

Essentials

Company portrait
Burckhardt Compression

Key facts on fiscal
year 2021



Burckhardt Compression is the worldwide market leader for reciprocating compressor systems and the only manufacturer and service provider that covers a full range of reciprocating compressor technologies and services. Its customized and standard compressor systems are used in the gas gathering and processing, gas transport and storage, refinery, chemical, petrochemical, industrial gas and hydrogen mobility and energy markets. Since 1844, its highly skilled workforce has crafted superior solutions and set the benchmark in the gas compression industry.

Cover:
LNG Tanker Flex Rainbow
Photo of Benjamin Seeger,
Field Service Coordinator, on
his way to his next job site.

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EDITORIAL



Fabrice Billard
CEO Burckhardt Compression

Dear readers,

We are passionate about helping our customers worldwide with our full range of products and services throughout the entire life cycle of their systems. This is the basis of our success, and it has made us the global market leader for reciprocating compression solutions. We can look back on a successful fiscal year 2021. The current year also gives us reason to be confident, and we are well on track to reach our medium-term target for 2022.

However, our achievements do not mean we can sit back and relax. The markets are changing continuously and ever more rapidly. We aim to maintain and further expand our strong market position by shaping the energy transition with our customers. Sustainable energy and natural gas applications already account for about half of our Group-wide sales, and we will continue to increase this share in a targeted manner in the years ahead.

A handwritten signature in black ink, appearing to read 'F. Billard', with a horizontal line above the first few letters.

Fabrice Billard
CEO

Tradition and innovation

The history of our company began 178 years ago. Since then, we constantly evolved to serve our customers with optimal gas compression solutions and services. That is why our customers trust us.

VISION

We are our customers' first choice for reciprocating compression solutions across the entire product life cycle.

MISSION

Systems Division: We provide optimum reciprocating compression solutions for every customer.

Services Division: We love to provide services that matter. Hands-on.

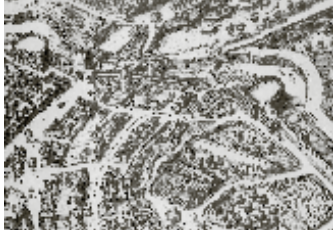
GUIDING PRINCIPLES

We are convinced that our well-established corporate culture forms the foundation of our competitiveness. The reputation that Burckhardt Compression enjoys and the mutual trust that exists within the Group depend mainly on the integrity and conduct of each and every employee. A comprehensive values program called "Values and Behaviors" ensures that employees in all Group's locations and companies share and actively uphold the same corporate values and principles.

From engineering workshop to global market leader

1844

Franz Burckhardt opens engineering workshop in Basel

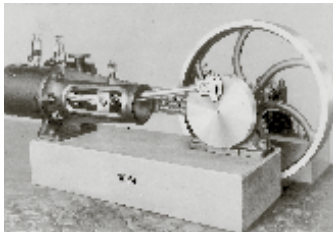


1856

Production of steam-powered machines

1883

Development and sale of the first single-stage, dry-running reciprocating compressor



1890

August Burckhardt founds the Burckhardt Maschinenfabrik

1913

Delivery of first compressor for ammonia synthesis to BASF Ludwigshafen, Germany

1920

Start of fertilizer production using ammonia synthesis compressors

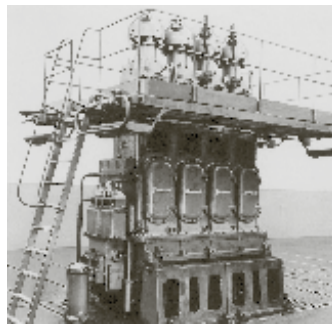


1935

Development and sale of the first labyrinth piston compressor (Laby) for oxygen compression in steel production

1951

Manufacture of LDPE thermoplastic using hyper compressors



1969

Acquisition by Sulzer

1971

Transport and storage of natural gas with process gas compressors

1982

Consolidation of Sulzer's activities in the field of reciprocating compressors to form Maschinenfabrik Sulzer-Burckhardt AG

1999

Consolidation of Basel and Winterthur sites at the Winterthur site

2002

Five members of the management board buy out the business together with a financial investor. Name changed to Burckhardt Compression

2006

Stock exchange listing on the SIX Swiss Exchange (IPO), valor BHCN

2013

Laby®-GI compressors were used on LNG tankers

2015/19

Acquisition of Arkos Field Services, US, in two stages. Access to a qualified workforce and service centers across the US



2016

New company structure with two divisions, Systems and Services

2016/20

Acquisition of Shenyang Yuanda Compressors, the leading Chinese manufacturer of reciprocating compressor systems, in two stages. Proximity to local market, expansion of the product portfolio and direct access to an established, local supply chain



2020

Acquisition of the compressor business of The Japan Steel Works JSW to strengthen position in the global market and particularly in Japan

2021

Acquisition of Mark van Schaick

2021

Launch of high pressure non-lubricated compressor for H₂ mobility and energy

Company history

Compressor development

Active integration of strategy and sustainability

Our strategy builds on an integrated business model and is supported by long-term energy trends and digitalization.



UP! Remote Support, the first service of its kind, supports customers on site in real time with a HoloLens or a tablet. Our experts guide the on-site technician with precise instructions through each individual work step, diagnose problems, and propose solutions.

OUR STRATEGY

Developing leading positions in demanding applications with the Systems Division. Offering a full range of services to support customers globally during the whole product life-cycle.

ENABLING THE ENERGY TRANSITION

Burckhardt Compression supports the transformation of the global energy mix towards natural gas as an interim solution and renewables with its numerous applications and innovations. Solutions and services for sustainable energy and natural gas applications already account for about half of Group sales. Hydrogen for applications in the mobility and energy sectors are strongly growing.

RISING WORLD POPULATION

The growing world population means that demand in our main areas of application is increasing.

- Industrial gases: for fertilizers, medical use, food and beverage packaging.
- Natural gas: as an energy source for mobility, heating, cooking and power generation.
- Petrochemical and chemical products: demand continues to rise worldwide, driven by the growth in global GDP and the sharp increase in demand for solar panels.

CUSTOMER-ORIENTED DIGITALIZATION

Burckhardt Compression has strongly advanced the development of digital products for its customers under the name UP! Solutions. They are driven forward, for example, through a Remote Support service. The collection and evaluation of data on oscillation, vibration and temperature, combined with our expertise, leads to increased efficiency and availability of the compressors. Any anomalies are calculated down to fractions of a second and operators are informed immediately. Comparison of our data with other similar compressors enables us to predict any service work that may be required.



