

RESEARCH & DEVELOPMENT FOR OUR FUTURE



ANNUAL REPORT

2018

Research & Development for our future –
the title theme of this annual report is
also one of the six main pillars of Pfeiffer
Vacuum's growth strategy. We can only
participate in the megatrends of our target
markets with innovative products and
services that are tailored to the future needs
of our customers. Our R&D work is crucial
to achieve these goals and secure Pfeiffer
Vacuum's long-term success. In this annual
report, we provide you with insights into
trends and challenges in R&D, at Pfeiffer
Vacuum as well as at our customers. Learn
how we identify the future needs of our cus-
tomers at an early stage and how we work
to develop matching vacuum solutions –
for our world of tomorrow!

➤ [ONLINE VERSION OF THE PFEIFFER VACUUM ANNUAL REPORT 2018](#)



KEY FIGURES

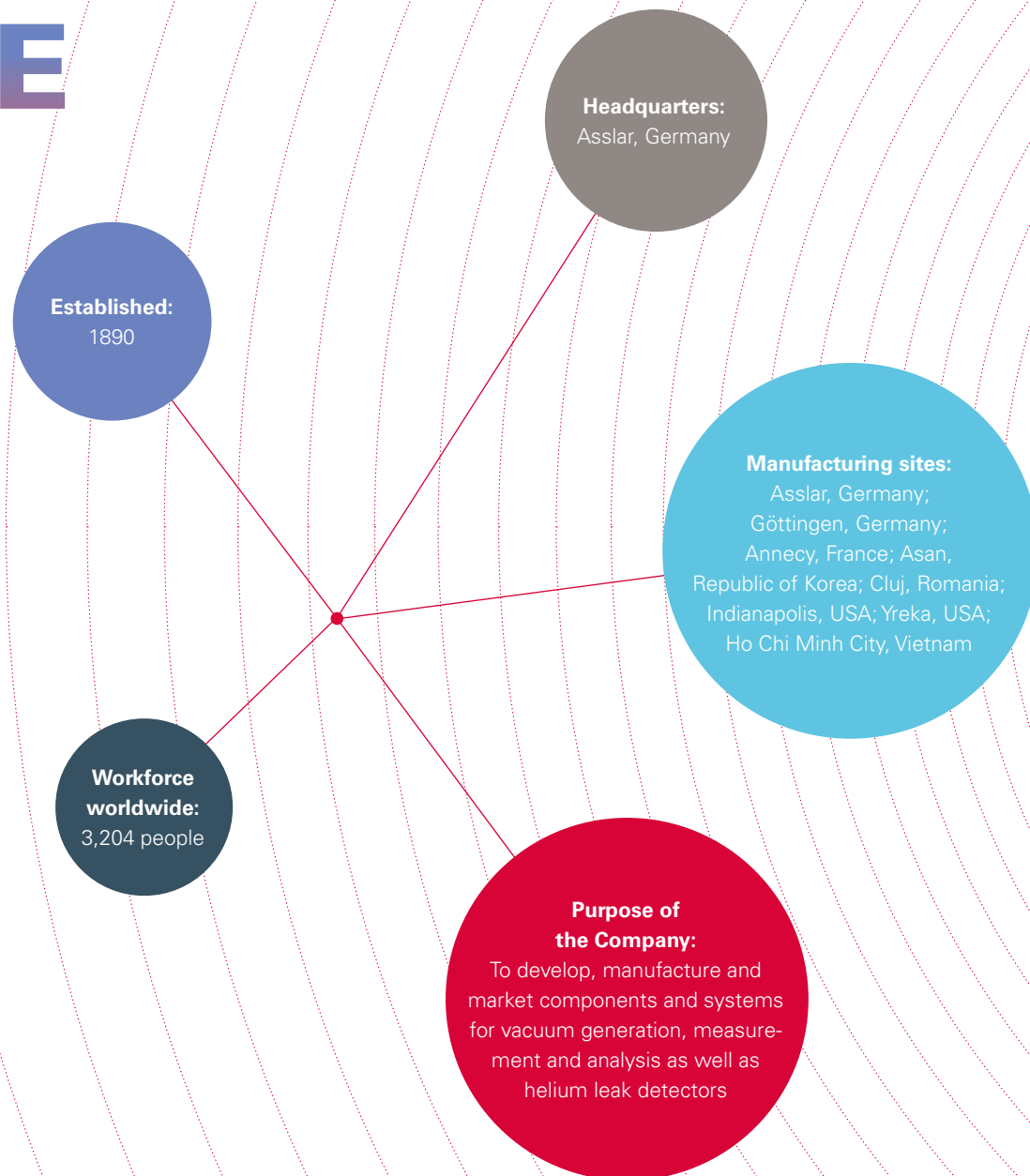
		2018	2017	Change
Sales and profit				
Total sales	K €	659,725	586,962	12.4 %
Operating profit	K €	95,130	71,386	33.3 %
Operating profit margin	%	14.4	12.2	2.2 Pp
Net income	K €	68,879	53,848	27.9 %
Return on sales	%	10.4	9.2	1.2 Pp
Operating cash flow	K €	62,547	71,397	– 12.4 %
Balance sheet				
Total shareholders' equity and liabilities	K €	624,160	553,361	12.8 %
Cash and cash equivalents	K €	108,380	97,402	11.3 %
Shareholders' equity	K €	372,225	320,937	16.0 %
Equity ratio	%	59.6	58.0	1.6 Pp
Return on equity	%	18.5	16.8	1.7 Pp
Capital expenditures	K €	33,669	27,678	21.6 %
Workforce				
Workforce (average)		3,101	2,809	10.4 %
Personnel costs	K €	211,972	190,970	11.0 %
Per employee	K €	68	68	0.0 %
Sales per employee	K €	213	209	1.9 %
Per share				
Earnings	€	6.98 ¹	5.46	27.8 %
Dividend	€	2.30 ¹	2.00	15.0 %

¹ Subject to the approval of the Supervisory Board and the Annual General Meeting

All percentages in this Annual Report were derived on the basis of amounts in thousands of euros. Rounding differences might result from their presentation in millions of euros.

