

# Surface Solutions Segment

**Order intake** amounted to CHF 1 233 million

**Sales** came in at CHF 1 229 million

Normalized<sup>1</sup>:

**EBITDA margin** stood at 21.6 %

Actual:

**EBITDA margin** stood at 21.4 %

<sup>1</sup> Excluding global footprint optimization.

**Maintained strong profitability** year-on-year and sequentially, with an EBITDA margin of over 20 % for five consecutive quarters.

**Oerlikon Metco successfully integrated** and a string of value-adding milestones such as joint products, services and competence centers with Oerlikon Balzers were achieved for customers.

**Dedicated Additive Manufacturing business unit** created to develop the business, product portfolio, R&D and partnerships in this fast emerging market.

**Acquired the business of Laser Cladding Services LLC** to extend the existing service offering in laser cladding and gain access to further key customers in the U.S. energy sector.

**Course set to become a global powerhouse in surface solutions and advanced materials**, expanding the targeted market size by 20 % to CHF 11 billion.

Launched **next-generation innovations for wear protection of tools**: BALINIT ALTENSA (coating for high-speed gear cutting) and INNOVENTA mega (PVD system with extremely high throughputs).

## Key figures

| in CHF million                    | 2015         | 2014       | Δ%           |
|-----------------------------------|--------------|------------|--------------|
| Order intake                      | 1 233        | 965        | 27.8%        |
| Order backlog                     | 81           | 79         | 2.5%         |
| <b>Sales (third parties)</b>      | <b>1 229</b> | <b>973</b> | <b>26.3%</b> |
| <b>EBITDA</b>                     | <b>264</b>   | <b>183</b> | <b>44.3%</b> |
| – as % of sales                   | 21.4%        | 18.8%      | –            |
| <b>EBIT</b>                       | <b>157</b>   | <b>98</b>  | <b>60.2%</b> |
| – as % of sales                   | 12.7%        | 10.0%      | –            |
| Research and development expenses | 70           | 56         | 25.0%        |

## Best-in-Class

Sandvik Machining Solutions: 16.1 % operating profit margin (2015).

## Profile

The Surface Solutions Segment, with its brands Oerlikon Balzers and Oerlikon Metco, is a global technology leader with over 80 years of developing engineered surface solutions for components and tools used in multiple industrial applications where superior surface mechanisms are required.

The addition of Metco in 2014 brought highly complementary technologies, competencies and addressable markets while expanding the technology and services portfolio of the Segment. The successful integration of Oerlikon Metco into the Segment has given the Segment a strong foundation upon which Oerlikon plans to build a global surface solutions and advanced materials powerhouse through internal investment and a "string of pearls" acquisition strategy in adjacent technologies. Implementation of that strategy is reflected in the recent acquisition of the business of Laser Cladding Services LLC, which extends the Segment's existing service offering in laser cladding and opens up its access to key customers in the US energy sector.

Oerlikon Balzers is a technology leader in its market, supplying service-driven physical vapor deposition (PVD) coatings and other surface technologies for precision components, metalworking and plastics processing tools. The environmentally friendly coatings of Oerlikon Balzers are extraordinarily thin, extremely hard and help to significantly reduce friction and wear. Oerlikon Metco's strengths lie in increasing production efficiency and reliability. With a strategic emphasis on serving customers in close proximity, the Segment operates one of the most extensive global networks, consisting of over 145 service and production centers among some 149 sites, spread across 37 countries and supported by over 6 100 employees.

## Markets

The combination of Oerlikon Balzers and Oerlikon Metco expanded the Surface Solutions Segment's targeted market to some CHF 9 billion. With its new strategic imperative, the Segment is looking to add new technologies such as additive manufacturing, thereby expanding its targeted market by 20 % to CHF 11 billion. The Segment continues to address key sectors such as aviation, power generation, automotive, oil & gas, tools and metal and plastics processing in key global markets. While the underlying dynamics within each of its sectors are attractive, they have varying market cycles and short-term headwinds, with oil and gas hit especially hard over the past year. In terms of sales in 2015, the automotive sector, and the tools and components for general industry were the highest revenue generators. The Segment anticipates stronger growth in aviation and power generation, and eventually also in the oil & gas sector. Cutting across all these sectors, there is a clear need for greater productivity, energy efficiency, environmentally friendly surface solutions and also products with multi-functional properties and extended lifetimes.