LIFE CYCLE OF A TYPICAL PROJECT

Duration	1-3 years	10-22 months	1-12 months	1-2 months	2 years (avg)	40 years (avg)
Phase	Evaluation and start of construction	Engineering and manufacturing of compressor system	Compressor installation	Compressor start-up	Warranty period	Post-warranty
Decision Maker	End customer/ EPC/Licensor	End customer/ EPC			End customer	
Project Progression	Decision to build plant and purchase order	Compressor shipped & transfer of ownership		Product acceptance		Repair & maintenance; structural machine build
Division in Charge	Systems Division				Services Division	

- Systems Division
- Services Division

1885

BASF is one of our longest-standing customers. As early as 1885, Burckhardt Compression supplied one of the first reciprocating compressors to Ludwigs-hafen. And we are proud that the company is still an important customer today.

INTEGRATED BUSINESS MODEL

Most compressors function as critical components of a larger system with an average life span of 40 years or more, so it is vital to have the support of a long-term oriented organization that offers expertise in all aspects with highly trained employees. The key to ensuring the sustainability of our solutions and success on the market is a profound knowledge of the requirements of numerous application areas, and technical expertise in the systems and individual components. Burckhardt Compression's two divisions, Systems and Services, cooperate with each other closely and between them cover the entire life cycle of reciprocating compressor systems. Customers are supported throughout the whole life of their systems by a wide range of products and services, from project definition, project execution, system installation and commissioning, ongoing service and spare parts through to the complete overhaul of their system or even its conversion for a new purpose.

The graphic above shows the entire life cycle of a compressor project and displays the interaction between the two divisions.

RESILIENCE

Burckhardt Compression's business model, based on two strong divisions, proved its worth in the exceptional situation caused by the pandemic and contributed to the firm's stability. The company's deliberate decision to diversify geographically in recent years has also proved correct. Since the Systems Division has production facilities on different continents, the impact of local lockdowns on logistical supply chains and production itself could be mitigated. The Services Division also benefited from a broad geographical presence and the expansion of its global marine business. The effects of travel restrictions remained within bounds thanks to the global network of Service Centers that has been built up and continuously expanded in recent years.

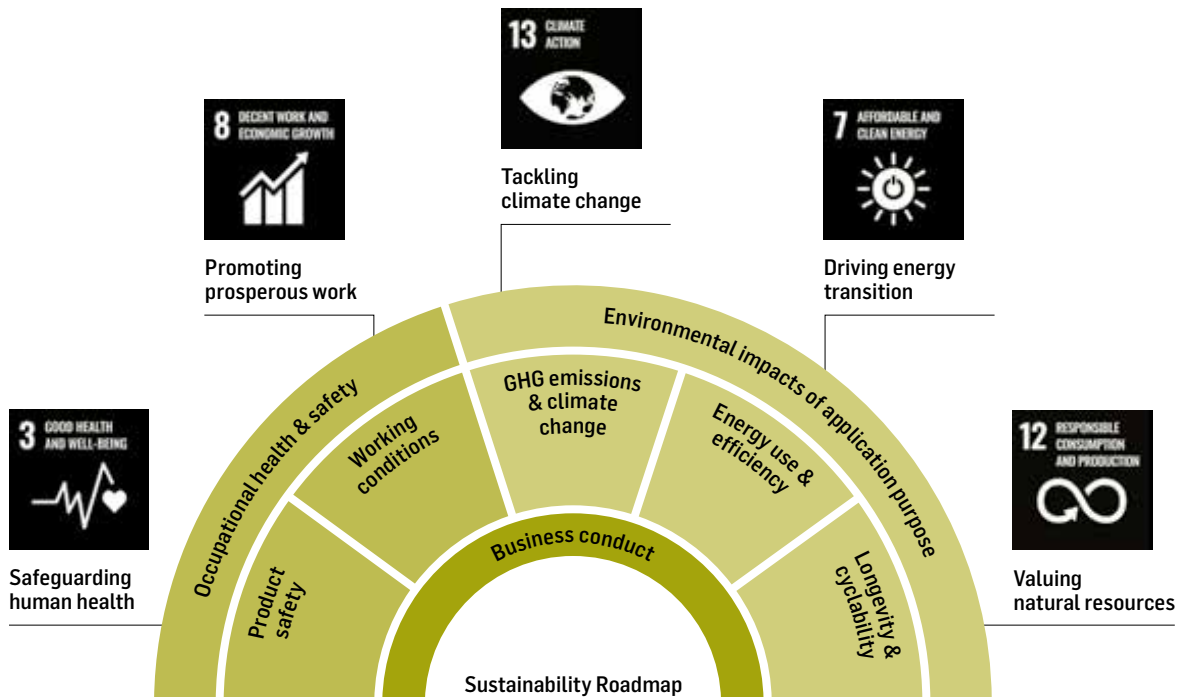
We approach sustainability with a clear mindset: pragmatic, focused on the long-term, creating value and impact driven.

SUSTAINABILITY

For Burckhardt Compression, sustainability means creating long-term values for society, the environment and the economy. Our sustainability roadmap follows an impact-driven approach, is focused on material topics and has a firmly anchored governance. We have a long track record of implementing high standards in terms of working conditions, employment relations, environmental management, health and safety at work and in providing durable and repairable products. This is a comprehensive commitment that we continue to expand.

Our compressors are used mostly in upscaled industrial and energy supply processes. With our technology and engineering expertise, we help our customers reduce energy consumption, greenhouse gas emissions and resource use. That is why we work closely with our customers and develop robust solutions to tackle their challenges.

Strategic sustainability framework



Innovating to tackle the energy transition

Compressors have been instrumental in important developmental advances in the industry. At Burckhardt Compression, we believe that technology and innovation are crucial to meet the sustainability challenge.

Since we were established more than 178 years ago, we have set new benchmarks and pushed boundaries to find solutions for both today and tomorrow. We are currently focusing our minds and developing new technologies for LNG transport as well as hydrogen mobility and energy.



Online AR
[report.burckhardtcompression.com/
energy-transition](https://report.burckhardtcompression.com/energy-transition)



Bridging technology paving the way to sustainable shipping

Burckhardt Compression's Laby®-GI fuel gas compressors play a crucial role in the current transition of the shipping industry. The compressors enable liquefied natural gas (LNG) to be used as a fuel instead of the more carbon-intensive and sulfur-rich heavy fuel oil. This provides a short and medium-term interim fuel to meet the more stringent international environmental requirements until zero-emission solutions are developed. Greenhouse gas emissions are reduced by up to 25% compared with heavy fuel oil, thanks to use of gas as a fuel and modern ship design.