CORPORATE PROFILE

Pfeiffer Vacuum – a name that stands for innovative solutions, high technology and dependable products, along with first-class service. For more than 125 years we have been setting standards in vacuum technology with these attributes. One very special milestone was the invention of the turbo-pump at our Company more than 50 years ago. Thanks to our know-how, we continue to be the technology and world market leader in this field. To no small degree, this also manifests itself in our strong profitability. Our extensive line of solutions, products and services ranges from vacuum pumps, measurement and analysis equipment as well as leak detectors right through to complex vacuum systems. And quality always plays a key role in this connection: Products from Pfeiffer Vacuum are constantly being optimized through close collaboration with customers from a wide variety of industries, through ongoing development work and through the exceptional enthusiasm and commitment of our people. These are virtues that we will continue to embrace!



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We publish our annual report exclusively in digital format. It is available as PDF with complete content or in reduced form as an online version:

[➔ ONLINE VERSION ANNUAL REPORT 2018](#)

The following symbols will lead you to further interesting information:

[➔](#) You will find more information online.

[■](#) Additional information on this topic can be found within this report.

[x](#) These links and references were inserted for better understanding. They are not part of the audited Group Management Report and the audited Consolidated Financial Statements.



TO OUR SHAREHOLDERS

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▶ VIDEO MESSAGE OF THE CEO

**OUR GROWTH STRATEGY
IS BASED ON SIX STRATEGIC
PILLARS – ONE OF THEM
IS OUR INNOVATIVE
FORCE IN R&D.**

Dear shareholders

2018 was a trailblazing year for Pfeiffer Vacuum: it marked the start of the transformation period which will realign our Company for a successful future. The goal of this major transformation is to make Pfeiffer Vacuum the Top 2 player in the vacuum industry. Actually, we are already the number 2, but with a sizable gap to the number 1. We want to substantially reduce this gap by increasing our market share to more than 20%.

The great financial results of the year 2018 show that we have a strong starting position: we achieved sales of € 659.7 million, which means an increase of 12.4 % compared to last year and a new sales record for the Company.

Within the next years, we want to grow further. To do so, we have developed a growth strategy that we will pursue ambitiously. The core elements of this strategy are significantly bigger investments than in the past. With them, we aim to increase our capacities worldwide, to modernize our operations as well as our IT infrastructure and to expand our global footprint – especially in Asia. Moreover, we will strongly enhance our R&D to benefit from digitalization, to innovate our products and to strengthen their technological intelligence as well as connectivity. This is why we developed a three-year investment plan of € 150 million in March 2018, with which we will speed up the implementation of our Group strategy from 2018 to 2020. The average of the investments made in the last ten years (2007–2017) amounted to € 10–15 million per year – this clearly underlines our great need for action.

Another important transformation that currently takes place inside the Pfeiffer Vacuum Group affects the management culture: we foster a much stronger collaboration between the worldwide locations of Pfeiffer Vacuum to seize synergies, benefit from global best practice approaches and create an international team spirit. To shorten our response times and to make our way of working efficient and agile, we empower our people, giving them more responsibility as well as decision authority.

This part of the transformation process started in January 2019 with the introduction of the new functions of the Management Board members: We now have the global positions of Chief Sales Officer (CSO), Chief Financial Officer (CFO), Chief Technology Officer (CTO) and Chief Operations Officer (COO). We consider this re-arrangement of the organizational structure of the Management Board vital for implementing the individual areas of our growth strategy more quickly and with a greater focus by having dedicated responsibilities in the functional leadership of the Group.

I want to use the opportunity to give you, dear shareholders, an overview of these individual areas of our strategy. It is based on these six main pillars:

1. Fields of application – participating in the future megatrends
2. Innovation leadership – growth through new products
3. New business models – e.g. wider service offerings
4. China – expanding our presence in the world's fastest growing market
5. Supply chain & global footprint – seize benefits of global procurement and customer proximity
6. Selective acquisitions to extend technology, presence and product portfolio

We have to know the demands and requirements of our customers and foster our innovation to develop the vacuum equipment of the future.

What lies in detail behind these pillars and how do we plan to reach them? To answer these questions and to get more information on the ongoing transformation of our Company, we invite you to visit the online version of this year's annual report, where we provide you with more details and interactive content on our strategic goals.

[➔ ONLINE VERSION ANNUAL REPORT 2018](#)

We would like to give you more insights into one of the most important pillars of our growth strategy: our innovative force and the goal to grow through the development of new products. Therefore, the annual report 2018 centers around the R&D work at Pfeiffer Vacuum.

Only if we provide the right products for the megatrends in our target markets, will we be able to realize our ambitious goals. We have to know the demands and requirements of our customers and foster our innovation to develop the vacuum equipment of the future. Digitalization, energy transition, biotechnology as well as nanotechnology and life-science are the fields of application that will shape our world of tomorrow – and they all need vacuum solutions. Our R&D work is crucial for taking part in these trends and for realizing the market share growth as well as the increase in profitability that we foresee for our Company. Our customers' technologies are

incredibly exciting and promising. We, Pfeiffer Vacuum, want to provide our customers with leading vacuum technology solutions so that they can manufacture high-quality products. This is our strong commitment to them: we are here to make our customers more successful.