## Business performance

The Segment achieved strong growth in 2015. Order intake totaled CHF 1 233 million. Sales increased 26.3 % to CHF 1 229 million. EBITDA went up to CHF 264 million, corresponding to

an EBITDA margin of 21.4 %. The EBITDA margin was sustained over 20 % for 5 consecutive quarters through year-end 2015. EBIT totaled CHF 157 million, or 12.7 % of sales.

## Key developments

Oerlikon Balzers reached a breakthrough with its BALIQ family of coatings, which combines arc and sputtering technologies to produce wear-resistant, extremely smooth and dense coatings. It also introduced INNOVENTA mega, a new PVD coating equipment which achieves extremely high throughputs, and BALINIT ALTENSA, the high-speed coating solution for productive gear cutting. In the medical sector, working on a joint project with Stryker, the Oerlikon Balzers team created a silver-containing antimicrobial PVD coating that provides better protection for medical components and instruments. In aviation, a test is underway with a client on coatings to protect airplane engine compressor blades from erosion and thereby maintain the efficiency of the system and reduce service frequency.

Oerlikon Metco introduced important products in 2015 such as the new SinplexPro™ spray gun that yields significantly higher throughput and reduces coating processing time and costs thanks to its very stable plasma. It also launched new materials for Environmental Barrier Coatings (EBC) to provide turbine engines with protection against vapor and other environmental impacts. Additionally, Oerlikon Metco is currently developing a new release of its RotaPlasma®, a unique rotating plasma spray gun manipulator that greatly enhances the capabilities and efficiency in coating cylinder bore surfaces in aluminum and cast iron engine blocks. It also brought to the market its woven carbon friction material with high-end friction and wear performance for synchronizer applications in the heavy duty truck market.

The merging of Oerlikon Balzers and Oerlikon Metco's thin-film business and competencies resulted in new capabilities and product offerings such as the new BALINIT CROMA coatings and the low-temperature plasma nitriding process for stainless steel.

In 2015, the Segment extended its expertise into the adjacent market of additive manufacturing. This is a new area of focus for the Segment because of its potential in materials development and manufacturing, especially in combination with its core competencies. Successful inroads include the launch of a first set of specialized alloy materials for additive manufacturing, strengthening partnerships with leading academic institutions, as well as setting up an Additive Manufacturing Center of Competence in Westbury, New York, USA to support R&D activities. To further tap the promising opportunities and develop the business in this market, a new Additive Manufacturing business unit has been formed.

As part of Oerlikon's Group-wide operational excellence program, the Segment further improved cost controls and production capacity, for instance through optimized powder melting procedures, as it continues to roll-out and implement measures at various sites.

# Manmade Fibers Segment

**Order intake** amounted to CHF 733 million

**Sales** came in at CHF 794 million

Normalized<sup>1</sup>:

**EBITDA margin** stood at 16.1 %

Actual:

**EBITDA margin** stood at 10.6 %

<sup>1</sup> Excluding restructuring costs.

**Joint venture with China's Huitong Chemical** created the only company that can offer a single-source solution, from continuous polycondensation to finished end products in chemical fiber spinning or PET bottle-grade material.

Following its debut early in the year, **RoTac<sup>3</sup>**, an innovative carpet yarn finishing component that is energy efficient, eco-friendly and improves the uniformity and quality of the yarn, has seen **substantial uptake by customers**.

Oerlikon Barmag marked a milestone when it delivered its **10 000th energy and cost-saving DTY** (Draw Textured Yarn) **machine** to a single customer, Century Synthetic Fiber in Vietnam.

During the world's largest textile exhibition, the ITMA 2015 in Milan, **orders exceeding CHF 50 million** were secured for Oerlikon Neumag's staple fiber plant engineering technologies.

**Increased service revenues** by taking a stronger customer-centric service partnership approach by both brands, Oerlikon Barmag and Oerlikon Neumag.

A new service center in **Dalton, Georgia, USA** and a new technology center in **Chemnitz, Germany**, were opened. Began construction of a new customer service center in **Vadodara, India**.