Our Laby®-GI Compressor is the world's only completely oil-free and leakage-free high-pressure reciprocating compressor for the use of gas as a fuel in the shipping industry.

However, for LNG to serve as an interim form of fuel in shipping, efficient and in particular leakage-free use is crucial. All Laby®-GI compressors are gas-tight, thus preventing gas emissions into the atmosphere. We are also the only manufacturer capable of compressing gas to 300 bar by means of a large ring-seal compressor system without cylinder lubrication. Oil-free compression of the gas renders oil separation and filtration of the gas superfluous and saves up to 1'200 liters of lubricant per year.

EXAMPLE CONTRIBUTIONS TO THE SUSTAINABLE DEVELOPMENT GOALS SDGs



SDG 13
Reduction of greenhouse gas emissions through the non-leaking use of LNG as a fuel in shipping instead of heavy fuel oil.



SDG 12
Responsible use of resources through operation without cylinder lubricants.



- 1'200 l

Oil-free compression of the gas renders oil separation and filtration of the gas superfluous and saves up to 1'200 liters of lubricant per year.



Another step toward efficient use of hydrogen in the energy transition

Successful energy transition depends on a wide range of technologies for the production and storage of renewable energy. Hydrogen has the potential in this context to be an essential stepping stone in the energy transition in specific fields of application, such as heavy-duty transport, and as a complement to existing technology, such as battery-powered electromobility. The use of hydrogen is not new to Burckhardt Compression; we have decades of experience in the compression of this gas. However, in order to be used on a broad and efficient scale as part of the energy transition, new requirements for the compression of this gas must be met.

We are working intensively on the further development of our compressor solutions and in this fiscal year we were able to launch an oil-free compressor with a discharge pressure of 550 bar and high capacity. The large high-pressure reciprocating compressors have been specifically developed for use in a variety of hydrogen applications and are particularly suitable for hydrogen trailer filling and hydrogen fuel stations with high capacity. These compressor solutions have been designed for mass flows in excess of 150 kg/h and help to reduce the number of compressors required.

With our new seals for oil-free high-pressure reciprocating compressors, we are able to support the forthcoming volume upscaling in the various hydrogen applications in a cost-efficient way.

550 bar

In this fiscal year we were able to launch an oil-free compressor with a discharge pressure of 550 bar and high mass flows.

EXAMPLE CONTRIBUTIONS TO THE SUSTAINABLE DEVELOPMENT GOALS SDGs



SDG 13/SDG 7
Development and promotion of technologies for the energy transition.

A wide range of applications

Burckhardt Compression offers a comprehensive portfolio of compressor solutions for a wide range of applications. Our compressor systems are used along the entire value chain, from production and transport to processing into innumerable end products.



50%

Sustainable energy and natural gas applications already account for about 50% of our overall turnover.

Most gases are valuable if they can be transported, stored or used in a chemical reaction. Compressors are needed for all these processes.

GAS PRODUCTION AND PROCESSING

The production of marketable and transportable natural gas starts with the pre-processing of the gas at the extraction site. High-speed compressors remove condensates, acid gas, mercury or water from the gas. This typically produces carbon dioxide and hydrogen sulfide, which are removed from the process by means of reciprocating compressors through injection

into high-pressure disposal wells. Burckhardt Compression offers not only these onshore, but also offshore solutions for various gas production and processing applications.

GAS TRANSPORT AND STORAGE

Typical gases for this application area are LNG (liquefied natural gas), LPG (liquefied petroleum gas) and CNG (compressed natural gas). The process chain that Burckhardt Compression supports with its compressors and services includes liquefaction, transfer to ships, handling of the boil-off gas (BOG) during transport, unloading of the ships and storage until re-gasification



H₂

The demand for hydrogen for mobility and energy applications will grow rapidly and opens up highly attractive prospects.

and injection into the consumer network. Burckhardt Compression provides unique solutions for the compression and reliquefaction of BOG as well as fuel gas injection in two- or four-stroke marine diesel engines. Burckhardt Compression's compressors are the only ones without gas losses (so-called "methane slippages") and therefore comply with the highest emission regulations. In addition, Burckhardt Compression offers solutions for the production or storage of natural gas and other hydrocarbons in onshore or offshore installations.

REFINERY

Refineries convert crude oil through appropriate distillation and chemical reactions into commercial products from which a variety of fuels, lubricants and feedstocks for other downstream processes are obtained. Burckhardt Compression supplies compressors for the various hydrogen applications (hydrotreating, isomerization, hydrocracking, reforming) in these processes.

PETROCHEMICAL/CHEMICAL INDUSTRY

The wide range of petrochemical and chemical products such as polyolefins (polymers), coatings, rubber, adhesives and dyes, solvents, paints, artificial fertilizers, detergents or textiles is based on the processing of natural gas and oil. Burckhardt Compression is the leading reciprocating compressor provider for these applications and one of the few suppliers of compressors for the production of EVA/LDPE for solar panels. Chemical recycling, which uses reciprocating compressors to break down petrochemical products down to the original gas, is an application that will become more important in the future as it can save resources.

HYDROGEN MOBILITY AND ENERGY

Hydrogen is a beacon of hope for the energy and transportation industry and a driver for the urgently needed CO₂ reduction. Burckhardt Compression offers unique solutions for hydrogen production and compression, high mass flow hydrogen refueling stations, trailer filling, power-to-gas, storage and pipeline injection.

INDUSTRIAL GAS

The applications of industrial gases are broad and include metal processing and metallurgy, chemical industry, power engineering, food industry, glass, pulp and paper production, electronics, construction, rubber and plastics processing, and the medical sector. Industrial gases such as argon, helium, carbon dioxide, carbon monoxide, oxygen, nitrogen and hydrogen are produced in air separation or hydrogen generation plants. Burckhardt Compression is now playing a leading role in solutions for the production of polysilicon, which is used in solar panels.

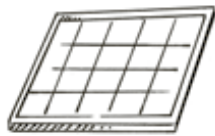


Our company



Our compressors are used by a broad range of customers ...

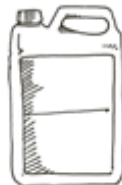
... to produce essential products for the world



Solar panels



Automotive parts



Lubricant oil



Cosmetics



Electrical power



O₂ bottles
(pharma, industry)



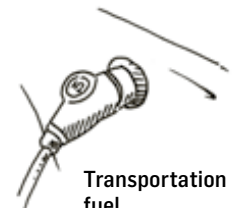
Industrial plastic



Pharmaceuticals



Gas bottles for domestic
consumption (heat, cooking)



Transportation
fuel

Optimum gas compression solution for every customer

We develop reliable, high-performance compressor solutions in true collaboration with our customers, combining in-depth technical expertise with the strongest product portfolio in the industry.

