Spirax-Sarco Engineering plc

Engineering every day

Annual Report 2019

Contents

Read about our business model on pages 8-17

Read more about our strategic progress in the Strategic Review on pages 33-40

Read about the activities of our Board during the year on pages 72-137

Our Company purpose

Our Company purpose is to **create sustainable value for all our stakeholders** as we **engineer** a more **efficient**, **safer** and **sustainable** world.

Our purpose unites us, guides our decisions and inspires us wherever we operate.

We create sustainable value for:

- our **shareholders** who benefit from strong financial returns and a progressive dividend policy that has delivered over 50 years of dividend growth;
- our **customers** who use our products and services to increase operating efficiency, improve product quality, optimise plant safety, meet sustainability targets and reduce costs;
- our **employees** who advance their careers in safe, inclusive and collaborative workplaces;
- our **suppliers** that we engage with for continuous improvement and responsibly sourced materials and services;
- our **communities** that we support through employee volunteering and charitable contributions; and
- the **environment**, which benefits from the solutions we provide to customers to reduce their carbon emissions, water and waste, and the activities we undertake to reduce our own environmental impacts.

We are **engineering a more efficient, safer and sustainable world**. For everyone. Every day.

For more information visit
www.spiraxsarcoengineering.com

Engineering every day

Spirax-Sarco Engineering plc is a multi-national industrial engineering Group with expertise in the control and management of steam, electric thermal solutions, peristaltic pumping and associated fluid path technologies.

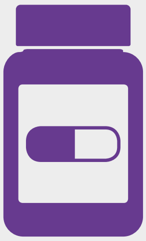
Our technologies play a critical role across multiple industries from food and beverage to pharmaceuticals, power generation to paper production. With customers in 130 countries, wherever you live in the world we provide the engineered solutions that sit behind the production of many of the items you use every day.

Examples of how we are engineering every day:

Spirax Sarco helps improve energy efficiency during egg production

See pages 12-13

Chromalox delivers precise temperature control for pharmaceutical production



See pages 14-15

Watson-Marlow increases process efficiency during confectionery manufacture

See pages 16-17

Financial summary 2019

for the year ended 31st December 2019

- Reported revenue growth of 8%, organic revenue growth of 6%
- Adjusted operating margin of 22.8%, up 10 bps organically*
- Strong organic sales growth in Steam Specialties and Watson-Marlow
- Chromalox operating margin increased to 15.1% in H2
- Net debt‡ of £295.2 million as at 31st December 2019, 0.9x EBITDA*
- Statutory operating profit down 18% due to non-recurring gain on disposal in 2018
- Final dividend increased by 10% to 78.0p

2019 key figures

Adjusted*	2019	2018	Reported	Organic†
Revenue	£1,242.4m	£1,153.3m	+8%	+6%
Adjusted operating profit*	£282.7m	£264.9m	+7%	+7%
Adjusted operating profit margin*	22.8%	23.0%	-20 bps	+10 bps
Adjusted profit before taxation*	£274.5m	£254.6m	+8%	
Adjusted basic earnings per share*	265.7p	250.0p	+6%	
Cash conversion**	84%	91%		

Statutory	2019	2018	Reported
Revenue	£1,242.4m	£1,153.3m	+8%
Operating profit	£245.0m	£299.1m	-18%
Operating profit margin	19.7%	25.9%	-620 bps
Profit before taxation	£236.8m	£288.8m	-18%
Basic earnings per share	226.2p	303.1p	-25%
Dividend per share	110.0p	100.0p	+10%

* All profit measures exclude certain items, which totalled a charge of £37.7 million (2018: credit £34.2 million), as set out in Note 2.

** Cash conversion measures the percentage of adjusted cash from operations to adjusted operating profit, as set out in Note 2.

† Organic percentage growth measures are at constant currency and exclude contributions from acquisitions and disposals, as set out in Note 2.

‡ Net debt includes total borrowings, cash at bank and bank overdrafts but excludes IFRS 16 lease liabilities, as set out in Note 24.

Segmental reporting

Our segmental reporting is consistent with how we present management information to the Board. A detailed segmental breakdown is provided in Note 3 of the Consolidated Financial Statements on pages 164 to 167. A performance review by operating segment is set out on pages 43 to 53.

2019	2019 Revenue	Change Reported	Change Organic	2019 Adjusted operating profit*	Change Reported	Change Organic
EMEA††	£335.7m	-3%	+2%	£67.0m	-3%	+4%
Asia Pacific	£249.8m	+7%	+7%	£72.5m	+14%	+13%
Americas	£169.9m	+9%	+11%	£38.4m	+4%	+18%
Steam Specialties	£755.4m	+3%	+6%	£177.9m	+5%	+10%
Electric Thermal Solutions	£186.1m	+20%	-1%	£24.7m	+8%	-19%
Watson-Marlow	£300.9m	+13%	+12%	£95.8m	+13%	+11%
Corporate expenses				(£15.7m)		
Total	£1,242.4m	+8%	+6%	£282.7m	+7%	+7%

†† Europe, Middle East and Africa.

* All profit measures exclude certain items, which totalled a charge of £37.7 million (2018: credit £34.2 million), as set out in Note 2.

Revenue £m

KPI

£1,242.4m

	Revenue £m	Organic growth %
2019	1,242.4	6
2018	1,153.3	7
2017	998.7	6
2016	757.4	4
2015	667.2	2

Adjusted operating profit* £m

KPI

£282.7m

	Adjusted operating profit £m	Margin %
2019	282.7	22.8
2018	264.9	23.0
2017	235.5	23.6
2016	180.6	23.8
2015	152.4	22.8

Basic adjusted earnings per share* p

KPI

265.7p

	p
2019	265.7
2018	250.0
2017	220.5
2016	171.5
2015	142.6

H&S over three-day lost time injury rate per 1,000 employees

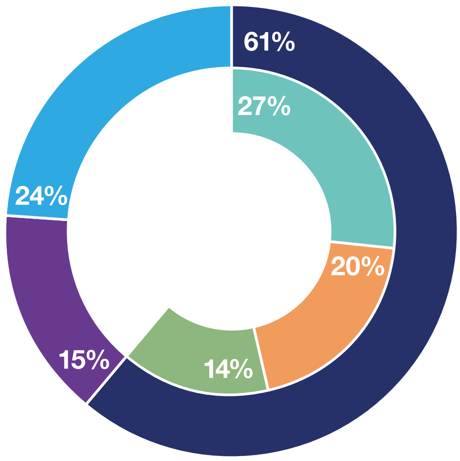
KPI

3.6

2019	3.6
2018	4.9
2017	4.6
2016	6.0
2015	6.2

* All profit measures exclude certain items, which totalled a charge of £37.7 million (2018: credit £34.2 million), as set out in Note 2.

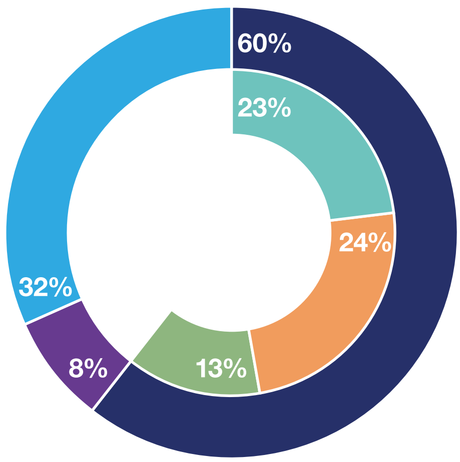
Revenue by segment %



- Steam Specialties
  - EMEA
  - Asia Pacific
  - Americas
- Electric Thermal Solutions
- Watson-Marlow

Adjusted operating profit by segment* %

Before corporate expenses of £15.7 million.



- Steam Specialties
  - EMEA
  - Asia Pacific
  - Americas
- Electric Thermal Solutions
- Watson-Marlow

* All profit measures exclude certain items, which totalled a charge of £37.7 million (2018: credit £34.2 million), as set out in Note 2. The Group's three operating segments, as defined by IFRS 8, are Steam Specialties, Electric Thermal Solutions and Watson-Marlow.

Our Group at a glance

A world-leading industrial engineering Group

Spirax-Sarco Engineering plc

Thermal Energy Management

Steam Specialties

spirax sarco

First for Steam Solutions

GESTRA

Engineering steam performance

EMEA Asia Pacific Americas

See pages 44-48

Electric Thermal Solutions

CHROMALOX

Advanced Thermal Technologies

THERMOCOAX

See pages 49-51

Watson-Marlow

WATSON MARLOW

Fluid Technology Group

See pages 52-53

Core product expertise

Steam Specialties

Industrial and commercial steam systems, including condensate management, controls and thermal energy management products and solutions

Typical uses: heating and curing, cleaning and sterilising, hot water generation, space heating and humidification

Characteristics of steam: high energy content, easy to control, environmentally safe, clean and sterile

Typical customer benefits: improved process efficiency, product quality and safety; reduced waste; lower CO_2 emissions, energy and water use; less maintenance downtime; and compliance with industry standards

Electric Thermal Solutions

Electrical process heating and temperature management solutions, including industrial heaters and systems, heat tracing and a range of component technologies

Typical uses: electrical heating for industrial processes, freeze protection and component heating for industrial heaters and systems

Characteristics of electrical solutions: easy to incorporate, install and maintain, high temperatures, controllable, no emissions at point of use

Typical customer benefits: more efficient industrial processes through improved thermal energy management and control systems

Watson-Marlow

Peristaltic and niche pumps and associated fluid path technologies, including pumps, tubing, specialty filling systems and products for single-use applications

Typical uses: fluid transfer in a wide range of pumping applications from those requiring sterility and accuracy to high volume pumping of corrosive materials

Characteristics of peristaltic pumps: fluid is contained within a tube: a sterile tube makes a sterile pump, and abrasive or corrosive fluids cannot damage the pump; gentle and highly accurate pumping; low maintenance

Typical customer benefits: more accurate, reliable and efficient fluid transfer

Global operations*

A diverse and expanding Group with a presence in all key industries and markets

We operate in both mature and emerging economies and in almost all industrial sectors. We have a unique global coverage and serve customers in 130 countries worldwide. We have 130 operating units in 47 countries and a resident direct sales presence in a further 19 countries. A further 64 countries are serviced indirectly by distributors or non-resident direct sales.

* Global operations at year end 2019.

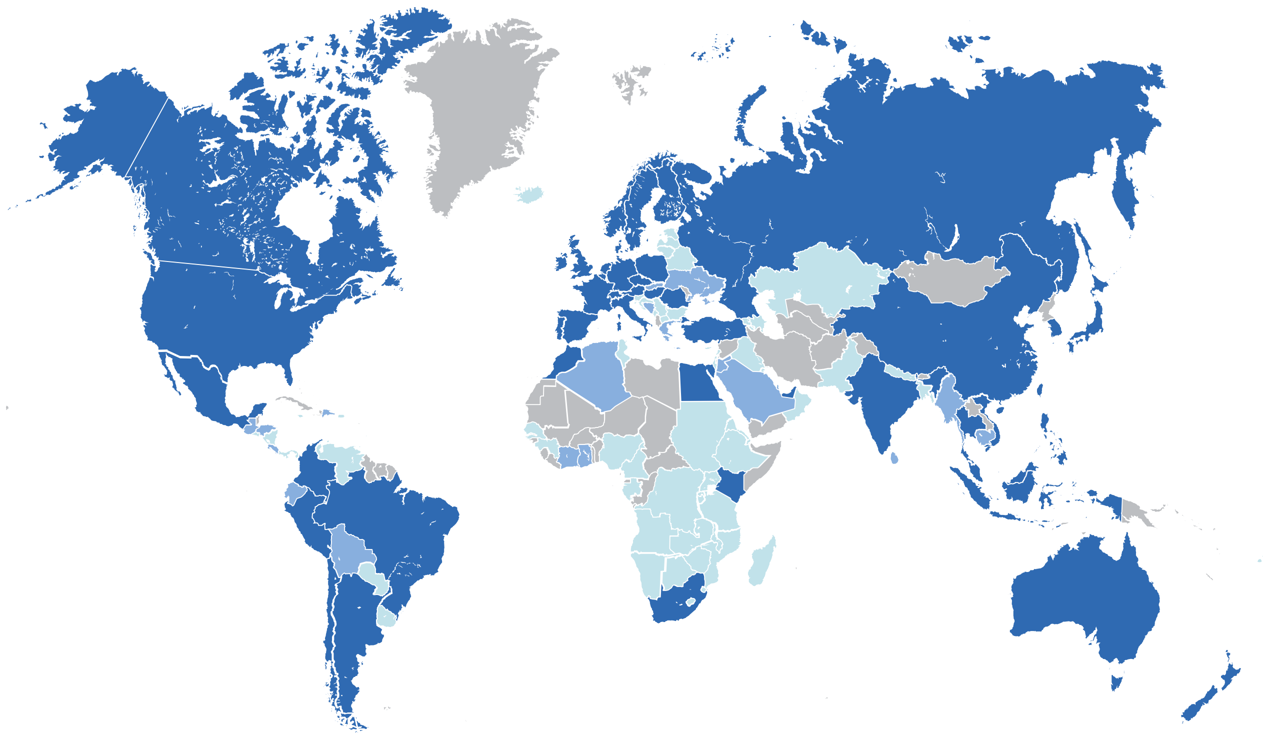
Further reading

Details of the industries we serve and our geographical expansion in 2019.

See pages 6-7 and 37

Map key

- Operating units
- Sales offices
- Indirect presence



Our diverse business

People

8,000+

Sales and service engineers

1,600+

Operating units**

130

Countries with a resident direct sales presence

66

Core product lines

1,600+

Direct buying customers‡

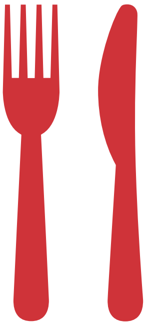
110,000

** Operating units are business units that invoice locally.

‡ Actively purchasing in the last 24 months.

The industries we serve

We apply our products, solutions and expertise across a diverse range of industrial sectors and end users – increasing efficiency, safety and sustainability in those industries, every day.



Food

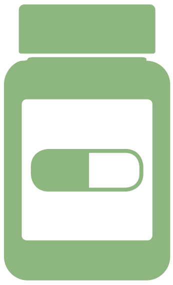
17% of Group revenue

Steam is used for blanching, cooking, baking, packaging, cleaning and sterilising. Electric heating elements are used in commercial food equipment. Pumps are used to meter ingredients, deliver food to process lines and handle process waste.

Beverage

3% of Group revenue

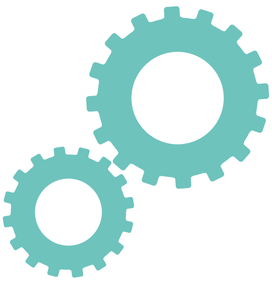
Steam is essential for brewing and distilling processes. It is used to protect product quality and flavour, and ensure compliance with industry standards. Pumps are used to transfer fruit, juice, concentrates, yeast and other additives.



Pharmaceutical & Biotechnology

18% of Group revenue

Clean steam reduces the risk of product and process contamination; electrical heating is used in a wide range of process heating applications; our peristaltic pumps, valves and single-use components enable precise flow control and fluid isolation.



OEM Machinery

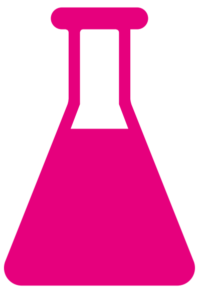
13% of Group revenue

Original Equipment Manufacturers (OEMs) are companies that build and supply machines for use in industry. Our activities with OEMs vary from simple product supply to advising on machine performance improvements and process plant design.

Oil & Gas

7% of Group revenue

Electrical heating products increase fluid viscosity, deliver freeze protection and help separate natural gas, crude oil and water during extraction. Our steam products enable optimum steam system performance and reduce energy use during oil and gas production.



Chemical

6% of Group revenue

Steam and electricity are widely used as an energy source in chemical production and product processing, while our pumps are used to safely and accurately transfer and dose critical chemical components.

Power Generation

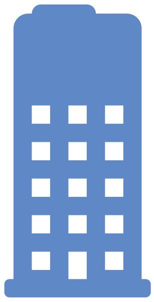
5% of Group revenue

Electrical heating technologies are widely used to optimise power generation. Steam turbines transfer chemical energy in fuel into electrical energy and steam is used to distribute and reuse waste heat formed during the power generation process.

Healthcare

4% of Group revenue

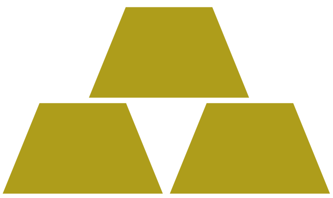
Steam is used in hospitals and clinics for space heating, hot water production, humidification and sterilisation. Pumps and associated equipment are used in the manufacture of products for the Healthcare industry.



Buildings

3% of Group revenue

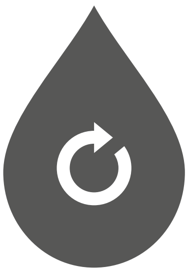
Steam is used to provide space heating, humidification and hot water in public and private buildings, while our electrical products are used for hot water and heat generation, snow melting, gutter and roof de-icing, and frost-heave prevention.



Mining & Precious Metal Processing

3% of Group revenue

Peristaltic pumps reduce water, energy and chemical use and increase productivity while moving and processing abrasive ores and slurries. Electrical heating is used for temperature maintenance and space heating for workers.



Water & Wastewater

3% of Group revenue

Peristaltic pumps are used to dose chemicals during water treatment processes and to transfer viscous and abrasive slurries. Electrical heating solutions provide freeze protection, temperature maintenance and space heating in water treatment plants.

Pulp & Paper

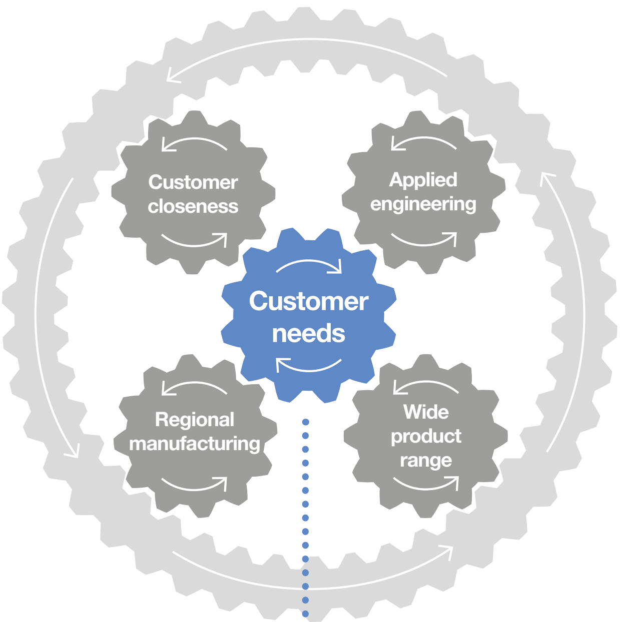
2% of Group revenue

Our steam, electric and pump products facilitate the accurate control of critical processes, such as washing, bleaching, dyeing, drying and finishing, in the manufacture of paper and a wide range of domestic and industrial tissues.

Our business model

Creating value through meeting customer needs

1. Our competitive strengths



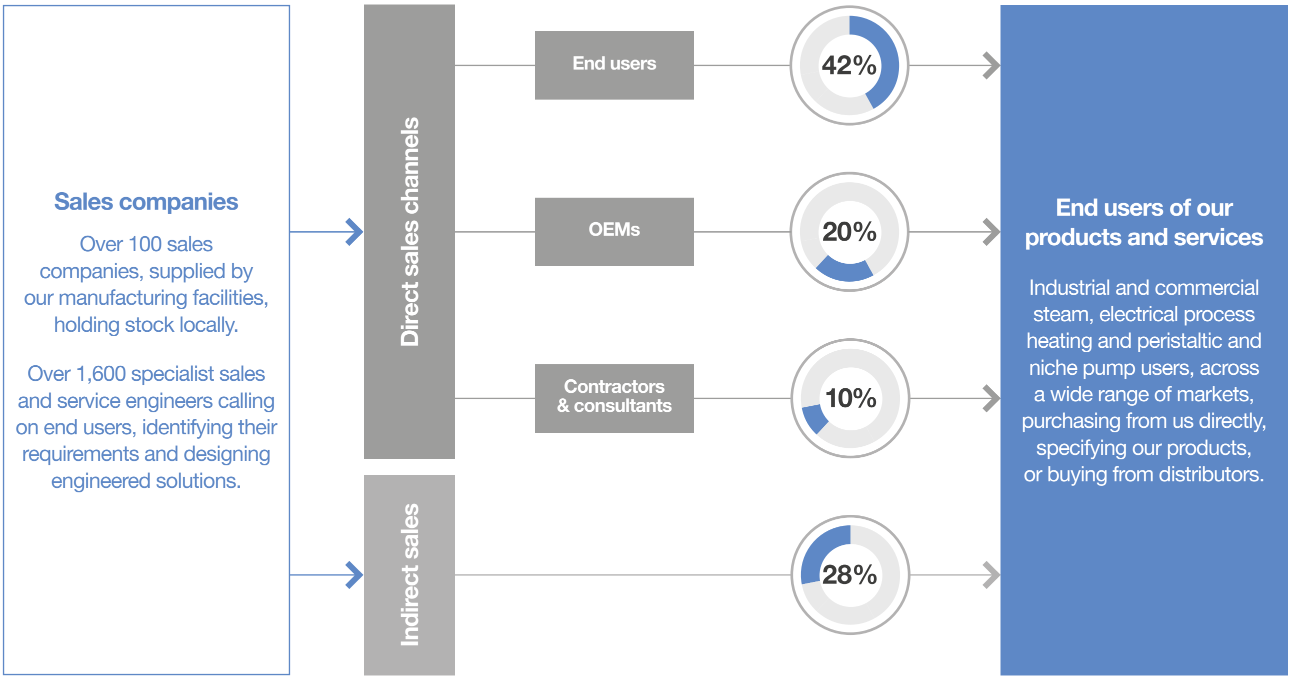
At the heart of our value creation, and our key competitive differentiator, is our deep engagement with and understanding of our customers and their processes, which is achieved through our direct sales approach. This closeness enables us to meet our customers' needs as we combine our specialist knowledge and locally-available, industry-leading products and services to deliver value-adding engineered solutions.

Read more on page 10

2. Our core activities

Read more on page 10

3. Our routes to market



Unique benefits to our approach

Bridge the knowledge gap

Many users of our products and services do not have the in-house knowledge or engineering resources to understand and fix their problems. We bridge that knowledge gap.

Focus on value-creating solutions

We act as a trusted adviser to identify efficiency improvement opportunities and provide value-creating solutions to customers.

Read more on page 11

Self-generate growth opportunities

Our sales engineers use their wide industry experience and knowledge to identify often unrecognised problems or efficiency opportunities, self-generating sales growth.

Develop innovative products and solutions

Our deep understanding of end user processes drives product innovation. We lead the way in developing convenient, effective and reliable ready-to-install packaged solutions.

Leverage information from our unique databases

Leveraging information from our large and unique customer databases enables our sales engineers to establish relationships with key decision makers and positions us well to achieve sales growth.

4. Creating value for our stakeholders

Customers

7.2m

tonnes of CO_2 saved annually from products sold in 2019

Suppliers

£545m

paid to suppliers for materials and services in 2019

Employees

£365m

paid in wages, salaries and pension contributions in 2019

Communities

£600,000

cash, in-kind donations and employee time to community engagement activities worldwide in 2019

Shareholders

£76m

paid as dividends in 2019

Environment

2%

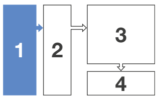
reduction in our water use intensity in 2019

Read more overleaf and on pages 59-71

Our business model *continued*

1. Our competitive strengths

Our direct sales approach is our most important differentiator, enabling us to meet customer needs, create value and drive sales growth.



Customer closeness

Our direct sales business model creates a unique understanding of our customers' needs. We build deep, long-term relationships as we help our customers solve their difficult productivity, control and energy efficiency problems, and improve their operational performance, safety and sustainability.

Applied engineering

It is not our products alone that provide value to our customers, but also the application of our extensive knowledge of systems design, operations and maintenance. Our customers increasingly rely on our expertise to deliver unique engineering solutions to achieve enhanced and sustainable operating efficiencies.

Wide product range

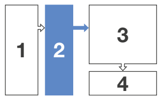
The breadth of our product offering is unmatched by our competitors and our one-stop shop approach simplifies the procurement process for our customers who are increasingly seeking partnerships with competent full-service suppliers. We are committed to research and development (R&D) to further widen our range of products and pre-fabricated engineered packages.

Regional manufacturing

Local availability of a wide range of products, which meet applicable regional design codes, is critical to our business model and enhances top-line revenue growth. We have strategically located our major manufacturing plants across the world in Europe, North America, Latin America and Asia.

2. Our core activities

Our core activities are those things we do that enable us to meet the needs of our customers and achieve our Company purpose.



Innovate & design

Through innovative R&D we develop and enhance our already broad range of products, pre-fabricated packages and site services, ensuring that we meet customers' changing needs. Our technically-expert direct sales force allows us to leverage these new products and develop new applications for existing products, which increases the amount of plant spend that we can capture in the small-scale projects and maintenance activities that lie at the heart of our business.

Manufacture

We manufacture industrial and commercial steam system products, electrical process heating and temperature management products, and peristaltic and niche pumps and associated fluid path technologies. We manufacture over 1,600 core product lines in over 30 manufacturing sites, located across four continents.

Sell

With a resident direct sales presence in 66 countries and non-resident direct sales or distributors in a further 64 countries, we serve customers in 130 countries worldwide. Our offering to customers ranges from single products to bespoke engineered solutions or full system design and supply. We also provide site surveys and audits, and customer training.

Monitor & measure

We offer a comprehensive range of site audits, maintenance services and digital monitoring solutions, to keep our customers' systems operating efficiently. Approximately 50% of our revenue is derived from our end users' maintenance, repair and overhaul activities.

Apply & solve

We combine our specialist knowledge with our industry-leading products and services to deliver value-adding engineered solutions to customers, who increasingly rely on our service, solutions and expertise to achieve enhanced and sustainable operating efficiencies.

Educate

We help our customers to identify in-house engineering knowledge skill gaps and offer a wide range of training courses, delivered in our 59 training centres worldwide, to help plug those knowledge gaps.

3. Our routes to market

Our direct sales approach is instrumental in creating value-adding opportunities for self-generated growth.

Routes to market

Our direct sales approach plays an important role in all routes to market – whether direct or indirect – as our engineers call on end users to highlight the benefits of our products, solutions and services. End users can then purchase from us directly, specify our products in OEM equipment, request that contractors specify our products, or purchase from a distributor.

Direct sales

Our specialist sales and service engineers visit end users in over 60 countries, offering expert advice and providing products and solutions to optimise process efficiency, safety and sustainability. Our territories are covered segmentally where possible, geographically where not, with sector specialists allocated to our core industries. We call this "sectorisation". Sectorisation enables us to provide industry-leading support to end users.

As we combine a detailed understanding of our end users' processes with our broad range of regionally-manufactured products, engineered packages and services, we build deep, long-term relationships with our customers who trust us as a valued engineering partner and expert adviser. This customer closeness further strengthens our ability to design and develop products, services and solutions that deliver value to customers, and self-generate growth.

Self-generated growth

Our sales and service engineers spend a lot of time in our customers' plants and are highly effective at self-generating growth opportunities as they identify often unrecognised customer needs and design solutions to meet those needs. Importantly, these small improvement projects are generally funded through operating expenditure budgets and have a short pay-back period for the customer, meaning that they remain attractive even during challenging economic times.

4. Creating value for our stakeholders

We recognise the importance of operating in a way that delivers long-term sustainable value for our stakeholders. We engineer sustainable value creation as we manage relationships in a way that reflects our Values; effectively use financial, human and natural resources; understand our associated risks and opportunities; and implement our strategy for growth.

Customers

Creating value for our customers is at the heart of our Company purpose and is exemplified by our direct sales business model, which is driven by our customer needs. We create sustainable value for our customers as we provide products and services that enable them to improve operational efficiency, productivity and safety, meet regulatory requirements and increase their sustainability.

See pages 12-17, 70 and 80-81

Employees

We have over 8,000 Company employees across 66 countries worldwide. Our employees are our greatest asset and we always aim to treat them with respect. We create value for our employees by extensively investing in developing their knowledge and skills, providing safe and inclusive working environments and remunerating them fairly for the work that they do.

See pages 36, 62-64 and 80-84

Shareholders

As we focus on meeting our customers' needs we consistently achieve growth that outperforms our markets. This, in turn, enables us to create and deliver a strong track record of shareholder value. We have a progressive dividend policy that has delivered over 50 years of dividend progress, with a 12% dividend Compound Annual Growth Rate over the last 10 years.

See pages 28-29, 31, 56 and 79

Suppliers

We operate a regional manufacturing strategy and use a wide range of local, national and international suppliers who adhere to our Supplier Sustainability Code. Having a broad manufacturing footprint, the beneficiaries of our value creation are geographically widespread and they, in turn, create value for their stakeholders.

See pages 39, 65 and 80-81

Communities

We are committed to "Engineering better futures" for the people in our local communities. We create value in our communities as we offer support to charities, non-profit organisations and education providers through employee volunteering, financial and in-kind charitable donations and educational provision.

See pages 40, 71 and 80-81

Environment

We create value for the environment by providing products and services that improve the sustainability of our end users' operations, in particular reducing energy and water use, lowering carbon emissions and reducing waste. We are also committed to minimising our own environmental impacts through reducing energy consumption, emissions, water use and waste.

See pages 12-13, 67-70 and 80-81

Our business model in action

> "An example of how engineering expertise can help the agricultural sector use resources as efficiently and effectively as possible."

Angelo Giambrone, Business Development Manager, Spirax Sarco UK

Spirax Sarco helps improve energy efficiency during egg production

The challenge

In the agricultural industry, where margins on agricultural produce are tight, farmers are becoming increasingly conscious of their energy use and are looking for innovative ways to cut costs and lower their environmental impacts. At the same time, on poultry farms across the UK a mixture of litter, soiled bedding and waste feed is generated as a by-product of the production process, which requires removal and disposal.

Biomass boilers, which use organic matter to fuel a heating or hot water system, are gaining traction amongst industrial users looking for sustainable, renewable fuel technologies. As a result, a biomass heating company asked Spirax Sarco to assist in the design and development of a fully-optimised biomass heating system, utilising the waste litter mixture to heat poultry sheds.

The solution

Spirax Sarco worked with the biomass boiler company to design and develop a biomass heating system with integrated steam technology, for use in the poultry industry. Four key technologies provided by Spirax Sarco include a pressurised de-aerator to raise the temperature of boiler feedwater and lower fuel use, a condensate recovery unit to maximise steam system efficiency, a plate heat exchanger package to control the conversion of steam to hot water and metering to enable end users to monitor their steam systems.

In addition, Spirax Sarco helped to integrate a micro-turbine into the system that uses steam to generate small amounts of electricity on site.

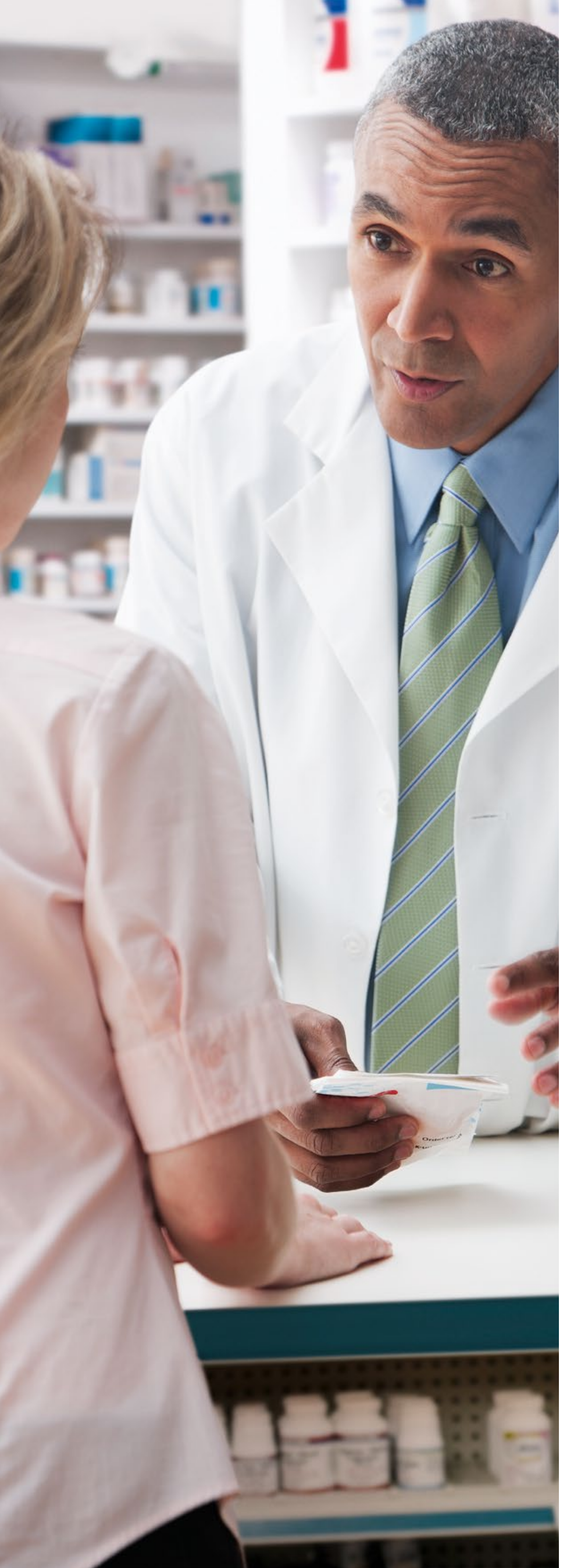
The result

Approximately two million chickens in the UK are housed in steam-heated sheds utilising biomass. As a result of Spirax Sarco's solution, agricultural customers have reduced waste removal from site, are achieving significant savings on their energy bills and have reduced their environmental impacts, increasing the sustainability of the eggs you eat.

Engineering every day

Our business model in action *continued*

> **“Combining our thermal energy management expertise with specialist products, we delivered a reliable heating solution to ensure the quality of essential medicines.”**
>
> **Patrick Fee,** Sales Engineer, Chromalox



Chromalox delivers precise temperature control for pharmaceutical production

The challenge

Within pharmaceutical manufacturing, thermal management is critical across a number of key processes to maintain product quality and production efficiency. Planning to expand its production facility, a biopharmaceutical company in Ireland, which manufactures a range of biologics (drugs manufactured in, extracted from or semi-synthesised from biological sources), required an accurate, clean and safe heating solution for a number of process applications, including the heating of water-jacketed vessels. Accurate temperature management is essential to prevent biopharmaceutical materials from overheating, which would cause the material to degrade and accumulate on the internal walls of the jacketed vessel.

The pharmaceutical company turned to a specialist OEM to provide the necessary processing equipment, and the OEM turned to Chromalox for its electrical thermal management expertise and products. The OEM required a temperature management solution that would seamlessly integrate with its pharmaceutical equipment.

The solution

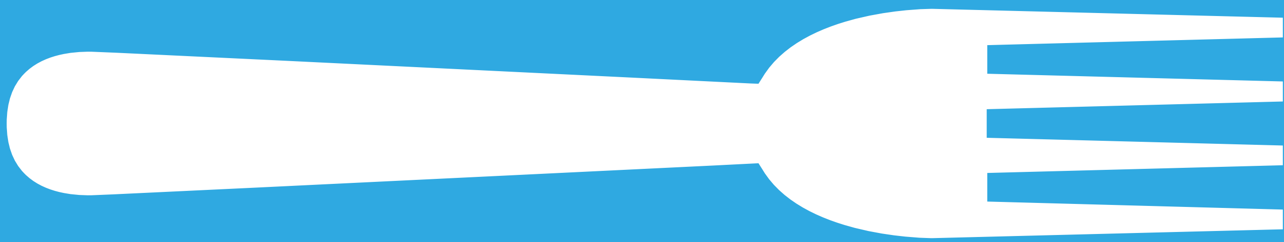
Engineers from Chromalox worked with the OEM to determine the precise temperature load required by the customer and then provided a range of heating and temperature management components, such as a stainless steel circulation heater and remote mounted SCR (silicon controlled rectifier) control panel, to monitor and manage the heating system, for integration with the OEM's pharmaceutical process equipment. Chromalox's circulation heaters are certified to ensure compliance with a number of standards, such as 32Ra external polishing requirements, ensuring they are suitable for use in a cleanroom environment.

The result

A compact and efficient heating system that is delivering precise temperature control of water circulating in the jacketed vessels, ensuring that the biologics produced are consistently of the highest quality.

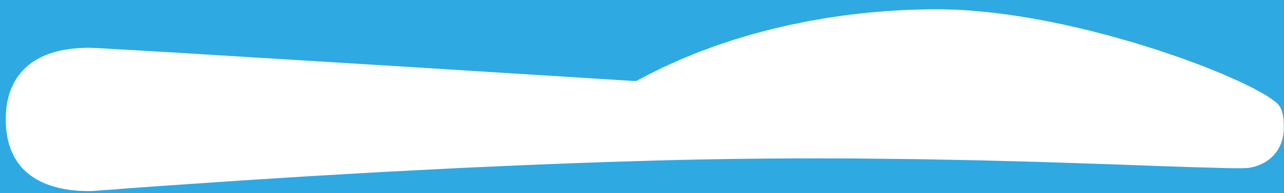
Engineering every day

Our business model in action *continued*



"The quality of the MasoSine pumps and our strong level of service helped us gain the customer's trust, enabling us to deliver increased production efficiency."

Ricardo Costa, Sales Engineer, Watson-Marlow Brazil



Watson-Marlow increases process efficiency during confectionery manufacture

The challenge
In its Brazilian factory, a market-leading confectionery producer was using lobe pumps to transfer ingredients such as liquid sugar within its production process when manufacturing fruit jelly sweets, marshmallows and fruit stick candies. However, the mechanical seals of the lobe pumps, which are situated around the rotating shaft to seal the process fluid inside the pump, frequently became stuck by the glue-like sugar solution. The pumps experienced frequent downtime and required regular maintenance, with the confectioner having to use standby pumps to maintain continuous production.

The solution
Designed to cope with viscous fluids that other pumps struggle to process, Watson-Marlow's MasoSine pumps have a triple-lip seal system that is unaffected by sticky or viscous fluids such as the hot sugar solution being pumped by the sweet manufacturer. Watson-Marlow recommended the installation of four new pumps at the plant to transfer the liquid sugar at rates of up to 4,600 litres per hour.

The result
Since installing the MasoSine pumps from Watson-Marlow, the confectioner reports that downtime has been significantly reduced, maintenance costs are lower and process efficiency has increased, ensuring that children and adults in Brazil can continue to enjoy the sweet treats that they love.

Engineering every day

Business drivers and investment case

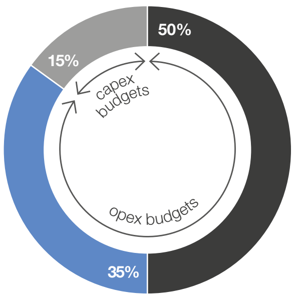
We have a clear understanding of our customers and markets, allowing us to understand where and how our revenues are generated and where best to invest for future returns.

With the majority of our income coming from our customers' maintenance activities and small improvement projects…

85%* of Group revenue is generated from annual maintenance and operational (opex) budgets, rather than from capital (capex) budgets.

Why is this important?

Capex budgets are more likely to be cut during periods of slower growth or recession. Therefore, the high proportion of revenue deriving from opex budgets gives us resilience during economic downturns. Additionally, through our direct sales approach, we are able to self-generate business by providing bespoke engineered solutions, typically with better margins.



- **Maintenance and repair sales** that ***maintain existing systems***, supported by the end users' opex budgets, with a typical invoice value of around £1k
- **Small project sales** that ***improve existing systems***, supported by the end users' opex budgets, with a typical invoice value of £10k-£50k
- **Large project sales** that ***build new systems***, supported by the end users' capex budgets, with a typical invoice value of over £100k

…and over a third of sales coming from self-generated opportunities…

35%* of revenue is derived from self-generated opportunities. This reflects our overall strategic objective to deliver growth that outperforms our markets. We achieve this by staying close to our customers – through our direct sales approach – understanding their system requirements and providing them with innovative products and solutions to solve their process challenges.

Why is this important?

By focusing on self-generated growth we identify problems and design solutions that deliver significant operational benefits for customers. Typically, these bespoke, engineered projects have higher margins and relatively short sign-off timeframes as they are funded by maintenance and operational budgets at plant level. As we deliver engineered solutions we self-generate growth, reinforce our customers' trust in our engineering expertise and forge sustainable business relationships.

Further reading

Our direct sales approach is our greatest competitive advantage and is covered in more detail in our business model and customer case studies.

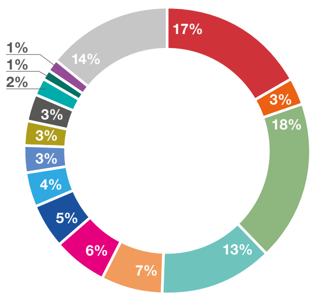
See pages 8-17

…our revenue is balanced across multiple less-cyclical industries…

50%* of Group revenue is derived from defensive, less cyclical end markets, including: Food & Beverage, Pharmaceutical & Biotechnology, Healthcare and Water & Wastewater.

Why is this important?

Not only do we derive revenue from a diverse range of industry sectors, we also have an excellent balance between higher-growth end markets and those that are more defensive and resilient.



- Food
- Beverage
- Pharmaceutical & Biotechnology
- OEM Machinery
- Oil & Gas
- Chemical
- Power Generation
- Healthcare
- Buildings
- Mining & Precious Metal Processing
- Water & Wastewater
- Pulp & Paper
- Rubber & Plastic
- Semiconductor
- Other

* Based on internal estimates. Where there is little visibility of end user industry sector (primarily in sales via distributors), sales have been allocated across industries on a pro-rata basis. In 2019 these "unknown" sales accounted for 20% of total revenue. OEM sales to identifiable industries have been allocated to those industries. Sales to OEM customers accounted for 20% of Group revenue in 2019.

…and our long-term market drivers remain positive.

14%* share of our addressable markets, which were valued at £9.0 billion at the end of 2019.

Our markets have significant growth potential due to a number of positive long-term market drivers (see the table below) at a macroeconomic and sector level.

Long-term market growth drivers

Population growth
Increased consumption and demand in all our major industry sectors.

Economic development in emerging markets
New markets and increased consumption.

Ageing population
Increased demand for healthcare and pharmaceutical products.

National and international climate change mitigation strategies
Requirement for companies to manage energy more efficiently, increasing demand for energy management products and services.

Increase in global energy consumption
Increased investment in renewable and non-renewable energy and power generation industries, with increased demand for energy management solutions.

Industrial production
Our markets reflect changes in industrial production growth rates but our sales have consistently outperformed them as we have expanded our addressable markets, extended our geographic penetration and grown our market share.

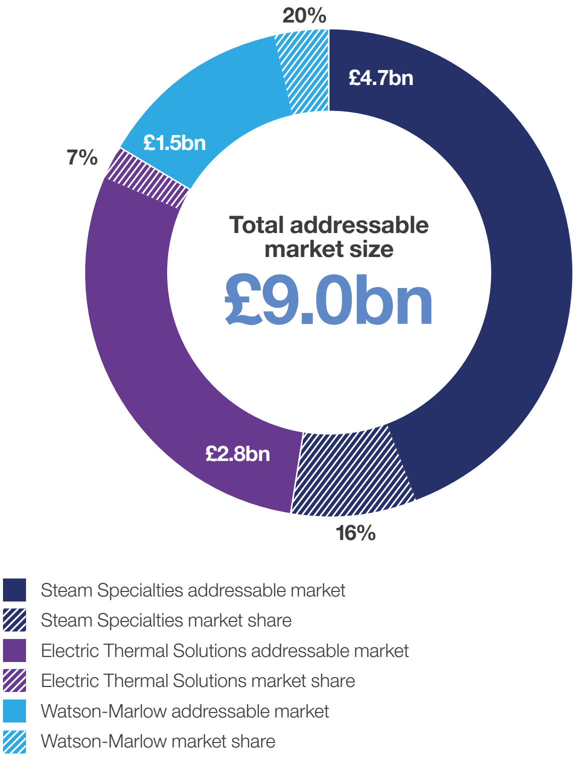
Our competitive landscape

As the global market leader in steam systems and peristaltic pumping, and a significant player in the electric thermal solutions market, we have a strong competitive position in relatively fragmented markets.

Our competitors generally fall into two categories: system specialists that supply a wide range of products and services, and product specialists that compete on a small part of our product range. Most system specialists are relatively small, privately owned, regional players, while product specialists lack the whole system expertise and application knowledge offered by our direct sales force. Our broad product range, global presence, applications knowledge and direct sales business model give us a strong competitive advantage in our markets.

Why is this important?

Our long-term growth prospects are promising. Despite being the market leader in Steam Specialties and pumps and fluid path technologies, we have a relatively small market share of these large addressable markets, at 16% and 20% respectively, and with just a 7% share of the electric thermal solutions market we have good opportunities for growth. We can grow by targeting self-generated sales, extending our geographical reach and increasing the size of our addressable market through innovative product development. In addition, our addressable markets and sectors continue to demonstrate headroom for long-term growth.



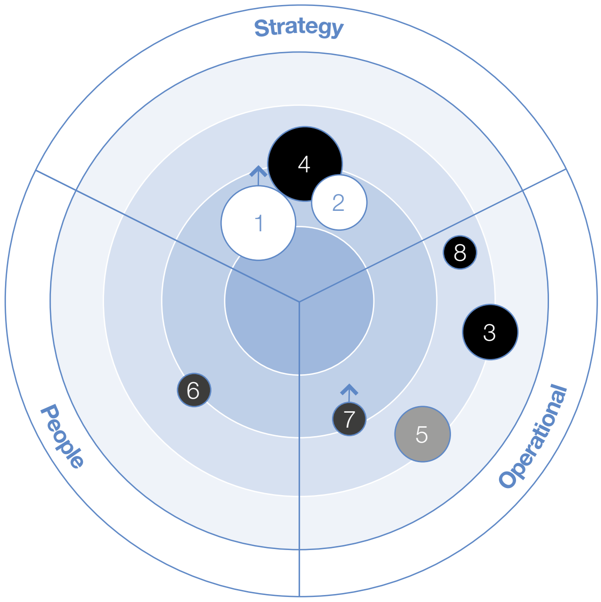
* Based on internal estimates. The increase in market size in 2019 reflects underlying changes in market segment sizes, expansion of the addressable market as a result of the acquisition of Thermocoax, product development and the impact of exchange movements. Market share includes the full year revenue of the acquisition made in 2019.

Risk management

> In 2019, we focused on the risks and opportunities associated with climate change, and meeting customer needs, as well as ensuring the Group is well prepared for Brexit.”

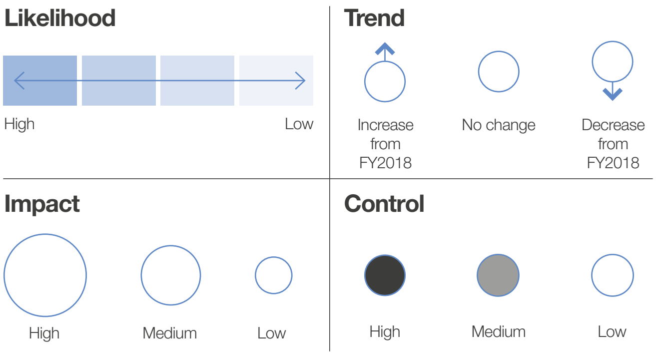
Nicholas Anderson
Group Chief Executive and
Chair of Risk Management Committee

Risk likelihood, control and impact



Principal risks

1	Economic and political instability
2	Significant exchange rate movements
3	Cybersecurity
4	Failure to realise acquisition objectives
5	Loss of manufacturing output at any Group factory
6	Breach of legal and regulatory requirements (including ABC laws)
7	Inability to identify and respond to changes in customer needs
8	Solution specification failure



Further reading

The numbers relate to the principal risks.

See pages 22-25

Our approach and appetite for risk

We recognise risk as an inherent part of our business operations and we approach risk with the same deliberate, strategic consideration as other aspects of the business. The Risk Management Committee monitors our risks, in particular those identified as principal risks, on an on-going basis, while the Board is responsible for the overall stewardship of risk management and internal control. Using the information and evaluations obtained from our regular top-down and bottom-up reviews, alongside the Committee-led principal risk appetite ratings, the Committee creates an effective system for monitoring, planning and developing a Group-wide approach and culture regarding risk.

General Managers of our operating units are directly involved in the risk assessment process and the evaluations of the Committee, including the appropriate levels of risk, are communicated to all Group companies.

The on-going monitoring and engagement contributes to the Group's risk register and the management of risks. Both the risk register and the principal risks are dynamic and fluid. They provide a reflection of current conditions across the Group and guidance for on-going monitoring and mitigation activities.

Managing risks

Key risk management actions during 2019

The Group undertook the following key actions during 2019 in addition to the regular monitoring of existing and developing risks:

- **Bottom-up risk review:** the Committee received high quality responses from its Group companies and determined that the Group companies have sufficiently robust measures in place to effectively mitigate the Group's principal risks;
- **Risk register:** the bottom-up risk review informed the annual review and update of the risk register;
- **Risk scoring:** the scoring matrix was reviewed and revised to enable a more precise measure of risks for the Group;
- **Electric Thermal Solutions:** the scope of the risk register was extended to cover Thermocoax, coinciding with the appointment of Dominique Mallet, President of the Electric Thermal Solutions business, to the Committee in September 2019;
- **Risk Appetite Statement:** the Committee confirmed the statement which can be found on pages 100 to 101; and
- **Climate change:** in recognition of it ascending in importance in the global political and economic agendas, as well as increasing global awareness of climate impacts, the Committee introduced climate change as a new risk on the risk register, to be carefully monitored over the coming year.

The Committee's analysis of the principal risks affecting the Group, before mitigation, is set out in the diagram on page 20.

How is the Group preparing for Brexit?

An on-going review and revision of the Group's Brexit strategy was overseen by the Committee in 2019. These actions, which will continue into 2020 as necessary, include the following:

- holding an additional month's raw material in stock in the UK;
- holding an additional two weeks' stock of finished goods at those businesses that purchase from the UK; and
- planning in respect of orders and demand in the operating companies.

Improved cybersecurity controls

In response to the growing risk of cyberattacks, we have rigorously assessed and improved our controls. Within each control there is a multi-faceted approach to risk reduction. The Group now has mature cyber defences commensurate with a FTSE 100 company.

Emerging risks

In addition to the principal risks faced by our business, we recognise that there are risks which are more uncertain in nature and difficult to assess or that have the potential to develop and increase in severity over time. The Committee monitors closely all emerging risks that have the potential to increase in significance and affect the performance of the Group and its ability to meet its strategic objectives. Whilst we acknowledge that such risks are not as easily accommodated on the risk scoring matrix or prescribed risk appetite ratings, the Committee meetings and the risk register are both used to identify and closely monitor such risks.

Solution specification failure, currently risk 8, demonstrates the dynamic nature of our risk assessment processes. This risk was elevated from an emerging risk to a principal risk in 2019.

The risk register recognises the importance of climate change as an emerging risk. Risks associated with climate change will be closely monitored, given the increasing likelihood of this risk impacting the Group, as will the controls we have in place to address the risks and opportunities that climate change presents.

The Board, the Group Executive Committee and the Committee are monitoring the impact of the COVID-19 virus on our business as an emerging risk.

Risk management *continued*

Risk register review

Following the review of the risk register and principal risks, the following changes were made:

- **Loss of a critical supplier:** no longer a principal risk as measures are being put in place to identify suppliers presenting the highest risk, to improve continuity of supply, with solutions to minimise the loss;
- **Inability to identify and respond to changes in customer needs:** included as a principal risk;
- **Health, safety and environmental risks:** no longer a principal risk as there has been a significant focus and good leadership on EHS and improved performance in recent years;
- **Solution specification failure:** included as a principal risk.

The trend for each principal risk was assessed and updated and our risk appetite process was extended to new and revised risks, including the two new principal risks.

Principal risks

The following table sets out the Group's principal risks and describes the links to strategy, the mitigation measures and the appetite for each risk. The trend column sets out the direction of change from 2018.

The table includes those risks that we have identified as currently most relevant to the Group.

Key

Trend

Increased risk · No change to risk · Decreased risk

Link to strategy

Direct link · Indirect link · No link

Risk appetite ratings defined:

Very low	Following a marginal-risk, marginal-reward approach that represents the safest strategic route available.
Low	Seeking to integrate sufficient control and mitigation methods in order to accommodate a low level of risk, though this will also limit reward potential.
Balanced	An approach which brings a high chance for success, considering the risks, along with reasonable rewards, economic and otherwise.
High	Willing to consider bolder opportunities with higher levels of risk in exchange for increased business payoffs.
Very high	Pursuing high-risk, unproven options that carry with them the potential for high-level rewards.

Principal risk and why it is relevant	Trend	Key mitigation, sponsor and explanation of change	Risk appetite rating	Rationale for rating
1. Economic and political instability				
The Group operates worldwide and maintains operations in territories that have historically experienced economic or political instability. This type of instability, which includes the uncertainties of regime change, creates risks for our locally based direct sales operations and broader risks to credit, liquidity and currency.	Increased risk	• Strong internal controls, including internal audit and appropriate insurance. • Operating in accordance with the Group Treasury Policy. • Externally-facilitated scenario planning. • Resilient business model. • Well spread business by geography and sector. **Executive sponsor:** Nicholas Anderson **Change:** This risk has increased due to various factors including trade friction between the USA and China in 2019, the deterioration in the Argentine economy and continued tensions in the Middle East.	Very high **High** (selected) Balanced Low Very low	We have the background and know-how to successfully manage the unique challenges in economically and politically volatile territories. We are willing to accept these challenges where opportunities for growth exceeded the impact of this risk.

Link to strategy: 1 2 **3** 4 **5** 6

Principal risk and why it is relevant	Trend	Key mitigation, sponsor and explanation of change	Risk appetite rating	Rationale for rating

2. Significant exchange rate movements

The Group reports its results and pays dividends in sterling. Operating and manufacturing companies trade in local currency. With sales companies and manufacturing spread across the globe, the nature of the Group's business necessarily results in exposure to exchange rate volatility.	→	• Maintain the spread of manufacturing across currency areas. • Consideration of exchange rate exposures in the manufacturing strategy. • Forward cover where appropriate and in line with the Group Treasury Policy. • Focus on reducing manufacturing cost. **Executive sponsor:** Kevin Boyd **Change:** No change.	Very high High ● Balanced Low Very low	We take a balanced view of this risk as the risk arises as a direct result of our global presence, but our geographic spread means we are not wholly dependent on any one currency.

Link to strategy: 1 2 **3** 4 **5** 6

3. Cybersecurity

Cybersecurity risks include risks from malware, accident, statutory and legislative requirements, malicious actions and other unauthorised access by third parties.	→	• Global assessment of our IT environment against UK cyber essentials framework and prioritising actions for improvement. • Deploying security tools to limit the impact and spread of ransomware. • Initiating a new centrally-managed Firewall environment. • Further strengthening of security for centrally-managed systems for heightened protection and consistency. **Executive sponsor:** Shaun Mundy, Group IS Director **Change:** No change.	Very high High Balanced Low ● Very low	Concerns of potential impact on the business, in addition to the important considerations surrounding protection of personal data, reinforce our commitment to implement and maintain robust security measures across the Group.

Link to strategy: 1 2 **3** 4 **5** 6

4. Failure to realise acquisition objectives

Whilst the Group mitigates this risk in various ways, including through comprehensive due diligence, professional advisers and contractual protections, amongst others, there are some variables that are uncontrollable or difficult to control, such as economic conditions, culture clashes and employee movement. Therefore, these could impact acquisition objectives.	→	• Regular review of acquisition criteria in line with strategic plan. • Board approval of integration plans for major acquisitions. • Scrutiny of targets and implementation plans by external advisers and internal key players. • Use of retainer/escrow to provide protection against warranty claims. • Use of insurance as protection against seller breach and non-disclosure. • Ensuring valuation models show a healthy return on investment. • Regular monitoring of performance by the Board against the approved investment case. **Executive sponsor:** Nicholas Anderson **Change:** No change.	Very high High Balanced ● Low Very low	Thorough planning and proper due diligence can mitigate many of the potentially risky aspects of an acquisition. Implementation plans must be well-developed and carefully pursued to achieve the full strategic and financial benefits.

Link to strategy: 1 2 **3** **4** **5** 6

Risk management *continued*

Principal risk and why it is relevant	Trend	Key mitigation, sponsor and explanation of change	Risk appetite rating	Rationale for rating

5. Loss of manufacturing output at any Group factory

Principal risk and why it is relevant	Trend	Key mitigation, sponsor and explanation of change	Risk appetite rating	Rationale for rating
The risk includes loss of output as a result of natural disasters, industrial action, accidents or any other cause. Loss of manufacturing output at any important plant risks serious disruption to sales operations.		• Investing in modern flexible machining. • Capacity planning and holding stock in sales companies. • Conducting audits/inspections. • Annual Risk Assessments and business continuity planning. • Reviewing and maintaining appropriate insurance cover. • Continuing commitment to employee policies, ensuring satisfactory benefits and regular communication with all employees. **Executive sponsors:** Neil Daws, Jay Whalen* and Dominique Mallet **Change:** No change.	Very high High Balanced Low Very low	Whilst we have mitigated this risk through a geographic spread of factories, calculated replication of capacity and management of stock, the potential negative consequences to the Group and its customers warrants a low appetite for this risk.

Link to strategy: 1 2 3 4 5 6

6. Breach of legal and regulatory requirements (including ABC laws)

Principal risk and why it is relevant	Trend	Key mitigation, sponsor and explanation of change	Risk appetite rating	Rationale for rating
We operate globally and must ensure compliance with laws and regulations wherever we do business. As we grow into new markets and territories, we must continually review and update our operations and procedures, and ensure our employees are fully informed and educated in all applicable legal requirements. This is particularly important with respect to anti-bribery and corruption (ABC) legislation. Breaching any of these laws or regulations could have serious consequences for the Group.		• On-going global monitoring of commercial arrangements and agreements, with appropriate professional advice. • Established procedures to maintain accreditations. • Group-wide ABC training and whistle-blowing hotline. • Group Litigation Report and on-going monitoring of cases. • Regular updates on Corporate Governance and Stock Exchange rules. • General Data Protection Regulation compliance plan implemented. • Conducting supplier audits. • Engaging suppliers to commit to compliance with the principles of the Supplier Sustainability Code. **Executive sponsor:** Andy Robson **Change:** No change.	Very high High Balanced Low Very low	We respect the laws, rules and regulations of the jurisdictions in which we operate and believe we have a duty to comply with those requirements.

Link to strategy: 1 2 3 4 5 6

* Jay Whalen retired from the Board and its Committees on 31st December 2019. Andrew Mines, Managing Director, Watson-Marlow, was appointed to the Committee on 1st January 2020.

Principal risk and why it is relevant	Trend	Key mitigation, sponsor and explanation of change	Risk appetite rating	Rationale for rating

7. Inability to identify and respond to changes in customer needs

This risk could lead to a loss of business as a result of a failure to respond rapidly to changes in the needs of customers or technology shifts.

Trend: ↑

- Stronger presence of sales engineers, compared with competitors, in the market place.
- Watson-Marlow instituting a product development pipeline process which tracks trends and changes in each industry sector.
- New product ideas generated by market development managers from close alignment with sales engineers and customers.
- Sales and competitor analyses undertaken to identify any trends or technology shifts.

Executive sponsor: Neil Daws

Change: New principal risk given the importance of changing customer requirements.

Risk appetite rating: Very high / High / Balanced / **Low** (selected) / Very low

The Group continues to focus on its market awareness, invests in technical and sales knowledge via the Spirax Sarco Academy and, through Customer First sectorisation, seeks to be more closely attuned to its customers. There is therefore a good level of control effectiveness, but a low appetite for risk.

Link to strategy: 1 2 3 4 5 6

8. Solution specification failure

This risk relates to loss of output at a customer plant due to a faulty product potentially leading to customer product contamination and/or customer loss of manufacturing output and thereby contractual liability and loss of sales.

Trend: →

- Product Lifecycle Management rolled out across the Steam Specialties business providing improved failure visibility and analysis.
- Product Data Management pilot to mid-2020 prior to wider roll-out.
- Electronic quality system project to commence in 2020 in Watson-Marlow.
- Strengthening compliance and quality resource in 2020 in critical areas including audit of localised manufacturing and establishing global quality and compliance activities to identify high risk.
- Additional buyer assumption of liability on Original Equipment Manufacturer products.
- Customer approval process for complex orders and engineered solutions.

Executive sponsor: Neil Daws, Jay Whalen* and Dominique Mallet

Change: No change to trend. Now a principal risk due to reassessment of the risk across all businesses.

Risk appetite rating: Very high / High / Balanced / **Low** (selected) / Very low

With our direct market approach, our risk from a control and mitigation perspective is well-managed as we are able to respond to our customers in a timely manner. From a financial standpoint, the price (and hence the margin) we command provides a strong foundation for some risk appetite.

Link to strategy: 1 2 3 4 5 6

* Jay Whalen retired from the Board and its Committees on 31st December 2019. Andrew Mines, Managing Director, Watson-Marlow, was appointed to the Committee on 1st January 2020.

What are the key areas of focus for 2020?

- Undertake top-down risk review and annual review of the risk register.
- Implement our plans for Brexit.
- Monitor COVID-19 and take action to mitigate its effects.
- Emerging risks.

Further reading

Information on the Group's approach to risk, including risk appetite, along with the roles, responsibilities and actions of the Risk Management Committee.

See pages 98-101

Our Viability Statement.

See page 101

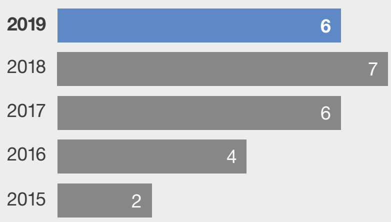
Our Going Concern Statement.

See page 136

Key Performance Indicators

Our key performance indicators are used to measure the successful implementation of our strategy.

1. Organic revenue growth† %



Definition
Organic revenue growth measures the change in revenue in the current year compared with the prior year from continuing Group operations. The effects of currency movements, acquisitions and disposals have been removed.

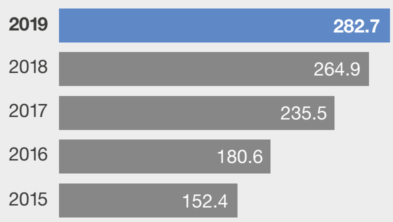
Progress in 2019
Organic sales increased by 6%, with 6% organic growth in the Steam Specialties business, a 1% organic contraction in the Electric Thermal Solutions business and a 12% organic increase in Watson-Marlow.

Link to remuneration
Revenue growth is a key driver of profit generation and a central element in the annual planning process. Bonus targets are driven off annual plans and therefore revenue growth drives a key measure of variable remuneration.

Link to risk
1 2 3 4 5 6 7 8

Direct link Indirect link No link

2. Adjusted operating profit* £m



Definition
Adjusted operating profit is the profit earned from our business operations before interest, taxes, the share of profit of Associate companies and certain other items.

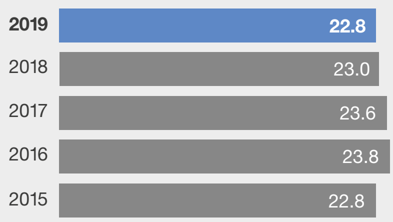
Progress in 2019
Adjusted operating profit increased by 7% to £282.7 million. The reported figure reflects a 7% organic increase and a net 1% increase as a result of acquisitions and disposals, partially offset by a currency headwind.

Link to remuneration
Executive Directors' variable remuneration is based on three financial components: adjusted operating profit, return on capital employed and cash generation. Operating profit margin is a key driver of all three bonus measures.

Link to risk
1 2 3 4 5 6 7 8

Direct link Indirect link No link

3. Adjusted operating profit margin* %



Definition
Adjusted operating profit margin is defined as adjusted operating profit expressed as a percentage of revenue.

Progress in 2019
The adjusted operating margin fell by 20 bps to 22.8% due to the disposal of the highly profitable but non-strategic HygroMatik business and a negative exchange impact. On an organic basis the adjusted operating profit margin was up 10 bps.

Link to remuneration
Executive Directors' variable remuneration is measured on three main indicators: profit, return on capital employed and cash generation. Operating profit margin is a key driver of all three.

Link to risk
1 2 3 4 5 6 7 8

Direct link Indirect link No link

† Organic growth is at constant currency and excludes contributions from acquisitions and disposals, see Note 2.

* Based on adjusted operating profit. Adjusted operating profit excludes certain items as set out and explained in the Financial Review and in Note 2.

Further reading

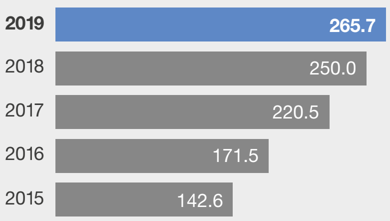
More information about our remuneration measures.

See pages 102-132

More information about our principal risks.

See pages 20-25

4. Adjusted basic earnings per share (EPS)* p



Definition

Earnings per share is a measure of the profit performance of the Group, taking into account the equity structure. EPS is defined as the adjusted after-tax profit attributable to equity shareholders divided by the weighted average number of shares in issue.

Progress in 2019

Adjusted basic earnings per share increased by 6% to 265.7 pence as organic growth and the net positive impact of acquisitions and disposals, partially offset by exchange headwinds, contributed to an increase in earnings.

Link to remuneration

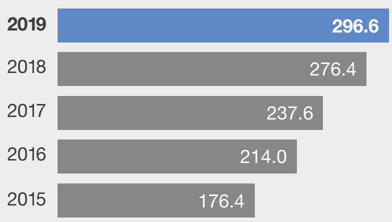
EPS measured over three-year periods is one of the two components of the Performance Share Plan.

Link to risk

1 2 3 4 5 6 7 8

Direct link Indirect link No link

5. Cash generation* £m



Definition

Cash generation is adjusted operating profit after adding back depreciation and amortisation (excluding IFRS 16 depreciation), less cash payments to pension schemes in excess of the charge to adjusted operating profit, equity settled share plans and working capital changes.

Progress in 2019

Cash generation increased by 7% to £296.6 million, primarily as a result of an increase in adjusted operating profit.

Link to remuneration

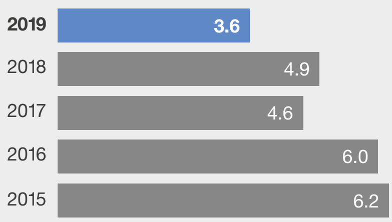
Cash generation is one of three financial measures on which Executive Directors' variable remuneration is based.

Link to risk

1 2 3 4 5 6 7 8

Direct link Indirect link No link

6. H&S over three-day lost time injury rate per 1,000 employees



Definition

The number of workplace injuries that resulted in over three days of absence per 1,000 employees. The workplace is any location in which an employee is present as a requirement of employment. Employees include all permanent and temporary staff and contractors. All injuries that occur in workplaces, regardless of cause, are included, as are road traffic accidents.

Progress in 2019

Our over three-day lost time injury rate improved during 2019, falling from 4.9 per 1,000 employees in 2018 to 3.6 per 1,000 employees in 2019.

Link to remuneration

The safety of our employees is central to the sustainability of our business and has an impact on the financial success and profitability of the Group. Improving the health, safety and sustainability of our Group is one of the personal strategic objectives of each Executive Director, creating a direct link with remuneration.

Link to risk

1 2 3 4 5 6 2 8

Direct link Indirect link No link

* Based on adjusted operating profit. Adjusted operating profit excludes certain items as set out and explained in the Financial Review and in Note 2.

10 year financial summary

Our financial performance demonstrates a strong trajectory of growth and shareholder value creation.

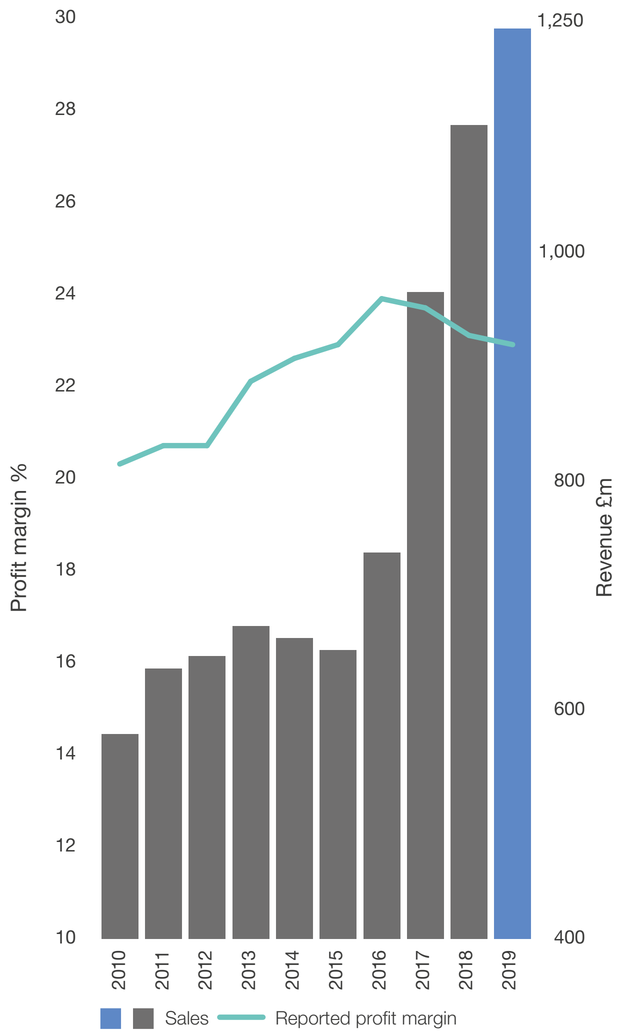
	2010 £m	2011 £m	2012† £m	2013 £m	2014 £m	2015 £m	2016 £m	2017 £m	2018 £m	2019 £m
Revenue	589.7	650.0	661.7	689.4	678.3	667.2	757.4	998.7	1,153.3	**1,242.4**
Operating profit	121.4	129.5	125.7	147.0	148.1	142.8	174.1	198.9	299.1	**245.0**
Adjusted operating profit*	119.1	134.0	136.2	151.6	153.0	152.4	180.6	235.5	264.9	**282.7**
Adjusted operating profit margin*	20.2%	20.6%	20.6%	22.0%	22.5%	22.8%	23.8%	23.6%	23.0%	**22.8%**
Profit before taxation	123.5	132.3	124.1	145.7	144.8	139.7	171.4	192.5	288.8	**236.8**
Adjusted profit before taxation*	121.6	137.2	134.9	151.1	151.1	151.1	177.9	229.1	254.6	**274.5**
Profit after taxation	86.7	93.2	87.6	102.3	100.6	96.7	121.3	157.9	223.4	**167.0**
Basic earnings per share	112.5p	120.0p	112.2p	133.4p	132.8p	129.9p	165.0p	214.4p	303.1p	**226.2p**
Adjusted earnings per share*	109.5p	124.8p	122.2p	138.8p	140.4p	142.6p	171.5p	220.5p	250.0p	**265.7p**
Dividends in respect of the year	52.6	38.1	119.5	44.5	139.9	50.6	55.8	64.4	73.6	**81.1**
Dividends in respect of the year (per share)	43.0p	49.0p	53.0p	59.0p	64.5p	69.0p	76.0p	87.5p	100.0p	**110.0p**
Special dividend (per share)	25.0p	–	100.0p	–	120.0p	–	–	–	–	**–**
Net assets	379.5	400.1	436.5	403.5	441.9	398.3	524.4	609.5	766.9	**826.3**
Return on capital employed* ††	42.1%	41.1%	39.4%	44.4%	44.3%	44.1%	47.9%	52.9%	54.9%	**56.2%**
Return on invested capital* ††	25.3%	25.7%	24.8%	27.6%	27.4%	27.1%	28.7%	22.6%	19.3%	**19.0%**

* All profit measures exclude certain items as set out and explained in the Financial Review and in Note 2.

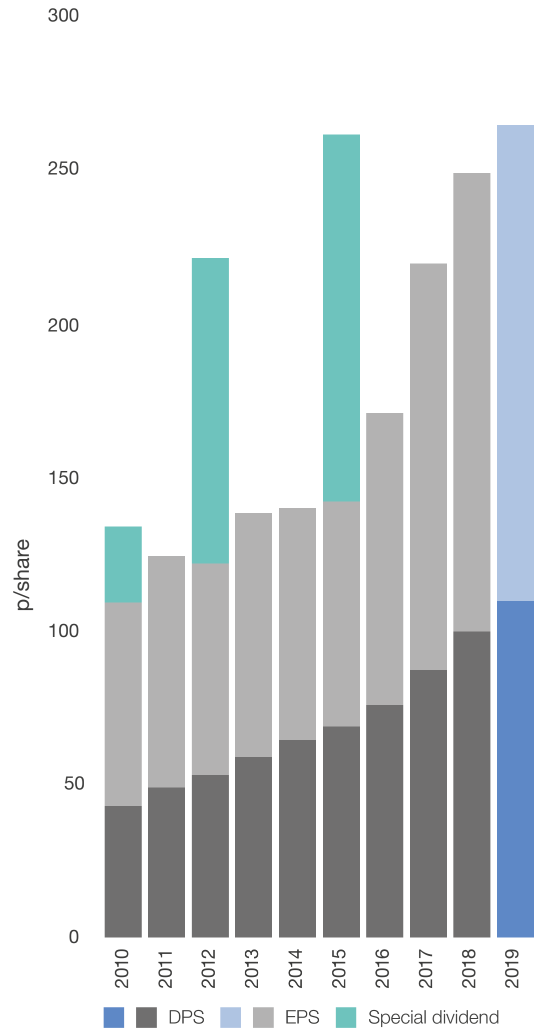
† The results for 2012 were restated to reflect IAS 19(R), prior years have not been restated.

†† The results for 2019 exclude the impacts of IFRS 16, which was adopted in 2019.

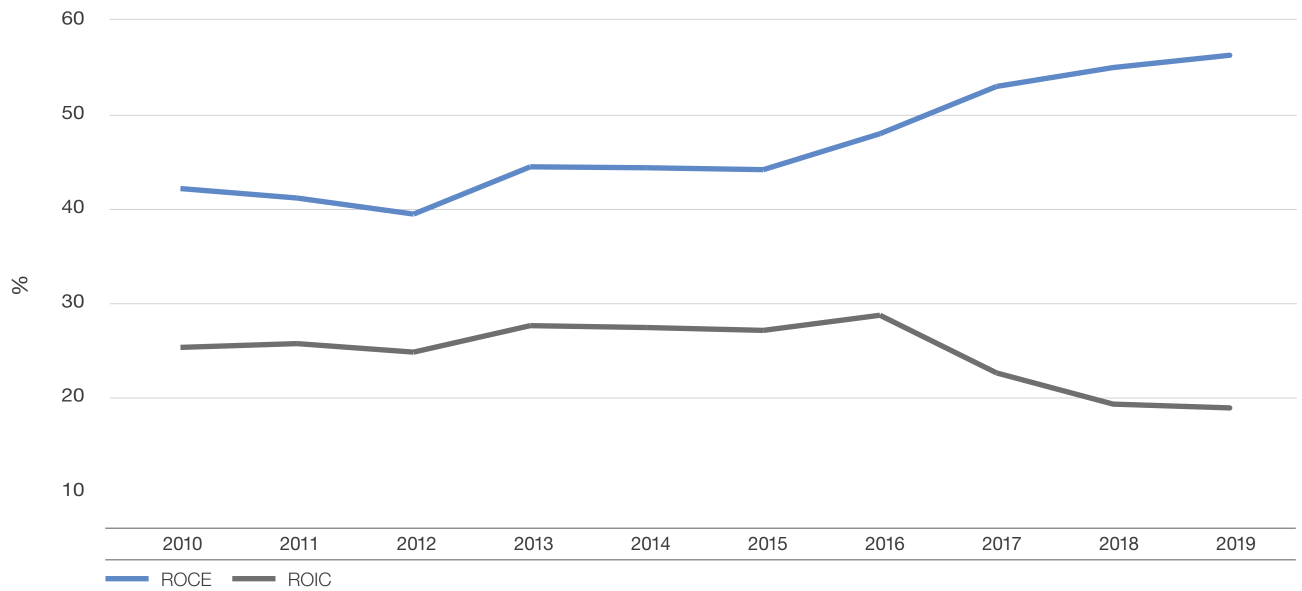
Revenue and adjusted operating profit margin £m / %



Dividends and adjusted earnings per share p



Return on capital employed and return on invested capital %



Chair's Statement

Another year of sustainable value creation

> "We have had another successful year, delivering record sales and adjusted operating profit and welcoming electric thermal solutions specialist, Thermocoax, into the Group."

Jamie Pike
Chair

Introduction

2019 marked the 60th anniversary of Spirax-Sarco Engineering's listing on the London Stock Exchange. Throughout this period we have consistently focused on delivering sustainable value to shareholders, while providing products and services to help engineer a more efficient, safer and sustainable world.

Against a backdrop of slowing industrial production growth rates we have had another successful year, delivering record sales and adjusted operating profit and welcoming electric thermal solutions specialist, Thermocoax, into the Group. We are therefore proposing a 10% increase in the final dividend, taking the total dividend to 110.0p, an increase of 10%, ensuring that our shareholders continue to benefit from the value we create. Throughout the year we helped our customers to manage their industrial processes and, by delivering small, bespoke engineered solutions to customers, we created value for them as we improved the efficiency, safety and sustainability of their existing systems. We estimate that energy management products sold by our Steam Specialties business in 2019 will save our customers 7.2 million tonnes of carbon emissions a year – the equivalent of the annual carbon absorption of approximately 327 million mature trees – thereby ensuring that our value creation goes beyond our customers and the financial markets to also help tackle the global challenge of climate change.[1]

Financial highlights

Sales for the year were £1,242.4 million, an organic increase of over 6%, strongly exceeding global industrial production growth of 1.0%.[2] Currency movements had no effect on sales during 2019, while acquisitions and disposals resulted in a 1% net increase. Thermocoax, which joined the Group on 13th May 2019, added £27.9 million to sales. HygroMatik was divested on 30th November 2018 and as a result made no contribution to sales in 2019. The Group's reported sales were 8% higher than 2018.

Our Steam Specialties business, comprising Spirax Sarco and Gestra, performed strongly, with sales up 6% organically and gains in all three geographical reporting segments. Our Watson-Marlow Fluid Technology business had an exceptional year, with organic sales growth of over 12%. Sales in our Electric Thermal Solutions business, comprising Chromalox and Thermocoax, were down 1% organically.

On an organic basis, Group adjusted operating profit increased by 7% to £282.7 million. The Steam Specialties business saw organic adjusted operating profit growth of 10%, while Watson-Marlow was up 11%. Chromalox saw an organic adjusted operating profit decline of 19%, following a challenging first half of the year, but recovered in the second half. Translation and transaction currency movements reduced the Group adjusted operating profit by 1%, while the net impact of the acquisition and disposal added 1%. Total adjusted operating profit was also up 7% on a reported basis. Statutory operating profit fell to £245.0 million (2018: £299.1 million) and the statutory operating profit margin fell from 25.9% to 19.7% due primarily to the non-recurring disposal in 2018.

The Group adjusted operating margin fell by 20 bps, to 22.8%, due to the disposal of the highly profitable but non-strategic HygroMatik business and a negative exchange impact. Organically, the adjusted operating margin grew by 10 bps.

1 CO_2 saving tree equivalent is based on the European Environment Agency's estimated figure of 22kg of carbon absorbed per mature tree each year.

2 Source for industrial production growth figures: Oxford Economics, February 2020.

The Group adjusted pre-tax profit was £274.5 million, 8% ahead of the prior year. Adjusted basic earnings per share was 6% ahead at 265.7 pence (2018: 250.0 pence).

The pre-tax profit on a statutory basis was £236.8 million, down 18% on 2018 (£288.8 million), which benefited from non-recurring gains on disposals (£53.9 million). Further details can be found in Note 2 to the Financial Statements. Over the last two years, statutory pre-tax profit grew 23%. The statutory basic earnings per share was 226.2 pence (2018: 303.1 pence).

Cash and dividends

Cash generation was robust throughout the year, with good adjusted cash conversion of 84% (2018: 91%), reflecting the strong organic revenue growth. On 13th May 2019 we acquired Thermocoax for €156 million (£135 million) on a cash-free, debt-free basis. The acquisition was financed from existing cash and debt facilities. At 31st December 2019 we had a net debt balance of £295.2 million, a net debt to EBITDA ratio of 0.9 times, compared with net debt of £235.8 million at 31st December 2018.

The interim dividend for 2019, paid on 8th November 2019, was raised by 10% to 32.0 pence per share (2018: 29.0 pence per share). The Board is recommending an increase in the final dividend of 10% to 78.0 pence per share (2018: 71.0 pence). Subject to approval of the final dividend by shareholders at the Annual General Meeting (AGM) on 13th May 2020, the total Ordinary dividend for the year will be 110.0 pence per share, an increase of 10% over the 100.0 pence per share for the prior year.

Corporate governance

We were pleased to welcome Caroline Johnstone to the Board as an independent Non-Executive Director on 5th March 2019. Caroline is a member of the Audit, Remuneration and Nomination Committees, and Chair of the Employee Engagement Committee. In her executive career she was a partner in PricewaterhouseCoopers (PwC) until 2009, where she worked extensively with large global organisations on turnaround, culture change, delivering value from mergers and acquisitions and cost optimisation programmes. Her financial, people and advisory skills, together with her international business experience across a range of different industries will benefit the further development of the Group.