## Key figures

| in CHF million                    | 2015       | 2014         | Δ%            |
|-----------------------------------|------------|--------------|---------------|
| Order intake                      | 733        | 901          | -18.6%        |
| Order backlog                     | 237        | 365          | -35.1%        |
| <b>Sales (third parties)</b>      | <b>794</b> | <b>1 073</b> | <b>-26.0%</b> |
| <b>EBITDA</b>                     | <b>85</b>  | <b>217</b>   | <b>-60.8%</b> |
| - as % of sales                   | 10.6%      | 20.3%        | -             |
| <b>EBIT</b>                       | <b>67</b>  | <b>197</b>   | <b>-66.0%</b> |
| - as % of sales                   | 8.4%       | 18.4%        | -             |
| Research and development expenses | 24         | 33           | -27.2%        |

## Best-in-Class

Oerlikon Manmade Fibers Segment: 8.4 % EBIT margin (2015); followed by Andritz AG: 5.6 % EBIT margin (Q1 to Q3 2015).

## Profile

The Manmade Fibers Segment, with its brands Oerlikon Barmag and Oerlikon Neumag, is a world market leader for solutions used in the manufacturing of manmade fibers. In 2015, it employed more than 2 500 employees at 13 sites worldwide. Synthetic textile fibers are processed into functional clothing, carpets and furnishings, and increasingly also into technical textiles for airbags and safety belts, as well as into geotextiles for road construction and other industrial applications. The Segment offers end-to-end systems, covering every step in the entire process of manmade fiber production, from melt to yarn. Oerlikon Barmag specializes in large-scale filament spinning and texturing systems for the manufacture and processing of polyester, polyamide and polypropylene. Oerlikon Neumag's core competencies are high-tech production systems for the manufacturing of bulked continuous filament (BCF) carpet yarns, synthetic staple fibers and nonwoven fabrics.

## Markets

Oerlikon Barmag's key regional market over the past years has been China, where the Segment generates over 60 % of its sales. India is gaining importance for this competence brand, in which it sees high growth potential. Additionally, the Middle East is an up-and-coming market with attractive opportunities for Oerlikon Barmag's technologies. Oerlikon Neumag focuses primarily on the markets in the USA and Turkey, serving major carpet yarn manufacturers. Out of the world's 25 largest manmade fiber producers, which cumulatively account for more than 60 % of the annual production of filaments and fibers, 22 are customers of the Manmade Fibers Segment.

The global manmade fibers market went into an artificially created trough that resulted from a generally weak global economy and substantial overcapacity in China. The redefinition by China's government of the country's 13th Five Year Plan (2016–2020) exerted additional pressure on the investments in this market. These challenges are expected to remain over the next few years and weigh on growth prospects. The size of the targeted market for the Manmade Fibers Segment was valued at around CHF 1.6 billion in 2015 and is expected to decline over the next two years and recover in 2018.

In the medium-term, the apparel market, supported by the fundamental demand for clothing from a growing global population and the burgeoning demand for more eco-friendly and hard-wearing yarns, is expected to return to growth. The increasing application of technical textiles, geotextiles and carpet yarn (BCF) will also provide attractive opportunities for the Segment. For example, nonwoven technologies are progressively being used in water and air filtration and for energy-efficient and resource-effective production solutions such as recycling technologies.

## Business performance

As a result of weak global economic conditions and overcapacity in China, the Manmade Fibers Segment reported sales of CHF 794 million. Order intake declined by 18.6 % to

CHF 733 million (2014: CHF 901 million). A decisive plan of action is being executed to leverage the Segment's strengths while accounting for the challenging near-term market realities and positioning the business to benefit and prosper when the cycle turns. To that end, a provision of CHF 43 million was recognized in 2015 for a reorganization of the Segment. EBITDA, including restructuring costs, for 2015 stood at CHF 85 million, or 10.6 % of Segment sales. EBIT totaled CHF 67 million and the margin was 8.4 %.

## Key developments

In 2015, the Segment introduced a new version of the Plant Operation Center (POC), a complete software solution that manages the entire spinning and texturing production process, fully in line with Industry 4.0. In addition to RoTac<sup>3</sup>, the eco-friendly and energy efficient component for yarn tangling, the Segment launched EvoTape, which enables greater process stability in efficient tape extrusion for the production of carpets, agricultural textiles and geotextiles. The newest additions to the successful WINGS line of products (Winding INtegrated Godet Solution) were also brought to market in 2015. WINGS FDY PLUS, for fully drawn yarn, provides the highest yarn quality, a larger operation window and higher package weights. The WINGS POY XS-Series, for partially oriented yarn, offers various types for the modernization and upgrade of conventional spinning plants. With an extremely compact design, it can be used for nearly every building concept.