Winterthur, Switzerland (P, M)



Pune, India (P, M)



Waller, USA (M)



Busan, Korea (M)



Shenyang, China (P, M)



P = Production plant
M = Assembly plant

Leading technology with global reach

33 MW

The largest ever compressor built by Burckhardt Compression was driven by a 33 MW engine.

Burckhardt Compression has three production and five assembly plants as well as 36 companies worldwide. This means that Burckhardt Compression is always close to the customer, one of our success factors.

Together with the customer, we develop the optimal solution. Our compressors are designed to ensure high availability, optimum service intervals and maximum ease of maintenance – all with the aim of keeping operating

costs as low as possible and increasing the sustainability of our solutions. All this is reflected in the quality, technology, materials and design of our products.



The right compression solution for every customer

LABY® LABYRINTH RECIPROCATING COMPRESSOR

Thanks to its unique labyrinth sealing system on its piston and piston rod gland, which enables oil-free and contact-free compression, the Laby® Labyrinth reciprocating compressor offers unrivaled reliability and availability. The result is a longer service life, which has a positive impact on uptime and operating costs. This prevents the gas from contamination by piston ring abrasion and friction-induced hot spots. The Laby® Compressor is designed to compress bone-dry, dirty, abrasive and other gases. The gas-tight casing reduces gas emissions and losses to the environment to virtually zero. The Laby® Compressor easily manages LNG boil-off gas at suction temperatures down to $-160\text{ }^{\circ}\text{C}$ ($-250\text{ }^{\circ}\text{F}$).



PROCESS GAS COMPRESSOR PER API 618

Our process gas compressor is built to customer-specific application requirements in accordance with the API 618 guidelines. Burckhardt Compression offers you non-lubricated and lubricated, horizontal and vertical, process gas compressors. It is suitable in particular for the high-pressure compression of hydrogen, hydrocarbon and corrosive gases. In addition to our premium product line, which focuses on a reduction in operating costs through optimized design and high-quality components, we now also offer a robust, modular and capex-optimized product line.

LABY®-GI COMPRESSOR

The Laby®-GI Compressor has a fully balanced design that eliminates unbalanced moments and forces, so it can be used on offshore vessels and installations where strict guidelines on maximum allowable vibration levels on deck structures must be observed. The Laby®-GI Compressor is mainly used for the compression of LNG boil-off gas. The unique combination of labyrinth seal design and tried-and-tested ring seal technology makes Laby®-GI Compressors the solution of choice for both low-temperature and high-pressure applications. The proven technology guarantees maximum efficiency and lowest life cycle costs without any gas slippages. Depending on the operating conditions, Laby®-GI Compressors can be engineered for lubricated or non-lubricated compression applications.



HIGH-SPEED COMPRESSOR

The high-speed compressor is basically a process gas processor with shorter strokes and higher rotational speeds (1000–1800 rpm). It is used for applications in natural gas extraction and transport and is often powered by gas rather than electric motors. Due to the short-term orientation in this industry, efforts are made to keep initial investment costs to a minimum.



STANDARD HIGH-PRESSURE COMPRESSOR

This air- and water-cooled compressor is used to compress air, hydrogen, nitrogen, helium, argon, natural gas and other non-corrosive gases and gas mixtures at land facilities and on ships. It is extremely robust and reliable, with a compact design and low weight. It is factory skid-mounted and supplied with anti-vibration mounts. Our standard high-pressure compressor boasts high compression efficiency, low wear and reduced maintenance costs.

DIAPHRAGM COMPRESSOR

The diaphragm compressor compresses gas by means of a flexible membrane. This metal membrane has a limited stroke, so tends to be used for smaller flow rates. The advantage of this technology is that the gas is hermetically sealed by the membrane during compression, so a very high level of gas purity can be achieved. The technology allows the gas to be compressed completely oil-free to a very high pressure.





HYPER COMPRESSOR

The hyper compressor is a high-pressure reciprocating compressor for ethylene-vinyl acetate (EVA) and low-density polyethylene (LDPE) plants with a discharge pressure of up to 3'500 bar. Burckhardt Compression has established an outstanding track record with nearly 60 years of experience in this type of compressor. It has a long operational life and high safety standards, due to its unique design features and our global one-stop maintenance and service. The most powerful compressor in the world was built by Burckhardt Compression in 2016. It is driven by a 33'000-kW electric motor and boasts compression capacity of 400'000 tonnes of ethylene a year.



COMPRESSOR PACKAGE

We engineer the complete system in-house to customers' specifications and use proven and qualified suppliers. We work together with our customers' teams to make every project a success for their business.



Our compressor portfolio

We love to provide services that matter. Hands-on.

Personal, passionate, powerful. At Burckhardt Compression, technical experts with an outstanding customer-first focus are at your service. We do everything to keep your compressors running as efficiently as possible. Anywhere in the world. At any time.



Our service is where you are

130

We are where you need us – more than 130 field service representatives cover all major ports and vessel routes.

MARINE SOLUTIONS

No matter what kind of vessel, Burckhardt Compression is your partner on water. Our dedicated marine teams are available to support you in port, on sea or in dry dock to maximize the performance of your compressor system.

HYDROGEN SOLUTIONS

Cost efficiency and speed are critical to keeping your operations running smoothly. Our service portfolio encompasses not only traditional, but also digital services. We are at your side – whenever and wherever in the world, in order to maximize your compressor uptime.

INDUSTRIAL GAS SOLUTIONS

Secure business processes and maximum availability of your compressor system is of utmost importance to you and us. Safety is the first priority, but competitiveness must be guaranteed.

PETROCHEMICAL AND REFINERY SOLUTIONS

We are ready for every challenge you encounter. Your main focus with your compressor system is optimal operational efficiency, maximum productivity and, of course, low life cycle costs. Our services are precisely tailored to help you achieve these goals.

GAS GATHERING AND PROCESSING

Whether onshore or offshore – we know your industry and, in light of increasingly stringent environmental regulations, we can give you tailor-made solutions that meet all your requirements while improving uptime and reducing maintenance costs.

SERVICES THAT MAKE A DIFFERENCE

Rooted in 178 years of compression engineering competence, we offer the full range of services for your compressors throughout the entire life cycle – regardless of brand, application or tasks.

ONE-STOP SHOP

As your comprehensive contractual partner, we assume overall responsibility for your project, from planning to on-site execution.

Solutions for all reciprocating compressors – whatever make or model:

- Spare Parts & Components
- Revamp & Engineering
- Technical Support
- Monitoring & Diagnostics
- Maintenance & Repair
- Training

In-house manufactured components – original spare parts, wearing parts and larger individual components are produced and delivered globally.