Clive Watson, Senior Independent Director and Chair of the Audit Committee, stepped down from the Board following the conclusion of the AGM, having served for nine years. On behalf of the Board, I express my thanks to Clive for the valuable contribution he made to the operations of the Board during his tenure.

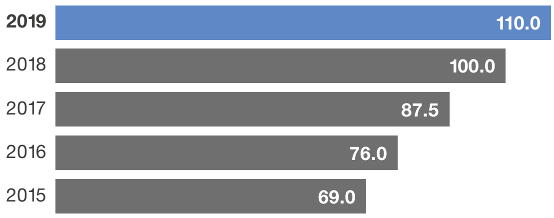
As a result of Clive's departure, Kevin Thompson joined the Board as an independent Non-Executive Director and Chair of the Audit Committee. Between 1998 and 2018, Kevin held the role of Group Finance Director at Halma plc, before which he was their Group Financial Controller, having qualified as a Chartered Accountant with PwC. He brings a depth of financial, tax and treasury expertise to the Board, as well as broad experience in other areas, including mergers and acquisitions.

Dr Trudy Schoolenberg was appointed Senior Independent Director, following the AGM in May.

On 31st December 2019, Jay Whalen, President of the Watson-Marlow Fluid Technology Group and an Executive Director, retired

Dividend per share p

110.0p



following 28 years with the Company, nine years as President and over seven years on the Board. On behalf of shareholders and the Board, I gratefully acknowledge the substantial contribution that Jay has made to the Group. Under Jay's leadership Watson-Marlow experienced significant growth and development, becoming an important and highly successful part of the Group.

Jay Whalen's successor, Andrew Mines, joined the Group in November 2019 becoming Managing Director of Watson-Marlow on 1st January 2020 and joining the Group Executive Committee. As of 1st January 2020 the composition of the Board returned to nine members, six of whom are Non-Executive Directors.

On 11th March 2020 we announced that Kevin Boyd, Chief Financial Officer and Executive Director, had informed the Board of his desire and intention to retire from the Group before the end of 2020, following an orderly handover of his duties to a successor. On behalf of shareholders, the Board acknowledges with gratitude the significant contribution to the Group's growth and prosperity made by Kevin and we wish him a happy and healthy retirement.

The Board has initiated a process to search for a suitable external candidate to succeed Kevin and will make a further announcement concerning the appointment of a new Chief Financial Officer once that process has been completed.

All Board changes were part of the succession planning undertaken by the Nomination Committee to recruit Non-Executive Directors with the skills and experience required to support the implementation of our strategy for growth.

Employees

On behalf of the Board, I would like to thank all our employees throughout the world for their individual and collective contributions that have enabled us to deliver another strong set of results in 2019. I would also like to welcome our Thermocoax colleagues into the Group.

The health, safety and well-being of our employees has been, and will remain, our top priority throughout the duration of the COVID-19 outbreak. To date, none of our employees globally, or their immediate family, have tested positive for COVID-19. We have taken multiple actions to protect employees and will continue to monitor and respond accordingly, as the situation develops.

COVID-19

China is the largest territory within the Steam Specialties business and the second largest in the Group, accounting for close to 11% of global sales and 8% of our employee base. Approximately 75% of what we sell in China is made in our two Chinese manufacturing

Chair's Statement *continued*

facilities, while only £10 million worth of materials is sourced annually from China for use in our global manufacturing facilities. Due to the COVID-19 outbreak in late January and the delayed return to work following the Lunar New Year holiday, for both ourselves and our customers, trading in China during February was significantly down on expectations. The majority of this shortfall came from our inability to interact with our customers, either because they had not returned to work or due to travel restrictions. By the end of February, our Chinese manufacturing operations were rapidly returning to normal levels of activity, while working closely with their local suppliers to restore our required levels of inbound supply. With reported Chinese infection rates now in decline and provided no resurgence occurs, we assume a return to normal levels of business in China by the end of the second quarter and some recovery of lost business in the second half of the year.

Throughout February, our supply chains outside China remained robust, however the recent COVID-19 outbreak beyond China has made it very difficult to assess the global impact on our business, as the situation is evolving on a daily basis. We have modelled a number of scenarios and currently assume the most likely is that the impact on industrial production globally will be less intense than China's experience. This scenario also assumes the full impact to be contained within the first half of the year with global industrial production recovering in the second half of 2020. We have already initiated a number of cost containment actions to mitigate the adverse impact of COVID-19 on our business globally, without compromising our ability to capitalise on growth opportunities in the second half of this year. Based on the above assumptions, we currently anticipate an impact on annual Group sales and adjusted operating profit of around 2% and 4% respectively, almost entirely affecting the first half of the year. Nevertheless, as the situation is evolving rapidly, the final impact could be significantly different.

Outlook

Global industrial production growth rates, which are a good indicator of our market conditions, slowed throughout the year resulting in an annual growth rate of 1.0% in 2019, compared with 3.1% in 2018. Even before the global spread of the COVID-19 virus, there remained a degree of uncertainty regarding industrial production growth rates in 2020. In their latest forecasts, published in February, Oxford Economics suggested that global industrial production would contract in the first quarter of 2020, before recovering slightly in the second half of the year, with a global growth rate for the year of 0.8%, comprising a 0.3% contraction in developed markets and 2.4% growth in emerging markets. However, given the global spread of the COVID-19 virus, we expect a further deterioration in 2020.

While industrial production growth rates are a strong indicator of conditions in our markets, we are enhancing our ability to outperform our markets through the implementation of our strategy and our focus on self-generated growth. Recent acquisitions within the Electric Thermal Solutions market, but also those in the Steam Specialties and Watson-Marlow businesses, provide opportunities for future organic growth as we broaden their global presence, strengthen their direct sales business model, improve efficiencies and invest for growth.

Currency had little impact on the 2019 results. The currency outlook for 2020 remains uncertain, as Brexit trade negotiations, COVID-19 and US/China tariff negotiations continue to cause volatility. If current exchange rates were to prevail for the remainder of the year there would be a negative 2% impact on sales from translation and a negative 3% impact on profit from translation and transaction, compared with the full year 2019. Movements in exchange rates are often volatile and unpredictable, therefore the actual impact could be significantly different.

Modelling the effect of COVID-19 is extremely difficult; however our current best estimate, based on the assumptions outlined earlier, is that it will impact 2020 sales by 2% and profit by 4%, with almost all the impact affecting the first half of the year. Nevertheless, as the situation is evolving rapidly, the final impact could be significantly different.

The full-year effect from the Thermocoax acquisition in May 2019 is expected to add c.1% revenue growth to the Group in 2020.

Against a very uncertain macroeconomic backdrop, we currently estimate that the combination of the twin headwinds of currency and COVID-19 will offset the underlying organic growth in the business. Despite these headwinds, we will strive to maintain the Group adjusted operating profit margin in 2020 at a similar level to 2019.

We confirm that to the best of our knowledge:

- the Financial Statements, prepared in accordance with the applicable set of accounting standards, give a true and fair view of the assets, liabilities, financial position and profit or loss of the Company and the undertakings included in the consolidation, taken as a whole;
- the Annual Report for 2019, taken as a whole, is fair, balanced and understandable, and provides the information necessary for shareholders to assess the Group's financial position, performance, business model and strategy;
- the Directors have a reasonable expectation that the Company will be able to continue in operation and meet its liabilities as they fall due over the three-year period to 31st December 2022. For the full Viability Statement, see page 101; and
- the Annual Report contains the information required for compliance with the Companies, Partnerships and Groups (and Non-Financial Reporting) Regulations 2016, see page 60.

The Strategic Report was approved by the Board on 10th March 2020.

Signed by:

Jamie Pike
Chair

on behalf of the Board of Directors
10th March 2020

Section 172 Statement

In accordance with the Companies Act 2006 (the Act) (as amended by the Companies (Miscellaneous Reporting) Regulations 2018), the Directors have prepared a statement describing how they have had regard to the matters set out in section 172(1) of the Act, when performing their duty to promote the success of the Company, under section 172. The statement can be found on pages 80-81 of the Governance Report.

Strategic Review

Engineering every day

“During 2019, progress continued on the implementation of our strategic priorities and we believe that this was a significant contributing factor to the good financial results and strong organic growth achieved during the year.”

Nicholas Anderson
Group Chief Executive

Engineering every day

As a result of our broad industrial and geographical reach, the diversity of our products and our extensive process expertise, our engineered products and solutions are deeply embedded in industrial and commercial sites all over the world. Every day, our engineering expertise contributes to the creation of a more efficient, safer and sustainable world as we help our customers to increase their operating efficiency, reduce their environmental impacts, improve product quality, provide safer working environments for their employees and achieve regulatory compliance. As we do this we create sustainable value for all our stakeholders.

Business model

Our direct sales business model is highly effective at uncovering opportunities to improve our customers’ processes. Our extensive global network of over 1,600 sales and service engineers is unique in number and expertise amongst our competitors. As they walk our customers’ sites, our specialist engineers are able to identify often unrecognised needs and design bespoke engineered solutions to meet those needs. These engineered solutions generally have a relatively short payback period of around 24 months or less and are typically paid for out of our customers’ operational budgets. Purchasing decisions are therefore made at operational level from budgets which are less likely to be cut in times of recession.

This “self-generated growth” element of our business, combined with the high proportion of sales that derive from end users’ maintenance and operating budgets, and the wide diversity of the markets we serve, both geographically and by industry sector, makes our business highly resilient, although not immune, to economic downturns.

Strategy for growth

Six years ago we undertook an extensive strategic review and developed our business strategy, the aim of which is to deliver self-generated growth that outperforms our markets. To accomplish this we are focusing on six strategic themes that are designed to help us do better what we already do well, increase the effectiveness of our direct sales engineers, leverage our strengths in key sectors, take advantage of the most attractive opportunities, expand our addressable markets, and align and direct our resources more effectively to improve business performance. Our six strategic themes are outlined on page 34.

As we implement our strategy we ensure that we have the right products, in the right places, at the right times and the highly skilled people with the expertise to provide industry-leading solutions to customers.

While our strategy is primarily one of organic growth, we supplement organic growth through the acquisition of businesses that meet stringent strategic and financial criteria. Acquisitions are generally bolt-ons that expand the capabilities of our businesses through new technologies, skills and geographic coverage, or that increase our addressable market.

Our strategy remains relevant and appropriate for our growing Group and, in 2019, we again saw the benefits of its implementation as we achieved growth strongly ahead of our markets.

Strategic Review *continued*

Strategy for growth

Our strategic objective

To deliver growth that outperforms our markets

Our strategic focus

Doing better what we already do well

Our six strategic themes

Increase direct sales effectiveness through market sector focus

Develop the knowledge and skills of our expert sales and service teams

Broaden our global presence

Leverage our R&D investments

Optimise supply chain effectiveness

Operate sustainably and help improve our customers' sustainability

Strategic implementation

During 2019, progress continued on the implementation of our strategic priorities and we believe that this was a significant contributing factor to the good financial results and strong organic growth achieved during the year. Information on the implementation of our strategy and examples of our strategy in action, can be found on the following pages, with further information provided for each business within the Review of Operations.

Further reading
Information on the implementation of our strategy and examples of our strategy in action.
See pages 35-40

Acquisition

During 2019, we acquired Thermocoax Developpement and all of its group companies (Thermocoax) for a cash-free, debt-free consideration of €156 million (£135 million). Thermocoax is a leading designer and manufacturer of highly engineered electric thermal solutions for critical applications in high added-value industries. Its core technology is mineral insulated cable, which comprises single or multiple conductor wires insulated by magnesium oxide, all enclosed within a tubular metal sheath. This construction is extremely robust compared with standard polymer insulated cables and highly resistant to extreme environments such as high temperatures, pressures, vibration and radiation. These cables are transformed into bespoke high value-added functional products, such as heaters and sensors, for specialised, highly certified, critical applications. A particular advantage of Thermocoax's cable heaters is that they are small in size and low in weight compared with conventional tubular heaters, allowing precise delivery of heat.

Thermocoax is headquartered near Paris, France and has four manufacturing facilities in Normandy, one in Georgia, USA and a further facility in Heidelberg, Germany.

Upon acquisition, Thermocoax along with Chromalox, became part of our newly named Electric Thermal Solutions business. Both companies have a strong reputation amongst customers and well-recognised brands, which they will retain. Thermocoax is a good strategic fit for the Group, doubling our Electric Thermal Solutions business in Europe and Asia. At the same time, Chromalox has the scale, contacts and reputation in the USA that will support faster penetration of Thermocoax into that market.

In September 2019, Dominique Mallet was appointed President of the Electric Thermal Solutions business. Dominique was the Chief Executive Officer of Thermocoax for over five years and has a strong track record of successfully growing businesses in sectors relevant to the Electric Thermal Solutions business.

Thermocoax was accretive to Group earnings in 2019.

Sustainable value creation

Throughout the year our diverse stakeholder base benefited from our value creation as we utilised our direct sales business model to meet customer needs, implemented our strategy for growth and delivered a good financial return for investors. We achieved this while operating sustainably, in a way that we believe preserves value for future generations and takes into account the current and future needs of all our stakeholder groups.

Increase direct sales effectiveness through market sector focus

As we sectorise our sales and service engineers around key industries, and align our products and services in support of this, we increase our ability to self-generate growth and provide value to customers.

Progress in 2019

We have continued to increase the alignment between our direct sales force and our target industries, with a number of new products developed specifically to meet the needs of a particular industry. For example, in 2019 Spirax Sarco launched its first Clean Steam Generator designed specifically for the Healthcare industry (see more detail below). We also benefited from the alignment of recently-launched products with our target industries. For example, during the year Watson-Marlow delivered strong sales growth in the Pharmaceutical and Biopharmaceutical industry, with sales of the Quantum pump (launched in 2017 for bioprocessing applications) being an important contributor to that growth.

We continued to sectorise our sales engineers around our target industries. For example, the addition of a dedicated Food & Beverage sales engineer in Watson-Marlow Benelux led to an increase in new business from end users and OEMs, with good sales of products such as the Certa Sine® pump, launched in 2016 for food and beverage applications.

Throughout the year our businesses exhibited at many specialist trade shows. For example, Spirax Sarco USA attended an important Food & Beverage trade show in Chicago; Thermocoax exhibited at Semicon Europa, one of Europe's leading expositions for the Semiconductor industry; Hiter (acquired in 2016) and Spirax Sarco together attended Brazil's only Bioenergy event; and Watson-Marlow exhibited at one of Europe's most important fairs for beverage customers in 2019.

We also delivered specialist training to customers in target industries. For example, Spirax Sarco delivered "Steam as an ingredient" workshops for Food & Beverage customers in Italy and steam quality training to Food & Beverage and Pharmaceutical customers in Ukraine.

During 2019, the Power Generation and Chemical industries, important sectors for Gestra, were added to the Steam Specialties business strategy as target industries.

Focus for 2020

- Developing industry and application-focused products and engineered solutions to align our offering with the needs of customers in our target industries.
- Watson-Marlow Group Business Development micro-segmentation of industries and customers for stronger alignment of product value propositions with customer buying objectives.

Strategy in action

Steam is widely used in the healthcare industry for a wide range of applications, such as sterilisation, hot water generation and humidification. During 2019, Spirax Sarco launched its first Clean Steam Generator designed specifically for the healthcare industry. Third-party validated to deliver steam that meets quality standard EN285, the new generator offers healthcare customers the highest steam quality when sterilising surgical equipment, reducing contamination risk and improving patient safety.

The launch of the new generator is being supported by tailored marketing materials and a "sterilise once" marketing campaign, that demonstrates an understanding of our Healthcare customers' steam applications and the challenges they face, and articulates how we can help them overcome them. We have also delivered additional training to our sales engineers to ensure they understand the value that this product will deliver to customers.

By providing tailor made, sector focused products such as the new Clean Steam Generator, we increase the effectiveness of our direct sales engineers and offer superior value to customers.

Strategic Review *continued*

Develop the knowledge and skills of our expert sales and service teams

The knowledge of our sales and service engineers is a key differentiator. We invest extensively in the professional development of our people, building a level of expertise that is unrivalled by our competitors.

Progress in 2019

The success of our business model relies on the expertise of our sales and service teams. Investing in the professional development of our people is an essential element of our strategy. For example, during 2019 we continued to develop and roll out the programmes of the Spirax Sarco Academy. The Academy's programmes are structured in levels, called "belts", with each "belt" being allocated a colour and representing an increasing level of expertise. During the year we completed the translation of the "Green belt" into 15 languages, in addition to English, and rolled these out across the Steam Specialties business. We also developed the course materials for the "Blue belt" in English and began to roll these out in our English-speaking companies during the year. In addition, we developed a "Consultative Selling" programme of materials and rolled this out in English and began working on a "Sales Management Development" programme, which we will continue to develop further in 2020.

Elsewhere in the Group, during 2019, Chromalox launched a video training library, with an initial 70 videos covering a range of topics from products to business skills, for its field sales employees. Watson-Marlow also developed its training content, working with subject matter specialists to create engaging and informative videos on a variety of topics, such as new products and product applications.

In addition to online training, our companies delivered intensive classroom-based and on-the-job training. For example, employees from Spirax Sarco Peru participated in consultative selling training, which was also a key focus at Spirax Sarco Brazil's sales conference in 2019.

Focus for 2020

- Continuing development and roll-out of the programmes of the Spirax Sarco Academy.
- Formalisation of training matrices by job function and the continued development of quality training content to develop the skills of Chromalox employees.
- Further development of Watson-Marlow's training materials.

Strategy in action

LEAP (Leadership Excellence Acceleration and Performance) is a year-long programme aimed at developing our high potential leaders.

Spirax Sarco UK Field Services Manager, Frank Milloy, was in the first cohort when LEAP was launched in 2018. LEAP encouraged Frank to take a more strategic view within his role. He identified the service delivery function as his first priority, as improving that area could have a significant business impact. By involving key stakeholders (engineers, schedule coordinators and supply management) and putting together a more formal structure for collaboration and communication, he increased the number of jobs his team completed by nearly 20%, compared with the same period in the prior year.

Frank commented, "LEAP has helped me see that sustainable success doesn't happen by just working harder. It often requires a different approach. Stakeholder inclusion and clarity are key. When people understand the purpose, can contribute to the solution and have a structure in place to support that, not only do business results improve but engagement does as well." Since his participation in LEAP, Frank has been promoted to National Services Manager.

Broaden our global presence

Our strong global infrastructure enables us to rapidly branch into neighbouring markets or leverage our existing infrastructure to pioneer the introduction of our businesses and technologies into new markets.

Progress in 2019

Our direct sales business model requires a local sales presence to unlock the self-generated sales that are only possible as a result of having expert sales and service engineers on-the-ground, visiting customers and identifying their problems. A key element of our strategy is the geographic expansion of our direct sales presence, to increase coverage and customer access to this expertise. Four new operating companies began trading in 2019: Watson-Marlow Philippines, Watson-Marlow Colombia, Watson-Marlow Iberia and Gestra China. In addition, Spirax Sarco established a direct presence in Bosnia & Herzegovina, Honduras and Qatar for the first time. Chromalox expanded its direct sales presence, entering Korea and Hungary, and Gestra strengthened its presence in Asia Pacific and the Americas. In addition, five new direct sales offices came into the Group through acquisition: Thermocoax France, Germany, UK, USA and China, which strengthen the geographical presence of our Electric Thermal Solutions business in Europe and Asia.

As a Group we are benefiting from this global expansion. For example, Watson-Marlow's recently-established sales company in the Middle East completed its first full year of trading in 2019. Having well-trained specialist engineers visiting customers is providing good opportunities for cross-selling products from across Watson-Marlow's brands, delivering greater outcomes to customers as well as generating growth for the business, which would not be possible if relying solely on distributors. For example, at a water treatment plant in Dubai, engineers from Watson-Marlow, who were called to the site to advise on pumps, identified, recommended and delivered a pumping solution that not only included 22 Bredel hose pumps, from Watson-Marlow, but also Aflex PTFE-lined hoses too.

Focus for 2020

- Continued geographical expansion and strengthening of Gestra, Chromlaox and Thermocoax's direct sales presence internationally.
- Strengthening Watson-Marlow's direct sales presence in Asia and Latin America.
- Strengthening Spirax Sarco's direct sales presence in developing markets.

Strategy in action

Having historically served the Philippines through distributors, a direct sales presence was established in the country in 2018. In July 2019 a new Watson-Marlow sales company began trading under the direction of Country Sales Manager Joel Flores. The Philippines was identified as a market with good growth potential, in particular in the Food, Beverage, Biopharmaceutical and Environmental (Water & Wastewater) industries.

With a direct sales presence Watson-Marlow can serve customers more effectively, drawing on the company's 60+ years of pumping expertise to advise customers on the most suitable pump for their application. A direct sales presence also allows engineers from Watson-Marlow to demonstrate the value of peristaltic pumps to customers who may not be familiar with the application of this pumping technology. Furthermore, the knowledge and specialisation of its sales engineers has enabled Watson-Marlow to broaden the range of products that it sells within the Philippines.

During the first six months of trading, the company made good progress, increasing base business by nearly 50% compared with the same period in the prior year, during which time most business was conducted by distributors.

Strategic Review *continued*

Leverage our R&D investments

We leverage R&D investments to meet changing customer requirements, improve our offering, respond to market trends, expand our addressable market and maintain our market-leading position in each of our business niches.

Progress in 2019

During 2019, we continued to invest in the development of innovative new products to ensure that we maintain our industry-leading position and stay ahead of our customers' changing needs. Within the Steam Specialties business, Gestra launched SPECTORconnect, a next-generation range of boiler controls (see below). The Spirax Sarco steam business launched, amongst other products, SpiraHeat, a compact and energy efficient steam-to-water heat transfer solution for building heating applications; and a new Clean Steam Generator (see pages 35 and 66). During 2019 we held our first Global Steam Business Development conference that brought together nearly 60 delegates from 16 countries, from both sales and Business Development functions, to identify and explore future growth opportunities and strengthen collaboration across the business.

Watson-Marlow launched, amongst other products, Qdos ReNu PU, a pump-head developed specifically to address the needs of water treatment customers; and Puresu® assemblies, which combine Watson-Marlow tubing and BioPure connectors and fittings into assemblies that are sterilised and ready for use by customers. Watson-Marlow also supported the development of an exciting new product that will expand the technical capabilities of peristaltic pumps, ready for launch in 2020.

The Electric Thermal Solutions business launched a number of new products, including a medium voltage electric steam generator, which utilises Chromalox's DirectConnect™ medium voltage heating element technology to connect directly to 4,160V and 7,200V medium voltage power; and the ProtoAir IIoT Gateway, which connects Chromalox's digitally-enabled products for reliable remote-monitoring. Thermocoax, which uses its core technologies to develop a significant proportion of its products bespoke to customer needs, continued to deliver innovative products such as a signal transmission solution for high pressure applications and signal transmission lines that will continue working under the most extreme conditions in the nuclear industry.

Focus for 2020

- Continue to develop innovative, sector-aligned new products through effective R&D processes.
- Broaden the application scope of existing products through range extensions, to meet a wider range of customer needs.

Strategy in action

Gestra has long been recognised as the market leader in boiler control technologies, a position that was reaffirmed during 2019 with the launch of SPECTORconnect, a next generation automated boiler control system that offers users unrivalled safety and reliability.

A complete system, including limiters, probes and controllers, SPECTORconnect allows remote monitoring of the boiler house from anywhere in the world. By providing users with detailed, real-time information about their boilers' performance, they have the information to enable them to quickly undertake preventative or corrective maintenance before any performance deviations can cause a significant problem on their site, resulting in safer, more efficient steam production, reduced energy bills and lower emissions.

Certified to a high safety rating and extensively tested to ensure reliability and durability, SPECTORconnect reflects the Group's commitment to developing industry-leading products that meet end users' exacting requirements and needs.

Optimise supply chain effectiveness

We have a global manufacturing footprint and focus on increasing supply chain agility and compressing lead times to enable greater responsiveness, reduce costs and improve customer service.

Progress in 2019

Within the Steam Specialties business, during 2019 we undertook a range of initiatives to further improve product availability, measuring our performance against the challenging "On Time to Customer Request" (OTTR) metric. Good progress was made across a number of our supply sites, as can be seen in the example below. We have also utilised comprehensive quality data to better monitor all aspects of our supply chain performance and drive improvements, from supplier quality performance to internal scrap rates, to field failures, with investigative root-cause analysis conducted and improvements delivered. (Read more on page 65.) Gestra's manufacturing site benefited from capital investments in new machinery and equipment during 2019.

Throughout 2019, Chromalox focused on its on time delivery performance, strengthened the management structure across its manufacturing sites, conducted detailed supplier analysis, and invested in machine guarding and other controls – including training – to reduce risk health and safety risk and improve operational performance.

Within the Watson-Marlow business, having broken ground on Aflex Hose's new site in Yorkshire, UK, good progress was made on the over £20 million project that will see Aflex's four existing manufacturing sites consolidated into one new state-of-the art facility. The project is scheduled for completion mid-2020.

Watson-Marlow saw progress across its other manufacturing sites as a result of the continued implementation of its Global Excellence in Manufacturing Strategy, which brings together best practice in manufacturing from within and outside the company to drive improvements. For example, during 2019 Watson-Marlow commissioned an automated boxing line to construct, label and close Watson-Marlow Tubing boxes prior to shipping to customers. The investment will deliver labour savings of 1,800 hours per year and reduce EHS risk, with operators re-deployed within the business to increase capacity for more value-adding activities elsewhere.

Focus for 2020

- Increase our focus on supplier performance, making use of improved data to accelerate improvements in our supply chain, improve quality and support our customer service metrics.
- Further improve the alignment between sales and supply companies, making use of improved internal and customer data, to reduce lead times and support OTTR improvements.
- Complete the consolidation of Aflex Hose's UK manufacturing sites into one new, purpose-built facility to increase capacity and productivity.

Strategy in action

Hiter Controls (Hiter), Brazil, a specialist manufacturer of process control valves, joined the Steam Specialties business in 2016. Utilising Spirax Sarco's direct sales engineers as a route to market, Hiter has experienced rapid sales growth since acquisition. As a result, Hiter was struggling to meet the high On Time to Request (OTTR) performance levels required by customers.

During 2019, Hiter undertook a programme of initiatives to improve OTTR performance. Key strategic activities included daily meetings, with the use of "Team Improvement Boards" to analyse and resolve delays; increased headcount and an additional shift to expand manufacturing capacity; improvements to the Enterprise Resource Planning system; a detailed supplier review to identify underperforming suppliers; daily contact with key suppliers to reduce material delays; and work to standardise the company's pool of components and products. By increasing the stock of standard components, for use in bespoke customer solutions, Hiter has been able to shorten lead times while maintaining product quality.

The transformation has been outstanding. Hiter has achieved a strong increase in OTTR performance, significantly improving customer service levels and supply chain effectiveness.

Strategic Review *continued*

Operate sustainably and help improve our customers' sustainability

As we focus on improving our own sustainability and deliver innovative solutions that improve the sustainability of our customers' operations, we create value and drive growth.

Progress in 2019

We continued to focus on the delivery of our Sustainability Strategy, a core component of our business strategy, and delivered good progress against many of our targets. For example, as a result of investment in safe-working controls in our recently acquired businesses, Behavioural Based Safety (BBS) training and safety campaigns we reduced our over three-day lost time injury rate from 4.9 per 1,000 employees in 2018, to 3.6 per 1,000 employees in 2019. We rolled out a Group Employee Volunteering Policy, which entitles all Company employees to up to three days of paid volunteering leave a year, and the number of employee volunteering hours increased by 9%, compared with the prior year. We made good progress in reducing our waste generation and also saw a small reduction in water use intensity. Our greenhouse gas emissions intensity saw a small increase, of 1%, during 2019. While the increase was partially as a result of improved reporting and also business growth, we recognise that more needs to be done to ensure a return to the downward trend that we have seen in recent years. Throughout the year, through our bespoke, engineered solutions we continued to deliver significant energy, water and carbon emissions savings for our customers.

On a local level, our Group companies are engaging with our sustainability commitments and acting to initiate positive change. For example, when Watson-Marlow Germany relocated to a new office location in 2019, environmental sustainability was a key consideration when selecting the site. The new office is an exemplar of energy efficiency, with energy use expected to be up to 30% lower per annum than the company's former building, and incorporates solar panels and an air source heat pump to ensure that most of the building's heating and hot water is powered by renewable energy sources.

Focus for 2020

- Drive progress against our sustainability targets and objectives, in each of our 10 material sustainability topics.
- Act to improve our carbon emissions intensity.
- Fully integrate recent acquisition, Thermocoax, into the Group's Sustainability Strategy.

Strategy in action

For the last three years Spirax Sarco China has provided 50 high school students in one of the poorest provinces of China with scholarships. The academically gifted students were in danger of leaving school as their families could not afford to pay their living costs. Spirax Sarco stepped in to provide scholarships to ensure the students remained in school. During 2019, the students sat a highly competitive university entrance exam, with 37 of the students (17 girls and 20 boys) receiving university offers and all but one of the remaining students deciding to re-sit the exam next year.

In the last year employees of Spirax Sarco China also participated in a beach clean-up, took part in the Shanghai Marathon and other sporting events to raise money for charitable causes such as funding medical treatment for children with cancer, and donated 200 books to a local library.

In recognition of their efforts, Spirax Sarco China won the large company category in the Group's 2019 Community Engagement Awards.

Further reading

More information about the 2019 Community Engagement Awards.

See page 71

Review of Operations

“We are pleased to report strong organic sales growth of 6% in 2019, ahead of global industrial production growth rates.”

Nicholas Anderson
Group Chief Executive

Introduction

Despite a very low growth macro-economic environment in 2019 we achieved strong organic growth and delivered record revenue and adjusted operating profit. We created value for our stakeholders, continued to invest in our businesses and implement our strategy to ensure a strong foundation for continued, sustainable growth.

Market environment

Our Steam Specialties, Electric Thermal Solutions and Watson-Marlow businesses all provide engineered products, services and solutions that play a critical role in industrial processes worldwide.

Steam is used across a broad range of industries, in all geographical markets, for a wide range of applications including heating, curing, cooking, drying, cleaning, sterilising, space heating, humidifying, vacuum packing and producing hot water on demand. Steam is relatively easy to control, environmentally safe, clean and sterile, and is capable of transferring large energy loads (in the form of heat) into industrial processes. A complementary medium to steam, with a similarly broad industrial and geographic reach, electrical heating solutions are particularly utilised in applications that require rapid “on-off” control, higher temperatures, easy installation, or zero-emissions at point of use.

Peristaltic and other niche pumps and associated fluid path components are widely used across an extensive range of industries to address mission critical or difficult pumping problems. Peristaltic pumps are particularly suitable for hygienic applications (as the fluid is contained within a tube, sterile tubing creates a sterile pump), precise metering or low-shear applications, as well as handling corrosive or abrasive materials that would otherwise damage the pump.

The wide applicability of our products across a broad range of industries, combined with our extensive geographical presence mean that conditions in our markets closely correlate with industrial production growth rates.

Throughout 2019 global industrial production growth declined each quarter, continuing the downward trend that commenced in 2018. Averaging 1.0% for the year, global industrial production growth was significantly lower than the 3.1% seen in 2018 and much weaker than initially forecast. Emerging markets saw 3.0% growth while mature markets experienced a 0.5% contraction compared with the prior year. With organic revenue growth of 6% we significantly outperformed our markets, as a result of the successful implementation of our strategy for growth.

The continuing uncertainty surrounding Brexit had an impact on market confidence and contributed to the negative industrial production growth rates seen in the UK and Europe in 2019. Nevertheless, while dampening market confidence in the UK and some of our European markets, overall Brexit uncertainty had a relatively limited impact on our business as a whole during 2019 as around 93% of our revenue and profit was generated outside of the UK during the year.

Forecasters are currently expecting global industrial production growth to slow further in 2020, to average 0.8% for the year, but with the COVID-19 outbreak still evolving we assume this could deteriorate further. Looking forward we remain cautious and are planning for the continuation of a low-growth environment throughout 2020.

Review of Operations *continued*

Summary of progress in 2019

Sales

Overall the Group achieved organic sales growth of over 6%, with 6% organic growth in the Steam Specialties business and over 12% organic growth in Watson-Marlow. Within the Electric Thermal Solutions business, sales were down 1% in Chromalox at constant currency, following a strong 9% sales growth in 2018. Thermocoax, which joined the Group on 13th May, contributed sales of £27.9 million for the period under ownership. HygroMatik was divested on 30th November 2018 and as a result made no contribution to sales in 2019, compared with £12.7 million in the prior year.

At £1,242.4 million, Group sales were up 8% (2018: £1,153.3 million). Although varying by business and geography, foreign exchange had no overall impact on Group sales.

Geographically, the Steam Specialties business, which accounted for 61% of Group revenue in 2019, saw growth in all regions. Sales of £755.4 million, were up 3% on a reported basis, 6% on an organic basis.

The Electric Thermal Solutions business, which accounted for 15% of Group revenue in 2019, achieved sales of £186.1 million, 20% ahead of the prior year, with the increase a result of the acquisition of Thermocoax. On an organic basis, sales were 1% lower.

Watson-Marlow accounted for 24% of Group revenue in 2019 and delivered £300.9 million of sales, a 13% increase over the prior year, up 12% organically. Growth was achieved across all geographic regions.

Adjusted operating profit

Group adjusted operating profit was 7% ahead of the prior year on an organic basis and, at £282.7 million, was also up 7% at reported exchange rates including acquisitions and disposals. The strong growth reflects the increase in revenue, a net 1% positive impact from the acquisition of Thermocoax and disposal of HygroMatik, and margin expansion in the Steam Specialties business, partially offset by a 1% negative translational and transactional exchange impact, slight margin dilution in Watson-Marlow as we invest to maintain growth and margin dilution from Chromalox due to operational issues in the first half of the year, particularly in Europe.

Within the Steam Specialties business, adjusted operating profit of £177.9 million was 10% higher than the prior year on an organic basis, with all three geographical segments delivering organic adjusted operating profit growth. On a reported basis, adjusted operating profit was 5% ahead, reflecting the divestment of HygroMatik on 30th November 2018 and the resulting non-repeat of £3.8 million of adjusted operating profit that the business contributed in 2018, as well as a £4.8 million adverse impact from currency movements.

Adjusted operating profit in the Electric Thermal Solutions business, at £24.7 million, was up 8% on the prior year on a reported basis. Chromalox had adjusted operating profit of £19.3 million, down 19% organically as we address unsatisfactory performance in the company's French operations, respond to manufacturing inefficiencies and continue to step up our investments for future growth and improved profitability. All of the Chromalox profit decline occurred in the first half of 2019. Thermocoax contributed £5.4 million to adjusted operating profit. Currency movements increased adjusted operating profit by 4%.

Watson-Marlow's organic adjusted operating profit grew by 11%, despite continued investment in the business. Reported growth of 13% was aided by a currency tailwind.

Adjusted operating profit margin

At 22.8% the Group adjusted operating profit margin was 20 bps lower than the prior year, due to the disposal of the highly profitable but non-strategic HygroMatik business and a negative exchange impact. On an organic basis, the Group margin increased 10 bps.

Within the Steam Specialties business, the adjusted operating profit margin increased by 40 bps on a reported basis to 23.6%, driven by margin progress across all three geographical segments, offset by the disposal of the highly profitable HygroMatik business and a negative exchange impact. Organically, the adjusted operating profit margin increased by 100 bps. On a reported basis, the adjusted operating profit margin of the Electric Thermal Solutions business fell 140 bps to 13.3% as a result of lower profitability in Chromalox in the first half of the year, partially offset by a small positive exchange impact and Thermocoax's higher adjusted operating profit margin of 19.5%. On an organic basis the margin fell by 270 bps, wholly due to the first half deterioration, but the margin was 30 bps higher in the second half of the year compared to the same period in 2018. Watson-Marlow's operating margin was 20 bps lower, 60 bps lower on an organic basis, as we continue to invest in the business to sustain growth.

Statutory operating profit and margin

Statutory operating profit decreased from £299.1 million to £245.0 million, as a result of the non-repeat of the profit on disposal of HygroMatik (£47.4 million), the disposal of property (£6.5 million) and a credit resulting from the post-retirement benefit plan in the USA being frozen to future accrual (£6.0 million), which all contributed to statutory profit in 2018. As a result the margin fell from 25.9% to 19.7%.

	2018	Exchange	Organic	Acquisitions and disposals	2019	Organic	Reported
Revenue	£1,153.3m	–	£73.9m	£15.2m	**£1,242.4m**	**+6%**	**+8%**
Adjusted operating profit	£264.9m	(£2.0m)	£18.2m	£1.6m	**£282.7m**	**+7%**	**+7%**
Adjusted operating profit margin	23.0%				**22.8%**	**+10 bps**	**-20 bps**
Statutory operating profit	£299.1m				**£245.0m**		**-18%**
Statutory operating profit margin	25.9%				**19.7%**		**-620 bps**

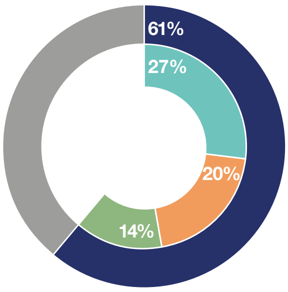
Review of Operations *continued*

Performance at a glance

Steam Specialties

Spirax Sarco & Gestra

Revenue £m



£755.4m

Reported	Organic
+3%	+6%

Adjusted operating profit £m

£177.9m

Adjusted operating margin %

23.6%

No. of operating units at year end

61

Key industries

Performance summary

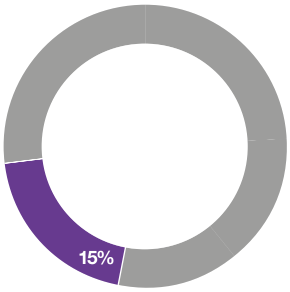
Organic sales up 6%; organic operating profit up 10%. All geographic segments achieved organic growth. Reported results impacted by 2018 HygroMatik divestment. Operating profit margin 23.6%; up 100 bps organically. Gestra operating profit margin up 110 bps, despite flat sales. Strategy implementation delivering improved performance. Remain confident in outperforming challenging markets.

See pages 44-48

Electric Thermal Solutions

Chromalox & Thermocoax

Revenue £m



£186.1m

Reported	Organic
+20%	-1%

Adjusted operating profit £m

£24.7m

Adjusted operating margin %

13.3%

No. of operating units at year end

25

Key industries

Performance summary

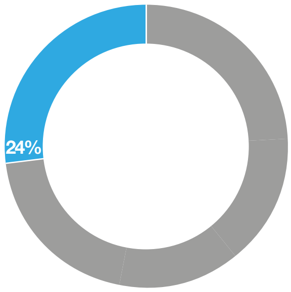
Organic sales down 1%; up 20% on a reported basis. Small project & MRO sales up; offsets lower capital projects. Acquired Thermocoax; expands technology, geographic footprint. Operating profit up 8%; Thermocoax and FX offset Chromalox H1. Chromalox H2 margin recovered to 15.1%; up 40 bps on FY 2018. 2020: restructuring Chromalox France; divested ProTrace (Canada). Confident that improvement actions can offset challenging markets.

See pages 49-51

Watson-Marlow Fluid Technology Group

Watson-Marlow

Revenue £m



£300.9m

Reported	Organic
+13%	+12%

Adjusted operating profit £m

£95.8m

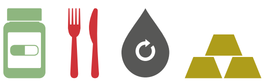
Adjusted operating margin %

31.8%

No. of operating units at year end

44

Key industries



Performance summary

Organic sales up 12%; strong growth in all regions. Biopharm sector drives stronger sales growth. Operating profit up 13%; organic profit up 11%. Organic margin down 60 bps; increased investments for growth. New sales companies in Spain, Colombia and Philippines. Well positioned to deliver above-market organic sales growth.

See pages 52-53

Review of Operations *continued*

Steam Specialties

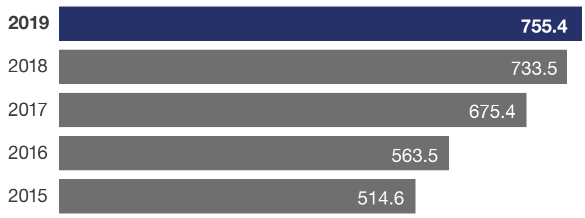
Revenue £m

£755.4m

2018: £733.5m

Reported
+3%

Organic
+6%



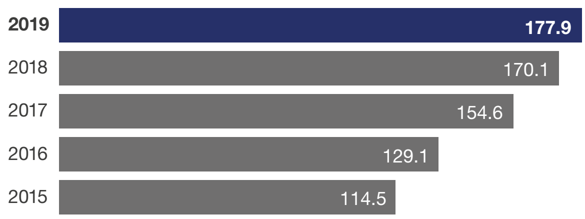
Adjusted operating profit £m

£177.9m

2018: £170.1m

Reported
+5%

Organic
+10%



Adjusted operating margin %

23.6%

2018: 23.2%

Reported
+40 bps

Organic
+100 bps

Steam Specialties at a glance (at year end)

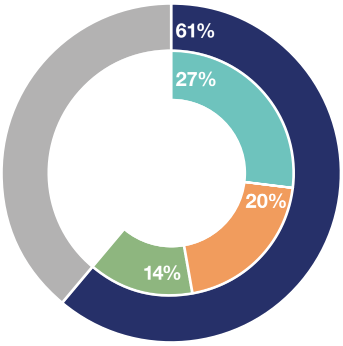
61
operating units*

66
countries with a resident direct sales presence

4,821
employees

* Operating units are business units that invoice locally.

Group revenue %



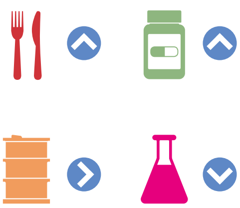
Europe, Middle East and Africa (EMEA)
Asia Pacific
Americas

spirax sarco
First for Steam Solutions
GESTRA
Engineering steam performance

> **"The Steam Specialties business made good progress in 2019, delivering revenue of £755.4 million. Adjusted operating profit was also strongly ahead of the prior year."**

Neil Daws
Managing Director, Steam Specialties

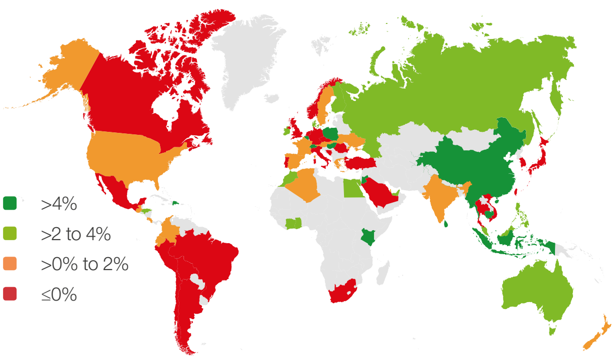
Key market performance



Positive
Neutral
Negative

- Low or negative industrial production growth in many core markets during 2019
- Pharmaceutical sector a good driver of growth; Food, Beverage and Healthcare generally robust
- OEMs, Oil & Gas and Chemical industries weaker

Industrial production growth rates, 2019*



* Compared with the prior year. (Source: Oxford Economics, February 2020.)

Market overview

Europe, Middle East and Africa (EMEA) as a whole saw a small contraction in industrial production during 2019. Brexit, political unrest and economic challenges affected market conditions and dampened industrial production growth rates in several countries. Our large European markets were particularly challenging, with industrial production down 3.4% in Germany, down 0.6% in the UK and down 1.2% in Italy, compared with the prior year. Of our larger European markets, only France saw growth, but at a low rate of just 0.5%. Elsewhere across EMEA, the picture was more mixed with some of our smaller markets such as Belgium, Denmark, Egypt, Russia, Spain and Sweden seeing growth between 0.9% and 4.4%, but other markets, such as the Netherlands, Norway, South Africa and Turkey, experiencing contraction.

Excluding China, Asia Pacific saw industrial production contract by 0.3%, as export-dependent economies were affected by the trade dispute between China and the USA, resulting in investment decisions to carry inventory, expand capacity or build new plants, being delayed or cancelled. Including China, industrial production in Asia Pacific grew by 2.5%. The industrial production growth rate in China slowed for the first three quarters and averaged 5.7% for the year. Korea, our second largest market in the region, saw contraction of 1.1% for the year as a whole, with a more marked contraction in the first half of the year that eased somewhat in the second half. Japan, Singapore, Thailand and Taiwan also experienced negative industrial production growth rates. Elsewhere in the region, industrial production growth was more mixed, with good growth in Vietnam, Indonesia and the Philippines, moderate growth in Australasia and low growth of 1.0% in India.

Within the Americas, industrial production growth slowed in consecutive quarters in North America, compared with the same period in the prior year, turning negative in the second half and averaging 0.6% for the year. Canada saw a 1.1% contraction for the year. The USA started the year relatively strongly but its industrial production growth rate slowed each quarter and reached a negative 0.9% in the final quarter and averaged 0.8% for the year. Market conditions in Latin America were challenging, with an average contraction of 1.7% for the region for the year. With the exception of some of our smaller markets in the region, such as Colombia and Costa Rica, which saw low growth, all of our key markets in the region experienced declining industrial production in 2019. Argentina saw the strongest contraction, of nearly 5%, as the country experienced the political uncertainty of a regime change and continued to suffer from a significant currency devaluation and recessionary conditions. Mexico continued to experience uncertainty, primarily as a result of trade tensions between the USA and China and the impact of the US Administration's influence on corporations off-shoring production, resulting in a 1.6% contraction. Brazil experienced a 1.1% decline in industrial production during 2019.

Progress in 2019

Against a backdrop of low or negative industrial production growth in many of our core markets during 2019, good progress was made in the Steam Specialties business. With organic revenue growth of 6%, we significantly outperformed our markets, delivering £755.4 million of revenue in 2019. On a reported basis, revenue was up 3%, impacted by the sale of HygroMatik in November 2018 and a negative impact from exchange movements.

Adjusted operating profit of £177.9 million was also strongly ahead; up 10% on an organic basis and up 5% on a reported basis. Reported growth was lower than organic growth due to the divestment of highly profitable HygroMatik and a negative exchange impact. At 23.6%, the Steam Specialties business' adjusted operating profit margin was up 100 bps organically and up 40 bps on a reported basis.

Gestra, which joined the Steam Specialties business in May 2017, generates over 40% of its sales in Germany and thus has a high exposure to conditions in that market. As outlined above, Germany experienced a marked contraction in industrial production growth in 2019. The German chemical industry, a key sector for Gestra, was particularly weak throughout the year, as were OEM boiler makers, who were affected by softening global demand and lower industrial production growth rates. In addition, distributor sales were affected by political and economic uncertainty in Europe. Despite these headwinds and a very tough comparison against 10% growth in 2018, Gestra outperformed its markets maintaining sales at 2018 levels and growing its order book, while increasing the adjusted operating profit margin by 110 bps.

On 3rd December 2018 we announced the disposal of HygroMatik. In 2018 HygroMatik reported sales of £12.7 million and £3.8 million of adjusted operating profit.

Statutory operating profit decreased from £222.5 million to £172.6 million primarily as a result of a number of non-recurring events in 2018; the profit on the disposal of HygroMatik (£47.4 million), the disposal of property (£6.5 million) and a credit resulting from the post-retirement benefit plan in the USA being frozen to future accrual (£6.0 million).

	2018	Exchange	Organic	Acquisitions and disposals	2019	Organic	Reported
Revenue	£733.5m	(£7.4m)	£42.0m	(£12.7m)	**£755.4m**	**+6%**	**+3%**
Adjusted operating profit	£170.1m	(£4.8m)	£16.4m	(£3.8m)	**£177.9m**	**+10%**	**+5%**
Adjusted operating profit margin	23.2%				**23.6%**	**+100 bps**	**+40 bps**
Statutory operating profit	£222.5m				**£172.6m**		**-22%**
Statutory operating profit margin	30.3%				**22.8%**		**-750 bps**

Review of Operations *continued*

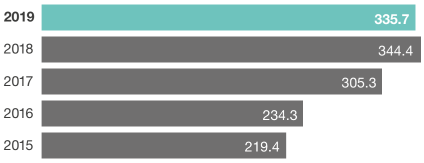
Steam Specialties *continued*

Europe, Middle East and Africa (EMEA)

Revenue £m

£335.7m

2018: £344.4m



Adjusted operated profit £m

£67.0m

2018: £69.3m

Adjusted operating margin %

20.0%

2018: 20.1%

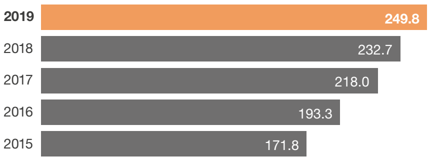
	2018	Exchange	Organic	Acquisitions and disposals	2019	Organic	Reported
Revenue	£344.4m	(£3.6m)	£7.6m	(£12.7m)	£335.7m	+2%	-3%
Adjusted operating profit	£69.3m	(£0.8m)	£2.3m	(£3.8m)	£67.0m	+4%	-3%
Adjusted operating profit margin	20.1%				20.0%	+30 bps	-10 bps
Statutory operating profit	£111.5m				£63.4m		-43%
Statutory operating profit margin	32.4%				18.9%		-1,350 bps

Asia Pacific

Revenue £m

£249.8m

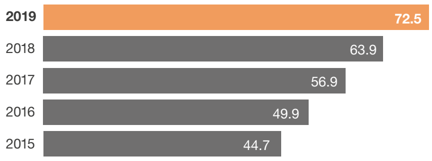
2018: £232.7m



Adjusted operated profit £m

£72.5m

2018: £63.9m



Adjusted operating margin %

29.0%

2018: 27.5%

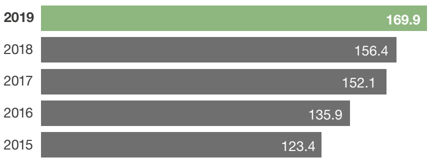
	2018	Exchange	Organic	Acquisitions and disposals	2019	Organic	Reported
Revenue	£232.7m	£0.1m	£17.0m	–	£249.8m	+7%	+7%
Adjusted operating profit	£63.9m	£0.3m	£8.3m	–	£72.5m	+13%	+14%
Adjusted operating profit margin	27.5%				29.0%	+140 bps	+150 bps
Statutory operating profit	£69.9m				£72.5m		+4%
Statutory operating profit margin	30.0%				29.0%		-100 bps

Americas

Revenue £m

£169.9m

2018: £156.4m



Adjusted operated profit £m

£38.4m

2018: £36.9m

Adjusted operating margin %

22.6%

2018: 23.6%

	2018	Exchange	Organic	Acquisitions and disposals	2019	Organic	Reported
Revenue	£156.4m	(£3.9m)	£17.4m	–	£169.9m	+11%	+9%
Adjusted operating profit	£36.9m	(£4.3m)	£5.8m	–	£38.4m	+18%	+4%
Adjusted operating profit margin	23.6%				22.6%	+120 bps	-100 bps
Statutory operating profit	£41.1m				£36.7m		-11%
Statutory operating profit margin	26.3%				21.6%		-470 bps

Europe, Middle East and Africa (EMEA)

Progress in 2019

Despite the zero-growth environment across the region as a whole and industrial production contraction in most of our core markets, sales in EMEA increased by 2% on an organic basis. At reported exchange rates and including the £12.7 million loss of revenue due to the divestment of HygroMatik, sales of £335.7 million were down 3% on the prior year.

Organic sales for Spirax Sarco companies were ahead in most countries in the region, including our mature markets of the UK, Germany, Italy and France, where market conditions were particularly poor, reflecting the successful implementation of our strategy. Our focus on helping customers to identify process, productivity, energy and sustainability improvements, and our ability to offer bespoke, engineered solutions that deliver customer value – self-generated small project sales – offset a reduction in large capital projects in the region that was caused by market uncertainty. Maintenance, repair and overhaul (MRO) base business was also robust.

The Pharmaceutical sector was a good driver of growth for a number of our sales companies in Central and Eastern Europe, sales into the Healthcare industry were generally robust and our strategic focus on the Food and Beverage industries delivered growth across the region, particularly in France and South Africa. Growth in these priority sectors helped to offset a small decline in OEM business, Oil & Gas and a weakness in the German Chemical industry, while a heightened focus on our strategic accounts, with an accompanying increase in the number of energy audits and steam system surveys, delivered good results.

As outlined earlier, Gestra, whose sales in EMEA accounted for 85% of its total revenue, struggled to make progress in very challenging markets that were predominantly showing negative growth and finished the year with a 2% organic decline in EMEA.

At £67.0 million, adjusted operating profit was 3% behind, due to the divestment of HygroMatik in November 2018 and a currency headwind. Organically, adjusted operating profit was up 4%, reflecting the organic sales growth and margin enhancement. The adjusted operating margin decreased by 10 bps to 20.0%, due to the divestment of highly profitable HygroMatik. Organically, the margin improved by 30 bps, primarily as a result of growth in self-generated project sales, which generally have higher margins than larger capital projects, and improvements to profitability in Gestra's European operations.

Statutory operating profit decreased from £111.5 million to £63.4 million, primarily due to the £47.4 million profit from the sale of HygroMatik in 2018.

Asia Pacific

Progress in 2019

Sales of £249.8 million were up 7% on both an organic and reported basis.

China saw strong, double-digit growth and Korea, our second largest market in the region, saw good growth despite challenging market conditions. Elsewhere in the region sales were more mixed with strong growth in Singapore and India, robust growth in Taiwan and New Zealand, but lower sales in Australia and some of our smaller markets such as the Philippines, Indonesia and Vietnam, against tough compares.

Sales growth in the region came from a combination of large project orders, self-generated business and MRO sales. Gestra, which has a small presence in the region, saw double-digit growth and benefited from the new sales company in China, which began trading in April 2019.

We are very pleased with the performance of our Indian operation, which was established as a sales and manufacturing location in 2016. As a result of strong domestic revenue growth and an increase in inter-company manufacturing volume, the company achieved a "break-even" position in 2019, one year ahead of plan, and we look forward to seeing continued sales and profitability growth in 2020.

Adjusted operating profit of £72.5 million increased 13% organically, with a small positive impact from exchange resulting in a reported increase of 14%. The adjusted operating margin of 29.0% was ahead 140 bps organically due to operational gearing from volume growth, active price management and increased localisation of products from our manufacturing plants in China and India, which more than covered increased costs elsewhere in the business.

Statutory operating profit increased from £69.9 million to £72.5 million despite the profit on the disposal of property (£6.5 million) in 2018.

Americas

Progress in 2019

At £169.9 million, sales were ahead 9% on a reported basis, and up 11% on an organic basis, with a 2% negative impact from currency movements. Excluding our Argentine business, where the further devaluation of the currency distorts both organic growth (due to large price increases) and currency movements, organic growth was 5% and reported growth 10%.

Organic sales were up 6% in North America. Both Spirax Sarco and Gestra achieved strong organic sales growth in the USA as we expanded our direct sales presence. Our customer facing employees in the USA and throughout the region are benefiting from training, delivered through the Spirax Sarco Academy, which equips them with the consultative selling tools to help them uncover our customers' process challenges and deliver the bespoke thermal energy solutions needed to resolve them. While strengthening our direct sales presence, we have continued to work with our distribution network to drive growth.

In Latin America, organic sales were ahead 20%, with good organic growth across all but one of our operations in the region and a positive benefit from Argentina's US dollar-denominated pricing. Excluding Argentina, organic sales growth was 8% in the region. Hiter, our Brazilian controls business, which we acquired in 2016, delivered another record year of double-digit growth and expanded its overseas sales footprint. Our Spirax Sarco company in Brazil also performed strongly, despite the country's challenging economic conditions. Argentina performed well to withstand the very difficult economic landscape, benefiting from in-country manufacturing and dollar-based pricing. Only Mexico struggled to secure growth and saw a fall in sales.

Gestra, which has a relatively small local presence in the region, continued to strengthen its direct sales presence in the Americas,

Review of Operations *continued*

Steam Specialties *continued*

while maintaining its long-standing distribution relationships. The Steam Specialties business' dual brand strategy and sectorised market approach is enabling both Gestra and Spirax Sarco to achieve growth and offer customer choice in the region. As a result, during 2019 Gestra saw strong double-digit growth in the Americas.

Adjusted operating profit in the Americas was ahead of the prior year; up 4% to £38.4 million. On an organic basis, adjusted operating profit was up 18%. Unlike 2018, reported profit in Argentina fell back as organic growth failed to offset currency devaluation. The reported adjusted operating profit margin was down 100 bps to 22.6% due to the impact of currency. On an organic basis, the margin rose 120 bps in the region. Excluding Argentina, the increase was 60 bps.

Statutory operating profit reduced from £41.1 million to £36.7 million as a result of the non-repeat of a credit from the post-retirement benefit plan in the USA being frozen to future accrual (£6.0 million).

Steam Specialties strategy update

Throughout 2019 we continued to implement the "Customer First" Steam Specialties business strategy, with all three geographic segments benefiting from the resulting operational improvements.

The ability of our sales and service engineers to self-generate sales through uncovering problems and providing bespoke solutions to meet customers' needs, became increasingly important in the negative or low-growth global industrial production environment during 2019. Five years of intensive strategic execution, investments in our direct sales business model and extensive training delivered through the Spirax Sarco Academy were reflected in the above-market growth achieved in 2019.

While strengthening and consolidating our position in our mature and emerging markets, we continued to expand our geographic footprint. In 2019 we established a Spirax Sarco direct presence in Bosnia & Herzegovina, Honduras and Qatar and our newly established Gestra company in China commenced trading. We also strengthened Gestra's direct sales presence in the Asia Pacific and Americas regions.

Our strategic focus on our priority sectors delivered good results, although OEMs and Oil & Gas were affected by the poor market conditions. A focus on customer steam quality, with customer educational campaigns, targeted marketing materials and the development of a new clean steam generator designed specifically for the Healthcare industry, delivered results in both the Healthcare and Food & Beverage industries.

In 2019 we initiated project OPAL, the implementation of a new integrated IT system to improve operational effectiveness and deliver improved customer focus and insight, effective strategic account management and rapid quoting and processing to further improve our customer delivery performance. The new system will incorporate ERP (Enterprise Resource Planning), CRM (Customer Relationship Management), CPQ (Configure, Price, Quote) and BI (Business Intelligence) modules. It is envisaged that the roll-out will extend over five years. We also continued to invest in our manufacturing sites through our "Future factory" programme, for example upgrading CNC machines in the UK, making improvements to the machining centres in Brazil, Argentina and Mexico, and stepping up capital investments in Gestra's manufacturing facility in Germany, leading to increased manufacturing efficiencies.

In the final quarter of the year, Gestra released the new SPECTORconnect boiler control range, offering customers unrivalled safety features, tools to enable them to monitor boiler efficiency, improve maintenance and better prevent breakdown, as well as improved digital monitoring to enable customers to have a better understanding of on-site energy usage.

We have continued to strengthen our safety culture, with intensive BBS (Behavioural Based Safety) training rolled out to managers during 2019, which is continuing into 2020, and the continued implementation of our Sustainability Strategy in support of all our stakeholders.

Steam Specialties outlook

The latest forecasts suggest that the global industrial production growth rate will remain low throughout the year, averaging 0.8% in 2020. Developed markets are expected to contract by an average 0.3% for the year, while the emerging markets are expected to grow 2.4%.

The UK, France, Germany and Italy are all currently forecasted to contract further in 2020, with conditions elsewhere in EMEA remaining broadly positive, although at low levels. The average growth rate is forecasted to be 0.9% for the region as a whole. Within the Americas, conditions in the USA are expected to slow further with year-on-year industrial production rates contracting by 0.5%. Within Latin America, conditions are expected to remain challenging, but returning to low growth of around 0.7% for the region as a whole, if Brazil, in particular, picks up as forecasted. Within Asia Pacific, Chinese growth is expected to slow further, although conditions elsewhere in the region may be slightly better than seen in 2020.

The Steam Specialties business has a higher exposure to the unfolding COVID-19 situation, which we anticipate could further reduce global industrial production growth in the first half of the year. We are therefore planning for a low-growth environment and the continuation of challenging market conditions in 2020. Nevertheless, thanks to our resilient business model, ability to self-generate sales, significant maintenance and repair revenues, broad geographic reach and the successful implementation of our strategy, we remain confident in our ability to continue outperforming our markets.

Review of Operations *continued*

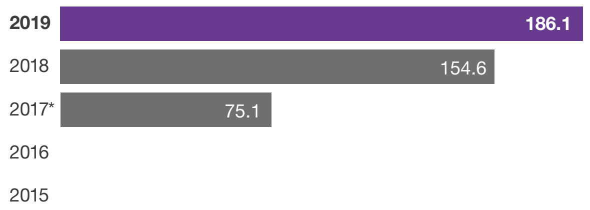
Electric Thermal Solutions

Revenue £m

£186.1m

2018: £154.6m

Reported	Organic
+20%	-1%



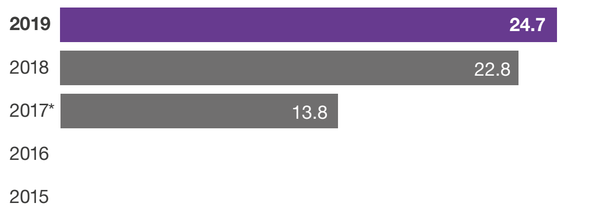
* Chromalox acquired in July 2017.

Adjusted operating profit £m

£24.7m

2018: £22.8m

Reported	Organic
+8%	-19%



* Chromalox acquired in July 2017.

Adjusted operating margin %

13.3%

2018: 14.7%

Reported
-140 bps

Organic
-270 bps

Electric Thermal Solutions at a glance (at year end)

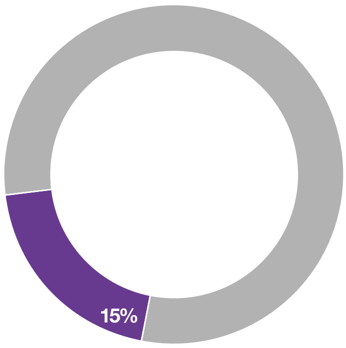
25 operating units*

19 countries with a resident direct sales presence

1,530 employees

* Operating units are business units that invoice locally.

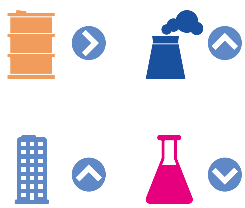
Group revenue %



"Electric Thermal Solutions business revenue was 20% ahead of the prior year, following the acquisition of Thermocoax in May 2019."

Dominique Mallet
President,
Electric Thermal Solutions

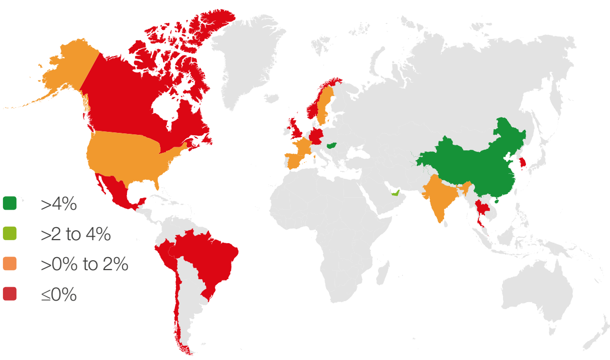
Key market performance



Positive
Neutral
Negative

- Slowing industrial production growth rates in North America, Chromalox's core market, and contraction in EMEA, Thermocoax's core market, in 2019
- Power Generation and Marine markets robust
- Other sectors, such as OEM, Oil & Gas and Chemical lower

Industrial production growth rates, 2019*



* Compared with the prior year. (Source: Oxford Economics, February 2020.)

Review of Operations *continued*

Electric Thermal Solutions *continued*

Market overview

Chromalox, which accounted for 85% of revenue in the Electric Thermal Solutions business in 2019, generates 80% of its revenue in North America and thus has a high exposure to industrial production growth rates in the USA and Canada, which slowed markedly during the year, averaging just 0.6%. A number of Chromalox's market sectors, such as Power Generation and Marine, saw positive growth in 2019 but this was offset by a slowdown in other sectors, such as OEM, Oil & Gas and Chemical, which account for around 47% of sales. The company saw a strong contraction in the Oil & Gas industry in EMEA as economic conditions in the region and political unrest in the Middle East delayed projects and hampered growth. Shipbuilding, offshore projects and Liquefied Natural Gas markets strengthened compared with the prior year and Chromalox saw progress in these industries, particularly in Asia Pacific.

Thermocoax, acquired in May, accounted for 15% of the Electric Thermal Solutions business' revenue in 2019. The company has a high exposure to industrial production growth rates in Europe with three quarters of its revenue generated through its companies in France, Germany and the UK. Industrial production contracted in Europe in 2019, creating a difficult operating environment. By industry, Thermocoax saw progress in OEM semiconductor markets, Aeronautics and Space, but found conditions more challenging in the Nuclear sector where global uncertainty, particularly in China and India, led to project delays.

Progress in 2019

The Electric Thermal Solutions business delivered £186.1 million of sales in 2019, up 20% on a reported basis, with Thermocoax adding £27.9 million for the seven and a half months under ownership. A 3% exchange tailwind more than offset a 1% organic decline in Chromalox's revenue.

Chromalox delivered £158.2 million of sales in 2019, a 1% organic decline following strong 9% organic growth in 2018. We saw sustained maintenance, repair and overhaul demand and continued the positive trend towards an increasing number of smaller projects and standard product sales, to offset a decline in large, custom-engineered capital project sales. This trend was particularly noticeable in the Heat Trace product line, which saw a reduction in heavy industry projects towards more engineering services and material sales. A focus on small projects and recurring revenue also produced an uplift in Component Technology sales, particularly in the renewable energy sector. We benefited from the direct sales presence that we established in Latin America (Brazil and Chile) in 2018 and saw good growth in these countries in 2019. Sales in Asia Pacific also saw growth in 2019.

In the full year of 2019, sales in Thermocoax fell by 5% at constant currency, partially due to disruption by the acquisition process in the first part of the year and partially as a result of customer rescheduling of shipments in the latter part of the year. This had the result of expanding the order book by 18% in the year.

Adjusted operating profit was £24.7 million for the Electric Thermal Solutions business up 8% on a reported basis due to the acquisition of Thermocoax and a 4% currency tailwind. On an organic basis, profit was down 19% due to the operational issues, particularly in Europe, encountered in the first half of the year by Chromalox.

The adjusted operating profit margin for the Electric Thermal Solutions business as a whole was down 140 bps with a 270 bps organic decline in Chromalox, partially offset by the higher operating margin of Thermocoax and a positive contribution from currency. In August 2019, we reported the disappointing profitability of Chromalox in the first half of the year, with an operating profit margin of 9.7%. Chromalox's second half operating margin

	2018	Exchange	Organic	Acquisitions and disposals	2019	Organic	Reported
Revenue	£154.6m	£5.1m	(£1.5m)	£27.9m	**£186.1m**	**-1%**	**+20%**
Adjusted operating profit	£22.8m	£1.0m	(£4.5m)	£5.4m	**£24.7m**	**-19%**	**+8%**
Adjusted operating profit margin	14.7%				**13.3%**	**-270 bps**	**-140 bps**
Statutory operating profit	£12.1m				**£7.9m**		**-35%**
Statutory operating profit margin	7.8%				**4.2%**		**-360 bps**

was much stronger at 15.1%, which was above the 14.7% full year margin achieved in 2018, as we began to see indications of operational performance improvement resulting from actions initiated in the first half of the year. Thermocoax's adjusted operating margin was 19.5% for the period under ownership.

Statutory operating profit decreased from £12.1 million to £7.9 million due to the amortisation of acquired intangibles recognised on the acquisition of Thermocoax.

Strategy update

We welcomed electric thermal solutions specialist, Thermocoax, into the Group in May 2019. Thermocoax expands our technical offering to customers, particularly in highly regulated and high-tech industries such as Nuclear, Aeronautic, Space, Power Generation and Semiconductor. It also doubles the Electric Thermal Solutions business footprint in Europe and Asia, which can be leveraged to improve Chromalox's access to those markets. At the same time, Chromalox's strong brand and presence in North America, will support faster market penetration for Thermocoax into that important market.

Chromalox and Thermocoax both have strong, well-respected brands and they will maintain these within the newly renamed Electric Thermal Solutions business. In September 2019, Thermocoax's Chief Executive Officer, Dominique Mallet, was appointed President of the Electric Thermal Solutions business. We are confident that the business will benefit from Dominique's experienced leadership.

Chromalox launched a variety of new products during 2019, including a new Medium Voltage electric steam generator, utilising the company's patented DirectConnect technology; the ProtoAir IIoT Gateway, that can be installed with any Chromalox digitally enabled product to provide seamless real time connectivity to the Cloud allowing for remote access and monitoring; and a wide range of "pick and ship" products, including heaters, flanges and control panels, which feature universal designs allowing for fast quoting, fast delivery and competitive pricing, when compared with more customer-bespoke products.

During 2019, we broadened Chromalox's direct sales footprint, establishing an initial direct sales presence in Korea and Hungary, to better support customers in those countries.

In addition to investing for long-term growth, Chromalox undertook a range of initiatives to improve profitability throughout the year, including the adoption of Spirax Sarco price management tools, a strategic pricing review and reducing central costs.

In February 2020 we announced to our workforce in Chromalox France the intention to reorganise the operation to reduce losses and help bring the European operation of Chromalox to break-even by the end of 2021. This will entail a restructuring of the supply chain to reduce manufacturing activity in France, which will result in a reduction of the workforce. Also, in early March we divested Chromalox's small Canadian subsidiary, ProTrace, which made a loss of £0.2 million in 2019. The combined cost of these two projects, which is estimated to be £4.2 million, will be taken as an adjusting item in 2020. The annualised benefit, which should begin to be seen from July 2020 is in the region of £1.2 million.

Outlook

Industrial production growth rates are forecasted to remain low or contract further in the core markets of the Electric Thermal Solutions business in 2020, with many of the factors affecting economic and political uncertainty during 2019 continuing into the current year. Nevertheless, the business is well-placed to make progress in 2020. We will continue to benefit from broadening our geographical direct sales footprint and the new products that were launched during the last quarter of 2019 and early in 2020 align strongly with customer trends such as decarbonisation, emissions control, energy efficiency, process productivity and digitisation, and should contribute to sales growth in 2020. We remain confident that all these actions will offset the inevitable market headwind resulting from the unfolding COVID-19 situation.

Review of Operations *continued*

Watson-Marlow

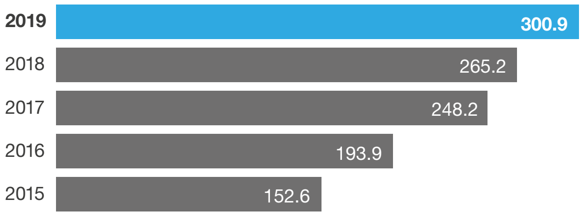
Revenue £m

£300.9m

2018: £265.2m

Reported +13%

Organic +12%



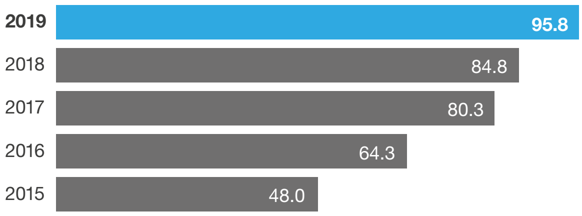
Adjusted operating profit £m

£95.8m

2018: £84.8m

Reported +13%

Organic +11%



Adjusted operating margin %

31.8%

2018: 32.0%

Reported -20 bps

Organic -60 bps

Watson-Marlow at a glance (at year end)

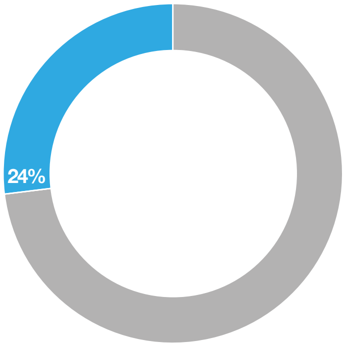
44 operating units*

37 countries with a resident direct sales presence

1,623 employees

* Operating units are business units that invoice locally.

Group revenue %



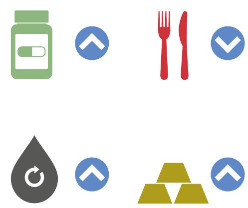
WATSON MARLOW
Fluid Technology Group

"Exceptional organic growth achieved in 2019, with strong growth in all geographical regions, delivering sales of £300.9 million."

Jay Whalen
Executive Director and President of Watson-Marlow*

* Jay Whalen retired on 31st December 2019 and was replaced by Andrew Mines

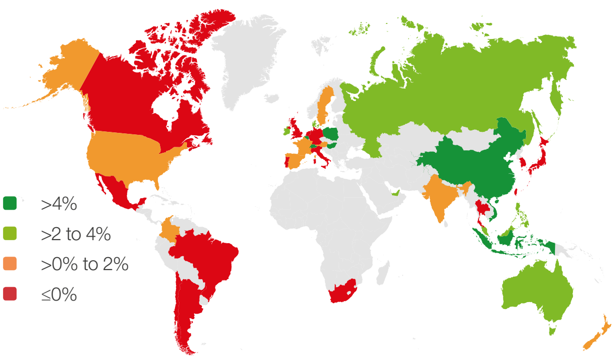
Key market performance



Positive
Neutral
Negative

- Industrial production growth rates challenging in many geographic markets
- Pharma & Biotech, Medical, Mining, Water & Environment industries buoyant
- General industry more challenging, reflecting low global industrial production growth rates

Industrial production growth rates, 2019*



* Compared with the prior year. (Source: Oxford Economics, February 2020.)

Strategic Report

Market overview

Industrial production growth is also a good indicator of economic conditions in Watson-Marlow's markets because of the company's wide geographical spread and diversity of end user industries. With a smaller but broadly similar geographic footprint to the Steam Specialties business, the market overview commentary found within the Steam Specialties business commentary is largely applicable to the Watson-Marlow business. However, Watson-Marlow's much greater weighting (c.50% of sales) to the Pharmaceutical & Biotechnology industry means that it is more affected by conditions in that market, than the Group as a whole. Throughout the year, the Pharmaceutical & Biotechnology market remained buoyant, as did the Medical Diagnostics, Mining and Water & Environmental industries, which are all key sectors for Watson-Marlow. General industrial markets were more challenging, reflecting the low industrial production growth rates globally.

Progress in 2019

Watson-Marlow delivered sales of £300.9 million in 2019, a 13% reported increase, with exceptional organic growth of 12% and a 1% currency tailwind. Strong organic sales growth was delivered across all geographical regions.

Within Europe and the Middle East, Watson-Marlow again achieved strong growth across most of our territories, including double-digit growth in the UK. Our relatively new sales companies in Ireland and the UAE both delivered excellent growth. Across the region, growth was largely driven by sales into the Biopharmaceutical sector with our BioPure, Flexicon, Watson-Marlow Tubing and Watson-Marlow Pumps products and solutions all achieving double-digit growth. General Industry and Food & Beverage sales were down slightly, hampered by the poor industrial production growth rates in the region and against a strong compare. In Asia Pacific, sales were also well ahead of the prior year, with China, Korea and Japan all performing strongly, and with excellent growth in some of our smaller markets. The Biopharmaceutical and Medical sectors were key drivers of growth in the region. Within the Americas, the Biopharmaceutical, Medical, Environmental and Mining industries all saw good growth, with sales growth in all countries in the region, with the exception of Mexico which was flat year-on-year.

Aflex, which was acquired at the end of November 2016, delivered solid growth, benefiting from the continuing conversion of distributor to direct sales across many of Watson-Marlow's direct sales territories. Work continues apace on the construction of Aflex's new purpose-built factory in the UK, which will consolidate the company's four UK factories onto one site, increasing capacity and production efficiency. The new facility, at a cost of over £20 million, is on schedule for completion in mid-2020.

Watson-Marlow's adjusted operating profit was £95.8 million, up 13% at reported exchange rates and up 11% organically, with a 2% exchange tailwind. At 31.8% the reported adjusted operating profit margin was down 20 bps. On an organic basis, the margin fell by 60 bps due to increased investment to sustain above market levels of growth.

Statutory operating profit increased from £77.5 million to £82.7 million although the margin fell by 170 bps to 27.5%.

Strategy update

Watson-Marlow's geographic expansion continued in 2019, with new sales companies established and trading in the Philippines, Colombia and Iberia (Spain and Portugal). The preparatory work was also completed for a new sales company to begin trading in Hungary in 2020.

During the year we broadened our direct sales product portfolio as our sales operations in Austria, Switzerland, Italy, Japan, India, Brazil and South Africa began selling Aflex products directly to their customer base, with sales growing as a result.

New product development remains a key strategic priority, with a number of product launches during the year, including the Qdos ReNu PU pumphead, developed specifically to address the pumping needs of the Wastewater Treatment industry; a new range of Puresu® assemblies, combining Watson-Marlow tubing with BioPure connectors and fittings, assembled, sterilised and ready for use; an expansion of BioPure's gasket range, using new materials to meet consistent quality demands for Bioprocessing; and Flexicon FPC60, a highly accurate peristaltic fill and finishing system that allows users to create their own bespoke filling solution to suit small-batch applications. The Qdos ReNu PU pumphead, in particular, has outperformed expectations, delivering sales more than double its plan in the first six months following launch in June 2019.

Throughout 2019, following the acquisition of a small, pre-revenue company in January 2018, we continued to develop an innovative product that will expand the technical capabilities of peristaltic pumps and extend the life of pump consumables, reducing maintenance and downtime for customers. We expect our first product as a result of this acquisition to be launched in the summer of 2020. As a result, a deferred "earn-out" of €5.8 million (£5.2 million) was paid in the first quarter of 2020.

Outlook

Globally, industrial production growth rates are expected to remain low throughout 2020. We remain confident in our ability to strongly outperform industrial production growth as Watson-Marlow's core industries, notably Pharmaceutical, Biotechnology, Biopharmaceutical and Medical devices, look to remain strong. Going into 2020 we have a strong pipeline of new products for launch during the year. We will continue to convert Aflex product sales from distributor to direct, utilising our global direct sales network to leverage growth. In recent years we have seen excellent growth in our new sales companies as we expand into new territories and we anticipate this continuing in our three new companies established in 2019, as well as in our other recently established companies. We anticipate that Watson-Marlow will have a lower exposure to the effects of the unfolding COVID-19 situation due to its strong position in the Biopharmaceutical industry, which we assume will be less impacted. As result of all of these factors, we are well positioned to continue to deliver above-market organic sales growth in 2020.

	2018	Exchange	Organic	Acquisitions and disposals	2019	Organic	Reported
Revenue	£265.2m	£2.3m	£33.4m	–	**£300.9m**	**+12%**	**+13%**
Adjusted operating profit	£84.8m	£1.8m	£9.2m	–	**£95.8m**	**+11%**	**+13%**
Adjusted operating profit margin	32.0%				**31.8%**	**-60 bps**	**-20 bps**
Statutory operating profit	£77.5m				**£82.7m**		**+7%**
Statutory operating profit margin	29.2%				**27.5%**		**-170 bps**

Financial Review

> A strong financial result in 2019 against a background of declining industrial production growth, with sales of £1,242.4 million and adjusted operating profit of £282.7 million."

Kevin Boyd
Chief Financial Officer

Introduction

The Group reports under International Financial Reporting Standards (IFRS) and also uses adjusted and organic figures where the Board believe that they help to effectively monitor the performance of the Group and aid users of the Financial Statements to draw comparisons with our peers. Certain alternative performance measures also form a meaningful element of Executive Directors' variable remuneration and some are used in calculating debt covenants. Adjusted results quoted in the text below are referred to as "adjusted" (see Note 2). A reconciliation of adjusted operating profit to statutory operating profit is given on page 55 and more detail can be found in Note 2 to the Financial Statements.

As we are a multi-national Group of companies that trade in a large number of foreign currencies and regularly acquire and sometimes dispose of companies, we also refer to organic performance measures. Organic measures strip out the effects of the movement of foreign currency exchange rates and of acquisitions and disposals. The percentage organic growth or decline is measured as the constant currency movement in those businesses that were part of the Group at the end of the current year and the beginning of the prior year, i.e. excluding the effects of any acquisitions or disposals made in either year. The Board believe that this allows users of the Financial Statements to gain a further understanding of how the Group has performed.

Revenue

The Group achieved a strong financial result in 2019 against a background of declining industrial production growth. Total sales grew 8% to £1,242.4 million (2018: £1,153.3 million) with organic sales growth of 6%. Watson-Marlow had an exceptional year, delivering 12% organic growth, with all regions performing well. Sales grew by 6% organically in the Steam Specialties business, with growth of 2% in EMEA, 7% in Asia Pacific and 11% in the Americas. Sales in the Electric Thermal Solutions business grew by 20% boosted by the acquisition of Thermocoax, on an organic basis sales were down 1%. The net effect of the acquisition of Thermocoax in May 2019 and the divestment of HygroMatik at the end of November 2018, added 1% to sales.

In aggregate, currency had no effect on sales, with losses in the Steam Specialties business being compensated for by gains in the Watson-Marlow and Electric Thermal Solutions businesses. If recent exchange rates were to prevail for the rest of 2020 we would expect to see a negative 2% impact to sales on translation when compared to 2019.

Adjusted operating profit and margin

Adjusted operating profit of £282.7 million (2018: £264.9 million) was 7% ahead at reported exchange rates and 7% ahead on an organic basis. On an organic basis the Steam Specialties business saw adjusted operating profit increase by 10% with 4% growth in EMEA, 13% growth in Asia Pacific and 18% growth in the Americas. Watson-Marlow's adjusted operating profit grew 11% on an organic basis while the Electric Thermal Solutions business fell back 19% due to Chromalox's poor performance in the first half of the year.