Dear shareholders, dear stakeholders, as you can see, we have an exciting and eventful path behind and in front of us. And the most important asset of all that we have to tread this path is our excellent, dedicated employees who, together with us, are implementing all these changes in order to lead Pfeiffer Vacuum into a successful future.

On behalf of the Management Board and our employees, I would like to thank you for your trust and support in 2018. I hope that it remains the same in 2019 so that we altogether continue to strive for sustainable growth to ensure the future success of our Company.

Sincerely yours,

Dr. Eric Taberlet
CEO of Pfeiffer Vacuum Technology AG

MANAGEMENT BOARD

Nathalie Benedikt
(CFO)

CV



Dr. Eric Taberlet
(CEO and CSO)

CV



Dr. Ulrich von Hülsen
(CTO)

CV



Dr. Matthias Wiemer
(Board member)

CV



CVs of our Supervisory Board members
are available on our website:

[CVs SUPERVISORY BOARD](#)



Helmut Bernhardt



Henrik Newerla



Filippo Th. Beck



Ayla Busch
(Chairwoman)



Manfred Gath



Götz Timmerbeil

REPORT OF THE SUPERVISORY BOARD

Dear Shareholders,

In fiscal 2018, the Supervisory Board of Pfeiffer Vacuum Technology AG correctly fulfilled all the duties vested in it by law, the Articles of Association and the Supervisory Board's rules of procedure. It monitored the work of the Management Board within the scope of its legal duties, accompanied and advised on the strategic further development of the Company and satisfied itself about the legality and expediency of the managerial work on the basis of the Management Board's reports with occasional use of external expert advice. Furthermore, the Supervisory Board continuously monitored the organization of the Company and Corporate Group and the cost-effectiveness of corporate management. In addition, a regular exchange of information took place between the Supervisory Board and/or the Supervisory Board Chairwoman and the Management Board.

Cooperation between Supervisory Board and Management Board

In the view of the Supervisory Board, the Management Board informed the Supervisory Board and/or the Supervisory Board chairwoman regularly, comprehensively and in a timely manner about the competitive environment, planned business policy and all strategic and crucial operational decisions in the course of the past fiscal year. In the same way, the Management Board discussed key financial and non-financial performance indicators with the Supervisory Board as a basis for evaluating the economic situation of the Company.

The Management Board reported during Supervisory Board meetings in oral or written form and replied within this setting to questions from the Supervisory Board. Outside of the meetings, the exchange of information with the Supervisory Board was also ensured with regular reports on the economic development of the Company and the Corporate Group and on the key occurrences within Pfeiffer Vacuum Technology AG. The Supervisory Board is satisfied that Management Board reporting met the statutory and Supervisory Board's requirements.

In fiscal 2018, business transactions requiring approval were decided by the Supervisory Board and, under certain conditions, also by individual committees, after these had adequately reviewed and discussed the issues with the Management Board.

Personnel changes in Supervisory Board and Management Board

After the personnel changes in the Supervisory and Management Boards in 2017, Mr. Henrik Newerla was appointed as a new member of the Supervisory Board by the Wetzlar District Court with effect from March 19, 2018. Henrik Newerla and his technical expertise is an enrichment for the Supervisory Board as well as for the entire Company; in the competence profile of the Supervisory Board, he covers the areas of digitization and IT as well as research, development, production and sales in the field of products and technologies relevant to Pfeiffer Vacuum Technology AG. The members of the Supervisory Board, Ms. Ayla Busch and Mr. Henrik Newerla, who were judicially appointed after the Annual General Meeting on May 23, 2017, and before the Annual General Meeting on May 23, 2018, were elected as Supervisory Board members by resolution of this Annual General Meeting.

Other than that, there were no changes in the composition of the Supervisory Board and the Management Board in the 2018 fiscal year. The proportion of women on the Supervisory Board is 16.7 % and 25 % on the Management Board, with reference in each case to the reporting date of March 14, 2019.

Supervisory Board meetings and issues of Supervisory Board work

During 2018, the Supervisory Board informed itself again in depth about the current situation of the Company and the Corporate Group in a total of **18 meetings**, and discussed this in detail with the Management Board.

At the meetings on **January 24, February 19, and March 7, 2018**, the Supervisory Board dealt with the medium-term corporate strategy proposed by the Supervisory Board and thus developed for the first time by the Management Board in conjunction with a new, supporting three-year investment plan. Together with the Management Board, an investment plan with a total volume of 150 million euros was approved, which provides for a significant increase in annual investments. This should strengthen the technology leadership and the competitiveness of the company. This plan includes, in particular, investments in the expansion and modernization of production capacities, the intensification of research and development, stepping up Industry 4.0 efforts, and the expansion of the Group's presence in Asia as a whole and China, in particular. The conference on February 19 was held in the form of a video conference. All members of the Supervisory Board attended these three meetings.

During the meeting on **March 6, 2018**, which was held in the form of a conference call and was attended by all Supervisory Board members, the candidature of Mr. Henrik Newerla as a new Supervisory Board member was discussed conclusively and, on the basis of a corresponding resolution, Henrik Newerla was appointed a Supervisory Board member as of March 19, 2018, by Wetzlar District Court.

At the Supervisory Board meeting on **March 20, 2018**, the Supervisory Board members discussed in detail the annual financial statements and the consolidated financial statements of the Company prepared in accordance with International Financial Reporting Standards (IFRS), the management reports and the auditor's report. In particular, contents of the report on the "non-financial performance" or "non-financial consolidated statement" (NFE), which was to be published for the first time in 2017, were discussed between the auditor and the Supervisory Board. After a detailed examination, the Supervisory Board approved the annual financial statements and the consolidated financial statements at this meeting.