Always a step ahead with our digital solutions: benefit from our special UP! Solutions for predictive maintenance. Our customer portal my-Fleet gives you easy access to all your compressors, spare parts and documentation.

Real-time information for better decisions. Monitoring and diagnostics solutions to predict and prevent compressor breakdowns.

UP! REMOTE SUPPORT

With UP! Remote Support, Burckhardt Compression offers an assistance solution where customers get direct support from our experts for their work by using a tablet, or HoloLens. The ATEX Zone 1 certification of the tablets provided enables rapid support, even in potentially explosive atmospheres. Our experts guide the technician on site step by step through the process with precise instructions.



Our success stories



“To overhaul both LDPE compressors at the same time while repairing the foundation for the booster-primary was a challenge. With Burckhardt Compression, we had a partner that worked hand in hand with us. We finished the job on schedule and kept the plant shutdown time to a minimum.”

European customer, petrochemical plant

ON YOUR DOORSTEP

We are close by and value relationships built on trust. 350 specialists, from engineers, local site managers to troubleshooters, ensure rapid responses. Local presence simplifies interaction with customers, shortens supply chains and field service hours.



40+

component production sites and Service Centers worldwide

1'000+

service employees worldwide

24/7

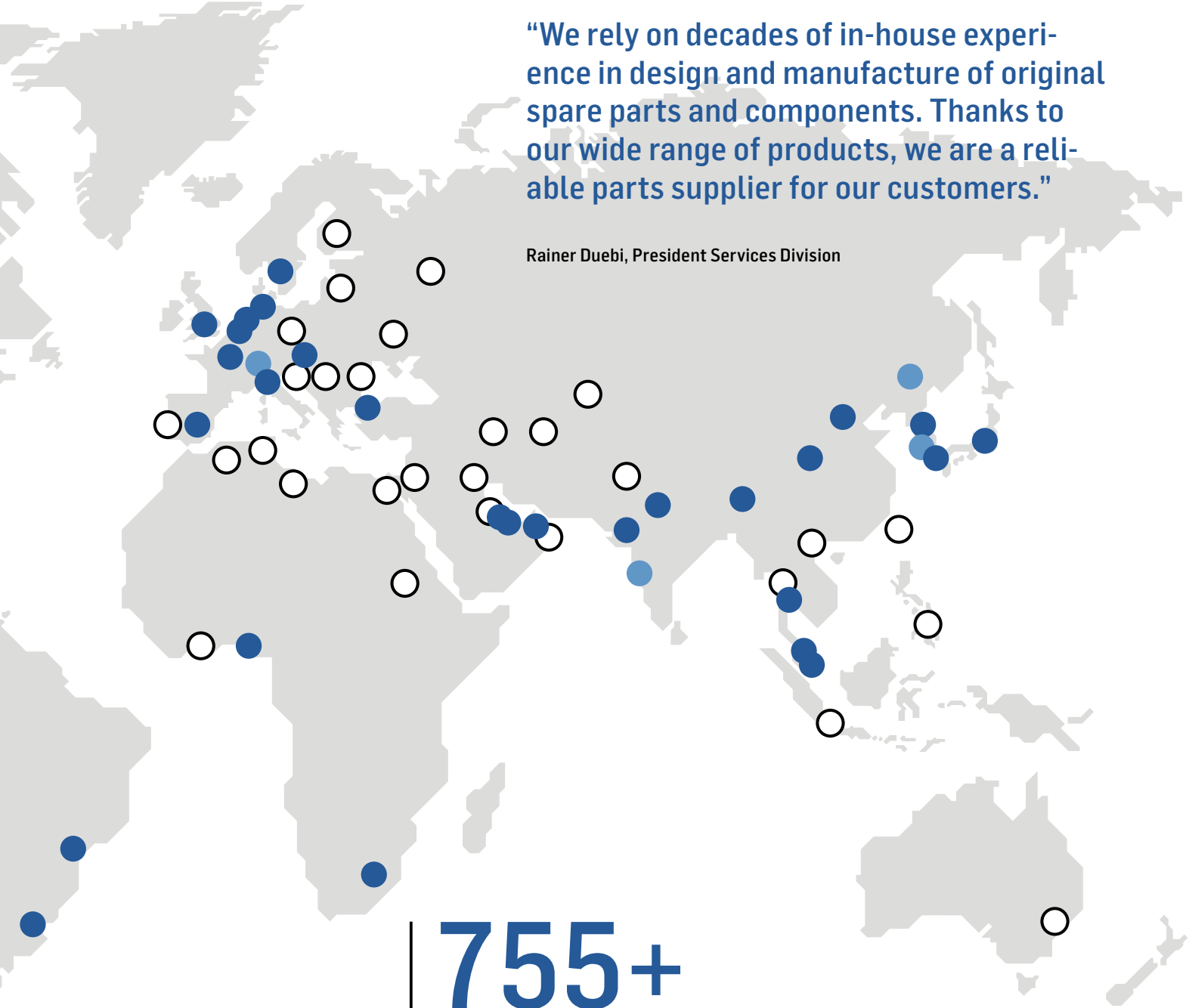
emergency hotline. Our services are available around the clock, anywhere in the world.



Your local contact

“We rely on decades of in-house experience in design and manufacture of original spare parts and components. Thanks to our wide range of products, we are a reliable parts supplier for our customers.”

Rainer Duebi, President Services Division



755+

customers gave us their valuable feedback in 2021. We continuously evaluate customer satisfaction levels and foster a culture of customer feedback.

Our service business meets ISO standards 9001, 14001 and 45001: Quality, Environmental, Health & Safety Management System