Currency movements depressed adjusted operating profit by less than 1% with translational losses of £4.6 million being partially offset by a transactional gain of £2.6 million. The main transactional exposure flow affecting the Group is the export of products from our factories in the UK, invoiced in sterling, less the import of goods from overseas Group factories and third parties priced predominately in euros and US dollars. The net exposure is approximately £100 million. If recent exchange rates prevail for the rest of 2020 we would expect to see a negative impact to profit of 3% due to transactional and translation foreign exchange movements.

The net effect of the acquisition made in 2019 and disposal in 2018 was to add less than 1% to adjusted operating profit on a constant currency basis.

The adjusted operating profit margin in the Steam Specialties business grew 40 bps to 23.6% despite the dilutionary impact of currency and eleven months less of the high margin HygroMatik business, which was sold in 2018. Excluding these effects, margin growth was 100 bps. Watson-Marlow's reported margin fell 20 bps to 31.8%, a fall of 60 bps at constant currency. The Electric Thermal Solutions business' margin fell by 140 bps although it was boosted by currency and the acquisition of Thermocoax in the middle of May 2019. On an organic basis it fell 270 bps as a result of the operational issues in Chromalox in the first half of the year. The margin in Chromalox in the second half of the year expanded 600 bps over the 9.1% reported in the first half, to 15.1%, which compares with 14.8% in the second half of 2018 and 14.7% in the full year. Overall the Group's reported adjusted operating profit margin fell by 20 bps to 22.8% due to the dilutionary impacts of currency and HygroMatik leaving the Group. On an organic basis, the Group margin improved by 10 bps.

Statutory operating profit and margin

Statutory operating profit decreased from £299.1 million to £245.0 million, as a result of the non-repeat of the profit on disposal of HygroMatik (£47.4 million), the disposal of property (£6.5 million) and a credit resulting from the post-retirement benefit plan in the USA being frozen to future accrual (£6.0 million), which all contributed to statutory profit in 2018. As a result, the margin fell from 25.9% to 19.7%.

Finance costs

Net finance costs fell from £10.3 million to £8.4 million. Net bank interest decreased from £8.3 million in 2018 to £4.9 million reflecting lower interest rates and reduced levels of debt, in particular that denominated in US dollars.

Net costs under IAS 19 in respect of the Group's defined benefit pension schemes increased marginally to £2.2 million (2018: £2.0 million).

In 2019, the Group adopted IFRS 16 (Leases). The IFRS 16 interest charge for the year was £1.3 million (2018: £nil million).

We anticipate total net interest charges to be at a similar level in 2020.

Associates

The Group has one Associate holding, a 26.3% interest in Econotherm, a heat pipe technology business. Econotherm's performance improved in 2019, with our share net of tax, rising to £0.2 million (2018: £nil million).

Adjusted profit before tax

The adjusted profit before tax of £274.5 million (2018: £254.6 million) was 8% ahead of the prior year. As outlined earlier, currency movements were negative in the year. At constant currency, adjusted profit before tax increased by 10%.

Statutory profit before tax

The statutory profit before tax was £236.8 million (2018: £288.8 million) and includes the items listed below that have been excluded from the adjusted profit:

	Operating profit 2019 £m	Operating profit margin 2019 %	Operating profit 2018 £m	Operating profit margin 2018 %
Europe, Middle East and Africa	67.0	20.0%	69.3	20.1%
Asia Pacific	72.5	29.0%	63.9	27.5%
Americas	38.4	22.6%	36.9	23.6%
Steam Specialties	**177.9**	**23.6%**	**170.1**	**23.2%**
Electric Thermal Solutions	24.7	13.3%	22.8	14.7%
Watson-Marlow	95.8	31.8%	84.8	32.0%
Corporate expenses	(15.7)		(12.8)	
Adjusted operating profit	**282.7**	**22.8%**	**264.9**	**23.0%**
Profit on disposal of businesses	–		47.4	
Profit on disposal of property	–		6.5	
Post-retirement benefit plan in the USA being frozen to future accrual	–		6.0	
Equalising guaranteed minimum pensions for the UK post-retirement benefit plans	–		(0.7)	
Amortisation of acquisition-related intangible assets	(26.8)		(25.2)	
Acquisition-related items	(2.6)		0.2	
Reversal of acquisition-related fair value adjustments to inventory	(4.1)		–	
Impairment of goodwill	(4.2)		–	
Statutory operating profit	**245.0**		**299.1**	

Financial Review *continued*

- a charge of £26.8 million (2018: £25.2 million) for the amortisation of acquisition-related intangible assets;
- a charge of £4.2 million for the impairment of goodwill (2018: £nil million)
- a charge of £2.6 million for acquisition costs relating to Thermocoax (2018: £0.2 million credit); and
- reversal of acquisition-related fair value adjustments to inventory on the acquisition of Thermocoax, £4.1 million (2018: £nil million).

The principal reasons for the movement between years are explained in the "Statutory operating profit and margin" section above.

Taxation

The tax charge on the adjusted profit before tax increased by 90 bps to 28.5% (2018: 27.6%), due primarily to a reduction in the benefit the Group received from its internal financing structures in 2019. The Group's overall tax rate reflects the blended average of the tax rates in nearly 50 tax jurisdictions around the world in which the Group trades and generates profit. The Group comprises in the region of 130 operating units, the majority of which are small, reflecting our local direct sales business model. On a statutory basis the Group's effective tax rate was 29.5%.

For the year to 31st December 2020 we currently anticipate that, based on the forecast mix of adjusted profits, the Group effective tax rate will be comparable to 2019, at approximately 29%.

Earnings per share

Adjusted basic earnings per share increased by 6% to 265.7 pence (2018: 250.0 pence). Statutory earnings per share was 226.2 pence (2018: 303.1 pence). The fully diluted earnings per share was not materially different in either year.

Dividends

The Group has a progressive dividend policy where dividend payments follow underlying earnings per share growth while maintaining prudent levels of dividend cover. The aim is to provide sustainable, affordable dividend growth, building on our 52 year record of dividend progress, with a compound annual increase of 11% over that period and a 12% per annum increase over the last 10 years. The Board is proposing a final dividend of 78.0 pence per share for 2019 (2018: 71.0 pence) payable on 22nd May 2020 to shareholders on the register at 24th April 2020. Together with the interim dividend of 32.0 pence per share (2018: 29.0 pence), the total Ordinary dividend for the year is 110.0 pence per share, an increase of 10% on the Ordinary dividend of 100.0 pence per share in 2018.

The total amount paid in dividends during the year was £76.3 million, 13% above the £67.3 million paid in 2018.

Acquisitions

Acquisitions are an important complement to our strategy for organic growth.

Dedicated resource remains focused on identifying opportunities to add attractive businesses that closely match our strategic, industrial and commercial requirements. Our three broad acquisition criteria are:

- geographic expansion, typically through the acquisition of a distributor in a developing market;
- products that can be integrated into our existing businesses; and
- related acquisitions that fit alongside our existing Steam Specialties, Watson-Marlow or Electric Thermal Solutions businesses.

On 13th May 2019 we acquired Thermocoax for €156 million (£135 million) on a cash-free, debt-free basis. The acquisition was financed from existing cash and debt facilities. Thermocoax, headquartered near Paris, France, is a leading designer and manufacturer of highly engineered electrical thermal solutions for critical applications in high added-value industries and together with Chromalox forms our Electric Thermal Solutions business. For more information on Thermocoax see the "Acquisition" section of the Strategic Review.

Brexit

About 93% of the Group's sales and operating profit are made outside the UK, reducing the risk to the Group from the United Kingdom's decision to leave the European Union. That said, we are net exporters from the UK, importing approximately £45 million raw materials and components and exporting in the region of £170 million of finished goods to our sales companies around the world. In 2018, to mitigate the risk of delays at ports, we made the decision to build a month's buffer stock of raw materials and components in the UK and finished goods outside the UK equating to an additional two weeks' usage ahead of the then planned exit date of 31st March 2019. Given that the Transition Period now extends to the 31st December 2020, we currently plan to maintain this buffer stock of £5 million into 2021.

We have modelled potential tariff impacts and believe that these would be more than compensated for by a devaluation in sterling if a "no-deal" Brexit were to occur following the end of the Transition Period.

We are well prepared and well placed to take on the challenges and identify the opportunities resulting from a UK exit from the EU. We have navigated periods of economic and political uncertainty in many different places around the world and have a long and successful history of doing so.

Research and development

The development of innovative new products, getting those products to market faster and sold more effectively, is an important element of our strategy for growth. Overall the Group's total spend on research and development in 2019 was £13.4 million (2018: £12.4 million) of which £3.2 million was capitalised (2018: £1.6 million).

IFRS 16

The adoption of IFRS 16 from 1st January 2019 has resulted in the inclusion of £40.8 million of right-of-use assets in the Statement of Financial Position at 31st December 2019 together with a lease liability of £38.9 million. In the year to 31st December 2019, operating profit was increased by £1.3 million, which was matched by an increase in lease liability interest of £1.3 million, giving a zero net impact to the Income Statement. Further information can be found in Note 1.

Capital employed

Total capital employed has increased by 15% at reported exchange rates. If the effects of currency, the acquisition of Thermocoax and IFRS 16 are excluded growth was 7%. This compares with organic sales growth of 7%.

Capital employed	2019 £m	2018 £m
Property, plant and equipment	251.2	230.8
Right-of-use assets (IFRS 16)	40.8	–
Inventories	185.9	160.6
Trade receivables	240.7	245.1
Prepayments and other current assets	44.6	43.7
Trade, other payables, current provisions and current tax	(205.0)	(195.7)
Capital employed	**558.2**	**484.5**
Intangibles including goodwill	721.6	645.2
Investment in Associate	0.2	–
Post-retirement benefits	(71.3)	(85.1)
Net deferred tax	(43.1)	(35.5)
Non-current provisions and long-term payables	(5.2)	(6.4)
Lease liabilities	(38.9)	
Net debt	(295.2)	(235.8)
Net assets	**826.3**	**766.9**
Adjusted operating profit	282.7	264.9
Adjusted operating profit (excluding IFRS 16)	281.4	264.9
Average capital employed	521.4	482.2
Average capital employed (excluding IFRS 16)	501.0	482.2
Return on capital employed	**54.2%**	**54.9%**
Return on capital employed (excluding IFRS 16)	**56.2%**	**54.9%**

Tangible fixed assets (PPE and IFRS 16 right-of-use-assets) increased by £61.2 million to £292.0 million. Changes in exchange rates reduced fixed assets by £8.3 million, £8.1 million came from the acquisition of Thermocoax and £40.8 million from the adoption of IFRS 16, giving an underlying increase of £20.6 million, or 9%.

Total working capital increased by £12.7 million. The ratio of working capital to sales reduced by 70 bps to 21.3% (2018: 22.0%). On a constant currency basis, excluding acquisitions and disposals, underlying working capital as a percentage of sales improved by 30 bps to 21.5% despite the building of £5 million of Brexit buffer stock and increasing Gestra's inventory to improve customer service levels. Going forward, we would expect a similar percentage of working capital to sales.

Return on capital employed (ROCE)

ROCE measures effective management of fixed assets and working capital relative to the profitability of the business. ROCE decreased to 54.2% (2018: 54.9%), due to the adoption of IFRS 16. At constant currency, excluding acquisitions and disposals and IFRS 16, ROCE increased by 310 bps. ROCE is defined in Note 2.

Return on invested capital (ROIC)

ROIC measures the return on invested capital, both equity and debt, relative to the adjusted operating profit after tax. ROIC fell to 18.7% (2018: 19.3%), due to the acquisition of Thermocoax and the adoption of IFRS 16. At constant currency, excluding acquisitions and disposals and IFRS 16, ROIC increased by 120 bps. ROIC is defined in Note 2 to the Financial Statements.

Post-retirement benefits

The net post-retirement benefit liability under IAS 19 fell to £71.3 million (2018: £85.1 million). Assets rose by £46.8m (11%), reflecting greater than expected returns. Liabilities rose by £33.0 million (6%), largely due to changes in market conditions, which resulted in reductions in the AA corporate bond rates used to discount future cash flows.

The main UK schemes, which constitute 88% of assets, were closed to new members in 2001 but have remained open to future service accrual. These schemes continue to be managed under a dynamic de-risking strategy whereby asset and liability values are monitored on a daily basis by the asset manager and appropriate asset allocation decisions taken as the funding level improves against pre-agreed trigger points. Following actuarial valuations of the three UK schemes, we agreed deficit reduction programmes with the Trustees and additional contributions of £4.0 million were made in 2019. Further contributions at the same rate per annum have been agreed until 2021. Actuarial valuations of the UK schemes will be undertaken in 2020.

Cash flow and treasury

Adjusted cash from operations is a measure of the cash flow generated from our companies over which the local management have control. A reconciliation between this and statutory operating cash flow can be found in Note 2 to the Financial Statements.

Adjusted cash from operations fell by £4.8 million to £238.1 million (2018: £242.9 million) representing 84% cash conversion. If we exclude the capital spend on the new Aflex facility this would rise to 90%.

Movements in working capital are discussed above.

Capital additions increased by £19.0 million. The most significant addition in the year was the £15.7 million spend on the construction of a new purpose-built factory in the UK for Aflex Hose, which will consolidate the existing four locations into a single facility, giving capacity for future growth while increasing efficiencies and providing a dedicated production line for Pharmaceutical products.

Financial Review *continued*

It is estimated that a further £6 million will be spent in 2020 in completing the project.

Looking forward, we would expect capital expenditure in 2020 to be at a similar level of approximately £65 million as we finish the Aflex facility but increase spending on project OPAL, the implementation of a global IT system for the Steam Specialties business. We generate significant cash and our first priority is to reinvest in the business, taking opportunities to generate good returns from increased efficiency, reduced costs and flexibility.

Tax paid in the year increased by £16.8 million to £78.4 million as tax rates rose and the Group grew. Free cash flow, defined in the table below, fell to £154.3 million (2018: £174.6 million) as a result of the increase in capital expenditure and tax.

Dividend payments were £76.3 million, including payments to minorities (2018: £67.3 million) and represent the final dividend for 2018 and the interim dividend for 2019.

There was a cash outflow, including fees, of £137.6 million on the acquisition of Thermocoax, as well as an additional £0.9 million outflow relating to the acquisition of various distribution rights. The net of share purchases and new shares issued for the Group's various employee share schemes gave a cash outflow of £12.5 million (2018: £5.0 million) reflecting the move to acquire shares on the open market rather than issue new equity.

Due to the acquisition of Thermocoax, net debt increased from £235.8 million to £295.2 million at 31st December 2019, an expansion of £59.4 million. This equates to a net debt to EBITDA ratio of 0.9 times (2018: 0.8 times) excluding IFRS 16. EBITDA is defined in Note 2 and the components of net debt are disclosed in Note 24.

The Group's Income Statement and Statement of Financial Position are exposed to movements in a wide range of different currencies. This stems from our direct sales business model, with a large number of local operating units. These currency exposures and risks are managed through a rigorously applied Treasury Policy, typically using centrally managed and approved simple forward contracts to mitigate exposures to known cash flows and avoiding the use of complex derivative transactions. The largest exposures are to the euro, US dollar, Chinese renminbi and Korean won. Whilst currency effects can be significant, the structure of the Group provides some mitigation through our regional manufacturing presence, diverse spread of geographic locations and through the natural hedge of having a high proportion of our overhead costs in the local currencies of our direct sales operating units.

Capital structure

The Board keeps the capital requirements of the Group under regular review, maintaining a strong financial position to protect the business and provide flexibility of funding for growth. The Group earns a high return on capital, which is reflected in strong cash generation over time. Our capital allocation policy remains unchanged. Our first priority is to maximise investment in the business to generate further good returns in the future, aligned with our strategy for growth and targeting improvement in our key performance indicators. Next, we prioritise finding suitable acquisitions that can expand our addressable market through increasing our geographic reach, deepening our market penetration or broadening our product range. Acquisition targets need to exhibit a good strategic fit and meet strict commercial, economic and return on investment criteria. When cash resources significantly exceed expected future requirements, we would look to return capital to shareholders, as evidenced by special dividends declared in respect of 2010, 2012 and 2014. However, in the near term, we will look to reduce our financial leverage prior to considering new returns of capital to shareholders.

Cash flow	**2019 £m**	**2018 £m**
Adjusted operating profit	282.7	264.9
Depreciation and amortisation (excluding IFRS 16)	34.3	32.9
Depreciation of leased assets	11.3	–
Cash payments to pension schemes more than the charge to adjusted operating profit	(5.2)	(4.6)
Equity settled share plans	6.2	5.7
Working capital changes	(21.4)	(22.5)
Repayments of principal under lease liabilities	(11.2)	–
Capital additions (including software and development)	(62.4)	(43.4)
Capital disposals	3.8	9.9
Adjusted cash from operations	**238.1**	**242.9**
Net interest	(5.4)	(6.7)
Income taxes paid	(78.4)	(61.6)
Free cash flow	**154.3**	**174.6**
Net dividends paid	(76.3)	(67.3)
Purchase of employee benefit trust shares/Proceeds from issue of shares	(12.5)	(5.0)
(Acquisitions)/Disposals of subsidiaries (including costs)	(138.5)	48.8
Cash flow for the year	**(73.0)**	**151.1**
Exchange movements	13.6	(13.3)
Opening net debt	(235.8)	(373.6)
Net debt at 31st December (excluding IFRS 16)	**(295.2)**	**(235.8)**
IFRS 16 lease liability	(38.9)	–
Net debt and lease liability at 31st December	**(334.1)**	**(235.8)**

Sustainability Report

> "Through our sustainability strategy we strive for continuous improvement across our 10 material sustainability topics, considering the impact of our business operations on the environment and key stakeholder groups, to support the long-term success and sustainability of the Company."

Ian Farnworth
Group Environmental, Health and Safety Director

Long-term focus

We embed long-term thinking and action across our business operations and in our interactions with our stakeholders, in order to create sustainable value for all our stakeholders as we engineer a more efficient, safer and sustainable world.

Membership, engagement and reporting

In 2019 our Group Sustainability Committee comprised: Ian Farnworth (Steam Supply Chain and Group EHS Director); Sheldon Banks (Divisional Director, Spirax Sarco Americas); Sean Clay (Divisional Director, Spirax Sarco EMEA); James Wright (Watson-Marlow Supply Chain Director); and Mark Wyatt (Group EHS Executive).

The Sustainability Committee engages a wide range of senior managers, project leaders and employees as part of its responsibility to oversee strategy implementation and review progress against strategic objectives. The Committee meets regularly throughout the year and receives presentations from project leaders at each session.

Progress against the Group's sustainability objectives is reported to the Group Chief Executive, Group Executive Committee and Board of Directors.

Managing sustainability

We have a well-defined management structure to help us achieve our sustainability objectives.

Group Chief Executive
Responsible for the Group sustainability strategy

Supported by

Board of Directors

Sustainability Committee
Senior Managers (Steam Supply Chain and Group EHS Director; Divisional Director Spirax Sarco Americas; Divisional Director Spirax Sarco EMEA; WMFTG Supply Chain Director; Group EHS Executive) oversee strategy implementation and review progress against strategic objectives

Sustainability strategy sponsors
Senior managers allocated to each sustainability objective

Divisional Directors, Regional and General Managers
Ensure the Group's sustainability policies are upheld and implemented by our operating units

Sustainability strategy project leaders and teams
Establish strategic priorities, with sponsors, and oversee strategic implementation

Employees and organised employee groups
Oversee, record and report on strategic implementation and performance within their local workplaces

Sustainability Report *continued*

Progress in 2019

Key areas of focus for 2019 were: increasing our employee's knowledge and understanding of sustainability, through the roll-out of the "Group Essentials" training programme; the continued adoption and integration of recent acquisitions into the Group's sustainability programmes; and progress against the Group's sustainability targets. We are pleased to have achieved progress in our areas of focus during 2019.

During 2019 we translated the course materials of our Group Essentials training programme into 15 languages and rolled these out across the Group. To date, over 5,300 employees have completed the programme's anti-bribery and corruption (ABC) training and 2,800 have completed all courses. Both Gestra and Chromalox have continued their adoption and implementation of the Sustainability Strategy and we made progress against most of our sustainability targets, which are outlined on page 61.

Focus for 2020

- Increase the number of employees who have completed the Group Essentials programme.
- Consider including the adoption of Group Essentials as an area of review within the Group's internal audit programme.
- Continue the integration of recent acquisition, Thermocoax, into the Group's sustainability programmes.
- Make progress against the Group's sustainability targets.

FTSE4Good

Spirax-Sarco Engineering plc is a constituent of the FTSE4Good UK Index

Non-financial information statement

This Annual Report contains the information required to comply with the Companies, Partnerships and Groups (and Non-Financial Reporting) Regulations 2016, as contained in sections 414CA and 414CB of the Companies Act 2006. The table below provides key references to information that, taken together, comprises the Non-Financial Information Statement for 2019.*

Reporting requirement	Group Policies that guide our approach	Information and risk management, with page references
Environmental matters	• Group Environmental, Health, Safety, Energy and Sustainability Policy • Group Management Code • Supplier Sustainability Code	Sustainability Report, pages 67-70 Principal risks, pages 21-22 and 99 Our business model, pages 8-17 Section 172 Statement, pages 80-81 Company purpose, page 1
Employees	• Group Diversity and Inclusion Policy • Group Management Code • Group Human Rights Policy • Group Environmental, Health, Safety, Energy and Sustainability Policy	Sustainability Report, pages 62-64 Our business model, pages 8-11 Principal risks, page 24 Employee Engagement Committee Report, pages 82-84 Section 172 Statement, page 80-81 Company purpose, page 1
Social matters	• Group Human Rights Policy • Group Charitable Donations Policy • Group Employee Volunteering Policy • Supplier Sustainability Code	Sustainability Report, pages 64-65 and 71 Our business model, page 8-11 Strategic Review, page 40 Section 172 Statement, page 80-81 Company purpose, page 1
Respect for human rights	• Group Human Rights Policy • Group Sanctions, Embargoes and Restrictions Policy • Supplier Sustainability Code	Sustainability Report, pages 64-65 Principal risks, page 24
Anti-corruption and anti-bribery matters	• Group Anti-Bribery and Corruption Policy • Group Gifts, Entertainment and Hospitality Policy • Group Competition Law Compliance Policy • Group Sanctions, Embargoes and Restrictions Policy • Group Whistle-Blowing Policy • Supplier Sustainability Code	Sustainability Report, page 64 Principal risks, page 24 Risk Management Committee Report, page 99
Description of the business model		Our business model, pages 8-17
Description of the principal risks in relation to the above matters, including business relationships, products and services likely to affect those areas of risk, and how the company manages the risks		Risk management and principal risks, pages 20-25 Risk Management Committee Report, pages 98-101
Non-financial key performance indicators		Sustainability Report, pages 62-71 Key Performance Indicators, page 27

* The policies listed above can be found on our website: www.spiraxsarcoengineering.com/our-approach/corporate-governance/governance-documents. Compliance with our policies is monitored through the implementation of our Sustainability Strategy and, locally, by our General Managers.

Our sustainability vision:
To engineer a more sustainable future.

Our sustainability mission:
We will operate sustainably through responsibly managing our business for on-going financial success; operating in accordance with laws and regulations; managing our social and environmental impacts; acting ethically; and managing our customer and supplier relationships, to improve the sustainability of their operations.

Our sustainability objectives:
We commit to engineering a sustainable future by focusing on five core areas, setting objectives and targets in each.

Sustainability overview 2019

Sustainability area	Material sustainability topic	Objective	Target	Further reading
Our workplaces	Health & Safety	To achieve Health and Safety (H&S) excellence through engagement, empowerment and fostering good behaviours while targeting zero accidents.	Zero accidents	Page 62
	Employment practices	To promote diversity and equality through employment practices that are free from discrimination and in accordance with international human rights principles.	33% of women on our Board, as opportunities arise	Page 63
	Ethical business practices	To act in accordance with our Values, upholding a zero tolerance approach to bribery and corruption.	Zero incidents of bribery and corruption	Page 64
	People development	To invest in developing the knowledge and skills of our people.	Increase the impact of our technical and leadership training offering	Page 64
Our supply chain	End-to-end supply chain	To focus on continuous improvement in our supply chain with particular emphasis on sustainability.	84% of phase 3 supplies to have signed our supplier sustainability code by the end of 2019	Page 65
	Product responsibility	To incorporate sustainability factors into our product design process, including energy efficiency, emissions, serviceability, recyclability and the availability of compliant and ethically sourced materials.	Continuing compliance with all applicable EHS standards, while meeting customer expectations of performance and cost	Page 66
Our environment	Water and waste	To limit the environmental impacts of our operations through reducing water use and minimising and managing effluent and waste.	To reduce waste intensity by 10% and water intensity by 5% over three years to 2021	Page 67
	Energy and carbon	To minimise the environmental impacts of our operations by managing energy consumption with the aim of reducing carbon emissions.	To reduce our energy intensity by 10% over three years to 2021, with an accompanying reduction in carbon emissions	Pages 68-69
Our customers	Customers	To provide products and services that improve the sustainability of our customers' operations through helping them reduce their environmental impacts, improve plant efficiency and productivity and maintain product quality.	n/a	Page 70
Our communities	Community engagement	To engage positively with the communities in which we operate and to offer financial support to approved charities.	All Group companies to participate in at least one community engagement activity annually by 2020	Page 71

Sustainability Report *continued*

Our workplaces
Health and Safety

Overview

We strive for Health and Safety (H&S) excellence and target zero accidents. As well as having robust management systems and safety controls to prevent accidents, we promote a strong H&S culture, with safety being one of our six Company Values. The Group Chief Executive and Board of Directors oversee our H&S programmes and performance, with H&S a standing agenda item at every Board meeting. All Group companies are expected to operate to the highest safety standards.

2019 performance and actions

Lagging indicators: lost time injury rate

During 2019, our over three-day lost time injury rate per 1,000 employees improved to 3.6 per 1,000 employees (2018: 4.9), a reduction from 36 injuries in 2018 to 28 in 2019. We also saw an improvement in our one to three-day lost time injury rate, which fell to 1.4 per 1,000 employees in 2019 (2018: 2.2), a reduction from 16 injuries in 2018 to 11 in 2019.

The 2018 increase in the over three-day lost time injury rate to 4.9 (2017: 4.6) was due to the full-year effect of the acquisition of Chromalox in 2017, which had less mature H&S practices than the rest of the Group. Since acquisition we have rolled out the Group's H&S programmes to Chromalox, invested in the business to reduce H&S risk and focused on increasing the H&S culture of the business. As a result, Chromalox's H&S performance improved in 2019.

Leading indicators: safety concerns and near miss reporting

Reflecting an increasingly well-embedded safety culture, the number of safety concerns raised by employees increased to 2,291 per 1,000 employees (2018: 1,954). The number of near misses reported also increased to 298 per 1,000 employees (2018: 195). All safety concerns and near misses were assessed and corrective action taken.

Leading indicators: safety training

During 2019, 134,341 H&S training units were delivered across the Group (2018: 87,671) and we established a new Group standard Behavioural Based Safety (BBS) programme. We delivered BBS training to our senior executive team and a number of General Managers. 14 EHS leaders completed a three day training event in the UK and at our global Group EHS conference 17 delegates received BBS training, to enable them to train our employees and drive a further improvement in our safety culture within the business. We established a quarterly safety competition in the steam business. We started the year with a safety message to all employees, to increase awareness of risk, empower employees to "stop the job" if they perceive any risk to themselves or their colleagues and reiterating the importance of reporting safety concerns and near misses.

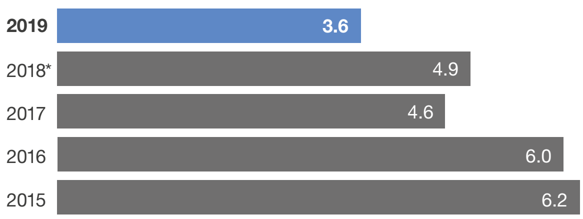
Safety management

During 2019, we increased the number of full-time qualified EHS professionals employed across the Group to 48 (2018: 39), improved the internal EHS audit scores at our steam supply sites and developed an EHS internal audit framework for our steam sales companies. We developed a Group Working at Height Policy and training, rolled out a Group Personal Protective Equipment standard and prepared a H&S integration plan for Thermocoax. We completed 1,978 EHS audits (2018: 2,446) and 2,428 inspections (2018: 1,599). 17 of our 32 manufacturing sites have OHSAS 18001 certification (2018: 15).

Notable achievements

Watson-Marlow MasoSine, Germany, celebrated 20 years without a lost-time accident and, for the second consecutive year, Spirax Sarco Ltd, UK, achieved a Royal Society for the Prevention of Accidents Gold award in recognition of the company's strong H&S management systems and culture.

Over three-day lost time injury rate per 1,000 employees



* 2018 rate increased due to the full-year effect of the Chromalox acquisition

One to three-day lost time injury rate per 1,000 employees

* 2018 rate increased due to the full-year effect of the Chromalox acquisition

Near misses and employee H&S concerns raised per 1,000 employees

Reporting metrics

We have refreshed our external reporting metrics to reflect our more challenging internal metrics. This has expanded the scope of the data from work-related lost time accidents – as defined by the UK's Health and Safety Executive's Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 2013 (RIDDOR) – to all lost time injuries experienced by our employees while working, regardless of cause. Most notably, injuries caused by car accidents, which were excluded under the RIDDOR definition, are now included in the data. We have also chosen to report one to three-day lost time injuries, reflecting the increasing maturity of our Health and Safety programmes, as well as two important leading indicators.

Focus for 2020

- Implement our BBS programme in Watson-Marlow UK.
- Roll out the EHS internal audit framework to sales companies in the Steam Specialties business.
- Align Thermocoax to Group EHS standards/programmes
- Establish new Group First Aid and Manual Handling Policies and increase the number of trained first aiders.

Our workplaces *continued*
Our people

Overview

Our Values, in particular Respect and Integrity, underpin our HR policies and employment practices. We are committed to creating a culture in which our employees feel safe to challenge and are encouraged to do so. We have robust HR policies and systems that support us in protecting the rights of our employees and ensure their fair and equitable treatment.

Employee engagement

We communicate with employees to ensure that they have an understanding of the operations and performance of their company locally and the Group. Every two years we conduct an employee survey to provide a confidential forum for all employees globally to tell us how they feel about working for Spirax-Sarco Engineering. Following each employee survey we undertake extensive work to put local actions plans in place to demonstrate a commitment to acting on the feedback from our employees. We also have well-established grievance and whistle-blowing procedures to enable employees to confidentially raise concerns.

The creation, in 2019, of the Employee Engagement Committee has achieved greater Board engagement with the workforce, enabling the Board to gauge and monitor our culture and to ensure it is both embedded and retained in our Company. The Employee Engagement Committee Report can be found on pages 82 to 84.

Workforce diversity

We believe that diversity of culture, gender, age, experience and expertise enhance our ability to operate effectively and ethically, whilst increasing the sustainability of our business. Our recruitment policies ensure decisions are fair and made without bias, and our remuneration policies are designed to recognise skills, experience and achievement.

We seek to increase diversity at all levels of the organisation, with a particular focus on gender diversity. Our Diversity and Inclusion Policy outlines, amongst other things, our commitment to provide equality, fairness and respect for all employees, regardless of background; to oppose all forms of unlawful discrimination; and to operate in accordance with the Equality Act 2010, avoiding discriminating on the basis of any protected characteristics.

2019 Performance and actions

We remain committed to increasing gender diversity across the business and contributed to the FTSE Women Leaders (Hampton-Alexander) Review. During 2019, we appointed Caroline Johnstone as a Non-Executive Director, increasing female representation on our Board from 22% to 30%. At the time of publication, following the retirement of Jay Whalen on 31st December 2019, female Board membership is 33%. At the end of 2019, 20% of the Executive Committee and their Direct Reports were female, an increase from 18% last year.

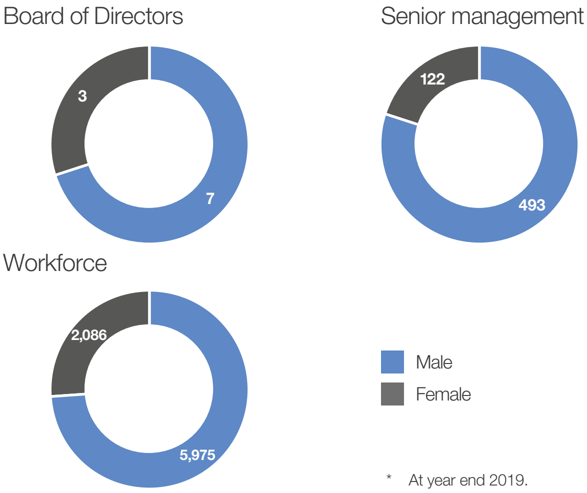
We formalised our commitment to ensuring more diverse shortlists for external recruitment and have asked the Human Resources managers of our operating companies not to accept shortlists from recruiters that do not include at least one strong female candidate.

2019 was the first full year of our Executive Mentoring Programme, designed to accelerate the development of high-potential women and strengthen the pipeline of female talent. Across the Group, 20 of our women leaders were paired with an executive mentor for one year. Notable success achieved by these women during the year include: Teeny Parwongphol, who was promoted from General Manager of Spirax Sarco Thailand to Regional General Manager of Thailand and South East Asia Developing Markets; Jo Weekes, who was promoted from General Manager of Watson-Marlow Ireland to Regional Sales Manager – Northern Europe; Dilsad Baysan, who was promoted from National Sales Manager in Spirax Sarco Turkey to General Manager of Spirax Sarco Turkey; Natalia Voropaeva, who was promoted from Spirax Sarco Central and Eastern Europe Regional Business Development Manager to Steam Specialties EMEA Business Development Manager, and Sarah Peers, Head of Group Corporate Communications, who received a prestigious WeQual Award, which recognises leadership potential in women one level below the Executive Committee.

In December 2019, we commenced a pilot to establish a Group-wide Women's Network. Approximately 30 women from different levels of the organisation, and across a variety of roles, were invited to participate in the pilot. Development of the Women's Network will continue in 2020.

During 2019, our workforce gender diversity improved across the workforce as a whole with 26% of our employees being female and 74% male (2018: 22% female, 78% male). Disappointingly, senior manager diversity declined slightly with 20% female and 80% male (2018: 21% female, 79% male). We recognise that there is still more to do to address gender imbalance and will continue to implement further programmes and initiatives in 2020.

Gender diversity 2019*



* At year end 2019.

Focus for 2020

- Inclusive leadership training to be delivered to senior managers across the Group.
- Starting salary analysis to be undertaken to further limit the gender pay gap throughout the business.
- Increased focus on internal communications to continuously improve employee engagement and collaboration across the Group.

Sustainability Report *continued*

Our workplaces *continued*
Ethical business practices

Overview
With the implementation of our refreshed Company Values across the Group in 2018, and on-going training and communication regarding sustainable and ethical business practices, we continue to ensure that we are creating and maintaining a culture of ethical behaviour throughout our global operations.

2019 Performance and actions
Continued expansion of ABC training
In keeping with the growing employee base and geographic reach of the Group's businesses, in 2019 we significantly expanded the scope of our internal anti-bribery and corruption (ABC) training. This increased scope, which commenced in late 2018, was completed in 2019 with the final roll-out of the new course to every employee with an email address, including our new colleagues within the Thermocoax business. More than 5,300 employees (at all levels within the business) have now completed the course, three times the number of employees who had completed it at the end of 2018.

The new course, which is part of a broader "Group Essentials" training programme, is available in 16 languages, ensuring that our high expectations for ethical business practices are understood across all our Group companies worldwide.

Whistle-blowing
Every employee has access to a local, independent, third-party whistle-blowing hotline, hosted by Safecall, where they can speak to an external party in their own language to raise concerns about potentially unethical behaviour within the business. Following the completion of the Thermocoax acquisition in May 2019, materials advertising the Safecall hotline were made available at each Thermocoax site. The internal audit function confirms that the Safecall information is appropriately displayed at every Group site.

In 2019, 13 calls were made to the Group's Safecall hotline. Each of these were investigated by senior management and follow-up actions taken, where necessary. Summaries of all calls and related actions are reviewed by the Audit Committee and the Board.

Company Values
We continue to embed our Company Values (customer focus, excellence, respect, integrity, safety and collaboration) through a number of initiatives to ensure they are constantly visible in our everyday work. For example, during 2019 Chromalox's HR team ran a Values in Action campaign, which publicly recognised 35 employees for "living the Values" in their daily work.

Focus for 2020
- Update content of ABC training to ensure it remains relevant and current.
- Continue to monitor compliance with internal whistle-blowing hotline publication requirements, via internal audit.

Our workplaces *continued*
People development

Overview
People development is an essential enabler of business sustainability. As we invest in our people, we are better able to serve our customers and engineer sustainable value for all our stakeholders.

2019 Performance and actions
During 2019 we invested in training and development initiatives across the Group, expanded our technical development programmes and rolled out Group-wide induction training.

Graduate development
We recruited 23 graduates onto our Global Graduate Development Programme, in 11 countries, hiring graduates in Korea, Singapore, India and Brazil for the first time. The total number of graduates currently on the two-year programme is 42, across 14 countries, with slightly over 50% being female. We held our first global graduate training conference in June, attended by all current graduates and some past-programme participants, and launched an online learning portal designed specifically for our graduates. The success of the Graduate Programme in accelerating career progression can be seen in the promotion of a former Graduate Programme participant, Lukas Grech (2013-15), to the position of General Manager of New Zealand, effective from 1st January 2020.

Leadership development
We expanded our LEAP leadership development programme, running three cohorts: one in EMEA, one in the Americas and one in Asia Pacific. The programme is delivering good results for the business, which was recognised when we won the "Best Commercial Programme" in the Training Journal Awards 2019. We actively promote diverse participation in LEAP, with the 88 attendees, to date, drawn from across all our Group businesses, from 28 countries, and with 27% of participants being women.

Watson-Marlow also continued to invest in their strategy-focused ASPIRE programme, with 31 leaders attending from across the business in 2019. A number of our senior leaders attended Executive education programmes at the London Business School, Harvard Business School, the Centre for Creative Leadership and Ashridge Business School.

Sales Management capability
During the second half of the year we launched an initiative to develop our Sales Management capability. We developed a Sales Management framework, as well as a competency assessment. Work has commenced to build a development programme for Sales Managers, which will be launched in 2020. Using the framework as a foundation, work has commenced on building a development programme for Sales Managers, which will be launched in 2020.

Focus for 2020
- Strengthen our Graduate Development programme.
- Continue to roll out our Leadership Development
- programmes.
- Launch a Sales Management development programme.

Our supply chain
End-to-end supply chain

Overview
We operate 32 manufacturing sites globally. By manufacturing close to the point of sale we shorten lead times, manufacture to local specifications, reduce transportation requirements for finished goods, provide local employment, improve customer service and strengthen our competitive advantage. We continuously seek to improve the sustainability of our end-to-end supply chain and focus on sourcing materials ethically, manufacturing responsibly and distributing efficiently, with the aim of providing high levels of customer service while managing our social and environmental impacts.

Supplier Sustainability Code
Our Supplier Sustainability Code (Code) is central to our commitment to ethical and sustainable sourcing. The Code outlines the expectations that we have for suppliers and enables us to embed sustainability into our purchasing processes. The requirements of the Code fall within four broad categories:

- **Ethics:** suppliers are required to comply with all applicable trade laws and regulations and commit to international ethical business conventions, including compliance with competition laws, the rejection of bribery and corruption, a commitment to trace the origin of materials, the maintenance of records to demonstrate compliance with regulations, and the use of anonymous grievance and whistle-blowing mechanisms.
- **Human Rights:** suppliers are expected to comply with international Human Rights conventions and, amongst other requirements, prohibit the use of child labour, eliminate discrimination in their employment practices, comply with laws regulating wages, working hours and working conditions, allow their employees freedom of association, and comply with the UK Modern Slavery Act and the US Dodd-Frank Act.
- **Health & Safety (H&S):** suppliers must operate a safe working environment, with a suitable H&S policy and management system, and the products produced by suppliers must comply with all applicable environmental, health and safety regulations.
- **Environmental Sustainability:** suppliers should implement initiatives that contribute to the preservation of the environment and mitigate their impact on natural resources, complying with all legal environmental requirements and demonstrate continuous improvement in environmental performance.

2019 Performance and actions

Supplier Sustainability Code roll-out
During 2016 and 2017 we commenced the Phase 1 and 2 roll-outs of the Code to direct suppliers of our Spirax Sarco and Watson-Marlow manufacturing and sales companies. By the end of 2019, 99% of Phase 1 and 2 suppliers had signed the Code (2018: 97%). In 2018, we commenced a Phase 3 roll-out of the Code to suppliers of recently acquired businesses Hiter Controls, Aflex Hose, Gestra and Chromalox. By the end of 2018, just over 50% of suppliers had signed the Code. Our 2019 target was for 84% of Phase 3 suppliers to have signed the Code, we achieved our target. We continue to work with suppliers on a continuous improvement basis to further raise standards within our supply chain. Our new combined Phase 1, 2 and 3 target is for 97% of suppliers to have signed the Code by the end of 2020.

Having acquired Thermocoax in 2019, we commenced a Phase 4 roll-out of the Code. Our Phase 4 target is for over 90% of suppliers to have signed the Code by the end of 2020.

During 2019 we exited seven suppliers who would not sign the Code, or whose standards fell short of those we require.

Supply chain sustainability initiative example
During 2019, Chromalox undertook a number of initiatives to improve the sustainability of its supply chain. One key activity was a detailed supplier analysis, using a range of categories. Following the analysis, several strategically important suppliers were identified as being in need of improvement and strategies were designed and deployed to work with those suppliers on a continuous improvement basis. Another project was undertaken to improve transportation efficiency for goods to and from the company's manufacturing plant in Mexico. As a result of the project, efficiency was increased, overall transportation costs were reduced and a number of new jobs were created for local employees in Mexico.

Product Lifecycle Management
Within the Steam Specialties business, we are benefiting from our enhanced Product Lifecycle Management (PLM) tool and the data that it provides. It is enabling us to more effectively monitor supplier quality, allowing us to identify and rectify supplier quality issues quickly, reducing the need for re-working parts as well as reducing scrap.

For example, during 2019 Spirax Sarco Mexico utilised PLM to identify its three lowest performing suppliers, by product quality. It found that one supplier accounted for 76% of rejected parts. Of those rejected parts, 81% related to just one sand-cast product, with 99% of the rejections due to small holes in the metal. The supplier and our Quality Assurance team identified a problem with the design of the casting that was causing small gas bubbles to be trapped. By modifying the template used to cast the part, the molten metal was able to flow more freely, preventing gas bubbles from being trapped, which resolved the issue.

Modern Slavery Statement
Spirax-Sarco Engineering plc prides itself on setting high standards for sustainable and ethical business practices in its operations worldwide. Included in those high standards is a commitment to respecting and protecting the human rights of all individuals and combating all forms of modern slavery or human trafficking in all parts of our business organisation, including our supply chain. We are continuously developing and improving our business practices and policies in line with that commitment. We support a strong, collective stand to identify, prevent and raise awareness of modern slavery and human trafficking practices in all parts of the world.

Further reading
Read our Modern Slavery Statement in full or view our Supplier Sustainability Code on our website.

www.spiraxsarcoengineering.com/sustainability/supply-chain

Focus for 2020
- Achieve progress against our targets and exit any suppliers found to fall short of required standards.
- Review our method for monitoring supplier sustainability.

Sustainability Report *continued*

Our supply chain *continued*
Product responsibility

Overview
To achieve our Company purpose of engineering a more efficient, safer and sustainable world, we design, manufacture and supply an industry-leading range of quality products to customers that are reliable, safe to use, ethically-produced and environmentally sound throughout their lifecycle.

Across five principal Research and Development (R&D) centres, in the UK (Spirax Sarco and Watson-Marlow), Germany (Gestra), the USA (Chromalox) and France (Thermocoax), we develop new products to meet our customers' changing needs, and enhance existing products. Extensive on-site analysis, test and validation capabilities, as well as the use of third-party certification, ensure that our customers can buy from us with confidence.

2019 Performance and actions
Management changes
Our product responsibility topic came under new day-to-day management, following the development of new Business Development and R&D organisational structures within the Steam Specialties business. As a result of the changes, limited progress was made against our 2019 objectives as the new project manager focused on refining the topic's overall objectives.

Two broad areas of focus going forward are, firstly, to build on the Eco-Design Policy that we already have to better incorporate sustainability factors into our product design and lifecycle process and, secondly, to improve the internal mechanisms used for measuring, monitoring and reporting on product sustainability.

Knowledge management
We continued to develop the use of quality data, including manufacturing reworking analysis, to evaluate the new product development process, with the aim of reducing energy use and scrappage rates during manufacturing. This data is being continuously fed back into the development process to ensure that lessons are learned and changes implemented to maximise manufacturing efficiency for new products that we develop.

Product development
Across the Group we continued to develop new products that will help our customers to improve the sustainability of their industrial processes. More information about some of the new products launched by our businesses in 2019 can be found on page 38.

Focus for 2020
- Complete a Group-wide review of R&D design practices and principles and facilitate the sharing of best practice.
- Improve disclosure of sustainability information to customers.

Eco-design in action: Clean Steam Generator
Energy efficiency is at the heart of the design of Spirax Sarco's new Clean Steam Generator (CSG), for the Healthcare industry, launched in 2019. Design features include variable speed pumps to reduce electricity consumption, a compact heat exchanger to minimise heat loss, predictive maintenance algorithms to ensure peak efficiency is maintained throughout the life of the product and additional heat recovery options available to ensure maximum efficiency within a customer's application.

All materials used within the CSG are responsibly sourced, and maintainability is central to the design, with all product components repairable or replaceable, to extend the life of the CSG.

During the CSG's development phase, the engineering team undertook an environmental impact assessment and used the results of the assessment to inform the development of the product. During the validation phase we undertook extensive testing and optimisation of the design in our world class R&D facility in Cheltenham, UK, to ensure optimum performance, long-term reliability, compliance with clean steam standards and product safety (see images below).

The CSG is being manufactured in three global locations: Mexico, Italy and China, to reduce transportation requirements, maximise local sourcing of materials, and ensure compliance with regulatory requirements in the three regions, while supporting economies of scale.

Further reading
To find out more about the Clean Steam Generator, see the strategy in action case study.

See page 35

Our environment
Water and waste

Overview

Fresh water is a scarce resource in many areas of the world. As a result, we aim to use water efficiently across all our global operations, monitoring use, controlling leakage, reducing effluent and acting to reduce total consumption. Through the products, solutions and services we supply to customers, we also help them to do the same.

Wherever we operate we ensure full compliance with waste regulations. For example, waste is segregated and stored safely, with certified waste vendors appointed to handle and responsibly dispose of waste. Any hazardous waste, such as paint residues, chemical waste from cleaning and degreasing processes, electronic waste and printer toner cartridges, are removed from our sites by licenced contractors who responsibly recover or dispose of waste. We proactively seek to reduce waste generation across our global operations and across our sites we utilise monitoring and management systems to ensure compliance with environmental regulations, such as the control of pollution and air emissions.

2019 Performance and actions

Water use

In 2019, our global operations (excluding Thermocoax) used 212,027m³ of water (2018: 211,540m³), a 0.2% increase. On an intensity basis, water use fell by 2% to 174.6m³ per £m of inflation adjusted sales (2018: 178.8m³), demonstrating progress towards our 5% reduction target, 2019- 2021.

Total water use m³

Water intensity m³ of water per £m of inflation adjusted sales at constant currency

Water management

During 2019, we focused on improving the quality of our global water consumption data, utilising the global sustainability accounting software that we purchased and rolled out in 2018. We now have a complete data set from across the Group (excluding Thermocoax) in 2019.

Across many of our sites we made good progress in reducing water use, which is partially masked in the reported results by the more complete data set in 2019. Examples of activities undertaken in 2019 to more effectively manage water use include the installation of automated remote water metering with internet reporting across our sites in Cheltenham, UK and participation in a district waste water recovery project that uses grey water for garden irrigation by Spirax Sarco India.

Waste

In 2019, our global operations (excluding Thermocoax) generated 5,389 tonnes of waste (2018: 5,843), an 8% reduction over the prior year. On an intensity basis, waste generation fell by 10% from 4.9 tonnes per £m of inflation adjusted turnover in 2018 to 4.4 tonnes in 2019. The 2018 data has been restated to correct errors that resulted in the overstating of waste generation at two sites. The strong progress in 2019 saw us achieve our three year waste intensity reduction target. Our target will remain in place for 2020 to ensure that the sites that have met the 10% reduction target maintain it and the rest continue to make progress towards it.

Total waste generation tonnes

Waste intensity tonnes of waste per £m of inflation adjusted sales at constant currency

In addition to reducing the total amount of waste generated, we reduced the amount of waste sent to landfill in 2019 by increasing the volume of waste recycled and improving the recovery of materials for reuse. During 2019, globally, 79% of our waste was recovered, recycled or used to generate energy.

Waste management

During 2019, we improved monitoring and reporting of waste data, especially in our operations outside of Europe. In a small number of locations we changed our waste contractors to suppliers that are able to provide data with greater accuracy.

Examples of waste reduction initiatives undertaken in 2019 include, improvements to Spirax Sarco Argentina's waste metals recovery programme; improved waste segregation and recycling at Chromalox Tennessee; new waste water storage containers in Chromalox France and Utah; and the introduction of a new waste contractor in Watson-Marlow Alitea (Sweden) that allows Alitea to donate money raised by recycling to charity. Spirax Sarco Argentina also joined an industrial sustainability forum in 2019, with 10 other industrial companies, which aims to facilitate learning and the sharing of best practice on key environmental sustainability topics such as water, waste and energy management.

Focus for 2020

- Implement locally-identified initiatives to reduce water use, such as improved monitoring and metering, water-efficient fixings and promoting behavioural change.
- Include Thermocoax's water and waste data in the Group results.
- Increase the re-use of packaging materials and identify alternatives for non-recyclable materials.

Sustainability Report *continued*

Our environment *continued*

Energy and carbon

Overview

Climate change is a global challenge and an emerging risk to businesses, people and the environment across the world. We have a role to play in limiting warming by improving our energy management, reducing our carbon emissions and helping our customers to do the same.

2019 Performance and actions

Greenhouse gas emissions performance

Our CO_2e 2019 emissions data have been audited by TÜV UK Ltd, which has provided limited assurance as follows:

"TÜV UK Ltd is acting as the independent verifier of the carbon footprint of Spirax Sarco. Based on our checks and reviews, taking into consideration a materiality level of 5% and a limited level of assurance we have found no evidence suggesting that the calculated greenhouse gas emissions are materially misstated and, hence, they are not an unreasonable assertion of the greenhouse gas-related data and information. Further, no facts became evident, which led us to the assumption that the calculation was not carried out in accordance with the applied international norm for the quantification, monitoring and reporting of GHG emissions (GHG-Protocol). The emissions for the reporting period 1st January 2019 to 31st December 2019 (inclusive) are: 23,878 tCO_2e for Scope 1 and 19,497 tCO_2e for Scope 2.

TÜV UK Ltd, London, February 2020"

The increase in CO_2e emissions reflects the growth of our business and an increased manufacturing output, set against emission reductions elsewhere across the Group. In 2019, 24% of our CO_2e emissions were generated in the UK. On an intensity basis, our emissions increased by 1% in 2019. Since 2013, our benchmark year, we have reduced our emissions intensity by 20%.

Energy performance

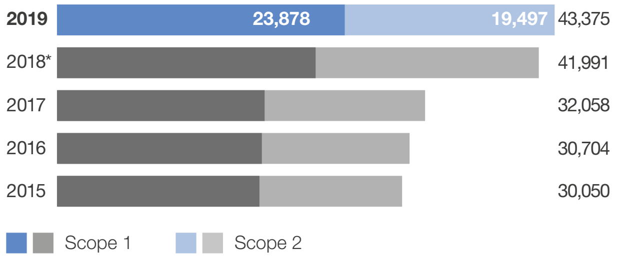
Group energy use increased by 6% in 2019, for the reasons outlined above, with a 4% increase on an intensity basis. We were disappointed not to have made progress against our energy and CO_2e emissions targets in 2019 and will look to return our energy and emissions intensity to a positive downward trend in 2020.

Energy management

In 2019 we were pleased to achieve a Carbon Disclosure Project score of B, placing us in the "Management" band of global companies, demonstrating that we are taking coordinated action on climate change.

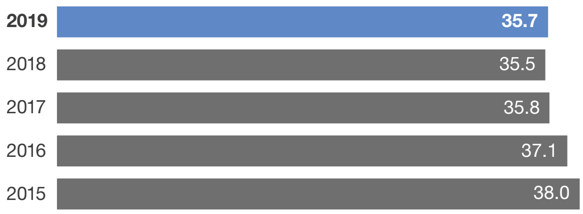
All Group companies are responsible for identifying energy saving opportunities through EHS audits and "treasure hunts", and implementing them locally. A wide range of initiatives were undertaken during 2019. For example, Watson-Marlow Bredel (Netherlands) replaced the roof in its assembly hall and installed a more effective insulation system; Chromalox China, converted to LED lighting; Chromalox Tennessee, Spirax Sarco France and Spirax Sarco USA, upgraded their compressed air systems to increase energy efficiency; Spirax Sarco UK optimised efficiency of its Combined Heat and Power plant, with 95% of electricity now self-generated on site; Spirax Sarco China, Spirax Sarco USA and Spirax Sarco Argentina replaced or improved their steam boilers; and Spirax Sarco USA became our seventh company to be certified to energy management standard ISO 50001.

Total Group CO_2e emissions (scope 1 and 2) tonnes

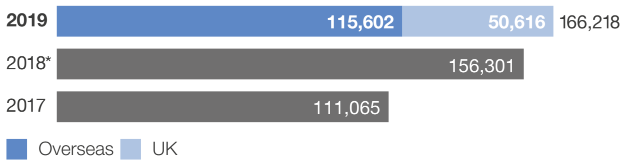


* The increase was due to the acquisition of Gestra and Chromalox, whose emissions were included for the first time in 2018.

CO_2e intensity tonnes per £m of inflation adjusted sales, at constant currency



Group energy consumption MWh



* The increase was due to the acquisition of Gestra and Chromalox, whose energy use was included for the first time in 2018.

Energy intensity MWh per £m of inflation adjusted sales, at constant currency

Methodology

We employ an "operational control" definition to outline our carbon footprint boundary. Included within that boundary are manufacturing facilities, administrative and sales offices where we have authority to implement our operating policies. For each of these entities we have measured and reported on our relevant Scope 1 and Scope 2 emissions. (Scope 1 refers to direct emissions from sources owned or controlled by the Company; Scope 2 refers to indirect emissions resulting from the purchase of energy generated off site, including electricity.) Excluded from our footprint boundary are emission sources from operating companies established or acquired during 2019. We have used the GHG Protocol Corporate Accounting and Reporting Standard and emission factors from the UK Government's GHG Conversion Factors for Company Reporting 2018 and 2019, data from The International Energy Agency 2018 and 2019, ISO 140064-1, and regionally specific Environmental Reporting Guidelines to calculate our total CO_2e emissions figures. In the interest of transparency and accuracy our total CO_2e emissions for 2018 have been re-stated from 40,009 tonnes to 41,991 tonnes CO_2e, following checks and revisions of reported fuel use, final invoicing and adjustments of estimates. This adjustment has also resulted in the restatement of our total energy use for 2018 from 155,947 MWh to 156,301 MWh. Our carbon and energy intensity metrics have, as a result, been recalculated for 2018.

Focus for 2020

- Develop a comprehensive, long-term strategic carbon roadmap.
- Develop and implement a Group Transportation Policy to reduce CO_2e emissions.
- Continue to implement energy saving initiatives.

Task Force on Climate-related Financial Disclosures (TCFD)

Governance

Describe the Board's oversight of climate-related risks and opportunities	• Our Risk Management Committee, a principal committee of the Board, oversees the management of our climate-related risks and opportunities. Day-to-day management of the Group's climate change mitigation activities is overseen by the Group Sustainability Committee, utilising the management structure outlined on page 59.
Describe management's role in assessing and managing climate related risks and opportunities	• The Board has collective responsibility for managing climate-related risks and opportunities. In particular, Neil Daws, Executive Director, supported by Andy Robson, Group General Counsel and Company Secretary, has specific delegated responsibility for overseeing climate related risks, mitigation activities and performance.

Strategy

Describe the climate-related risks and opportunities the organisation has identified over the short, medium and long-term	• **Short-term (0-5 years)**: customer carbon emission targets and increasing availability of green electricity could encourage a move towards electric heating solutions that have zero emissions at point of use. While an opportunity for the Electric Thermal Solutions business, some sales could be at risk in the Steam Specialties business for applications where steam or electric heating solutions are equally viable. • **Medium-term (5-10 years)**: growth in electric vehicles could cause a decline in the oil and gas industry, particularly refinery demand. • **Long-term (10+ years)**: large oil, coal and gas fired boilers could be replaced by banks of small electric generators reducing demand for boiler controls and boiler-house products. • Increasing frequency of climate related extreme weather events.
Describe the impact of climate-related risks and opportunities on the organisation's businesses, strategy and financial planning	• In the short to medium-term, growing awareness of climate change and customer sustainability targets will continue to provide an impetus for business growth as we provide products, services and solutions that increase efficiency and reduce customers' energy use and carbon emissions. To mitigate the risks outlined above, we initiated a strategic project to assess potential business impacts and opportunities. The outcome of the review will feed our R&D pipeline to ensure that we stay abreast of customers' changing requirements. Our broad geographical presence and global manufacturing footprint reduce the risk of disruption caused by an extreme weather event and we have appropriate insurance cover in place to mitigate the effects of such events. We direct our financial resources appropriately, for example investing in R&D and allocating capital to projects that increase our own energy efficiency and reduce our environmental impacts.
Describe the resilience of the organisation's strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario	• Our company purpose is to create sustainable value for all our stakeholders as we engineer a more efficient, safer and sustainable world, and our business strategy supports this, with all three of our businesses offering significant environmental benefits to customers. With customers in almost all industries worldwide and across 130 countries our products are indispensable for the production of foods, beverages and medicines, the generation of power and the treatment of water and wastewater, and many other essential products. Furthermore, steam remains the world's most efficient heat transfer medium with multiple on-site applications. We thus have a highly resilient business and business strategy that will remain relevant across different climate-related scenarios. However, we are not complacent and recognise that we will need to continue to develop and adapt, ensuring that our product offering continues to evolve to meet customer needs now and in the future.

Risk management

Describe how processes for identifying, assessing, and managing climate-related risks are integrated into the organisation's overall risk management	• Each year the Group engages in a top-down and bottom-up risk review and feeds its results to the Risk Management Committee. This includes sustainability/climate-related risks. The Risk Management Committee assesses the climate-related risks identified to understand their severity, identify controls or mitigation required and monitors such risks on its risk register.

Metrics and targets

Disclose the metrics used by the organisation to assess climate-related risks and opportunities in line with its strategy and risk management process	• We report various consumption and intensity metrics relating to energy, CO_2e, waste and water in our Sustainability Report, as well as a customer carbon avoided metric. Please see pages 67 to 68 and 70.
Disclose Scope 1, Scope 2, and, if appropriate, Scope 3 greenhouse gas (GHG) emissions, and the related risks	• Streamlined Energy and Carbon Reporting (SECR) disclosures can be found on page 68.
Describe the targets used by the organisation to manage climate-related risks and opportunities and performance against targets	• Our current three year target (2019-2021) is to reduce our energy and CO_2e emissions intensity by 10%. Please see page 68 for details of performance against these targets.

Sustainability Report *continued*

Customers

Overview

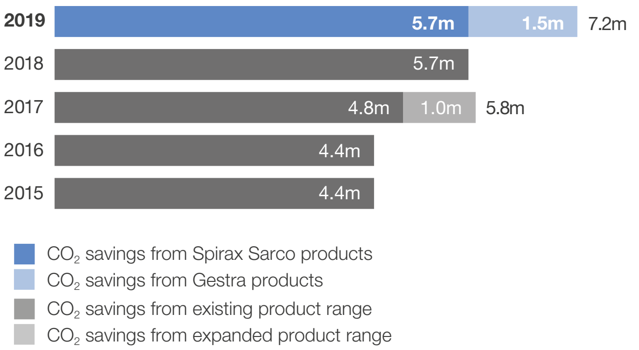
With growing concern globally over climate change and businesses increasingly recognising a need to lower their carbon emissions, use energy more efficiently, reduce waste and minimise their water consumption, we are uniquely placed to offer our customers a wide range of products, engineered solutions and services to help them reduce their environmental impacts and increase their operational sustainability.

2019 Performance and actions

Customer CO_2 emissions reduction

Using methodology that has been independently assessed with the assistance of Ricardo Energy & Environment, and taking revised emissions factors into account, we estimate that our customers will save 7.2 million tonnes of carbon emissions annually as a result of purchasing a select range of energy saving products from our Steam Specialties business in 2019. The calculation is based on a select range of products for which we can quantify energy savings with reasonable accuracy. Many other products will generate energy and carbon savings when used as part of an engineered solution that increases operating efficiency, but as the benefits are not easily quantifiable they are excluded from the methodology. The scope of the calculation was extended in 2019 to include the sale of products from Gestra, acquired in 2017, as well as the Spirax Sarco steam business.

Tonnes of CO_2e emissions our end users saved as a result of purchasing our energy management products*



* 2015-2018 Spirax Sarco steam products only.

To put the savings into context, 7.2 million tonnes of carbon emissions is equivalent to the annual carbon sequestration of approximately 327 million mature trees or equates to removing approximately 3.7 million new cars from the roads annually.

Sustainability offering roadmap

In 2018 we developed a sustainability offering roadmap within the Steam Specialties business, which we have used and further developed in 2019. The roadmap captures how our products, solutions and service offerings support our customers with their sustainability journeys, as well as identifying future opportunities for meeting customer needs. One area of focus for the roadmap is working with our strategic accounts management team to support customer energy saving programmes (audits, training and projects). We saw positive progress during 2019, with both delivery of customer sustainability benefits and related growth opportunities.

Thermocoax supports ground-breaking nuclear fusion project

In one of the most ambitious energy projects in the world, 35 nations are collaborating in the south of France to build the world's largest nuclear fusion reactor, which aims to become the first fusion device to produce net energy, proving the concept and preparing the way for commercial fusion power plants in the future.

Within the reactor magnetic interferences, a vacuum, radiation and extreme temperatures create exceptionally challenging conditions for relaying essential information from sensors. Even Thermocoax's robust mineral-insulated cable technology could not function effectively under such harsh conditions. Research demonstrated that by twisting the cable it was possible to overcome the interference, but this process damaged the cable sheathing. In response, Thermocoax developed a new technology that combined twisted conductor cables with a specifically formulated sheath that is able to consistently and reliably relay sensor signals within the reactor, despite the extreme conditions.

Widely regarded as the "holy grail" of power generation, nuclear fusion involves fusing hydrogen atoms in a controlled way, with the resulting reaction producing almost 4 million times more energy than burning fossil fuels and four times as much energy as nuclear fission, at equal mass. Nuclear fusion is environmentally safe and sustainable: the fuel sources are readily available in nature; the principal by-product of the process is helium – an inert, non-toxic gas; no radioactive waste is generated; no carbon emissions or greenhouse gases are released; and there is no risk of a chain reaction, leading to a nuclear "meltdown".

Thermocoax's technology is playing an essential role in this ground-breaking, and potentially environmentally revolutionary, project.

Further reading

Examples of how our products and services are engineering a more efficient, safer and sustainable world can be found on pages 12 to 17 and on our website.
www.spiraxsarcoengineering.com/about-us/our-impact

Focus for 2020

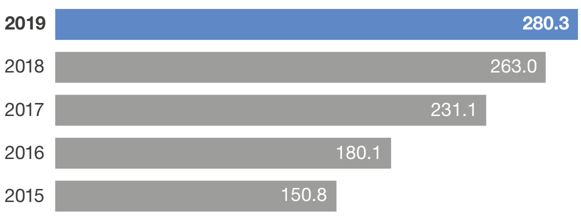
- Enhance international collaboration to consistently support multinational companies with their sustainability programmes.
- Continue to strengthen the skills and expertise of our sales and service teams to identify customer sustainability improvement opportunities.
- Develop our customer sustainability reporting metrics.

Our communities
Community engagement

Overview
Wherever we operate, we seek to be a force for good. We commit to “Engineering better futures” for the people living in our communities through financial donations to registered charities; educational provision; in-kind donations of products, services or the use of company facilities; and company-supported employee volunteering. Our primary focus is education, particularly in the sciences and engineering, where we aim to raise awareness of technical careers and break down gender stereotypes that are limiting female participation in engineering. We also seek to respond to local needs, offer support to the underprivileged young, disadvantaged, disabled and elderly, and contribute to natural disaster relief.

2019 Performance and actions
Group Charitable Fund donations
During 2019, the Spirax Sarco Group Charitable Fund increased its donations by 7%, to £280,300. The Fund made donations varying in size from £300 to £50,000 to a wide variety of charities, including £6,000 to Young Gloucestershire, which supports disadvantaged young people in the county who are facing challenges in their lives; an £8,000 donation to Young Enterprise, a charity that empowers young people to develop their personal and business skills and make connections between school and the world of work; and £50,000 to Engineers Without Borders UK, a charity that seeks to inspire young engineers and embed global responsibility into engineering. In addition to supporting Engineers Without Borders UK financially, we are contributing to their valuable work through encouraging employee volunteering.

Group Charitable Fund donations £’000



Local community engagement activities
Nearly £160,000 was donated to charitable causes by our operating companies during the year. In-kind donations with an estimated value of £31,000 were donated and our employees contributed over 5,300 hours of working time to community engagement activities. Using an average hourly salary to estimate the cost to the company of employee volunteering, and including management costs, we estimate that the total value of our operating companies’ community engagement activities in 2019 was approximately £320,000. In addition, our employees donated £55,000 of their own money and gave over 2,000 hours of their own time in workplace-organised fundraising and community engagement activities.

Employee Volunteering
During 2019, a Group Employee Volunteering Policy was developed and rolled out across our global operations, which entitles all employees to three days of paid volunteering leave each year. During the year we saw a 9% increase in the number of employee volunteering hours, compared with 2018.

Community Engagement Awards, 2019
The Group Community Engagement Awards raises awareness of community engagement and recognises the work that is being done by our colleagues. In 2019, 27 strong entries were received. Following a careful selection process, the Sustainability Committee and Group Chief Executive chose the winners: Spirax Sarco China (large company award), Spirax Sarco Colombia (small company award) and Chromalox Mexico (Group Chief Executive’s award), which each received £5,000 towards their community engagement activities in 2020. In addition, Steam Business Development (UK), Chromalox Singapore and Watson-Marlow USA each received an honorary award of £2,500.

Winners
All employees from Spirax Sarco Colombia worked together to construct a new house for a single mother with three young children who were living in poverty; providing the family with a warm, safe place in which to live.

Chromalox Mexico undertook a wide range of community engagement activities, with widespread participation by employees. Activities included donating school supplies to 360 students; donating toys and gifts to disadvantaged children; organising a Christmas meal, party and gifts for children living in poverty; donating life-saving blood and hair for children with cancer; donating money raised through recycling to support families struggling to pay for cancer treatment and planting trees and plants at a local school.

Further reading
Spirax Sarco China’s community engagement activities.
See pages 40

Honorary award winners
Employees in the Steam Business Development team in the UK raised money for Gloucestershire Young Carers, produced marketing materials for the charity pro-bono and spent a day volunteering at Acorns Children’s Hospice. All Chromalox Singapore employees spent a day at a local hospital, playing games with patients with severe long-term medical conditions and providing them with tasty snacks. Employees of Watson-Marlow USA raised over $14,000 for local charities and donated business outfits to unemployed people looking for work, toys and Christmas gifts to children in need, toiletries to a local homeless shelter and care packages for serving members of the armed forces, as well as established a school Science, Engineering, Technology and Mathematics programme, to be rolled out in 2020.

Focus for 2020
- Establish a Group-wide employee volunteering portal to facilitate ease of monitoring and reporting.
- Translate the Group Employee Volunteering Policy into the Group’s core languages.
- Raise awareness of employee volunteering across the Group.

Our governance*

*At year end 2019.

1. Jamie Pike
Chair

3. Trudy Schoolenberg
Independent Non-Executive Director and Senior Independent Director

5. Neil Daws
Managing Director, Steam Specialties

2. Nicholas Anderson
Group Chief Executive

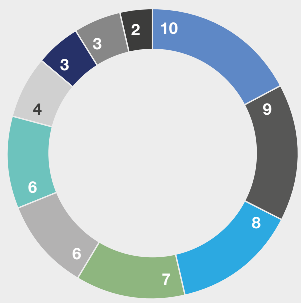
4. Kevin Boyd
Chief Financial Officer

6. Caroline Johnstone
Independent Non-Executive Director

In this section

Board overview*

Core expertise



International
Senior management
Engineering
M&A
Operational
Strategy
Sales and marketing
Finance
Product development
People

* At year end 2019.

7. Peter France
Independent Non-Executive Director

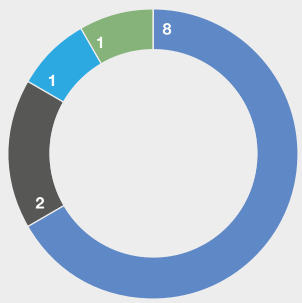
9. Jane Kingston
Independent Non-Executive Director

Andy Robson
Group General Counsel and Company Secretary

8. Jay Whalen
President, Watson-Marlow

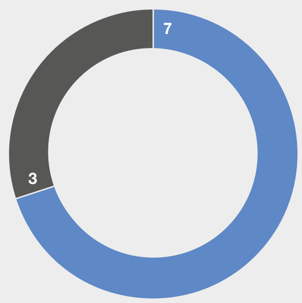
10. Kevin Thompson
Independent Non-Executive Director

Nationality



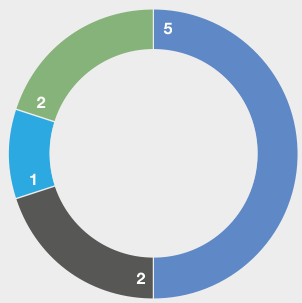
- British[1]
- American[1]
- Dutch
- Irish[2]

Gender



- Male
- Female

Length of service



- 5+ years
- 3–5 years
- 1–3 years
- Less than 1 year

1 N.J. Anderson holds dual British and American citizenship.
2 J. Pike holds dual British and Irish citizenship.

1. Board leadership and Company purpose

Board of Directors*

*At year end 2019.

Jamie Pike MBA, MA, MIMechE
Chair

N* EE

Appointed to the Board
May 2014

Areas of experience
Senior management, engineering, international

Background
Jamie Pike joined Burmah Castrol in 1991 and was Chief Executive of Burmah Castrol Chemicals before leading the Foseco buy-out in 2001 and its subsequent flotation in 2005. Prior to joining Burmah, he was a partner at Bain & Company. Jamie was educated at Oxford, holds an MBA from INSEAD and is a Member of the Institute of Mechanical Engineers.

External appointments
Chair of Cobham plc - stepped down Cobham's Board in January 2020.

Nicholas Anderson BSc Engineering, MBA
Group Chief Executive

RK*

Appointed to the Board
March 2012. Appointed Chief Operating Officer in August 2013 and Group Chief Executive in January 2014

Areas of experience
International, operational, industrial, sales and marketing, engineering, strategy, M&A

Background
Before joining the Group in 2011 as Director EMEA, Nicholas Anderson was Vice-President of John Crane Asia Pacific (part of Smiths Group plc), based in Singapore, and President of John Crane Latin America, based in the USA. Previously, Nicholas held senior positions with Alcoa Aluminio in Argentina and Brazil, starting his career with the Foseco Minsep Group plc in Brazil.

Kevin Boyd BEng, CEng, FIET, FCA
Chief Financial Officer

RK

Appointed to the Board
May 2016

Areas of experience
Finance and accounting, engineering, pensions, international, M&A

Background
Before joining the Group in 2016, Kevin Boyd was Group Finance Director for Oxford Instruments plc. Prior to that he was Group Finance Director of Radstone Technology plc and previously held senior finance positions within Siroyan Ltd and the TI Group (now Smiths Group plc). Kevin is a Chartered Engineer, a Chartered Accountant and a Fellow of the Institute of Chartered Accountants and the Institution of Engineering and Technology.

External appointments
Non-Executive Director and Audit Committee Chair of EMIS Group plc.

Trudy Schoolenberg PhD
Independent Non-Executive Director & Senior Independent Director

A EE N R

Appointed to the Board
August 2012

Areas of experience
Engineering, product development, oil and petrochemical

Background
Prior to her most recent position at AkzoNobel, Trudy Schoolenberg served as Vice-President of Global Research & Development at Wärtsilä Oy. Trudy previously held senior management positions with Royal Dutch Shell plc and was Head of Strategy for Shell Chemicals. Until October 2016, Trudy served as Director of Integrated Supply Chain and Research, Development and Innovation, Decorative Paints Division of AkzoNobel.

External appointments
Non-Executive Director of COVA and Low & Bonar PLC. Non-Executive Director and Senior Independent Director of Accsys Technologies plc.

Peter France
Independent Non-Executive Director

A EE N R

Appointed to the Board
March 2018

Areas of experience
International, operational, industrial, sales and marketing, engineering

Background
Peter France was Chief Executive Officer of Rotork plc from 2008 to 2017. He also gained wide experience in a number of key roles at Rotork plc from 1989 to 2008 including acting as Chief Operating Officer and Director of Rotork South East Asia based in Singapore.

Peter is a Chartered Director of the Institute of Directors

External appointments
Chief Executive Officer of ASCO Group Limited.

Caroline Johnstone BA, CA
Independent Non-Executive Director

A EE* N R

Appointed to the Board
March 2019

Areas of experience
Finance, people, international, M&A

Background
Caroline Johnstone has nearly 40 years' experience of working with large global organisations on turnaround, culture change, delivering value from mergers and acquisitions and cost optimisation programmes. She sat on the Board of the Assurance practice of PricewaterhouseCoopers (PwC) as people partner. Caroline is a chartered accountant and a member of the Institute of Chartered Accountants of Scotland. She also provides consulting services to a range of international clients.

External appointments
Non-Executive Director and Audit Committee Chair of both Synthomer plc and Shepherd Group Ltd, a private company which owns Portakabin Limited.

Neil Daws CEng, FIMechE
Managing Director, Steam Specialties

RK

Appointed to the Board
June 2003

Areas of experience
Manufacturing, engineering, product development, sales and marketing, broad operational experience

Background
Neil Daws joined the Group in 1978 and held positions in production and design engineering prior to being named as UK Supply Director. Following this, Neil has held responsibility for Asia Pacific, Latin America, the Group's Supply operations, including the Group's health, safety and environmental matters and, more recently, EMEA.

Jay Whalen** BA, MBA
President, Watson-Marlow

RK

Appointed to the Board
March 2012

Areas of experience
Sales and marketing, engineering, product development, operational, international business development

Background
Jay Whalen joined the Group in 1991 as President of Watson-Marlow Inc. in the USA. He was named Sales and Marketing Director of the global Watson-Marlow business in 2002 and in 2010 was appointed to his current Group position of President, Watson-Marlow Fluid Technology Group. Prior to joining Watson-Marlow, Jay was Vice-President Operations for Harvard Bioscience, Inc.

Andy Robson LLB Law Barrister
Group General Counsel and Company Secretary

Appointed as Group General Counsel and Company Secretary
June 2012

Areas of experience
International law, corporate governance, international business development including mergers and acquisitions, business restructuring, information technology, contract negotiation

Background
Before joining the Group in 2012, Andy Robson was General Counsel and Company Secretary of RM Plc, a role he held for 14 years. Prior to this, Andy was European General Counsel with Cendant Corporation headquartered in Baltimore, USA.

** As previously announced, Jay Whalen retired from the Board on 31st December 2019.

Jane Kingston BA
Independent Non-Executive Director

A | EE | N | R*

Appointed to the Board
September 2016

Areas of experience
Human Resources, remuneration, international, engineering

Background
From 2006 until her retirement in December 2015, Jane Kingston served as Group Human Resources Director for Compass Group PLC. Prior to this, she served as Group Human Resources Director for BPB plc. Jane has worked in a variety of sectors, including roles with Blue Circle Industries plc, Enodis plc and Coats Viyella plc and has significant international experience.

External appointments
Non-Executive Director of Inchcape plc. Stepped down from the Board of National Express plc on 31st December 2019.

Kevin Thompson BSc, FCA
Independent Non-Executive Director

A* | EE | N | R

Appointed to the Board
May 2019

Areas of experience
Finance, tax and treasury, engineering, M&A

Background
Kevin Thompson was Group Finance Director of Halma plc from 1998 to 2018, having joined Halma as Group Financial Controller in 1987. Kevin qualified as a Chartered Accountant with PricewaterhouseCoopers (PwC) and is a Fellow of the Institute of Chartered Accountants in England and Wales

External appointments
Member of the Financial Reporting Lab Steering Group and a Trustee of the Great Ormond Street Hospital Children's Charity.

Further reading
Read about our Board diversity, composition, succession and evaluation.

See pages 89-92

A Audit Committee
N Nomination Committee
EE Employee Engagement Committee
R Remuneration Committee
RK Risk Management Committee
* Denotes Committee Chair

Flag denotes country of citizenship

1. Board leadership and Company purpose *continued*

Chair's introduction

"Our 2019 Governance Report complies in full with the Corporate Governance Code and we attach great importance to the Code principles of diversity, long-term thinking and stakeholder engagement."

Jamie Pike
Chair

Board changes in 2019

On 1st March 2019, we announced the appointment of Caroline Johnstone as an independent Non-Executive Director. Caroline's financial, people and advisory skills, together with her international business experience across a range of different industries, will benefit the further development of the Group. Caroline was appointed as Chair of our newly established Employee Engagement Committee in the first half of 2019. The purpose of the Committee is to make recommendations to the Board on all aspects of employee engagement, giving full consideration to the matters set out in Principle E and Provisions 5 and 6 of the UK Corporate Governance Code 2018 (Code).

Following the Annual General Meeting (AGM) in May 2019, Kevin Thompson succeeded Clive Watson as Chair of the Audit Committee. Clive stood down having served as a Non-Executive Director and Chair of the Audit Committee for nine years, in addition to being the Senior Independent Director since 2018. The Board acknowledges with gratitude Clive's significant contribution to the Group's growth and prosperity over the last nine years, and his guidance.

Kevin was Group Finance Director of Halma plc from 1998 to 2018. He qualified as a Chartered Accountant with PricewaterhouseCoopers and is making a valuable contribution to the Board. Dr Trudy Schoolenberg took over from Clive as Senior Independent Director.

Jay Whalen, President, Watson-Marlow, and Executive Director, retired from the Board on 31st December 2019 after over 28 years of service. The Board acknowledges the major contribution to the Group's growth and prosperity made by Watson-Marlow under Jay's leadership.

Board biographies can be found on pages 74 to 75.

A FTSE 100 company

Our business has continued to grow organically and increase in size with the acquisitions of Gestra, Chromalox and Thermocoax. We have successfully integrated and driven performance improvement in our acquisitions. We are pleased to have consolidated our presence in the FTSE 100.

Good governance

Recent Board changes have provided the opportunity to reaffirm our individual and collective responsibilities as a Board and to test our understanding of what good governance means to us and why it is important.

In 2019, we refreshed our Company purpose, following detailed input from the Group Executive Committee and overseen by the Board. Although the purpose itself has not changed, the way in which we articulate it has (see page 1).

In respect of section 172(1) of the Companies Act 2006 (as amended by the Companies (Miscellaneous Reporting) Regulations 2018), the Directors have prepared a statement describing how they have had regard to the matters set out in section 172(1), when performing their duty to promote the success of the Company (see pages 80 to 81).

Key Board activities 2019

During 2019, we paid attention to succession planning for the Board with the appointments set out earlier in this section. We also focused on the acquisition of, and investments in, Thermocoax, our culture, strategic risks and opportunities, including Brexit, climate change and diversity.

We invested in a new consolidated manufacturing site for Aflex Hose in Yorkshire, UK.

We appointed J.P. Morgan Cazenove and Morgan Stanley as joint corporate brokers. J.P. Morgan Cazenove and Rothschild are our joint financial advisers.

Assessing and monitoring culture

Our culture is one of the main reasons for our measured progress and success. As we grow it is vital that we retain such a successful culture. We ensure our culture and Company Values are aligned with our strategy.

The creation and work of the Employee Engagement Committee has achieved greater Board engagement with the workforce, enabling the Board to gauge and monitor our culture and to ensure it is both embedded and retained in our Company.

Electric Thermal Solutions

The Board meeting in June 2019 was held in Utah, USA where Chromalox has its largest manufacturing site. We were joined by Dominique Mallet, President of Thermocoax immediately following the acquisition of this business. We reviewed our plan for improvements within Chromalox and our strategy for combining Chromalox and Thermocoax under Dominique's leadership.

Brexit

We have taken the following actions with respect to our preparations for Brexit:

- holding an additional month's raw material in stock in the UK;
- holding an additional two weeks' finished goods stock at those businesses that purchase from the UK; and
- planned for "no-deal" in respect of orders and demand in the Group's operating companies.

The UK is currently in a transition period while trade agreements are sought. We are, therefore, continuing to prepare for a "no deal" Brexit and the application of tariffs for goods moving in and out of Europe. However, we are poised to take advantage of opportunities that are presented and to mitigate any adverse trading impact on the Group.

About 93% of our revenue is generated outside of the UK, while close to a third of our cost of goods sold is manufactured in the UK. Therefore, a devaluation of sterling would produce translational and transactional net benefits for the Group.