Through the joint venture with Huitong Chemical Engineering, the Segment reinforced its offering and expertise in polycondensation. The joint venture is today the only company in the position to offer customers a complete solution and an entirely integrated process – from raw materials all the way through to the textured yarn or the production of PET bottle-grade polyester.

In 2015, the Segment enhanced the value and quality of services to customers by extending its global footprint. A new technology center was opened in Chemnitz, Germany. In the United States, the Segment celebrated its 50-year anniversary of operations and opened a new service and repair center in Dalton, Georgia, USA. In India, where the Segment plans to ramp up its operations, the construction of a new site in Vadodara has begun.

Operational excellence initiatives were further carried out in 2015. In China, the Segment saw productivity increases in the production and service sites of Beijing, Suzhou, Wuxi and Tongxiang. The "After Sales Growth" initiative aims to strengthen and grow customer services by helping workshops improve their performance, meet quality assurance goals and also make working conditions safer for employees. One enhancement that resulted from the program is an improved grease distribution run for galettes overseen by the Suzhou repair teams, which led to meaningful time savings.

# Drive Systems Segment

**Order intake** amounted to CHF 571 million

**Sales** came in at CHF 648 million

Normalized<sup>1</sup>:

**EBITDA margin** stood at 7.5 %

Actual:

**EBITDA margin** stood at -3.0 %

<sup>1</sup> Excluding restructuring costs.

The **new Torque Hub for self-propelled agricultural sprayers** offers a unique design solution and leading technology. Its brake design improves vehicle safety, reliability and efficiency.

A **new PTU** for next generation clutch transmissions of **Mercedes AMG** models was developed. The PTU supports auto-makers' moves to on-demand all-wheel drive on four-wheel drive platforms.

A **joint research project** with the Surface Solutions Segment was started to develop new friction materials and leverage Oerlikon Metco's expertise in surface solutions and its global scope.

The Segment was **chosen by ANFIA as one of the significant automotive OEM suppliers** to participate in the IATF meeting to determine certification for the new ISO/TS 16949 Vision 2016 standard.

**A third plant in India**, located in Sanand, was inaugurated for the Segment to better serve the construction, transportation, industrial and agricultural markets.

**New robotized cells** at the Segment's Rivoli Plant in Italy were installed to improve efficiency. Benefits include higher throughput, broader product line capability and lower set-up and other costs.

## Key figures

| in CHF million                    | 2015        | 2014       | Δ%            |
|-----------------------------------|-------------|------------|---------------|
| Order intake                      | 571         | 781        | -26.9%        |
| Order backlog                     | 113         | 199        | -43.2%        |
| <b>Sales (third parties)</b>      | <b>648</b>  | <b>779</b> | <b>-16.8%</b> |
| <b>EBITDA</b>                     | <b>-19</b>  | <b>82</b>  | <b>n/a</b>    |
| - as % of sales                   | -3.0%       | 10.5%      | -             |
| <b>EBIT</b>                       | <b>-534</b> | <b>41</b>  | <b>n/a</b>    |
| - as % of sales                   | -82.3%      | 5.3%       | -             |
| Research and development expenses | 10          | 14         | -28.6%        |

## Best-in-Class

BorgWarner: 11.7 % operating income margin (2015).

## Profile

The Drive Systems Segment, with its brands Oerlikon Graziano and Oerlikon Fairfield, is a leading provider of gears, planetary drives, shifting solutions, power transfer units (PTUs) and differentials as well as e-drives and hybrids. With over 90 years of experience, one of the Segment's core competencies is its in-house engineering and manufacturing expertise in developing innovative solutions for the propulsion or rotation of mobile vehicles or industrial equipment. The Segment's technologies help improve the safety and efficiency of customers' products, and also reduce production and maintenance costs. The Segment's high-tech products can be found in operating machinery and equipment used in agriculture, construction, energy, mining, transportation and high-performance sports cars. Examples include tractors, trucks, on-/off-highway vehicles such as city buses and airport towing tractors, power plants, oil and gas platforms and underground mining machines. The Segment's innovations for electric and hybrid vehicles are targeted at reducing emissions and pollution, while meeting vehicle performance and engine efficiency targets.