At the meeting held as a conference call on **April 23, 2018**, the Supervisory Board approved the Separate Non-Financial Group Report prepared by the Management Board in accordance with §315b Sub-Para. 1 and Sub-Para. 3 and 315c of the German Commercial Code ("HGB"). The Supervisory Board discussed the contents of the report, which had previously been reviewed with the support of Ernst & Young GmbH Wirtschaftsprüfungsgesellschaft.

At the meetings on **January 24, March 19, May 2, May 23, August 1, September 28, November 5 and December 5, 2018**, the Board dealt with the general course of business, financial results and the strategic orientation of the Company and measures for continuing to boost profitability and efficiency of the overall company. In this context, the Supervisory Board accompanied the development of global strategies in the areas of communications, human resources, IT, sourcing and production by the Management Board.

At the meetings on **January 24, May 2, May 23, August 1, September 28, November 5 and December 5, 2018**, the Supervisory Board also deliberated on the Compliance Management System and the Compliance Organization of the Company. The experts from PricewaterhouseCoopers GmbH, who were appointed for a new analysis of the compliance management system, presented their final report, including a list of recommendations, at the meetings on **July 4 and August 1, 2018**, and discussed it with the Supervisory Board members. In the further meetings, the Supervisory Board supported the significant and company-specific expansion of the compliance management system in close contact with the responsible member of the Management Board, Nathalie Benedikt. The goal is to cover all relevant risk

areas, harmonize reporting within the Group, and strengthen the culture of compliance. The meetings on August 1 and September 28, 2018, took place in the form of a conference call. All members of the Supervisory Board attended these eight meetings.

At the meetings on **August 1** and **August 29, 2018**, which all Supervisory Board members took part in by conference call, the Supervisory Board dealt with an expansion of the production site in Annecy. After the Supervisory Board members, Ms. Ayla Busch and Mr. Henrik Newerla, visited the production site in Annecy on August 24, 2018, the Supervisory Board approved the expansion project in principle at the meeting on August 29, 2018. As part of the meeting on September 28, 2018, which took place in Annecy, all Supervisory Board members, together with the Management Board, visited the production site in Annecy and informed themselves about certain details of the expansion plans.

At the meeting on **October 23, 2018**, which was held in the form of a conference call, the Supervisory Board for the first time, and at the behest of the Management Board, looked in principle at the possibility of a strategic cooperation with the Busch Group in the form of a relationship agreement, and discussed this with the Management Board. This should allow closer cooperation between the two companies, especially in the areas of purchasing, sales and service, research and development and IT. At the meeting on **November 5, 2018**, negotiations with the Busch Group were approved, the status of which the Management Board reported on at the Supervisory Board meeting on **December 5, 2018**. In the latter meeting, the Supervisory Board decided to seek external legal advice, separately from the Management Board, regarding this possible strategic cooperation. In view of the potential conflict of interest regarding the person of Ayla Busch, who is also a shareholder and board member of the Busch Group, the Supervisory Board decided that, in connection with this planned strategic cooperation, Götz Timmerbeil acts as the contact person and discussion leader for the Supervisory Board; Ayla Busch will abstain from voting on the strategic cooperation. All Supervisory Board members attended all three meetings.

On the basis of the proposals prepared by the Management Board Committee, the Supervisory Board agreed on a new allocation of responsibilities within the Management Board as of January 1, 2019, at its meeting on **November 5, 2018**. In accordance with the decision of the Management Board and Supervisory Board, the Company is to be organized in the future according to its global business functions. The functions Chief Sales Officer, Chief Technology Officer and Chief Operations Officer were newly created. Chairman of the Board, Eric Taberlet, takes over the position of Chief Sales Officer. Ulrich von Hülsen becomes Chief Technology Officer. For the long-term appointment of the Chief Operations Officer, the search has begun for a suitable candidate for this board position. An external personnel consulting firm was commissioned to ensure a structured, professional and transparent search process, which is closely monitored by Supervisory Board Chairwoman, Ayla Busch, for the Supervisory Board.

At the meeting on **November 5, 2018**, the Supervisory Board also decided, taking the legal requirements and the recommendations of the German Corporate Governance Code (DCGK) into account, to develop a profile of competences and requirements that is available on the Company's website. In addition to the definition of areas in which knowledge, skills and experience are considered essential for the exercise of qualified supervision and advice to the Management Board, the competence and requirements profile contains concrete objectives for the composition of the Supervisory Board. These concrete objectives concerning the makeup of the Supervisory Board are based on the criteria of internationality, the avoidance of potential conflicts of interest, independence, availability for the role, a mix of generations and an age limit, length of service and diversity.

Supervisory Board Committees

The Supervisory Board has three committees since its meeting on October 26, 2017, in which the resolution of the Management Committee was decided:

- A Management Board Committee,
- A Nomination Committee and
- An Audit Committee.

The composition of the committees at the meeting on May 23, 2018, following the Annual General Meeting, was approved as follows:

Management Board Committee

- Ayla Busch (Chairwoman)
- Filippo Th. Beck
- Henrik Newerla
- Götz Timmerbeil

Nomination Committee

- Ayla Busch (Chairwoman)
- Filippo Th. Beck
- Götz Timmerbeil

Audit Committee

- Götz Timmerbeil (Chairman)
- Filippo Th. Beck
- Ayla Busch

The **Management Board Committee** met on October 22, 2018. At this meeting, the committee focused on the preparation of the overall Supervisory Board meeting which took place on November 5 where, among other things, the new allocation of responsibilities within the Board of Management as of January 1, 2019, was decided. During the year, the members of the committee also consulted each other at regular intervals in informal phone conversations. All members attended this meeting.