Diversity

As a Group we are committed to gender diversity and to achieving a minimum target of 33% female representation on the Board, the Group Executive and their direct reports. We ensure that this target is taken into account in our succession planning and recruitment. Our Group Diversity and Inclusion Policy is available on the Group's website. At the time of publication, we have 33% female representation on our Board.

We also attach importance to ensuring that our people can progress to the highest levels in their business careers regardless of their socio-economic background, race or sexual orientation. We accept Sir John Parker's recommendation that our Board should have at least one Director from an ethnic minority background by 2021.

2018 Code compliance

In running our business in 2019, we were fully compliant with the UK Corporate Governance Code 2018 (Code) and we detail our compliance, on a Code provision-by-provision basis, in the corporate governance section on our website: www.spiraxsarcoengineering.com.

Fair, balanced and understandable

In accordance with the Code, the Directors confirm that they consider the Annual Report, taken as a whole, is fair, balanced and understandable and provides the information necessary for shareholders to assess the Group's financial position, performance, business model and strategy.

Focus for 2020

We see many future opportunities to build on our success and we look forward to realising and sharing these with our shareholders through our strategic plan.

I look forward to meeting our shareholders at our forthcoming AGM.

Jamie Pike
Chair

Further reading

All governance-related policies and procedures are available to view and download:

www.spiraxsarcoengineering.com

1. Board leadership and Company purpose *continued*

Our approach to governance

The Code

We have summarised some of the key words from the 2018 Code's Principles A-E in the graphic below and provided cross-references for further reading. This is our own interpretation and serves to direct our readers to narrative that explains how we have applied some of the Principles. In addition, we report on relevant provisions later within the scope of the Governance Report. With many relevant examples already covered in the Strategic Report our aim is to reduce repetition and demonstrate the integrated spirit of the 2018 Code.

In relation to Code Provision 1, which deals with the Company generating value over the long term in the context of future risks and opportunities, sustainability is addressed in our Sustainability Report, on pages 59 to 71, and Risk Management Report, on pages 98 to 101. The contribution of governance to Strategy is explained graphically below.

Our approach to governance

Governance helps us to ensure our shareholders receive a good return on their investment; behave with integrity; treat our customers, employees, suppliers and local communities properly; and respect the environment.

In the Governance Report we describe the responsibilities of the Board and its Committees, the key activities during 2019 and the focus for 2020.

The ways in which we have addressed compliance with some of the key elements of the Code and our leadership on these matters are highlighted below.

Long-term sustainable success

The Board is focused on long-term corporate and strategic plans. It engaged in a review and assessment of market and technology trends at its strategic meeting in June 2019. As part of this review, the Board considered the business risks and opportunities arising from our strategy for growth.

Leading by example

The Board relies on the Executive management team to run the business. The Board holds this team accountable against targets and standards. The Board ensures that we have strong and effective leadership in place to execute the strategic plan.

Effective and entrepreneurial

The Non-Executive Directors provide effective challenge and review, bringing wide experience, specific expertise and a fresh objective perspective to major decisions.

The emphasis is on growth and on an entrepreneurial approach with a strong governance culture. To ensure that the Board remains effective, in 2018 we engaged Independent Audit Ltd to carry out an external Board effectiveness evaluation and followed up their recommendations by way of our internal evaluation in 2019. The process and actions of this evaluation are detailed on page 92.

1. Board leadership and Company purpose *continued*

Engaging with our stakeholders

Our commitment to shareholder engagement

In addition to the five key stakeholder groups detailed on pages 80 to 81, the Board recognises our shareholders as an important stakeholder group. We maintain an active dialogue with our principal investors, institutional shareholder advisers and the investment community.

During 2019, we undertook a comprehensive calendar of events, as shown below. By providing regular forums for meeting and communicating with shareholders, their advisers and the investment community, we ensure that we understand the views and opinions of our investors and are kept informed of any concerns that may arise. We are also able to give updates on our results and developments within our businesses.

We communicate using a variety of forums including regulatory news announcements, interviews, investor and analyst calls, one-to-one meetings, roadshows, site tours and capital markets events. During 2019, Nicholas Anderson, Group Chief Executive, and Kevin Boyd, Chief Financial Officer, attended shareholder roadshows across a number of key countries in Europe, Asia and North America.

At the AGM in 2019, shareholders were able to hear from, and put questions to, the Board on a range of matters.

Shareholder engagement calendar 2019

Jan

- Shareholder consultation on Remuneration Policy
- Institutional meetings, Cheltenham
- Investor and analyst calls

Feb

- Institutional visit to China facility
- Institutional meetings, London and Cheltenham
- Investor and analyst calls, including in relation to the announcement of exclusive negotiations to acquire Thermocoax

Mar

- Preliminary Results announcement, analyst meeting and shareholder roadshow, London
- Institutional meetings, Cheltenham and London
- Investor and analyst calls

Apr

- Institutional meetings, Cheltenham and London
- Investor and analyst calls

May

- AGM and trading update
- Institutional meetings, Cheltenham, London and Europe (Copenhagen, Helsinki and Stockholm)
- Investor and analyst calls following AGM, trading update and Thermocoax acquisition announcement

Jun

- Institutional meetings, Cheltenham, Europe (Madrid) and USA (Los Angeles, San Francisco and Salt Lake City)
- Investor and analyst calls

Jul

- Shareholder roadshow, Europe (Amsterdam, Brussels, Frankfurt, Paris and Zurich)

Aug

- Half Year Results announcement, analyst meeting and shareholder roadshow, London
- Shareholder roadshow, Scotland (Edinburgh)
- Institutional meetings, Cheltenham
- Investor and analyst calls

Sep

- Shareholder roadshow, Asia (Hong Kong, Singapore and Tokyo)
- Institutional meetings, Cheltenham and London
- Investor and analyst calls

Oct

- Shareholder roadshow, Canada and USA (Montreal, Toronto, Boston, Chicago and New York)
- BAML Conference (Paris)
- Institutional meetings, Cheltenham
- Investor and analyst calls

Nov

- Baird Global Industrial Conference, USA (Chicago)
- HSBC Global Investment Forum, USA (New York)
- Investec Best Ideas Conference, London
- Institutional meetings, Cheltenham
- Investor and analyst calls

Dec

- Institutional meetings, Cheltenham
- Investor and analyst calls

1. Board leadership and Company purpose *continued*

Engaging with our stakeholders *continued*

Section 172 Statement

Engaging with our stakeholders and acting in a way that promotes the long-term success of the Company, while taking into account the impacts of our business decisions on our stakeholders, is central to our strategic thinking and our statutory duty in accordance with Section 172(1) of the Companies Act 2006 (s.172). The content on pages 80 to 81 constitutes our s.172 Statement, as required under the Companies (Miscellaneous Reporting) Regulations 2018.

The Board of Directors of Spirax-Sarco Engineering plc consider, both individually and together, that they have acted in the way that they consider, in good faith, would be most likely to promote the success of the Company for the benefit of its members as a whole, having regard to the stakeholders and matters set out in s.172 (A-F of the Companies Act) in the decisions taken during the year. In particular, as outlined in a Board assurance statement that accompanied our business plan for the period 2020 to 2025, and approved by the Board, our plan is designed to have a long-term beneficial impact on the Company and its stakeholders, and contribute to the Company's continued success in delivering reduced carbon emissions and increased efficiency, safety and sustainability for our customers. Our plan is focused on our customers, as exemplified by our customer focused business strategy, but also takes into account other stakeholders, such as our employees and the effective management of our supply chain, with the aim of delivering value to shareholders.

As a Board of Directors, our intention is to behave responsibly and ethically at all times, in line with our Company values, and to ensure that our management teams operate the business in a responsible manner and to the highest standards of business conduct and good governance. As we act in a way that reflects our values, we will contribute to the long-term success of the Company and continue to nurture our reputation as a responsible, successful Company that delivers stakeholder value, as outlined in our Company purpose.

We improved our focus on our s.172 duty during 2019, and established a formal process to ensure that all new investments that are submitted to the Board address how the investment will benefit or impact our shareholders, customers, employees, the environment and the communities where we work.

Our impacts on, and engagement with, five key stakeholders groups are systematically considered within the implementation of our Group sustainability strategy, which is overseen by the Group Chief Executive and supported by the Board of Directors. The stakeholder groups are: our employees, our customers, our suppliers, our communities and our environment. How and why we engage with these stakeholders is summarised below. Additional information on how we engage with employees can be found in our Employee Engagement Committee Report on pages 82 to 84. In addition, as a Board of Directors, we recognise our shareholders as an important stakeholder group and treat them fairly and equally, so they too may benefit from the successful delivery of our plan and the value we create. For more detail on how we engaged with our shareholders in 2019, see page 79.

Embedding long-term thinking and action

Our employees

Why it's important

Our employees are our greatest asset and our success relies on the application of their knowledge and skills. We aim to be a responsible employer in our approach to pay and benefits, and the health, safety and well-being of our employees is always a primary consideration.

How we are engaging

- We communicate with employees through a variety of channels including meetings, conferences, videos, email and written communications.
- Through our global employee survey we listen to the views of our employees. Survey results are analysed collectively, by business, by company and, where numbers are sufficient, by department, with focus groups established and plans to address those areas our employees tell us we could do better.
- Our Employee Engagement Committee ensures that the views and interests of employees are considered at Board level.

Read more on pages 62-64 and 82-84

Our customers

Why it's important

We generate value for our stakeholders as we help the end users of our products to improve the efficiency, safety and sustainability of their operations. Meeting the needs of customers now and developing our offering so that we can continue to meet their needs into the future, requires a closeness to, and engagement with, customers.

How we are engaging

- Our direct sales business model is the key avenue for customer engagement, allowing us to deeply understand their needs and requirements.
- Regular "Voice of the customer" surveys provide valuable feedback from customers who tell us what we are doing well and how we can improve.
- Customer requirements are always taken into consideration during new product development, with customer needs driving the design and development of products.

Read more on pages 8-17 and 70

Our communities

Why it's important

As a financially successful business, we are well-placed to "give something back" to our communities. We strive to be a force for good wherever we operate. While education, particularly in the sciences and engineering, is our priority focus, to maximise our positive impact we always seek to identify and respond to local needs.

How we are engaging

- We respond to requests for much needed charitable funding, making financial donations to a wide range of local, national and international charitable causes.
- Our employees are encouraged to volunteer their time and skills, during working hours, to support a range of worthwhile causes in their local community.
- We work with schools, colleges and universities to raise aspirations, increase awareness of engineering and develop the talent of young engineers.

Read more on pages 40 and 71

Our environment

Why it's important

We live in a resource-constrained world where human impacts on the environment are increasingly being recognised as harmful not only to the natural world but also to the long-term sustainability of financial systems and societies. Not only is managing our environmental impacts the right thing to do, it also helps us to manage and mitigate risk.

How we are engaging

- We actively engage with customers to identify and implement engineered solutions to reduce their energy use, carbon emissions, water and waste.
- We educate our employees and take steps to reduce our own environmental impacts.
- We report transparently on our environmental performance and engage with international reporting frameworks such as the Carbon Disclosure Project.

Read more on pages 12-13 and 67-70

Our suppliers

Why it's important

Our purchasing decisions not only impact our suppliers, but their stakeholders too. We expect our suppliers to operate ethically, taking due consideration for the safety and well-being of their workers while minimising their environmental impacts. By setting high standards for our suppliers, we reduce operating and reputational risk and promote the long-term success of the Company.

How we are engaging

- We purchase from suppliers who adhere to our Supplier Sustainability Code.
- We undertake supplier audits to oversee compliance with our standards.
- We work with suppliers on a continuous improvement basis to raise standards.
- We train employees on business ethics and encourage the use of the whistle-blowing hotline to raise concerns about anything in our end-to-end supply chain.
- We pay our suppliers for properly completed work on 60 day terms in the UK and follow customary good pay practices in other countries.

Read more on pages 39 and 64-65

1. Board leadership and Company purpose *continued*

Employee Engagement Committee Report

The Employee Engagement Committee's purpose is to ensure the Board hears the voice of our employees."

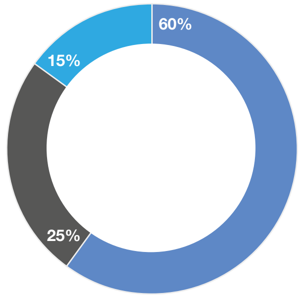
Caroline Johnstone
Chair of Employee Engagement Committee

Members

Our Employee Engagement Committee comprises:

	No. of meetings attended/ total no. of meetings held	Attendance %
Caroline Johnstone (Chair)	3/3	100%
Peter France	3/3	100%
Jane Kingston	3/3	100%
Jamie Pike	3/3	100%
Trudy Schoolenberg	3/3	100%
Kevin Thompson	3/3	100%

How the Committee spent its time



Developing the remit of the Committee

The Employee Engagement Committee was established in response to, and in compliance with the Code, with one Non-Executive Director designated as the Chair of the Committee. The principal remit is to support the Board and to ensure that we consider employees in all aspects of our thinking and to have insight into the areas of concern and interest for employees. The Committee will, among other activities, develop an understanding and knowledge of employee engagement practices across the Group, review and ensure that appropriate mechanisms are in place for employees' views to be heard, and will advise the Board on all aspects of employee engagement.

Committee role and responsibilities

The Committee's future agenda is being developed and refined, but current responsibilities of the Committee include making recommendations to the Board on all aspects of employee engagement and giving full consideration to the matters set out in the relevant portions of the Code. The Committee's Terms of Reference are available on the Group's website, www.spiraxsarcoengineering.com.

The duties of the Committee include:

- develop an understanding and knowledge of existing employee engagement practices across the Group;
- develop a programme of Board engagement activities to enable the Board to have regular dialogue with employees across the Group. This will be practical and pragmatic, building on existing opportunities and with proportionate time and expense;
- in association with the Audit Committee and the Board, review the mechanisms and procedures in place for employees to raise concerns in confidence and anonymously, such as the Company's whistle-blowing facility (Safecall);
- the Committee will advise, provide oversight and review the following:
  - global employee engagement survey;
  - executive mentoring of high-potential talent; and
  - operating company activity related to employee engagement;

  and
- have regard to the latest legislation, corporate governance best practices, and Financial Conduct Authority Listing Rules with respect to employee/workforce engagement.

Meetings

The Committee met three times in the year to address the following matters:

- review and approve the Terms of Reference, establishing the remit of the Committee;
- develop plans for Committee events and actions;
- focus group meeting at Chromalox, Utah, follow-up discussions, and Executive responses;
- review the results of the employee engagement survey;
- review executive-arranged focus group activity; and
- discuss current Group employee engagement activities.

Chair's review of 2019

I was delighted to join the Board in March 2019 and to be asked to take on the role as Chair of the newly formed Employee Engagement Committee. In my previous career with PwC and on the Boards of other organisations, I have always focused on the people. In my view, all businesses are people businesses.

Employee engagement and empowerment is at the heart of the Group's philosophy and is a major factor in its success to date. It is a diverse organisation, which allows local leaders to pursue business development in a way that best suits their market, but with clear goals and principles of operating, common across all of the Group. Our direct sales force is a key differentiator for us.

In recent years, the Group Executive Committee has been developing its approach to employee engagement and, in 2019, the business again rolled out a survey across the whole of the Group, following the first Group-wide employee engagement survey in 2017. A total of 7,636 employees received an invitation to participate in 2019 and 82% responded. The executive management's action plans are being developed as a result of the survey responses and will be reviewed by the Committee.

In addition to the employee survey, the business has been listening to employees and developing a programme of two-way internal communications. For example, Neil Daws, Managing Director of the Steam Specialties business, is now sending out a quarterly business update video. He has had some excellent feedback and employees really welcome the immediate, personal information, straight from the business leader.

We have a diverse and dispersed employee group, with over 8,000 employees spread across 66 countries, three businesses, and multiple brands. We strive to ensure all voices are heard in the boardroom and we guard against misinterpretation of views. My aspiration is to reach out to employees on a regular basis and to aim for a cross section of views on how we are doing as a Board and what people think.

Over the course of 2019, we developed the initial remit of the Committee, which we recognise will continue to evolve as we learn from various activities and feedback. The Non-Executive Directors have already had various interactions with employees and I was able to use my induction activities to engage with quite a wide range of employees and managers across the businesses.

Key Employee Engagement Committee activities 2019

Jun

- Developed remit and agenda, and established the Terms of Reference
- Hosted focus group at Chromalox, Utah
- Committee members met with a range of employees at the Women in Engineering Day at Watson-Marlow in Falmouth

Aug

- Considered feedback from Chromalox, Utah focus group
- Reviewed employee engagement survey headlines

Oct

- Further review of employee engagement survey results
- Reviewed summary of Group employee engagement activities
- Considered Executive-led focus group feedback
- 2020 priorities agreed, including plans for the Board to hear from individual business units about their employee engagement activities and response to the employee engagement survey at each Board Meeting

1. Board leadership and Company purpose *continued*

Employee Engagement Committee Report *continued*

I have spent time in the Steam Specialties manufacturing and sales businesses in Cheltenham and visited customers in Northern England with one of the Area Sales Engineers. I visited the Watson-Marlow site in Falmouth, where I spent time on the factory floor, talking with, amongst others, the leader of the local Employee Engagement Team. I attended a Women in Engineering event in Falmouth in June 2019 and, together with my fellow Non-Executive Director Jane Kingston, met a wide range of employees; graduate recruits, business leaders and HR professionals. With other members of the Board, I visited the Chromalox manufacturing site in Utah and spent time with management and also walking round the factory.

Whilst at Chromalox, we held our first employee focus group, listening to a representative and self-chosen group of non-management employees. We were particularly interested to meet them, given they are, like me, relatively new to the Spirax Sarco Group, following the acquisition of Chromalox in 2017. We asked for their input on a wide range of topics, including their views on the Company values and how they think we live up to them. The group were very forthcoming and open. They were passionate and positive about the Company values. There were a number of positive short and long-term actions that we have implemented to continue the strengthening of our culture and values.

We have now agreed the Committee agenda for 2020, including a series of employee engagement events. The outcomes from Executive focus groups being held across the business will also be fed back to the Committee throughout the year. Employee engagement is on every Board agenda as part of each business presentation.

We will continue our programme of events for Non-Executive Directors to meet employees across the Group and we are developing an informal agenda for us to share information.

The Committee will ensure that the employees' voice is heard by the Board.

Committee focus for 2020

- The Committee has planned a series of focus group meetings in 2020. Committee members have also scheduled some face-to-face visits with employees at various sites.
- In view of the dispersed nature of the Group, the Committee will also aim to engage with employees using digital technology.
- A key objective for 2020 is following up on the 2019 employee engagement survey and reviewing the action plans for different business units and functions.
- The Committee members will continue to visit various Group sites and attend events so they can listen to employees at all levels. The Board aims to visit Watson-Marlow in Falmouth and the new Aflex Hose facility in Bradford, where the 2020 Women in Engineering Day celebrations are also scheduled to be held.

Caroline Johnstone
Chair of Employee Engagement Committee

Caroline Johnstone induction

I have been impressed by the teamwork and strong governance in evidence across the Group. As Chair of the Employee Engagement Committee I have seen the culture and values of the Group up close.

Since joining the Board in March 2019, I have had the opportunity to visit a number of Group companies, from Watson-Marlow's operations in Falmouth, UK, to Chromalox in Utah, USA, and visited customers with field-based engineers. In all of these meetings I have felt completely welcomed throughout the Group. The people I met were passionate about our values of customer focus and collaboration.

We are committed to taking the Group forward based on a well-founded and excellently executed strategic plan. Forward thinking is evident in the workings of all the Board committees where I have seen thoughtful and thorough reviews of all major business decisions.

Spirax Sarco is an exciting company and I look forward to playing a part in the continued success of all its businesses.

> **"I have felt completely welcomed throughout the Group. The people I met were passionate about our values of customer focus and collaboration."**

Caroline Johnstone
Independent
Non-Executive Director

2. Division of responsibilities

The Chair

Independence

Jamie Pike has been a member of our Board since May 2014. Having served over five years on the Board, we consider him to have retained his independent status.

Responsibility

Jamie's responsibilities are outlined in the table overleaf. In his tenure to date we consider him to have upheld the responsibility of the Chair as described in the Principle of the Code, such as his independence, ability to work well with others and leadership skills.

Since stepping down as Chair of Cobham plc in January 2020, Jamie has no other FTSE directorships.

A balanced Board

During 2019, in compliance with the Code, the number of Non-Executive Directors was always equal to or more than the number of Executive Directors (excluding the Chair). With effect from 1st January 2020, our Board comprises three Executive and five Non-Executive Directors (excluding the Chair). This ensures that no one person or group of individuals dominates the Board's decision-making. All of our Non-Executive Directors are considered independent.

Performance

The Chair confirms that, following a formal performance evaluation, each Director's performance continues to be effective and each Director demonstrates commitment to the role.

Non-Executive Directors

Our Non-Executive Directors provide independent challenge and review, bringing wide experience, specific expertise and a fresh objective perspective. The Board is confident that the Non-Executive Directors have sufficient time to meet their Board responsibilities. External appointments held by our Non-Executive Directors and full-time Executive Directors are set out on pages 74 to 75 and a summary is provided in the table on the top right of this page.

Jane Kingston, Non-Executive Director and Chair of the Remuneration Committee, stepped down from the Board of National Express Group plc on 31st December 2019.

Senior Independent Director

Dr Trudy Schoolenberg was appointed as Senior Independent Director in May 2019. With expertise in engineering, product development and having significant Executive and Non-Executive experience over many years, the Board is satisfied that Trudy has the necessary qualities and experience for this role.

The Senior Independent Director carried out an interview with all Directors to facilitate the appraisal of the Chair as part of our Board and Committee annual internal evaluation process.

At year end	No. of other Non-Executive roles	No. of other Executive roles
Independent Non-Executive Directors		
Jamie Pike (Chair)[1]	1	–
Peter France	–	1
Caroline Johnstone[2]	1	–
Jane Kingston[3]	2	–
Trudy Schoolenberg	3	–
Kevin Thompson	–	–
Full-time Executive Directors		
Nicholas Anderson	–	–
Kevin Boyd	1	–
Neil Daws	–	–
Jay Whalen[4]	–	–

1 J. Pike stood down as Chair of Cobham plc in January 2020 and, therefore, has no other Non-Executive roles.

2 C.A. Johnstone is also a Non-Executive Director of Shepherd Group Ltd, a private company.

3 J.S Kingston stood down as Non-Executive Director of National Express plc on 31st December 2019 and, therefore, has only one other Non-Executive role.

4 J.L. Whalen retired from the Board on 31st December 2019.

Non-Executive Director meetings

As per best practice, our Non-Executive Directors met with the auditor and Korn Ferry, independent remuneration consultants, separately from our Executive Directors.

Division of responsibilities

An overview of the division of responsibilities, as set out in the Code, is provided in the table on page 86 and we comply with all Principles and provisions.

The responsibilities of the Chair, Group Chief Executive, Senior Independent Director, Board and Committees are set out in writing and agreed by the Board. A clear division is made between the leadership of the Board and Executive leadership.

Group General Counsel and Company Secretary

The Group General Counsel and Company Secretary supports the Chair and the Committee Chairs in making sure members are equipped for informed decision-making and that they appropriately allocate their time to subjects. All Directors have access to the advice of the Group General Counsel, who is responsible for advising the Board on all governance matters. Both the appointment and removal of the Group General Counsel is a matter for the whole Board.

2. Division of responsibilities *continued*

Division of responsibilities (based on 2018 Code's Principles F–I)

Chair
- Leads the Board
- Responsible for overall effectiveness in directing the Company
- Demonstrates objective judgement
- Promotes a culture of openness and debate
- Facilitates constructive Board relations
- Facilitates effective contribution of all Non-Executive Directors
- Ensures Directors receive accurate, timely, information
- Holds meetings with Non-Executive Directors, without Executive Directors present

Board (key matters)
- The approval of corporate and strategic business plans
- The approval of the annual and interim results
- Trading updates
- Integrated risk management framework
- Major acquisitions/disposals
- Major capital expenditure
- Director appointments
- Material litigation
- Governance structure

Senior Independent Director
- Provides a sounding board to the Chair
- Serves as an intermediary for the other Directors and shareholders
- Leads an annual meeting of Non-Executive Directors to appraise the Chair's performance

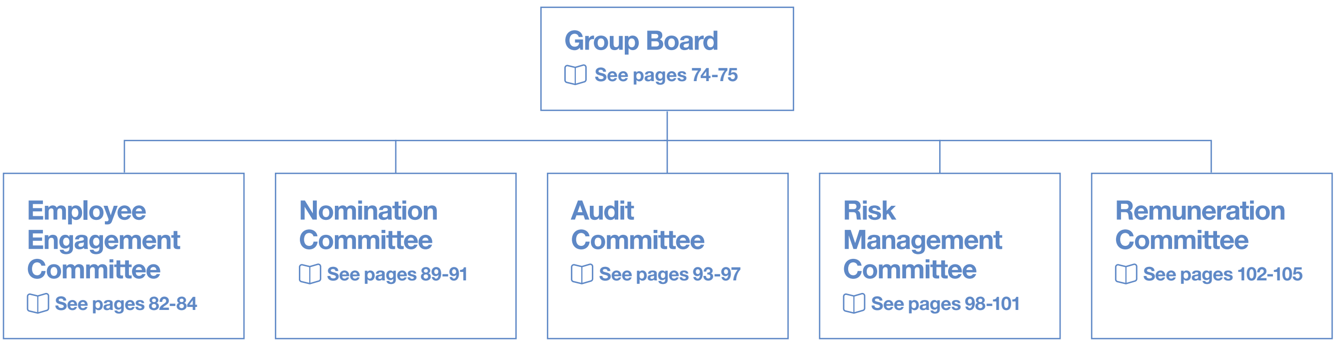
Non-Executive Directors
- Provide constructive challenge, strategic guidance and offer specialist advice
- Hold a prime role in appointing and removing Executive Directors
- Scrutinise and hold to account the performance of management and individual Executive Directors against agreed performance objectives

Group General Counsel and Company Secretary
- Advises the Board on all governance matters
- Supports the Board to ensure that it has the policies, processes, information, time and resources it needs for the Board to function effectively and efficiently
- Advises the Board on important legal and regulatory matters

Executive leadership

There is a clear division of responsibilities between the leadership of the Board and our Executive leadership. Our Group Chief Executive's roles and responsibilities include: management of the Group's short, medium and long-term performance; stewardship of capital, technical and human resources; corporate and business strategy; internal risk management controls; and organisational structure.

Governance structure



Further reading Board Committees overview

The Terms of Reference for all Board Committees are set out in detail on the Group's website. These terms are subject to regular review.

www.spiraxsarcoengineering.com

The Board of Directors

The Board relies on Executive management to run the business and monitor management activities, and holds them accountable against targets and standards. The Board also approves long-term corporate and strategic plans after a full review and assessment of market and technology trends, business drivers and risks. Having a senior management team that is capable of executing the strategic plans is a key focus for the Board.

The formal schedule of matters reserved for the Board's decision is available on the Group's website, www.spiraxsarcoengineering.com. The Board also has an Authority Limits Policy that sets out clearly the primary responsibilities, controls and authorisation limits on matters affecting the Group's business.

Board meetings

The Board meets as often as is necessary to discharge its duties. In 2019, the Board met seven times. All Directors are expected to attend all Board meetings and relevant Committee meetings unless prevented by prior commitments, illness or a conflict of interest. Directors unable to attend specific Board or Committee meetings are sent the relevant papers and asked to provide comments in advance of the meeting to the Chair of the Board or Committee.

In addition, all Board and Committee members receive the minutes of meetings as a matter of course.

Board attendance 2019*

	Board meetings							Attendance
J. Pike	✓	✓	✓	✓	✓	✓	✓	100%
N.J. Anderson	✓	✓	✓	✓	✓	✓	✓	100%
K.J. Boyd	✓	✓	✓	✓	✓	✓	✓	100%
N.H. Daws	✓	✓	✓	✓	✓	✓	✓	100%
P. France	✓	✓	✓	✓	✓	✓	✓	100%
J.S. Kingston	✓	✓	✓	✓	✓	✓	✓	100%
J.L. Whalen	✓	✓	✓	✓	✓	✓	✓	100%
C.A. Johnstone[1]		✓	✓	✓	✓	✓	✓	100%
G.E. Schoolenberg[2]	✓	✓	✓	✓	✓	✓		87.5%
K.J. Thompson[3]			✓	✓	✓	✓	✓	100%

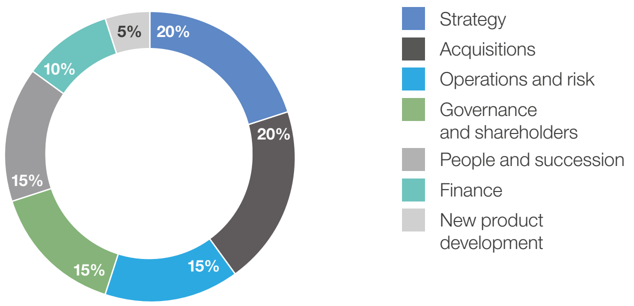
* C.G. Watson attended four meetings prior to stepping down from the Board on 15th May 2019.

1 C.A. Johnstone appointed on 5th March 2019.

2 G.E. Schoolenberg absence due to illness.

3 K.J. Thompson appointed on 15th May 2019.

How the Board spent its time



Board activity 2019

The Board ensures good governance practices are embedded throughout the Group as they are an integral part of running a successful business. In the chart on the bottom left of the page, we have set out how the Board spent its time during 2019.

The Board agendas are carefully planned to ensure focus on the Group's strategic priorities and key monitoring activities, as well as reviews of significant issues. During 2019, the Board devoted considerable time to ensuring that the post-acquisition plans relating to the Electric Thermal Solutions business were implemented. This was supported by the Board's visit to Chromalox's site in Utah, USA in June, where we were able to see an example of our Electric Thermal Solutions business' manufacturing site up close and engage with our employees through a focus group conducted under the auspices of our Employee Engagement Committee.

We also reviewed the implementation of our strategic plan and had an update on our corporate strategy in June. One outcome of this review was the decision to place Chromalox and Thermocoax under the umbrella of our Electric Thermal Solutions business and to appoint Dominique Mallet as President of the business.

We monitored the significant investment we are making in Aflex Hose, Yorkshire, where we are consolidating our four sites into a purpose-built facility that will streamline our processes and prepare us for the growth we anticipate in this business. Completion of this site is scheduled for March 2020 with the Board visiting in October 2020.

We considered a number of important finance matters during 2019 including the approval of a cash pooling arrangement with Bank Mendes Gans, a foreign exchange risk management policy and consideration of the renewal and extension of our revolving credit facilities provided by Barclays Bank plc and HSBC plc in 2020.

Health & Safety is of fundamental importance to the business and is considered at each Board meeting. It is also considered in detail at each Group Executive Committee meeting.

The Board also concentrated its attention on formulating a proactive Brexit strategy, looking at both the challenges and opportunities for the Group posed by a UK exit from the EU.

The Board continued to engage with shareholders on governance, remuneration and trading during the period.

Board focus for 2020

- Continue to support the Executive Committees with their growth plans across all of our businesses. Key management presentations and discussions are planned in 2020 across all of our businesses.
- Further consolidate our position in the FTSE 100 through both organic and inorganic growth.
- We see many opportunities to build on our success and we look forward to realising and sharing these with our shareholders as we effect them through our strategic plan.

2. Division of responsibilities *continued*

Key Board activities in 2019, by meeting

Standing agenda items

- An Environmental, Health and Safety update is the first operational matter addressed by the Board at each meeting
- The Group Chief Executive and the Chief Financial Officer report on monthly, quarterly, bi-annual and annual trading, as appropriate
- The Group General Counsel and Company Secretary regularly updates the Board on all material legal matters and on our compliance programmes
- Company share performance and shareholder/analyst feedback is discussed at most Board meetings

Board visit case study

Board visit to Electric Thermal Solutions, Chromalox, Utah in June 2019

The Board met with Chromalox's management team and employees to better understand its operations, track the cultural changes since the acquisition in 2017 and discuss the main opportunities and risks for the Chromalox business. This visit was timed just after Thermocoax joined the Group in May 2019. Dominique Mallet, President of Thermocoax at that time, joined the visit and the Board were able to cement plans to amalgamate the companies, under Dominique's leadership, to create our Electric Thermal Solutions business. In addition, the Employee Engagement Committee held its first employee meeting and the Chromalox team provided positive input. Key cultural advances have been made since the Board's visit.

Feb

- Draft Annual Report
- Modern Slavery update
- Group litigation
- Thermocoax acquisition
- Business review – EMEA, Asia Pacific (Steam Specialties)
- Management presentations – Americas (Steam Specialties)
- Watson-Marlow – Asia Pacific and Africa
- Deloitte Academy governance update

Mar

- 2018 financial results
- 2018 final dividend
- Review and approval of Annual Report
- Aflex Hose expansion
- Business review – Gestra (Steam Specialties)
- Thermocoax acquisition

May

- Foreign exchange hedging programme
- New ERP system (Steam Specialties)
- Business review – Asia Pacific (Steam Specialties)
- Management presentation – Watson-Marlow, USA

Jun

(Chromalox, Utah, USA)

- Succession planning
- Business and corporate strategy
- Electric Thermal Solutions
- Corporate broker review
- Management presentation – Chromalox

Aug

- Half-year results
- 2019 interim dividend
- Group litigation report
- Investor feedback
- Business review – Watson-Marlow
- Management presentations – Spirax Sarco USA and Spirax Sarco Thailand (both Steam Specialties)

Oct

- Cash pooling
- Acquisition implementation
- Business review – Supply (Steam Specialties)
- Management presentation – Business Development (Steam Specialties)

Dec

- Approval of budget
- Internal Board effectiveness review
- Draft Annual Report and Circular to Shareholders
- 2020 Plan and business presentations
- Report by Risk Management Committee including Brexit and climate change

3. Composition, succession and evaluation

Nomination Committee Report

We strive for greater diversity on our Board, across the Group and in our succession planning. We met our target of 33% female representation on our Board."

Jamie Pike
Chair of Nomination Committee

Members

Our Nomination Committee comprises:

	No. of meetings attended/ total no. of meetings held*	Attendance %
Jamie Pike (Chair)	5/5	100%
Peter France	5/5	100%
Caroline Johnstone[1]	4/4	100%
Jane Kingston	5/5	100%
Trudy Schoolenberg[2]	4/5	80%
Kevin Thompson[3]	3/3	100%

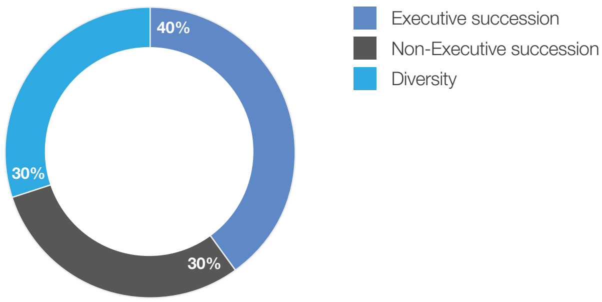
* C.G. Watson attended two meetings prior to stepping down from the Board on 15th May 2019.

1 C.A. Johnstone appointed on 5th March 2019.

2 G.E. Schoolenberg absence due to illness.

3 K.J. Thompson appointed on 15th May 2019.

How the Committee spent its time



Committee role and responsibilities

The main role of the Nomination Committee is to recommend changes to the Board and consider succession planning for the future. The Committee:

- makes appropriate recommendations to the Board for the appointment, re-appointment or replacement of Directors;
- reviews the structure and composition of the Board with regard to the overall balance of skills, knowledge and experience against current and perceived future requirements of the Group;
- recommends any proposed changes to the Board; and
- considers succession planning arrangements for the Directors and, more generally, senior executives.

Meetings

The Nomination Committee met five times in the year to address the following matters:

- Executive Director succession planning;
- re-appointment of Non-Executive Directors; and
- Audit Committee Chair succession.

3. Composition, succession and evaluation *continued*

Nomination Committee Report *continued*

Key Nomination Committee activities 2019

Feb Mar

- Appointment of Senior Independent Director and Chair of Audit Committee
- Group Chief Executive not attending meetings for governance reasons

Jun

- Executive Director succession planning

Aug

- Re-appointment of Non-Executive Director

Dec

- Executive Director succession planning

Chair's review of 2019

Board changes

In March 2019, we welcomed Caroline Johnstone to the Board who, in due course, became Chair of our Employee Engagement Committee. In May 2019 we welcomed Kevin Thompson who took over from Clive Watson as Chair of the Audit Committee. In addition, consequent on Clive's completion of nine years with the Board, Trudy Schoolenberg took over as our Senior Independent Director.

We are delighted that Caroline Johnstone and Kevin Thompson have joined the Board as independent Non-Executive Directors. Caroline's financial, people and advisory skills, together with her international business experience across a range of different industries, will benefit the further development of the Group. Kevin's international expertise and financial skills will also enhance the Board's overall skill set. In respect of Caroline's and Kevin's appointments, we achieved a 50% female appointment ratio, consistent with our stated policies. Should any Director succession opportunities arise in the next 12 months, gender and ethnic diversity will continue to be important selection criteria.

Korn Ferry was appointed in relation to the specification, search and evaluation of these appointments and was instructed to include candidates that advanced both our gender and ethnic representation. It is our policy to consider overall Board balance and diversity when appointing any new Director. Korn Ferry is an independent search and recruitment agency.

With Caroline's appointment and the retirement of Jay Whalen, female representation on our Board increases to 33%.

Diversity and Inclusion Policy

We believe that the Board's perspective and approach is greatly enhanced by gender, age and cultural diversity and it is our policy to consider overall Board balance and diversity when appointing new Directors. As shown on page 63, we have made progress with our diversity and inclusion agenda, which is particularly relevant given the broad international reach of the Group and we will continue this progress with future appointments to the Board.

Diversity and inclusion are key elements in our Group strategic sustainability project where we undertook the following:

- progressed our external talent pools to increase the number of female candidates;
- embedded and executed our Executive mentoring programme for female talent with male and female mentors; and
- completed an equal pay audit for all UK employees.

Gender reporting

By the end of 2019, Board gender diversity changed with six males and three females. During 2019, we participated in the FTSE Women Leaders (Hampton-Alexander) Review. With 30% female representation on our Board and 20% of the combined Executive Committees and their direct reports being female, we were ranked 69th in the FTSE 100 for women in leadership and 4th in the industrial engineering category. Since 2015, we have enhanced our focus and expanded our activities regarding succession planning and talent development at the executive levels of the Group so that we continue to have a strong, diverse bench strength for the management and operation of our businesses. Practical achievements in this field include the development and implementation of a successful executive female mentoring programme and the internal promotion and external recruitment of 25 women for higher executive positions. In addition, we have achieved 50% female representation when recruiting for our two-year Global Graduate Programme. We will continue to take other actions to increase the representation of women in our company. We recognise that further actions need to be taken to increase the representation of women.

As a Group we are committed to gender diversity and we made good progress in 2019 achieving our minimum target of 33% female representation on the Board. We will work to progress the same targets that also apply to the Group Executive Committee and their direct reports. We ensure that this target is taken into account in our succession planning and recruitment.

More detailed figures on gender diversity can be found on page 63 in our Sustainability Report.

Committee focus for 2020

In 2020, we will focus on succession planning at Executive levels of the Group and promoting talent across the Group so that we continue to have a strong bench strength for the management and operation of our businesses.

Jamie Pike
Chair of Nomination Committee

Further reading

Our Diversity and Inclusion Policy can be found on our website.

www.spiraxsarcoengineering.com

Jay Whalen's reflections on 28 years with the Group

Most importantly, it has been a great pleasure to serve our shareholders and employees as the President of the Watson-Marlow Fluid Technology Group (WMFTG) for over 28 years.

I joined the Group in 1991 as President of Watson-Marlow Inc. in the USA and was named Sales and Marketing Director of the global Watson-Marlow pump business in 2002. In August 2010 I became President of Watson-Marlow and in 2012 I was appointed to the Spirax-Sarco Engineering plc Board.

During this time WMFTG has become an integral part of the Group and its significant growth has been due to successful geographic expansion, sectorised market penetration and a first class acquisition strategy. I would like to say thank you to all my colleagues and friends at Spirax Sarco and Watson-Marlow. I wish you all the very best under the leadership of Andrew Mines. Andrew and I have completed a smooth handover of executive responsibilities and I know that I leave Watson-Marlow in good hands.

"Steering Watson-Marlow through excellent growth and high margin profitability has been a pleasure."

Jay Whalen
President,
Watson-Marlow

"The Board and management's passion for the business have fully met my expectations."

Kevin Thompson
Independent Non-Executive Director

Kevin Thompson's induction and early reflections

I am delighted to have joined the Board of Spirax-Sarco Engineering plc with its record of long-term success and exciting business opportunity.

My expectations have been fully met by the Board and management's passion for the business and its growth, the integrity and strong governance I have seen in every interaction. I have found the people and operations of very high quality, setting high expectations and with an open mindset for continued improvement. As Chair of the Audit Committee I am very pleased to see how seriously the Group takes its responsibilities.

I have been able to visit Chromalox in Utah, the Watson-Marlow operations in Falmouth, the Spirax Sarco R&D and manufacturing facilities in Cheltenham as well as visits to customers with a service engineer. In all cases I have felt warmly welcomed and been struck by the professionalism, care and commitment towards customers and the growth of the business.

I observe that as well as its governance responsibilities, the Board spends a lot of time considering opportunities and risks and looking to the future through investment in resources and development of our people. I very much hope to be able to contribute to the Group's success in these and other areas, and to its growth in the long term.

3. Composition, succession and evaluation *continued*

Board evaluation

Board evaluation process

In 2018, we commissioned an independently-facilitated Board effectiveness review conducted by Independent Audit. (Independent Audit provides no other services to the Group.) Our aim was to capture open and constructive feedback from Board members which would:

- provide insight into our effectiveness;
- point to actions for improving our performance; and
- establish a benchmark for measuring future progress.

The review was carried out in accordance with the guidance in the Code.

In 2019, we followed up on the recommendations of Independent Audit and the Board carried out an internal evaluation of the performance of the Board and the Board Committees, in accordance with the provisions of the Code. The Chair circulated a comprehensive questionnaire to members of the Board covering all issues related to the effective running of the Board and the functioning of the Committees. The responses were consolidated and anonymised and common themes identified in order for the Board to determine key actions and next steps for improving Board and Committee effectiveness and performance.

The internal effectiveness review supported the overall conclusion of the 2018 external evaluation that the expertise and experience of the Board provided guidance and support on important decisions. In particular, it was noted that the Board is well-balanced across skill sets and backgrounds, and has a good dynamic with open discussion and the ability to table challenging points of view.

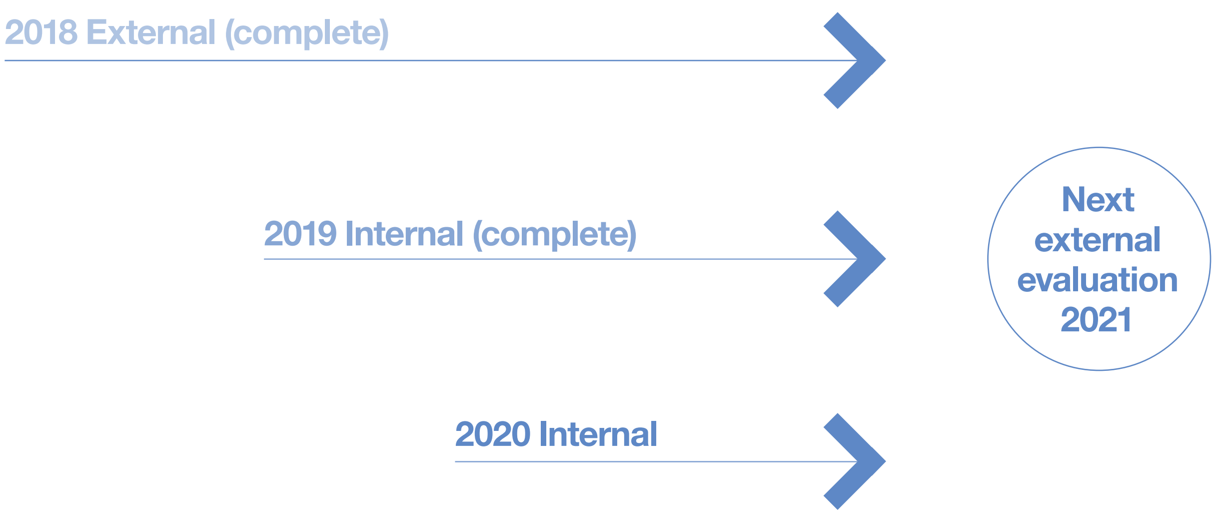
The main recommendations, following the review, are:

- Improvements to Committee scope;
- Concentrating time on important matters; and
- Identifying priority areas for 2020.

Outcome and agreed focus for 2020

- 2020 Plan delivery.
- Executive succession planning.
- Continue to improve safety and sustainability.

Evaluation cycle – three year



4. Audit, risk and internal control

Audit Committee Report

> **I recognise the solid foundations established by the Audit Committee over many years and it is my intention to build on them.”**

Kevin Thompson
Chair of Audit Committee

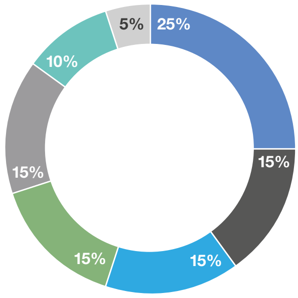
Members

Our Audit Committee comprises:

	No. of meetings attended/ total no. of meetings held*	Attendance %
Kevin Thompson[1] (Chair)	2/2	100%
Peter France	3/3	100%
Jane Kingston	3/3	100%
Caroline Johnstone[2]	3/3	100%
Trudy Schoolenberg	3/3	100%

* C.G. Watson attended one meeting prior to his retirement on 15th May 2019.
1 K.J. Thompson appointed to Board and as Chair of Audit Committee on 15th May 2019.
2 C.A. Johnstone appointed to Board and Board Committees on 5th March 2019.

How the Committee spent its time



Committee role and responsibilities

The main roles and responsibilities of the Audit Committee include:

- monitoring the integrity of the Financial Statements of the Company and any formal announcements relating to the Company's financial performance, and reviewing significant financial reporting judgements contained in them;
- providing advice (where requested by the Board) on whether the Annual Report, taken as a whole, is fair, balanced and understandable, and provides the information necessary for shareholders to assess the Company's financial position, performance, business model and strategy;
- in conjunction with the Risk Management Committee and the Board, reviewing the Company's internal financial controls and internal control and risk management systems;
- monitoring and reviewing the effectiveness of the Company's internal audit function and making recommendations to the Board;
- conducting the tender process and making recommendations to the Board about the appointment, re-appointment and removal of the external auditor, and approving the remuneration and terms of engagement of the external auditor;
- reviewing and monitoring the external auditor's independence and objectivity;
- reviewing the effectiveness of the external audit process, taking into consideration relevant UK professional and regulatory requirements;
- developing and implementing policy on the engagement of the external auditor to supply non-audit services, ensuring there is prior approval of non-audit services, considering the impact this may have on independence, taking into account the relevant regulations and ethical guidance in this regard, and reporting to the Board on any improvement or action required; and
- reporting to the Board on how it has discharged its responsibilities.

4. Audit, risk and internal control *continued*

Audit Committee Report *continued*

Meetings

The Committee met three times during 2019. Relevant members of the Group's senior management, including the Group Chief Executive, the Head of Internal Audit, the Chief Financial Officer and the Group Financial Controller, were also in attendance at these meetings. Following an internal review by the Audit Committee of its own performance, a number of changes to the way it operates meetings were agreed upon. The more important of those changes were (i) that the Committee will invite the Group Chief Executive to attend all future meetings instead of just one a year (being clear to note that "attendance" is in his capacity as Group Chief Executive and that he is not a member of the Audit Committee) and (ii) to seek more direct involvement from the Group's Divisional Finance Directors by inviting them to attend and present to the Committee at least once a year.

During 2019, the Committee received reports from external and internal auditors on the major findings of their work and the progress of management follow-up by way of management reports. As a safeguard, the Committee holds separate meetings with the external and internal auditors without management present to discuss their respective areas and any issues arising from their audits.

Key Audit Committee activities 2019

Mar

- Reviewed the Annual Report including:
  - Viability Statement
  - Going Concern basis
  - that it is fair, balanced and understandable
- Agreed updates to the Internal Audit Charter for 2019
- Reviewed the effectiveness of internal controls

Aug

- Reviewed the half-year results
- Reviewed the auditor interim report
- On-going review of risk areas such as cybersecurity, GDPR and whistle-blowing
- Consideration of Audit Committee performance
- Approved amendments to the Audit Committee's Terms of Reference

Oct

- External audit planning (including review and approval of audit scope and fees)
- Reviewed updates from Tax and Group Treasury
- Reviewed internal audit process
- Reviewed and approved new Mandatory Contract Practices process and documentation

Committee competence and governance

The Audit Committee operates under Terms of Reference, which were reviewed by the Committee and updated in August 2019, and can be found on the Group's website, www.spiraxsarcoengineering.com. The Terms of Reference set out the membership and experience requirements of the Committee.

Collectively, the Committee is considered by the Board to possess an appropriate level of independence (it is comprised solely of Non-Executive Directors) and experience. The Chair has recent, extensive and relevant financial experience and the required competence in accounting and its members have a depth of financial and commercial experience in various industries, as well as the industrial engineering sector in which the Group operates. A more detailed summary of the qualifications, skills and experience of each Committee member can be found on pages 74 to 75.

Chair's review of 2019

It is a pleasure to be presenting my first report as Chair of the Audit Committee. I would like to thank Clive Watson for his support in my transition into the role and for the solid foundations established over his time as Chair. My intention is to build further on these.

The Committee has reviewed its Terms of Reference and will ensure that the Committee agendas align fully with their requirements. We have agreed that more time will be devoted to Committee business (including an additional meeting each year) to ensure that the Committee members receive adequate training as well as exposure to senior finance executives. This will also enable thoughtful review and implementation of increasing governance and reporting requirements.

During 2019 the key areas of focus for the Audit Committee, in addition to its on-going core responsibilities of monitoring the integrity of the Group's Financial Statements and the effectiveness of its controls, were:

- monitoring the Group's cybersecurity policies and control processes;
- reviewing and updating the Committee's Terms of Reference;
- monitoring the outcome of Internal Audits and agreeing the focus for future audits;
- reviewing the progress on integration and accounting for recent acquisitions;
- monitoring the implementation of new accounting standards including IFRS 16; and
- monitoring the Group's preparedness for Brexit.

The following matters considered by the Audit Committee were of particular note:

Appointments

Since the appointments, in 2017, of a Head of Internal Audit and a Group Tax Manager, the Committee noted that in 2019 the Group had further strengthened its Finance team and the control environment by appointing a Senior Internal Auditor.

GDPR and cybersecurity

The Committee was pleased to note that the 2018 GDPR compliance project had been successfully completed and that 2019 saw compliance with GDPR carried out on a "business as usual" basis by the Group. The Committee will continue to monitor compliance.

In early 2019 the Group suffered a ransomware attack, which the Group swiftly and successfully contained. No data of a business or personal nature was accessed or compromised. We liaised with the relevant authorities and no ransom was paid. The impact on our business was immaterial. Whilst the attack demonstrated that the Group had robust defences in place and its handling of, and recovery from, the attack was excellent, lessons were learned by the Group. The Committee was pleased to note that the Group continues to invest in its cybersecurity defences to mitigate the continued threat posed to businesses by online attacks.

Taxation

The Group Taxation Strategy, which can be found on the Group's website, www.spiraxsarcoengineering.com, on the Governance Documents page, was published in 2018 and reviewed in 2019. The Taxation Strategy sets out the Group's approach to tax risk management and governance, tax planning and relationship with the relevant tax authorities.

The Committee noted that the Group is subject to HMRC Senior Accounting Officer review and in June 2019 a clean certificate was issued by the Senior Accounting Officer for the year ended 31st December 2018.

Review of effectiveness of internal controls

In its review of the Group's internal controls, the Committee considers the effectiveness of all material controls, including financial, operational and compliance controls and risk management systems.

The Committee continues to consider the Group to have a strong and effective control environment in place. Further detail on monitoring effectiveness of internal controls can be found on page 100.

Mandatory Contract Practices

One of the areas identified by the Audit Committee for improvement in 2019 was the Group's contracting processes and a new Mandatory Contract Practices process was established by the Group. The Mandatory Contract Practices were reviewed and approved by the Committee in October 2019 and have subsequently been rolled out to all businesses of the Group for implementation. The Mandatory Contract Practices detail the processes and procedures that all Group sales and purchasing teams are to follow to ensure that no Group business is exposed to unacceptable contractual risks. Linked to the new contracting procedures is the provision of new template documents (including new terms and conditions of sale in 23 languages) for use by all Group companies. The Committee will continue to monitor the adoption, and impact, of these new mandatory practices.

Whistle-blowing

The Committee, in association with the Board, was pleased to note that the Whistle-blowing Policy implemented in 2014 had been successfully rolled out to the newest members of the Group (Thermocoax). This roll out included the Group's Safecall facility, a confidential employee whistle-blowing hotline. The Committee received updates on the use of Safecall at each meeting and noted that, on the whole, this hotline continued to be used for its intended purpose by employees. The Committee assessed management's responses to the reported cases (of which there were 13 in 2019) and considered them to be appropriate and satisfactory.

Acquisitions and goodwill

Following the acquisitions and establishment of the Electric Thermal Solutions business, the Group has made a number of changes to its internal reporting and structure. This has clarified three segments. As a result of this, the Group has considered how goodwill is monitored and reported, ultimately concluding it is to be consistent with the Groups segments.

In addition, the Committee has reviewed the work undertaken to rationalise the number of cash generating units assessed for goodwill impairment in line with the segmental reporting of the Group. The results of this rationalisation are reflected in the Financial Statements. See Note 15 on page 175 for further details.

Significant issues

During 2019, the Committee considered and addressed the following significant issues in relation to the Group's Financial Statements and disclosures:

(i) Revenue recognition

In view of the profile of revenue and profit recognition in the final quarter of the year, the need to focus on any new contracts and revenue cut-off for certain businesses was highlighted to ensure the appropriate recognition of revenue for the year ended 31st December 2019.

How this was addressed

The Committee received regular updates on significant new contracts and the adequacy of the control environment for revenue recognition during 2019.

(ii) Pensions

There are judgements and estimates made in selecting appropriate assumptions in valuing the Group's defined benefit pension obligations, including discount ratios, mortality, inflation and salary increases.

How this was addressed

The Committee considered reports by the Group, including those from independent external advisers, and is comfortable that the key assumptions are reasonable.

4. Audit, risk and internal control *continued*

Audit Committee Report *continued*

(iii) Management override of controls

Internal controls are the safeguards put in place by the Group to protect its financial resources from fraud and abuse by employees. Management is responsible for ensuring the internal controls are followed by employees. As such, intervention by management in the handling of financial information and making decisions contrary to the internal control policy is a significant, if unlikely, risk.

How this was addressed

Regular cycles of internal and external audits by independent parties have been put in place to review financial information. These audits are objective reviews on compliance with the Group's accounting policies. The Group continues to provide additional resource to its internal audit function having appointed its third dedicated internal auditor in 2019. Also, a further review of certain internal controls and related documentation will be carried out to ensure they are fit for purpose in the now enlarged Group.

(iv) Acquisitions and Goodwill

Further acquisition activity during the year resulted in a focus on the initial valuation of acquired intangibles and goodwill on the Thermocoax acquisition. The carrying value of all goodwill and acquired intangibles was also highlighted to ensure it is appropriate.

How this was addressed

The Committee reviewed and approved the valuation of acquired intangibles and goodwill for the Thermocoax acquisition made in 2019.

The Committee considered the key assumptions selected to perform goodwill impairment reviews and concluded it was comfortable that they were reasonable and resulted in value in use exceeding carrying values.

The Committee has also reviewed and approved the work undertaken to bring the number of cash generating units used for goodwill impairment reviews into line with the segmental reporting of the Group.

Critical judgements and key sources of estimation uncertainty in the Financial Statements

After reviewing the presentations and reports from management and consulting with the auditor, the Committee is satisfied that the Financial Statements appropriately address the critical judgements and key sources of estimation uncertainty, both in respect of the amounts reported and the disclosures. The Committee is also satisfied that the significant assumptions used for determining the value of assets and liabilities have been appropriately scrutinised, challenged and are sufficiently robust. This includes the valuation of the Group's defined benefit obligation which is valued using key assumptions. Further details can be found on page 154.

The Committee reviewed the 2019 Going Concern and Viability Statements and were satisfied that these represented accurate assessments of the Company's position as at the date of the Statements.

External audit process

This is the sixth financial year in which the Annual Report and Financial Statements have been audited by Deloitte LLP, following their appointment as the Company's external auditor as of 20th May 2014. This appointment is subject to on-going monitoring and will run for a maximum of 10 years before being tendered. One of the primary responsibilities of the Committee is to assess the robustness of the external audit process and make recommendations to the Board in relation to the appointment, re-appointment or removal of the external auditor. The Committee took a number of factors into account when evaluating the effectiveness of the external audit including: the quality and scope of the planning of the audit (in October 2019, Deloitte LLP presented their plan for the 2019 audit to the Committee); and feedback from all audited operating units, the Group Finance team, senior management and Directors on the audit process and the quality and experience of the audit partners engaged in the audit.

In accordance with the requirements to rotate the audit partner at least every five years, 2019 saw Andrew Bond take over responsibility for the audits from Mark Mullins.

The Group has complied with the provisions of the Competition and Market Authority (CMA) Order, issued by the CMA in September 2014, for "The Statutory Audit Services for Large Companies Market Investigation (Mandatory Use of Competitive Tender Processes and Audit Committee Responsibilities)".

Audit fees

During 2019, the Committee reviewed and approved the proposed audit fees and terms of engagement for the 2019 audit and recommended to the Board that it proposes to shareholders that Deloitte LLP be re-appointed as the Group's external auditor for 2020 at the AGM to be held on 13th May 2020.

Safeguarding independence and objectivity

The Committee recognises that the independence of the external auditor is an essential part of the audit framework and has adopted a policy which sets out a framework for determining whether it is appropriate to engage the Group's auditor for non-audit services. This policy states that any expenditure with the Group's auditor on non-audit fees should not exceed 70% of the average audit fees charged in the last three-year period.

During the year, the Group spent £0.1 million on non-audit services provided by Deloitte LLP (being 6% of the average of Group audit fees charged over the past three years). Further details can be found in Note 7 on page 168. No significant non-audit services were provided by Deloitte LLP.

Auditor payments 2019 £m

Internal audit

During 2019, the Committee assessed the effectiveness of the internal audit process, noting the significant progress made over the past three years. The Committee reviewed the schedule of planned internal audits undertaken in 2019 and assessed the robustness of the control framework that is in place to track and monitor progress in remedying any identified deficiencies. This review ensures that the Committee is able to give assurances that the Group has an effective and integrated risk management framework, in addition to the oversight provided by the Risk Management Committee. During 2019, there were a total of 30 internal audits performed. On the whole, the companies audited had an effective control environment. Where issues were found, remediation actions were agreed that are tracked to completion and validated before being closed. To the extent that any internal audit action items become overdue, the Divisional Finance Directors are notified to assist with ensuring they are closed as soon as possible. The Committee noted that with the increased internal audit resource and coverage, more action items have been generated and requested that management devote sufficient resource to their resolution with regular reporting back to the Committee. The internal audit process is explained in more detail on page 100.

Ensuring a fair, balanced and understandable Annual Report

Review of Financial Statements

During 2019, the Committee considered many components of business performance in order to ensure it has a full understanding of the operations of the Group. Key matters considered by the Committee include:

- determining the position adopted in judgement and estimate areas for pensions;
- risk areas set out in the Risk Management Committee Report;
- receipt of regular strategy reports from the Group Chief Executive and operational reports from the Divisional Directors;
- reviews of the budget and operational plan; and
- consideration of judgements and estimates.

Through these processes and its monitoring of the effectiveness of controls, internal audit and risk management, the Committee is able to maintain a good understanding of business performance, key areas of judgement and decision-making processes within the Group.

Fair, balanced and understandable

One of the key governance requirements of the Committee is for the Annual Report to be fair, balanced and understandable.

The co-ordination and review of the Group-wide input into the Annual Report is a significant exercise performed within an exacting time frame, which runs alongside the formal audit process undertaken by the external auditor.

The Directors acknowledge their responsibility for preparing the 2019 Annual Report. In accordance with the Code, the Directors confirm that they consider the Annual Report, taken as a whole, is fair, balanced and understandable and provides the information necessary for shareholders to assess the Group's financial position, performance, business model and strategy. An overview of the processes involved to achieve this are set out in the following table.

Audit Committee oversight of the Annual Report

- Assessed the consistency of the risks and judgements;
- reviewed the Board minutes to ensure issues of significance were given prominence; and
- arrived at a position where initially the Committee and then the Board were satisfied with the overall fairness, balance and clarity of the Annual Report.

Specific actions taken to achieve this included:

- comprehensive guidance for contributors at operational level;
- verification process dealing with the factual content of the reports;
- consideration of the appropriateness of alternative performance measures;
- comprehensive reviews undertaken at different levels in the Group that aim to ensure consistency and overall balance; and
- comprehensive review by the senior management team.

I will be attending the Company's AGM in May 2020 and will be happy to answer any questions on this report or the activities of the Committee.

Committee focus for 2020

In addition to on-going monitoring of risks, Internal Audit reviews and the quality of the Financial Statements, reporting and governance, the focus of the Committee for 2020 will include:

- on-going review of 2019 improvement areas (including Mandatory Contract Practices and cybersecurity);
- enhancing internal audit with increased attention to key Group risks, use of analytics, KPI reporting and closure of action items;
- increased Committee exposure to senior finance executives and training; and
- further review of the internal control environment to ensure it remains fit for purpose, including project OPAL. (See page 48 for further information on this project.)

Kevin Thompson
Chair of Audit Committee

Further reading

Our Going Concern Statement.
See page 136

Our Viability Statement.
See page 101

4. Audit, risk and internal control *continued*

Risk Management Committee Report

Our risk review covered our principal risks and emerging risks, including climate change."

Nicholas Anderson
Chair of Risk Management Committee

Members

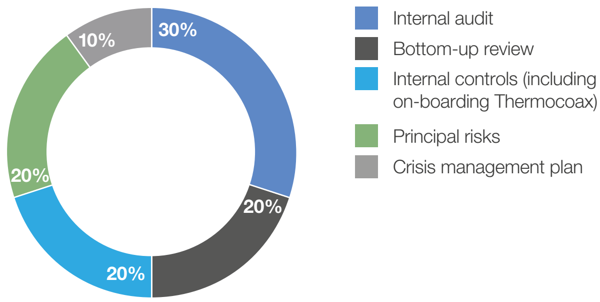
Our Risk Management Committee comprises:

	No. of meetings attended/ total no. of meetings held	Attendance %
Nicholas Anderson (Chair)	4/4	100%
Kevin Boyd	4/4	100%
Neil Daws	4/4	100%
Jay Whalen	4/4	100%
Jim Devine	4/4	100%
Dominique Mallet/Chris Molnar[1]	4/4	100%
Andy Robson	4/4	100%
Dan Harvey[2]	3/4	75%

1 In respect of the Electric Thermal Solutions business, Dominique Mallet (President) joined the Committee on 1st September 2019 and succeeded Chris Molnar (Vice President, Chromalox) acting President from 1st March 2019 to 31st August 2019.

2 Absence due to audit commitments.

How the Committee spent its time



Committee role and responsibilities

The Committee oversees the management and control of significant risks affecting the Group. The Committee ensures that the Group has risk management policies and procedures, including those covering project governance, sanctions and embargoes, crisis management, human rights, business continuity and business management.

The Committee's responsibilities include:

- using top-down and bottom-up reviews, understanding the risks facing the Group;
- determining our appetite for risk;
- accepting and managing within the businesses those risks which our employees have the skills and expertise to understand and leverage; and
- identifying appropriate risk mitigation techniques and countermeasures.

Meetings

The Committee met four times in 2019. A summary of the Committee's activities throughout the year is overleaf.

Key Risk Management Committee activities

Jun

- Group fully prepared for Brexit and all contingency plans deployed
- Consideration of climate change risk and inclusion in the risk register

Aug

- Reviewed the bottom-up risk summary
- Confirmed risk countermeasures in place at Group operating companies
- Climate change to be included in the risk register

Oct

- Updated and approved the risk register, based on the bottom-up review
- Risk register extended to cover Thermocoax
- Risk scoring matrix reviewed

Dec

- Final approval of the risk register
- Validation of scores
- Approval of principal risks
- Approval of changes in trend

Chair's review of 2019

Summary of key focus areas 2019

In keeping with the goals set for the year, in 2019 the Committee reviewed and updated its Crisis Management Plan. In conjunction with that process, the Committee undertook the additional tasks of designating incident officers for each of the businesses, agreeing to organise media training for senior management and the appointment of KPMG LLP on retainer, as advisers.

The Committee completed its biennial bottom-up review of risks, and updated the Group risk register accordingly. The Committee also continued to monitor the on-going Brexit negotiations, and approved specific preparedness actions for a potential "no deal" Brexit.

Anti-Bribery and Corruption (ABC)

The Group has continued to reinforce the message of zero tolerance for bribery and corruption within its businesses.

In 2019, that message was further strengthened by the improvement and expansion of our online ABC training. This new ABC training is hosted by the Spirax Sarco Academy as part of the Group Essentials training module, which also provides training to employees on a range of fundamental topics, such as Group Values, Health & Safety and cybersecurity. The reach of this training has also been expanded so that every employee with an email address is required to complete the course.

By the end of 2019, the new training was available in 16 key languages. In 2019, 4,344 employees completed the new ABC course. In total, over 5,400 employees (including Directors) worldwide have undertaken the ABC training. This includes our Electric Thermal Solutions business.

The Group also uses an independent, third-party whistle-blowing hotline to enable employees to anonymously report any suspected unethical, illegal or otherwise concerning conduct. Additionally, in line with our Gifts, Entertainment and Hospitality Policy, we maintain an online gift register, where employees record gifts so as to ensure our conduct is in keeping with our highest ethical expectations and within the law.

Further updates on whistle-blowing and ABC can be found in our Sustainability Report on page 64.

Modern Slavery Statement

The Group has updated its Modern Slavery Statement to reflect the Group's Values and the interplay between those Values and our commitment to the mission behind the UK Modern Slavery Act. The updated Statement also tracks our progress in incorporating our new acquisitions into our Global Excellence in Supply Chain Initiative. The 2019 Statement can be found on the Group's website, www.spiraxsarcoengineering.com, under Sustainability (Our supply chain).

Identifying emerging and principal risks

We have a robust risk management process in place through which we identify, evaluate and manage the principal risks and emerging risks that could impact the Group's performance.

During 2019, we reviewed the Group's exposure to risk using a bottom-up approach. Following this process, the Committee reviewed and confirmed the robustness of the countermeasures that Group companies have in place to mitigate the principal risks in the Group risk register. Our principal risks and the results of the 2019 review are set out in the Strategic Report on pages 22 to 25. Our approach to emerging risks is further described on page 21.

Climate risk

As climate-related risks continue to evolve, we are regularly assessing and monitoring the same with the aim of mitigating their impact where possible. We also recognise the importance of considering climate risks and opportunities in our business decisions and acknowledge that adopting the recommendations of the Task-Force on Climate-related Financial Disclosures (TCFD) is an important step in supporting the transition to a low-carbon economy. Our disclosures, set out on pages 68 to 69, demonstrate how we are managing our climate impact and how our business is evolving in response to the risks and opportunities arising.

Willis Towers Watson annually assess the impact of climate change on our Group companies using Global Peril Diagnostic and Property Quantified Results.

4. Audit, risk and internal control *continued*

Risk Management Committee Report *continued*

Going forward, climate risk will be managed holistically by the Committee with regular updates to the Group Executive Committee and the Board. We will also progress further with the implementation of the TCFD recommendations, including alignment of our short, medium and long-term outlook on climate risk with our Group's broader risk time horizons.

Monitoring effectiveness:

(i) Risk management systems

The Committee is responsible for reporting to the Board the risks facing the Group and the countermeasures related to those risks. To fulfil that responsibility, the Committee oversees the Group's risk management processes and procedures, with reliance on the Audit Committee for oversight of the Group companies.

Further, the Committee is charged with the on-going monitoring of sufficient and effective mitigation plans for relevant risks at each Group operating company and business group.

Each operating company is required to undertake a formal review, at least once a year, of the risks which impact, or have the potential to impact, its business. The reviews are consolidated into Group-wide risk reports which are maintained and reviewed by the Committee on a regular basis. Additionally, the risk management processes are monitored on an on-going basis via internal and external audits of Group companies. Senior managers have full accountability of the risk management within their businesses.

The governance structure provides three lines of defence in the Group's risk management, as illustrated below.

Three lines of defence

First line of defence
- The business is responsible for the identification, control and management of its own risks.

Second line of defence
- The Risk Management Committee, with the Audit Committee, ensures that the risk and compliance framework is effective so as to facilitate the monitoring of risk management with on-going challenge and review of the risk profile in the business.

Third line of defence
- Internal audits provide independent testing and verification of compliance with policies and procedures and monitoring of follow-up actions where required.

(ii) Internal control systems

Since 2013 the Group has employed a specific on-going review process for identifying and managing risks faced by the Group. The process includes assessment of the effectiveness of all material controls, including financial, operational and compliance controls, as well as risk management systems.

The review confirms that proper accounting records have been maintained, that financial information used within the business is reliable and that the preparation of the Consolidated and Company Financial Statements and the financial reporting process comply with all relevant regulatory reporting requirements.

Every year, via a self-certification questionnaire, General Managers and Finance Managers of every Group company are required to self-certify compliance with the policies, procedures and minimum requirements for an effective system of internal controls. The Committee uses this information, as well as information from the top-down and bottom-up risk review processes, to have meaningful and on-going oversight of risks across the business.

Whilst internal controls are not an absolute assurance against material misstatement or loss, the Board believes the regular cycle of review paired with internal monitoring provides a commercially sound approach to protect the Group from the risks that are a necessary part of its operations. As required by the UK Listing Authority, throughout the year and up to the date of the publication of the Annual Report, the Group has complied with the Code provisions on internal controls.

(iii) Internal audit

The Group's standard policy regarding internal auditing is that each operating company is audited once every five years (most more frequently). Operating companies located in higher risk territories are audited more frequently, and businesses acquired by the Group are subject to internal audit within six months of acquisition.

The internal audit system is a crucial part of the risk management process. The internal audits are conducted by our internal audit team headed up by Dan Harvey, who has over 20 years of professional experience.

Audit reports are made to the Audit Committee and the Board as a whole. The Committee has ensured compliance with centrally documented control procedures on such matters as capital expenditure, information and technology security, and legal and regulatory compliance.

Risk Appetite Statement

Risk is an inherent part of business and, in order to achieve our business aims, we must accept certain risks. We seek to implement a balanced approach to risk, ensuring that our resources are protected while still pursuing opportunities to accelerate and deliver growth.

The decision to take opportunity-based risks should, to the greatest extent possible, be deliberate and calculated.

We aim to confirm that the level of risk is commensurate with the strategic and economic benefits the risk might bring; we evaluate our ability to control the risk or mitigate its effects, should that risk materialise; and we always assess the potential ethical considerations arising from knowingly accepting some level of risk.

An informed and well-considered process is crucial to any decision to accept risk. The Committee has undertaken a thorough evaluation process to determine an appropriate risk appetite rating for each principal risk. These are set out in detail on pages 22 to 25.

In summary, the Group has a very low appetite for risks that could lead to violations of health, safety and environmental legislation, breaches of legal and regulatory requirements and climate change that affects its operations.

In contrast, the Group has a high risk appetite in relation to economic and political instability; with decades of experience in successfully managing operations in volatile markets, we have the control procedures in place to handle the challenges that come with those risks and we appreciate that without taking risks in new, albeit sometimes unstable, territories we would miss out on valuable opportunities for growth.

As an organisation we are risk aware, but not risk averse. We continually monitor and assess the risks facing the Group and evaluate our ability to control them and mitigate their effects. Focusing on our strategic objectives, we evaluate our risk appetite and decisions to accept risk in a way that will ensure the on-going financial health of the Group.

Viability Statement

In accordance with provision 31 of the UK Corporate Governance Code 2018, the Board has assessed the viability of the Group over a three-year period, taking into account the Group's current financial position, business strategy, the Board's risk appetite and the potential impacts of the principal risks outlined on pages 22 to 25 of the Strategic Report. Based on this assessment, the Board confirms that it has a reasonable expectation that the Company will be able to continue in operation and meet its liabilities as they fall due over the three-year period to 31st December 2022.

The Board believe that a three-year viability assessment period is appropriate as the timeframe is covered by the Group's rolling forecasts; takes into account the nature of the Group's principal risks, a number of which are external and have the potential to impact over short time periods; and is in alignment with the Group's bank term-loan durations. While the Board has no reason to believe that the Group will not be viable over a longer period, given the inherent uncertainty involved, the Board believe that a three-year period presents readers of the Annual Report with a reasonable degree of confidence while still providing a longer-term perspective.

In making their assessment, the Board completed a robust assessment of the principal risks facing the Group, including those that would threaten its business model, future performance, solvency or liquidity, and undertook sensitivity and stress testing to determine the potential impacts of the occurrence of one or more of the principal risks on sales, profit, margin, balance sheet, cash and return on capital employed. In addition to completing an impact assessment of the principal risks, the Board considered the probability of occurrence of the principal risks, the Company's ability to control them and the effectiveness of mitigating actions.

The Group's resilient business model has proven strong and defensive in the long term and has enabled the business to prosper, even in challenging market conditions. The diversity of our end-user markets and customers, broad product range, wide geographic spread, high replacement revenue streams and large base of installed equipment worldwide, together with our effective direct sales business model, enhances the viability of the Group in the face of adverse economic conditions and/or political uncertainty, as does our ability to self-generate business through identifying solutions to our customers' difficult process challenges and our ability to adjust our cost base.

Whilst no Board can ever fully foresee all possible risks facing the business in the future, the Board is of the view that a robust assessment was undertaken of the severe but plausible scenarios that may feasibly impact upon the business over the next three years. Furthermore, the Board remains confident in the Group's risk management process and the risk mitigation actions taken to address identified risks.

Committee focus for 2020

- Implementation of plans for Brexit.
- Continue to progress disclosure on climate change based on Taskforce on Climate-related Financial Disclosures guidelines.
- Top-down risk review.

Nicholas Anderson
Chair of Risk Management Committee

Further reading
Risk management and principal risks
See pages 20-25

5. Remuneration

Remuneration Committee Report

> **In 2019, Executive Director compensation fully complied with our Policy. We recommend our 2020 Policy after helpful input from shareholders."**

Jane Kingston
Chair of Remuneration Committee

Members

Our Remuneration Committee comprises:

	No. of meetings attended/ total no. of meetings held*	Attendance %
Jane Kingston (Chair)	5/5	100%
Peter France	5/5	100%
Caroline Johnstone[1]	3/3	100%
Trudy Schoolenberg[2]	4/5	80%
Kevin Thompson[3]	3/3	100%

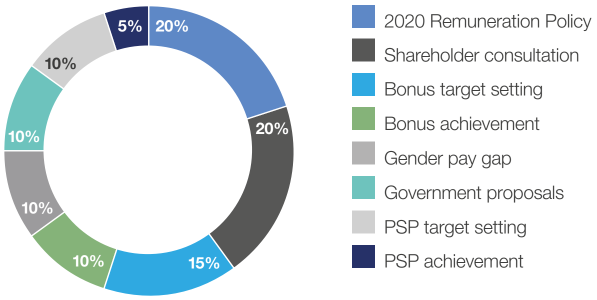
* C.G. Watson attended three meetings prior to stepping down from the Board on 15th May 2019.

1 C.A. Johnstone appointed 5th March 2019.

2 G.E. Schoolenberg absence due to illness.

3 K.J. Thompson appointed 15th May 2019.

How the Committee spent its time



Committee role and responsibilities

The Committee determines the philosophy, principles and policy of Executive and Senior Manager remuneration having regard to the latest legislation, corporate governance, best practices and the FCA Listing Rules. The Committee takes account of workforce remuneration and related policies and the alignment of incentives and rewards with culture. The Committee's role has expanded with the introduction of the UK Corporate Governance Code 2018, which applied in 2019. The Committee now reviews remuneration policy and practices that apply to the Group Chief Executive, Executive Directors, the Group Executive Committee and Senior Managers. The main role of the Committee is to determine Executive remuneration policies, how they are applied and set targets for the short and long-term incentive schemes. It also monitors compliance with the presiding Remuneration Policy.

Key Remuneration Committee activities 2019

Feb Mar

- Shareholder consultation
- Executive Director salaries
- Statement by Committee Chair
- Annual Report on Remuneration 2018
- Annual Bonus – 2018 outcome and 2019 targets
- PSP – 2016 outcome and 2019 targets

May

- PSP – 2019 award

Oct

- Newly-appointed ETS* and Watson-Marlow leaders' salaries
- 2020 Remuneration Policy
- Executive pensions

Dec

- Shareholder consultation
- 2020 Remuneration Policy
- Group Chief Executive pay ratio reporting
- UK gender pay gap reporting
- 2020 Remuneration recommendations for Executive Directors and the Group Executive Committee

* Electric Thermal Solutions

Statement by Committee Chair

Dear shareholder,

On behalf of the Board, I am pleased to present our Remuneration Report for 2019. I confirm that the implementation of Executive Director remuneration complied fully with our Remuneration Policy approved by shareholders at the AGM in May 2017, and the Committee has not exercised any discretion in arriving at 2019 reward entitlements.

I would like to thank shareholders for the support they showed for the Annual Report on Remuneration 2018 which received 94.66% votes in favour at the AGM in May 2019.

2019 Performance-based rewards

The Chair's Statement on pages 30 to 32, shows that the Company made impressive progress in 2019. On an organic basis, Group revenue increased by 6% and adjusted operating profit was up 7% (contributing to adjusted earnings per share (EPS) growth of 57.5% (over three years) and a return on capital employed (ROCE) of 54.5% as determined under Annual Incentive Plan (AIP) rules)).

The Company delivered a total shareholder return (TSR) of 99.9% for the three years ending 31st December 2019 (as determined under our Performance Share Plan (PSP)) placing us 5th in the ranking of our TSR comparator group, and qualifying participants for 100% vesting. An increase in the total dividend for the year extends our dividend progress to 52 years.

We are pleased that the Group's strong and consistent financial performance has delivered results in line with external expectations and our challenging internal goals and targets during a year in which the Company has continued to integrate and invest in Chromalox, Thermocoax and Gestra, as well as develop further our core businesses (Steam Specialties and Watson-Marlow).

TSR performance growth

The graph below demonstrates the growth in value of a £100 investment in the Company compared to the FTSE 350 Industrial Goods and Services Supersector from December 2009 to December 2019.

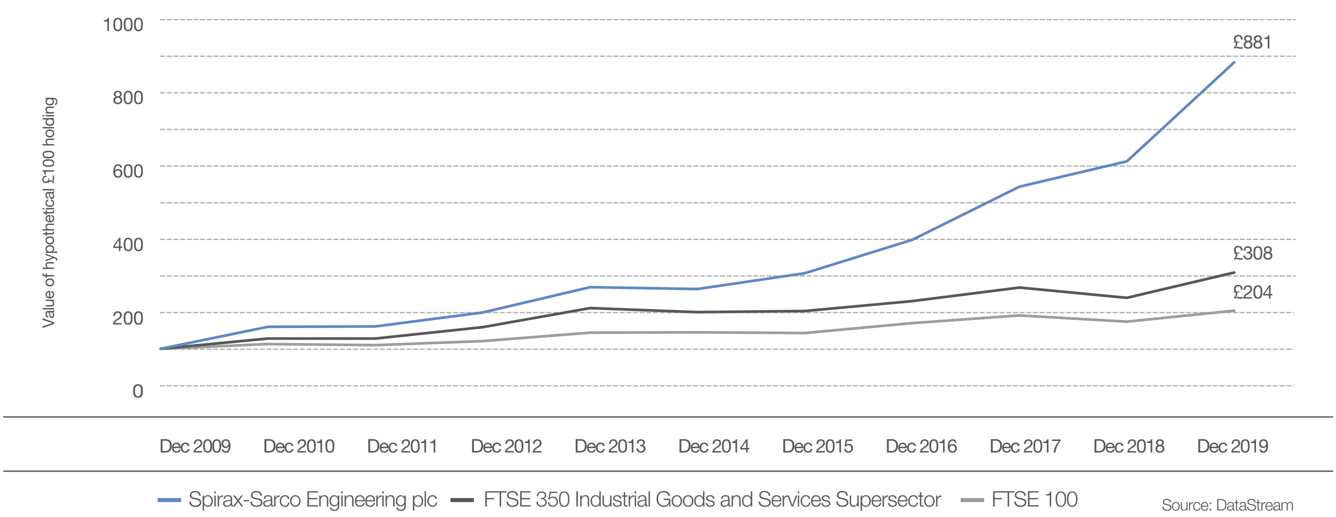
This comparison is chosen as it is the supersector within which the Company is classified and it is a broad equity market index including companies of a similar size, complexity and sector. We have also shown a comparison relative to the FTSE 100.

Our Remuneration Policy is designed to ensure that a significant percentage of Executive Director pay is based on the achievement of demanding performance targets and is, therefore, "at risk". Maximum payout in the AIP and PSP is only possible as a result of significant strong performance by the business.