The Drive Systems Segment is channeling its efforts and resources to focus on key accounts and a streamlined portfolio of high-value products and extend the range of its applications into adjacent industries. It is also adopting a focused factory approach, with defined lead factories for each global product line, in order to intensify expertise, process efficiency and economies of scale and scope.

## Markets

The Drive Systems Segment provides its high-tech products to the agricultural, construction, energy, mining, transportation and automotive markets. With approximately 70 % of all agricultural machinery manufactured worldwide containing shifting solutions, the agricultural industry is and remains the most important market for the Segment, followed by the construction industry. The Segment counts among its customers well-known brands that manufacture machinery for those industries. In the high-performance automotive sector, complete systems from the Drive Systems Segment are used in premium sports car brands, as well as in electric and hybrid vehicles.

The Segment has a targeted market size of around CHF 15 billion in 2015, with the main geographic markets being Europe, the Middle East, Africa and Russia (EMEAR), the Americas, India and China. During the reporting year, four of the Segment's key markets, namely mining, oil & gas, agriculture and construction, faced severe headwinds caused by a substantial fall in commodity prices, with an attendant negative effect on the BRIC nations, which have driven world growth and market demand for more than a decade. The long-term drivers, including a growing world population, rising middle class, urbanization and increased mobility, will inherently support the recovery and growth of these markets. The Segment's redefined focus will serve to help the Segment meet these short to medium-term market challenges while optimizing its position to even more effectively meet customers' needs and seize new opportunities as they emerge.

## Business performance

Due to the difficult market conditions, the Drive Systems Segment posted lower sales amounting to CHF 648 million and order intake declined to CHF 571 million. Decisive actions are underway to reorganize the Segment's operations and drive innovation to achieve new goals. These include investments in cutting-edge manufacturing technology and automation. They also entail streamlining initiatives ranging from reducing product count to carefully resizing the global workforce. As a result of these actions, an expense of CHF 68 million was recognized in 2015 for the reorganization of the Segment. Additionally, impairment charges of goodwill and fixed assets of CHF 476 million was accounted for in 2015 due to the current and expected medium-term weakness in four of the Segment's six markets.

The Segment's EBITDA for 2015, including restructuring costs, was minus CHF 19 million, or minus 3.0 % of Segment sales. Including costs for restructuring and goodwill impairment, EBIT totaled minus CHF 534 million, yielding an EBIT margin of minus 82.3 %. Normalized, excluding these one-off charges, Segment EBITDA for 2015 was CHF 49 million, or 7.5 % of sales, and EBIT was CHF 10 million, or 1.6 % of sales.

## Key developments

One of the four strategic pillars in the strategy of the Drive Systems Segment is to expand the applications of its key products into adjacent markets and industries. The new Torque Hub for sprayer tractors is an important example of the Segment's innovations in this area as it successfully applied its expertise in engineered drive products for OEMs to create planetary drives for the off-highway equipment market. Another example is the Segment's success in expanding its core technology in bevel gear sets, among the most technically demanding gear configurations, into new markets and applications including differentials for commercial and all-terrain vehicles and electric cars, from its traditional agricultural and automotive applications. New orders in 2015 included a long-term agreement to supply gearing components and drive solutions to the agriculture and construction sectors in Latin America, Europe and India, as well as to supply planetary drives for compact tractor loaders for the off-highway market.

In addition to expanding its footprint in Latin America with distributors and in India with its third plant in Sanand, the Segment is extending its deep expertise into the area of service by establishing an aftermarket and service organization to support customers in the areas of R&D, testing, prototyping and aftermarket development. Increasing automation is another strategic pillar for the Segment. A new Mercedes assembly line in the Luserna Plant in Italy is a synchronized and balanced one-piece flow and u-shaped line designed on lean manufacturing principles and has resulted in a 25 % improvement in productivity. As a testament to the Segment's high regard and standing among customers, the Segment continued to win awards in 2015 from Club Car, one of the world largest manufacturers of golf cart and utility vehicles, John Deere, Mahindra and JCB, the largest agricultural and construction equipment manufacturers in the world.