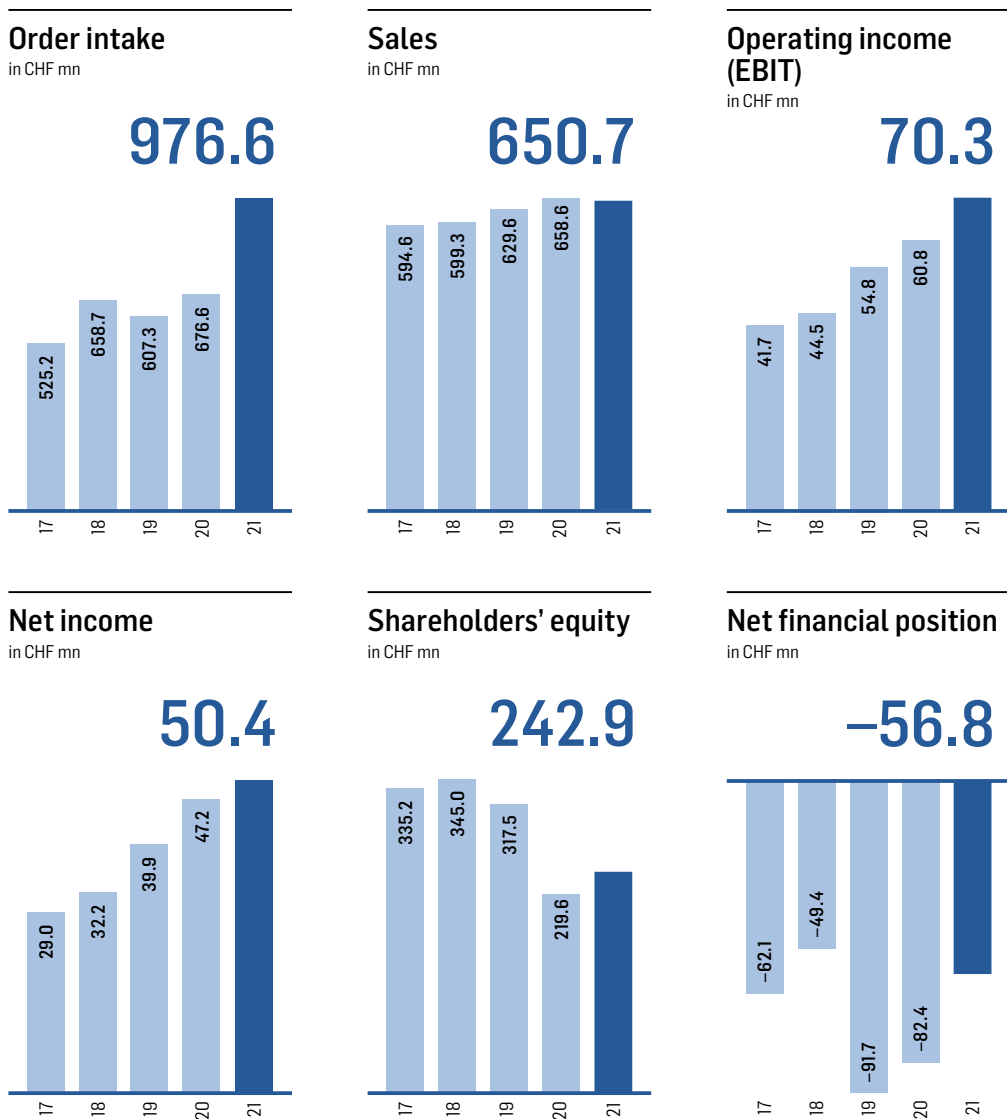
-  Burckhardt Compression Manufacturing/Assembly Locations
-  Burckhardt Compression Subsidiaries, Associates and Service Centers
-  Agents

Fiscal year 2021

Global markets benefited from global transition towards more sustainable and secure energy sources. Thanks to our positioning along these trends, our order intake saw an increasing momentum.

SIGNIFICANTLY HIGHER ORDER INTAKE

The fiscal year 2021 was characterized by a significantly higher order intake and a clearly improved operating income. The Board of Directors will propose a higher dividend. We made further progress towards our Mid-Range Plan targets as well as in integrating digitalization and sustainability into our strategy and operations.



KEY FIGURES

in CHF mn	2021	2020	Change 2021/2020
Total			
Order intake	976.6	676.6	44.3%
Sales	650.7	658.6	-1.2%
Operating income (EBIT)	70.3	60.8	15.7%
in % of sales	10.8	9.2	
Net income	50.4	47.2	6.8%
in % of sales	7.7	7.2	
Systems Division			
Order intake	651.1	404.6	60.9%
Sales	372.7	409.8	-9.1%
Operating income (EBIT)	21.1	16.2	30.4%
in % of sales	5.7	3.9	
Services Division			
Order intake	325.5	272.1	19.6%
Sales	278.0	248.8	11.8%
Operating income (EBIT)	58.4	51.2	13.9%
in % of sales	21.0	20.6	
Balance sheet			
Balance sheet total	837.8	758.1	10.5%
Shareholders' equity in %	29.0	29.0	
Net financial position	-56.8	-82.4	
Share			
Net income per share	14.82	13.00	14.0%
Dividend per share	7.50	6.50	15.4%
Payout ratio	50.6%	50.0%	
Market capitalization (in CHF mn)	1'662.6	1'071.0	55.2%
Employees			
Employees as per end of fiscal year (FTE)	2'732	2'538	7.7%
Apprentice	64	59	8.5%
Turnover rate	10.1%	9.5%	
Average company affiliation (years)	8.4	8.5	-1.2%
Environment			
Energy use (MWh)	42'581	38'733	9.9%
Greenhouse gas emissions Scope 1 (tCO ₂ e)	2'465	3'391	-27.3%
Greenhouse gas emissions Scope 2 (tCO ₂ e)	12'815	8'184	56.6%
Water (m ³)	83'810	91'218	-8.1%

ORDER INTAKE

+44.3%

Order intake increased by CHF 300 million to CHF 976.6 million in the reporting period.

NET INCOME

+6.8%

Net income rose by CHF 3.2 million to CHF 50.4 million.

WATER CONSUMPTION

-8.1%

Global water consumption in our factories was reduced by 8.1%.

OPERATING INCOME (EBIT)

+15.7%

Operating income (EBIT) increased by CHF 9.5 million to CHF 70.3 million.

EMPLOYEES

2'732

Of the 2'732 employees, 43% worked in EMEA, 46% in APAC and 11% in the Americas during the year under review.

ECOVADIS

Burckhardt Compression was awarded the EcoVadis silver medal in 2021 for its sustainability management, which placed it in the top 25% in the sector.





1.5 MILLION OPERATING HOURS WITH LABY®-GI COMPRESSORS

Burckhardt Compression's Laby®-GI compressor system plays an important role in the fuel supply on liquefied natural gas (LNG) carriers. During transport, the liquid gas warms up resulting in a small amount of evaporation in the form of boil-off gas that is then either reliquefied and fed back into the tank or used as fuel for the carrier's engines. Liquefaction systems and diesel gas engines both require pressure of up to 300 bar. This is why Burckhardt Compression has developed specific solutions for LNG applications that compress gas at low temperatures and high pressure, and meet the stringent requirements of use on the high seas. The unique selling point of the Burckhardt Compression system is the sealed crankcase that prevents methane from escaping into the atmosphere. In the reporting period, the installed system Laby®-GI recorded 1.5 million operating hours for the first time, reflecting its high level of reliability.