The Committee has undertaken a robust and full assessment of performance during the year, taking into account both financial and non-financial measures. Arising from this, payments to Executive Directors under the AIP range from 84.6% to 123.9% of salary and I am pleased to confirm 100% vesting for the 2017 PSP award. The Committee considers that the remuneration paid to Executive Directors in 2019 (given as a single figure for each Director on page 107) reflects the excellent progress made by the Company during 2019, as well as over the last three years. As part of the review in 2019, the Group Chief Executive volunteered to defer any bonus earned above 125% of base salary into shares for a two-year holding period.

2019 Executive remuneration review and shareholder engagement

The Executive remuneration review and the accompanying shareholder consultation were the most important matters addressed by the Committee in the first half of 2019. I was most grateful for the very high level of shareholder engagement (over 40 organisations provided us with constructive feedback). I would like to thank them all for the advice and support that enabled us to re-position all four Executive Directors' remuneration arrangements. Full details are set out in pages 107 to 109 of the 2018 Annual Report and do not need to be reprised here. However, it is important to stress that, as part of this review, the Committee made a number of commitments to be formalised in the 2020 Policy. All of those commitments have been fully met in the updated 2020 Policy (see pages 122 to 132).



Governance Report

5. Remuneration *continued*

Remuneration Committee Report *continued*

2020 Remuneration Policy revision and shareholder engagement

Having successfully completed the Executive remuneration review, in the second half of 2019 the Committee reviewed all aspects of the current Policy to ensure it remains fit for purpose. Overall the Policy, and how we apply it, continues to be in line with our long-term business strategy, our culture and values. We also reviewed the Policy in light of the 2018 Code requirements including the five additional tests of simplicity, clarity, risk, predictability and proportionality. The updates we propose incorporate the prior shareholder commitments mentioned above, the 2018 Code and good practice changes, and further strengthen the link between pay and performance.

In recommending an updated Policy, and further to the changes of the remuneration review, we are not proposing any increase to remuneration quantum in any way, other than salary increases in line with the workforce.

Shareholder engagement on the 2020 Policy update

Notwithstanding the significant engagement of 2018/2019, we sought feedback on all of our proposals from our top shareholders as well as the Investment Association/IVIS, ISS and Glass Lewis. Many of our changes were well understood as a result of last year's engagement. They are summarised below:

Pensions

Pensions were obviously a hot and current topic for UK investors. All those we spoke to welcome the new UK Executive Director pension rate set at the level of the wider employee population in the market in which the Executive Director is based (10% being the current value in the UK). Whilst the Committee fully appreciated that we needed a plan to align incumbents to this rate, we wanted to achieve this in a measured way that would not risk business continuity. We discussed openly the challenges of dramatically reducing fixed pay for our Group Chief Executive and other Executive Directors and undoing the work of last year by widening an already significant gap given our performance, current market cap and position in the FTSE 100. We have agreed that the incumbent Executive Directors' pension allowance should be frozen and reduced, by 2022, to the current blended average for all employees in the market in which the Executive Director is based (17% in the UK). It remains our intention to reduce to 10% by the end of the following Policy period (31st December 2025).

On page 105 I have detailed the plan approved by the Committee.

LTIP policy maximum

In order to future-proof our policy for as yet unforeseen events we propose to increase the LTIP policy maximum from 200% to 250% of salary. During consultation we discussed this with a few of our shareholders. We explained that there was absolutely no intention to use this headroom given recent changes, but felt it was a prudent change in case of future events such as management succession. Our shareholders appeared comfortable with this, given our strong record of consultation and transparency.

Performance measures

One of our shareholders did challenge the decision to favour a cash measure over ROCE.

This change reflects our Group-wide objective of reducing working capital retained in the business and is understandable and actionable by the wider management team. We believe this makes for strong internal alignment of action and purpose. The focus on working capital by our wider management also contributes significantly to strong ROCE performance.

Key changes

We are grateful for the comments and advice and, as a result, have made certain consequential changes to our original proposals.

The key changes are as follows:

Salary increases

Salary increases will continue to be in line with the wider UK workforce norm (absent a significant change in the scale of the Group) (shareholder commitment*).

In-post shareholding requirement

Increased from 200% to 300% of base salary for the Group Chief Executive and from 125% to 200% for other Executive Directors. This change was implemented in 2019 and is now formalised in the 2020 Policy (shareholder commitment*).

Post-termination shareholding requirements

In line with the Code it is proposed that Executive Directors' shareholding guidelines will apply for two years following stepping down from the Board (shareholder commitment*).

Bonus deferral

Executive Directors who already hold shares in excess of the above requirement will be required to calculate the net of tax amount of any bonus they earn above 80% of the bonus opportunity and increase the level of shareholding they have to hold for a further two years. This can be through the purchase of additional shares or the locking up of shares that are surplus to their shareholding requirements. If an Executive Director does not meet the in-post guidelines at the time a bonus is paid this calculation increases to be any bonus earned in excess of 60% of the bonus opportunity (shareholder commitment*).

Policy maximum

Following the changes made in 2019 there is no change to the AIP maximum (150%). To allow flexibility for future events/how the policy may be operated in future years, we are proposing to increase the limit on annual grants under the PSP by 50% to 250% of base salary. There is absolutely no current intention to use this headroom and should unforeseen circumstances arise, we would fully consult with shareholders and representative bodies before that flexibility is used. We trust that our track record of transparent consultation gives our shareholders confidence on this matter.

LTIP threshold vesting

The Policy is being changed to cement the approach in 2019 of reducing from 25% to 18% the proportion of an LTIP award that vests at threshold (shareholder commitment*).

* Commitment to shareholders as part of the 2019 remuneration review.

Performance measures

The performance measures we currently use for the PSP will remain unchanged. We intend to retain the same measures and weightings for the AIP with the exception of the ROCE measure being replaced by increasing the existing cash generation measure. This change reflects our Group-wide objective of reducing working capital retained in the business and is understandable and actionable by the wider management team. We believe this makes for strong internal alignment of action and purpose. The focus on working capital by our wider management also contributes significantly to strong ROCE performance. Both ROCE and Return On Invested Capital are key performance indicators for the business. The Committee will continue to assess ROCE performance to ensure no unacceptable deterioration.

Pensions

In accordance with the 2018 Code, the Investment Association/IVIS, ISS, Glass Lewis and our shareholders' guidance, we will limit the maximum pension contribution for new Executive Directors to the level of the wider employee population in the market in which the Executive Director is based. At present, all of our Executive Directors are based in the UK. Here, we operate defined benefit, defined contribution and cash allowance arrangements. The blended average for all employees within the UK (where most employees and the Executives are based) is 17% of base salary. However, a newly appointed Executive Director would only be able to receive defined contribution/cash allowance arrangements on the same basis as the majority of newly appointed UK employees, which is currently 10%.

Pension – Group Chief Executive and incumbent Executive Directors

In 2019 our consultation with shareholders explained that our Group Chief Executive's pay and that of the other Executive Directors had slipped materially behind the appropriate market rates and we made some adjustments to address this shortfall. We remain concerned about the gap that exists given our increased market cap and position in the FTSE 100. Compared to companies in our broad sector, our Group Chief Executive's salary remains circa 15% to 20% below the median, even after the 2019 changes. The differential to similarly-sized companies in the FTSE 51 to 100 is significantly greater.

The Committee felt it would be wrong to cut incumbent Executive Directors' fixed pay by 15% of salary to 10% by way of reduced pension. This would create an even wider gap. However, the Committee and the Executive Directors have agreed that pensions will be frozen at the 2020 sterling rate and will reduce, by 2022, to the current blended average in the market in which the Executive Director is based (17% in the UK). It remains our intention to reduce this to 10% by the end of the following Policy period, namely, 2025.

PSP

Awards granted after the 2020 AGM will only vest at the end of the performance period and not earlier, even for good leavers, and the Committee will be able to add dividend equivalents accrued during the vesting period to those awards.

Inappropriate outcomes

In line with the provisions in the Code under the proposed updated Policy, the Committee will be able to override formulaic outcomes where they have led to inappropriate outcomes.

Recovery provisions

Recovery provisions will be toughened so that bonus and PSP payments can be recovered in the event of corporate failure or reputational damage (in addition to financial misstatement, erroneous calculations determining payments and gross misconduct).

Wider workforce environment

I am encouraged by management's commitment to invest in employees at all levels. The Committee receives information on regional pay norms and budgets as context to the remuneration decisions it approves for the Executive Directors, the wider Group Executive Committee and Senior Managers.

2020 Salary reviews

In accordance with our prior commitments, with effect from 1st January 2020, a salary increase of 2.9% was awarded to the Group Chief Executive, the Chief Financial Officer and Managing Director, Steam Specialties. The country norm for 2020 was 2.9% (UK).

Retirement

Jay Whalen, President, Watson-Marlow, retired on 31st December 2019. His replacement, Andrew Mines, will not serve as an Executive Director. Jay is entitled, under the relevant scheme rules, to receive any bonus payment due for the performance year 2019 and the 2017 LTIP award. The 2018 and 2019 LTIP awards will be prorated in accordance with the PSP rules.

UK Corporate Governance Code 2018

We have revised our Terms of Reference to align with the Committee's change of scope under the 2018 Code.

I hope that this provides a useful overview of the activities and decisions the Committee has taken during 2019.

Committee focus 2020

- Implementation and oversight of 2020 Policy.
- Consideration of an appropriate ESG measure for the AIP.

Jane Kingston
Chair of Remuneration Committee
10th March 2020

5. Remuneration *continued*

Remuneration at a glance 2019

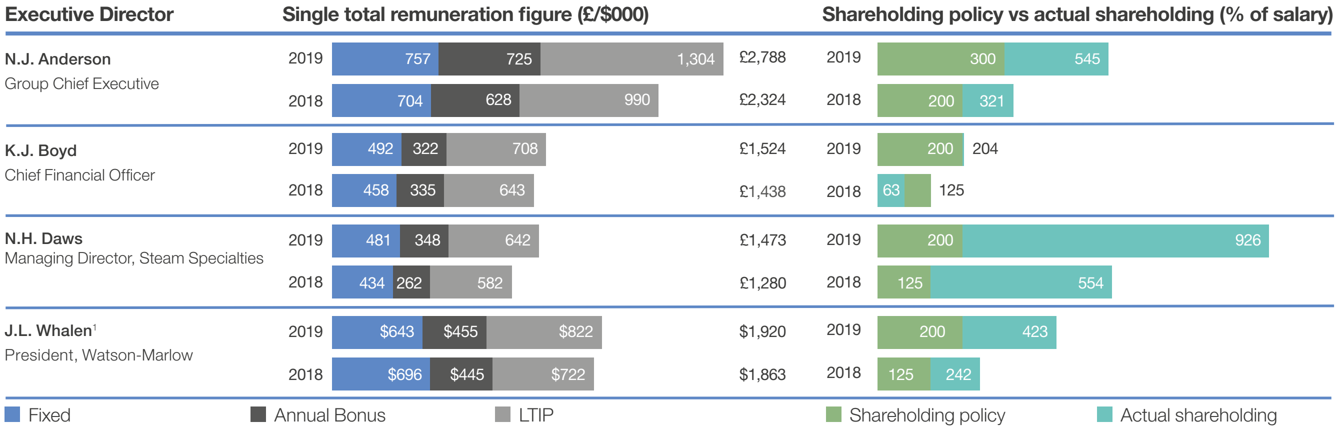
How we performed

Remuneration key performance indicator	2019 actual	2019 threshold	2019 target	2019 maximum	Remuneration measure
Group operating profit (£m)	277.3	256.7	270.3	283.8	Annual Incentive Plan
Group cash generation (£m)	296.4	270.7	285.0	299.2	Annual Incentive Plan
Group ROCE (%)	54.5	50.1	52.7	55.3	Annual Incentive Plan
2017-2019 EPS (%)	57.5	27.6	N/A	52.3	Performance Share Plan
2017-2019 relative TSR (percentile TSR)	94th	50th	N/A	75th	Performance Share Plan

The above figures exclude the acquisition of Thermocoax.

Executive Directors' remuneration and shareholdings

The Executive team has consistently delivered upper quartile performance for shareholders and this is reflected in the results of both the annual bonus and LTIP. The Committee is pleased with the work of the Executive team and is confident that this vesting outcome is reflective of the value delivered to the business.



1 Retired from the Board on 31st December 2019.

Overview of the Executive Directors' Remuneration Policy

Base salary	Benefits	Pension	Annual bonus award	Performance Share Plan (PSP)
To enable the Group to attract, retain and motivate high-performing Executive Directors of the calibre required to meet the Group's strategic objectives.	To provide market competitive benefits, and to enable the Executive Directors to undertake their roles through ensuring their well-being and security.	To offer appropriate levels of pension, and to attract and retain individuals with the personal attributes, skills and experience required to deliver Group strategy.	To incentivise and reward performance against selected KPIs which are directly linked to business strategy, while ensuring a significant proportion of Executive Director remuneration is directly linked to business performance.	To incentivise and reward Executive Directors for delivering against long-term Group performance, to align Executive Directors' interests to those of shareholders, and to retain key Executive talent.

Changes at a glance 2019

Executive Directors	2019 Base salary	% Change from 2018
Nicholas Anderson	£585,000	7.7
Kevin Boyd	£380,500	7.7
Neil Daws	£369,600	5.0
Jay Whalen	$498,623	3.0

Non-Executive Directors	2019 Fee	% Change from 2018
Jamie Pike	£216,090	2.9%
Peter France	£51,760	2.9%
Caroline Johnstone	£61,760	N/A
Jane Kingston[1]	£61,760	2.9%
Trudy Schoolenberg[1,2]	£61,760	2.9%
Kevin Thompson	£61,760	N/A

1 From 15th May 2019.

2 The 2.9% increase applies to base fee. Chair and Senior Independent Director fees were unchanged.

5. Remuneration *continued*

Annual Report on Remuneration 2019

Strategic alignment

The Committee ensures that the remuneration paid to the Executive Directors, and the Group Executive Committee, is closely aligned with and reinforces the Group strategy. At their meeting in June 2019 the Board reviewed the strategic plan.

This alignment is achieved by using the strategic plan to set financial and individual strategic objectives for the Executive Directors, and the Group Executives, and, from this, bonus targets are agreed and approved by the Committee. This process forms part of the annual Board calendar, with the bonus targets approved in the early part of the financial year. The Group's strategic themes are set out on page 34.

1.0 Annual Report on Remuneration 2019

This section sets out the Directors' remuneration for the financial year ended 31st December 2019.

1.1 Single total figure of remuneration (audited)

	Salary/Fees		Benefits[1]		Annual bonus		PSP[2]		Pension		ESOP[3]		Total	
	2018	2019	2018	2019	2018	2019	2018	2019	2018	2019	2018	2019	2018	2019
Executive Directors														
N.J. Anderson	£543,000	£585,000	£24,828	£26,115	£627,708	£724,851	£990,103	£1,304,135	£135,750	£146,250	£2,089	£1,900	£2,323,478	£2,788,251
K.J. Boyd	£353,300	£380,500	£16,184	£16,644	£335,282	£321,918	£642,778	£708,066	£88,325	£95,125	£2,026	£1,900	£1,437,895	£1,524,153
N.H. Daws[4]	£330,933	£369,600	£20,366	£19,128	£261,941	£348,126	£581,558	£642,201	£82,733	£92,400	£2,089	£1,900	£1,279,620	£1,473,355
J.L. Whalen[5]	$484,100	$498,623	$50,112	$48,707	$445,372	$455,237	$721,614	$822,274	$161,390	$96,056	N/A	N/A	$1,862,588	$1,920,897
Chair and Non-Executive Directors														
J. Pike[6]	£154,534	£216,090	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	£154,534	£216,090
P. France	£41,401	£51,760	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	£41,401	£51,760
C.A. Johnstone[7]	N/A	£46,769	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	£46,769
J.S. Kingston	£60,300	£61,760	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	£60,300	£61,760
G.E. Schoolenberg[8]	£50,300	£58,042	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	£50,300	£58,042
K.J. Thompson[9]	N/A	£39,115	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	£39,115
C.G. Watson[10]	£66,595	£26,956	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	£66,595	£26,956

1 The 2019 Benefits are set out in the table on page 108.

2 The 2019 column relates to vesting of the 2017 PSP award valued at 8655.0p or $110.82 for J.L. Whalen. Value converted at the 2019 average dollar/sterling exchange rate of 1.2804. The 2018 column relates to vesting of the 2016 PSP award valued at 6825.0p or $90.9636 for J.L. Whalen. Value converted at the 2018 average dollar/sterling exchange rate of 1.3328.

3 Matching shares awarded during the year based on the mid-market price of the shares on the date of award: 7600.0p for 2019 and 6330.0p for 2018.

4 N. Daws' 2018 remuneration is based on a combined salary of £330,933: £320,400 per annum for the period 1st January to 31st August 2018 in the role of Divisional Director, EMEA and £352,000 per annum for the period 1st September to 31st December 2018 following promotion to his current role of Managing Director, Steam Specialties.

5 Paid in US dollars. All elements of J.L. Whalen's remuneration are shown in US dollars because he lives and works mostly in the USA. Furthermore, converting to sterling is misleading due to the movement in exchange rates. Original dollar value. J.L. Whalen retired from the Board on 31st December 2019.

6 J. Pike appointed Chair on 15th May 2018.

7 C.A. Johnstone appointed to the Board on 5th March 2019 and as Chair of the newly established Employee Engagement Committee on 1st June 2019.

8 G.E. Schoolenberg appointed Senior Independent Director on 15th May 2019.

9 K.J. Thompson appointed to the Board and as Audit Committee Chair on 15th May 2019.

10 C.G. Watson appointed Senior Independent Director on 15th May 2018 and stepped down from the Board and Board Committees on 15th May 2019.

Salary/fees

The following table sets out the 2019 base salary with effect from 1st January 2019 for each of the Executive Directors, compared to 2018.

Executive Directors	2018	2019	Increase
N.J. Anderson	£543,000	**£585,000**	7.7%
K.J. Boyd	£353,300	**£380,500**	7.7%
N.H. Daws (refer to note 4 above)	£352,000	**£369,600**	5.0%
J.L. Whalen	$484,100	**$498,623**	3.0%

The 2019 base salary increases were implemented after significant shareholder consultation to partially address a substantial gap in on-target remuneration versus pay levels in the Company's peer group companies. For the purpose of assessing pay levels relative to market, the Committee primarily considered practices in 15 peer companies (Bodycote, Cobham, Halma, IMI, Meggitt, Morgan Advanced Materials, QinetiQ Group, Renishaw, Rotork, RPC Group, Senior, Smiths Group, Spectris, Ultra Electronics Holdings and Weir Group).

In 2019, Nicholas Anderson's and Kevin Boyd's salaries increased by 7.7%, Neil Daws' salary increased by 5.0% and Jay Whalen's salary increased by 3.0%. Increases for the broader employee population were on average 2.9% in the UK and 3.0% in the USA, with above average increases available for top performers in accordance with internal guidelines. The increases for Executive Directors, like those for the broader UK employee population, took account of both individual performance and market data.

5. Remuneration *continued*

Annual Report on Remuneration 2019 *continued*

The following table sets out the Policy fees for the Chair and Non-Executive Directors for 2019. Actual fees received, based on role and date of appointment, are set out in the Single Total Figure of Remuneration table on page 107. Pay for the Chair and Non-Executive Directors does not vary with performance. Fees for Non-Executive Directors are reviewed annually. The Chair and Non-Executive Directors did not receive any taxable benefits.

Chair and Non-Executive Directors	Changes during 2019	Date	Basic fees	Additional fees	2019 Total fees
J. Pike			£216,090	N/A	£216,090
C.G. Watson[1,2]	Stepped down	15.05.19	£51,760	£20,000	£71,760
G.E. Schoolenberg[2]	Appointed Senior Independent Director	15.05.19	£51,760	£10,000	£61,760
P. France			£51,760	N/A	£51,760
C.A. Johnstone[3]	Appointed	05.03.19	£51,760	£10,000	£61,760
J.S. Kingston[3]			£51,760	£10,000	£61,760
K.J. Thompson[3]	Appointed	15.05.19	£51,760	£10,000	£61,760

1 C.G. Watson stepped down from the Board and Board Committees on 15th May 2019.

2 G.E. Schoolenberg appointed Senior Independent Director on 15th May 2019. In respect of their duties as Senior Independent Director, C.G. Watson received £3,718 prorated to 15th May 2019 and G.E. Schoolenberg received £6,282 prorated from 15th May 2019.

3 J.S. Kingston received £10,000 in respect of her role as Remuneration Committee Chair. C.G. Watson received £3,718 prorated to 15th May 2019 and K.J. Thompson received £6,282 prorated from 15th May 2019 in respect of their roles as Audit Committee Chair. C.A. Johnstone received £4,167 prorated from 1st August 2019 in respect of her role as Employee Engagement Committee Chair.

The Chair and Non-Executive Director fees were reviewed at the end of 2018 and were increased by 2.9%, consistent with the average rate of increase in the UK. The fee for the Senior Independent Director and Committee Chairs remained at £10,000, the benchmarked median.

Benefits (excluding pension)

Benefits	N.J. Anderson	K.J. Boyd	N.H. Daws	J.L. Whalen[1]
Company car and associated running costs or cash alternative allowance	£25,721	£16,250	£18,734	$26,531
Private health insurance	£394	£394	£394	$19,508
Telecommunications and computer equipment	–	–	–	$2,668

1 Paid in US dollars. All elements of J.L. Whalen's remuneration are shown in US dollars because he lives and works mostly in the USA. Furthermore, converting to sterling is misleading due to the movement in exchange rates.

Pension

Full details of the pension benefits are set out at section 1.2 on pages 114 to 115.

Annual bonus

Executive Directors participate in the annual bonus plan, which rewards them for financial performance both at Group level and, where relevant, the business segment for which they are responsible. Targets are reviewed annually to ensure continuing alignment with strategy and are agreed at the start of the year. Resulting awards are determined following the end of the financial year by the Committee, based on performance against these targets.

For the Group Chief Executive, achievement of target performance results in a bonus of 90% of salary, increasing to 150% of salary for maximum performance. For the other Executive Directors, achievement of target performance results in a bonus of 60% of salary, increasing to 100% of salary for maximum performance.

Bonus payments are subject to a contractual right for the Company to clawback or apply malus for up to three years following payment. Circumstances that may result in a clawback or malus include financial misstatement, erroneous calculations determining bonus payments or gross misconduct.

In accordance with Policy, Executive Directors must use any bonus earned over 60% of base salary, or 90% of base salary for the Group Chief Executive, net of tax, to buy shares until their shareholding guideline has been met. This is, in effect, a bonus deferral mechanism. To demonstrate our commitment to this principle, prior to the introduction of our 2020 Policy, in 2019 our Group Chief Executive volunteered that any bonus earned above 125% (his maximum bonus opportunity at that time) would be subject to this mechanism for a two-year holding period.

The majority of each Executive Director's bonus opportunity (90%) is based on the achievement of stretching financial performance targets in areas that directly align with our areas of strategic focus. The remaining 10% is based on the achievement of individual strategic objectives, tailored to each Director's areas of responsibility. Performance standards are agreed and communicated at the start of the year. Financial measures have an established threshold, target and maximum with a sliding scale between each. Individual strategic measures are subject to three possible achievement levels: fully achieved, partially achieved and not achieved.

The table below sets out the performance measures that each of the Executive Directors' bonus awards were subject to.

		Achieved (% of bonus)			
Executive Directors	**2019 Measures (% of bonus)**	**N.J. Anderson**	**K.J. Boyd**	**N.H. Daws**	**J.L Whalen**
N.J. Anderson	Group operating profit (70%)	**56.6%**	**56.6%**		
K.J. Boyd	Group cash generation (10%)	**9.2%**	**9.2%**		
	Group ROCE (10%)	**8.8%**	**8.8%**		
	Personal strategic objectives (10%)	**8.0%**	**10.0%**		
N.H. Daws	Segmental operating profit (50%)			**50.0%**	**47.1%**
J.L. Whalen	Group operating profit (20%)			**16.2%**	**16.2%**
	Group cash generation (10%)			**9.2%**	**9.2%**
	Group ROCE (10%)			**8.8%**	**8.8%**
	Personal strategic objectives (10%)			**10.0%**	**10.0%**

The performance measures are adjusted to reflect certain items including the amortisation of acquisition-related intangible assets and exceptional reorganisational costs and to exclude any profit contribution and other impacts such as major acquisitions during the period.

2019 was a good year for the Group, which delivered strong organic sales growth, grew earnings per share and increased dividend to shareholders. The annual bonus payments to Executive Directors ranged between 84.6% and 123.9% of salary. The bonus is payable in cash where the relevant Executive Director has met the share ownership requirement, otherwise any part of the bonus above target, net of tax, must be used to buy shares until the shareholding requirement has been met.

The table below summarises the achieved performance in 2019 in respect of each of the measures used in the determination of annual bonus, together with an indication of actual performance relative to target. (Figures exclude the acquisition of Thermocoax.)

	Actual performance[1]	Achieved (% of target)	Threshold	Target	Maximum
Group operating profit	**£277.3m**	**102.6%**	£256.7m	£270.3m	£283.3m
Group cash generation	**£296.4m**	**104.0%**	£270.7m	£285.0m	£299.2m
Group ROCE	**54.5%**	**103.4%**	50.1%	52.7%	55.3%
Steam Specialties operating profit	**£177.9m**	**105.8%**	£159.8m	£168.2m	£176.6m
Watson-Marlow operating profit	**£99.9m**	**104.3%**	£91.0m	£95.8m	£100.5m

1 To comply with the annual bonus plan rules these metrics use, as a base, the actual adjusted operating profit of £282,733 for segmental operating profit performance, and exclude centrally allocated overheads from both the target measure and actual performance.

Personal strategic objective assessment

The Executive Directors were each obliged to complete an appraisal self-assessment on their performance against each personal strategic objective. The Group Chief Executive reviewed this self-assessment with the Executive Director and made his own assessment. In the case of the Group Chief Executive, the Chair of the Board conducted the assessment. A report was submitted to the Committee and, at its February 2020 meeting, the Committee reviewed the recommendations and approved a final decision.

The personal strategic objectives for 2019 are detailed on pages 110 to112.

5. Remuneration *continued*

Annual Report on Remuneration 2019 *continued*

Personal strategic objective 2019	Description	Achievement
Nicholas Anderson		
Health, Safety and Sustainability (HS&S)	Accelerate and embed a step change in the HS&S performance of the Group, significantly improving the HS&S awareness and culture. Enhance the Group's Sustainability programme.	The Group's EHS performance improved in 2019, with both leading and lagging indicators making progress on full year 2018 and 2017. The number of "over three-day lost time injuries" was down 29% on 2018 and the number of "all accidents" was 7% below prior year. The Group recorded 46,700 more training units in 2019 than in 2018. The "all accidents" rate was 15% below 2018. There has been renewed focus across the Group to increase the number of Sustainability projects, particularly those engaging with local communities.
Strategy implementation	Materially progress the implementation of the Customer First strategy, including the Spirax Sarco Academy, in the Steam Specialties business.	All elements of our Customer First strategy made good progress in 2019. The most compelling evidence of a positive transformation in the Steam Specialties business was the out-performance of real terms orders growth vis-à-vis the historical correlation to global industrial production growth rates, in addition to incremental pricing across the Group when compared to pre-Customer First pricing levels. The above-average sales growth rates achieved in our chosen industry sectors, end user channels and self-generated solutions are further evidence of our successful strategy implementation. On the Corporate strategy, in May 2019 we acquired Thermocoax, which is being integrated with the Chromalox business as planned.
Gestra integration	Ensure successful implementation of the acquisition plans, with particular emphasis on sales growth plans.	The Gestra division achieved its overall integration objectives for 2019, which included the opening of Gestra China in April 2019, the first new Gestra operating company under our ownership; the successful launch of the world's most advanced line of industrial boiler controls; the introduction of cross-selling initiatives; and trading margin improvements through stronger pricing and manufacturing efficiency initiatives. The three-year cumulative orders and sales performance is in line with the acquisition case, while the trading profit is 7% ahead of target.
Chromalox trading margin	Improve the profitability of the Chromalox business, with resources from across the Group mobilised to support initiatives.	Multiple actions were put in place during 2019 to improve the profitability of the Chromalox business. These included a new Enterprise Resource Planning system in France; a comprehensive organisation review; and a marked step-up in price management performance. In September 2019, Dominique Mallet, Chief Executive Officer, Thermocoax, was promoted to the role of President of the new Electric Thermal Solutions business. In the second half of 2019, the trading margin increased to 15.1%, 40 bps above the 2018 trading margin. Despite achieving this trading margin, the full year 2019 margin was lower than full year 2018 and, therefore, this objective was not achieved.
Thermocoax integration	Ensure successful implementation of the acquisition integration plans.	The acquisition of Thermocoax was completed in May 2019 and the Board-approved actions for on-boarding were rolled out. These included on-site audits by the Group Head of EH&S; the signing of contracts for a site consolidation in Normandy; and an integration visit to Cheltenham by the Thermocoax leadership team. In October 2019, the merger of Chromalox Germany GmbH with Thermocoax Isopad GmbH was completed. In November 2019, Inès Hamon, previously Sales and Marketing Director, was promoted to the role of Managing Director, replacing Dominique Mallet.
Kevin Boyd		
Health, Safety and Sustainability (HS&S)	Accelerate and embed a step change in the HS&S performance of the Group, significantly improving the HS&S awareness and culture. Enhance the Group's Sustainability programme.	The Group's EHS performance improved in 2019, with both leading and lagging indicators making progress on full year 2018 and 2017. The number of "over three-day lost time injuries" was down 29% on 2018 and the number of "all accidents" was 7% below prior year. The Group recorded 46,700 more training units in 2019 than in 2018. The "all accidents" rate was 15% below 2018. There has been renewed focus across the Group to increase the number of Sustainability projects, particularly those engaging with local communities.
Information Technology and Systems	Advance the Group's global cybersecurity infrastructure, processes and responsiveness. Support the Steam Specialties' development of a global Enterprise Resource Planning (ERP), Customer Relationship Management (CRM) and Business Intelligence (BI) proposal.	Proposal for global ERP, CRM and BI systems developed and approved for the Steam Specialties business. Dedicated resources to further strengthen cybersecurity in existing Group companies and new acquisitions.

Personal strategic objective 2019	Description	Achievement
Kevin Boyd *continued*		
Treasury	Develop and implement a new Group foreign exchange hedging policy. Strengthen Group cash flow management and reporting practices across the Group's operating companies. Appoint a third bank and implement cash pooling in Europe and the USA. Support mergers and acquisitions funding requirements.	New foreign exchange hedging policy implemented, as well as improved cash flow reporting. Enhanced functional capability on cash management across all business units in the Group. Additional bank relationship implemented and cash pooling arrangements now in place.
Taxation	Continue the implementation of the new Group Tax Strategy to improve the Group's Effective Tax Rate in a sustainable manner. Ensure progress on Base Erosion and Profit Shifting, Anti-Tax Avoidance Directive, financing company structure, transfer pricing review and compliance tax register. Assess the cost/benefit of expanding the Group's in-house tax resource.	New Group tax function now in place and strategy developed and approved by the Group Executive Committee. A large number of transfer pricing reviews have been completed and a compliance tax register established.
External advisers	Ensure successful completion of Deloitte LLP's audit programme and transition of senior audit partner. Conduct a review of the Group's brokers and Investor Relations (IR) resources, proposing a new way forward.	A full tender exercise of potential brokers was completed and two appointments made. The 2019 internal audit schedule was completed with regular reviews by the Group Executive Committee in order to further improve the control environment. Completed a review of IR capability and appointed a dedicated IR Officer.
Neil Daws		
Health, Safety and Sustainability (HS&S)	Ensure improved Health & Safety performance in the Steam Specialties business, strengthening the EH&S awareness and culture. Implement Behavioural Based Safety (BBS) in all Supply companies and continue the implementation of the Group's Sustainability programme.	Successful implementation of quarterly safety themes and the roll-out of BBS. "Over three-day lost time injuries" fell 15%, "one to three-day lost time injuries" fell 33% and "all accidents" fell 4%. Increased awareness of "green" issues with new Group risk recognised and "Future of Steam" strategy work initiated to plan future growth opportunities.
Strategy implementation	Embed the Customer First strategy sponsorship changes during the first quarter to maintain growth, progress Customer Value Propositions roll-outs, continue building the Spirax Sarco Academy belts and the Consultative Selling programme. Initiate transition of sales management to full leadership role in the second half.	Market strategies delivering double-digit growth with an additional project initiated to drive Gestra sales, five-year plan to grow our business through stronger targeting, sectorisation, cross-selling Spirax Sarco and Hiter (our Brazilian control valve business) products and deeper application training. Spirax Sarco Academy Consultative Selling programme launched and Sales Management module ready for pilot roll-out in the first quarter of 2020. Strong improvement in the employee engagement survey participation level to 84%.
Customer service	Improve global "on time to request" (OTTR) to a specified target by December 2019. Reduce global sales at risk (IQM zone 1) to less than 3.0% by October 2019. Reduce the global Total Surplus Stock (IQM zones 5 & 6 plus non-stock) to a maximum of £10 million of total stock by December 2019.	Sales OTTR hit a new record of 93.3% against a plan of 93%. A stronger progress in Steam Specialties Supply units ending the year at 91.2% versus plan of 88%. The "sales at risk" metric declined by 20%, double the 10% reduction planned. Total surplus stock fell to £9.6 million, 5.9% year-on-year.
Gestra development	Maintain progress of the integration plans. Emphasise advancing Market Intelligence Committee coordination, completing senior management recruitments, start-up Gestra China, launch Gestra's new range of boiler controls, advance boiler house controls upgrades and initiate cross-selling programme.	Gestra's profit exceeded plan by 1.6%, keeping the three-year business plan on track. Rebuilt management team to full strength, completing most of the integration projects. Opened the Chinese operating company, launched Gestra's new range of boiler controls and progressed upgrades to the new Spirax Sarco boiler house controls. Progressed Customer First strategy to accelerate sector-led growth opportunities.
Project OPAL	Ensure successful roll-out across the Nordics region in 2019. Propose and ensure approval of a globally expanded scope of project OPAL (see page 48).	By year end, the vast majority of system testing of all configurations had proven positive. Work commenced in August 2019 with roll-out planned for October 2020.
Sustainability	Initiate review of Zero-Carbon Future to provide feed into next Customer First strategic review cycle.	A pilot will commence in the first quarter 2020 to prove customer needs and incremental value. A strategic project is underway to ensure that we stay abreast of customers' requirements, which will be progressed through 2020 in preparation for the strategic review cycle update in 2021. In parallel, we are increasing our customer carbon avoidance data capture and researching potential for steam storage and hydrogen fuelling of steam boilers.

5. Remuneration *continued*

Annual Report on Remuneration 2019 *continued*

Personal strategic objective 2019	Description	Achievement
Jay Whalen		
Health, Safety and Sustainability (HS&S)	Ensure improved Health & Safety performance of the Watson-Marlow Division, strengthening the EH&S awareness and culture. Support the implementation of the Group's Sustainability programme.	In 2019 "over three-day lost time injuries" were down 25% and the "one to three-day lost time injuries" were down 59%. Training units were up 98% in 2019.
AX deployment	Ensure on time and on budget roll-out of the AX ERP and BI system to Australia and New Zealand, Spain, Aflex USA, Southeast Asia and South Africa.	ERP rolled in Australasia, Spain, Aflex USA, Singapore, Malaysia, Philippines and South Africa. Completed on budget and on time.
New product introduction	Ensure successful and timely launch of specific innovative, new products.	New innovative pump head developed for 2020 launch for Qdos product. Completed development of new Certa pump for Pharma sector and new Flexicon product developed and ready for launch in 2020.
Aflex	Successful execution of the Bradley Park single site project. Secure a high-calibre replacement for the Aflex Managing Director role.	High-calibre Managing Director appointed to oversee transition to new facility. Building project on plan and transition to start in 2020.
Territorial expansion	Successful start-up of new sales companies in Iberia, the Philippines and Colombia, as well as the successful conversion to direct selling organisations of the Aflex distributors in Ireland, Switzerland, Italy, Brazil, India, Japan, South Africa and California, USA (Biopharm).	Iberia, the Philippines and Colombia commenced trading in the first half of 2019. All distributor conversions were achieved as planned.

The personal strategic objective achievement levels are set out below.

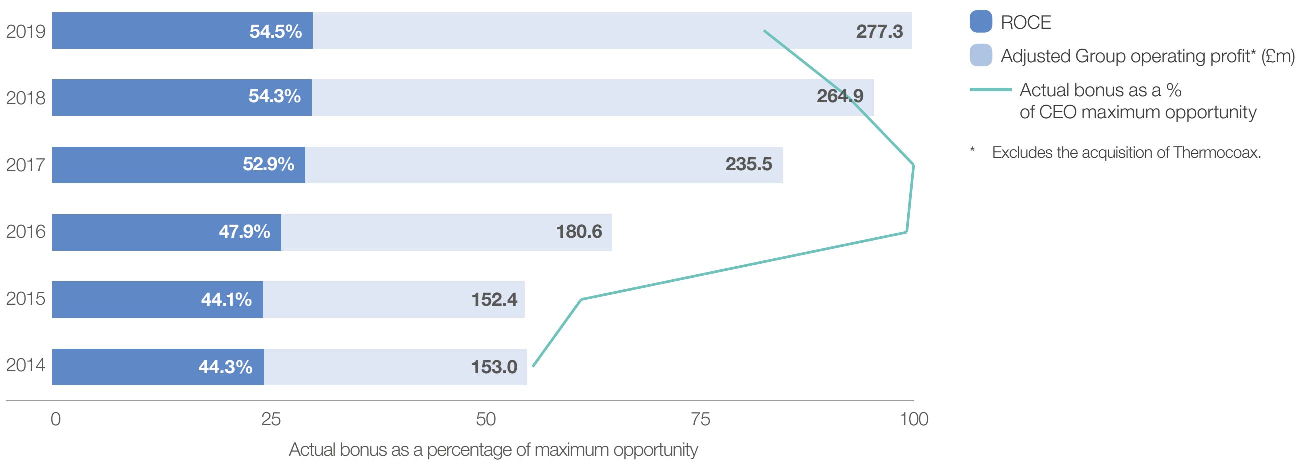
	Performance targets			
	Fully achieved	Partly achieved	Not achieved	% of bonus
N.J. Anderson	4	0	1	8%
K.J. Boyd	5	0	0	10%
N.H. Daws	6	0	0	10%
J.L. Whalen	5	0	0	10%

As a result of this performance in 2019, the following bonuses were achieved:

Executive Directors	Bonus achieved	Bonus (% of salary)
N.J. Anderson	£724,851	123.9%
K.J. Boyd	£321,918	84.6%
N.H. Daws	£348,126	94.2%
J.L. Whalen[1]	$455,237	91.3%

[1] Paid in US dollars. All elements of J.L. Whalen's remuneration are shown in US dollars because he lives and works mostly in the USA. Furthermore, converting to sterling is misleading due to the movement in exchange rates. Original dollar value.

The following graph provides a six-year summary of bonus outcomes for the Group Chief Executive against the performance of adjusted Group operating profit and ROCE. This illustrates the strong historical alignment between pay and performance.



Spirax Sarco Performance Share Plan (PSP)

The Committee makes an annual conditional award of shares to each Executive Director under the PSP. Prior to award, the Committee reviews the performance targets for each measure to ensure they remain sufficiently stretching. For EPS this includes a review of analysts' forecasts.

PSP awards are subject to malus (reduction in the amount of deferred and as yet unpaid remuneration) and clawback (reimbursement of remuneration that has already been paid) for up to three years following the award, and can be applied during a holding period. Circumstances that may result in a clawback or malus adjustment include financial misstatement, erroneous calculations determining bonus payments or gross misconduct.

Vesting is based on two performance conditions measured over a three-year period, which have been chosen as they are aligned with our strategy:

Performance measure	Weight	Threshold requirement	Maximum requirement
EPS growth	60%	Global IP +2% pa[1]	Global IP +8% pa
Relative TSR	40%	Median TSR	Upper quartile TSR

[1] The Global Industrial Production (IP) data source is the CHR Metals Global IP Index, providing data that incorporates over 90% of global industrial output.

For awards made in 2019 onwards, the Committee has reduced the value that can be earned for threshold performance from 25% of the award to 18%. Vesting between threshold and maximum is calculated on a straight-line basis.

The EPS element of the PSP is based on growth in excess of global industrial production growth rates, often referred to in our industry as "Global IP", rather than UK RPI. Global IP is a measure that the Board and management have used for some time as there is well documented evidence that it is the best predictor of the global and industrial markets within which the Group operates. For these reasons, Global IP was used in the formulation of the long-term strategic plan and targets for EPS growth approved by the Board. In setting the initial performance range in 2016, which was intended to be long-term in nature, the Committee reviewed the historical and projected data (2007 to 2020), including the Group's performance, market benchmarks and analysts' consensus. The Committee remains confident that this range remains sufficiently challenging across various market environments. Since 2018, EPS targets are also augmented to reflect the EPS obtained through major acquisitions. EPS disposed through the divestment of operating companies reduces EPS targets.

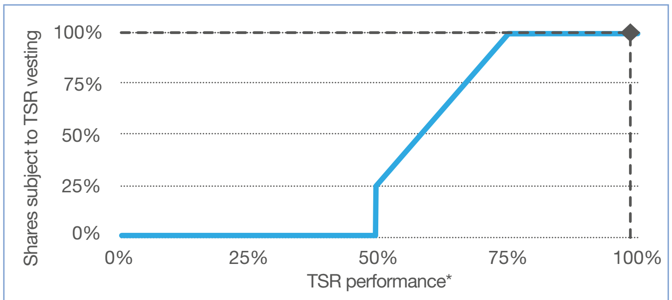
The TSR element of the PSP assesses TSR performance relative to a comparator group of companies that comprises the constituents of the FTSE 350 Industrial Goods and Services Supersector at the start of the performance period. This is the same sector classification as Spirax Sarco, and was selected as it objectively provides a sufficiently robust number of companies to compare performance against, that also operate in the industrial goods and services arena. While the exact number of companies varies from year-to-year, the comparator group generally has between 50 and 60 companies.

PSP awards vesting over 2017-2019

In 2017 the Executive Directors received share awards under the PSP, with vesting subject to EPS growth and relative TSR performance. The following diagrams set out details of the performance measures and targets that applied, along with the actual performance during the period 1st January 2017 to 31st December 2019.

Relative TSR performance (40% of PSP award)

Over the three-year period to 31st December 2019, the Company delivered a TSR of 99.9%. This ranked in the top decile TSR of the comparator group significantly above the level required for full vesting. The comparator group, comprising 50 companies, for the purpose of measuring relative TSR performance was the FTSE 350 Industrial Goods and Services Supersector constituents at the start of the performance period.



	Target	TSR	Vesting
Threshold	Median TSR	24.8%	25%
Maximum	Upper quartile TSR or above	52.7%	100%
Actual		99.9%	100%

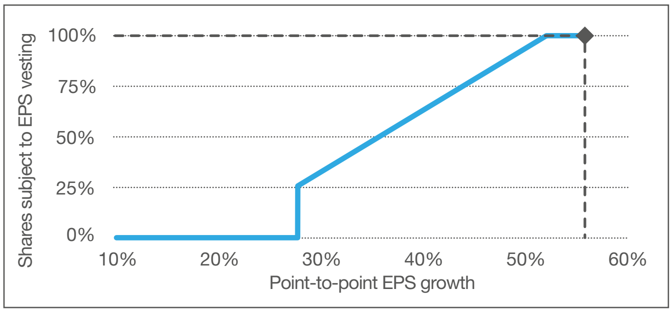
* Vesting is calculated based on Spirax Sarco's TSR relative to the median and upper quartile TSR of the peer group.

Governance Report

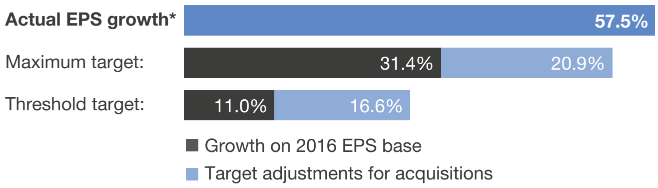
5. Remuneration *continued*

Annual Report on Remuneration 2019 *continued*

EPS growth (60% of PSP award)
Over the three-year period to 31st December 2019, the Company delivered adjusted EPS growth of 57.5%. This equated to growth of approximately 16.3% per annum over the three years. EPS is derived from the audited Annual Report for the relevant financial year but adjusted to exclude the items shown separately on the face of the Consolidated Income Statement. EPS is based on growth in excess of Global IP growth rates and augmented following the acquisitions of Gestra and Chromalox (see page 113).



	Performance (over 3 years)	Vesting
Threshold	27.6%	25.0%
Maximum	52.3%	100.0%
Actual	57.5%	100.0%



* Excludes the contribution of HygroMatik, which was sold in 2018, from the 2016 base.

As a result of the very strong Company performance, as measured by relative TSR and EPS growth, 100% of the shares awarded under the 2017 PSP vested. The Committee considers that this result reflects holistic performance and a very positive return for shareholders.

Executive Directors	Award	Vested	Lapsed	Value on vesting[1]
N.J. Anderson	15,068	**15,068**	0	**£1,304,135**
K.J. Boyd	8,181	**8,181**	0	**£708,066**
N.H. Daws	7,420	**7,420**	0	**£642,201**
J.L. Whalen	7,420	**7,420**	0	**$822,274**

[1] Based on share price at date of vesting, 5th March 2020 (8655.0p or $110.82 for J.L. Whalen). Value converted at the 2019 average dollar/sterling exchange rate of 1.2804.

1.2 Pension (audited)

In lieu of pension benefits, Nicholas Anderson and Kevin Boyd receive 25% of their basic salary in cash which, in the year ended 31st December 2019, amounted to £146,250 and £95,125 respectively.

Neil Daws became a deferred member of an HMRC registered, contributory defined benefit scheme, the Spirax-Sarco Executives' Retirement Benefits Scheme, with effect from 31st December 2012, and is, therefore, no longer accruing any pension benefits within the defined benefit scheme. His defined benefit rights in the Scheme at 31st December 2019 were £5,242,000 and his normal retirement date is 1st January 2025 (age 62½). In lieu of pension benefits, he receives 25% of his basic salary in cash which, in the year ended 31st December 2019, amounted to £92,400.

Jay Whalen retired from the Company on 31st December 2019. He became a deferred member of the Spirax Sarco Inc. defined benefit plan on 31st December 2018 when the plan was frozen and closed to all future service and accruals.

The benefit paid under normal retirement from the US defined benefit plan is a single life annuity equal to the number of years of service multiplied by the sum of 1.0% of pensionable salary up to social security covered compensation, plus 1.45% of pensionable salary in excess of social security covered compensation. Final average salary is the average of the highest pensionable pay for any five consecutive years prior to retirement up to a ceiling. Jay Whalen's final average salary is higher than the salary ceiling as at 31st December 2018.

Additionally, Jay Whalen benefited from Company contributions to a personal plan (choice of a personal US defined contribution pension plan or cash in lieu of pension benefits) and to a 401k plan. The total amount contributed by the Group was $95,056.

Jay Whalen's defined benefit plan arrangements are as follows:

Executive Director	Age attained at 31.12.19	Accrued pension at 31.12.18	Accrued pension at 31.12.19	Change in accrued pension during the year	Change in accrued pension during the year	Change in the value of accrued pension over the year net of inflation and Director's own contributions
J.L. Whalen	63	$95,830	$95,830	–	–	–

On 31st December 2018 the plan was frozen and closed to all future service and accruals.

Jay Whalen retired from the Company on 31st December 2019.

1.3 Scheme interests awarded during the financial year (audited)

Spirax Sarco Performance Share Plan (PSP)

All awards were granted under the PSP as a contingent right to receive shares, with the face value calculated as a percentage (200% for the Group Chief Executive and 175% for the Executive Directors) of base salary, using the share price at date of award (8161.3p). Awards were made on 15th May 2019.

Executive Director	PSP award	Face value	Last day of the performance period	Vesting at threshold performance
N.J. Anderson	14,335 shares	£1,169,922	31.12.21	18%
K.J. Boyd	8,158 shares	£665,799	31.12.21	18%
N.H. Daws	7,925 shares	£646,783	31.12.21	18%
J.L. Whalen[1,2]	7,925 shares	$828,141	31.12.19	18%

1 Value converted at the 2019 average dollar/sterling exchange rate of 1.2804.

2 The performance period for J.L. Whalen's award ended on 31st December 2019, his date of retirement. Therefore, the award has been reduced by two thirds (to 2,641 shares) to reflect the shortened performance period of one year.

For awards made in 2019, vesting is based on two performance conditions measured over a three-year period, which have been chosen as they are aligned with our strategy. In addition to the three-year vesting period, a two-year holding period applies. These performance conditions are explained further on page 113.

Spirax-Sarco Engineering plc Employee Share Ownership Plan (ESOP)

Executive Directors (excluding Jay Whalen who is a US citizen) are eligible to participate in an HMRC approved Share Incentive Plan known as the ESOP. Nicholas Anderson, Kevin Boyd and Neil Daws are participants.

During the year ended 31st December 2019: Nicholas Anderson, Kevin Boyd and Neil Daws each purchased 25 partnership shares, were each awarded 25 matching shares and received seven, one and 12 dividend shares respectively. Further information is set out in the table on page 117.

The maximum annual investment in shares is £1,800 (the HMRC limit) for Executive Directors (and eligible UK employees). This can be matched by the Company on a one-for-one basis for each share that is purchased. Dividends paid can be reinvested as shares.

Shares acquired under the ESOP are not subject to performance measures as the aim of the ESOP is to encourage increased shareholding in the Company by all eligible UK employees. In 2019, 76.6% of eligible UK employees purchased partnership shares and were awarded matching shares under the ESOP.

5. Remuneration *continued*

Annual Report on Remuneration 2019 *continued*

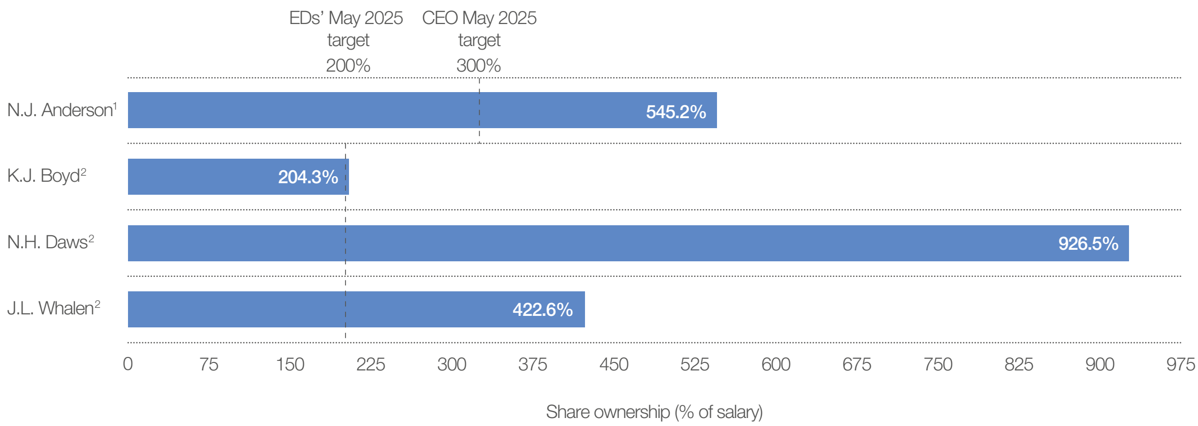
1.4 Payments to past Directors (audited)
There were no payments to former Directors during the year ended 31st December 2019.

1.5 Payments for loss of office (audited)
There were no payments made to Directors for loss of office during the year ended 31st December 2019.

1.6 Statement of Directors' shareholding and share interests (audited)
Progress towards share ownership guideline

In January 2019, the Executive Directors' share ownership guidelines were increased from 200% to 300% of base salary for the Group Chief Executive and from 125% to 200% of base salary for the other Executive Directors. These increased guidelines are included in our 2020 Policy.

The share ownership guidelines have been met by all Executive Directors, as illustrated in the chart below. The value of the shareholding is taken at 31st December 2019 as a percentage of 2019 base salary. The share price on 31st December 2019 was 8890.0p.



1 Target increased from 200% to 300% of base salary, with effect from January 2019 (to be formally adopted in our 2020 Policy).

2 Target increased from 125% to 200% of base salary, with effect from January 2019 (to be formally adopted in our 2020 Policy).

Outstanding share interests

The following table summarises the total interests of the Directors in shares of the Company as at 31st December 2019. These cover beneficial and conditional interests. No Director had any dealing in the shares of the Company between 31st December 2019 and 10th March 2020.

	Beneficial[1]	PSP awards[2, 5]	PSP nil-cost options[3]	ESOP shares[4]	Total 31.12.19 (or date of retirement if earlier[5])	Total 10.03.20
J. Pike	8,646	N/A	N/A	N/A	8,646	8,646
N.J. Anderson	35,191	44,052	0	683	79,926	79,926
K.J. Boyd	8,631	24,281	0	115	33,027	33,027
N.H. Daws	37,441	22,548	3,995	1,080	65,064	65,064
J.L. Whalen[5]	18,511	22,548	0	N/A	41,059	–
P. France	980	N/A	N/A	N/A	980	980
C.A. Johnstone[6]	0	N/A	N/A	N/A	0	0
J.S. Kingston	2,580	N/A	N/A	N/A	2,580	2,580
G.E. Schoolenberg	2,754	N/A	N/A	N/A	2,754	2,754
K.J. Thompson	2,500	N/A	N/A	N/A	2,500	2,500
C.G. Watson[7]	2,446	N/A	N/A	N/A	2,446	–

1 Shares include any owned by connected persons.

2 Subject to the performance measures as set out on pages 113 to 114.

3 Explained in table overleaf.

4 Not subject to performance measures.

5 J.L. Whalen retired from the Board on 31st December 2019 and his 2018 and 2019 PSP awards have been reduced to reflect the interim TSR and EPS performance updates and the shortened performance periods set out below.
2018 award: 7,203 shares, TSR = 100%, EPS = 86.3%, two year performance period = 4,407 shares vested;
2019 award: 7,925 shares, TSR = 100%, EPS = 63.1%, one year performance period = 2,056 shares vested.

6 C.A. Johnstone has indicated a firm intention to purchase shares.

7 C.G. Watson stepped down from the Board on 15th May 2019.

Spirax-Sarco Engineering plc Share Option Schemes (Option Schemes)

No Directors had interests under the Option Schemes.

Spirax Sarco Performance Share Plan (PSP)

The interests of Executive Directors in the PSP are set out below.

	Date of award							
	05/11.04.16[1]	26.05.17[2]	04.04.18[3, 5]	Balance 01.01.19	Vested 04.03.19[1]	Lapsed 04.03.19[1]	Awarded 15.05.19[4, 5]	Balance 31.12.19
N.J. Anderson	14,507	15,068	14,649	44,224	14,507	0	14,335	44,052
K.J. Boyd	9,418	8,181	7,942	25,541	9,418	0	8,158	24,281
N.H. Daws	8,521	7,420	7,203	23,144	8,521	0	7,925	22,548
J.L. Whalen[5]	7,933	7,420	7,203	22,556	7,933	0	7,925	22,548

1 The mid-market prices of the shares on 5th April 2016 (N.J. Anderson, N.H. Daws and J.L. Whalen) and 11th April 2016 (K.J. Boyd) were 3550.0p and 3557.0p respectively. 100% of the PSP award vested on 4th March 2019 as the performance measures applicable were fully met. During the performance period 1st January 2016 to 31st December 2018, the TSR and the EPS performance of the Company resulted in 100% vesting of this element. The mid-market price of the shares on 4th March 2019 was 6825.0p. The 2016 awards vested in the form of whole shares.

2 The average mid-market price of the shares from 19th May to 25th May 2017 inclusive was 5256.0p. This was applied in determining the number of shares subject to the PSP awards granted on 26th May 2017. The period over which performance measures are measured is 1st January 2017 to 31st December 2019. Details of the performance measures attached to these PSP awards are set out on pages 113 to 114.

3 The mid-market price of the shares on 4th April 2018 was 5560.0p. The period over which performance measures are measured is 1st January 2018 to 31st December 2020. There are two performance measures governing vesting of this PSP award: 40% of the PSP award is subject to a TSR performance measure which requires the Company to rank at median relative to a comparator group of the constituents of the FTSE 350 Industrial Goods and Services Supersector for 25% of this portion of the PSP award to vest, increasing to full vesting for ranking at the upper quartile; 60% of the PSP award is subject to an EPS performance measure which requires growth of Global IP +2% per annum for 25% of this portion of the PSP award to vest, increasing to full vesting for growth of Global IP +8% per annum. A two-year post-vesting holding period applies to these awards.

4 The average mid-market price of the shares from 9th May to 14th May 2019 was 8161.3p. This was applied in determining the number of shares subject to the PSP awards granted on 15th May 2019. The period over which performance measures are measured is 1st January 2019 to 31st December 2021. Details of the performance measures attached to these PSP awards are set out on page 113. A two-year post-vesting holding period applies to these awards.

5 J.L. Whalen retired from the Board on 31st December 2019 and his 2018 and 2019 PSP awards have been reduced to reflect the interim TSR and EPS performance updates and the shortened performance periods set out below.

2018 award: 7,203 shares, TSR = 100%, EPS = 86.3%, two year performance period = 4,407 shares vested;

2019 award: 7,925 shares, TSR = 100%, EPS = 63.1%, one year performance period = 2,056 shares vested.

As noted in previous years, the 2010 and 2011 awards that vested in 2013 and 2014 respectively took the form of nil-cost options. The following table summarises the outstanding options.

	Balance at 01.01.19	Vested 05.03.13	Exercised 24.04.19	Balance at 31.12.19
N.H. Daws	12,740	12,740	12,740	0
N.H. Daws	3,995	–	–	3,995

Spirax-Sarco Engineering plc Employee Share Ownership Plan (ESOP)

The interests of eligible Executive Directors are set out below.

	Balance 01.01.19	Partnership shares purchased[1]	Matching shares awarded[1]	Dividend shares[2]	Balance 31.12.19	Period of qualifying conditions[3]
N.J. Anderson	626	25	25	7	683	3 years
K.J. Boyd	64	25	25	1	115	3 years
N.H. Daws	1,018	25	25	12	1,080	3 years

1 Partnership shares were purchased, at a price of 7240.0p, and matching shares were awarded on 9th October 2019. The mid-market price of the shares on that date was 7600.0p.

2 13 dividend shares were received on 24th May 2019, on which date the mid-market price of the shares was 8870.0p. Seven dividend shares were received on 8th November 2019, on which date the mid-market price of the shares was 8440.0p.

3 Partnership shares are not subject to qualifying conditions. No matching shares or dividend shares were released from the ESOP or forfeited during the year ended 31st December 2019.

1.7 Directors' service agreements and letters of appointment

Chair and Non-Executive Directors

The Chair and Non-Executive Directors have letters of appointment with the Company for a period of three years, subject to annual re-election at the AGM. Appointments may be terminated by the Company or individual with one month's notice. The appointment letters for the Chair and Non-Executive Directors provide that no compensation is payable on termination, other than accrued fees and expenses.

5. Remuneration *continued*

Annual Report on Remuneration 2019 *continued*

Directors' terms of service

The table below sets out the dates on which each Director was initially appointed, their latest service agreement or letter of appointment and their notice period. All Directors are subject to election or re-election (as the case may be) at the AGM.

Executive Directors	Original appointment date	Current agreement/ appointment/ re-appointment letter[1]	Expiry date	Notice period
N.J. Anderson	15.03.12	13.12.13	N/A	12 months
K.J. Boyd	11.05.16	26.10.15	N/A	12 months
N.H. Daws	01.06.03	25.09.12	N/A	12 months
J.L. Whalen	15.03.12	17.04.12	31.12.19	12 months
Chair and Non-Executive Directors				
J. Pike	01.05.14	15.05.18	14.05.21	1 month
P. France	06.03.18	05.03.18	05.03.21	1 month
C.A. Johnstone	05.03.19	27.02.19	04.03.22	1 month
J.S. Kingston	01.09.16	05.08.19	31.08.22	1 month
G.E. Schoolenberg	01.08.12	12.07.18	31.07.21	1 month
K.J. Thompson	15.05.19	15.05.19	14.05.22	1 month

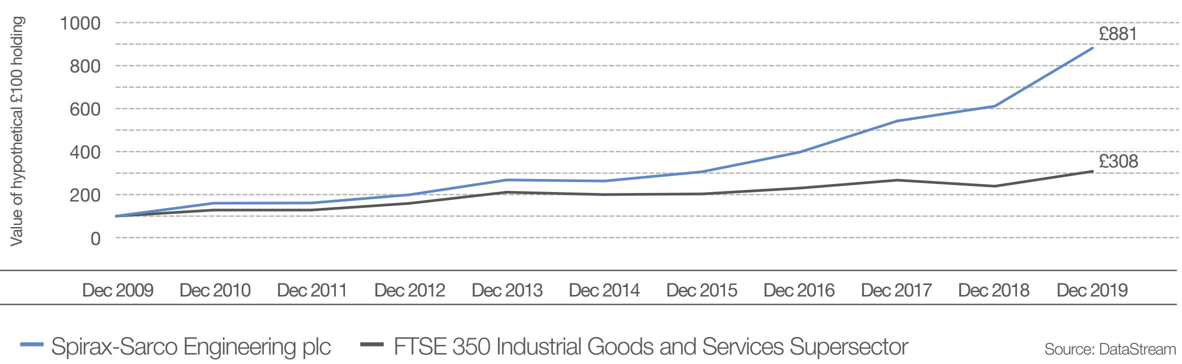
[1] All letters of appointment and service agreements are available for inspection at the Group's headquarters in Cheltenham.

1.8 External Directorships

Kevin Boyd served as a Non-Executive Director and Audit Committee Chair at EMIS Group plc during 2019, for which he received and retained total fees of £46,708.

1.9 TSR performance graph

This graph demonstrates the growth in value of a £100 investment in the Company compared to the FTSE 350 Industrial Goods and Services Supersector from December 2009 to December 2019. This comparison is chosen as it is the supersector within which the Company is classified and it is a broad equity market index including companies of a similar size, complexity and sector.



The graph in the Statement by Committee Chair on page 103 also includes a comparison to the FTSE 100 and shows a similar level of out-performance.

The table below shows the historic levels of the Group Chief Executive's pay (single figure of total remuneration) and annual variable and PSP awards as a percentage of maximum.

	Single figure of annual remuneration	Annual variable pay as % of maximum	Vested PSP awards value as % of maximum
2019	£2,788,251	82.60%	100.00%
2018	£2,323,478	92.48%	100.00%
2017	£2,172,620	100.00%	100.00%
2016	£1,610,891	99.20%	40.00%
2015	£1,191,137	61.39%	80.33%
2014 (N.J. Anderson appointed Group Chief Executive in January 2014)	£1,000,115	55.76%	33.06%
2013	£1,593,150	95.24%	29.93%
2012	£1,402,668	31.69%	74.60%
2011	£1,516,798	80.08%	100.00%
2010	£1,720,765	100.00%	100.00%

Group Chief Executive pay ratio

The table below details the ratio of the Group Chief Executive's single figure of total remuneration to the median, 25th and 75th percentile total remuneration of the Group's full-time equivalent UK employees.

Financial year	Method*	25th percentile pay ratio	50th median pay ratio	75th percentile pay ratio
2019	Option B	110:1	74:1	46:1

* Option B has been chosen for these calculations. The data used is consistent with that collected to inform the Group's UK gender pay gap report.

Single figure total remuneration	CEO	25th (lower quartile)	50th (median)	75th (upper quartile)
Salary	£585,000	£24,414	£32,773	£45,000
Benefits	£26,115	–	£397	£8,733
Bonus	£724,851	–	£728	£1,035
PSP	£1,304,135	–	–	–
Pension	£146,250	£977	£2,622	£4,500
ESOP	£1,900	–	£983	£1,350
Total pay	£2,788,251	£25,391	£37,503	£60,618

The reward policies and practices for our workforce as a whole follow those set for the Executive Directors, including the Group Chief Executive, as detailed on page 107. The Committee has responsibility for setting and making any changes in remuneration for the senior management. This includes the reviewing of policies and practices for our workforce and consideration of shareholders' and other stakeholders' views as part of designing the Remuneration Policy and its operation for the Executive Directors. On this basis, the Committee is satisfied that the median pay ratio is consistent with the pay, reward and progression policies across the Company's employees.

The Committee will review any changes in the ratio over the forthcoming year and will provide an analysis of any changes in the 2020 Annual Report.

1.10 Percentage change in remuneration of the Group Chief Executive

The following table provides a summary of the 2019 increase in base salary, benefits and bonus for the Group Chief Executive compared to the average increase for the general UK employee population across the Group in the same period.

		2019 change	2018 change
Salary	Group Chief Executive	**7.7%**	2.7%
	General employee population	**2.9%**	2.7%
Benefits	Group Chief Executive	**5.2%**	3.2%
	General employee population	**2.9%**	2.7%
Bonus	Group Chief Executive	**15.5%**	-4.9%
	General employee population*	**22.2%**	1.6%

* 2018 percentage restated to include all UK bonuses for the general UK employee population across the Group.

UK gender pay gap

A detailed narrative relating to the UK gender pay gap can be found on our website, www.spiraxsarcoengineering.com.

1.11 Relative importance of spend on pay

The table below demonstrates the relative importance of total pay spend relative to total employee numbers, profit before tax (selected as the best measure of efficiency) and dividends payable in respect of the year.

	2019	2018	Change
Total pay spend	**£438.7m**	£403.9m	8.6%
Group average headcount	**7,833**	7,403	5.8%
Adjusted profit before tax	**£274.5m**	£254.6m	7.8%
Dividends payable	**£81.1m**	£73.6m	10.2%

5. Remuneration *continued*

Annual Report on Remuneration 2019 *continued*

1.12 Changes for 2020

Shareholder consultation

As part of our Policy review, we again consulted with leading shareholders and their representative bodies to seek to understand their views. As a result of the commitments made last year, and the feedback from the consultation, a number of changes are being made. These changes are set out on pages 120 to 121 and explained in the Remuneration Committee Chair's Statement on pages 103 to 105.

Changes to Policy and/or how it will be operated

Shareholding guidelines (in-post and post-termination)	Changes committed to in 2019
Bonus deferral	
PSP threshold vesting level	
Pension alignment for future Directors	

Pension alignment for current Directors	Change made to provide additional flexibility and to comply with the UK Corporate Governance Code and investor expectations
PSP vesting delay for "good leavers"	
PSP policy maximum	
Discretion to override formulaic outcomes for incentives	
Enhanced malus/clawback	
Allowing minor changes to the Policy in the next three years	

2020 Salaries

The Committee reviewed salary levels and agreed that Executive Directors should receive an increase of 2.9% in line with the wider UK workforce increase from 1st January 2020.

2020 Annual bonus

The same opportunity, performance measures and weighting apply in 2020 as was the case in 2019, except that ROCE will be replaced by increasing the existing cash generation measure. This change reflects our Group-wide objective of reducing working capital retained in the business and is understandable and actionable by the wider management team. We believe this makes for strong internal alignment of action and purpose and simplifies the bonus plan. The focus on working capital by our wider management also contributes significantly to strong ROCE performance. Both ROCE and Return on Invested Capital are important performance indicators for the business. As part of its overall assessment of whether the formulaic outcome of the bonus calculation is representative of the performance delivered, the Committee will assess the quality of ROCE achieved in the year. If it is not satisfied with the performance, then the Committee is able to reduce the level of bonus for the year. These measures continue to align with our strategic focus to deliver growth that outperforms our markets, by improving on what we already do well. As in previous years, the specific targets associated with each measure that were approved in February 2020 are not disclosed in this Report as they are considered by the Board to be commercially sensitive. The targets will be retrospectively reported in the Annual Report next year.

2020 PSP awards

The same award levels, performance measures and weights apply in 2020 as was the case in 2019. In February 2020, the Committee approved the three-year EPS targets, which remain unchanged at Global IP +2% per annum to Global IP +8% per annum. Having reviewed our own forecasts, analysts' expectations and performance expectations of our peers, we remain satisfied that to achieve growth of Global IP +2% per annum to Global IP +8% per annum over the coming three years remains appropriately challenging and exceeds market consensus. These targets are set out in the table on page 113. As promised, the PSP threshold vesting level was reduced from 25% to 18% from 2019 onwards.

Pensions

To comply with the UK Corporate Governance Code and UK institutional investors' expectations, the Executive Directors requested that the Committee lower their pension benefit, by 31st December 2022, to the current blended average for all employees in the market in which the Executive Director is based (17% in the UK). The Committee accepted this request although is cognisant that this will materially increase the extent to which the Executive Directors' fixed pay lags the UK market. The intention is to reduce this to 10% by the end of the following Policy period, 31st December 2025.

Annual bonus deferral

As of the 2020 annual bonus award, Executive Directors who already hold shares in excess of their in-post shareholding guideline will be required to calculate the net of tax amount of any bonus they earn above 80% of their maximum bonus opportunity and increase the level of shareholding they have to hold for a further two years. This can be through the purchase of additional shares, or by locking up shares that are surplus to their shareholding requirements. If an Executive Director does not meet the in-post shareholding guideline at the time a bonus is paid, the bonus deferred increases to be any bonus earned in excess of 60% of their maximum bonus opportunity.

In-post and post-termination shareholding requirements

The in-post shareholding requirement was increased in 2019 from 200% to 300% of base salary for the Group Chief Executive and from 125% to 200% for other Executive Directors. In line with the UK Corporate Governance Code, Executive Directors' shareholding guidelines will apply for the two years following stepping down from the Board. If the guideline has not been met by the time of departure then the number of shares held at that time have to be retained for that two year period. The Committee does retain the discretion to relax these guidelines if it feels the circumstances warrant it. To avoid creating a disincentive for Executive Directors to purchase shares from their own resources, they are free to exclude any such shares purchased from counting towards meeting their shareholding requirement.

2020 Non-Executive Director fees

Effective from 1st January 2020, the Non-Executive Director basic fee was increased by 2.9%, which is in line with the average UK employee salary increase of 2.9%. The Committee Chair and Senior Independent Director's fees were unchanged.

1.13 Consideration by the Directors of matters relating to Directors' remuneration

Operation of the Remuneration Committee in 2019

Membership and attendance

Each Committee member is an independent Non-Executive Director and thus brings independence to all aspects of Board remuneration and the application of professional advice to matters relating to remuneration.

During 2019, the Committee was chaired by Jane Kingston and the members comprised: Trudy Schoolenberg, Peter France, Caroline Johnstone (with effect from her appointment to the Board on 5th March 2019), Kevin Thompson (with effect from his appointment to the Board on 15th May 2019) and Clive Watson (up to his stepping down from the Board on 15th May 2019).

In 2019, the Committee met five times. All members attended each meeting relative to their Committee membership, with the exception of Trudy Schoolenberg who was unable to attend one meeting due to illness, but reviewed all the papers and provided her views to the Committee Chair in advance. Caroline Johnstone, Kevin Thompson and Clive Watson each attended three meetings. On his appointment to Chair of the Board in May 2018, Jamie Pike ceased being a formal member of the Committee, but continued to attend meetings at the invitation of the Committee Chair. The Chair of the Board was independent on appointment and did not formally vote on matters approved by the Committee.

Advisers to the Committee

During 2019, the Committee sought advice and information from Jamie Pike, the Chair; Nicholas Anderson, the Group Chief Executive; and Jim Devine, the Group Human Resources Director. None of the invitees participated in any discussions regarding their own remuneration or fees. The General Counsel and Company Secretary acts as Secretary to the Committee.

In addition, the Committee received external advice from Willis Towers Watson and Korn Ferry. Following a formal tendering process, Korn Ferry replaced Willis Towers Watson during the year. These firms provided material advice to the Committee on various matters such as Executive remuneration levels and structure, performance updates in respect of the PSP, the Remuneration Report and attendance at Committee meetings. In 2019, on a time and materials basis, Willis Towers Watson's fees in respect of these services totalled £76,203 and Korn Ferry's fees in respect of these services totalled £51,587. In addition, Korn Ferry work with management on other matters relating to remuneration with the approval of the Committee. A separate advisory team within Willis Towers Watson provides support and advice to management on pensions and insurance matters. The Committee is of the opinion that the advice received is objective and independent, given that Korn Ferry are a signatory to the Remuneration Consultants Group Code of Conduct, the manner in which advice is delivered and the separate teams that advise management more generally.

In 2019, Baker & McKenzie LLP provided legal advice to the Company (which was available to the Committee). Legal fees relate to advice provided to the Company and not the Committee, and are charged on a time-cost basis.

1.14 Statement of voting at general meeting

At the AGM in 2017, shareholders approved the Remuneration Policy 2017 (mandatory) and at the AGM in 2019, shareholders approved the Annual Report on Remuneration 2018 (advisory). The table below shows the results which required a simple majority (i.e. 50%) of the votes cast to be in favour for the resolutions to be passed.

	Votes for	%	Votes against	%	Votes withheld
Remuneration Policy 2017 (2017 AGM)	57,778,590	95.06	3,005,646	4.9	278,674
Annual Report on Remuneration 2018 (2019 AGM)	57,432,155	94.66	3,243,057	5.3	276,582

This Annual Report on Remuneration 2019 has been approved by the Board of Directors of Spirax-Sarco Engineering plc and signed on its behalf by:

Jane Kingston
Chair of Remuneration Committee

10th March 2020

5. Remuneration *continued*

Remuneration Policy 2020

2.0 Remuneration Policy

The table below summarises the Remuneration Policy which will take effect, if approved, from the AGM to be held on 13th May 2020.

Element	Purpose and link to strategy	Operation	Performance measures	Maximum potential value
Fixed elements of Executive Director remuneration				
Base salary	To enable the Group to attract, retain and motivate high performing Executive Directors of the calibre required to meet the Group's strategic objectives.	Reviewed annually by the Committee, taking into account: • scale, scope and complexity of the role; • skills and experience of the individual; • wider workforce comparisons; and • market benchmarking, within defined external comparator groups. The Committee uses this information with caution, given the limited number of direct comparators and to avoid remuneration inflation as a result of benchmarking exercises with no corresponding improvement in performance. The Committee considers the impact of any base salary increase on the total remuneration package.	Reviews take into account Company and individual performance.	Ordinarily, salary increases will not exceed the average increase awarded to other Group employees from the same country/region. A salary increase may be higher than the average increase awarded to employees in circumstances such as (i) where a new recruit or promoted Executive Director's salary has been set lower than the market level for such a role; (ii) where there is a significant increase in the size and responsibilities of the Executive Director's role; or (iii) where the salary level has fallen below the lower quartile level against market benchmarks.
Pension	To offer appropriate levels of pension and benefit. To attract and retain individuals with the personal attributes, skills and experience required to deliver Group strategy.	For eligible Executive Directors who joined the UK Company before 2001 the Company provides a UK defined benefits pension scheme (DB scheme) or cash alternative allowance. For UK nationals who joined the UK Company after 2001 the Company provides a defined contribution pension arrangement (DC plan) and/or contributions to a private pension and/or a cash allowance. Executive Directors who have transferred internally from overseas may continue to participate in home country pension arrangements and/or receive a cash allowance.	N/A	The maximum pension contribution for new Executive Directors will be the same basis as the majority of newly appointed employees receive in the market in which the Executive Director is based. Incumbent Executive Directors' maximum pension to be, by 31st December 2022, the current blended average in the market in which the Executive Director is based (17% of salary in the UK), reducing to the new Executive Director level by 2025. No element other than base salary is pensionable.

Element	Purpose and link to strategy	Operation	Performance measures	Maximum potential value
Fixed elements of Executive Director remuneration				
Common benefits	To provide market competitive benefits. To enable the Executive Directors to undertake their roles through ensuring their wellbeing and security.	The Company provides common benefits including: • Company car and associated running costs or cash alternative allowance; • private health insurance; telecommunications and computer equipment; • life assurance; and • long-term disability insurance.	N/A	The aggregate maximum cash cost of providing all common benefits will not exceed 20% of base salary.
Mobility-related benefits	To ensure that Executive Directors who have relocated nationally or internationally are compensated for costs incurred.	The Company will pay all reasonable expenses and applicable tax due for the Executive Director and his/her family to relocate on appointment and for repatriation to the original home country at the end of their assignment and/or employment. Executive Directors are personally responsible for all taxes and social charges incurred in the home and host locations as a result of their appointment. The Company will pay for reasonable tax advice and filing support in relation to work related income for international Executive Directors. Executive Directors are reimbursed under a Tax Treaty Adjustment for any double tax they might be liable for as a result of being subject to home country and host country taxation typically for days worked in the home location. Executive Directors are not entitled to tax equalisation.	N/A	Based on individual circumstances and subject to written agreement. Maximum values will not exceed the normal market practice of companies of a similar size and nature at the time of relocation.

5. Remuneration *continued*

Remuneration Policy 2020 *continued*

Element	Purpose and link to strategy	Operation	Performance measures	Maximum potential value
Variable elements of Executive Director remuneration				
Annual bonus	To incentivise and reward performance against selected KPIs which are directly linked to business strategy. To recognise performance through variable remuneration and enable the Company to flexibly control its cost base and react to events and market circumstances. To ensure a significant proportion of Executive Director remuneration is directly linked to business performance.	Measures, targets and their relative weightings are reviewed regularly by the Committee to ensure continuing alignment with strategic objectives and will be detailed in the relevant Annual Report on Remuneration. Bonus is based largely or entirely on the achievement of challenging financial performance measures, which have been selected to ensure the Company is focused on its strategic objectives. Bonus is delivered in cash. However, Executive Directors must use the net of tax amount of any bonus they earn above 80% of the maximum opportunity to increase the level of shareholding they have and to hold for a further two years. Where a Director has not met their shareholding requirement, the bonus deferred increases to any bonus they earn above 60% of the maximum opportunity. Bonus is subject to clawback and/or malus for up to three years following payment. Circumstances include financial misstatement, erroneous calculations determining bonus payments, gross misconduct, corporate failure and reputational damage. The Committee can adjust some performance targets to reflect certain non-operating items and retains the ability to adjust the amount of a bonus if the formulaic outcome is not reflective of the business performance.	Any measure can be incorporated at the Committee's discretion provided it is clearly aligned to the Group's strategic objectives. At least 70% of the bonus opportunity will be governed by financial performance measures.	150% of salary. No more than 60% of the bonus opportunity can be earned for target performance in any year.

Element	Purpose and link to strategy	Operation	Performance measures	Maximum potential value
Variable elements of Executive Director remuneration				
Performance Share Plan (PSP)	To incentivise and reward Executive Directors for delivery against long-term Group performance. To align Executive Directors' interests to those of shareholders. To drive sustainable Company performance. To retain key executive talent.	The Committee makes conditional awards of shares to each Executive Director. Annual participation is subject to Committee approval. Measures, targets and their relative weightings are reviewed regularly by the Committee to ensure continuing alignment with strategic objectives and will be detailed in the relevant Annual Report on Remuneration. Performance is measured over a three-year period, normally starting at the beginning of the financial year in which awards are granted. An additional two-year post-vesting holding period will apply. Awards can vest in the form of shares, a nil-cost option or, exceptionally, cash. Share awards made from 2012 are subject to clawback and/or malus for up to three years following award. Circumstances include financial misstatement, erroneous calculations determining bonus payments, gross misconduct, corporate failure and reputational damage. PSP awards accrue dividends between grant and vesting. The Committee retains the ability to adjust awards if the formulaic outcome is not reflective of the business performance. The Committee will be able to add dividend equivalents accrued during a vesting period to any award granted under this policy.	Vesting is currently based on two performance measures, which have been chosen as they are clearly aligned with our strategic objectives: • TSR; and • EPS growth. To ensure continued alignment with the Company's strategic priorities, the Committee may, at its discretion, vary the measures and their weightings for future grants from time-to-time including the consideration of financial and non-financial measures. The Committee reserves the right to adjust targets, for example for the effects of divestments or major acquisitions, to ensure that those results are in line with the principles that supported the targets when they were originally set.	250% of the annual rate of salary at the time of award. Currently the maximum award level is 200% of salary (for the CEO). Any increase beyond this level will only take place following consultation with leading shareholders.

5. Remuneration *continued*

Remuneration Policy 2020 *continued*

Element	Purpose and link to strategy	Operation	Performance measures	Maximum potential value
Variable elements of Executive Director remuneration				
Employee Share Ownership Plan (ESOP)	To offer all eligible UK-based employees the opportunity to build a shareholding in a tax-efficient way. To align Executive Director interests to those of shareholders.	Eligible UK Executive Directors are entitled to participate in an HMRC approved Share Incentive Plan known as the ESOP. Whilst not currently operated, if in the future employee share plans are offered outside the UK, or if alternative or additional plans are operated within the UK, eligible Executive Directors will be entitled to participate on the same basis as all other eligible employees. Awards granted under the ESOP are not subject to clawback or malus. The ESOP operates over a five-year period.	N/A	Executive Directors will be subject to the same limitations as all other participants.
Other				
Share ownership guidelines	To provide alignment with shareholder interests.	Executive Directors are required to accumulate through retaining at least half of the shares acquired (after sales to meet tax due) from PSP awards and the investment of bonus, a shareholding in the Company worth a minimum of 200% (300% for the CEO) of their annual salary. Subject to the level of PSP awards that vest and of bonus invested, it is anticipated that this will be achieved within five years of appointment. In addition, on departure as an Executive Director, the required shareholding (or level of holding achieved by the date of departure), normally has to be retained for two years. If an Executive Director purchases shares from his/her own resources then he/she can deem those shares as not counting towards the share ownership guidelines and therefore also the two year post-cessation requirement. This retention policy applies to all Executive Directors not under notice at the time the Policy is approved by shareholders.	N/A	N/A

Element	Purpose and link to strategy	Operation	Performance measures	Maximum potential value
Chair and Non-Executive Directors				
Fees	To attract and retain high calibre individuals, with appropriate experience or industry related skills, by offering market competitive fee levels.	The Chair is paid a single fee for all responsibilities. The Non-Executive Directors are paid a basic fee. The Chairs of the main Board Committees, the Senior Independent Director and any individual with other separate responsibilities are paid an additional fee to reflect their extra responsibilities. Fees for the Chair and the Non-Executive Directors are reviewed annually by the Board, with reference to any change in the time commitment required, UK market levels and the average base salary increase across the wider workforce. The Chair and the Non-Executive Directors do not participate in any annual bonus or incentive plans, pension schemes, healthcare arrangements, the Company's PSP or ESOP. The Company repays the reasonable expenses (including any tax due thereon) that the Chair and the Non-Executive Directors incur in carrying out their duties as Directors.	N/A	The aggregate value of fees paid to the Chair and Non-Executive Directors will not exceed the amount set out in the Articles of Association.