The **Audit Committee** held a meeting on November 5, 2018, at which representatives of the auditor were also present. The Audit Committee was in regular contact with the auditor and discussed and decided upon the audit procedure, the scope and the focus of the audit, and any special questions about the audit with the independent auditor. The Audit Committee consulted intensively with the auditor in connection with the explanations on the legality, regularity and expediency of the statements and the critical assessment of the concept and risks. All members attended the meeting.

No meetings of the **Nomination Committee** were held in the 2018 fiscal year.

Corporate Governance

The Supervisory Board recognizes the principles of good governance and also addressed this issue in fiscal 2018. An essential basis for this is the extensive recognition of the recommendations of the German Corporate Governance Code (GCGC) based on the version of February 7, 2017. This does not preclude deviating from the GCGC recommendations in individual justified cases. As a listed company, Pfeiffer Vacuum Technology AG is subject to the obligation under § 161 Sub-Para.1 of the German Stock Corporation Act ("AktG") to declare the extent to which the recommendations of the German Corporate Governance Code have been and will be complied with, or which recommendations have not been or will not be applied, and to justify deviations from recommendations (statement of compliance). The Management Board and Supervisory Board, the latter represented by the Supervisory Board Chairwoman, Ayla Busch, who was authorized at the meeting on November 5, submitted a declaration of compliance on December 5, 2018, which is available on the Company's website. Furthermore, the efficiency review of the Supervisory Board was carefully carried out at the meeting on November 5, 2018, with the support of external experts.

The members of the Supervisory Board of Pfeiffer Vacuum Technology AG are obliged to disclose to the Supervisory Board any possible conflicts of interest, in particular those which could arise through consulting or executive functions at customers, suppliers, lenders or other third parties. With the exception of the planned strategic cooperation agreement with the Busch Group, which has been a majority shareholder in the Company since November 2, 2018, and in which the Supervisory Board Chairman, Ms. Ayla Busch, is a shareholder and a board member, there are no indications of actual or potential conflicts of interest in the 2018 fiscal year. In order to deal with the potential conflict of interest regarding the person of Ayla Busch, the Supervisory Board has decided that, in connection with this planned strategic cooperation, Götz Timmerbeil will act as the contact person and discussion leader for the Supervisory Board; Ayla Busch will abstain from voting on the strategic cooperation.

Audit of Annual and Consolidated Financial Statements, Dependency Report

At the same meeting, the Supervisory Board decided to commission the auditing company PricewaterhouseCoopers GmbH, Wirtschaftsprüfungsgesellschaft, Frankfurt am Main, to audit the annual financial statements and the consolidated financial statements of the Company, prepared in accordance with IFRS and, to the extent required by law, of the subsidiaries. Pursuant to § 315e of the German Commercial Code, the Company did not prepare consolidated financial statements presented in accordance with the rules of the German Commercial Code. PricewaterhouseCoopers GmbH was also commissioned to audit the report on “non-financial performance” and “non-financial consolidated statements,” which was approved by the Supervisory Board at the meeting on November 5, 2018.

At the meeting on November 5, 2018, the Audit Committee and the auditor defined, among other things, key audit points of (i) accounting for goodwill, (ii) auditing revenue recognition in the operating companies, and (iii) examining the application and impact of IFRS 9, IFRS 15 and IFRS 16.

The Annual Financial Statements and the Management Report as well as the Consolidated Financial Statements presented in accordance with IFRS, together with the Group Management Report, all for the 2018 fiscal year and all of which prepared by the Management Board, were audited by the independent auditor and received his unqualified endorsement.

The Annual Financial Statements, the Management Report for the Company and the Corporate Group, as well as the audit reports from the independent auditor were submitted to all members of the Supervisory Board in a timely fashion. They were discussed in detail at the Audit Committee meeting as well as at the Supervisory Board meeting relating to the financial statements on March 14, 2019. The independent auditor attended the meetings, reported on the major findings of his audit and was available to answer additional questions from the Supervisory Board. On the basis of its own thorough review, the Supervisory Board concurred with the results of the audit conducted by the independent auditor. Given the concluding results of its review, the Supervisory Board raised no objections to the Annual and Consolidated Financial Statements. It has approved the Annual and Consolidated Financial Statements, with the Financial Statements thus being formally adopted. The Supervisory Board discussed in

detail with the Management Board its proposal regarding the distribution of a dividend and then concurred with the Management Board’s proposal regarding appropriation of the Company’s retained earnings.

Additionally, the Management Board of Pfeiffer Vacuum Technology AG has drawn up a report on relationships with affiliated companies for the fiscal year 2018 (“dependency report”), in accordance with § 312 Sub-Para. 1 of the German Stock Corporation Act (“AktG”) and afterwards presented this report to the Supervisory Board.

PricewaterhouseCoopers GmbH, Wirtschaftsprüfungsgesellschaft, Frankfurt am Main, audited the dependency report and issued the following auditor’s report:

“According to our professional audit and judgment we confirm that:

1. the actual disclosures in the report are correct and,
2. the Company’s payment for legal transactions as included in the report was not inadequately high.”

The Management Board’s dependency report as well as the related independent auditor’s report were submitted the Supervisory Board. The Supervisory Board reviewed both, the dependency report as well as the auditor’s report. Final review was made in the Supervisory Board meeting on March 14, 2019. The independent auditor attended this meeting, reported on audit of the dependency report and the major findings of his audit and was available to answer additional questions from the Supervisory Board. After the final review the Supervisory Board concurred with the dependency report of the Management Board and the audit report of the auditor and had no objections against the final declaration of the Management Board at the end of the dependency report.