PARTNERSHIP WITH SHELL NEW ENERGIES

Shell New Energies has selected Burckhardt Compression as its partner for the development of oil-free high-pressure hydrogen compressors. As part of this project, Burckhardt Compression is building a new test facility in Winterthur, Switzerland, to further develop sealing technology and solutions for hydrogen refueling stations serving heavy-duty vehicles. These solutions will enable the compression of hydrogen gas up to 900 bar (as a booster), using non-lubricated compressors.



ECONOMICAL AND ECO- LOGICAL OIL-FREE HYDROGEN COMPRESSOR

In the reporting period, Burckhardt Compression developed and sold large high-pressure reciprocating compressors with a discharge pressure of up to 550 bar for use in a range of hydrogen applications. The innovative design makes them particularly suitable for filling hydrogen trailers and hydrogen fueling stations with high mass flows, and reduces the number of compressors required. The development of seals for oil-free high-pressure reciprocating compressors represents another milestone. These innovations enable Burckhardt Compression to efficiently support the planned increase in volume across various hydrogen applications.



COLLABORATION WITH MICROSOFT AND PTC

Under the name UP! Solutions, Burckhardt Compression offers digital solutions that provide real-time monitoring of compressors and remote support for customers' on-site maintenance – whether on land or at sea. To accelerate these developments, the company collaborates with the leaders in innovative digital solutions. In the reporting period Burckhardt Compression announced that it was working with PTC – based in Boston, US – to develop remote service solutions for customers around the world and augmented reality (AR) service solutions. Burckhardt Compression also works with Microsoft in order to offer customers remote support that's stable even in rough seas.

2021

ACQUISITION OF MARK VAN SCHAICK STRENGTHENS SERVICE BUSINESS

Burckhardt Compression's acquisition in December 2021 of Mark van Schaick BV, based in Rotterdam in the Netherlands, expands its repair and service capabilities in Europe. The company is a leading provider of complex repair services – including crankshafts – for customers worldwide in the maritime and petrochemical industries.

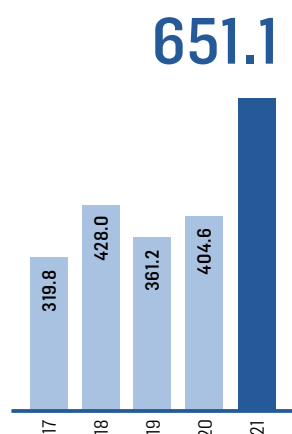


RECORD ORDERS FOR HYPER COMPRESSORS AND INDUSTRIAL GAS COMPRESSORS FOR THE SOLAR PANELS INDUSTRY

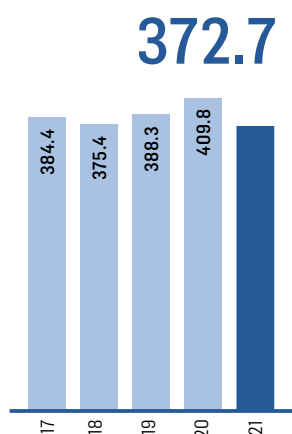
The sharp rise in global demand for solar cells and the resulting increase in production capacity led to a record number of orders for Burckhardt Compression in the reporting period. To make solar cells, polysilicon and a thin layer of EVA plastic are required – and Burckhardt Compression is a leading supplier of compression solutions for both.

Systems Division

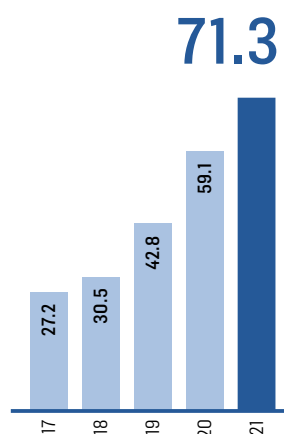
Order intake
in CHF mn



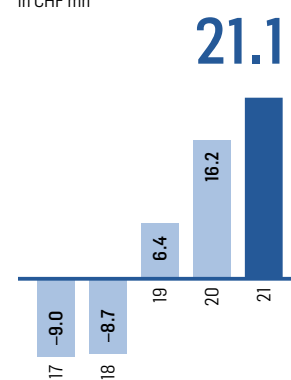
Sales
in CHF mn



Gross profit
in CHF mn



Operating income (EBIT)
in CHF mn



in CHF mn

	2021	2020	Change 2021/2020
Order intake	651.1	404.6	60.9%
Sales	372.7	409.8	-9.1%
Gross profit	71.3	59.1	20.7%
in % of sales	19.1%	14.4%	
EBIT	21.1	16.2	30.4%
in % of sales	5.7%	3.9%	
Headcount at end of fiscal year (full-time equivalents)	1'518	1'429	6.2%

MARKETS

Burckhardt Compression offers compressor system solutions in the following application areas:

- Gas gathering and processing
- Gas transport and storage, incl. marine
- Refinery
- Petrochemical/chemical industry
- Industrial gas
- H₂ mobility and energy

Burckhardt Compression maintained its strong market position in the reporting period.

GAS GATHERING AND PROCESSING

After the drop seen in fiscal year 2020, the market gradually recovered in the reporting period. However, despite rising prices for crude oil and natural gas, new investment remained at a low level.

GAS TRANSPORT AND STORAGE

In the first half of the year, this segment benefited from a surge in demand in the LPGM market. The LNG marine segment also recorded growing demand, both in the transport of gases and for LNG-powered ships. Several orders for LNG terminals were received, especially in China.

REFINERY

Demand recovered in 2021, driven by various capacity expansion projects and bio-fuel projects in North America and Europe.

CHEMICAL AND PETROCHEMICAL INDUSTRY

This area of application saw significant activity due to large LDPE/EVA projects for solar panel plants in China.

H₂ MOBILITY AND ENERGY

Recently, and particularly in the reporting period, investments in the hydrogen economy have been strongly increasing in the hydrogen economy has been strongly increasing due to efforts to reduce CO₂ emissions and secure additional energy sources. One particular order concerned compressors for the world's largest hydrogen liquefaction plant in Korea. We entered into a partnership with Shell New Energies to develop oil-free high-pressure hydrogen compressors. It still represents only a small portion of the total market, but the long-term potential is undoubtedly huge.

INDUSTRIAL GAS

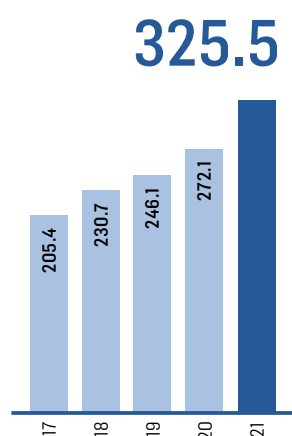
The various user industries are developing in line with our expectations, matching the increase in global GDP. In the reporting period, Shenyang Yuanda Compressor benefited from the booming market for polysilicon in China, the main raw material in the production of solar cells.