2.1 Notes to the Policy table

Changes to the Remuneration Policy

The main proposed changes to the Remuneration Policy are as follows:

- AIP award: introduce deferral of bonus;
- PSP award: increase potential maximum award from 200% of salary to 250% of salary (subject to shareholder consultation) and dividend equivalents to apply;
- pensions: set the level of pension benefit for newly appointed Executive Directors to no higher than the level available to the workforce and incumbent Directors to move, by 31st December 2022, to the current blended average for all employees in the market in which the Executive Director is based (17% in the UK), reducing to the new Executive Director level by 2025;
- enhancement of the clawback/malus arrangements;
- share ownership requirements: increase guideline levels to 300% for the CEO and 200% for other Executive Directors and introduce post-cessation shareholding requirements for the two-year period following an Executive Director's departure; and
- permit minor changes to be made to the Policy without shareholder approval in a General Meeting.

Additional details and an explanation of the changes can be found in the Statement by Committee Chair on pages 104 to 105.

Outstanding incentive awards

Details of outstanding incentive awards granted to Executive Directors prior to the Policy coming into force, including awards granted in 2019, and details of the performance targets are set out on pages 108 to 114.

All incentive awards granted prior to this Policy coming into force will continue on their existing terms including the exercise of discretion to amend such awards.

5. Remuneration *continued*

Remuneration Policy 2020 *continued*

Remuneration policy for other employees

The Company's approach to annual salary reviews is consistent across the Group, with consideration given to the scope of the role, level of experience, responsibility, individual performance and market pay levels. The most senior managers in the business (approximately 150 people globally) participate in bonus arrangements with similar targets, measures and relative weightings to the Executive Directors. Target and maximum potential values are lower and determined by the grade of the manager's role. Performance targets are based on an appropriate combination of Group, divisional and local operating company financial measures, in addition to personal strategic objectives. Contractual terms and benefits for the wider workforce are subject to local employment legislation and best practice.

Measure selection and the target setting process

Measures are selected taking into account the key strategic priorities of the Company, shareholder expectations and factors that sit within an individual's span of control.

Targets are set with reference to internal and external forecasts to ensure that they are realistic, yet sufficiently stretching. An appropriate mix of long- and short-term targets will be used, informed by the nature of the measure.

The Committee may make minor amendments to the policy set out in this Policy Report (for regulatory, exchange control, tax or administrative purposes or to take account of a change in legislation) without obtaining shareholder approval for that amendment.

2.2 External directorships

Directors are permitted to hold external directorships in order to broaden their experience, to the benefit of the Company. Such appointments are subject to approval by the Board and the Director may retain any fees paid in respect of such directorships. The Board ensures compliance by Directors with Code provision B.3.

2.3 Approach to recruitment and promotion remuneration

When appointing external hires, promoting executives, or an Executive Director internally, the Committee will continue to act in the best interests of shareholders when determining remuneration, in line with the stated policy. The main elements of the Remuneration Policy for Executive Director appointments are:

- base salary will be set on appointment taking into account the factors set out in the Policy table, but also the individual's experience. Depending on an individual's prior experience, the Committee may set salary below market norms, with the intention that it is realigned over time, typically two to three years, subject to performance in the role;
- pension benefits will not exceed the rate applicable to the relevant country's workforce, as determined by the Committee;
- mobility related benefits may include the payment of some or all of an individual's tax on relocation expenses incurred within 12 months of joining;
- on-going annual incentive pay opportunity will not exceed 400% of salary, in line with the maximums stated in the Policy table (up to 150% of salary for annual bonus and an award of up to 250% of salary under the PSP). In the year of appointment an off-cycle award under the PSP and different annual bonus conditions may be made by the Committee to ensure an immediate alignment of individual interests;
- in addition to the standard elements of remuneration, on the appointment of an external candidate, the Committee reserves the right to buy-out incentives that the individual has foregone by accepting the appointment, if appropriate. The terms of such awards would be informed by the amounts being forfeited and the associated terms (for example the extent to which the outstanding awards were subject to performance, the vehicles and the associated time horizons). Awards would be made either through the existing share plans or in accordance with the relevant provisions contained within the Listing Rules; and
- when an internal appointment to the Board is made, any pre-existing obligations may be honoured by the Committee and payment will be permitted under this Remuneration Policy.

Details of the remuneration for any new Chair or Executive Director appointed to the Board will be disclosed on the Group's website, www.spiraxsarcoengineering.com.

2.4 Service agreements and termination policy

The Company's policy on service agreements and termination arrangements for Executive Directors is set out below. Service agreements are designed to reflect the interests of the Company, as well as the individual concerned. Executive Directors' service agreements are kept at the Company's headquarters in Cheltenham.

In accordance with the Code and guidelines issued by institutional investors, Executive Directors have service agreements that are terminable by either the Company or the Executive Director on 12 months' notice. In the event of termination or resignation, and subject to business reasons, the Company would not necessarily hold the Executive Director to his or her full notice period. All Directors are subject to election (if newly appointed in the year) or re-election at the AGM.

Service agreements set out restrictions on the ability of the Executive Director to participate in businesses competing with those of the Group or to entice or solicit away from the Group any senior employees or to solicit/deal with clients of the Group or interfere with supply, in the 12 months following the cessation of employment.

Salary, pension and benefits are included in the agreements and are treated as described in the policy table on pages 122 to 127. There is no contractual entitlement to payment of an annual bonus or granting of an award under the PSP, until individual participation, level of award, measures and targets have been set for a particular year.

The Chair and Non-Executive Directors do not have service agreements but serve the Company under letters of appointment, for an initial period of three years, subject to annual re-election at the AGM. Appointments may be terminated by the Company or individual with one month's notice.

Group Chief Executive and new appointments from 1st January 2013

The details of the service agreements of the Group Chief Executive and for new appointments to the Board are outlined below and comply with best practice. In the event of a material change in role, function or responsibilities, Executive Directors' agreements will be reviewed and will be expected to be updated to meet the requirements outlined below.

Notice period	**12 months by the Executive Director and 12 months by the Company**
Termination	No payment if Executive Director commits a repudiatory breach of the service agreement or for gross misconduct or in certain circumstances. No additional termination payment if notice worked. If notice only part worked/part on garden leave, payment in respect of unexpired period of notice, otherwise 12 months' base salary only. Company discretion to pay in lieu of notice in lump sum or monthly except within 12 months of a change of control, when a lump sum will be paid. If paid monthly, payment will be reduced by the value of any salary, fees and benefits, excluding long-term incentives, earned in new paid employment in that period (mitigation clause). No automatic entitlement to payments under the annual bonus or PSP. See pages 130-131. Payment of reasonable legal fees and any legally enforceable entitlements. Garden leave clause. Robust post-termination restrictions on confidentiality, non-compete, non-solicitation and non-interference with customers or suppliers. Service agreements may be terminated without notice and without payment of compensation on the occurrence of certain events, such as gross misconduct or financial misstatement.
Clawback or malus	Bonus payments and PSP awards are subject to clawback or malus until the third anniversary of bonus payment and PSP vesting respectively. Circumstances include financial misstatement, erroneous calculations determining bonus payment, gross misconduct, reputational damage and corporate failure.

5. Remuneration *continued*

Remuneration Policy 2020 *continued*

Executive Directors' legacy agreements (appointments before 2013)

Within the legacy agreements of Executive Directors, termination of agreements is subject to a 12 month notice period. Where payment is made in lieu of notice on termination, the payment of a sum in respect of lost future bonus opportunity (based on an average of the preceding three years' bonus payments) is subject to the Committee's discretion. The Committee has the power to reduce the amount to reflect performance on the part of the Executive Director that is considered by the Committee to be unsatisfactory. On termination of such an Executive Director's service agreement, the Committee will take into account the departing Executive Director's need to mitigate his or her loss when determining the amount of bonus. Payment will only be made at the discretion of the Committee after taking into account individual performance in order to ensure that there will be no "payments for failure". In any event, payments will be subject to clawback or malus provisions.

Executive Directors' service agreements may be terminated without notice and without payment of compensation on the occurrence of certain events, such as termination for gross misconduct or financial misstatement.

While the Executive Directors' service agreements include a provision to deal with termination on a change of control, in the event of an offer being made, shareholders have discretion to accept the offer or not. The decision to recommend acceptance, or not, is a matter for the Board, and the Committee is of the clear view that the change of control provision within the Executive Directors' service agreements would have no influence on the voting pattern of those Executive Directors. Executive Directors' legacy agreements are summarised in the table below.

Notice period	**12 months by the Executive Director and 12 months by the Company**
Termination	No payment if Executive Director commits a repudiatory breach of the service agreement or for gross misconduct or in certain circumstances. No additional termination payment if notice worked. If notice only part worked/part on garden leave, payment in respect of unexpired period of notice. Otherwise 12 months' base salary, the value of other benefits, plus the cost of pension credits or contributions for the period plus the average of the prior three years' annual bonus payments, with Committee discretion to reduce the amount of the bonus that would otherwise be calculated, to reflect performance on the part of the Executive Director that is considered by the Committee to be below the required standards, provided that termination by the Company does not occur within 12 months of a change of control. Committee discretion to pay in lump sum or monthly except within 12 months of a change of control when a lump sum will be paid. If paid monthly, payment will be reduced by the value of any salary, fees and benefits excluding long-term incentives, earned in new paid employment in that period. No automatic entitlement to payments under the current annual bonus or PSP. See pages 130-131. Garden leave clause. Robust post-termination restrictions on confidentiality, non-compete, non-solicitation and non-interference with customers or suppliers.
Clawback or malus	Bonus payments and PSP awards are subject to clawback or malus for up to three years following award. Circumstances include financial misstatement, erroneous calculations determining bonus payments, reputational damage or gross misconduct.

Treatment of leavers under the incentive plans

Whilst it is not an entitlement, it is expected that where an Executive Director is a "good leaver" (ie where the cessation of employment is due to death, disability, redundancy, retirement or the company business in which he/she works being disposed of or where the ending of employment is instigated by the Company and is not for cause), payments will be made under the annual bonus plan if performance targets are met subject to, and in accordance with, the plan rules. If the Executive Director is not a "good leaver" it is expected that no bonus will be paid.

The treatment of leavers under the PSP is determined in accordance with the shareholder approved PSP rules. Any awards granted within six months prior to termination (or the giving or receiving of notice) will lapse. Any awards granted six months or longer prior to termination of employment (but prior to the end of the performance period) will lapse unless the Executive Director is considered to be a "good leaver".

In the case of such a "good leaver" the award will vest on the termination date, or the normal vesting date, at the Committee's discretion. This is subject to the satisfaction of the performance targets at that date and a pro-rata reduction in the number of shares to take account of the shortening of the performance period. For awards granted after the 2020 AGM, the award will vest on the normal vesting date.

If the Executive Director is a "good leaver" where the ending of employment is not for cause, the number of shares vested may be reduced (including to zero) by the Committee in its absolute discretion.

Where an Executive Director ceases employment (or notice is given) on or after the end of the performance period but prior to the date on which the Committee has determined the extent to which the award has vested, if the Executive Director is a "good leaver", his/her award will be preserved and will be treated in the same way as if his/her employment had continued, whereas if the Executive Director is not a "good leaver", his/her award will lapse on the earlier of his/her cessation of employment and the giving of notice.

In relation to the ESOP, as an HMRC approved plan, where an Executive Director leaves the treatment will be in line with the approved plan rules and HMRC guidance.

Change of control

Bonus: if termination occurs within 12 months following a change of control, the Executive Director is entitled to (i) a lump sum payment in lieu of notice and (ii) receive a full bonus payment calculated by reference to the average of the preceding three years' bonus payments (without any reduction for performance).

PSP: the rules provide that in the event of a change of control, outstanding share-based awards will vest to the extent that performance targets are met at the date of the event. Any such vesting would generally be on a time prorated basis. The Committee may, at its discretion, increase the level of vesting if it believes that exceptional circumstances warrant such treatment.

2.5 Illustrations of application of the Remuneration Policy

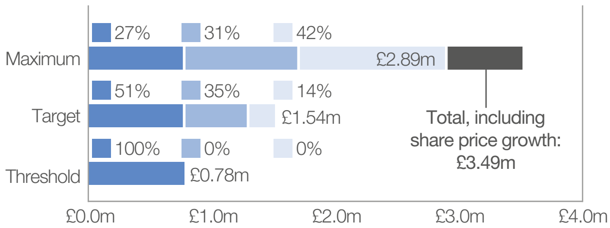
Under the Remuneration Policy, a significant portion of remuneration is variable and depends on the Company's performance. Below we illustrate how the total pay opportunity for the Executive Directors varies under three performance scenarios: maximum, on target, and below threshold.

The scenarios for 2020, informed by the current application of our pay policy, are as follows:

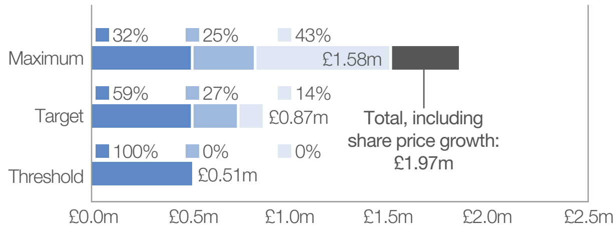
Element			
Fixed pay, benefits and ESOP	Fixed pay and ESOP does not vary with performance and comprises: • base salary effective 1st January 2020; • benefits value based on 2019 disclosure; • pension value (DB 2019: cash allowance: rate applied to 2020 salary); and • ESOP participation of up to £1,800 1:1 matching shares for eligible Executive Directors.		
	Percentage of base salary		
	Below threshold	**On target**	**Maximum**
Annual bonus (% of salary)	0%	90% CEO 60% ED	150% CEO 100% ED
PSP[1] (% of salary at award)	0%	36.0% CEO 31.5% ED	200% CEO 175% ED

[1] A level of 18% vesting for "on target" performance is equivalent to threshold performance under the PSP, which the Committee believes to be a fair assumption for on target performance given the approach taken to setting performance targets.

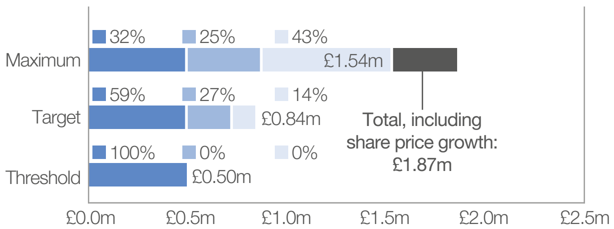
Nicholas Anderson (Group Chief Executive)



Kevin Boyd (Chief Financial Officer)



Neil Daws (Managing Director, Steam Specialties)



Fixed Annual bonus PSP PSP value with 50% share price growth

5. Remuneration *continued*

Remuneration Policy 2020 *continued*

2.6 Statement of consideration of employment conditions elsewhere in the Group

When determining the remuneration of Executive Directors, the Committee considers the pay of employees across the Group. When conducting the annual salary review, the average base salary increase awarded to the UK workforce and senior managers across the Group provides a key reference point when determining levels of increase for Executive Director remuneration. The Remuneration Policy was drawn up by the Committee without the need for any consultation with employees.

The Committee also determines the principles and policy of remuneration which shall apply to the Group's senior managers. The responsibility for determining precise compensation packages that meet local practice and performance targets lies with the Group Chief Executive and the responsible Executive Director.

To ensure consistency in Remuneration Policy across the Group and to encourage a performance culture, senior managers participate in the PSP. The Board believes that share ownership is an effective way of aligning the interests of managers and shareholders and to strengthen the development of the business.

2.7 Statement of consideration of shareholder views

In developing and reviewing the Company's Remuneration Policy for Executive Directors and other senior executives, the Committee seeks and takes into account the range of views of shareholders and institutional shareholder advisers. The Committee Chair actively engages with major shareholders and institutional shareholder advisers when appropriate and takes into account their views when reviewing and implementing the Company's Remuneration Policy.

The Committee considers shareholder feedback received in relation to the AGM each year and guidance from institutional shareholder advisers more generally. This feedback, plus any additional feedback received during the year at meetings with shareholders, is considered as part of the Company's annual Remuneration Policy review. At the AGMs in 2019 and 2018, the advisory votes on the 2018 and 2017 Annual Reports on Remuneration received 94.66% and 98.96% in favour respectively. At the AGM in 2017 the Remuneration Policy received 95.06% in favour.

Regulatory disclosures

> Compliance and regulations are used to steer the Group forward in the right way."

Andy Robson
Group General Counsel and Company Secretary

Principal activities

Spirax-Sarco Engineering plc is a multi-national industrial engineering group that is domiciled and incorporated in the UK under registration number 596337 and which has expertise in steam, electric thermal solutions, peristaltic pumping and fluid path technologies. An overview of our principal activities, by business, is given on pages 4 and 8 to 11 of the Strategic Report.

Future development

An indication of likely future developments in the Group is given in the Strategic Report.

Strategic Report

This is set out on the inside front cover to page 71 of the Annual Report.

Risk management and principal risks

A description of risk management and the principal risks facing the business are on pages 20 to 25 and 98 to 101.

Constructive use of AGM

We are delighted when our shareholders attend our AGM. Those who are unable to attend are encouraged to vote online or using the proxy card posted to them.

In 2019, 74.36% of the proxy votes received were lodged electronically through the CREST system.

At the AGM, the Group Chief Executive will give a short presentation about the previous year and, more generally, about current trading and the Group's future plans. The Chair and other Board members are available to answer questions raised by shareholders. Shareholders are invited to vote on the resolutions by way of a polled vote. The results are announced instantaneously at the AGM using the Equiniti "Vote Now" polling system, and on the London Stock Exchange and the Group's website, www.spiraxsarcoengineering.com, shortly after the conclusion of the meeting. Following the AGM the Board is available to answer questions and meet informally with individual shareholders.

The Notice of Meeting convening the AGM, to be held on Wednesday, 13th May 2020, and an explanation of the resolutions sought, is set out in the Circular posted on our website and sent to shareholders in the format selected by them.

Results

The Group's results for the year have been prepared in accordance with the International Financial Reporting Standards as adopted by the European Union. They are set out in the Consolidated Income Statement, which appears on page 150.

Dividend

The Directors are proposing the payment of a final dividend of 78.0p (2018: 71.0p) which, together with the interim dividend of 32.0p (2018: 29.0p), makes a total distribution for the year of 110.0p (2018: 100.0p). If approved at the AGM, the final dividend will be paid on 22nd May 2020 to shareholders on the register at the close of business on 24th April 2020.

Regulatory disclosure *continued*

Directors' interests

The interests of the Directors in the share capital of Spirax-Sarco Engineering plc as at 31st December 2019 are set out on page 116.

Directors' and Officers' Insurance

The Company provides Directors' and Officers' Insurance for Board members, Directors of the Group's operating companies and senior officers.

The Company has also provided each Director with an indemnity to the extent permitted by law in respect of the liabilities incurred as a result of their holding office as a Director of the Company.

Appointment and replacement of Directors

The appointment and replacement of Directors is governed by the Company's Articles of Association, the Code, the Companies Act 2006 and related legislation.

All Directors will seek election or re-election (as the case may be) at the AGM, with the exception of Jay Whalen, who retired from the Board on 31st December 2019.

The Directors stand for election or re-election on an annual basis at each AGM, in accordance with the Code. The Board considers that all Directors standing for election or re-election continue to perform effectively and demonstrate commitment to their roles. In addition, the Board considers that all Directors have the necessary skills and experience, as set out in their biographies on pages 74 to 75.

Conflicts of interest

Under the Companies Act 2006 and the provisions of the Company's Articles of Association, the Board is required to consider potential conflicts of interest. The Company has established formal procedures for the disclosure and review of any conflicts, or potential conflicts, of interest which the Directors may have and for the authorisation of such matters of conflict by the Board. To this end the Board considers and, if appropriate, authorises any conflicts, or potential conflicts, of interest as they arise and reviews any such authorisation annually.

New Directors are required to declare any conflicts, or potential conflicts, of interest to the Board at the first Board meeting after his or her appointment. The Board believes that the procedures established to deal with conflicts of interest are operating effectively.

Articles of Association

The Company's Articles of Association are available from Companies House in the UK or by writing to the General Counsel and Company Secretary at the Group's registered office in Cheltenham. They are also available on the Company's website. Amendments to the Articles of Association can only be made by means of a special resolution at a general meeting of the shareholders of the Company.

Share capital

As at 29th February 2020 there were no treasury shares held by the Company. Details of shares issued during the year are set out in Note 21 on page 180.

As at 31st December 2019 the Company's share capital was made up of Ordinary shares which each carry one vote at general meetings of the Company. Except as set out in the Articles of Association or in applicable legislation, there are no restrictions on the transfer of shares in the Company and there are no restrictions on the voting rights in the Company's shares.

The Company is not aware of any agreements entered into between any shareholders in the Company which restrict the transfer of shares or the exercise of any voting rights attached to the shares.

Substantial shareholdings

The voting rights in the table below have been determined in accordance with the requirements of the UK Listing Authority's Disclosure and Transparency Rules DTR 5, and represent 3% or more of the voting rights attached to issued shares in the Company as at 28th February 2020 and 31st December 2019. There are no Controlling Founder Shareholders.

	As at 31.12.19		As at 28.02.20	
Substantial shareholdings	**Number of Ordinary shares**	**% of issued share capital**	**Number of Ordinary shares**	**% of issued share capital**
The Capital Group Companies, Inc.	6,584,006	8.9%	6,598,428	8.9%
Sun Life Financial, Inc.	5,566,823	7.5%	5,481,561	7.4%
BlackRock, Inc.	4,624,204	6.3%	4,913,790	6.7%
Fiera Capital Corporation	4,764,251	6.5%	4,768,688	6.5%
APG Groep N.V.	4,068,000	5.5%	4,068,000	5.5%
The Vanguard Group, Inc.	2,569,081	3.5%	2,637,287	3.6%

Powers of the Directors and purchase of own shares

Subject to the provisions of the Articles of Association, the Directors may exercise all the powers of the Company.

A shareholder's authority for the purchase by the Company of a maximum of 10% of its own shares was in existence during the year. However, the Company did not purchase any of its shares during that time. This authority expires at the forthcoming AGM and it is proposed that a similar authority be approved. The total number of shares in issue as at 31st December 2019 was 73,736,888.

PSP and Employee Benefit Trust (EBT)

The number of shares held in the EBT at 31st December 2019 was 79,489 for the purpose of satisfying the vesting of awards and options granted to employees under the various Company schemes. Dividends on shares in the EBT are waived.

Significant contracts

The Company is not a party to any significant agreements that take effect, alter or terminate upon a change of control of the Company following a takeover bid.

There are provisions in the Executive Directors' service agreements which state that following a takeover or change of control, if the Executive Director's employment is terminated then both salary/benefits and a sum in respect of lost future bonus opportunity become payable as a lump sum.

The Strategic Report contains all the information required to comply with Section 414(c) of the Companies Act 2006 and there are no contractual arrangements that need to be disclosed which are essential to the business of the Group.

Disclosure of information to the auditor

As at the date of the approval of this Annual Report, as far as each Director is aware, there is no relevant audit information of which the Company's auditor is unaware. Each Director has taken all such steps as he or she ought to have taken as a Director in order to make himself/herself aware of any relevant audit information and to establish that the Company's auditor is aware of that information.

This confirmation is given and should be interpreted in accordance with the provisions of Section 418 of the Companies Act 2006.

Auditor

The Company's auditor throughout the period of this Annual Report was Deloitte LLP, who was appointed on 20th May 2014.

Deloitte LLP has expressed its willingness to continue in office as auditor and a resolution to re-appoint Deloitte LLP will be proposed at the forthcoming AGM.

Research and development

The Group continues to devote significant resources to the research and development and the updating and expansion of its range of products in order to remain at the forefront of its world markets. The R&D functions in Cheltenham (Spirax Sarco Steam Specialties), Falmouth (Watson-Marlow), Bradford (Aflex Hose), Bremen (Gestra), Normandy (Thermocoax) and the Product Development function in Pittsburgh and Utah (Chromalox) are tasked with improving the Group's pipeline of new products, decreasing the time to launch, expanding the Group's addressable market and realising additional sales. Further information on the expenditure on R&D is contained in Note 1 on page 157. The amount of R&D expenditure capitalised, and the amount amortised, in the year, are given in Note 15 on page 174.

Relationships with suppliers and customers

Our relationship with our customers is explained throughout the Report, including pages 70 and 81 (Our customers). Our relationship with our suppliers is specifically addressed on pages 66 (Our supply chain) and 81 (Our suppliers).

Treasury and foreign exchange

The Group has in place appropriate treasury policies and procedures, which are approved by the Board. The treasury function manages interest rates for both borrowings and cash deposits for the Group and is also responsible for ensuring there is sufficient headroom against any banking covenants contained within its credit facilities, and for ensuring there are appropriate facilities available to meet the Group's strategic plans.

In order to mitigate and manage exchange rate risk, the Group routinely enters into forward contracts and continues to monitor exchange rate risk in respect of foreign currency exposures.

All these treasury policies and procedures are regularly monitored and reviewed. It is the Group's policy not to undertake speculative transactions which create additional exposures over and above those arising from normal trading activity.

Political donations

The Group has a policy of not making political donations and no political donations were made during the year (2018: nil).

Regulatory disclosures *continued*

Greenhouse gas emissions

Details of our greenhouse gas emissions can be found on page 68.

Going concern

The Group's business activities, together with the main trends and factors likely to affect its future development, performance and position, and the financial position of the Group, its cash flows, liquidity position and borrowing facilities, are set out in the Financial Review on pages 54 to 58. In addition, Note 28 on pages 190 to 196 includes the Group's objectives, policies and processes for managing its capital, its financial risk management objectives, its financial instruments and hedging activities, its exposures to credit risk and liquidity risk.

The Group has considerable financial resources together with contracts with a diverse range of customers and suppliers across different geographic areas and industries. No one customer accounts for more than 1% of Group turnover.

As a consequence, the Directors believe that the Group is well placed to manage its business risks successfully.

The Directors, having made appropriate enquiries, consider that the Company and the Group have adequate resources to continue in operational existence and that the Directors intend to do so, for at least one year from the date the Financial Statements were signed, and that it is appropriate to adopt the going concern basis in preparing the Annual Report.

Scope of the reporting in this Annual Report

The Board has prepared a Strategic Report (including the Chair's Statement, the Strategic Review and the Review of Operations) which provides an overview of the development and performance of the Group's business in the year ended 31st December 2019 and its position at the end of that year, and which covers likely future developments in the business of the Company and the Group.

For the purposes of compliance with DTR 4.1.5 R(2) and DTR 4.1.8 R, the required content of the management report can be found in the Strategic Report and these Regulatory disclosures, including the sections of the Annual Report incorporated by reference.

The Strategic Report and the Directors' Report were approved by the Board on 10th March 2020. Pages 133 to 136 form the Directors' Report for the purposes of the Companies Act 2006.

The Annual Report contains the information required for compliance with the Companies, Partnerships and Groups (and Non-Financial Reporting) Regulations 2016.

For the purposes of LR 9.8.4C R, the information required to be disclosed by LR 9.8.4 R is set out in the following table.

Section	Topic	Location
(1)	Interest capitalised	Not applicable
(2)	Publication of unaudited financial information	Not applicable
(4)	Details of long-term incentive schemes	Remuneration Report, pages 113-114
(5)	Waiver of emoluments by a Director	Not applicable
(6)	Waiver of future emoluments by a Director	Not applicable
(7)	Non pre-emptive issues of equity for cash	Not applicable
(8)	Item (7) in relation to major subsidiary undertakings	Not applicable
(9)	Parent participation in a placing by a listed subsidiary	Not applicable
(10)	Contracts of significance	Regulatory Disclosures, page 135
(11)	Provision of services by a controlling shareholder	Not applicable
(12)	Shareholder waivers of dividends	Regulatory Disclosures, page 135
(13)	Shareholder waivers of future dividends	Not applicable
(14)	Agreements with controlling shareholders	Not applicable

Andy Robson
General Counsel and Company Secretary

10th March 2020

Spirax-Sarco Engineering plc
Registered no. 596337

Statement of Directors' Responsibilities

Board of Directors

The Directors are responsible for preparing the Annual Report and the Financial Statements in accordance with applicable laws and regulations.

Company law requires the Directors to prepare consolidated Group Financial Statements for each financial year in accordance with IFRS as adopted by the EU and applicable law. Parent Company Financial Statements are prepared under FRS 101.

In addition, by law the Directors must not approve the Financial Statements unless they are satisfied that they give a true and fair view of the state of affairs of the Group and Parent Company and of their profit or loss for that period. In preparing these Financial Statements, the Directors are required to:

- properly select and apply accounting policies;
- present information, including accounting policies, in a manner that provides relevant, reliable, comparable and understandable information;
- provide additional disclosures when compliance with the specific requirements in IFRS are insufficient to enable users to understand the impact of particular transactions, other events and conditions on the entity's financial position and financial performance; and
- make an assessment of the Company's ability to continue as a going concern.

The Directors are responsible for keeping adequate accounting records that are sufficient to show and explain the Company's transactions and disclose with reasonable accuracy at any time the financial position of the Company and enable them to ensure that its Financial Statements comply with the Companies Act 2006.

They are also responsible for safeguarding the assets of the Company and hence for taking reasonable steps for the prevention and detection of fraud and other irregularities.

The Directors are responsible for the maintenance and integrity of the corporate and financial information included on the Group's website, www.spiraxsarcoengineering.com. Legislation in the UK governing the preparation and dissemination of Financial Statements may differ from legislation in other jurisdictions.

Cautionary statement

All statements other than statements of historical fact included in this document, including those regarding the financial condition, results, operations and businesses of Spirax-Sarco Engineering plc (its strategy, plans and objectives), are forward-looking statements. These forward-looking statements reflect management's assumptions made on the basis of information available to it at this time. They involve known and unknown risks, uncertainties and other important factors which could cause the actual results, performance or achievements of Spirax-Sarco Engineering plc to be materially different from future results, performance or achievements expressed or implied by such forward-looking statements. Spirax-Sarco Engineering plc and its Directors accept no liability to third parties in respect of this Report save as would arise under English law.

"We focus on our Annual Report being fair, balanced and understandable and giving you a true and fair view of our Group."

Kevin Boyd
Chief Financial Officer

Any liability to a person who has demonstrated reliance on any untrue or misleading statement or omission shall be determined in accordance with schedule 10A of the Financial Services and Markets Act 2000. Schedule 10A contains limits on the liability of the Directors of Spirax-Sarco Engineering plc and their liability is solely to Spirax-Sarco Engineering plc.

Responsibility statement

We confirm that to the best of our knowledge:

- the Financial Statements, prepared in accordance with IFRS as adopted by the EU, give a true and fair view of the assets, liabilities, financial position and profit or loss of the Company and the undertakings included in the consolidation taken as a whole;
- the Strategic Report includes a fair review of the development and performance of the business and the position of the Company and the undertakings included in the consolidation taken as a whole, together with a description of the principal risks and uncertainties that they face; and
- the Annual Report 2019 taken as a whole, is fair, balanced and understandable and provides the information necessary for shareholders to assess the Company's financial position, performance, business model and strategy.

This responsibility statement was approved by the Board of Directors on 10th March 2020 and is signed on its behalf by:

Kevin Boyd
Chief Financial Officer
10th March 2020

Financial Statements

In this section

Independent Auditor's Report

to the members of Spirax-Sarco Engineering plc

Report on the audit of the Financial Statements

1. Opinion

In our opinion:

- the Financial Statements of Spirax-Sarco Engineering plc (the "Parent Company") and its subsidiaries (the "Group") give a true and fair view of the state of the Group's and of the Parent Company's affairs as at 31st December 2019 and of the Group's profit for the year then ended;
- the Group Financial Statements have been properly prepared in accordance with International Financial Reporting Standards (IFRS) as adopted by the European Union;
- the Parent Company Financial Statements have been properly prepared in accordance with United Kingdom Generally Accepted Accounting Practice, including Financial Reporting Standard 101 "Reduced Disclosure Framework"; and
- the Financial Statements have been prepared in accordance with the requirements of the Companies Act 2006 and, as regards the Group Financial Statements, Article 4 of the IAS Regulation.

We have audited the Financial Statements which comprise:

- the Consolidated and Parent Company Statement of Financial Position
- the Consolidated Income Statement;
- the Consolidated Statement of Comprehensive Income;
- the Consolidated and Parent Company Statements of Changes in Equity;
- the Consolidated Statement of Cash Flows; and
- the related Notes 1 to 28 to the Consolidated Financial Statements and 1 to 11 for the Parent Company Financial Statements.

The financial reporting framework that has been applied in the preparation of the Group Financial Statements is applicable law and IFRS as adopted by the European Union. The financial reporting framework that has been applied in the preparation of the Parent Company Financial Statements is applicable law and United Kingdom Accounting Standards, including FRS 101 "Reduced Disclosure Framework" (United Kingdom Generally Accepted Accounting Practice).

2. Basis for opinion

We conducted our audit in accordance with International Standards on Auditing (UK) (ISA (UK)) and applicable law. Our responsibilities under those standards are further described in the auditor's responsibilities for the audit of the Financial Statements section of our report.

We are independent of the Group and the Parent Company in accordance with the ethical requirements that are relevant to our audit of the Financial Statements in the UK, including the Financial Reporting Council's (the "FRC's") Ethical Standard as applied to listed public interest entities, and we have fulfilled our other ethical responsibilities in accordance with these requirements. We confirm that the non-audit services prohibited by the FRC's Ethical Standard were not provided to the Group or the Parent Company.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

3. Summary of our audit approach

Key audit matters	The key audit matters that we identified in the current year were: • Revenue recognition in relation to cut off for certain components and revenue recognition on any significant new and/or one-off contracts spanning the year end. • Defined benefit pension liability valuation focusing on the judgements and assumptions made by management in determining the discount rate, mortality assumption and inflation rate. • Goodwill impairment review for the Chromalox CGU on transition to a new CGU structure. • Valuation of acquired intangible assets from the purchase of Thermocoax pinpointed to the identified customer relationships. Within this report, key audit matters are identified as follows: ! Newly identified Similar level of risk
Materiality	The materiality that we used for the Group Financial Statements was £11.5m, which was determined on the basis of 5% of statutory profit before tax.
Scoping	We focused our Group audit scope primarily on the audit work at 33 components. These components represent the principal business units and account for 82% of the Group's net assets, 76% of the Group's revenue and 77% of the Group's profit before tax.
Significant changes in our approach	We included the following two additional key audit matters in our report this year: valuation of acquired intangible assets from the purchase of Thermocoax in the current year, and the recoverability of Chromalox goodwill due to margin performance being below forecast.

Financial Statements

Independent Auditor's Report *continued*

4. Conclusions relating to going concern, principal risks and viability statement

4.1. Going concern

We have reviewed the Directors' statement on page 136 to the Financial Statements about whether they considered it appropriate to adopt the going concern basis of accounting in preparing them and their identification of any material uncertainties to the Group's and Company's ability to continue to do so over a period of at least 12 months from the date of approval of the Financial Statements.

We considered as part of our risk assessment the nature of the Group, its business model and related risks including where relevant the impact of Brexit, the requirements of the applicable financial reporting framework and the system of internal control. We evaluated the Directors' assessment of the Group's ability to continue as a going concern, including challenging the underlying data and key assumptions used to make the assessment, and evaluated the Directors' plans for future actions in relation to their going concern assessment.

We are required to state whether we have anything material to add or draw attention to in relation to that statement required by Listing Rule 9.8.6R(3) and report if the statement is materially inconsistent with our knowledge obtained in the audit.

Going concern is the basis of preparation of the Financial Statements that assumes an entity will remain in operation for a period of at least 12 months from the date of approval of the Financial Statements.

We confirm that we have nothing material to report, add or draw attention to in respect of these matters.

4.2. Principal risks and viability statement

Based solely on reading the Directors' statements and considering whether they were consistent with the knowledge we obtained in the course of the audit, including the knowledge obtained in the evaluation of the Directors' assessment of the Group's and the Company's ability to continue as a going concern, we are required to state whether we have anything material to add or draw attention to in relation to:

- the disclosures on pages 20 to 25 that describe the principal risks, procedures to identify emerging risks, and an explanation of how these are being managed or mitigated;
- the Directors' confirmation on page 101 that they have carried out a robust assessment of the principal and emerging risks facing the Group, including those that would threaten its business model, future performance, solvency or liquidity; or
- the Directors' explanation on page 101 as to how they have assessed the prospects of the Group, over what period they have done so and why they consider that period to be appropriate, and their statement as to whether they have a reasonable expectation that the Group will be able to continue in operation and meet its liabilities as they fall due over the period of their assessment, including any related disclosures drawing attention to any necessary qualifications or assumptions.

We are also required to report whether the Directors' statement relating to the prospects of the Group required by Listing Rule 9.8.6R(3) is materially inconsistent with our knowledge obtained in the audit.

Viability means the ability of the Group to continue over the time horizon considered appropriate by the Directors.

We confirm that we have nothing material to report, add or draw attention to in respect of these matters.

5. Key audit matters

Key audit matters are those matters that, in our professional judgement, were of most significance in our audit of the Financial Statements of the current period and include the most significant assessed risks of material misstatement (whether or not due to fraud) that we identified. These matters included those which had the greatest effect on: the overall audit strategy, the allocation of resources in the audit and directing the efforts of the engagement team.

These matters were addressed in the context of our audit of the Financial Statements as a whole, and in forming our opinion thereon, and we do not provide a separate opinion on these matters.

5.1. Revenue recognition

Key audit matter description

The Group generates revenue primarily from the sale of goods with revenue being recognised on delivery or dispatch. We have identified a key audit matter relating to two risks of material misstatement, whether due to fraud or error, in relation to cut off for revenue recognition:

- Potential overstatement of revenue within certain components where a significantly higher proportion of annual revenue is recognised in December 2019 compared to the rest of the year. The risk for these components focuses on the recognition of revenue by reference to the contracted shipping terms and the transfer of control for product despatches and deliveries spanning year end.
- There may be significant new and/or one-off contracts spanning the year end where specific alternative revenue recognition policies are required to ensure revenue has been recorded within the appropriate period.

Refer to Note 1 for the Group's revenue recognition policy and the significant issues section of the Audit Committee Report on pages 95 to 96.

How the scope of our audit responded to the key audit matter

In response to the key audit matter described above, we performed a risk assessment across the Group to identify specific areas of risk, focusing our testing accordingly. Our audit response consisted of several procedures including those summarised below.

We obtained an understanding of the controls relating to the revenue cycle. At significant components, we mapped the end-to-end controls and processes in place.

We reviewed the product despatch cycle and revenue recognition profile across the year-end period and tested a sample of items by confirming the date of transfer of control was in line with the revenue recognition date in accordance with the terms of trade with customers. We focused our procedures on those components with a higher than average volume of trade in December 2019.

We audited a sample of contracts spanning the year end, challenging the performance obligation, tracing back to the contract and external evidence where possible, and the associated revenue recognition.

Key observations

From the work performed above we are satisfied that there are no material cut-off errors and revenue recognition for significant new contracts is appropriate.

5.2. Defined benefit pension liability valuation

Key audit matter description

At 31st December 2019 the gross retirement benefit liability recognised in the Consolidated Statement of Financial Position was £559.1m (2018: £526.1m). There is a risk of material misstatement relating to the judgements made by management in valuing the defined benefit pension liabilities including the use of key model input assumptions specifically the discount rate, mortality assumption and inflation rate over the five main schemes (three in the UK, one in Germany and one in the USA). These variables can have a material impact in calculating the quantum of the retirement benefit liability.

Refer to Note 1 for the Group's policy on defined benefit plans, Note 23 for the financial disclosure including the key estimates and assumptions used in the defined benefit pension plan valuation and the significant issues section of the Audit Committee Report on pages 95 to 96.

How the scope of our audit responded to the key audit matter

Working with our internal actuarial specialists we assessed the key assumptions applied in determining the pension obligations for the five main pension schemes, and determined whether the key assumptions are reasonable. Testing covered 97.4% (2018: 96.9%) of defined benefit pension liabilities. For each of the five schemes, we challenged management's key assumptions by reference to illustrative benchmark rates, sensitising any difference between management's rates and the illustrative benchmark rates. Additionally we benchmarked the key assumptions against other listed companies to check for any outliers in the data used.

Key observations

From the work performed above we are satisfied that the key assumptions applied in respect of the valuation of the schemes' liabilities are appropriate.

Independent Auditor's Report *continued*

5.3. Goodwill impairment review for the Chromalox CGU

Key audit matter description	During 2019 management determined that goodwill should be monitored at an operating segment level and therefore combined CGUs to change their CGU structure. As part of this transition, IAS 36 requires goodwill impairment to be reviewed under the old and new CGU structure to assess if any material benefits are being derived from this transition. We identified a risk of material misstatement for the Chromalox CGU (being on the historic CGU basis) recognising that profit margin has been below management forecast. The value of goodwill for the Chromalox CGU was £175.9m (2018: £183.0m). We have specifically pinpointed this risk to the key assumptions in the model – revenue growth rates, trading margin and discount rate. The Audit Committee Report on page 96 refers to impairment of goodwill and other intangibles as an area considered by the Audit Committee. Note 1 to the Consolidated Financial Statements sets out the Group's accounting policy for testing of goodwill and intangibles for impairment. The basis for the impairment reviews is outlined in Note 15 to the Consolidated Financial Statements, including details of the discount rates and growth rates used. Note 15 to the Consolidated Financial Statements also includes details of the extent to which the CGUs to which the goodwill and other intangible assets are allocated are sensitive to changes in the key inputs.
How the scope of our audit responded to the key audit matter	In response to the significant risk for material misstatement identified, we performed the following procedures to challenge management's assumptions and assessment: • we obtained an understanding of the controls relating to the impairment review process; • validating the integrity of management's impairment model through testing of the mechanical accuracy and verifying the application of the input assumptions; • evaluating the process management undertook to prepare the cash flow forecasts in its impairment model including agreement with the latest Board approved plans and management approved forecasts; • challenging the cash flow projections through assessing the accuracy of historical budgeting by comparing them with actual performance and independent evidence to support any significant expected future changes to the business; • considered a range of available market data and performed benchmarking exercise to assess and challenge the growth rates forecasted by management in revenue and trading profit margins; • considered the potential impact of Brexit and Coronavirus on the cash flow projections; • considered reasonable possible changes in assumptions to challenge the appropriateness of management's assessment of reasonable possible change scenarios; and • our challenge was informed by input from certain of our internal valuations specialists, utilising their knowledge and expertise in relation to the discount rate.
Key observations	From the work performed above we are satisfied with management's impairment model for Chromalox which shows that the value in use supports the carrying value. This was on the basis that the assumptions applied, when taken in aggregate, are within our acceptable range.

5.4. Valuation of certain acquired intangible assets from the purchase of Thermocoax

Key audit matter description	During the year the Group acquired Thermocoax Developpment ("Thermocoax") for a total consideration of £121.4 million. In accordance with IFRS 3 (Business Combinations), management has recognised the identifiable assets and the liabilities at their acquisition date fair values. We have identified a key audit matter specifically in relation to the assumptions applied in respect of the Purchase Price Allocation ("PPA") exercise specifically the primary intangible asset identified is customer relationships of £34.6m and we pinpointed the risk to the key assumptions in forecast revenue growth, trading margin growth, discount rate and customer attrition rates. The associated disclosure is included in Note 26. The Audit Committee has included their assessment of this risk on page 96. For specifics of the Group's accounting policy please see page 157.
How the scope of our audit responded to the key audit matter	Our procedures for challenging management's key assumptions in relation to the Thermocoax acquisition included: • we obtained an understanding of the controls to address the key audit matter; • evaluating the acquisition balance sheet and fair value adjustments including challenging management with regards to the identification and valuation of intangible assets; • challenging management's assessment of useful economic life of the customer relationship asset using independent benchmarking; • evaluated the reasonableness of the forecast from which the customer relationship asset valuation is derived and the profitability pertaining to this intangible asset working with our valuation experts and benchmarking; • assessing the excess earnings intangible assets valuation methodology used by management; and • working with our valuation specialists to assess the valuation methodology and certain key assumptions including the discount rate and attrition rate.
Key observations	From the work performed above we are satisfied that the acquisition of Thermocoax, in particular the valuation of the customer relationship intangible asset, has been appropriately accounted for in accordance with IFRS 3 (Business Combinations).

Independent Auditor's Report *continued*

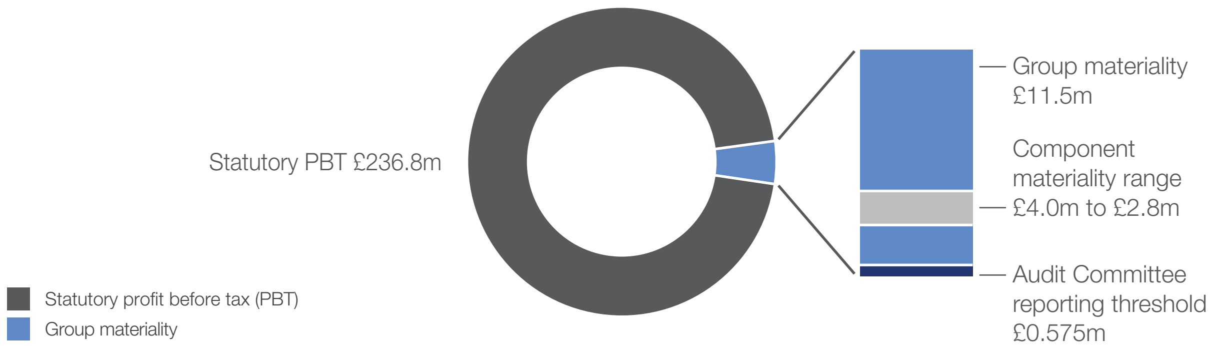
6. Our application of materiality

6.1. Materiality

We define materiality as the magnitude of misstatement in the Financial Statements that makes it probable that the economic decisions of a reasonably knowledgeable person would be changed or influenced. We use materiality both in planning the scope of our audit work and in evaluating the results of our work.

Based on our professional judgement, we determined materiality for the Financial Statements as a whole as follows:

	Group Financial Statements	Parent Company Financial Statements
Materiality	£11.5m (2018: £11.4m)	£4.0m (2018: £4.2m)
Basis for determining materiality	5% of statutory profit before tax. In the prior year, due to material one-off gains included in the statutory profit before tax, we used adjusted profit before tax as our benchmark balance. Adjusted for one-off gains in the prior year being £47.4m gain on disposal of subsidiary, £6.5m gain on disposal of property and £6.0m past service cost credits from freeze of pension scheme.	Parent Company materiality equates to 5% of profit before tax, which is capped at 35% (2018: 40%) of Group materiality.
Rationale for the benchmark applied	We have used statutory profit before tax for determining materiality. This is considered to be a key benchmark as this metric is important to the users of the Financial Statements (investors and analysts being the key users for a listed entity) because it portrays the performance of the business and hence its ability to pay a return on investment to the investors.	In determining our final materiality based on our professional judgement we have considered net assets as the appropriate measure given the Parent Company is primarily a holding company for the Group. We then capped materiality at the highest component materiality for the Group.



6.2. Performance materiality

We set performance materiality at a level lower than materiality to reduce the probability that, in aggregate, uncorrected and undetected misstatements exceed the materiality for the Financial Statements as a whole. Group performance materiality was set at 70% of Group materiality for the 2019 audit (2018: 70%). In determining performance materiality we considered our risk assessment, including our assessment of the Group's overall control environment and the level of misstatements identified in previous audits.

6.3. Error reporting threshold

We agreed with the Audit Committee that we would report to the Committee all audit differences in excess of £575,000 (2018: £530,000), as well as differences below that threshold that, in our view, warranted reporting on qualitative grounds. We also report to the Audit Committee on disclosure matters that we identified when assessing the overall presentation of the Financial Statements.

7. An overview of the scope of our audit

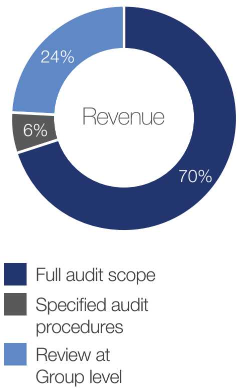
7.1 Identification and scoping of components

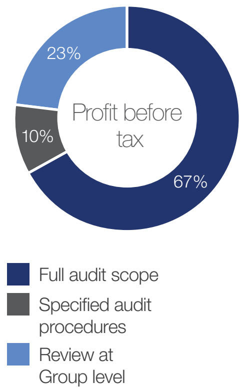
Our Group audit was scoped by obtaining an understanding of the Group and its environment, including Group-wide controls, and assessing the risks of material misstatement at the Group level. Based on that assessment, we focused our Group audit scope primarily on the audit work at 33 (2018: 28) components. 26 (2018: 25) of these were subject to a full audit, whilst the remaining seven components (2018: three components) were subject to specified audit procedures where the extent of our testing was based on our assessment of the risks of material misstatement and of the materiality of the Group's operations at those components. These components represent the principal business units and account for 82% (2018: 93%) of the Group's net assets, 76% (2018: 73%) of the Group's revenue and 77% (2018: 80%) of the Group's profit before tax. They were also selected to provide an appropriate basis for undertaking audit work to address the risks of material misstatement identified above. Our audit work at the components was executed at levels of materiality applicable to each individual entity which were lower than Group materiality and ranged from £2.8m to £4.0m (2018: £3.2m to £4.2m).

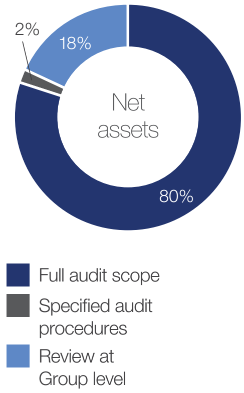
At the Parent Company level we also tested the consolidation process and carried out analytical procedures to confirm our conclusion that there were no significant risks of material misstatement of the aggregated financial information of the remaining components not subject to audit or audit of specified account balances.

7.2.Working with other auditors

The Group audit team continued to follow a programme of planned visits that has been designed so that a senior member of the Group audit team visits each of the key components where the Group audit scope was focused on a rotational basis and the most significant of them at least once a year. In the current year we visited the UK, USA, Germany, France, China and South Korean components. As part of these visits, meetings were held with both component management and the component audit team. For all components, we held close calls after they reported into us and as deemed necessary, reviewed their work papers.







Independent Auditor's Report *continued*

8. Other information

The Directors are responsible for the other information. The other information comprises the information included in the Annual Report, other than the Financial Statements and our auditor's report thereon.

Our opinion on the Financial Statements does not cover the other information and, except to the extent otherwise explicitly stated in our report, we do not express any form of assurance conclusion thereon.

In connection with our audit of the Financial Statements, our responsibility is to read the other information and, in doing so, consider whether the other information is materially inconsistent with the Financial Statements or our knowledge obtained in the audit or otherwise appears to be materially misstated.

If we identify such material inconsistencies or apparent material misstatements, we are required to determine whether there is a material misstatement in the Financial Statements or a material misstatement of the other information. If, based on the work we have performed, we conclude that there is a material misstatement of this other information, we are required to report that fact.

In this context, matters that we are specifically required to report to you as uncorrected material misstatements of the other information include where we conclude that:

- **Fair, balanced and understandable** – the statement given by the Directors that they consider the Annual Report and Financial Statements taken as a whole is fair, balanced and understandable and provides the information necessary for shareholders to assess the Group's position and performance, business model and strategy, is materially inconsistent with our knowledge obtained in the audit; or
- **Audit Committee reporting** – the section describing the work of the Audit Committee does not appropriately address matters communicated by us to the Audit Committee; or
- **Directors' Statement of compliance with the UK Corporate Governance Code** – the parts of the Directors' Statement required under the Listing Rules relating to the Company's compliance with the UK Corporate Governance Code containing provisions specified for review by the auditor in accordance with Listing Rule 9.8.10R(2) do not properly disclose a departure from a relevant provision of the UK Corporate Governance Code.

We have nothing to report in respect of these matters.

9. Responsibilities of Directors

As explained more fully in the Statement of Directors' Responsibilities, the Directors are responsible for the preparation of the Financial Statements and for being satisfied that they give a true and fair view, and for such internal control as the Directors determine is necessary to enable the preparation of Financial Statements that are free from material misstatement, whether due to fraud or error.

In preparing the Financial Statements, the Directors are responsible for assessing the Group's and the Parent Company's ability to continue as a going concern, disclosing as applicable, matters related to going concern and using the going concern basis of accounting unless the Directors either intend to liquidate the Group or the Parent Company or to cease operations, or have no realistic alternative but to do so.

10. Auditor's responsibilities for the audit of the Financial Statements

Our objectives are to obtain reasonable assurance about whether the Financial Statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an Auditor's Report that includes our opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with ISA (UK) will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these Financial Statements.

Details of the extent to which the audit was considered capable of detecting irregularities, including fraud and non-compliance with laws and regulations are set out below.

A further description of our responsibilities for the audit of the Financial Statements is located on the FRC's website at: www.frc.org.uk/auditorsresponsibilities. This description forms part of our Auditor's Report.

11. Extent to which the audit was considered capable of detecting irregularities, including fraud

We identify and assess the risks of material misstatement of the Financial Statements, whether due to fraud or error, and then design and perform audit procedures responsive to those risks, including obtaining audit evidence that is sufficient and appropriate to provide a basis for our opinion.

11.1. Identifying and assessing potential risks related to irregularities

In identifying and assessing risks of material misstatement in respect of irregularities, including fraud and non-compliance with laws and regulations, we considered the following:

- the nature of the industry and sector, control environment and business performance including the design of the Group's remuneration policies, key drivers for Directors' remuneration, bonus levels and performance targets;
- results of our enquiries of management, internal audit and the Audit Committee about their own identification and assessment of the risks of irregularities;
- any matters we identified having obtained and reviewed the Group's documentation of their policies and procedures relating to:
  - o identifying, evaluating and complying with laws and regulations and whether they were aware of any instances of non-compliance;
  - o detecting and responding to the risks of fraud and whether they have knowledge of any actual, suspected or alleged fraud;
  - o the internal controls established to mitigate risks of fraud or non-compliance with laws and regulations;
- the matters discussed among the audit engagement team including significant component audit teams, and involved relevant internal specialists, including tax, valuations, pensions and IT regarding how and where fraud might occur in the financial statements and any potential indicators of fraud.

As a result of these procedures, we considered the opportunities and incentives that may exist within the organisation for fraud and identified the greatest potential for fraud in the following area: cut off for certain components and revenue recognition on any significant new and/or one-off contracts spanning year end. In common with all audits under ISA (UK), we are also required to perform specific procedures to respond to the risk of management override.

We also obtained an understanding of the legal and regulatory frameworks that the Group operates in, focusing on provisions of those laws and regulations that had a direct effect on the determination of material amounts and disclosures in the financial statements. The key laws and regulations we considered in this context included the UK Companies Act, Listing Rules, pensions legislation and tax legislation.

In addition, we considered provisions of other laws and regulations that do not have a direct effect on the Financial Statements but compliance with which may be fundamental to the Group's ability to operate or to avoid a material penalty.

11.2. Audit response to risks identified

As a result of performing the above, we identified cut off for certain components and revenue recognition on any significant new and/or one-off contracts spanning year end a key audit matter related to the potential risk of fraud. The key audit matters section of our report explains the matter in more detail and also describes the specific procedures we performed in response to that key audit matter.

In addition to the above, our procedures to respond to risks identified included the following:

- reviewing the Financial Statement disclosures and testing to supporting documentation to assess compliance with provisions of relevant laws and regulations described as having a direct effect on the Financial Statements;
- enquiring of management, the Audit Committee and in-house legal counsel concerning actual and potential litigation and claims;
- performing analytical procedures to identify any unusual or unexpected relationships that may indicate risks of material misstatement due to fraud;
- reading minutes of meetings of those charged with governance, reviewing internal audit reports and reviewing correspondence with HMRC; and
- in addressing the risk of fraud through management override of controls, testing the appropriateness of journal entries and other adjustments; assessing whether the judgements made in making accounting estimates are indicative of a potential bias; and evaluating the business rationale of any significant transactions that are unusual or outside the normal course of business.

We also communicated relevant identified laws and regulations and potential fraud risks to all engagement team members including internal specialists and significant component audit teams, and remained alert to any indications of fraud or non-compliance with laws and regulations throughout the audit.

Independent Auditor's Report *continued*

Report on other legal and regulatory requirements

12. Opinions on other matters prescribed by the Companies Act 2006

In our opinion the part of the Directors' Remuneration Report to be audited has been properly prepared in accordance with the Companies Act 2006.

In our opinion, based on the work undertaken in the course of the audit:

- the information given in the Strategic Report and the Directors' Report for the financial year for which the Financial Statements are prepared is consistent with the Financial Statements; and
- the Strategic Report and the Directors' Report have been prepared in accordance with applicable legal requirements.

In the light of the knowledge and understanding of the Group and the Parent Company and their environment obtained in the course of the audit, we have not identified any material misstatements in the Strategic Report or the Directors' Report.

13. Matters on which we are required to report by exception

13.1. Adequacy of explanations received and accounting records

Under the Companies Act 2006 we are required to report to you if, in our opinion:

- we have not received all the information and explanations we require for our audit; or
- adequate accounting records have not been kept by the Parent Company, or returns adequate for our audit have not been received from branches not visited by us; or
- the Parent Company Financial Statements are not in agreement with the accounting records and returns.

We have nothing to report in respect of these matters.

13.2. Directors' remuneration

Under the Companies Act 2006 we are also required to report if in our opinion certain disclosures of Directors' remuneration have not been made or the part of the Directors' Remuneration Report to be audited is not in agreement with the accounting records and returns.

We have nothing to report in respect of these matters.

14. Other matters

14.1. Auditor tenure

Following the recommendation of the audit committee, we were appointed by the Directors and subsequently at the Annual General Meeting on 11th May 2014 to audit the Financial Statements for the year ending 31st December 2014 and subsequent financial periods. The period of total uninterrupted engagement including previous renewals and reappointments of the firm is six years, covering the years ended 31st December 2014 to 31st December 2019.

14.2. Consistency of the Audit Report with the additional report to the Audit Committee

Our audit opinion is consistent with the additional report to the Audit Committee we are required to provide in accordance with ISA (UK).

15. Use of our report

This report is made solely to the Company's members, as a body, in accordance with Chapter 3 of Part 16 of the Companies Act 2006. Our audit work has been undertaken so that we might state to the Company's members those matters we are required to state to them in an Auditor's Report and for no other purpose. To the fullest extent permitted by law, we do not accept or assume responsibility to anyone other than the company and the Company's members as a body, for our audit work, for this report, or for the opinions we have formed.

Andrew Bond, FCA
(Senior statutory auditor)

For and on behalf of Deloitte LLP
Statutory Auditor
London, United Kingdom

10th March 2020

Consolidated Statement of Financial Position
at 31st December 2019

	Notes	2019 £m	2018 £m
Assets			
Non-current assets			
Property, plant and equipment	13	251.2	230.8
Right-of-use assets	14	40.8	–
Goodwill	15	417.7	368.0
Other intangible assets	15	303.9	277.2
Prepayments		0.9	6.2
Investment in Associate	12	0.2	–
Deferred tax assets	16	40.8	41.3
		1,055.5	923.5
Current assets			
Inventories	17	185.9	160.6
Trade receivables	28	240.7	245.1
Other current assets	18	35.3	32.9
Taxation recoverable		8.4	4.6
Cash and cash equivalents	24	168.5	187.1
		638.8	630.3
Total assets		1,694.3	1,553.8
Equity and liabilities			
Current liabilities			
Trade and other payables	19	174.8	167.0
Provisions	20	3.5	5.0
Bank overdrafts	24	0.2	0.4
Short-term borrowings	24	–	15.7
Current portion of long-term borrowings	24	34.3	41.5
Short-term lease liabilities		11.1	–
Current tax payable		26.7	23.7
		250.6	253.3
Net current assets		388.2	377.0
Non-current liabilities			
Long-term borrowings	24	429.2	365.3
Long-term lease liabilities		27.8	–
Deferred tax liabilities	16	83.9	76.8
Post-retirement benefits	23	71.3	85.1
Provisions	20	1.3	3.7
Long-term payables		3.9	2.7
		617.4	533.6
Total liabilities		868.0	786.9
Net assets	2, 3	826.3	766.9
Equity			
Share capital	21	19.8	19.8
Share premium account		81.0	77.8
Other reserves	21	(10.6)	22.2
Retained earnings		735.1	646.0
Equity shareholders' funds		825.3	765.8
Non-controlling interest		1.0	1.1
Total equity		826.3	766.9
Total equity and liabilities		1,694.3	1,553.8

These Financial Statements of Spirax-Sarco Engineering plc, company number 00596337, were approved by the Board of Directors and authorised for issue on 10th March 2020 and signed on its behalf by:

N.J. Anderson **K.J. Boyd** Directors

Consolidated Income Statement

for the year ended 31st December 2019

	Notes	Adjusted 2019 £m	Adjustments 2019 £m	Total 2019 £m	Adjusted 2018 £m	Adjustments 2018 £m	Total 2018 £m
Revenue	3	1,242.4	–	1,242.4	1,153.3	–	1,153.3
Operating costs	4	(959.7)	(37.7)	(997.4)	(888.4)	34.2	(854.2)
Operating profit	2, 3	282.7	(37.7)	245.0	264.9	34.2	299.1
Financial expenses		(9.9)	–	(9.9)	(11.4)	–	(11.4)
Financial income		1.5	–	1.5	1.1	–	1.1
Net financing expense	3, 6	(8.4)	–	(8.4)	(10.3)	–	(10.3)
Share of profit of Associate	12	0.2	–	0.2	–	–	–
Profit before taxation	7	274.5	(37.7)	236.8	254.6	34.2	288.8
Taxation	9	(78.3)	8.5	(69.8)	(70.4)	5.0	(65.4)
Profit for the period		196.2	(29.2)	167.0	184.2	39.2	223.4
Attributable to:							
Equity shareholders		195.8	(29.2)	166.6	183.9	39.2	223.1
Non-controlling interest		0.4	–	0.4	0.3	–	0.3
Profit for the period		196.2	(29.2)	167.0	184.2	39.2	223.4
Earnings per share	2, 10						
Basic earnings per share		265.7p		226.2p	250.0p		303.1p
Diluted earnings per share		264.9p		225.5p	249.1p		302.0p
Dividends	11						
Dividends per share				110.0p			100.0p
Dividends paid during the year (per share)				103.0p			91.0p

Adjusted figures exclude certain items, as set out and explained in the Financial Review and as detailed in Notes 2 and 3. All amounts relate to continuing operations.

The Notes on pages 154 to 196 form an integral part of the Financial Statements.

Consolidated Statement of Comprehensive Income

for the year ended 31st December 2019

	Notes	2019 £m	2018 £m
Profit for the year		**167.0**	223.4
Items that will not be reclassified to profit or loss:			
Remeasurement gain/(loss) on post-retirement benefits	23	**9.0**	(5.9)
Deferred tax on remeasurement (gain)/loss on post-retirement benefits	23	**(1.4)**	1.2
		7.6	(4.7)
Items that may be reclassified subsequently to profit or loss:			
Foreign exchange translation differences and net investment hedges	21	**(33.5)**	4.2
Non-controlling interest foreign exchange translation differences		**(0.1)**	–
Profit/(loss) on cash flow hedges net of tax	21, 28	**3.3**	(0.1)
		(30.3)	4.1
Total comprehensive income for the year		**144.3**	222.8
Attributable to:			
Equity shareholders		**144.0**	222.5
Non-controlling interest		**0.3**	0.3
Total comprehensive income for the year		**144.3**	222.8

Consolidated Statement of Changes in Equity

for the year ended 31st December 2019

	Notes	Share capital £m	Share premium account £m	Other reserves £m	Retained earnings £m	Equity shareholders' funds £m	Non-controlling interest £m	Total equity £m
Balance at 1st January 2019		19.8	77.8	22.2	646.0	765.8	1.1	766.9
Adoption of IFRS 16	1	–	–	–	(2.4)	(2.4)	–	(2.4)
Balance at 1st January 2019 (restated)		19.8	77.8	22.2	643.6	763.4	1.1	764.5
Profit for the year		–	–	–	166.6	166.6	0.4	167.0
Other comprehensive (expense)/income:								
Foreign exchange translation differences and net investment hedges	21	–	–	(33.5)	–	(33.5)	(0.1)	(33.6)
Remeasurement gain on post-retirement benefits	23	–	–	–	9.0	9.0	–	9.0
Deferred tax on remeasurement gain on post-retirement benefits	16, 23	–	–	–	(1.4)	(1.4)	–	(1.4)
Cash flow hedges	21, 28	–	–	3.3	–	3.3	–	3.3
Total other comprehensive (expense)/income for the year		–	–	(30.2)	7.6	(22.6)	(0.1)	(22.7)
Total comprehensive (expense)/ income for the year		–	–	(30.2)	174.2	144.0	0.3	144.3
Contributions by and distributions to owners of the Company:								
Dividends paid	11	–	–	–	(75.9)	(75.9)	(0.4)	(76.3)
Equity settled share plans net of tax		–	–	–	(5.4)	(5.4)	–	(5.4)
Issue of share capital	21	–	3.2	–	–	3.2	–	3.2
Employee Benefit Trust shares	21	–	–	(4.0)	–	(4.0)	–	(4.0)
Transfer between reserves	21	–	–	1.4	(1.4)	–	–	–
Balance at 31st December 2019		19.8	81.0	(10.6)	735.1	825.3	1.0	826.3

Other reserves represent the Group's Translation, Net investment hedge, Cash flow hedges, Capital redemption and Employee Benefit Trust reserves (see Note 21). The non-controlling interest is a 2.5% share of Spirax-Sarco (Korea) Ltd held by employee shareholders.

Consolidated Statement of Changes in Equity

for the year ended 31st December 2018

	Notes	Share capital £m	Share premium account £m	Other reserves £m	Retained earnings £m	Equity shareholders' funds £m	Non-controlling interest £m	Total equity £m
Balance at 1st January 2018		19.8	75.1	19.3	494.2	608.4	1.1	609.5
Adoption of IFRS 15		–	–	–	0.7	0.7	–	0.7
Balance at 1st January 2018 (restated)		19.8	75.1	19.3	494.9	609.1	1.1	610.2
Profit for the year		–	–	–	223.1	223.1	0.3	223.4
Other comprehensive (expense)/income:								
Foreign exchange translation differences and net investment hedges	21	–	–	4.2	–	4.2	–	4.2
Remeasurement loss on post-retirement benefits	23	–	–	–	(5.9)	(5.9)	–	(5.9)
Deferred tax on remeasurement loss on post-retirement benefits	16, 23	–	–	–	1.2	1.2	–	1.2
Cash flow hedges	21, 28	–	–	(0.1)	–	(0.1)	–	(0.1)
Total other comprehensive income/(expense) for the year		–	–	4.1	(4.7)	(0.6)	–	(0.6)
Total comprehensive income for the year		–	–	4.1	218.4	222.5	0.3	222.8
Contributions by and distributions to owners of the Company:								
Dividends paid	11	–	–	–	(67.0)	(67.0)	(0.3)	(67.3)
Equity settled share plans net of tax	21	–	–	–	(0.3)	(0.3)	–	(0.3)
Issue of share capital	21	–	2.7	–	–	2.7	–	2.7
Employee Benefit Trust shares	21	–	–	(1.2)	–	(1.2)	–	(1.2)
Balance at 31st December 2018		19.8	77.8	22.2	646.0	765.8	1.1	766.9

In 2018, included in foreign exchange translation differences and net investment hedges is £0.3m for historic currency translation gains transferred to the income statement relating to the disposal of a subsidiary (see Note 27).

Consolidated Statement of Cash Flows

for the year ended 31st December 2019

	Notes	2019 £m	2018 £m
Cash flows from operating activities			
Profit before taxation		236.8	288.8
Depreciation, amortisation and impairment	3, 4	76.6	58.1
Loss/(profit) on disposal of fixed assets	7	0.4	(8.6)
Profit on disposal of subsidiary	27	–	(47.4)
Reversal of acquisition-related fair value adjustments to inventory	2	4.1	–
Cash payments to the pension schemes greater than the charge to operating profit	23	(5.2)	(10.1)
Equity settled share plans	23	6.2	5.7
Net financing expense	6	8.4	10.3
Operating cash flow before changes in working capital and provisions		327.3	296.8
Change in trade and other receivables		2.4	(16.0)
Change in inventories		(23.8)	(15.5)
Change in provisions		(2.4)	0.8
Change in trade and other payables		2.3	8.1
Cash generated from operations		305.8	274.2
Income taxes paid		(78.4)	(61.6)
Net cash from operating activities		227.4	212.6
Cash flows from investing activities			
Purchase of property, plant and equipment		(50.9)	(33.5)
Proceeds from sale of property, plant and equipment		3.4	11.9
Purchase of software and other intangibles		(8.3)	(8.3)
Development expenditure capitalised		(3.2)	(1.6)
Disposal of subsidiary	27	–	51.5
Acquisition of businesses net of cash acquired	26	(117.9)	(2.7)
Interest received		1.5	1.1
Net cash (used in)/from investing activities		(175.4)	18.4
Cash flows from financing activities			
Proceeds from issue of share capital	21	2.1	1.8
Employee Benefit Trust share purchase		(14.7)	(6.7)
Repaid borrowings	24	(80.2)	(111.6)
New borrowings	24	129.8	0.1
Interest paid including interest on lease liabilities		(7.0)	(7.7)
Repayment of lease liabilities	24	(11.2)	–
Dividends paid (including minorities)		(76.3)	(67.3)
Net cash used in financing activities		(57.5)	(191.4)
Net change in cash and cash equivalents		(5.5)	39.6
Net cash and cash equivalents at beginning of period	24	186.7	151.6
Exchange movement	24	(12.9)	(4.5)
Net cash and cash equivalents at end of period	24	168.3	186.7
Borrowings	24	(463.5)	(422.5)
Net debt at end of period	24	(295.2)	(235.8)
Lease liabilities (including IFRS 16 transition adjustment)	24	(38.9)	–
Net debt and lease liabilities at end of period	24	(334.1)	(235.8)

Notes to the Consolidated Financial Statements

1 Accounting policies

Basis of preparation

The Consolidated Financial Statements have been prepared on a historical cost basis except for items that are required by International Financial Reporting Standards (IFRS) to be measured at fair value, principally certain financial instruments. The Consolidated Financial Statements have been prepared in accordance with IFRS which includes the standards and interpretatons issued by the International Accounting Standards Board (IASB) that have been adopted by the European Union (EU).

The preparation of Financial Statements in conformity with IFRS requires the Directors to apply IAS 1 and make judgements, estimates and assumptions about the carrying amounts of assets and liabilities that are not apparent from other sources. The estimates and associated assumptions are based on historical experiences and other factors that are considered to be relevant. Actual results may differ from these estimates.

The estimates and underlying assumptions are reviewed on an on-going basis. Revisions to accounting estimates are recognised in the period in which the estimate is revised if the revision affects only that period, or in the period of the revision and future periods if the revision affects both current and future periods.

Critical judgements in applying the Group's accounting policies

The Directors have concluded that no critical judgements, apart from those involving estimations (which are dealt with separately below) have been made in the process of applying the Group's accounting policies.

Key sources of estimation uncertainty

The key assumptions concerning the future, and other key sources of estimation uncertainty at the reporting period that may have a significant risk of causing a material adjustment to the carrying amounts of assets and liabilities within the next financial year, are outlined below.

(i) Post-retirement benefits

The Group's defined benefit obligation is assessed by selecting key assumptions. The selection of mortality rates, inflation and pay increases are key sources of estimation uncertainty which could lead to material adjustment in the defined benefit obligation within the next financial year. These assumptions are set with close reference to market conditions.

The Group's defined benefit obligation is discounted at a rate set by reference to market yields at the end of the reporting period on high quality corporate bonds. The most significant criteria considered for the selection of bonds include the issue size of the corporate bonds, quality of the bonds and the identification of outliers which are excluded.

The assumptions selected and associated sensitivity analysis are disclosed in Note 23.

The impact the COVID-19 outbreak has had on our business in the first two months of 2020 and the anticipated impact on our full year results along with the actions we are taking to mitigate its impact are discussed in the Chair's Statement starting on page 30. Whilst the situation is evolving rapidly the final outcome is very difficult to assess, we expect an impact to sales and operating profit in 2020 from COVID-19. Our view is that we do not believe there is a significant risk of COVID-19 causing a material adjustment to the carrying amounts of assets and liabilities within the next financial year, so therefore it does not represent a material estimation uncertainty.

Climate change is a global challenge and an emerging risk to businesses, people and the environment across the world. We have a role to play in limiting warming by improving our energy management, reducing our carbon emissions and by helping our customers do the same. Growing awareness of climate change and customer sustainability targets will provide impetus for business growth as we provide products, services and solutions that increase efficiency and reduce customers' energy use and carbon emissions. As a result, in our view climate change doesn't represent a material estimation uncertainty. For further detail see the Risk Management and Sustainability sections of the Strategic Report.

The possibility of a "no deal" Brexit has created economic uncertainties for business. The Group's Risk Management Committee has taken action to mitigate these uncertainties as outlined in the Risk Management section on page 21. The Group has prepared for delays at ports and the application of tariffs for goods moving in and out of Europe as disclosed in the Financial Review on page 56. However we are also poised to take advantage of opportunities that are presented and to mitigate any adverse trading impact on the Group. The Group's view is that this doesn't represent a material estimation uncertainty.

The Group has considerable financial resources together with a diverse range of products and customers across wide geographic areas and industries. As a consequence, the Directors believe that the Group is well placed to manage its business risks successfully.

Further information on the Group's business activities, performance and position, together with the financial position of the Group, its capital structure and cash flow are included in the Strategic Report from the inside front cover to page 58. In addition, Note 28 to the Financial Statements discloses details of the Group's financial risk management and credit facilities.

The Consolidated Financial Statements are presented in pounds sterling, which is the Company's functional currency, rounded to the nearest one hundred thousand.

The Group's Income Statement includes an adjustment column where certain items are included. Details of the items included and the reasons why they are included are disclosed in Note 2.

New standards and interpretations adopted in the current year

IFRS 16 (Leases)

The Group adopted IFRS 16 (Leases) using the cumulative catch-up approach on 1st January 2019. IFRS 16 introduces new requirements for lessee and lessor accounting, with the distinction between operating lease and finance lease no longer applying for lessees. Under IFRS 16, a lessee is required to recognise assets and liabilities for all leases with a term of more than 12 months, unless the underlying asset is of a low value when new. The new standard also requires depreciation of the asset to be recognised separately from the interest expense on the lease liability.

As a result of adopting IFRS 16, the difference between the asset and liability recognised on 1st January 2019 has been shown as an adjustment to opening retained earnings within the Consolidated Statement of Changes in Equity. Comparative information has not been restated and is therefore presented under IAS 17.

1 Accounting policies *continued*

The exemptions taken by the Group on transition are detailed below. The weighted average incremental borrowing rate applied to the lease liabilities at 1st January 2019 was 3.2%.

The Group has elected to use the following transition practical expedients:

(a) The definition of a lease in accordance with IAS 17 and IFRIC 4 will continue to be applied to leases entered or changed before 1st January 2019, and as a result we have not reassessed whether a contract is or contains a lease on transition.

(b) Leases with a determined lease term of less than 12 months remaining from 1st January 2019 have been treated as short-term.

(c) Initial direct costs have been excluded from the measurement of the right-of-use asset for all leases entered into or changed before 1st January 2019.

Furthermore, the Group has also elected to make use of the following exemptions provided by IFRS 16:

a) Leases with a determined lease term of 12 months or less from the commencement of the lease will be treated as short-term and therefore not included in the right-of-use asset or lease liability. Instead, lease costs will be recognised on a straight-line basis across the life of the lease.

b) Leases for which the underlying asset is of low value when new will be exempt from the requirements to value a right-of-use asset and lease liability. Instead, lease costs will be recognised on a straight-line basis across the life of the lease. To apply this exemption, a threshold of £5,000 has been utilised to define "low value".

c) Lease and non-lease components will not be separated; therefore, each lease component and any associated non-lease component will be accounted for as a single component.

d) Where applicable, IFRS 16 will be applied to a portfolio of leases with similar characteristics.

The impact on the Financial Statements on transitioning is as follows:

Statement of Financial Position

a) Right-of-use assets were capitalised, totalling £41.2m. The majority of this value (£27.2m) results from leased property where the Group leases a number of office and warehouse sites in a number of geographical locations. £5.1m relates to the reclassification of long-term prepayments held at 31st December 2018 to right-of-use assets at 1st January 2019. The remaining £8.9m is largely made up of leased motor vehicles, where the Group makes use of leasing cars for sales and service engineers at a number of operating company locations.

b) Lease liabilities were recognised totalling £39.0m, split between £9.6m relating to amounts due within 12 months from 1st January 2019 and £29.4m relating to amounts due after 1st January 2020.

c) Deferred tax assets were recognised at the date of transition of £0.5m.

d) As a result of the Group using the cumulative catch-up approach, all property lease assets were valued as if IFRS 16 had always applied since the commencement of those leases with the cumulative effect being an adjustment to opening retained earnings. This led to a difference between the right-of-use assets capitalised (excluding £5.1m reclassified from long-term prepayments held at 31st December 2018), deferred tax assets recognised and the corresponding lease liability. The difference between these values of £2.4m has been recognised as an adjustment to opening retained earnings.

Income Statement

a) The impact on the Income Statement for the year ended 31st December 2019 is an increase in operating profit of £1.3m compared to the operating profit had IAS 17 continued to apply. This is made up of a reduction in operating lease rentals of £12.6m offset by a depreciation charge of £11.3m. Once taking into account an additional £1.3m of lease liability interest, the overall impact on profit before tax in the year ended 31st December 2019 is £nil.

b) The total expense relating to exempt leases (being short-term, low value or variable lease payments not included in the lease liability) was £2.5m.

Statement of Cash Flows

a) Net cash inflow from operating activities for the year ended 31st December 2019 increased by £12.5m as a result of the payments made on lease liabilities being reclassified from cash generated from operations to financing activities.

b) Net cash outflow from financing activities increased by £12.5m as a result of the above.

c) There is no impact on the net change in cash and cash equivalents as a result of IFRS 16.

Please see Note 14 for further disclosures given in relation to IFRS 16.

IFRIC 23 (Uncertainty Over Income Tax Treatments)

The Group adopted the guidance set out in IFRIC 23 (Uncertainty Over Income Tax Treatments). International Accounting Standard (IAS) 12 specifies how to account for current and deferred tax, but not how to reflect the effects of uncertainty.

The guidance issued by the International Financial Reporting Interpretations Committee (IFRIC) in IFRIC 23 provides requirements that add to the requirements in IAS 12 by specifying how to reflect the effects of uncertainty in accounting for income taxes.

The guidance issued by the IFRIC provides clarification on when to recognise a liability arising from an uncertainty, how to measure the uncertainty, the unit of account to be used, the risk of detection of uncertainty and how to consider changes in facts and circumstances that impact on the measurement. The impact of adoption of the guidance in IFRIC 23 is no change in the provision at 1st January 2019.

In addition to IFRS 16 and IFRIC 23 during the current year, the Group has applied a number of amendments to IFRS Standards and Interpretations issued by the International Accounting Standards Board (IASB) that are effective for annual periods that begin on or after 1st January 2019. Their adoption has not had a material impact on the disclosures or on the amounts reported in these Financial Statements:

- amendments to IFRS 9 (Financial Instruments): Prepayment Features with Negative Compensation;

Notes to the Consolidated Financial Statements *continued*

1 Accounting policies *continued*

- amendments to IAS 28 (Investments in Associates and Joint Ventures): Long-term Interests in Associates and Joint Ventures;
- annual Improvements to IFRS Standards 2015–2017 (Cycle Amendments) to IFRS 3 (Business Combinations), IFRS 11 (Joint Arrangements), IAS 12 (Income Taxes) and IAS 23 (Borrowing Costs); and
- amendments to IAS 19 (Employee Benefits): Plan Amendment, Curtailment or Settlement.

At the date of authorisation of these Financial Statements, the Group has not applied the following new and revised IFRS Standards that have been issued but are not yet effective:

- IFRS 17 (Insurance Contracts);
- IFRS 10 and IAS 28 (amendments): Sale or Contribution of Assets between an Investor and its Associate or Joint Venture;
- amendments to IFRS 3 (Business Combinations): Definition of a business;
- amendments to IAS 1 (Presentation of Financial Statements) and IAS 8 (Accounting Policies, Changes in Accounting Estimates and Errors): Definition of material; and
- Conceptual Framework: Amendments to References to the Conceptual Framework in IFRS Standards.

The Directors do not expect that the adoption of the Standards listed above will have a material impact on the Financial Statements of the Group in future periods.