Review of the Content of the Separate Non-Financial Group Report

The Supervisory Board discussed in detail and audited the content of the reporting on the issues described in the Law to Strengthen the Non-Financial Reporting of Companies in their Management Reports and Group Management Reports (CSR guideline implementation law) of April 11, 2017, within the scope of the Separate Non-Financial Group Report of Pfeiffer Vacuum Technology AG for the reporting period from January 1 to December 31, 2017. At its meeting on April 23, 2018, the Supervisory Board resolved to approve the Separate Non-Financial Group Report of the Company for the reporting period from January 1 to December 31, 2017. The content of the non-financial reporting was reviewed by the Supervisory Board with the support of Ernst & Young GmbH Wirtschaftsprüfungsgesellschaft as part of an audit on the achievement of limited assurance pursuant to the International Standard on Assurance Engagements (ISAE) 3000 (Revised). The audit did not reveal any facts that would have led the auditing firm to the conclusion that the Separate Non-Financial Group Report of Pfeiffer Vacuum Technology AG for the period from January 1 to December 31, 2017, had not been prepared, in all material respects, in accordance with §315c of the German Commercial Code ("HGB").

Acknowledgments

The Supervisory Board would like to sincerely thank the Management Board in its present composition, the Employee Council and the entire staff of the Group for their dedication and commitment in the successful 2018 fiscal year.

Adoption of this Report

The Supervisory Board adopted this Supervisory Board Report in the resolution dated March 14, 2019, pursuant to § 171 Sub-Para. 2 of the German Stock Corporation Act ("AktG").

Asslar, March 14, 2019

On behalf of the Supervisory Board

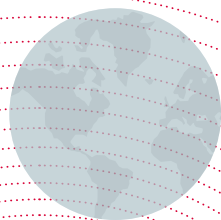
Ayla Busch
(Chairwoman of the Supervisory Board)



RESEARCH & DEVELOPMENT AT PFEIFFER VACUUM



017



1.

Our future needs vacuum

Vacuum technology is a
fundamental basis for
the emerging
megatrends.



2.

Progress needs research

The research departments
of our customers lay the
foundation for our world
of tomorrow.

3.

**Research for our future
needs Pfeiffer Vacuum**

Pfeiffer Vacuum enables its customers
to conduct research on the
applications of the future –
our products are the key tools
for their work.

**OUR FUTURE
NEEDS
VACUUM
NEEDS
RESEARCH
NEEDS
PFEIFFER VACUUM**

OUR FUTURE NEEDS VACUUM

Vacuum technology is already a fundamental basis of our life – and also the future megatrends will not be possible without it.

1.



VIRTUAL AND AUGMENTED REALITY

The creation of fictive environments by the aid of the virtual reality (VR) technology is on the rise. VR is not only used in video games, exhibitions or movies but also in industry. The mixing of virtual and physical reality is known as "Augmented Reality," which is already used for architectural or landscape design as well as in Research & Development. Without vacuum, no VR glasses or cameras could be manufactured.

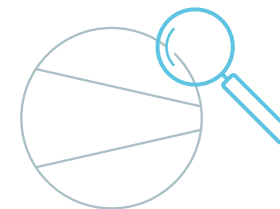
DIGITALIZATION

We are currently experiencing the digitalization of our world: laptops, smartphones and tablets ensure unlimited connectivity around the globe. Self-driving cars are developed and we control the lightning and heating of our homes with smart home solutions. All technical foundations of these applications would not exist without vacuum.



RENEWABLE ENERGIES

Our planet is becoming more and more crowded – and an ever increasing population results in a rising demand for energy. To prevent climate change and global warming, the promotion of renewable energies is in focus. The generation and storage of these green forms of energy require vacuum technology.

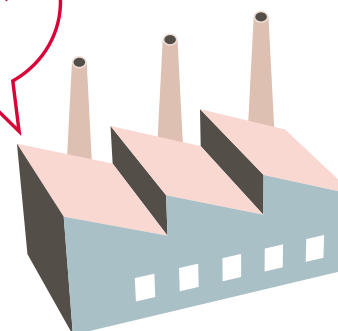


INDUSTRY 4.0

Interlinking human manpower, machines, systems, production processes and logistics via digital, modern IT and communication measures is the goal of Industry 4.0. The principle aims at making industrial production more efficient, lean and comprehensive. All the measures and systems used for interlinking the process constituents work only thanks to vacuum technology.

What role
does vacuum
play in the
development
of these
megatrends?

See for yourself on the next page!



ELECTROMOBILITY

Electromobility is one of the cornerstones in our society's pursuit of a sustainable and climate-friendly transport system. Electric trains, cars, motor bikes, busses, trucks or bikes would not be able to move without vacuum technology – the necessary parts and energy storage devices are produced and operated with the help of vacuum.



2.

PROGRESS NEEDS RESEARCH

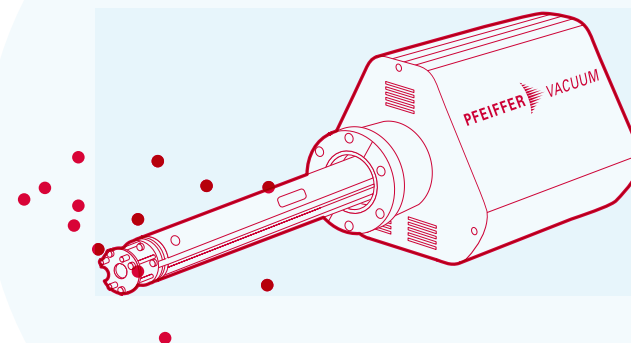
Groundbreaking applications of the future can only be realized through intensive research.



megatrends

Our customers work with the latest technology and most modern research tools in their R&D departments to set new standards in their sectors.

Through extensive interchange and collaboration, Pfeiffer Vacuum provides its customers with the needed equipment for their laboratories and research facilities.