OUTLOOK

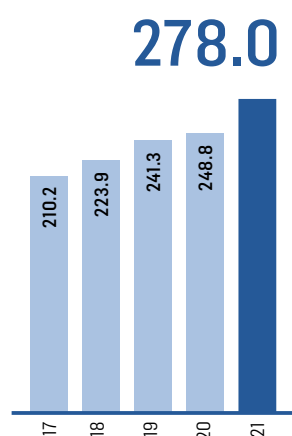
In the gas gathering and processing market, the rise in prices for crude oil and natural gas, combined with potential shifts in the geographical focus of production, could stimulate investment in USA and in the Gulf region. In the gas transport and storage market, the global need to secure energy sources and the trend towards environmentally friendly energy is resulting in a strong demand of LNG as fuel. Increased efforts to provide sustainable energy will compel the refinery segment to press ahead with the development of biofuels. As far as the petrochemical/chemical and industrial markets are concerned, the activity level is expected to remain strong in the next fiscal year. Finally, the H₂ mobility and energy market, in which Burckhardt Compression recorded significant progress in the reporting period, is expected to become a significant sales pillar for the company in the medium term due to global environmental and energy policy targets.

Services Division

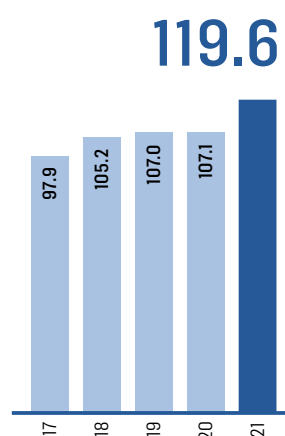
Order intake
in CHF mn



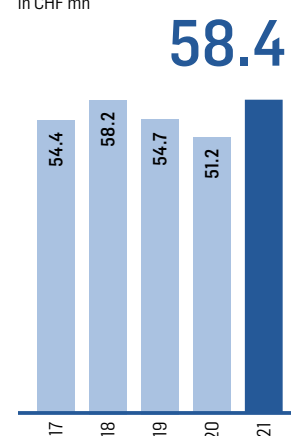
Sales
in CHF mn



Gross profit
in CHF mn



Operating income (EBIT)
in CHF mn



in CHF mn

	2021	2020	Change 2021/2020
Order intake	325.5	272.1	19.6%
Sales	278.0	248.8	11.8%
Gross profit	119.6	107.1	11.6%
in % of sales	43.0%	43.0%	
EBIT	58.4	51.2	13.9%
in % of sales	21.0%	20.6%	
Headcount at end of fiscal year (full-time equivalents)	1'198	1'095	9.4%

MARKETS

Burckhardt Compression offers services in the following application areas, certified to ISO 9001, 14001, and 45001:

- Preventive maintenance
- Spare parts for compressor systems
- Overhauls and repairs
- Project solutions for modernizations and plant improvements
- Problem diagnoses and troubleshooting
- Solutions for plant monitoring (Prognost)

In the reporting period, Burckhardt Compression expanded and strengthened its market position. Demand for spare parts and services increased, particularly in China, Europe, and the US. In the marine segment, we carried out several dry dock overhauls, including the first 5-year overhaul of a Laby®-GI for Teekay LNG. Demand for complete solutions for overhauls (turnarounds) rose in Europe and the Middle East, and these were completed safely and to schedule for our customers. We entered into strategic partnerships with KB-Delta and SERO Pump Systems, and long-term collaborations with leading compression systems operators on land and on the seas.

SPARE PARTS

Growth in the spare parts business continued in the reporting period, both for our compressors and for those of third-party suppliers. Burckhardt Compression also benefited from the trend for spare parts to be required in conjunction with services. The targeted expansion of the third-party products business is generating an increasing proportion of sales.

ENGINEERING/REVAMP/REPAIR

This segment saw increased activity, with significant orders received from Germany, Norway, China, Singapore, Taiwan and central Asian countries. Thanks to the relaxation of coronavirus restrictions, we were able to make better use of our capacity. It is encouraging to see the continuing trend for long-term service contracts, helping to strengthen and stabilize the business, and the requirement for complex engineering solutions for complete on-site overhauls (turnaround projects). The repair business in our Service Centers worldwide will also benefit from the recently completed standardization of repair processes across the Group.

FIELD SERVICE

The release of corona-related measures allowed an increase of capacity utilization. In the US, Arkos Field Service is growing and has been profitable.

MONITORING AND DIAGNOSTICS

In addition to reciprocating compressors, PROGNOST diagnostic systems were also used in gearbox applications during the year under review. For example, after an intensive 18-month test phase in competition with other suppliers, the first PROGNOST predictor systems for monitoring and diagnosing gearboxes on hot roll mills were ordered from an American steel mill. In general, our solutions are more needed to switch to remote monitoring and also to condition-based service.

OUTLOOK

The underlying attractive growth prospects for the Service business remain unchanged:

- More and more customers are outsourcing their service operations. Suppliers are increasingly becoming service partners. Thus, long-term service agreements are becoming more important.
- The portfolio of installed compressor systems from Burckhardt Compression continues to grow.
- Customers are seeking efficiency gains to increase their competitiveness. This requires retrofitting and conversions, not least driven by the need to comply with environmental regulations (efficiency improvements and emissions reduction).
- Maintenance of equipment using the latest digital capabilities is becoming more important. This reveals a trend to move from preventive to condition-based maintenance.

Demand for comprehensive services from a single source will therefore grow more strongly than the direct spare parts business. Customers increasingly expect engineering solutions, competent advice on site and tailor-made maintenance strategies.

Our focus areas for organic growth are our consistently increasing portfolio of installed equipment and the service business for compressors from other manufacturers, primarily those that have left the market. To further support the growth regions, Burckhardt Compression will focus on expansion of local and regional service expertise and increasingly on digital solutions.

The numerous LNG ships commissioned in recent years will all require servicing and spare parts, resulting in additional business potential for Burckhardt Compression. The most interesting potential lies in the provision of long-term service agreements tailored to the whole compressor life cycle. Geographically, the best growth opportunities are in the Asia-Pacific region, but also in North America and Europe thanks to the large number of marine customers domiciled there. In North America, Burckhardt Compression will benefit from the expansion in service activities brought by the integration of Arkos.

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