Basis of accounting

(i) Subsidiaries

The Group Consolidated Financial Statements include the results of the Company and all its subsidiary undertakings. Subsidiaries are entities controlled by the Group. Control exists when the Group has the power, directly or indirectly, to govern the financial and operating policies of an entity so as to obtain benefits from its activities. In assessing control, potential voting rights that presently are exercisable or convertible are taken into account. The Financial Statements of subsidiaries are included in the Consolidated Financial Statements from the date that control commences until the date that control ceases.

(ii) Associates

Associates are those entities for which the Group has significant influence, but not control, over the financial and operating policies. The Financial Statements include the Group's share of the total recognised income and expense of Associates on an equity accounted basis, from the date that significant influence commenced until the date that significant influence ceases.

(iii) Transactions eliminated on consolidation

Intra-Group balances, and any unrealised gains and losses or income and expenses arising from intra Group transactions, are eliminated in preparing the Group Consolidated Financial Statements. Unrealised gains arising from transactions with Associates are eliminated to the extent of the Group's interest in the entity.

Foreign currency

(i) On consolidation

The assets and liabilities of foreign operations are translated into sterling at exchange rates ruling at the date of the Consolidated Statement of Financial Position (closing rate).

The revenues, expenses and cash flows of foreign operations are translated into sterling at average rates of exchange ruling during the year. Where the Notes to the Group Consolidated Financial Statements include tables reconciling movements between opening and closing balances, opening and closing assets and liabilities are translated at closing rates and revenue, expenses and all other movements translated at average rates, with the exchange differences arising being disclosed separately.

Exchange differences arising from the translation of the assets and liabilities of foreign operations are taken to a separate translation reserve within equity. They are recycled and recognised in the Income Statement upon disposal of the operation. In respect of all foreign operations, any differences that have arisen before 1st January 2004, the date of transition to IFRS, are not presented as a separate component of equity.

(ii) Foreign currency transactions

Transactions in foreign currencies are translated to the respective currencies of the Group entities at the foreign exchange rate at the date of the transaction. Monetary assets and liabilities at the date of the Statement of Financial Position denominated in a currency other than the functional currency of the entity are translated at the foreign exchange rate ruling at that date. Foreign exchange differences arising on translation are recognised in the Income Statement. Non-monetary assets and liabilities that are measured in terms of historical cost in a foreign currency are translated using the exchange rate at the date of the transaction. Non-monetary assets and liabilities denominated in foreign currencies that are stated at fair value are translated at foreign exchange rates ruling at the dates fair value was determined.

Cash flow hedges

Where a derivative financial instrument is designated as a hedge of the variability in cash flows of a highly probable forecasted transaction, the effective part of any gain or loss on the derivative financial instrument is recognised in other comprehensive income and presented in the cash flow hedges reserve. The associated gain or loss is removed from equity and recognised in the Income Statement in the period in which the transaction to which it relates occurs.

Net investment hedge accounting

The Group uses foreign currency denominated borrowings as a hedge against translation exposure on the Group's net investment in overseas companies. Where the hedge is fully effective at hedging, the variability in the net assets of such companies caused by changes in exchange rates and the changes in value of the borrowings are recognised in the Consolidated Statement of Comprehensive Income and accumulated in the translation reserve. The ineffective part of any changes in value caused by changes in exchange rates is recognised in the Consolidated Income Statement.

Interest-bearing borrowings

Interest-bearing borrowings are recognised initially at the fair value of consideration received, less directly attributable transaction costs. Subsequent to initial recognition, interest-bearing borrowings are measured at amortised cost with any difference between cost and redemption value being recognised in the Consolidated Income Statement over the period of the borrowings on an effective-interest basis.

1 Accounting policies *continued*

Other financial liabilities

Other financial liabilities, including borrowings, are initially measured at fair value, net of transaction costs. Other financial liabilities are subsequently measured at amortised cost using the effective interest method, with interest expense recognised on an effective yield basis. The effective interest method is a method of calculating the amortised cost of the financial liability and of allocating interest expense over the relevant period. The effective interest rate is the rate that exactly discounts estimated future cash payments through the expected life of the financial liability, or, where appropriate, a shorter period, to the net carrying amount on initial recognition.

The Group has not participated in any supplier financing arrangements during the current or prior year.

Property, plant and equipment

Items of property, plant and equipment are stated at cost or deemed cost, less accumulated depreciation.

Certain items of property, plant and equipment that had been revalued to fair value prior to 1st January 2004, the date of transition to IFRS, are measured on the basis of deemed cost, being the revalued amount at the date of that revaluation.

Depreciation is charged to the Income Statement on a straight-line basis at rates which write down the value of assets to their residual values over their estimated useful lives. Land is not depreciated.

The principal rates are as follows:

Freehold buildings	1.5-3.3%
Leasehold buildings (short and long-term)	Over life of lease
Plant and machinery	10-12.5%
Office furniture and fittings	10%
Office equipment	12.5-33.3%
Motor vehicles	20%
Tooling and patterns	10%

The depreciation rates are reassessed annually.

Business Combinations

Acquisitions of subsidiaries and businesses are accounted for using the acquisition method of accounting. Identified assets acquired and liabilities assumed are measured at their respective acquisition date fair values. The excess of the fair value of the consideration given over the fair value of the identifiable net assets acquired is recorded as goodwill. Acquisition related costs are expensed as incurred. The operating results of the acquired business are reflected in the Group's Consolidated Financial Statements after the date of acquisition.

Intangible assets

(i) Goodwill

Goodwill represents the difference between the cost of the acquisition and the fair value of the net identifiable assets acquired. Goodwill is stated at cost less any accumulated impairment losses. Goodwill is allocated to cash-generating units and is not amortised but is tested annually for impairment (see Note 15 for more detail). In respect of acquisitions prior to 1st January 2004, goodwill is included on the basis of its deemed cost, which represents the amount recorded under previous UK Generally Accepted Accounting Practice (GAAP).

(ii) Research and development

Expenditure on R&D is charged to the Income Statement in the period in which it is incurred except that development expenditure is capitalised where the development costs relate to new or substantially improved products that are subsequently to be released for sale and will generate future economic benefits. The expenditure capitalised includes staff costs and related expenses. Capitalised development expenditure is stated at cost less accumulated amortisation (see below) and any impairment losses.

(iii) Other intangible assets

Intangible assets other than goodwill that are acquired by the Group are stated at cost less accumulated amortisation (see below) and any impairment losses. Annual impairment tests are performed on acquired intangible assets by comparing the carrying value with the recoverable amount, being the higher of the fair value less cost to sell and value in use, discounted at an appropriate discount rate, of future cash flows in respect of intangible assets for the relevant cash-generating unit. More detail is given in Note 15.

(iv) Amortisation

Amortisation is charged to the Income Statement on a straight-line basis over the estimated useful lives of intangible assets, other than goodwill, from the date they are available for use. Goodwill is tested for impairment annually. The principal amortisation rates are as follows:

Capitalised development costs	20%
ERP systems and software	12-33%
Brand names and trademarks	5-33%
Manufacturing designs and core technology	6-50%
Non-compete undertakings	20-50%
Customer relationships	6-33%

Inventories

Inventories are measured at the lower of cost and net realisable value. The cost of inventories includes expenditure incurred in acquiring the inventories, production or conversion costs and other costs in bringing them to their existing location and condition. In the case of manufactured inventories and work in progress, cost includes an appropriate share of production overheads based on normal operating capacity.

Trade receivables and other receivables

Trade and other receivables are carried at original invoice amount (which is considered a reasonable proxy for fair value) and are subsequently held at amortised cost less provision for impairment. The provision for impairment of receivables is based on lifetime expected credit losses. Lifetime expected credit losses are calculated by assessing historic credit loss experience, adjusted for factors specific to the receivable and operating company. The movement in the provision is recognised in the Consolidated Income Statement. In continuing to assess the impact of the adoption of IFRS 9, specifically expected credit losses, is immaterial, we have considered that there is no material concentration or dependency on large customers, specific industries or geographies.

Trade and other payables

Trade and other payables are recognised at the amounts expected to be paid to counterparties and subsequently held at amortised cost.

Notes to the Consolidated Financial Statements *continued*

1 Accounting policies *continued*

Provisions and contingent liabilities

A provision is recognised in the Consolidated Statement of Financial Position when the Group has a present legal or constructive obligation as a result of a past event and it is probable that an outflow of resources, that can be reliably measured, will be required to settle the obligation. If the obligation is expected to be settled within 12 months of the reporting date the provision is included within current liabilities and if expected to be settled after 12 months included in non-current liabilities.

In respect of product warranties, a provision is recognised when the underlying products or services are sold. Obligations arising from restructuring plans are recognised when detailed formal plans have been established and there is a valid expectation that such a plan will be carried out.

Provisions are recognised at an amount equal to the best estimate of the expenditure required to settle the Group's liability.

If the likelihood of having to settle the obligation is less than probable but more than remote, or the amount of the obligation cannot be measured reliably then a contingent liability is disclosed.

Cash and cash equivalents

Cash and cash equivalents comprise cash balances and call deposits with an original maturity usually of three months or less, and are held at amortised cost. Bank overdrafts that are repayable on demand and form an integral part of the Group's cash management are included as a component of cash and cash equivalents for the purpose of the Statement of Cash Flows.

Going concern

The statement on the going concern assumption is included within the Governance Report on page 136.

Alternative performance measures

The Group reports under International Financial Reporting Standards (IFRS) and also uses alternative performance measures where the Board believe that they help to effectively monitor the performance of the Group, users of the Financial Statements might find them informative and an aid to comparison with our peers. Certain alternative performance measures also form a meaningful element of Executive Directors' annual bonuses. A definition of the alternative performance measures included in the Annual Report and a reconciliation to the closest IFRS equivalent are disclosed in Note 2.

Employee benefits

(i) Defined contribution plans

Obligations for contributions to defined contribution pension plans are recognised as an expense in the Income Statement as incurred.

(ii) Defined benefit plans

The costs of providing pensions under defined benefit schemes are calculated in accordance with the advice of qualified actuaries and spread over the period during which benefit is expected to be derived from the employees' services. The Group's net obligation or surplus in respect of defined benefit pensions is calculated separately for each plan by estimating the amount of future benefit that employees have earned in return for their service in the current and prior periods. Past service costs are recognised straight away.

That benefit is discounted at rates reflecting the yields on AA credit rated corporate bonds that have maturity dates approximating the terms of the Group's obligations to determine its present value. Pension scheme assets are measured at fair value at the Statement of Financial Position date. Actuarial gains and losses, differences between the expected and actual returns, and the effect of changes in actuarial assumptions are recognised in the Statement of Comprehensive Income in the year they arise. Any scheme surplus (to the extent it is considered recoverable under the provisions of IFRIC 14) or deficit is recognised in full in the Statement of Financial Position.

The cost of other post-employment liabilities are calculated in a similar way to defined benefit pension schemes and spread over the period, which benefit is expected to be derived from the employees' services, in accordance with the advice of qualified actuaries.

(iii) Employee share plans

Incentives in the form of shares are provided to employees under share option and share award schemes. The fair value of these options and awards at their date of grant is charged to the Income Statement over the relevant vesting periods with a corresponding increase in equity. The value of the charge is adjusted to reflect expected and actual levels of options and share awards vesting.

(iv) Long-term share incentive plans

The fair value of awards is measured at the date of grant and the cost spread over the vesting period. The amount recognised as an expense is not adjusted to reflect market based performance conditions, but is adjusted for non-market based performance conditions.

Revenue

The Group applies the following five step framework when recognising revenue.

Step 1: Identify the contracts with customers.

Step 2: Identify the performance obligations in the contract.

Step 3: Determine the transaction price.

Step 4: Allocate the transaction price to the performance obligations in the contract.

Step 5: Recognise revenue when (or as) the entity satisfies a performance obligation.

The criteria the Group uses to identify the performance obligations within a contract are:

- the customer must be able to benefit from the goods or services either on its own or in combination with other resources available to the customer; and
- the entity's promise to transfer the good or service to the customer is separable from other promises in the contract.

The transaction price is the value that the Group expects to be entitled to from the customer and includes discounts, rebates, credits, price concessions, incentives, performance bonuses, penalties and liquidated damages, but is not reduced for bad debts. It is net of any Value Added Tax (VAT) and other sales-related taxes. Variable consideration that is dependent on certain events is included in the transaction price when it is "highly probable" that the variable consideration will occur.

1 Accounting policies *continued*

Revenue is recognised over time as the product is being manufactured or a service being provided if any of the following criteria are met:

- the Group is creating a bespoke item which doesn't have an alternative use to the Group (i.e. we would incur a significant loss to re-work and/or sell to another customer) and the entity has a right to payment for work completed to date including a reasonable profit;
- the customer controls the asset that is being created or enhanced during the manufacturing process i.e. the customer has the right to significantly modify and dictate how the product is built during construction; and
- services provided where the customer simultaneously receives and consumes the benefits provided by the Group's performance as the Group performs.

Judgement is made when determining if a product is bespoke and the value of revenue to recognise over time as products are being manufactured. However due to the low value of orders for bespoke items in progress at the 31st December 2019 where we have a right to payment of costs plus a reasonable profit this is not considered a critical judgement.

The value of revenue to be recognised over time for goods being manufactured is calculated using a cost based input approach. This is considered a faithful depiction of the transfer of the goods as the costs incurred, total costs expected to be incurred and order value are known.

The value of revenue to be recognised over time for services being provided is calculated based on the value to the customer transferred to date as a proportion of the total value of the service being provided.

If the criteria to recognise revenue over time is not met then revenue is recognised at a point in time when the customer obtains control of the asset and the performance obligation is satisfied. The customer obtains control of the asset when the customer can direct the use of the asset and obtain the benefits from the asset.

Factors the Group considers when determining the point in time when control of the asset has passed to the customer and revenue recognised include:

- the Group has a right to payment;
- legal title is transferred to the customer;
- physical possession of the asset has been transferred to the customer;
- the customer has the significant risks and rewards of ownership; and
- the customer has accepted the asset.

Control normally passes and revenue recognised when the goods are either despatched or delivered to the customer (in accordance with the terms and conditions of the sale) or the installation and testing is completed.

A large proportion of the Group's revenue qualifies for recognition on despatch or delivery of the goods to the customer as this is when the performance obligation is satisfied. This is normally the trigger point for raising an invoice per the terms and conditions of the order. Therefore invoicing for a large proportion of the Group's revenue occurs at the same time as when the performance obligation is satisfied. Contract assets at 31st December 2019 were £5.8m (0.5% of total revenue).

All revenue recognised by the Group is generated through contracts with customers.

When the unavoidable costs of fulfilling the contract exceed the revenue to be recognised the contract is loss making and the expected loss is recognised in the Consolidated Income Statement immediately.

Warranties that give assurance that a product meets agreed-upon specifications are accounted for as a cost provision and do not impact the timing and value of revenue. The Group does not have any material warranties that promises more than just providing assurance that a product meets agreed-upon specifications.

Costs of obtaining a contract, that are only incurred because the contract was obtained, are capitalised and expensed at a later date. At 31st December 2019 no costs of obtaining a contract were capitalised. All other assets recognised to fulfil a contract are within the scope of other accounting standards and policies.

Leases

The Group assesses whether a contract is or contains a lease, at inception of the contract. The Group recognises a right-of-use asset and a corresponding lease liability with respect to all lease arrangements in which it is the lessee, except for short-term leases (defined as leases with a lease term of 12 months or less) and leases of low value assets (assets with a value of less than £5,000). For these leases, the Group recognises the lease payments as an operating expense on a straight-line basis over the term of the lease unless another systematic basis is more representative of the time pattern in which economic benefits from the leased assets are consumed.

For any new leases entered into after 1st January 2019, the lease liability is initially measured at the present value of the lease payments that are not paid at the commencement date, discounted by using the incremental borrowing rate for the related geographical location unless the rate implicit in the lease is readily determinable. The incremental borrowing rate is calculated at the rate of interest at which the company would have been able to borrow for a similar term and with a similar security the funds necessary to obtain a similar asset in a similar market.

Lease payments included in the measurement of the lease liability comprise:

- fixed lease payments (including in substance fixed payments), less any lease incentives receivable;
- variable lease payments that depend on an index or rate, initially measured using the index or rate at the commencement date;
- the amount expected to be payable by the company under residual value guarantees;
- the exercise price of purchase options, if the company is reasonably certain to exercise the options; and
- payments of penalties for terminating the lease, if the lease term reflects the exercise of an option to terminate the lease.

Notes to the Consolidated Financial Statements *continued*

1 Accounting policies *continued*

The lease liability is subsequently measured by increasing the carrying amount to reflect interest on the lease liability and by reducing the carrying amount to reflect the lease payments made.

The Group remeasures the lease liability (and makes a corresponding adjustment to the related right-of-use asset) whenever:

- the lease term has changed or there is a significant event or change in circumstances resulting in a change in the assessment of exercise of a purchase option; and
- the lease payments change due to changes in an index or rate or a change in expected payment under a residual guarantee value.

The right-of-use assets comprise the initial measurement of the corresponding lease liability, lease payments made at or before the commencement date and any initial direct costs. They are subsequently measured at cost less accumulated depreciation and impairment losses.

Right-of-use assets are depreciated over the shorter period of lease term and useful life of the underlying asset. If a lease transfer's ownership of the underlying asset or the cost of the right-of-use asset reflects that the Group expects to exercise a purchase option, the related right-of-use asset is depreciated over the useful life of the underlying asset.

Variable lease payments that do not depend on an index or rate are not included in the measurement of the lease liability and the right-of-use asset. The related payments are recognised as an expense in the period in which the event or condition that triggers those payments occurs.

Judgement is required when determining whether to include or exclude optional extension periods within the lease term, and estimation is required when calculating the incremental borrowing rate used to discount the future lease cash flows. These are not considered critical judgements or a key source of estimation uncertainty.

Taxation

The tax charge comprises current and deferred tax. Income tax expense is recognised in the Income Statement unless it relates to items recognised directly in equity or in other comprehensive income, when it is also recognised in equity or other comprehensive income respectively. Current tax is the expected tax payable on the profit for the year and any adjustments in respect of previous years using tax rates enacted or substantively enacted at the reporting date. Tax positions are reviewed to assess whether a provision should be made on prevailing circumstances. Tax provisions are included within Current taxation payable. Deferred tax is provided on temporary differences arising between the tax base of assets and liabilities, and their carrying amounts in the Financial Statements. Deferred tax assets are recognised to the extent that it is probable that future taxable profits will be available against which the asset can be utilised. Deferred tax is provided using rates of tax that have been enacted or substantively enacted at the date of the Statement of Financial Position or the date that the temporary differences are expected to reverse. Deferred tax assets are reviewed at each reporting date and are reduced to the extent that it is no longer probable that the related tax benefit will be realised.

Share capital and repurchased shares

When share capital recognised as equity is repurchased, the amount of the consideration paid, including directly attributable costs, is recognised as a deduction from equity. Repurchased shares are classified as treasury shares or placed in an Employee Benefit Trust and are presented as a deduction from total equity.

Share-based benefits granted to subsidiary employees

The Company grants share-based benefits over its own Ordinary shares directly to employees of subsidiary companies. These employees provide services to the subsidiary companies. The cost of these shares is not recharged and therefore the fair value of the share options granted is recognised as a capital contribution to the subsidiary companies. This is accounted for as an increase in investments with a corresponding increase in a non-distributable component of equity.

2 Alternative performance measures

The Group reports under International Financial Reporting Standards (IFRS) and also uses alternative performance measures where the Board believes that they help to effectively monitor the performance of the Group, users of the Financial Statements might find them informative and an aid to comparison with our peers. Certain alternative performance measures also form a meaningful element of Executive Directors' variable remuneration. Please see the Annual Report on Remuneration 2019 on pages 102 to 132 for further detail. A definition of the alternative performance measures and a reconciliation to the closest IFRS equivalent are disclosed below.

Adjusted operating profit

Adjusted operating profit excludes items that are considered to be significant in nature and/or quantum and where treatment as an adjusted item provides stakeholders with additional useful information to assess the period-on-period trading performance of the Group and an aid to comparison with our peers. The Group excludes such items which management have defined as:

- amortisation and impairment of acquisition-related intangible assets;
- impairment of goodwill;
- costs associated with acquisitions and disposal;
- reversal of acquisition-related fair value adjustments to inventory;
- changes in deferred consideration payable on acquisitions;
- profit or loss on disposal of subsidiary;
- significant restructuring costs;
- foreign exchange gains and losses on borrowings;
- significant profits or losses on disposal of property; and
- significant plan amendments and/or legal rulings requiring a past service cost or credit for post-retirement benefit plans.

2 Alternative performance measures *continued*

A reconciliation between operating profit as reported under IFRS and adjusted operating profit is given below.

	2019 £m	2018 £m
Operating profit as reported under IFRS	**245.0**	299.1
Amortisation of acquisition-related intangible assets	**26.8**	25.2
Impairment of goodwill	**4.2**	–
Acquisition-related items	**2.6**	(0.2)
Reversal of acquisition-related fair value adjustments to inventory	**4.1**	–
Profit on disposal of subsidiary	**–**	(47.4)
Profit on disposal of property	**–**	(6.5)
Equalising guaranteed minimum pensions for the UK post-retirement benefit plans	**–**	0.7
Post-retirement benefit plan in the USA being frozen to future accrual	**–**	(6.0)
Adjusted operating profit	**282.7**	264.9

The related tax effects of the above are included as adjustments in taxation as disclosed in Note 9.

Adjusted earnings per share

	2019	2018
Profit for the period attributable to equity holders as reported under IFRS (£m)	**166.6**	223.1
Items excluded from adjusted operating profit disclosed above (£m)	**37.7**	(34.2)
Tax effects on adjusted items (£m)	**(8.5)**	(5.0)
Adjusted profit for the period attributable to equity holders (£m)	**195.8**	183.9
Weighted average shares (million)	**73.7**	73.6
Basic adjusted earnings per share	**265.7p**	250.0p
Diluted weighted average shares (million)	**73.9**	73.8
Diluted adjusted earnings per share	**264.9p**	249.1p

Basic adjusted earnings per share is defined as adjusted profit for the period attributable to equity holders divided by the weighted average number of shares. Diluted adjusted earnings per share is defined as adjusted profit for the period attributable to equity holders divided by the diluted weighted average number of shares.

Basic and diluted EPS calculated on an IFRS profit basis are included in Note 10.

Adjusted cash flow

A reconciliation showing the items that bridge between net cash from operating activities as reported under IFRS to an adjusted basis is given below. Adjusted cash from operations is used by the Board to monitor the performance of the Group, with a focus on elements of cashflow, such as Net capital expenditure, which are subject to day to day control by the business.

	2019 £m	2018 £m
Net cash from operating activities as reported under IFRS	**227.4**	212.6
Acquisition and disposal costs	**2.5**	0.2
Net capital expenditure excluding acquired intangibles from acquisitions	**(59.0)**	(31.5)
Tax paid	**78.4**	61.6
Repayments of principal under lease liabilities	**(11.2)**	–
Adjusted cash from operations	**238.1**	242.9

Adjusted cash conversion in 2019 is 84% (2018: 91%). Cash conversion is calculated as adjusted cash from operations divided by adjusted operating profit.

The adjusted cash flow is included in the Financial Review on page 58.

Notes to the Consolidated Financial Statements *continued*

2 Alternative performance measures *continued*

Cash generation

Cash generation is one of the Group's key performance indicators used by the Board to monitor the performance of the Group and measure the successful implementation of our strategy. It is one of three financial measures on which Executive Directors' variable remuneration is based.

Cash generation is adjusted operating profit after adding back depreciation and amortisation (excluding IFRS 16 depreciation), less cash payments to pension schemes in excess of the charge to operating profit, equity settled share plans and working capital changes.

	2019 £m	2018 £m
Adjusted operating profit	282.7	264.9
Depreciation and amortisation (excluding IFRS16 depreciation)	34.3	32.9
Cash payments to pension schemes in excess of charge to P&L	(5.2)	(4.6)
Equity settled share plans	6.2	5.7
Working capital changes	(21.4)	(22.5)
Cash generation	**296.6**	276.4

A reconciliation showing the items that bridge between net cash from operating activities as reported under IFRS to cash generation is shown below.

	2019 £m	2018 £m
Net cash from operating activities as reported under IFRS	**227.4**	212.6
Acquisition and disposal costs	2.5	0.2
Tax paid	78.4	61.6
Depreciation of right-of-use assets (IFRS 16)	(11.3)	–
(Loss)/profit on disposal of fixed assets	(0.4)	2.0
Cash generation	**296.6**	276.4

Return on invested capital (ROIC)

ROIC measures the after tax return on the total capital invested in the business. It is calculated as adjusted operating profit after tax divided by average invested capital.

An analysis of the components is as follows:

	2019 £m	2018 £m
Total equity	826.3	766.9
Net debt	334.1	235.8
Total invested capital	**1,160.4**	1,002.7
Average invested capital	**1,081.6**	992.9
Average invested capital (excluding IFRS 16)	**1,061.2**	992.9
Operating profit as reported under IFRS	245.0	299.1
Adjustments (see adjusted operating profit)	37.7	(34.2)
Adjusted operating profit	282.7	264.9
Taxation	(80.6)	(73.1)
Adjusted operating profit after tax	**202.1**	191.8
Adjusted operating profit after tax (excluding IFRS 16)	**201.2**	191.8
Return in invested capital	**18.7%**	19.3%
Return in invested capital (excluding IFRS 16)	**19.0%**	19.3%

2 Alternative performance measures *continued*

Return on capital employed (ROCE)

ROCE measures effective management of fixed assets and working capital relative to the profitability of the business. It is calculated as adjusted operating profit divided by average capital employed. More information on ROCE can be found in the Capital Employed and ROCE sections of the Financial Review on page 57.

An analysis of the components is as follows:

	2019 £m	2018 £m
Property, plant and equipment	**251.2**	230.8
Right-of-use assets (IFRS 16)	**40.8**	–
Prepayments	**0.9**	6.2
Inventories	**185.9**	160.6
Trade receivables	**240.7**	245.1
Other current assets	**35.3**	32.9
Tax recoverable	**8.4**	4.6
Trade, other payables and current provisions	**(178.3)**	(172.0)
Current tax payable	**(26.7)**	(23.7)
Capital employed	**558.2**	484.5
Average capital employed	**521.4**	482.2
Average capital employed (excluding IFRS 16)	**501.0**	482.2
Operating profit	**245.0**	299.1
Adjustments (see adjusted operating profit on page 160)	**37.7**	(34.2)
Adjusted operating profit	**282.7**	264.9
Adjusted operating profit (excluding IFRS 16)	**281.4**	264.9
Return on capital employed	**54.2%**	54.9%
Return on capital employed (excluding IFRS 16)	**56.2%**	54.9%

A reconciliation of capital employed to net assets as reported under IFRS and disclosed on the Consolidated Statement of Financial Position is given below.

	2019 £m	2018 £m
Capital employed	**558.2**	484.5
Goodwill and other intangible assets	**721.6**	645.2
Investment in Associate	**0.2**	–
Post-retirement benefits	**(71.3)**	(85.1)
Net deferred tax	**(43.1)**	(35.5)
Non-current provisions and long-term payables	**(5.2)**	(6.4)
Lease liabilities	**(38.9)**	–
Net debt	**(295.2)**	(235.8)
Net assets as reported under IFRS	**826.3**	766.9

Net debt including IFRS 16 lease liabilities

A reconciliation between net debt and net debt including IFRS 16 lease liabilities is given below. A breakdown of the balances that are included within net debt is given within Note 24. Net debt excludes IFRS 16 lease liabilities to enable comparability with prior years.

	2019 £m	2018 £m
Net debt	**295.2**	235.8
IFRS 16 lease liabilities	**38.9**	–
Net debt and IFRS 16 lease liabilities	**334.1**	235.8

Notes to the Consolidated Financial Statements *continued*

2 Alternative performance measures *continued*

Net debt to earnings before interest, tax, depreciation and amortisation (EBITDA)

To assess the size of the net debt balance relative to the size of the earnings for the Group, we analyse net debt as a proportion of EBITDA. EBITDA is calculated by adding back depreciation and amortisation of owned property, plant and equipment, software and development to adjusted operating profit. Net debt excludes IFRS 16 lease liabilities. The net debt to EBITDA ratio is calculated as follows:

	2019 £m	2018 £m
Adjusted operating profit	**282.7**	264.9
Depreciation and amortisation of property, plant and equipment, software and development	**34.3**	32.9
Earnings before interest, tax, depreciation and amortisation	**317.0**	297.8
Net debt	**295.2**	235.8
Net debt to EBITDA	**0.9**	0.8

The components of net debt are disclosed in Note 24.

Organic measures

As we are a multi-national group of companies, which trade in a large number of foreign currencies and regularly acquire and sometimes dispose of companies, we also refer to organic performance measures throughout the Annual Report. These strip out the effects of the movement of foreign currency exchange rates and of acquisitions and disposals. The Board believes that this allows users of the accounts to gain a further understanding of how the Group has performed.

Exchange translation movements are assessed by re-translating prior period reported values to current period exchange rates. Exchange transaction impacts on operating profit are assessed on the basis of transactions being at constant currency between years.

Any acquisitions and disposals that occurred in either the current period or prior period are excluded from the results of both the prior and current period at current period exchange rates.

The organic percentage movement is calculated as the organic movement divided by the sum of the prior period and exchange.

The organic bps change in adjusted operating margin is the difference between the current period margin excluding acquisitions and disposals and the prior period margin at current period exchange rates excluding acquisitions and disposals.

A reconciliation of the movement in revenue and adjusted operating profit compared to the prior period is given below.

	2018	Exchange	Organic	Acquisitions and disposals	2019	Organic	Reported
Revenue	£1,153.3m	–	£73.9m	£15.2m	**£1,242.4m**	**+6%**	**+8%**
Adjusted operating profit	£264.9m	(£2.0m)	£18.2m	£1.6m	**£282.7m**	**+7%**	**+7%**
Adjusted operating margin	23.0%				**22.8%**	**+10 bps**	**-20 bps**

The reconciliation for each segment is included in the Strategic Report.

3 Segmental reporting

As required by IFRS 8 (Operating Segments), the following segmental information is presented in a consistent format with management information considered by the Board.

Following recent material acquisitions into the Group, the composition of the Group's Reportable Segments changed in the financial year ended 31st December 2019 to align with both how the business is now managed alongside how information is now presented to the Board and the Executive Committee. This change results in Steam Specialties being reported as one single consolidated operating segment. In previous years Steam Specialties was an aggregation of three separate operating segments, EMEA, Americas and Asia Pacific, however recent changes to the management structure resulted in the creation of a separate Steam Specialties management team reporting to the Chief Executive and Chief Financial Officer on the consolidated Steam Specialties results. Comparative results have not been restated, as the Steam Specialties total was previously disclosed as a subtotal to the three previous geographic operating segments.

Following the acquisition of Thermocoax in May 2019, the Chromalox operating segment was renamed to Electric Thermal Solutions which now includes the combination of both businesses in 2019. No other changes to the structure of operating segments have been made.

3 Segmental reporting *continued*

Analysis by operating segment

2019

	Revenue £m	Total operating profit £m	Adjusted operating profit £m	Adjusted operating margin %
Steam Specialties	755.4	172.6	177.9	23.6%
Electric Thermal Solutions	186.1	7.9	24.7	13.3%
Watson-Marlow	300.9	82.7	95.8	31.8%
Corporate expenses		(18.2)	(15.7)	
Total	1,242.4	245.0	282.7	22.8%
Net finance expense		(8.4)	(8.4)	
Share of profit of Associate		0.2	0.2	
Profit before tax		236.8	274.5	

2018

	Revenue £m	Total operating profit £m	Adjusted operating profit £m	Adjusted operating margin %
Steam Specialties	733.5	222.5	170.1	23.2%
Electric Thermal Solutions	154.6	12.1	22.8	14.7%
Watson-Marlow	265.2	77.5	84.8	32.0%
Corporate expenses		(13.0)	(12.8)	
Total	1,153.3	299.1	264.9	23.0%
Net finance expense		(10.3)	(10.3)	
Share of profit of Associate		–	–	
Profit before tax		288.8	254.6	

The following table details the split of revenue by geography for the combined Group:

	2019 £m	2018 £m
Europe, Middle East and Africa	518.7	487.3
Asia Pacific	296.0	269.8
Americas	427.7	396.2
Total revenue	1,242.4	1,153.3

Net revenue generated by Group companies based in the USA is £319.4m (2018: £288.8m), in China is £134.6m (2018: £118.5m), in the UK is £103.5m (2018: £103.7m), in Germany is £105.3m (2018: £118.0m) and the rest of the world is £579.6m (2018: £524.3m).

Notes to the Consolidated Financial Statements *continued*

3 Segmental reporting *continued*

The total operating profit for the period includes certain items, as analysed below:

2019

	Amortisation of acquisition-related intangible assets £m	Acquisition-related items £m	Impairment of goodwill £m	Reversal of acquisition-related fair value adjustments to inventory £m	Total £m
Steam Specialties	(5.3)	–	–	–	(5.3)
Electric Thermal Solutions	(12.7)	–	–	(4.1)	(16.8)
Watson-Marlow	(8.8)	(0.1)	(4.2)	–	(13.1)
Corporate expenses	–	(2.5)	–	–	(2.5)
Total	(26.8)	(2.6)	(4.2)	(4.1)	(37.7)

2018

	Amortisation of acquisition-related intangible assets £m	Profit on disposal of subsidiary and property £m	Acquisition related items £m	Equalising GMP for the UK pension plans £m	USA pension plan frozen to future accrual £m	Total £m
Steam Specialties	(6.7)	53.9	(0.1)	(0.7)	6.0	52.4
Electric Thermal Solutions	(10.7)	–	–	–	–	(10.7)
Watson-Marlow	(7.8)	–	0.5	–	–	(7.3)
Corporate expenses	–	–	(0.2)	–	–	(0.2)
Total	(25.2)	53.9	0.2	(0.7)	6.0	34.2

Net financing income and expense

	2019 Income £m	2019 Expense £m	2019 Net £m	2018 Income £m	2018 Expense £m	2018 Net £m
Steam Specialties	1.1	(3.3)	(2.2)	0.9	(2.8)	(1.9)
Electric Thermal Solutions	0.1	(0.3)	(0.2)	0.1	(0.1)	–
Watson-Marlow	0.1	(0.5)	(0.4)	0.1	(0.2)	(0.1)
Corporate expenses	0.2	(5.8)	(5.6)	–	(8.3)	(8.3)
Total net financing expense	1.5	(9.9)	(8.4)	1.1	(11.4)	(10.3)

Net assets

	2019 Assets £m	2019 Liabilities £m	2018 Assets £m	2018 Liabilities £m
Steam Specialties	669.4	(176.3)	683.6	(195.9)
Electric Thermal Solutions	552.0	(36.3)	409.3	(28.9)
Watson-Marlow	255.2	(42.2)	227.9	(38.7)
	1,476.6	(254.8)	1,320.8	(263.5)
Liabilities	(254.8)		(263.5)	
Net deferred tax	(43.1)		(35.5)	
Net current tax payable	(18.3)		(19.1)	
Net debt including lease liabilities	(334.1)		(235.8)	
Net assets	826.3		766.9	

Non-current assets in the UK were £187.1m (2018: £157.1m), in the USA were £375.8m (2018: £393.5m), in Germany were £165.0m (2018: £169.4m) and in France were £146.5m (2018: £15.1m).

3 Segmental reporting *continued*

Capital additions, depreciation, amortisation and impairment

	2019 Capital additions £m	2019 Depreciation, amortisation and impairment £m	2018 Capital additions £m	2018 Depreciation and amortisation £m
Steam Specialties	**57.7**	**35.8**	27.9	30.1
Electric Thermal Solutions	**81.6**	**18.4**	6.0	13.6
Watson-Marlow	**40.6**	**22.4**	18.6	14.4
Group total	**179.9**	**76.6**	52.5	58.1

Capital additions include property, plant and equipment of £59.0m (2018: £33.5m), of which £8.1m (2018: £0.2m) was from acquisitions in the period, and other intangible assets of £72.0m (2018: £19.0m) of which £60.2m (2018: £9.1m) relates to acquired intangibles from acquisitions in the period. Right-of-use asset additions of £48.9m occurred during the 12 month period to 31st December 2019, of which £36.1m relates to additions on 1st January 2019 as a result of transition to IFRS 16, £11.7m relates to new leases entered into in 2019 and £1.1m from acquisitions. Capital additions split between the UK and rest of the world are UK £36.8m (2018: £20.1m) and rest of the world £143.1m (2018: £32.4m).

4 Operating costs

	2019 Adjusted £m	2019 Adjustments £m	2019 Total £m	2018 Adjusted £m	2018 Adjustments £m	2018 Total £m
Cost of inventories recognised as an expense	**297.5**	**4.1**	**301.6**	278.0	–	278.0
Staff costs (Note 5)	**438.7**	**–**	**438.7**	409.2	(5.3)	403.9
Depreciation, amortisation and impairment	**45.6**	**31.0**	**76.6**	32.9	25.2	58.1
Other operating charges	**177.9**	**2.6**	**180.5**	168.3	(54.1)	114.2
Total operating costs	**959.7**	**37.7**	**997.4**	888.4	(34.2)	854.2

Total depreciation, amortisation and impairment includes amortisation of acquisition-related intangible assets of £26.8m (2018: £25.2m) and impairment of goodwill of £4.2m (2018: £nil). Total other operating charges include acquisition-related items of £2.6m (2018: £0.2m), profit on the sale of businesses of £nil (2018: £47.4m) and profit on disposal of property of £nil (2018: £6.5m). Total cost of inventories recognised as an expense includes the reversal of acquisition-related fair value adjustments to inventory £4.1m (2018: £nil).
Operating costs include exchange difference benefits of £2.7m (2018: £3.9m).

5 Staff costs and numbers

The aggregate payroll costs of persons employed by the Group were as follows:

	2019 £m	2018 £m
Wages and salaries	**345.6**	325.9
Social security costs	**71.6**	58.7
Pension costs	**21.5**	19.3
Total payroll costs	**438.7**	403.9

The average number of persons employed by the Group (including Directors) during the year was as follows:

	2019	2018
United Kingdom	**2,014**	1,875
Overseas	**5,819**	5,528
Group average	**7,833**	7,403

Notes to the Consolidated Financial Statements
continued

6 Net financing income and expense

	2019 £m	2018 £m
Financial expenses:		
Bank and other borrowing interest payable	(6.4)	(9.4)
Interest expense on lease liabilities	(1.3)	–
Net interest on pension scheme liabilities	(2.2)	(2.0)
	(9.9)	(11.4)
Financial income:		
Bank interest receivable	1.5	1.1
Net financing expense	(8.4)	(10.3)
Net pension scheme financial expense	(2.2)	(2.0)
Interest expense on lease liabilities	(1.3)	–
Net bank interest	(4.9)	(8.3)
Net financing expense	(8.4)	(10.3)

7 Profit before taxation

Profit before taxation is shown after charging:

	2019 £m	2018 £m
Depreciation of owned tangible fixed assets	(27.0)	(26.5)
Depreciation of right-of-use assets	(11.3)	–
Amortisation of acquired intangibles	(26.8)	(25.2)
Impairment of goodwill	(4.2)	–
Operating lease rentals	–	(15.1)
Leases exempt from IFRS 16 (short-term, low value or variable lease payments)	(2.5)	–
Exchange difference benefits	2.7	3.9
(Loss)/profit on disposal of property, plant and equipment	(0.4)	8.6
Research and development	(10.2)	(10.8)

Auditor's remuneration	2019 £m	2018 £m
Audit of these Financial Statements	0.2	0.2
Amounts receivable by the Company's auditor and its Associates in respect of:		
Audit of Financial Statements of subsidiaries of the Company	1.7	1.5
Total audit fees	1.9	1.7
Audit-related assurance services – Interim review	0.1	0.1
Total non-audit fees	0.1	0.1
Total auditor's remuneration	2.0	1.8

8 Directors' emoluments

Directors represent the key management personnel of the Group under the terms of IAS 24 (Related Party Disclosures). Total remuneration is shown below.

Further details of salaries and short-term benefits, post-retirement benefits, share plans and long-term share incentive plans are shown in the Annual Report on Remuneration 2019 on pages 102 to 132. The share-based payments charge comprises a charge in relation to the Performance Share Plan and the Employee Share Ownership Plan (as described in Note 23).

	2019 £m	2018 £m
Salaries and short-term benefits	4.1	3.7
Post-retirement benefits	0.5	0.4
Share-based payments	1.7	1.3
Total Directors' remuneration	6.3	5.4

9 Taxation

	2019 Adjusted £m	2019 Adjustments £m	2019 Total £m	2018 Adjusted £m	2018 Adjustments £m	2018 Total £m
Analysis of charge in period						
UK corporation tax:						
Current tax on income for the period	14.1	–	14.1	7.6	–	7.6
Adjustments in respect of prior periods	(1.1)	–	(1.1)	0.4	–	0.4
	13.0	–	13.0	8.0	–	8.0
Foreign tax:						
Current tax on income for the period	56.9	–	56.9	58.5	0.3	58.8
Adjustments in respect of prior periods	(0.1)	–	(0.1)	0.9	–	0.9
	56.8	–	56.8	59.4	0.3	59.7
Total current tax charge	69.8	–	69.8	67.4	0.3	67.7
Deferred tax – UK	(0.1)	–	(0.1)	0.1	–	0.1
Deferred tax – Foreign	8.6	(8.5)	0.1	2.9	(5.3)	(2.4)
Tax on profit on ordinary activities	78.3	(8.5)	69.8	70.4	(5.0)	65.4

Reconciliation of effective tax rate

	2019 Adjusted £m	2019 Adjustments £m	2019 Total £m	2018 Adjusted £m	2018 Adjustments £m	2018 Total £m
Profit before tax and share of profit of Associate	274.3	(37.7)	236.6	254.6	34.2	288.8
Expected tax at blended rate	69.2	(9.6)	59.6	67.3	6.5	73.8
Increased withholding tax on overseas dividends	4.0	–	4.0	4.3	–	4.3
Benefit of financing structures	(1.2)	–	(1.2)	(3.6)	–	(3.6)
Non-deductible expenditure	2.7	–	2.7	2.1	–	2.1
Over provided in prior years	0.1	–	0.1	(1.0)	–	(1.0)
Other reconciling items	3.5	1.1	4.6	1.3	(11.5)	(10.2)
Total tax in income statement	78.3	(8.5)	69.8	70.4	(5.0)	65.4
Effective tax rate	28.5%	22.6%	29.5%	27.6%	(14.6%)	22.6%

The Group's tax charge in future years is likely to be affected by the proportion of profits arising and the effective tax rates in the various territories in which the Group operates. The blended tax rate is calculated using each subsidiary company's headline tax rate as a proportion of its respective profit.

The Group's tax charge for the year ended 31st December 2019 includes a credit of £8.5m in relation to certain items excluded from adjusting operating profit (as disclosed in Note 2). The tax impacts of these items are:

- amortisation of acquisition-related intangible assets (£6.7m credit);
- reversal of acquisition-related fair value adjustments to inventory (£1.3m tax credit); and
- acquisition-related items (£0.5m tax credit).

Excluding these adjustments the tax on profit and the effective tax rate are £78.3m and 28.5% respectively.

The UK corporation tax rate reduced from 20% to 19% on 1st April 2017. Whilst a further reduction to 17% (effective from 1st April 2020) was substantively enacted on 15th September 2016, which will reduce the Group's future current tax charge, the UK Government have announced proposals to maintain the UK corporation tax rate at 19%; however this not been enacted to date.

The UK deferred tax assets and liabilities at 31st December 2019 have been calculated based upon rates of 19% and 17% in respect of deferred tax expected to reverse before 1st April 2020 and after this date respectively.

Notes to the Consolidated Financial Statements *continued*

9 Taxation *continued*

In October 2017, the European Commission opened a formal State Aid investigation into an exemption within the UK's current Controlled Foreign Company (CFC) regime for certain finance income. On 2nd April 2019, the European Commission published its final decision that the UK CFC Finance Company Partial Exemption (FCPE) constituted State Aid in certain circumstances. In common with a number of other UK Groups, the Spirax-Sarco Group has benefited from the FCPE and the total benefit in the period from 1st January 2013 to 31st December 2019 is approximately £8.3m including compound interest. On 12th June 2019 the UK Government submitted an application for annulment to the EU General Court appealing the decision of the European Commission. Similar to other UK Groups, on 31st October 2019 the Spirax-Sarco Group submitted an application for annulment to the EU General Court in its own right, appealing the decision of the European Commission. As a result, no provision has been recognised at the year end balance sheet date. The Spirax-Sarco Group acknowledge a cash payment for the amount that HM Revenue & Customs seek to recover may be required during 2020, which we would expect to be refundable in the event of a successful appeal.

No UK tax (after double tax relief for underlying tax) is expected to be payable on the future remittance of retained earnings of overseas subsidiaries.

The effective tax rate is calculated as a percentage of profit before tax and a share of profits of Associates.

10 Earnings per share

	2019	2018
Profit attributable to equity shareholders (£m)	166.6	223.1
Weighted average shares (million)	73.7	73.6
Dilution (million)	0.2	0.2
Diluted weighted average shares (million)	73.9	73.8
Basic earnings per share	226.2p	303.1p
Diluted earnings per share	225.5p	302.0p

Basic and diluted earnings per share calculated on an adjusted profit basis are included in Note 2.

The dilution is in respect of unexercised share options and the Performance Share Plan.

11 Dividends

	2019 £m	2018 £m
Amounts paid in the year:		
Final dividend for the year ended 31st December 2018 of 71.0p (2017: 62.0p) per share	52.3	45.7
Interim dividend for the year ended 31st December 2019 of 32.0p (2018: 29.0p) per share	23.6	21.3
Total dividends paid	75.9	67.0
Amounts arising in respect of the year:		
Interim dividend for the year ended 31st December 2019 of 32.0p (2018: 29.0p) per share	23.6	21.3
Proposed final dividend for the year ended 31st December 2019 of 78.0p (2018: 71.0p) per share	57.5	52.3
Total dividends arising	81.1	73.6

The proposed dividend is subject to approval in 2020. It is therefore not included as a liability in these Financial Statements. No scrip alternative to the cash dividend is being offered in respect of the proposed final dividend for the year ended 31st December 2019.

12 Investment in Associate

	Associate 2019 £m	Associate 2018 £m
Cost of investment	1.4	1.4
Share of equity	(1.2)	(1.4)
Total investment in Associate	0.2	–
Summarised financial information (100% of the results of the Associate):		
Revenue	4.2	1.5
Profit/(loss) for the period	0.6	–
Current assets	1.9	0.5
Non-current assets	0.2	0.2
Current and non-current liabilities	1.3	0.5

Details of the Group's Associate at 31st December 2019 and 31st December 2018 is as follows:

Name of Associate	Country of incorporation and operation	Proportion of ownership interest and voting power held	Principal activity
Econotherm (UK) Ltd	UK	26.3%	Manufacturing and selling

During 2018, the proportion of ownership held by the Group in Econotherm was reduced from 38.9% to 26.3%.

The Group's share of Profit of Associate is £0.2m (2018: £nil).

13 Property, plant and equipment

2019

	Freehold land and buildings £m	Leasehold land and buildings £m	Plant and machinery £m	Fixtures, fittings, tools and equipment £m	Total £m
Cost:					
At 1st January 2019	134.1	39.0	178.5	78.8	430.4
Exchange adjustments	(4.4)	(2.0)	(6.7)	(3.3)	(16.4)
	129.7	37.0	171.8	75.5	414.0
Additions	18.3	0.9	22.3	9.4	50.9
Acquisitions	3.8	–	4.0	0.3	8.1
Transfers	–	0.7	(1.7)	1.2	0.2
Disposals	(3.7)	(0.2)	(9.7)	(2.9)	(16.5)
At 31st December 2019	148.1	38.4	186.7	83.5	456.7
Depreciation:					
At 1st January 2019	29.9	6.9	110.0	52.8	199.6
Exchange adjustments	(1.2)	(0.4)	(3.9)	(2.1)	(7.6)
	28.7	6.5	106.1	50.7	192.0
Charged in year	3.2	1.4	14.7	7.7	27.0
Transfers	–	0.3	(1.1)	0.4	(0.4)
Disposals	(0.5)	(0.1)	(9.9)	(2.6)	(13.1)
At 31st December 2019	31.4	8.1	109.8	56.2	205.5
Net book value:					
At 31st December 2019	116.7	30.3	76.9	27.3	251.2

Notes to the Consolidated Financial Statements *continued*

13 Property, plant and equipment *continued*

The total amount of transfers relates to property, plant and equipment transferred to other intangible assets (see Note 15).

2018

	Freehold land and buildings £m	Leasehold land and buildings £m	Plant and machinery £m	Fixtures, fittings, tools and equipment £m	Total £m
Cost:					
At 1st January 2018	138.8	37.7	164.9	73.4	414.8
Exchange adjustments	1.1	0.1	0.5	(0.3)	1.4
	139.9	37.8	165.4	73.1	416.2
Additions	4.5	1.4	18.6	9.0	33.5
Transfers	(5.3)	–	3.8	0.3	(1.2)
Disposals	(3.0)	(0.2)	(8.6)	(2.2)	(14.0)
Disposal of subsidiary	(2.0)	–	(0.7)	(1.4)	(4.1)
At 31st December 2018	134.1	39.0	178.5	78.8	430.4
Depreciation:					
At 1st January 2018	29.8	5.7	103.0	48.8	187.3
Exchange adjustments	0.3	–	0.2	(0.1)	0.4
	30.1	5.7	103.2	48.7	187.7
Charged in year	2.9	1.4	14.4	7.9	26.6
Transfers	(0.6)	–	0.4	(1.0)	(1.2)
Disposals	(1.3)	(0.2)	(7.5)	(1.7)	(10.7)
Disposal of subsidiary	(1.2)	–	(0.5)	(1.1)	(2.8)
At 31st December 2018	29.9	6.9	110.0	52.8	199.6
Net book value:					
At 31st December 2018	104.2	32.1	68.5	26.0	230.8

Included in the above are assets under construction of £24.2m (2018: £8.1m). In 2018 additions from acquisitions were £0.2m and are shown within additions.

14 Leases

Right-of-use assets

	Leased land and buildings £m	Leased plant and machinery £m	Leased fixtures, fittings, tools and equipment £m	Total right-of-use assets £m
Cost:				
Transition adjustment at 1st January 2019	**27.2**	**7.0**	**1.9**	**36.1**
Reclassification from long-term prepayments	**5.1**	**–**	**–**	**5.1**
Additions	**7.2**	**4.2**	**0.3**	**11.7**
Acquisitions	**0.8**	**0.3**	**–**	**1.1**
Disposals	**(0.2)**	**(0.1)**	**–**	**(0.3)**
Exchange adjustments	**(1.5)**	**(0.4)**	**(0.1)**	**(2.0)**
At 31st December 2019	**38.6**	**11.0**	**2.1**	**51.7**
Depreciation:				
Charged in the year	**7.0**	**3.7**	**0.6**	**11.3**
Disposals	**(0.1)**	**–**	**–**	**(0.1)**
Exchange adjustments	**(0.2)**	**(0.1)**	**–**	**(0.3)**
At 31st December 2019	**6.7**	**3.6**	**0.6**	**10.9**
Net book value:				
At 31st December 2019	**31.9**	**7.4**	**1.5**	**40.8**

The vast majority of the right-of-use asset value relates to leased property where the Group leases a number of office and warehouse sites in a number of geographical locations. The remaining leases are largely made up of leased motor vehicles, where the Group makes use of leasing cars for sales and service engineers at a number of operating company locations. The average lease term is 4.3 years.

14 Leases *continued*

The maturity analysis of lease liabilities is presented in Note 28.

Reconciliation of 2018 operating lease commitment to IFRS 16 transition

The below table shows a reconciliation from the operating lease commitments disclosed in the 2018 Annual Report, to the IFRS 16 lease liability recognised on transition as at 1st January 2019:

	2019 £m
Operating lease commitments disclosed as at 31st December 2018	**39.8**
Discounted using the incremental borrowing rate at the date of initial application	37.3
Add: finance lease liabilities recognised as at 31st December 2018	0.3
(Less): short-term leases not recognised as a liability	(1.4)
(Less): low-value leases not recognised as a liability	(0.2)
Add: adjustments as a result of a different treatment of extension and termination options	3.0
Lease liability recognised as at 1st January 2019	**39.0**
Of which are:	
Short-term lease liabilities	9.6
Long-term lease liabilities	29.4
	39.0

Amounts recognised in Consolidated Income Statement

	31st December 2019 £m
Depreciation expense on right-of-use assets	11.3
Interest expense on lease liabilities	1.3
Expense relating to short-term leases	2.0
Expense relating to leases of low value assets	0.2
Expense relating to variable lease payments not included in the measurement of the lease liability	0.3
Income from subleases right-of-use assets	(0.2)
Gain on sale and leaseback transactions	(0.4)
Total impact on profit before tax	**14.5**

During 2019, Aflex Hose Ltd entered into a sale and leaseback transaction, selling an owned property and leasing it back for a period of 18 months. This leaseback period covers the remaining time the company is expected to utilise the site before moving into a new purpose built consolidated property in 2020. This sale and leaseback transaction led to a profit recognised in the Consolidated Income Statement of £0.4m.

The total cash outflow for leases during 2019 was £15.0m.

The following cash outflows (undiscounted) are those that the Group is potentially exposed to in future periods but are currently not reflected in the measurement of lease liabilities:

- £0.3m relating to variable lease payments not based on an index or rate;
- £1.3m relating to optional extension periods that are not reasonably certain to be exercised as at 31st December 2019; and
- £0.7m relating to leases that the Group are committed, but have not commenced as at 31st December 2019.

Notes to the Consolidated Financial Statements *continued*

15 Goodwill and other intangible assets

2019

	Acquired intangibles £m	Development costs £m	Computer software £m	Total intangibles £m	Goodwill £m
Cost:					
At 1st January 2019	320.6	21.2	66.6	408.4	371.9
Exchange and other adjustments	(13.9)	(0.2)	(1.5)	(15.6)	(16.3)
	306.7	21.0	65.1	392.8	355.6
Additions	–	3.2	8.3	11.5	–
Acquisitions	60.2	–	0.3	60.5	70.0
Transfers from property, plant and equipment	–	0.1	(0.3)	(0.2)	–
Disposals	–	(0.7)	(1.9)	(2.6)	–
At 31st December 2019	366.9	23.6	71.5	462.0	425.6
Amortisation and impairment:					
At 1st January 2019	76.2	14.8	40.2	131.2	3.9
Exchange adjustments	(3.8)	(0.2)	(1.2)	(5.2)	(0.2)
	72.4	14.6	39.0	126.0	3.7
Amortisation and impairment	26.8	1.6	5.7	34.1	4.2
Transfers from property, plant and equipment	–	0.1	0.3	0.4	–
Disposals	–	(0.6)	(1.8)	(2.4)	–
At 31st December 2019	99.2	15.7	43.2	158.1	7.9
Net book value:					
At 31st December 2019	267.7	7.9	28.3	303.9	417.7

2018

	Acquired intangibles £m	Development costs £m	Computer software £m	Total intangibles £m	Goodwill £m
Cost:					
At 1st January 2018	300.6	26.6	56.9	384.1	355.3
Exchange and other adjustments	10.9	(0.1)	0.6	11.4	12.4
	311.5	26.5	57.5	395.5	367.7
Acquisitions	9.1	–	–	9.1	2.0
Additions	–	1.6	8.3	9.9	2.2
Transfers from property, plant and equipment	–	0.2	1.0	1.2	–
Disposals	–	(7.1)	(0.2)	(7.3)	–
At 31st December 2018	320.6	21.2	66.6	408.4	371.9
Amortisation and impairment:					
At 1st January 2018	49.8	20.3	34.0	104.1	4.0
Exchange adjustments	1.2	(0.1)	0.3	1.4	(0.1)
	51.0	20.2	34.3	105.5	3.9
Amortisation and impairment	25.2	1.2	5.1	31.5	–
Transfers from property, plant and equipment	–	0.2	1.0	1.2	–
Disposals	–	(6.8)	(0.2)	(7.0)	–
At 31st December 2018	76.2	14.8	40.2	131.2	3.9
Net book value:					
At 31st December 2018	244.4	6.4	26.4	277.2	368.0

Development

All capitalised development costs arise from internal product development.

15 Goodwill and other intangible assets *continued*

Acquired intangibles

The disclosure by class of acquired intangible assets is shown in the tables below.

2019

	Customer relationships £m	Brand names and trademarks £m	Manufacturing designs and core technology £m	Non-compete undertakings and other £m	Total acquired intangibles £m
Cost:					
At 1st January 2019	57.1	187.3	56.0	20.2	320.6
Exchange and other adjustments	(3.0)	(7.8)	(2.2)	(0.9)	(13.9)
	54.1	179.5	53.8	19.3	306.7
Acquisitions	34.9	14.3	7.2	3.8	60.2
At 31st December 2019	89.0	193.8	61.0	23.1	366.9
Amortisation and impairment:					
At 1st January 2019	25.1	21.3	14.2	15.6	76.2
Exchange adjustments	(1.3)	(1.1)	(0.6)	(0.8)	(3.8)
	23.8	20.2	13.6	14.8	72.4
Amortisation and impairment	7.1	10.4	5.6	3.7	26.8
At 31st December 2019	30.9	30.6	19.2	18.5	99.2
Net book value:					
At 31st December 2019	58.1	163.2	41.8	4.6	267.7

Customer relationships are amortised over their useful economic lives in line with the accounting policies disclosed in Note 1. Within this balance individually material balances relate to Thermocoax £32.6m. The remaining amortisation period is 14.3 years.

Brand names and trademark assets are amortised over their useful economic lives in line with the accounting policies disclosed in Note 1. Within this balance individually material balances relate to Chromalox £114.1m (2018: £125.4m), Gestra £28.4m (2018: £32.5m) and Thermocoax £13.6m. The remaining amortisation periods are 17.5 years, 12.3 years and 19.3 years respectively.

Manufacturing designs and core technology are amortised over their useful economic lives in line with the accounting policies disclosed in Note 1. Within this balance individually material balances relate to Chromalox £12.9m (2018: £15.1m), Gestra £10.8m (2018: £12.3m) and Aflex £8.5m (2018: £9.4m). The remaining amortisation period is 12.5 years for Chromalox, 12.3 years for Gestra and 10 years for Aflex.

Non-compete undertakings are amortised over their useful economic lives in line with the accounting policies disclosed in Note 1. There are no individually material items within this balance.

2018

	Customer relationships £m	Brand names and trademarks £m	Manufacturing designs and core technology £m	Non-compete undertakings and other £m	Total acquired intangibles £m
Cost:					
At 1st January 2018	54.9	179.1	50.0	16.6	300.6
Exchange and other adjustments	1.0	8.2	1.4	0.3	10.9
	55.9	187.3	51.4	16.9	311.5
Acquisitions	1.2	–	4.6	3.3	9.1
At 31st December 2018	57.1	187.3	56.0	20.2	320.6
Amortisation and impairment:					
At 1st January 2018	19.8	10.9	8.6	10.5	49.8
Exchange adjustments	0.3	0.4	0.3	0.2	1.2
	20.1	11.3	8.9	10.7	51.0
Amortisation and impairment	5.0	10.0	5.3	4.9	25.2
At 31st December 2018	25.1	21.3	14.2	15.6	76.2
Net book value:					
At 31st December 2018	32.0	166.0	41.8	4.6	244.4

Notes to the Consolidated Financial Statements *continued*

15 Goodwill and other intangible assets *continued*

Impairment

In accordance with the requirements of IAS 36 (Impairment of Assets), goodwill is allocated to the Group's cash-generating units, or groups of cash-generating units, that are expected to benefit from the synergies of the business combination that gave rise to the goodwill.

During 2019, we performed a review on the basis of identification of our individual CGUs. As a result of this review, we have consolidated a number of our current individual CGUs into groups of CGUs that represent the lowest level to which goodwill is monitored for internal management purposes, being each operating segment as disclosed in Note 3. As a result, we performed an impairment review at an operating segment CGU level, the breakdown of the goodwill value at 31st December across these is shown below:

	2019 Goodwill £m	2018 Goodwill £m
Steam Specialties	113.0	119.3
Electric Thermal Solutions	244.7	183.0
Watson-Marlow	60.0	65.7
Total goodwill	417.7	368.0

In order to complete the transition to performing goodwill impairment reviews at an operating segment level, we also performed a goodwill impairment review as at 31st December 2019 under the historical CGU basis. The result of this impairment review led to an impairment of £4.2m being recognised in respect of Watson-Marlow FlowSmart. No other impairment was recognised.

The goodwill balance has been tested for annual impairment on the following basis:

- the carrying values of goodwill have been assessed by reference to value in use. These have been estimated using cash flows based on forecast information for the next financial year which have been approved by the Board and then extended up to a further 9 years based on the most recent forecasts prepared by management;
- pre-tax discount rates range from 11-12% (2018: 10-15%);
- short to medium-term growth rates vary between 3-8% depending on detailed forecasts (2018: 2-8%). The range in rates excludes the annualised impact of owning Thermocoax for a first full year in 2020. The short to medium-term is defined as not more than 10 years; and
- long-term growth rates are set using IMF forecasts and vary between 1.8-2.5% (2018: 0.8-3.0%).

The key assumptions on which the impairment tests are based are the discount rates, growth rates and the forecast cash flows:

The principal value in use assumptions were as follows:

Cash-generating unit	Pre-tax discount rate	Short to medium-term growth rate*	Long-term growth rate
Steam Specialties	11.8%	3.1%-3.6%	2.3%
Electric Thermal Solutions	10.6%	3.5%-6.7%	1.8%
Watson-Marlow	11.0%	5.0%-7.5%	2.5%

* The short to medium-term growth rate for Electric Thermal Solutions excludes the annualised impact of owning Thermocoax for a first full year in 2020.

The results of the Group's impairment tests are dependent upon estimates, particularly in relation to the key assumptions described above. Sensitivity analysis to potential changes in the key assumptions has been undertaken based on the following reasonably possible change sensitivities in isolation:

- a 0.5 % increase in the pre-tax discount rate applied to each cash-generating unit;
- a 1.0 % reduction in the short and long-term growth rates used in the cash flow projections; and
- a range of 100 to 200 bps reduction in the EBIT margin used in the cash flow projections.

For each cash-generating unit, the Directors do not consider that there are any reasonably possible change sensitivities for the business that could arise in the next 12 months that would result in an impairment charge being recognised.

Going forward from 2020, goodwill impairment will be assessed at an operating segment level only.

16 Deferred tax assets and liabilities

Recognised deferred tax assets and liabilities

Deferred tax assets and liabilities are attributable to the following:

	2019 Assets £m	2018 Assets £m	2019 Liabilities £m	2018 Liabilities £m	2019 Net £m	2018 Net £m
Accelerated capital allowances	**0.5**	0.5	**(8.5)**	(7.3)	**(8.0)**	(6.8)
Provisions	**2.3**	2.4	**(0.2)**	–	**2.1**	2.4
Losses	**2.9**	3.0	**–**	–	**2.9**	3.0
Inventory	**6.4**	6.2	**(1.6)**	(1.8)	**4.8**	4.4
Pensions	**17.7**	19.4	**(0.9)**	(0.6)	**16.8**	18.8
Other temporary differences	**11.0**	9.8	**(72.7)**	(67.1)	**(61.7)**	(57.3)
Tax assets/(liabilities)	**40.8**	41.3	**(83.9)**	(76.8)	**(43.1)**	(35.5)

Movement in deferred tax during the year 2019

	1st January 2019 £m	Recognised in income £m	Recognised in OCI £m	Recognised in equity £m	Acquisitions £m	31st December 2019 £m
Accelerated capital allowances	**(6.8)**	**(1.5)**	**0.1**	**0.2**	**–**	**(8.0)**
Provisions	**2.4**	**0.5**	**0.2**	**(1.0)**	**–**	**2.1**
Losses	**3.0**	**0.1**	**(0.1)**	**(0.1)**	**–**	**2.9**
Inventory	**4.4**	**0.2**	**(0.2)**	**0.4**	**–**	**4.8**
Pensions	**18.8**	**(0.5)**	**(1.5)**	**–**	**–**	**16.8**
Other temporary differences	**(57.3)**	**8.0**	**(0.7)**	**4.7**	**(16.4)**	**(61.7)**
Group total	**(35.5)**	**6.8**	**(2.2)**	**4.2**	**(16.4)**	**(43.1)**

Movement in deferred tax during the year 2018

	1st January 2018 £m	Recognised in income £m	Recognised in OCI £m	Recognised in equity £m	Acquisitions £m	31st December 2018 £m
Accelerated capital allowances	(5.3)	(1.5)	(0.3)	0.3	–	(6.8)
Provisions	3.1	(0.4)	(0.3)	–	–	2.4
Losses	2.7	0.3	–	–	–	3.0
Inventory	4.4	0.4	(0.4)	–	–	4.4
Pensions	19.0	(1.9)	1.7	–	–	18.8
Other temporary differences	(60.8)	6.5	(1.3)	0.1	(1.8)	(57.3)
Group total	(36.9)	3.4	(0.6)	0.4	(1.8)	(35.5)

At the Balance Sheet date, the Group has deductible temporary differences, unused tax losses and unused tax creditors of £12.8m (2018: £9.9m) available for offset against future profits. A deferred tax asset has been recognised in respect of £2.9m (2018: £3.0m). No deferred tax asset has been recognised in respect of the remaining £9.9m (2018: £6.9m) as it is not considered probable that there will be future taxable profits available against which the relevant deduction can be offset. The losses may be carried forward indefinitely.

Deferred tax of £1.5m recognised in the Consolidated Statement of Comprehensive Income (page 151) associated with the measurement of defined benefit obligations comprises £1.4m relating to remeasurement gain and £0.1m relating to exchange movements.

Other temporary differences mostly consist of deferred tax liabilities recognised on acquired intangibles from acquisitions.

A £0.5m deferred tax asset was recognised on transition to IFRS 16 on 1st January 2019. This is included within other temporary differences recognised in equity in the 2019 movement table above.

Notes to the Consolidated Financial Statements
continued

17 Inventories

	2019 £m	2018 £m
Raw materials, consumables and components	72.2	53.0
Work in progress	25.5	25.7
Finished goods and goods for resale	88.2	81.9
Total inventories	**185.9**	160.6

The write-down of inventories recognised as an expense during the year in respect of continuing operations was £0.7m (2018: £3.5m). This comprises a cost of £5.1m (2018: £4.8m) to write-down inventory to net realisable value reduced by £4.4m (2018: £1.3m) for reversal of previous write-down reassessed as a result of customer demand.

The value of inventories expected to be recovered after more than 12 months is £13.4m (2018: £11.2m).

There is no material difference between the Statement of Financial Position value of inventories and their replacement cost. None of the inventory has been pledged as security.

18 Other current assets

	2019 £m	2018 £m
Other receivables	16.9	14.9
Contract assets	5.8	4.9
Prepayments	12.6	13.1
Total other current assets	**35.3**	32.9

Contract assets relate to revenue recognised that has not yet been invoiced to the customer.

19 Trade and other payables

	2019 £m	2018 £m
Trade payables	57.9	57.4
Contract liabilities	8.7	8.9
Social security	5.6	5.1
Other payables	37.8	37.6
Accruals	64.8	58.0
Total trade and other payables	**174.8**	167.0

Contract liabilities relate to advance payments received from customers which have not yet been recognised as revenue.

£8.3m of the contract liabilities at 31st December 2018 was recognised as revenue during 2019 (2018: £3.0m).

20 Provisions

2019	Product warranty £m	Legal, contractual and other £m	Total £m
At 1st January 2019	3.6	5.1	8.7
Additional provision in the year	0.4	2.0	2.4
Utilised or released during the year	(2.6)	(3.5)	(6.1)
Acquisition of subsidiary	0.2	–	0.2
Exchange adjustments	(0.1)	(0.3)	(0.4)
At 31st December 2019	1.5	3.3	4.8

2018	Product warranty £m	Legal, contractual and other £m	Total £m
At 1st January 2018	3.8	6.1	9.9
Additional provision in the year	0.2	2.3	2.5
Utilised or released during the year	(0.5)	(3.4)	(3.9)
Exchange adjustments	0.1	0.1	0.2
At 31st December 2018	3.6	5.1	8.7

	2019 £m	2018 £m
Current provisions	3.5	5.0
Non-current provisions	1.3	3.7
Total provisions	4.8	8.7

Product warranty

Product warranty provisions reflect commitments made to customers on the sale of goods in the ordinary course of business. These are expected to be incurred in the next three years.

Legal, contractual and other

Legal, contractual and other provisions mainly comprise amounts provided against open legal and contractual disputes arising from trade and employment. These costs are based on past experience of similar items and other known factors and represent management's best estimate of the likely outcome. The Group has taken action to enforce its rights and protect its intellectual property rights around the world.

Reflecting the inherent uncertainty within many legal proceedings, the timing and amount of the outflows could differ significantly from the amount provided. Management does not expect that the outcome of such proceedings, either individually or in aggregate, will have a material adverse effect on the Group's financial condition or results of operations. Of the total legal, contractual and other provisions at 31st December 2019 £2.7m (2018: £3.3m) has been included within current and £0.6m within non-current provisions (2018: £1.8m).

Notes to the Consolidated Financial Statements *continued*

21 Called up share capital and reserves

	2019 £m	2018 £m
Ordinary shares of 26 12/13p (2018: 26 12/13p) each:		
Authorised 111,428,571 (2018: 111,428,571)	**30.0**	30.0
Allotted, called up and fully paid 73,736,888 (2018: 73,666,646)	**19.8**	19.8

In 2019 71,698 shares with a nominal value of £19,303 were issued in connection with the Group's Employee Share Schemes with external consideration of £2.1m received by the Group. An additional £1.1m was received from Group companies.

At 31st December 2019 79,489 shares were held in an Employee Benefit Trust and available for use in connection with the Group's Employee Share Schemes.

133 senior employees of the Group have been granted options on Ordinary shares under the Share Option Scheme and Performance Share Plan (details in Note 23).

Other reserves in the Consolidated Statement of Changes in Equity on pages 151 to 152 are made up as follows:

	1st January 2019 £m	Change in year £m	31st December 2019 £m
Translation reserve	**30.3**	**(45.0)**	**(14.7)**
Net investment hedge reserve	**(7.4)**	**12.9**	**5.5**
Cash flow hedges reserve	**–**	**3.3**	**3.3**
Capital redemption reserve	**1.8**	**–**	**1.8**
Employee Benefit Trust reserve	**(2.5)**	**(4.0)**	**(6.5)**
Total other reserves	**22.2**	**(32.8)**	**(10.6)**

The change in translation reserve includes a £1.4m credit transferred from retained earnings.

	1st January 2018 £m	Change in year £m	31st December 2018 £m
Translation reserve	18.7	11.6	30.3
Net investment hedge reserve	–	(7.4)	(7.4)
Cash flow hedges reserve	0.1	(0.1)	–
Capital redemption reserve	1.8	–	1.8
Employee Benefit Trust reserve	(1.3)	(1.2)	(2.5)
Total other reserves	19.3	2.9	22.2

Translation reserve
The foreign currency translation reserve is used to record exchange differences arising from the translation of the Financial Statements of foreign subsidiaries. On disposal accumulated exchange differences are recycled to the Income Statement.

Net investment hedge reserve
The reserve records the cumulative gain or loss on hedging instruments designated in net investment hedges. Together with the translation reserve, these are the foreign currency translation reserves of the Group.

Cash flow hedges reserve
The reserve records the cumulative net change in the fair value of forward exchange contracts where they are designated as effective cash flow hedge relationships.

Capital redemption reserve
This reserve records the historical repurchase of the Group's own shares.

Employee Benefit Trust reserve
The Group has an Employee Benefit Trust which is used to purchase, hold and issue shares in connection with the Group's employee share schemes. The shares held in Trust are recorded in this separate reserve.

22 Capital commitments and contingent liabilities

	2019 £m	2018 £m
Capital expenditure contracted for but not provided	8.5	4.1

All capital commitments are related to property, plant and equipment and computer software. The Group has no material contingent liabilities at 31st December 2019 (no material contingent liabilities existed at 31st December 2018), but does have a non-material contingent liability in relation to tax estimated at approximately £8.3m (2018: £7.1m). See Note 9 for further details.

23 Employee benefits

Retirement benefit obligations

The Group operates a wide range of retirement benefit arrangements, which are established in accordance with local conditions and practices within the countries concerned. These include funded defined contribution and funded and unfunded defined benefit schemes.

Defined contribution arrangements

The majority of the retirement benefit arrangements operated by the Group are of a defined contribution structure, where the employer contribution and resulting Income Statement charge is fixed at a set level or is a set percentage of employees' pay. Contributions made to defined contribution schemes and charged to the Income Statement totalled £14.1m (2018: £14.3m). In the UK, following the closure of the defined benefit schemes to new entrants, the main scheme for new employees is a defined contribution scheme.

Defined benefit arrangements

The Group operates several funded defined benefit retirement schemes where the benefits are based on employees' length of service. Whilst the Group's primary schemes are in the UK, it also operates other material benefit schemes in the USA as well as less material schemes elsewhere. In funded arrangements, the assets of defined benefit schemes are held in separate trustee-administered funds or similar structures in the countries concerned.

UK defined benefit arrangements

The defined benefit schemes in the UK account for 34% (2018: 48%) of the Group's net liability for defined retirement benefit schemes. Spirax-Sarco operates three UK schemes: the Spirax-Sarco Employees Pension Fund, the Spirax-Sarco Executives' Retirement Benefits Scheme and the Watson-Marlow Pension Fund. These are all final salary pension schemes. The UK schemes are closed to new members but are open to future accrual. There is a mix of different inflation-dependent pension increases (in payment and deferment) which vary from member to member according to their membership history and which scheme they are a member of. All three schemes have been set up under UK law and are governed by a Trustee committee, which is responsible for the scheme's investments, administration and management. A funding valuation is carried out for the Trustees of each scheme every three years by an independent firm of actuaries. Depending on the outcome of that valuation a schedule of future contributions is negotiated with Spirax-Sarco. Further information on the contribution commitments is shown in the Financial Review on page 57.

During 2018 an assessment of the estimated impact of equalising for the effects of unequal Guaranteed Minimum Pensions (GMP) was performed resulting in a past service cost of £0.7m recognised in the Consolidated Income Statement.

US defined benefit schemes

The Group operates a pension scheme in the USA, which is closed to new entrants. During 2018 the pension scheme was frozen to future accrual, which led to a reduction in the Defined Benefit Obligation (DBO) as benefits are no longer linked to salary increases. This plan amendment was recognised as a past service credit, of £6.0m, in the Consolidated Income Statement during 2018. The pension scheme defines the pension in terms of the highest average pensionable pay for any five consecutive years prior to retirement. No pension increases (in payment and deferment) are offered by this scheme. It also operates a post-retirement medical plan in the USA, which is unfunded, as is typical for these plans.

Principal risks

The pension schemes create a number of risk exposures. Annual increase in benefits are, to a varying extent from scheme to scheme, dependent on inflation so the main uncertainties affecting the level of benefits payable are future inflation levels (including the impact of inflation on future salary increases) and the actual longevity of the membership. Benefits payable will also be influenced by a range of other factors including member decisions on matters such as when to retire and the possibility to draw benefits in different forms. A key risk is that additional contributions are required if the investment returns fall short of those anticipated when setting the contributions to the pension schemes. All pension schemes are regulated by the relevant jurisdictions. These include extensive legislation and regulatory mechanisms that are subject to change and may impact on the Group's pension schemes. The IAS 19 liability measurement known as Defined Benefit Obligation (DBO) and the Service Cost are sensitive to the actuarial assumptions made on a range of demographic and financial matters that are used to project the expected benefit payments, the most important of these assumptions being the future inflation and salary growth levels and the assumptions made about life expectation. The DBO and Service Cost are also very sensitive to the IAS 19 discount rate, which determines the discounted value of the projected benefit payments. The discount rate depends on market yields on high-quality corporate bonds. Investment strategies are set with funding rather than IAS 19 considerations in mind and do not seek to provide a specific hedge against the IAS 19 measurement of DBO. As a result the difference between the market value of the assets and the IAS 19 DBO may be volatile. Further information on the investment strategy for the UK schemes can be found in the Financial Review on page 57.

Sensitivity analysis to changes in discount rate and inflation are included on page 185.

Notes to the Consolidated Financial Statements *continued*

23 Employee benefits *continued*

The financial assumptions used at 31st December were:

	Assumptions weighted by value of liabilities % per annum			
	UK pensions		Overseas pensions and medical	
	2019 %	2018 %	2019 %	2018 %
Rate of increase in salaries	**2.4**	2.7	**2.7**	2.8
Rate of increase in pensions	**2.8**	2.9	**1.8**	1.7
Rate of price inflation	**2.9**	3.2	**1.8**	1.9
Discount rate	**2.1**	2.7	**2.7**	3.7
Medical trend rate	**n/a**	n/a	**5.0**	5.0

The mortality assumptions for the material defined benefit schemes at 31st December 2019 and 31st December 2018 were:

Spirax-Sarco Employees Pension Fund	At 31st December 2019: 97% of SAPS S2 base table, with 2018 CMI Core Projection model from 2007, with a long-term trend of 1.25% p.a. At 31st December 2018: 97% of SAPS S2 base table, with 2017 CMI Core Projection model from 2007, with a long-term trend of 1.25% p.a.
Spirax-Sarco Executives' Retirement Benefits Scheme	At 31st December 2019: 85% of SAPS S2 light base table for males and 96% of SAPS S2 base table for females, with 2018 CMI Core Projection model from 2007, with a long-term trend of 1.25% p.a. At 31st December 2018: 85% of SAPS S2 light base table for males and 96% of SAPS S2 base table for females, with 2017 CMI Core Projection model from 2007, with a long-term trend of 1.25% p.a.
Watson-Marlow Pension Fund	At 31st December 2019: 96% of SAPS S2 base table, with 2018 CMI Core Projection model from 2007, subject to a long-term trend of 1.25% p.a. At 31st December 2018: 96% of SAPS S2 base table, with 2017 CMI Core Projection model from 2007, subject to a long-term trend of 1.50% p.a.
US Pension Scheme	At 31st December 2019: SOA Pri-2012 Amount Weighted Blue Collar mortality tables projected generationally with Mortality Improvement Scale MP2019. At 31st December 2018: SOA-2014 Blue Collar Mortality adjusted back to 2006 with Mortality Improvement Scale MP2018.

The assumptions used by the actuary are the best estimates chosen from a range of possible actuarial assumptions which, due to the timescale covered, may not necessarily be borne out in practice.

The amounts recognised in the Consolidated Statement of Financial Position are determined as follows:

	UK pensions		Overseas pensions and medical		Total	
	2019 £m	2018 £m	2019 £m	2018 £m	2019 £m	2018 £m
Fair value of schemes' assets	**433.7**	387.4	**54.1**	53.6	**487.8**	441.0
Present value of funded schemes' liabilities	**(458.2)**	(428.3)	**(77.4)**	(73.6)	**(535.6)**	(501.9)
Deficit in the funded schemes	**(24.5)**	(40.9)	**(23.3)**	(20.0)	**(47.8)**	(60.9)
Present value of unfunded schemes' liabilities	**–**	–	**(23.5)**	(24.2)	**(23.5)**	(24.2)
Retirement benefit liability recognised in the Consolidated Statement of Financial Position	**(24.5)**	(40.9)	**(46.8)**	(44.2)	**(71.3)**	(85.1)
Related deferred tax asset	**4.3**	7.0	**12.5**	11.8	**16.8**	18.8
Net pension liability	**(20.2)**	(33.9)	**(34.3)**	(32.4)	**(54.5)**	(66.3)

23 Employee benefits *continued*

Fair value of scheme assets

	UK pensions		Overseas pensions and medical		Total	
	2019 £m	**2018 £m**	**2019 £m**	**2018 £m**	**2019 £m**	**2018 £m**
Equities	**107.3**	118.2	**31.6**	27.8	**138.9**	146.0
Bonds	**297.0**	245.8	**16.1**	13.9	**313.1**	259.7
Other	**29.4**	23.4	**6.4**	11.9	**35.8**	35.3
Total market value in aggregate	**433.7**	387.4	**54.1**	53.6	**487.8**	441.0

At 31st December 2019 £98.2m (2018: £91.0m) of scheme assets have a quoted market price in an active market of which £47.4m (2018: £40.9m) relates to UK pensions and £50.8m (2018: £50.1m) relates to overseas pensions and medical.

The actual return on plan assets was an increase of £61.4 million (2018: a decrease of £15.8 million).