REQUIREMENTS OF OUR CUSTOMERS

The requirements of our customers get increasingly specific. What can be observed more and more frequently is the fusion of the vacuum pump with the rest of the vacuum system. It is thus convenient for our customers to purchase individually tested system assemblies from Pfeiffer Vacuum. The close collaboration with customers is the key element for the R&D work of the next few years: Only if we know which challenges our products must meet, we can offer the right solutions.



DIGITAL R&D PROCESSES

The ongoing digitalization also impacts the R&D work of our customers. Modern simulation programs and 3D models are standard. In the future, Virtual Reality will become a major tool in the R&D departments of pioneering companies.



THE KEY TO THE FUTURE

Expertise and advice
mixed with digitalization

Through close cooperation, Pfeiffer Vacuum has gained a broad knowledge of its customers' applications. With simulation and calculation programs developed in-house, we provide our customers with detailed advice and support in the design of their systems. In addition to face-to-face meetings, digital communication and virtual reality will become increasingly important in the future.



3.

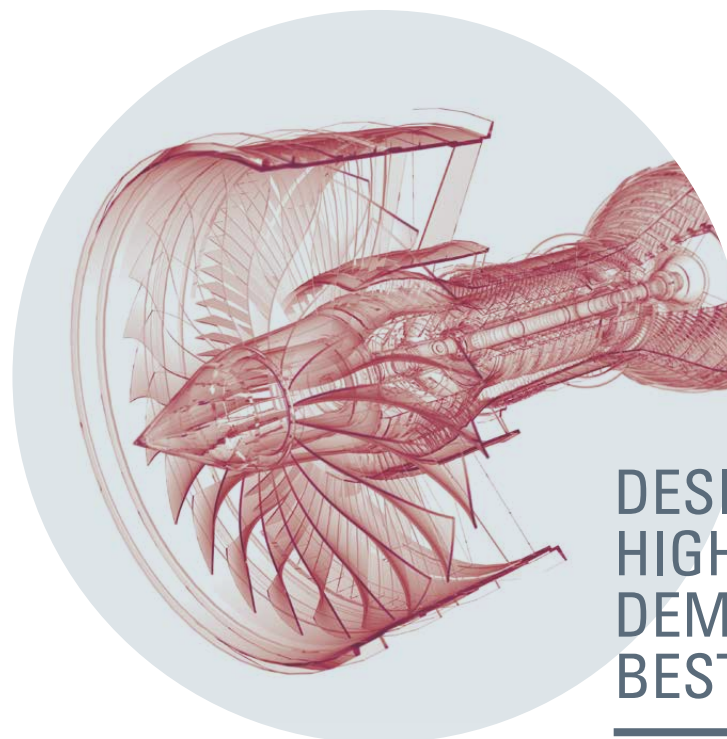
RESEARCH
FOR OUR FUTURE
NEEDS
PFEIFFER VACUUM

research

The research and development work at Pfeiffer Vacuum lays the foundation for the R&D of our customers as well as for the vacuum applications of the future.

The pioneering companies and institutions in the different sectors use our products in their R&D to explore new fields and develop new applications. Did you know that, for example, our turbopumps, measurement and leak detection equipment as well as our components are used to advance research on the use of nuclear fusion to generate renewable energy? Our products are also applied in the development of stationary and mobile fly-wheel systems. These technologies will be used in the future for storing and supplying energy – for example in Uninterruptible Power Supplies (UPS) of data centers or hospitals as well as for climate-friendly propulsion of vehicles. [➔ LEARN MORE](#)

In the coming years, high-quality consulting, close cooperation with our customers as well as the design of customer-specific complete solutions will become key factors for our economic success. This applies to all areas of the Company, from sales to production and service up to our R&D work. Efficient, digital processes, the further development of our broad product portfolio and our developers' ability to think outside the box by working with customers from a wide variety of industries will ensure that we remain the technology leader in the vacuum industry.

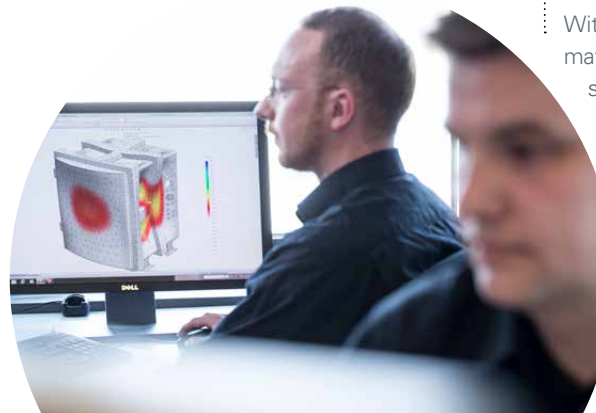


DESIGN: HIGHEST DEMANDS FOR BEST SOLUTIONS

**QUALITY,
DESIGN,
AND SAFETY
ARE CRUCIAL
IN OUR
R&D WORK.**

Demands from our customers and trends in our markets indicate the need for the development of new products or product variations. Precision, conciseness and the clear orientation of the needs of the markets are key to our research and development work – right from the design stage.

With the help of Augmented Reality, 3D animations and CAD data, our developers design our products according to defined needs and requirements. Already at this state, we closely collaborate with the R&D departments of our customers to adhere to our principles of precision and conciseness.

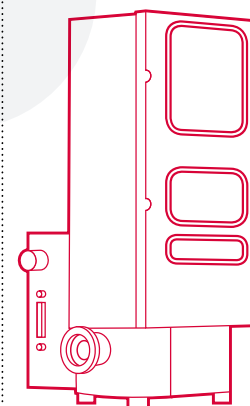




QUALITY: HIGHLY ACCURATE TESTS FOR FLAWLESS PRODUCTS

Each newly developed product leaves the R&D stage only after it has passed strict quality control tests under realistic conditions. With our modern test stations, we are able to mount the pumps in the positions in which they will later also be used by our customers in their R&D and production. In this way, we can verify their correct function under real conditions.