The movements in the defined benefit obligation recognised in the Consolidated Statement of Financial Position during the year were:

	UK pensions		Overseas pensions and medical		Total	
	2019 £m	**2018 £m**	**2019 £m**	**2018 £m**	**2019 £m**	**2018 £m**
Defined benefit obligation at beginning of year	**(428.3)**	(443.0)	**(97.8)**	(100.0)	**(526.1)**	(543.0)
Current service cost	**(6.2)**	(7.1)	**(0.7)**	(3.2)	**(6.9)**	(10.3)
Past service (cost)/credit	**–**	(0.7)	**0.5**	6.0	**0.5**	5.3
Interest cost	**(11.2)**	(10.5)	**(3.4)**	(3.0)	**(14.6)**	(13.5)
Administration costs	**–**	–	**(0.7)**	–	**(0.7)**	–
Contributions by members	**(0.2)**	(0.2)	**–**	–	**(0.2)**	(0.2)
Remeasurement (loss)/gain	**(27.9)**	20.4	**(12.1)**	1.6	**(40.0)**	22.0
Actual benefit payments	**15.6**	14.1	**9.1**	4.1	**24.7**	18.2
Settlement gain	**–**	–	**0.3**	–	**0.3**	–
Acquisitions and disposals	**–**	–	**(0.3)**	0.2	**(0.3)**	0.2
Experience (loss)/gain	**–**	(1.3)	**–**	0.7	**–**	(0.6)
Currency gain/(loss)	**–**	–	**4.2**	(4.2)	**4.2**	(4.2)
Defined benefit obligation at end of year	**(458.2)**	(428.3)	**(100.9)**	(97.8)	**(559.1)**	(526.1)

The movements in the fair value of plan assets during the year were:

	UK pensions		Overseas pensions and medical		Total	
	2019 £m	**2018 £m**	**2019 £m**	**2018 £m**	**2019 £m**	**2018 £m**
Value of assets at beginning of year	**387.4**	403.6	**53.6**	53.8	**441.0**	457.4
Expected return on assets	**10.3**	9.6	**2.1**	1.9	**12.4**	11.5
Remeasurement gain/(loss)	**42.3**	(22.6)	**6.7**	(4.7)	**49.0**	(27.3)
Contributions paid by employer	**9.7**	10.7	**2.9**	4.4	**12.6**	15.1
Contributions paid by members	**0.2**	0.2	**–**	–	**0.2**	0.2
Actual benefit payments	**(15.6)**	(14.1)	**(9.2)**	(4.1)	**(24.8)**	(18.2)
Administration costs	**(0.6)**	–	**–**	–	**(0.6)**	–
Disposals	**–**	–	**–**	(0.1)	**–**	(0.1)
Currency (loss)/gain	**–**	–	**(2.0)**	2.4	**(2.0)**	2.4
Value of assets at end of year	**433.7**	387.4	**54.1**	53.6	**487.8**	441.0

The estimated employer contributions to be made in 2020 are £12.1m.

Notes to the Consolidated Financial Statements *continued*

23 Employee benefits *continued*

The history of experience adjustments is as follows:

	2019 £m	2018 £m	2017 £m	2016 £m	2015 £m
Defined benefit obligation at end of year	**(559.1)**	(526.1)	(543.0)	(520.3)	(419.6)
Fair value of schemes' assets	**487.8**	441.0	457.4	426.1	345.9
Retirement benefit liability recognised in the Statement of Financial Position	**(71.3)**	(85.1)	(85.6)	(94.2)	(73.7)
Experience adjustment on schemes' liabilities	**–**	(0.6)	(8.5)	1.6	2.4
As a percentage of schemes' liabilities	**0.0%**	0.1%	1.6%	0.3%	0.6%
Experience adjustment on schemes' assets	**49.0**	(27.3)	29.9	66.0	(7.2)
As a percentage of schemes' assets	**10.0%**	6.2%	6.5%	15.5%	2.1%

The expense recognised in the Group Income Statement was as follows:

	UK pensions		Overseas pensions and medical		Total	
	2019 £m	2018 £m	2019 £m	2018 £m	2019 £m	2018 £m
Current service cost	**(6.2)**	(7.1)	**(0.7)**	(3.2)	**(6.9)**	(10.3)
Administration costs	**(0.6)**	–	**(0.7)**	–	**(1.3)**	–
Past service (cost)/credit	**–**	(0.7)	**0.5**	6.0	**0.5**	5.3
Settlement gain	**–**	–	**0.3**	–	**0.3**	–
Net interest on schemes' liabilities	**(0.9)**	(0.9)	**(1.3)**	(1.1)	**(2.2)**	(2.0)
Total expense recognised in Income Statement	**(7.7)**	(8.7)	**(1.9)**	1.7	**(9.6)**	(7.0)

The expense is recognised in the following line items in the Consolidated Income Statement:

	2019 £m	2018 £m
Operating costs	**(7.4)**	(5.0)
Net financing expense	**(2.2)**	(2.0)
Total expense recognised in Income Statement	**(9.6)**	(7.0)

The gain or loss recognised in the Statement of Comprehensive Income (OCI) was as follows:

	UK pensions		Overseas pensions and medical		Total	
	2019 £m	2018 £m	2019 £m	2018 £m	2019 £m	2018 £m
Remeasurement effects recognised in OCI:						
Due to experience on DBO	**–**	(1.3)	**–**	0.7	**–**	(0.6)
Due to demographic assumption changes in DBO	**4.1**	0.9	**0.4**	(5.0)	**4.5**	(4.1)
Due to financial assumption changes in DBO	**(32.0)**	19.5	**(12.5)**	6.6	**(44.5)**	26.1
Return on assets	**42.3**	(22.6)	**6.7**	(4.7)	**49.0**	(27.3)
Total remeasurement gain/(loss) recognised in OCI	**14.4**	(3.5)	**(5.4)**	(2.4)	**9.0**	(5.9)
Deferred tax on remeasurement gain/(loss) and change in rate recognised in OCI	**(2.4)**	0.6	**1.0**	0.6	**(1.4)**	1.2
Cumulative loss recognised in OCI at beginning of year	**(51.3)**	(48.4)	**(22.4)**	(20.6)	**(73.7)**	(69.0)
Cumulative loss recognised in OCI at end of year	**(39.3)**	(51.3)	**(26.8)**	(22.4)	**(66.1)**	(73.7)

23 Employee benefits *continued*

Sensitivity analysis

The effect on the defined benefit obligation at 31st December 2019 of an increase or decrease in key assumptions is as follows:

	UK pensions £m	Overseas pensions and medical £m	Total £m
Increase/(decrease) in pension deficit:			
Discount rate assumption being 1.0% higher	(74.2)	(13.2)	(87.4)
Discount rate assumption being 1.0% lower	94.6	15.5	110.1
Inflation assumption being 0.25% higher	13.9	0.7	14.6
Inflation assumption being 0.25% lower	(14.4)	(0.7)	(15.1)
Mortality assumption life expectancy at age 65 being one year higher	19.9	3.4	23.3

The average age of active participants in the UK schemes at 31st December 2019 was 52 years (2018: 52 years) and in the overseas schemes 48 years (2018: 51 years).

Cash payments to the pension scheme greater or less than the expense to operating profit

	2019 £m	2018 £m
Defined benefit arrangements	(7.4)	(5.0)
Defined contribution arrangements	(14.1)	(14.3)
Total expense recognised in operating costs	(21.5)	(19.3)
Defined benefit arrangements	12.6	15.1
Defined contribution arrangements	14.1	14.3
Total contributions paid by employer	26.7	29.4
Cash payments to the pension scheme greater than the expense to operating profit	5.2	10.1

Share-based payments

Disclosures of the share-based payments offered to employees are set out below. More detail on each scheme is given in the Annual Report on Remuneration 2019 on pages 102 to 132. The charge to the Income Statement in respect of share-based payments is made up as follows:

	2019 £m	2018 £m
Performance Share Plan	5.1	4.7
Employee Share Ownership Plan	1.1	1.0
Total expense recognised in Income Statement	6.2	5.7

Share option scheme

The Group operates equity-settled share option schemes for employees, although no grants have been made since 2011 because awards have been made using the Group's Performance Share Plan instead. Awards were determined by the Remuneration Committee whose objective was to align the interests of employees with those of shareholders by giving an incentive linked to added shareholder value. Options are subject to performance conditions, which if met make the options exercisable between the third and tenth anniversary of the date of grant. The performance condition is an increase in earnings per share (EPS) of more than 9% greater than the increase in the UK Retail Price Index to be met over the three-year period from 1st January prior to the date of the grant. If the condition is not met at the end of the three-year period the option will lapse.

The share options granted have been measured using the Present Economic Value (PEV) valuation methodology.

The number and weighted average exercise prices of share options are as follows:

Option (exercise price)	Outstanding at start of year	Granted during year	Exercised during year	Lapsed during year	Outstanding at end of year
2009 grant (765.0p)	4,001	–	4,001	–	–
2010 grant (1,366.0p)	20,096	–	13,096	–	7,000
2011 grant (1,873.0p)	54,401	–	19,507	993	33,901
	78,498	–	36,604	993	40,901
Weighted average exercise price	£16.87		£15.70	£18.73	£17.86
Weighted average contractual life remaining	1.9				1.0

Notes to the Consolidated Financial Statements *continued*

23 Employee benefits *continued*

Performance conditions in respect of all exercisable shares have been met. The number of shares exercisable at 31st December 2019 is 40,901 (2018: 78,498). The average share price during the period was £75.65 (2018: £59.30).

Performance Share Plan

Awards under the Performance Share Plan are made to Executive Directors and other senior managers and take the form of contingent rights to acquire shares, subject to the satisfaction of a performance target. To the extent that they vest, awards may be satisfied in cash, in shares or an option over shares. The performance criteria is split into two separate parts. 40% of the award is based on a TSR measure where the performance target is based on the Company's total shareholder return (TSR) relative to the TSR of other companies included in the FTSE All-Share Industrial Engineering Sector over a three-year performance period where awards will vest on a sliding scale. All shares within an award will vest if the Company's TSR is at or above the upper quartile. 25% will vest if the TSR is at the median and the number of shares that will vest will be calculated pro-rata on a straight-line basis between 25% and 100% if the Company's TSR falls between the median and the upper quartile. No shares will vest if the Company's TSR is below the median. The second part, amounting to 60% of the award, is subject to achievement of a target based on aggregate EPS over a three-year performance period. 25% will vest if the compound growth in EPS is equal to the growth in global industrial production (IP) plus 2% as published by CHR Economics, and 100% will vest if the compound growth in EPS is equal to or exceeds the growth in global IP plus 8%, there is pro-rata vesting for actual growth between these rates.

Shares awarded under the Performance Share Plan have been valued using the Monte Carlo simulation valuation methodology. The relevant disclosures in respect of the Performance Share Plan grants are set out below.

	2015 Grant	2016 Grant	2017 Grant	2018 Grant	2019 Grant
Grant date	11th June	5th April	26th May	4th April	**15th May**
Mid market share price at grant date	3,460.0p	3,550.0p	5,273.0p	5,560.0p	**8,161.0p**
Number of employees	101	141	128	134	**133**
Shares under scheme	140,090	152,440	137,001	145,041	**112,159**
Vesting period	3 years	3 years	3 years	3 years	**3 years**
Probability of vesting	71.5%	70.8%	73.1%	73.5%	**74.1%**
Fair value	2,473.9p	2,513.4p	3,854.5p	4,084.4p	**6,048.9p**

Employee Share Ownership Plan

UK employees are eligible to participate in the Employee Share Ownership Plan (ESOP). The aim of the ESOP is to encourage increased shareholding in the Company by all UK employees and so there are no performance conditions. Employees are invited to join the ESOP when an offer is made each year. Individuals save for 12 months during the accumulation period and subscribe for shares at the lower of the price at the beginning and the end of the accumulation period under HMRC rules. The Company provides a matching share for each share purchased by the individual.

Shares issued under the ESOP have been measured using the Present Economic Value (PEV) valuation methodology. The relevant disclosures in respect of the Employee Share Ownership Plans are set out below.

	2015 Grant	2016 Grant	2017 Grant	2018 Grant	2019 Grant
Grant date	1st October	1st October	1st October	1st October	**1st October**
Exercise price	2,797.0p	4,477.3p	5,496.7p	7,240.0p	**7,835.0p**
Number of employees	1,038	1,040	1,229	1,294	**1,318**
Shares under scheme	34,449	22,173	22,411	16,687	**16,820**
Vesting period	3 years	3 years	3 years	3 years	**3 years**
Expected volatility	21%	21%	21%	19%	**21%**
Risk free interest rate	0.4%	0.1%	0.4%	0.8%	**0.5%**
Expected dividend yield	2.5%	2.5%	2.3%	2.0%	**1.8%**
Fair value	2,931.3p	4,696.7p	5,799.0p	7,623.7p	**8,305.1p**

The accumulation period for the 2019 ESOP ends in September 2020, therefore some figures are projections.

24 Analysis of changes in net debt, including changes in liabilities arising from financing activities

2019

	At 1st January 2019 £m	Cash flow £m	Acquired debt* £m	Exchange movement £m	Reclassification £m	At 31st December 2019 £m
Current portion of long-term borrowings	(41.5)					(34.3)
Non-current portion of long-term borrowings	(365.3)					(429.2)
Short-term borrowings	(15.7)					–
Total borrowings	(422.5)					(463.5)
Comprising:						
Borrowings	(422.2)	(49.6)	(18.2)	26.5	–	(463.5)
Finance leases	(0.3)	–	–	–	0.3	–
Changes in liabilities arising from financing	(422.5)	(49.6)	(18.2)	26.5	0.3	(463.5)
Cash at bank	187.1	(5.7)	–	(12.9)	–	168.5
Bank overdrafts	(0.4)	0.2	–	–	–	(0.2)
Net cash and cash equivalents	186.7	(5.5)	–	(12.9)	–	168.3
Net debt	(235.8)	(55.1)	(18.2)	13.6	0.3	(295.2)
Lease liabilities (including IFRS 16 transition adjustment)	(39.0)	11.2	(12.6)	1.8	(0.3)	(38.9)
Net debt and lease liabilities	(274.8)	(43.9)	(30.8)	15.4	–	(334.1)

* Debt acquired includes both debt acquired due to acquisition, and debt recognised on the balance sheet due to entry into new leases under IFRS 16.

The cash flow for borrowings net total of £49.6m consists of £129.8m of new borrowings and £80.2m of repaid borrowings. This includes repayments of US$51.6m (£40.3m) on the US$200.0m term loan, €96.2m (£84.2m) of new drawings against a revolving credit facility, €50m (£43.8m) of new drawings on a euro term loan, CNY119.7m (£13.6m) of repayments on an overdraft facility and €8.3m (£7.3m) of repayments on a euro term loan.

At 31st December 2019 total lease liabilities consist of £11.1m short-term and £27.8m long-term.

See Note 28 for further information on net debt and lease liabilities.

2018

	At 1st January 2018 £m	Cash flow £m	Acquired debt £m	Exchange movement £m	At 31st December 2018 £m
Current portion of long-term borrowings	(49.3)				(41.5)
Non-current portion of long-term borrowings	(455.9)				(365.3)
Short-term borrowings	(20.0)				(15.7)
Total borrowings	(525.2)				(422.5)
Comprising:					
Borrowings	(524.9)	111.5	–	(8.8)	(422.2)
Finance leases	(0.3)	–	–	–	(0.3)
Changes in liabilities arising from financing	(525.2)	111.5	–	(8.8)	(422.5)
Cash at bank	152.1	39.8	(0.3)	(4.5)	187.1
Bank overdrafts	(0.5)	0.1	–	–	(0.4)
Net cash and cash equivalents	151.6	39.9	(0.3)	(4.5)	186.7
Net debt	(373.6)	151.4	(0.3)	(13.3)	(235.8)

25 Related party transactions

Transactions with Directors are disclosed separately in Note 8 and are shown in the Annual Report on Remuneration 2019 on pages 107 to 121.

There were no other related party transactions in either 2018 or 2019.

Notes to the Consolidated Financial Statements *continued*

26 Purchase of businesses

2019

The provisional fair value accounting for the acquisition of Thermocoax Developpement is shown below:

	Fair value £m
Non-current assets:	
Property, plant and equipment	8.1
Right-of-use assets	1.1
Acquired intangibles	59.3
Software and other intangibles	0.3
Deferred tax assets	0.5
	69.3
Current assets:	
Inventories	15.6
Trade receivables	8.5
Other current assets	3.6
Cash and cash equivalents	4.6
	32.3
Total assets	**101.6**
Current liabilities:	
Trade payables	4.2
Other payables and accruals	6.5
Provisions	0.2
Short-term borrowings	18.2
Short-term lease liabilities	0.3
Current tax payable	2.0
	31.4
Non-current liabilities:	
Long-term lease liabilities	0.8
Deferred tax liabilities	17.2
Long-term payables	0.5
Post-retirement benefit plans	0.3
	18.8
Total liabilities	**50.2**
Total net assets	51.4
Goodwill	70.0
Total	**121.4**

Satisfied by:	
Cash paid	121.4
Deferred consideration	–
Total consideration	121.4

Reconciliation to acquisition of businesses net of cash acquired in the Consolidated Statement of Cash Flows (page 153)

Cash paid for the Thermocoax business and debt repaid on the acquisition date	139.6
Debt repaid on acquisition date	(18.2)
Cash paid for the Thermocoax business	121.4
Less cash acquired in the Thermocoax business	(4.6)
Cash paid for acquired intangibles from distributors	1.1
Acquisition of businesses net of cash acquired	**117.9**

26 Purchase of businesses *continued*

1. On a debt-free, cash-free basis the cash outflow for acquisitions was £135.0m consisting of £121.4m paid to the sellers, £18.2m of debt repaid on the acquisition date less cash acquired of £4.6m.
2. The acquisition of 100% of the equity in Thermocoax Developpement and all of its group companies (Thermocoax) was completed on the 13th May 2019. The acquisition method of accounting has been used. Consideration of £121.4m was paid on completion.

   Separately identified intangibles are recorded as part of the provisional fair value adjustment. The acquired intangibles relate to customer relationships, brand names, trademarks, manufacturing designs and core technology. The goodwill recognised represents the skilled workforce acquired and the opportunity to achieve synergies from being part of a larger Group. Goodwill arising is not expected to be tax deductible.

   Due to their contractual dates, the fair value of receivables acquired approximate to the gross contractual amounts receivable. The amount of gross contractual receivables not expected to be recovered is immaterial.

   The acquisition has generated £27.9m of revenue and £5.4m of adjusted pre-tax profit since acquisition. Had the acquisition been made on the 1st January 2019, the Thermocoax revenue and adjusted pre-tax profit would have been approximately £42m and £8m respectively.

   Thermocoax is headquartered near Paris, France and has four manufacturing facilities in Normandy, France, one in Georgia, USA and a further facility in Heidelberg, Germany. Thermocoax is a leading designer and manufacturer of highly engineered electrical thermal solutions for critical applications in high added value industries. Thermocoax will enhance and add significantly to the Spirax-Sarco Engineering plc electrical process heating business in delivering thermal energy solutions to customers.
3. In addition to the acquired intangibles recognised for the acquisition of Thermocoax, £0.9m of acquired intangibles were recognised during the period for the acquisition of intangibles from distributors. Of this £0.7m was paid in the period with £0.2m deferred. In addition deferred consideration of £0.4m was paid during 2019 for acquired intangibles recognised prior to 2019.
4. £2.5m of acquisition costs were incurred during the period.
5. During the period the deferred consideration payable for the acquisition of a small German pre-revenue company within the Watson-Marlow Fluid Technology business was reassessed. The result of this reassessment was that deferred consideration of €5.8m remained appropriate and that no changes were required. Deferred consideration of €5.8m (£5.2m) was paid in the first quarter of 2020.

2018

In January 2018, we acquired 100% of the share capital of a small German pre-revenue company within the Watson-Marlow Fluid Technology business. The acquisition method of accounting has been used. Total consideration on a cash-free, debt-free basis at the acquisition date was expected to be £8.4m (€9.5m). This includes £0.3m to repay a bank overdraft and £0.2m which was deemed to be contingent remuneration rather than consideration under IFRS 3. £2.7m of the total £8.4m was paid on the acquisition date, with a further £5.7m deferred. The deferred payment is dependent on satisfactory compliance with agreed conditions. Separately identified intangibles are recorded as part of the provisional fair value adjustment. The fair value of net assets on acquisition under IFRS 3 were £5.9m consisting of:

- acquired intangibles, valued at £7.8m, relating to manufacturing designs, core technology and non-compete undertakings;
- a deferred tax liability of £1.8m recognised on the acquired intangibles;
- property, plant and equipment of £0.2m; and
- a bank overdraft of £0.3m.

Goodwill of £2.0m was recognised and is not expected to be tax deductible. Total consideration under IFRS 3 is therefore £7.9m. In the 12 months ended 31st December 2018 the acquisition generated £nil of revenue and a loss of £1.3m. Had the acquisition been made on the 1st January 2018 the revenue and loss would have been the same.

During 2018 the deferred consideration we expect to pay was reassessed resulting in a reduction of £0.5m to £5.2m.

During 2018 the fair value of the assets acquired as part of the acquisition of Chromalox Inc. and associated businesses on 3rd July 2017 were finalised. The outcome was an increase to goodwill of £2.2m.

During 2018 the Group acquired several distributors creating acquired intangibles of £1.3m.

Notes to the Consolidated Financial Statements
continued

27 Disposal of subsidiary

2019

No subsidiaries were disposed of during 2019.

2018

The profit on disposal of subsidiary wholly relates to the disposal of 100% of HygroMatik GmbH on 30th November 2018.

	2018 £m
Property, plant and equipment	1.3
Inventory	1.7
Trade and other receivables	1.6
Cash and cash equivalents	0.5
Trade and other payables	(4.4)
Post retirement benefit	(0.1)
Net assets disposed	0.6
Consideration received, satisfied in cash	49.7
Cash disposed of	(0.5)
Transaction expenses	(2.0)
Net proceeds from disposal of subsidiary	47.2
Contingent consideration	–
Cash disposed of	0.5
Net assets disposed of	(0.6)
Currency translation differences transferred from translation reserve	0.3
Profit on disposal of subsidiary	47.4
Net proceeds from disposal of subsidiary	47.2
Amount received to settle outstanding intercompany loan	4.3
Cash inflow per Consolidated Statement of Cash Flows	51.5

The sale of HygroMatik did not meet the definition of a discontinued operation given in IFRS 5 (Non-Current Assets Held for Sale and Discontinued Operations) and, therefore, no disclosures in relation to discontinued operations have been made. On a debt-free, cash-free basis including working capital adjustments the total cash consideration was £52.3m.

28 Derivatives and other financial instruments

The Group does not enter into significant derivative transactions. The Group's principal financial instruments comprise loans, cash and short-term deposits. The main purpose of these financial instruments is to raise finance for the Group's operations. The Group has various other financial instruments such as trade debtors and trade creditors, which arise directly from its operations. It is, and has been throughout the period under review, the Group's policy that no trading in financial instruments shall be undertaken.

The main risks arising from the Group's financial instruments are credit risk, interest rate risk, liquidity risk and foreign currency risk. The Board reviews and agrees policies for managing each of these risks and they are summarised below.

Credit risk

The Group sells products and services to customers around the world and its customer base is extremely varied in size and industry sector. The Group operates credit control policies to assess customers' credit ratings and provides for any debt that is identified as non-collectable.

Interest rate risk

The Group's policy is to hold a mixture of fixed and floating rate debt, with a preference to floating rate when the Group's interest cover is high and leverage is low. When new debt facilities are entered into the Group assesses if this should be fixed or floating depending on the specific circumstances at the time. In addition the Group aims to achieve a spread of maturity dates in order to avoid the concentration of funding requirements at any one time. The ratio of fixed to floating rate debt and debt maturity profile is kept under review by the Group CFO in conjunction with the Board.

Liquidity risk

The Group's objective is to maintain a balance between continuity of funding and flexibility through the use of overdrafts, loans, facilities and finance leases as appropriate.

28 Derivatives and other financial instruments *continued*

Foreign currency risk

The Group has operations around the world and therefore its Consolidated Statement of Financial Position can be affected significantly by movements in the rate of exchange between sterling and various other currencies particularly the US dollar and euro. The Group seeks to mitigate the effect of this structural currency exposure by borrowing in these currencies where appropriate while maintaining a low cost of debt. In addition the Group employs Net Investment Hedge Accounting where appropriate to mitigate these exposures, with such hedges being designated in both 2019 and 2018. The gain on net investment hedges during 2019 included in the Consolidated Statement of Comprehensive income was £12.9m (2018: £7.4m loss). This is included within other reserves in the Consolidated Statement of Changes in Equity (see Note 21).

The Group also has transactional currency exposures principally as a result of trading between Group companies. Such exposures arise from sales or purchases by an operating unit in currencies other than the unit's functional currency. The Group operates a programme to manage this risk on a Group-wide net basis, through the entering into of both forward contracts and non-deliverable forward contracts with a range of bank counter-parties.

Fair values of financial assets and financial liabilities

Fair values of financial assets and liabilities at 31st December 2019 are not materially different from book values due to their size or the fact that they were at short-term rates of interest. Fair values have been assessed as follows:

- **Derivatives**
  Forward exchange contracts are marked to market by discounting the future contracted cash flows using readily available market data.
- **Interest-bearing loans and borrowings**
  Fair value is calculated based on discounted expected future principal and interest cash flows.
- **Lease liabilities**
  The fair value is estimated as the present value of future cash flows, discounted at the incremental borrowing rate for the related geographical location unless the rate implicit in the lease is readily determinable.
- **Trade and other receivables/payables**
  For receivables/payables with a remaining life of less than one year, the notional amount is deemed to reflect the fair value.

The following table compares amounts and fair values of the Group's financial assets and liabilities:

	2019 Fair value £m	2019 Carrying value £m	2018 Carrying value £m	2018 Fair value £m
Financial assets:				
Cash and cash equivalents	168.5	168.5	187.1	187.1
Trade, other receivables and contract assets	263.4	263.4	264.9	264.9
Total financial assets	431.9	431.9	452.0	452.0

	2019 Carrying value £m	2019 Fair value £m	2018 Carrying value £m	2018 Fair value £m
Financial liabilities:				
Loans	463.5	463.5	422.2	422.2
Lease liabilities	38.9	38.9	0.3	0.3
Bank overdrafts	0.2	0.2	0.4	0.4
Trade payables	57.9	57.9	57.4	57.4
Other payables and contract liabilities	46.5	46.5	46.5	46.5
Total financial liabilities	607.0	607.0	526.8	526.8

There are no other assets or liabilities measured at fair value on a recurring or non-recurring basis for which fair value is disclosed.

Derivative financial instruments are measured at fair value. Fair value of derivative financial instruments are calculated based on discounted cash flow analysis using appropriate market information for the duration of the instruments.

Notes to the Consolidated Financial Statements *continued*

28 Derivatives and other financial instruments *continued*

Financial instruments fair value disclosure

Fair value measurements are classified into three levels, depending on the degree to which the fair value is observable:

- Level 1 fair value measurements are those derived from quoted prices in active markets for identical assets and liabilities;
- Level 2 fair value measurements are those derived from other observable inputs for the asset or liability; and
- Level 3 fair value measurements are those derived from valuation techniques using inputs that are not based on observable market data.

We consider that the derivative financial instruments fall into Level 2.

Interest rate risk profile of financial liabilities

The interest rate profile of the financial liabilities of the Group as at 31st December was as follows:

2019	Total £m	Fixed rate financial liabilities £m	Floating rate financial liabilities £m	Financial liabilities on which no interest is paid £m
Euro	**485.8**	**199.6**	**253.0**	**33.2**
US dollar	**50.7**	**14.6**	**19.6**	**16.5**
Sterling	**16.2**	**2.5**	**–**	**13.7**
Renminbi	**18.6**	**1.5**	**–**	**17.1**
Other	**35.7**	**13.6**	**–**	**22.1**
Group total	**607.0**	**231.8**	**272.6**	**102.6**

2018	Total £m	Fixed rate financial liabilities £m	Floating rate financial liabilities £m	Financial liabilities on which no interest is paid £m
Euro	376.7	202.6	145.9	28.2
US dollar	81.4	–	60.9	20.5
Sterling	14.0	–	2.0	12.0
Renminbi	30.1	13.7	–	16.4
Other	24.6	0.5	0.2	23.9
Group total	526.8	216.8	209.0	101.0

Terms and debt repayment schedule

The terms and conditions of outstanding loans were as follows:

	Currency	Nominal interest rate	Year of maturity	2019 Carrying value £m	2018 Carrying value £m
Unsecured private placement - €225.0m	€	1.1%	2023	**191.0**	202.0
Unsecured bank facility – €160.0m	€	0.7%	2021	**135.7**	143.6
Unsecured bank facility – £50m revolving credit facility	€	0.5%	2021	**48.3**	–
Unsecured bank facility – £41.7m	€	0.7%	2022	**35.2**	–
Unsecured bank facility – £110m revolving credit facility	€	0.5%	2021	**33.7**	–
Unsecured bank facility – $25.8m	$	2.6%	2020	**19.6**	60.9
Unsecured bank facility	€	0.9%	2020	**0.2**	0.3
Unsecured bank facility	CNY	3.9%	2020	**–**	13.7
Unsecured bank facility	£	1.6%	2020	**–**	2.0
Finance leases	S$	2.8%	2018-2021	**–**	0.1
Unsecured bank facility	€	10.4%	2019	**–**	0.1
Lease liability	CAD	4.0%	2018-2021	**–**	0.1
Lease liability	YEN	1.4%	2023	**–**	0.1
Total outstanding loans				**463.7**	422.9

The weighted average interest rate paid during the year was 1.4% (2018: 1.5%).

28 Derivatives and other financial instruments *continued*

Interest rate risk profile of financial assets

The interest rate profile of the financial assets of the Group as at 31st December was as follows:

2019	Total £m	Fixed rate financial assets £m	Floating rate financial assets £m	Financial assets on which no interest is earned £m
Sterling	29.1	–	0.2	28.9
Euro	115.9	1.4	16.6	97.9
US dollar	98.4	0.1	16.7	81.6
Renminbi	42.0	–	11.9	30.1
Other	146.5	5.3	10.5	130.7
Group total	431.9	6.8	55.9	369.2

2018	Total £m	Fixed rate financial assets £m	Floating rate financial assets £m	Financial assets on which no interest is earned £m
Sterling	32.9	–	0.2	32.7
Euro	131.8	1.3	17.1	113.4
US dollar	100.1	8.4	5.1	86.6
Renminbi	49.5	1.1	19.2	29.2
Other	137.7	14.0	8.9	114.8
Group total	452.0	24.8	50.5	376.7

Financial assets on which no interest is earned comprise trade and other receivables and cash at bank.

Floating and fixed rate financial assets comprise cash at bank or cash placed on deposit.

Currency exposures

As explained on page 191, the Group's objectives in managing the currency exposures arising from its net investment overseas (in other words, its structural currency exposures) are to maintain a low cost of debt while partially hedging against currency depreciation. All gains and losses arising from these structural currency exposures are recognised in the Consolidated Statement of Comprehensive Income. In addition the Group employs Net Investment Hedge Accounting in order to mitigate these impacts where appropriate.

Transactional (or non-structural) exposures give rise to net currency gains and losses that are recognised in the Consolidated Income Statement. Such exposures include the monetary assets and monetary liabilities in the Consolidated Statement of Financial Position that are not denominated in the operating (or functional) currency of the operating unit involved. At 31st December 2019 the currency exposures in respect of the euro was a net monetary liability of £184.6m (2018: £191.1m net monetary liability) and in respect of the US dollar a net monetary liability of £0.2m (2018: net monetary liability £40.5m).

At 31st December 2019, the percentage of debt to net assets, excluding debt was 20% (2018: 29%) for the euro, 1% (2018: 5%) for the US dollar and nil (2018: 1%) for the Chinese renminbi.

Notes to the Consolidated Financial Statements *continued*

28 Derivatives and other financial instruments *continued*

Maturity of financial liabilities

The Group's financial liabilities at 31st December mature in the following periods:

2019	Trade, other payables and contract liabilities £m	Overdrafts £m	Short-term borrowings £m	Lease liabilities £m	Long-term borrowings £m	Total £m
In six months or less, or on demand	98.3	0.2	–	6.5	21.4	126.4
In more than six months but no more than twelve	6.0	–	–	5.7	16.0	27.7
In more than one year but no more than two	0.1	–	–	9.6	234.1	243.8
In more than two years but no more than three	–	–	–	7.0	9.0	16.0
In more than three years but no more than four	–	–	–	5.1	192.8	197.9
In more than four years but no more than five	–	–	–	2.4	–	2.4
In more than five years	–	–	–	5.7	–	5.7
Total contractual cash flows	104.4	0.2	–	42.0	473.3	619.9
Statement of Financial Position values	104.4	0.2	–	38.9	463.5	607.0

2018	Trade and other payables £m	Overdrafts £m	Short-term borrowings £m	Finance leases £m	Long-term borrowings £m	Total £m
In six months or less, or on demand	97.7	0.4	13.4	0.1	24.1	135.7
In more than six months but no more than twelve	6.1	–	2.3	0.1	22.8	31.3
In more than one year but no more than two	0.1	–	–	0.1	23.8	23.9
In more than two years but no more than three	–	–	–	–	146.1	146.1
In more than three years but no more than four	–	–	–	–	2.1	2.2
In more than four years but no more than five	–	–	–	–	204.1	204.1
In more than five years	–	–	–	–	–	–
Total contractual cash flows	103.9	0.4	15.7	0.3	423.0	543.3
Statement of Financial Position values	103.9	0.4	15.7	0.3	406.5	526.8

The Group did not employ any supply chain or similar forms of financing during 2019 or 2018.

Cash flow hedges

The Group uses forward currency contracts to manage its exposure to movements in foreign exchange rates. The forward contracts are designated as hedging instruments in a cash flow hedging relationship. At 31st December 2019 the Group had contracts outstanding to economically hedge or to purchase £30.0m (2018: £14.1m), and €11.3m (2018: €5.7m) with US dollars, £53.8m (2018: £17.8m) with euros, £12.1m (2018: £0.0m), and €8.2m (2018: €0.0m) with Chinese renminbi, £8.4m (2018: £1.9m) and €4.7m (2018: €0.4m) with Korean won, £4.2m (2018: £0.0m) with Singapore dollar, £0.0m (2018: £1.1m) with Danish krone, £0.0m (2018: £0.2m) with Canadian dollars, £0.0m, (2018: £0.5m) with Swiss franc and £0.0m (2018: £0.1m) with Japanese yen. The fair values at the end of the reporting period were an asset of £3.4m (2018: £0.1m asset). The fair value of cash flow hedges falls into the Level 2 category of the fair value hierarchy in accordance with IFRS 7.

The fair value of derivative financial instruments is estimated by discounting the future contracted cash flow using readily available market data.

28 Derivatives and other financial instruments *continued*

The contractual cash flows on forward currency contracts at the reporting date are shown below, classified by maturity. The cash flows shown are on a gross basis and are not discounted.

2019	Less than 6 months £m	6 to 12 months £m	More than 12 months £m	Total £m
Contracted cash in/(out):				
Sterling	**7.9**	**6.4**	**0.2**	**14.5**
Euro	**(1.2)**	**(1.5)**	**–**	**(2.7)**
US dollar	**(3.1)**	**(2.9)**	**–**	**(6.0)**
Korean won	**–**	**–**	**–**	**–**
Other	**(2.4)**	**–**	**–**	**(2.4)**
Total contractual cash flows	**1.2**	**2.0**	**0.2**	**3.4**

2018	Less than 6 months £m	6 to 12 months £m	More than 12 months £m	Total £m
Contracted cash in/(out):				
Sterling	23.3	12.2	–	35.5
Euro	(7.0)	(5.3)	–	(12.3)
US dollar	(13.1)	(6.1)	–	(19.2)
Korean won	(2.2)	–	–	(2.2)
Other	(1.0)	(0.8)	–	(1.8)
Total contractual cash flows	–	–	–	–

It is anticipated that the cash flows will take place at the same time as the corresponding forward contract matures. At this time the amount deferred in equity will be reclassified to profit or loss.

All forecast transactions which have been subject to hedge accounting during the year have occurred or are still expected to occur.

A profit on derivative financial instruments of £3.3m (2018: loss of £0.1m) was recognised in other comprehensive income during the period.

No amount (2018: £nil) was removed from equity during the period and included in the initial cost or other carrying amount of a non-financial asset or non-financial liability whose acquisition or incurrence was a hedged highly probable forecast transaction.

As at 31st December 2019 no ineffectiveness has been recognised in profit or loss arising from hedging foreign currency transactions.

Borrowing facilities

The Group has various borrowing facilities available to it. The undrawn committed facilities available at 31st December in respect of which all conditions precedent had been met at that date were as follows:

	2019 £m	2018 £m
Expiring in one year or less	**–**	21.5
Expiring in more than one year but no more than two years	**78.5**	17.7
Expiring in more than two years but no more than three years	**–**	160.0
Expiring in more than three years	**–**	–
Total Group undrawn committed facilities	**78.5**	199.2

At 31st December 2019, the Group had available £78.5m (2018: £160.0m) of undrawn committed borrowing facilities in respect of its £160m pound sterling revolving credit facilities, of which all conditions precedent had been met. These facilities expire on 31st December 2021.

Notes to the Consolidated Financial Statements *continued*

28 Derivatives and other financial instruments *continued*

Sensitivity analysis

In managing interest rate and currency risks, the Group aims to reduce the impact of short-term fluctuations on the Group's earnings. Over the longer term, however, permanent changes in foreign exchange and interest rates would have an impact on consolidated earnings. At the year end borrowings totalled £463.7m (2018: £422.9m). At 31st December 2019, it is estimated that a general increase of one percentage point in interest rates would decrease the Group's profit after tax and equity by approximately £2.6m (2018: £3.1m).

For the year ended 31st December 2019, it is estimated that a decrease of five percentage points in the value of sterling weighted in relation to the Group's profit and trading flows would have increased the Group's profit before tax by approximately £13.0m (2018: £11.5m). The effect can be very different between years due to the weighting of different currency movements. Forward exchange contracts have been included in this calculation.

The credit risk profile of trade receivables

The ageing of trade receivables at the reporting date was:

	Gross 2019 £m	Impairment 2019 £m	Net 2019 £m	Gross 2018 £m	Impairment 2018 £m	Net 2019 £m
Not past due date	**167.4**	**(1.6)**	**165.8**	164.6	(0.5)	164.1
0–30 days past due date	**40.6**	**(0.8)**	**39.8**	41.4	(0.1)	41.3
31–90 days past due date	**22.2**	**(0.3)**	**21.9**	23.8	(0.6)	23.2
91 days to one year past due date	**16.3**	**(3.1)**	**13.2**	15.6	(1.4)	14.2
More than one year	**9.0**	**(9.0)**	**–**	9.5	(7.2)	2.3
Group total	**255.5**	**(14.8)**	**240.7**	254.9	(9.8)	245.1

Other than those disclosed above no other impairment losses on receivables and contract assets arising from contracts with customers have been recognised. Other than trade receivables there are no financial assets that are past their due date at 31st December 2019.

Payment terms across the Group vary dependent on the geographic location of each operating company. Payment is typically due between 20 and 90 days after the invoice is issued.

All contracts with customers do not contain a significant financing component.

The movement in the allowance for impairment in respect of trade receivables during the year was as follows:

	2019 £m	2018 £m
Balance at 1st January	**9.8**	9.6
Additional impairment	**8.6**	2.8
Amounts written off as uncollectable	**(1.2)**	(0.7)
Amounts recovered	**(0.6)**	(0.5)
Impairment losses reversed	**(1.1)**	(1.4)
Exchange differences	**(0.7)**	–
Balance at 31st December	**14.8**	9.8

Company Financial Statements

In this section

Company Statement of Financial Position

at 31st December 2019

	Notes	2019 £m	2018 £m
Assets			
Non-current assets			
Property, plant and equipment	11	**6.9**	7.5
Loans to subsidiaries	3, 9	**210.1**	285.6
Investment in subsidiaries	2	**662.0**	445.8
Deferred tax assets	6	**0.7**	–
Post-retirement benefits	7	**5.6**	3.7
		885.3	742.6
Current assets			
Due from subsidiaries	9	**154.9**	135.2
Other current assets	4	**6.5**	2.9
Cash and cash equivalents		**1.4**	0.3
		162.8	138.4
Total assets		**1,048.1**	881.0
Equity and liabilities			
Current liabilities			
Trade and other payables	5	**3.6**	3.4
Current portion of long-term borrowings	10	**20.2**	41.2
Short-term borrowings		**–**	2.0
		23.8	46.6
Net current assets		**139.0**	91.8
Non-current liabilities			
Long-term borrowings	10	**190.4**	221.7
Deferred tax liabilities	6	**0.9**	0.6
Due to subsidiaries	9	**4.8**	13.3
		196.1	235.6
Total liabilities		**219.9**	282.2
Net assets		**828.2**	598.8
Equity			
Share capital	8	**19.8**	19.8
Share premium account		**81.0**	77.8
Other reserves	8	**11.8**	13.6
Retained earnings		**715.6**	487.6
Equity shareholders' funds		**828.2**	598.8
Total equity		**828.2**	598.8
Total equity and liabilities		**1,048.1**	881.0

The loss before dividends received was £12.7m (2018: £17.5m). Dividends from subsidiary undertakings of £322.0m (2018: £265.4m) are excluded from this amount.

These Financial Statements of Spirax-Sarco Engineering plc, company number 00596337 were approved by the Board of Directors and authorised for issue on 10th March 2020 and signed on its behalf by:

N.J. Anderson **K.J. Boyd** Directors

Company Statement of Changes in Equity

for the year ended 31st December 2019

	Share capital £m	Share premium account £m	Other reserves £m	Retained earnings £m	Total equity £m
Balance at 1st January 2019	**19.8**	**77.8**	**13.6**	**487.6**	**598.8**
Profit for the year	–	–	–	309.3	309.3
Other comprehensive income:					
Remeasurement loss on post-retirement benefits	–	–	–	1.9	1.9
Deferred tax on remeasurement loss on post-retirement benefits	–	–	–	(0.3)	(0.3)
Total other comprehensive income for the year	–	–	–	1.6	1.6
Total comprehensive income for the year	–	–	–	310.9	310.9
Contributions by and distributions to owners of the Company:					
Dividends paid	–	–	–	(75.9)	(75.9)
Equity settled share plans net of tax	–	–	–	(7.0)	(7.0)
Issue of share capital	–	3.2	–	–	3.2
Employee Benefit Trust shares	–	–	(4.0)	–	(4.0)
Investment in subsidiaries in relation to share options granted	–	–	2.2	–	2.2
Balance at 31st December 2019	**19.8**	**81.0**	**11.8**	**715.6**	**828.2**

For the year ended 31st December 2018

	Share capital £m	Share premium account £m	Other reserves £m	Retained earnings £m	Total equity £m
Balance at 1st January 2018	19.8	75.1	12.2	310.2	417.3
Profit for the year				247.9	247.9
Other comprehensive expense:					
Remeasurement loss on post-retirement benefits	–	–	–	(0.6)	(0.6)
Deferred tax on remeasurement loss on post-retirement benefits	–	–	–	0.1	0.1
Total other comprehensive expense for the year	–	–	–	(0.5)	(0.5)
Total comprehensive income for the year				247.4	247.4
Contributions by and distributions to owners of the Company:					
Dividends paid	–	–	–	(67.0)	(67.0)
Equity settled share plans net of tax	–	–	–	(3.0)	(3.0)
Issue of share capital	–	2.7	–	–	2.7
Employee Benefit Trust shares	–	–	(1.2)	–	(1.2)
Investment in subsidiaries in relation to share options granted	–	–	2.6	–	2.6
Balance at 31st December 2018	19.8	77.8	13.6	487.6	598.8

Other reserves represent the Company's share-based payments, capital redemption and Employee Benefit Trust reserves (see Note 8).

The Notes on pages 200 to 206 form an integral part of the Financial Statements.

Notes to the Company Financial Statements

1 Accounting policies

The separate Financial Statements of the Company are presented as required by the Companies Act 2006. The Company meets the definition of a qualifying entity under FRS 100. Accordingly the Company has adopted FRS 101 (Reduced Disclosure Framework). As permitted by FRS 101, the Company has taken advantage of the disclosure exemptions available under that standard in relation to share-based payments, financial instruments and the presentation of a Cash Flow Statement. Where relevant, equivalent disclosures have been given in the Consolidated Financial Statements.

Under section 408 of the Companies Act 2006 the Company is exempt from the requirement to present its own Income Statement. As permitted by the audit fee disclosure regulations, disclosure of non-audit fees information is not included in respect of the Company.

The Company's accounting policies are the same as those set out in Note 1 of the Consolidated Financial Statements, except as noted below.

The Directors have concluded that no critical judgements or key sources of estimation uncertainty have been made in the process of applying the Company's accounting policies.

Investments in subsidiaries are stated at cost less, where appropriate, provisions for impairment.

Loans to or from other Group undertakings and all other payables and receivables are initially recorded at fair value, which is generally the proceeds received. They are then subsequently carried at amortised cost.

2 Investments in subsidiaries

	2019 £m	2018 £m
Cost:		
At 1st January	**445.8**	269.4
Share options issued to subsidiary company employees	**2.2**	2.6
Additions	**214.0**	173.8
At 31st December	**662.0**	445.8

Investments are stated at cost less provisions for any impairment in value.

Additions in the year relate to investments in Gestra Holdings Limited £1.6m and Spirax Sarco America Investments Limited £212.4m. Spirax Sarco America Investments Limited was incorporated on 24th October 2018 with the purpose of holding Group US$ investments and loans. Gestra Holdings Limited was incorporated on 9th October 2018 with the purpose of holding other Gestra Companies.

Details relating to subsidiary undertakings are given on pages 207 to 211. Except where stated all classes of shares were 100% owned by the Group at 31st December 2019. The country of incorporation of the principal Group companies is the same as the country of operation with the exception of companies operating in the United Kingdom which are incorporated in Great Britain. All operate in steam, electrical thermal energy solutions, fluid path technologies or peristaltic pumping markets except those companies identified as a holding company on pages 207 to 211.

3 Loans to subsidiaries

	2019 £m	2018 £m
Cost:		
At 1st January	**285.6**	321.3
Advances	**1.6**	–
Interest	**–**	4.2
Repayments	**(64.5)**	(46.5)
Exchange adjustment	**(12.6)**	6.6
At 31st December	**210.1**	285.6

The terms and conditions of loans to subsidiaries at 31st December 2019 were as follows:

	Currency	Nominal interest rate	Year of maturity	2019 £m	2018 £m
Spirax-Sarco Overseas Limited	€	1.10%	2023	**190.6**	200.6
Spirax-Sarco Investments Limited	$	2.20%	2020	**–**	3.7
Spirax-Sarco America Limited	$	2.20%	2020	**19.5**	81.3
Total loans to subsidiaries				**210.1**	285.6
Due within one year				**19.5**	–
Due after more than one year				**190.6**	285.6

4 Other current assets

	2019 £m	2018 £m
Prepayments and accrued income	**6.5**	2.9
Total other current assets	**6.5**	2.9

5 Trade and other payables

	2019 £m	2018 £m
Accruals	**3.6**	3.3
Other payables	**–**	0.1
Total trade and other payables	**3.6**	3.4

Trade and other payables are due within one year.

6 Deferred tax assets and liabilities

Movement in deferred tax during the year 2019

	1st January 2019 £m	Recognised in income £m	Recognised in OCI £m	Recognised in equity £m	31st December 2019 £m
Other temporary differences (asset)	**–**	**0.7**	**–**	**–**	**0.7**
Pensions (liability)	**(0.6)**	**–**	**(0.3)**	**–**	**(0.9)**
Company total	**(0.6)**	**0.7**	**(0.3)**	**–**	**(0.2)**

Movement in deferred tax during the year 2018

	1st January 2018 £m	Recognised in income £m	Recognised in OCI £m	Recognised in equity £m	31st December 2018 £m
Other temporary differences (asset)	1.2	(1.2)	–	–	–
Pensions (liability)	(0.7)	–	0.1	–	(0.6)
Company total	0.5	(1.2)	0.1	–	(0.6)

Notes to the Company Financial Statements *continued*

7 Employee benefits

Pension plans

The Company is accounting for pension costs in accordance with International Accounting Standard 19.

The disclosures shown here are in respect of the Company's defined benefit obligations. Other plans operated by the Company were defined contribution plans.

The total expense relating to the Company's defined contribution pension plans in the current year was £0.7m (2018: £0.6m).

At 31st December 2019 the post-retirement mortality assumptions in respect of the Company Defined Benefit Scheme follows 85%/96% (male/female) of SAPS S2, CMI 2017 projections with a long term trend of 1.25% p.a. At 31st December 2018 the post-retirement mortality assumptions in respect of the Company Defined Benefit Scheme follows 85% of SAPS S2 Light base table for males and 96% of SAPS S2 base table for females with CMI Core Projection Model 2016 improvements commencing in 2007, subject to a 1.25% p.a. long-term trend. These assumptions are regularly reviewed in light of scheme-specific experience and more widely available statistics.

The financial assumptions used at 31st December were:

	Weighted-average assumptions used to define the benefit obligations	
	2019 %	2018 %
Rate of increase in salaries	2.4	2.7
Rate of increase in pensions	2.8	2.9
Rate of price inflation	2.9	3.2
Discount rate	2.1	2.7

The assumptions used by the actuary are the best estimates chosen from a range of possible actuarial assumptions, which due to the timescale covered, may not necessarily be borne out in practice.

Fair value of scheme assets:

	2019 £m	2018 £m
Equities	9.2	7.8
Bonds	47.9	46.8
Other	2.4	1.8
Total market value in aggregate	59.5	56.4

£1.5m (2018: £1.4m) of scheme assets have a quoted market price in an active market.

The actual return on plan assets was a gain of £5.5m (2018: £1.0m loss).

The amounts recognised in the Company Statement of Financial Position are determined as follows:

	2019 £m	2018 £m
Fair value of scheme's assets	59.5	56.4
Present value of funded scheme's liabilities	(53.9)	(52.7)
Retirement benefit asset recognised in the Statement of Financial Position	5.6	3.7
Related deferred tax	(0.9)	(0.6)
Net pension asset	4.7	3.1

7 Employee benefits *continued*

The movements in the Defined Benefit Obligation (DBO) recognised in the Statement of Financial Position during the year were:

	2019 £m	2018 £m
Defined benefit obligation at beginning of year	(52.7)	(55.7)
Current service cost	–	(0.1)
Interest cost	(1.4)	(1.3)
Contributions from members	–	–
Remeasurement (loss)/gain	(2.2)	2.1
Actual benefit payments	2.4	2.6
Experience loss	–	(0.3)
Defined benefit obligation at end of year	(53.9)	(52.7)

The movements in the fair value of plan assets during the year were:

	2019 £m	2018 £m
Value of assets at beginning of year	56.4	60.0
Expected return on assets	1.4	1.4
Remeasurement gain/(loss)	4.1	(2.4)
Contributions paid by employer	–	–
Contributions from members	–	–
Actual benefit payments	(2.4)	(2.6)
Value of assets at end of year	59.5	56.4

The estimated employer contributions to be made in 2020 are £nil.

The history of experience adjustments is as follows:

	2019 £m	2018 £m	2017 £m	2016 £m	2015 £m
Defined benefit obligation at end of year	(53.9)	(52.7)	(55.7)	(54.1)	(48.1)
Fair value of scheme's assets	59.5	56.4	60.0	58.8	51.7
Retirement benefit recognised in the Statement of Financial Position	5.6	3.7	4.3	4.7	3.6
Experience adjustment on scheme's liabilities	–	(0.3)	(1.2)	0.5	1.0
As a percentage of scheme's liabilities	0.0%	0.1%	2.2%	0.9%	2.0%
Experience adjustment on scheme's assets	4.1	(2.4)	2.2	7.6	(1.2)
As a percentage of scheme's assets	6.9%	4.3%	3.7%	13.0%	2.3%

The expense recognised in the Company Income Statement was as follows:

	2019 £m	2018 £m
Current service cost	–	(0.1)
Net interest on scheme's assets and liabilities	–	0.1
Total expense recognised in Income Statement	–	–

Notes to the Company Financial Statements *continued*

7 Employee benefits *continued*

Statement of Comprehensive Income (OCI)

	2019 £m	2018 £m
Remeasurement effects recognised in OCI:		
Due to experience on DBO	–	(0.3)
Due to demographic assumption changes in DBO	**0.5**	0.4
Due to financial assumption changes in DBO	**(2.7)**	1.7
Return on assets	**4.1**	(2.4)
Total remeasurement loss recognised in OCI	**1.9**	(0.6)
Deferred tax on remeasurement amount recognised in OCI	**(0.3)**	0.1
Cumulative loss recognised in OCI at beginning of year	**(11.7)**	(11.2)
Cumulative loss recognised in OCI at end of year	**(10.1)**	(11.7)

Sensitivity analysis

The effect on the defined benefit obligation at 31st December 2019 of an increase or decrease in key assumptions is as follows:

Increase/(decrease) in pension defined benefit obligation	£m
Discount rate assumption being 1.00% higher	**(5.9)**
Discount rate assumption being 1.00% lower	**7.0**
Inflation assumption being 0.25% higher	**1.0**
Inflation assumption being 0.25% lower	**(1.1)**
Mortality assumption life expectancy at age 65 being one year higher	**2.6**

Share-based payments

Disclosures of the share-based payments offered to employees of the Company are set out below. The description and operation of each scheme is the same as outlined in the Group disclosure.

Share Option Scheme

As at 31st December 2019 the number of shares outstanding were nil, due to performance conditions in respect of all exercisable shares being met. No options have been granted since 2011.

Performance Share Plan

The relevant disclosures in respect of the Performance Share Plan grants are set out below.

	2015 Grant	2016 Grant	2017 Grant	2018 Grant	2019 Grant
Grant date	11th June	5th April	26th May	4th April	**15th May**
Mid market share price at grant date	3,460.0p	3,550.0p	5,256.0p	5,560.0p	**8,161.0p**
Number of employees	15	13	12	12	**12**
Shares under scheme	70,290	69,890	62,356	60,899	**60,626**
Vesting period	3 years	3 years	3 years	3 years	**3 years**
Probability of vesting	71.5%	70.8%	73.1%	73.5%	**74.1%**
Fair value	2,473.9p	2,513.4p	3,842.1p	4,084.4p	**6,048.9p**

8 Called up share capital and reserves

	2019 £m	2018 £m
Ordinary shares of 26 $^{12}/_{13}$p (2018: 26 $^{12}/_{13}$p) each		
Authorised 111,428,571 (2018: 111,428,571)	**30.0**	30.0
Allotted, called up and fully paid 73,736,888 (2018: 73,666,646)	**19.8**	19.8

71,698 shares with a nominal value of £19,303 were issued in connection with the Group's Employee Share Schemes for a consideration of £3.2m received by the Company.

In 2019 the Parent Company purchased 111,195 shares representing 0.15% of called up share capital with a nominal value of £29,937 for a consideration of £9,071,496. The shares were placed in an Employee Benefit Trust (EBT) to be used in connection with the Group's Employee Share Scheme.

At 31st December 2019 79,489 shares were held in an Employee Benefit Trust and available for use in connection with the Group's Employee Share Schemes.

12 senior employees of the Company have been granted options on Ordinary shares under the Share Option Scheme and Performance Share Plan (details in Note 7).

Other reserves in the Company Statement of Changes in Equity on page 199 are made up as follows:

	1st January 2019 £m	Change in year £m	31st December 2019 £m
Share-based payments reserve	**14.3**	**2.2**	**16.5**
Capital redemption reserve	**1.8**	**–**	**1.8**
Employee Benefit Trust reserve	**(2.5)**	**(4.0)**	**(6.5)**
Total other reserves	**13.6**	**(1.8)**	**11.8**

Share-based payments reserve
This reserve records the Company's share based payment charge that is recognised in reserves.

Capital redemption reserve
This reserve records the historical repurchase of the Company's own shares.

Employee Benefit Trust reserve
The Company has an Employee Benefit Trust which is used to purchase, hold and issue shares in connection with the Group's employee share schemes. The shares held in Trust are recorded in this separate reserve.

9 Related party transactions

	2019 £m	2018 £m
Dividends received from subsidiaries	**322.0**	265.4
Loans due from subsidiaries at 31st December	**210.1**	285.6
Amounts due from subsidiaries at 31st December	**154.9**	135.2
Amounts due to subsidiaries at 31st December	**4.8**	13.3

10 Financial instruments
The terms and conditions of outstanding loans at 31st December 2019 are as follows:

	Currency	Nominal interest rate	Year of maturity	Carrying value £m
Unsecured private placement – €225.0m	€	1.1%	2023	**191.0**
Unsecured bank facility – $25.8m	$	2.2%	2020	**19.6**
Total outstanding loans				**210.6**
Current portion of long-term borrowings due before 31st December 2020				**20.2**
Long-term borrowings payable after 31st December 2020				**190.4**
Total outstanding loans				**210.6**

Notes to the Company Financial Statements
continued

11 Other information

Dividends
Dividends paid by the Company are disclosed in Note 11 of the Consolidated Financial Statements.

Property, plant and equipment
The Company holds freehold property with a cost of £9.3m (2018: £9.3m), accumulated depreciation of £2.4m (2018: £1.8m) and a net book value of £6.9m (2018: £7.5m).

Employees
The total number of employees of the Company at 31st December 2019 was 99 (2018: 85).

Directors' remuneration
The remuneration of the Directors of the Company is shown in the Annual Report on Remuneration 2019 on pages 107 to 132.

Auditor's remuneration
Auditor's remuneration in respect of the Company's annual audit has been disclosed on a consolidated basis in the Company's Consolidated Financial Statements as required by Section 494(4)(a) of the Companies Act 2006.

Contingent liabilities and capital commitments
The Company has no contingent liabilities or capital commitments at 31st December 2019 (2018: £nil).

Our global operations

Steam Specialties

EMEA

Country/Territory	Company Name	Registered Office address
Belgium	Spirax Sarco NV	Industrielaan 5, B-9052 Zwijnaarde, Belgium
Czech Republic	Spirax Sarco spol sro	Prazska 1455, 102 00 Praha, Hostivar, Czech Republic
Egypt	Spirax Sarco Egypt	19 Farid Street, Heliopolis, Cairo, Egypt
	Spirax Sarco Energy Solutions LLC (H)	19 Farid Street, Heliopolis, Cairo, Egypt
Finland	Spirax Oy	Niittytie 25 A 24, 01300 Vantaa, Finland
France	Spirax Sarco SAS	8 Avenue le Verrier, 78190 Trappes, France
	Spirax-Sarco France HoldCo SAS (H)	23 Route de Château-Thierry, 02200 Noyant-et-Aconin, Soissons, France
Germany	Spirax Sarco GmbH Regelapparate	Reichenaustr. 210, 78467 Konstanz, Germany
	Spirax-Sarco Germany Holdings GmbH (H)	Reichenaustr. 210, 78467, Konstanz, Germany
	Gestra AG	Muenchener Str. 77, 28215, Bremen, Germany
	Gestra HoldCo GmbH (H)	Muenchener Str. 77, 28215, Bremen, Germany
Hungary	Spirax-Sarco Kft	1103 Budapest Koér utca 2/A, Hungary
Ireland	Spirax-Sarco (Americas) Financing Unlimited (H)	Unit 1013, Gateway Business Park, New Mallow Road, Cork, T23 WK35, Ireland
	Spirax-Sarco (EMEA) Financing Unlimited (H)	Unit 1013, Gateway Business Park, New Mallow Road, Cork, T23 WK35, Ireland
Italy	Spirax Sarco Srl	Via Per Cinisello 18, 20834 Nova Milanese, Italy
	Colima Srl	Via Mestre 11, 20063 Cernusco Sul Naviglio, Milano, Italy
	Italgestra Srl	Via Per Cinisello 18, 20834 Nova Milanese, Italy
Kenya	Spirax Sarco East Africa Ltd	Clifton Park, Mombasa Road, Nairobi, Kenya
Morocco	Spirax Sarco Maghreb	Secteur 3, Lot 146, Rue Arfoud, Bureaux 5 et 6, commerce 2-12000 Temara, Morocco
Netherlands	Spirax-Sarco Netherlands BV	Industrieweg 130A, 3044 AT, Rotterdam, Netherlands
	Spirax-Sarco Engineering BV (H)	Industrieweg 130A, 3044 AT, Rotterdam, Netherlands
	Spirax-Sarco Investments BV (H)	Industrieweg 130A, 3044 AT, Rotterdam, Netherlands
	Spirax-Sarco Netherlands Holdings Coöperative WA (H)	Sluisstraat 7, 7491 GA Delden, Delden, Netherlands
Norway	Spirax Sarco AS	Vestvollveien 14A, N-2019 Skedsmokorset, Norway
Poland	Spirax Sarco Sp Zoo	Jutrzenki 98, 02-230, Warszawa, Poland
	Gestra Polonia Sp Zoo	ul Schuberta 104, PL 80-172, Gdansk, Poland
Portugal	Spirax Sarco Equipamentos Ind Lda	Rua Quinta do Pinheiro, No 8 & 8A, 2794-058 Carnaxide, Portugal
	Gestra Portugal, Lda	Avenida Dr Antunes Guimaraes, Numero 1159, Porto 4100-082, Portugal
Romania	Spirax-Sarco SRL	2-4 Traian Street, Cluj-Napoca Municipality, Cluj County, Romania
Russia	Spirax-Sarco Engineering LLC*	198188, Russian Federation, St. Petersburg, Vozrozhdeniya Street, The House 20a, lit.A. Russian Federation
South Africa	Spirax Sarco Investments (Pty) Ltd (H)	Corner Brine Avenue and Horn Street, Chloorkop Ext 23, Gauteng 1624, South Africa
	Spirax Sarco South Africa (Pty) Ltd	Corner Brine Avenue and Horn Street, Chloorkop Ext 23, Gauteng 1624, South Africa
Spain	Spirax-Sarco SAU	C/ Sant Josep, 130 08980 Sant Feliu de Llobregat, Barcelona, Spain
	Especialidades Hydra SLU	C/ Sant Josep, 130 08980 Sant Feliu de Llobregat, Barcelona, Spain
	Spirax-Sarco Engineering SLU (H)	C/ Sant Josep, 130 08980 Sant Feliu de Llobregat, Barcelona, Spain
	Gestra Espanloa SA	Calle Luis Cabrera 86-88, 28002, Madrid, Spain
Sweden	Spirax Sarco AB	Telefonvägen 30, SE-126 37 Hagersten, Sweden
Switzerland	Spirax Sarco AG	Gustav-Maurer-Strasse 9, 8702 Zollikon, Switzerland
Turkey	Spirax Sarco Valf Sanayi ve Ticaret A.Ş.	Serifali Mevkii, Edep Sok No 27, 34775 Yukari Dudullu - Ümraniye, Istanbul, Turkey
United Arab Emirates	Spirax-Sarco Engineering Middle East (FZC)	Saif Desk Q1-05-005/A, PO Box 514361, Sharjah, United Arab Emirates
United Kingdom	Spirax-Sarco Ltd*	Charlton House, Cirencester Road, Cheltenham, Gloucestershire, GL53 8ER, United Kingdom
	V.C.E. Ltd	Block 2, Unit 5 Threave Court, Castlehill Industrial Estate, Carluke, ML8 5UF
	Spirax-Sarco America Ltd (H)	Charlton House, Cirencester Road, Cheltenham, Gloucestershire, GL53 8ER, United Kingdom
	Spirax-Sarco America Investments Ltd* (H)	Charlton House, Cirencester Road, Cheltenham, Gloucestershire, GL53 8ER, United Kingdom
	Spirax-Sarco Investments Ltd* (H)	Charlton House, Cirencester Road, Cheltenham, Gloucestershire, GL53 8ER, United Kingdom
	Spirax-Sarco Overseas Ltd* (H)	Charlton House, Cirencester Road, Cheltenham, Gloucestershire, GL53 8ER, United Kingdom
	Gestra Holdings Ltd* (H)	Charlton House, Cirencester Road, Cheltenham, Gloucestershire, GL53 8ER, United Kingdom
	Gestra UK Ltd	Charlton House, Cirencester Road, Cheltenham, Gloucestershire, GL53 8ER, United Kingdom

Our global operations *continued*

Steam Specialties continued

Asia Pacific

Country/Territory	Company Name	Registered Office address
Australia	Spirax Sarco Pty Ltd	14 Forge St., Blacktown, NSW 2148, Australia
China	Spirax-Sarco Engineering (China) Ltd	No 800 XinJun Ring Road, Pujiang Hi Tech Park, Shanghai, China
	Spirax Sarco Trading (Shanghai) Co Ltd	No 800 XinJun Ring Road, Pujiang Hi Tech Park, Shanghai, China
	Gestra (Shanghai) Fluid Control Technology Co Ltd	Room 333 3rd Floor of 4th Area Building 1, No.2001 North Yanggao Road China (Shanghai) Free Trade Pilot Zone, Shanghai, China
Hong Kong	Spirax Sarco Hong Kong Co Ltd	Unit 1507, 15th Floor, Prosperity Center, 25 Chin Yip Street, Kwun Tong, Kowloon, Hong Kong
India	Spirax-Sarco India Private Ltd	Plot No. 6, Central Avenue, Mahindra World City, Chengalpattu Taluk, Kancheepuram District 603004, India
Indonesia	PT Spirax Sarco Indonesia	Kawasan Infinia Park Blok C99, Jl. Dr Sahardjo No. 45, Manggarai Tebet, Jakarta Selatan 12850, Indonesia
Malaysia	Spirax Sarco Sdn Bhd	No 10, Temasya 18, Jalan Pelukis U1/46A, 40150 Shah Alam, Selangor, Malaysia
	Spirax Sarco Investment Limited (H)	6th Floor, Akademi Etiqa, No23 Jalan Melaka, 50100 Kuala Lumpur, Malaysia
Myanmar	Spirax Sarco Ltd	No. 1206, 12th Floor, Sakura Tower, 339 Bogyoke Aung San Road, Kyauktada Township, Yangon, Myanmar
New Zealand	Spirax Sarco Ltd	6 Nandina Avenue, East Tamaki, Auckland 2013, New Zealand
Philippines	Spirax-Sarco Philippines Inc	2308 Natividad Building, Chino Roces Avenue Extension, Makati City, Philippines
Singapore	Spirax Sarco Pte Ltd	21 Changi South Avenue 2, #01-01 Singapore 486630, Singapore
	Gestra Singapore Pte Ltd	21 Changi South Avenue 2, #01-01 Singapore 486630, Singapore
South Korea	Spirax Sarco Korea Ltd	Steam People House, 99 Sadangro 30gil, Dongjak-gu, Seoul, Republic of Korea
Taiwan	Spirax Sarco Co Ltd	6F-3, No. 12, Lane 270, Sec. 3, Pei Shen Road, Shen Keng District, New Taipei City 22205, Taiwan
Thailand	Spirax Sarco (Thailand) Ltd	38 Krungthepkreeta Road, Khlong Song Ton Nun, Lat Krabang, Bangkok 10520, Thailand
Vietnam	Spirax Sarco Vietnam Co Ltd	4th Floor, 180 Nguyen Van Troi Street, Ward 8, Phu Nhuan District, Ho Chi Minh City, Vietnam

Americas

Country/Territory	Company Name	Registered Office address
Argentina	Spirax Sarco SA	Av. del Libertador 498, 12th Floor, Buenos Aires C1001ABR, Argentina
Brazil	Spirax Sarco Ind e Com Ltda	Avenida Manoel Lages do Chão, 268, Bairro Portão, Cotia, São Paulo, 06705-050, Brazil
	Spirax-Sarco Servicos de Engenharia Ltda	Avenida Manoel Lages do Chão, 268, Bairro Portão, Cotia, São Paulo, 06705-050, Brazil
	Hiter Controls Engenharia Ltda	Av. Jerome Case, No 2600, Hangers B19, B20 and B21, Éden, Sorocaba, São Paulo, 18087 220, Brazil
Canada	Spirax Sarco Canada Ltd	383 Applewood Crescent, Concord, ON L4K 4J3, Canada
Chile	Spirax-Sarco Chile Ltda	Las Garzas 930, Galpón E, Quilicura, Santiago de Chile, Chile
	Inversiones Spirax-Sarco Chile Ltda (H)	Las Garzas 930, Galpón D, Quilicura, Santiago de Chile, Chile
Colombia	Spirax Sarco Colombia SAS	Carretera Panamericana No 3-150, Jamundi, Valle del Cauca, Cali, Colombia
Mexico	Spirax Sarco Mexicana, SAPI DE CV	Boulevard Alianza 30B, Parque Industrial CPA, Ciénega de Flores Nuevo León, CP 65550, Mexico
Peru	Spirax Sarco Peru SAC	Av. Guillermo Dansey 2124, Lima, Lima, Perú
United States	Spirax Sarco Inc	1150 Northpoint Blvd., Blythewood, SC 29016, United States
	Sarco International Corp (H)	2711 Centerville Road, Suite 400, Wilmington, DE 19808, United States
	Spirax Sarco Investments, Inc (H)	251 Little Falls Drive, Wilmington, DE 19808-1674, United States
	Gestra USA, Inc	1150 Northpoint Blvd., Blythewood, SC 29016, United States

Electric Thermal Solutions

Country/Territory	Company Name	Registered Office address
Brazil	Chromalox Engenharia Ltda	Avenida Manoel Lages do Chão, 268, Bairro Portão, Cotia, São Paulo, 06705-050, Brazil
Canada	Canadian Heat Acquisition Corp (H)	7051 68th Ave NW, Edmonton, Alberta, T6B 3E3, Canada
	ProTrace Engineering, Inc	Suite 205, 6204-6A Street SE, Calgary, Alberta, T2H 2B7, Canada
China	Chromalox Precision Heat Control (Shanghai) Co Ltd	88 Taigu Road, Suite A2, 4th Floor - Fenggu Building, Shanghai, 200131, China
	Chromalox Precision Heat Control (Suzhou) Co Ltd	T02, No 1801, Pangjin Road, Pangjin Industrial Park, Wujiang, Suzhou, 215200, China
	Thermocoax (Chengdu) Co Ltd	No.11 Fujiang Road, Shuangliu Park, Jiaelong Industry Port, Chengdu, Sichuan, China
France	Etirex SAS	23 Route de Chauteau Thierry, Noyant-et-Aconin, Soissons, Cedex, F-02203, France
	Thermocoax Developpement SAS	40 Boulevard Henri Sellier, 92150 Suresnes, France
	Thermocoax SAS	Usine de Planquivon, Athis-de-l'Orne, 61430 Athis-Val de Rouvre, France
Germany	Thermocoax Isopad GmbH	Englerstraße 11, 69126 Heidelberg, Germany
Hong Kong	Chromalox Hong Kong Holdings Ltd (H)	33/F, Shui On Centre, Nos 6-8 Harbour Road, Wanchai, Hong Kong
India	Chromalox India Precision Heat & Control Private Limited	1st Floor, 6 Unicom House, A-3 Commercial Complex, New Delhi, Janakpuri, 110058, India
Mexico	ELW Industrial S. de R. L. de C.V.	Carretera Nacional, K.M. 8.5, Modulo Industrial de America, Lote #5, Nuevo Laredo, Tamaulipas, 88277, Mexico
Singapore	Chromalox Precision Heat and Control (Singapore) Pte Ltd	No 11 Woodlands Close, #05-34, Singapore, 737854, Singapore
Thailand	Chromalox (Asia Pacific) Ltd	383/2, The Village Business Centre, Unit D16-A, Moo 12, Sukhumvit Road, Nongprue, Banglamung, Chon Buri, 20151, Thailand
United Arab Emirates	Chromalox Gulf DWC, LLC	PO Box 390012, Office No: E-2-0226, Business Park, Dubai Aviation City, United Arab Emirates
United Kingdom	Chromalox (UK) Ltd	AMP House, 2nd Floor, Dingwall Road, Croydon, Surrey, CR0 2LX, United Kingdom
	Thermocoax UK Ltd	Tower House, Lucy Tower Street, Lincoln, LN1 1XW, United Kingdom
United States	Chromalox, Inc.	2711 Centerville Rd., Suite 400, Wilmington, DE 19808, United States
	Heat Acquisition Corp (H)	2711 Centerville Rd., Suite 400, Wilmington, DE 19808, United States
	Thermocoax, Inc	Corporation Trust Center, 1209 Orange Street, City of Wilmington, County of New Castle, Delaware, United States

Our global operations *continued*

Watson-Marlow Fluid Technology Group

Country/Territory	Company Name	Registered Office address
Australia	Watson-Marlow Pty Ltd	Unit 15, 19-26 Durian Place, Wetherill Park, NSW 2164, Australia
Austria	Watson-Marlow Austria GmbH	Rathaus Viertel 3/1 OG/TOP 311, Guntramsdorf A 2353, Wien, Austria
Belgium	Watson-Marlow NV	Industriepark 5, B-9052 Zwijnaarde, Belgium
Brazil	Watson-Marlow Bredel Ind e Com de Bombas Ltda	Alameda Oceania, 63, Polo Empresarial Tamboré, Santana de Parnaiba, São Paulo, CEP 06543-308, Brazil
Canada	Watson-Marlow Canada Inc	383 Applewood Crescent, Concord, ON L4K 4J3, Canada
Chile	Watson-Marlow Bombas Chile Ltda	Las Garzas 930, Galpón E, Quilicura, Santiago de Chile, Chile
Colombia	Watson-Marlow Colombia SAS	Carretera Panamericana No 3-150, Jamundi, Valle del Cauca, Cali, Colombia
Denmark	Watson-Marlow Flexicon A/S	Frejasvej 2, 4100 Ringsted, Denmark
France	Watson-Marlow SAS	9 Route De Galluis, Zi Les Croix, 78940 La Queue Lez Yvelines, France
Germany	Watson-Marlow GmbH	Kurt-Alder-Str. 1, 41569 Rommerskirchen, Germany
	Qonqave GmbH	Stadtplatz 11-13, 73249 Wernau Neckar, Germany
Hungary	Watson-Marlow Kft	2/A Koer utca, Budapest 1103, Hungary
India	Watson-Marlow India Private Ltd	S No 81/7, Opp JSPM College, Pune-Mumbai Bypass Road, Tathawade, Pune, Maharashtra, 411 033, India
Ireland	Watson-Marlow Ltd	Unit 1013, Gateway Business Park, New Mallow Rd., Cork, Ireland
Italy	Watson-Marlow Srl	Via Padana Superiore 74/D, 25080 Mazzano, Brescia, Italy
Japan	Watson-Marlow Co Ltd	4-23-21 Ukima Kita-ku, Tokyo 115-0051, Japan
Malaysia	Watson-Marlow SDN BHD	6th Floor, Akademi Etiqa No. 23 Jalan Melaka, 50100 Kuala Lumpur W.P., Malaysia
Mexico	Watson-Marlow S de RL de CV	Boulevard Alianza 30B, Parque Industrial CPA, Ciénega de Flores Nuevo León, CP 65550, Mexico
Netherlands	Watson-Marlow BV	Oslo 9, 2993LD Barendrecht, Netherlands
	Watson-Marlow Bredel BV	Sluisstraat 7, 7491 GA, Delden, Netherlands
	Watson-Marlow Bredel Holdings BV (H)	Industrieweg 130A, 3044 AT, Rotterdam, Netherlands
	Watson-Marlow Bredel Holdings II BV (H)	Sluisstraat 7, 7491 GA, Delden, Netherlands
New Zealand	Watson-Marlow Ltd	Unit F, 6 Polaris Place, East Tamaki, Auckland 2013, New Zealand
Philippines	Watson-Marlow Inc	10th Floor EGI Rufino Plaza, Sen. Gil Puyat Avenue, Corner Taft Avenue, Barangay, 38 Pasay City, Fourth District, Philippines
Poland	Watson-Marlow Sp Zoo	Ul. Fosa 25, 02-768 Warszawa, Poland
Russia	Watson-Marlow LLC*	Room 19, Premises I, Shosse Entuziastov, 34, Moscow, 105118, Russian Federation
Singapore	Watson-Marlow Pte Ltd	421 Tagore Industrial Avenue, #01-13, Singapore 787805, Singapore
South Africa	Watson-Marlow Bredel SA (Pty) Ltd	Unit 6 Cradleview Industrial Park, Cnr Beyers Naude Drive & Johan Street, Laser Park, South Africa
Sweden	W-M Alitea AB	Hammarby Fabriksväg 29-31, SE-120 30 Stockholm, Sweden
Spain	Watson-Marlow SLU	Tuset, 20 3 - 08006, Barcelona, Spain
Taiwan	Watson-Marlow Co Ltd	No.9 Lane 270 Sec. Beishen Road, Shenkeng District, New Taipei City 222, Taiwan
United Arab Emirates	Watson Marlow FZCO	Office Number FZJOA2005, Jafza One, Jebel Ali Free Zone, Dubai, United Arab Emirates
United Kingdom	Aflex Hose Ltd	Spring Bank Industrial Estate, Watson Mill Lane, Sowerby Bridge, HX6 3BW, United Kingdom
	BioPure Technology Ltd	Bickland Water Road, Falmouth, Cornwall, TR11 4RU, United Kingdom
	Watson-Marlow Ltd*	Bickland Water Road, Falmouth, Cornwall, TR11 4RU, United Kingdom
United States	Aflex Hose USA LLC	32 Appletree Lane, Pipersville, PA 18947, United States
	ASEPCO	1161 Cadillac Ct, Milpitas, CA 95035, United States
	Watson Marlow Inc	37 Upton Technology Park, Wilmington, MA 01887, United States
	Watson-Marlow Flow Smart Inc	1675 South State St., Suite B, Dover, DE 19901 United States

Dormant companies

Country/Territory	Company Name	Registered Office address
Canada	Canadian Heat Holding Corp	6600-100 King Street W., 1 First Canadian Place, Toronto, Ontario, M5X 1B6, Canada
France	Heat Holding France SAS	23 Route de Château-Thierry, 02200 Noyant-et-Aconin, Soissons, France
United Kingdom	Gervase Instruments Ltd*	Charlton House, Cirencester Road, Cheltenham, Gloucestershire, GL53 8ER, United Kingdom
	Heat Holding (UK) Limited	AMP House, 2nd Floor, Dingwall Road, Croydon, Surrey, CR0 2LX, United Kingdom
	SARCO Ltd*	Charlton House, Cirencester Road, Cheltenham, Gloucestershire, GL53 8ER, United Kingdom
	Sarco Thermostats Ltd	Charlton House, Cirencester Road, Cheltenham, Gloucestershire, GL53 8ER, United Kingdom
	Spirax Manufacturing Co Ltd	Charlton House, Cirencester Road, Cheltenham, Gloucestershire, GL53 8ER, United Kingdom
	Spirax-Sarco Europe Ltd*	Charlton House, Cirencester Road, Cheltenham, Gloucestershire, GL53 8ER, United Kingdom
	Spirax-Sarco International Ltd*	Charlton House, Cirencester Road, Cheltenham, Gloucestershire, GL53 8ER, United Kingdom
United States	Electronic Control Systems, Inc.	103 Gamma Drive, Pittsburgh, PA 15238, United States
	Heat Asset Acquisition Corp.	2711 Centerville Rd., Suite 400, Wilmington, DE19808, United States
	Mexican Heat Holding Corp.	c/o RA PO Box 20380, Carson City, Nevada, 89706, United States
	Mexican Heat Holding, LLC	160 Greentree Dr., Suite 101, Dover, Delaware, 19904, United States
	Ogden Manufacturing Co.	2711 Centerville Rd., Suite 400, Wilmington, DE19808, United States

The global operations listed on pages 207 to 211 are registered companies.

In addition to these operations we have a number of other operating units, including an Associate company; a company that is part owned with a third-party trust; branches of Spirax Sarco steam or Watson-Marlow companies; and several Watson-Marlow businesses that operate via Spirax Sarco steam business companies.

Notes

1. All subsidiaries in the tables on pages 207 to 211 are indirect subsidiaries of Spirax-Sarco Engineering plc, unless indicated*. All subsidiaries listed are 100% owned by the Group, except as follows:

Company	% owned by the Group
Spirax Sarco Egypt	98.867%
Spirax Sarco Energy Solutions LLC, Egypt	98.992%
Spirax Sarco Korea Ltd	97.5%
Spirax-Sarco Philippines Inc	99.998%
Spirax Sarco Services South Africa (Pty) Ltd	48.51%. (51.49% is owned by a third-party trust, The Tomorrow Trust). The Group has control of the company and exposure, or rights, to variable returns from its investment in the investee.
Spirax Sarco (Thailand) Ltd	99.995%

2. In addition to the subsidiaries in the tables on pages 207 to 211, we have the following operations:

Steam Specialties (Spirax Sarco):

Country	Operating as a branch of
Cambodia	Spirax Sarco Pte Ltd, Singapore
Denmark	Spirax-Sarco Limited, UK
Ghana	Spirax-Sarco Limited, UK
Ireland	Spirax-Sarco Limited, UK
Japan	Spirax-Sarco Limited, UK
Sri Lanka	Spirax-Sarco India Private Ltd, India
United Arab Emirates	Spirax-Sarco Limited, UK

Watson-Marlow Fluid Technology Group:

Country	Operating as a branch of
Switzerland	Watson-Marlow Limited, UK

	Operating via
Argentina	Spirax Sarco SA, Argentina
China	Spirax-Sarco Engineering (China) Ltd
South Korea	Spirax Sarco Korea Ltd
Indonesia	PT Spirax-Sarco Indonesia
Thailand	Spirax Sarco (Thailand) Ltd
Vietnam	Spirax Sarco Vietnam Co Ltd

This complete list of our global operations, including subsidiaries, forms part of the audited Financial Statements. For more information see Note 2 in the Company Financial Statements.

3. UK registered subsidiaries exempt from audit:

Gestra UK Ltd (company no. 10639879), Spirax-Sarco America Ltd (company no. 07829847), Spirax-Sarco Investments Ltd (company no. 00100995), Spirax-Sarco Overseas Ltd (company no. 01472201), V.C.E Ltd (company no. SC126116), Gestra Holdings Ltd (company no. 11612492), Spirax-Sarco America Investments Ltd (company no. 11639451) and Heat Holding (UK) Limited (company no. 04325456) qualify to take the statutory audit exemption as set out within section 479A of the Companies Act 2006 for the period ended 31st December 2019. Spirax-Sarco Engineering plc will guarantee the debts and liabilities of the companies claiming the statutory audit exemption at the balance sheet date in accordance with section 479C of the Companies Act 2006.

Key
* Direct subsidiary owned by Spirax-Sarco Engineering plc
(H) Holding company

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Solicitors

Baker & McKenzie LLP

Important dates

Annual General Meeting	13th May 2020

Final dividend**

Ordinary shares quoted ex-dividend	23rd April 2020
Record date for final dividend	24th April 2020
Final dividend payable	22nd May 2020

** Subject to shareholder approval at the AGM.

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