With extensive testing in our R&D departments, individual standards and threshold values are determined for the different pump types. Once a new product is released for serial production, these values serve as a guideline for the quality tests in our own production that all products must pass before they are delivered to the customer.



The R&D departments at our two largest locations in Asslar and Annecy work closely together with the R&D departments at other subsidiaries and provide groundbreaking impetus for the further development of our broad product portfolio.



TRENDS IN RESEARCH AND DEVELOPMENT

Many pilot projects are currently running in our global R&D departments to test the use of the latest technologies in the development of our products. The biggest trends here are Virtual and Augmented Reality. However, 3D printing is also becoming an increasingly important tool for our developers.

SAFETY: CRASH TESTS TO PROVE THAT OUR TURBOPUMPS ARE SAFE

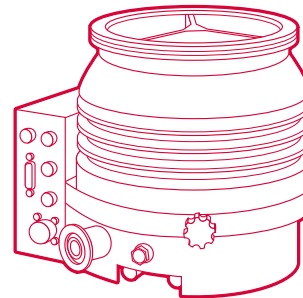
The rotor of a turbopump rotates up to 90,000 times per minute – this is almost the speed of sound at the outer radius. It is easy to imagine that when a rotor crashes at full speed, it causes severe damage. Therefore, safety is one of the most important aspects in our R&D work. Our developers regularly carry out crash tests in a dedicated test room during which turbopumps are deliberately destroyed to make sure that the housing withstands the forces released by a rotor crash.

Even though such massive failures thankfully do not happen often in practice, they cannot be completely prevented either when operating turbopumps. A rotor crash can happen when a foreign object drops into the pump – for example as a result from a wafer breaking – or if a contact between rotor and stator occurs due to incorrect installation or operating errors.

**OUR DEVELOPERS REGULARLY
CARRY OUT CRASH TESTS
ON OUR TURBOPUMPS**

To prevent massive damage or even harm to people, Pfeiffer Vacuum tests its pumps under extreme conditions. Therefore, not only crash tests are conducted, but also long-term test cycles that last up to one year and expose the pumps to overloads.

View inside a turbo-
pump after it had been
deliberately crashed
during a safety test.



OUR GUIDELINE FOR THE FUTURE

Besides the use of digital tools, our experience from the past years has shown that good communication and close cooperation between Pfeiffer Vacuum and its customers have significantly enhanced innovative strength and competitiveness on both sides. We will continue and intensify this course also in the future.



VACUUM SOLUTIONS

OUR VACUUM SOLUTIONS – TAILORED TO THE NEEDS OF OUR CUSTOMERS

Our customers' fields of application are extremely diverse – and so are their expectations and demands on our products. Thankfully, we have a portfolio of vacuum solutions that is just as broad. This allows us to design individual vacuum solutions tailored to the specific needs of our customers.

Our guideline:
technological excellence and
highest quality standards

APPLICATION EXAMPLES FOR VACUUM SOLUTIONS:

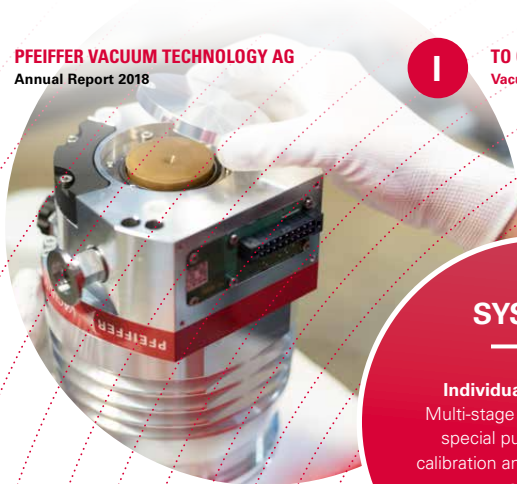
- Analysis technology
- Chemical industry
- Coating of glasses, architectural glass, tools, flat screens, Blu-ray discs
- Drying processes
- Food and beverage industry
- Leak detection for the automotive industry
- Manufacturing solar cells
- Paper manufacturing
- Pharmaceutical industry
- Semiconductor production
- Solar thermal plants
- Space simulation
- Steel degassing

For each vacuum solution we design, the same guidelines apply: technological excellence matched with the highest quality standards from the development stage right through to commissioning. We know that for each of our customers, the perfect vacuum solution looks different. This is why the same standards apply to all our various products for evacuating, measuring, and analyzing vacuum – consultation and service included.

KEY FACTORS FOR COMPILING A VACUUM SOLUTION

- Number and types of gases in one container
- Pressure and flow velocity
- Intended final pressure and base pressure
- Pumping speed and throughput





SYSTEMS

Individual technologies
Multi-stage vacuum systems,
special pumping stations,
calibration and decontamination
systems

TURBOPUMPS

High and ultra-high vacuum
Magnetic and hybrid bearing
turbopumps and turbo pumping
stations

BACKING PUMPS

Low and medium vacuum
Rotary vane, diaphragm, Roots,
side channel, screw and piston
pumps in addition to
pumping stations



VACUUM CHAMBERS

Depending on process conditions
Low, medium, and high vacuum
chambers in individual
shapes and sizes

ELEMENTS OF VACUUM- SOLUTIONS

More about our vacuum solutions
[PFEIFFER-VACUUM/SOLUTIONS](https://www.pfeiffer-vacuum.com/solutions)

CONSULTATION

Absolute customer orientation
Needs assessment, design,
and calculation of vacuum
systems as well as product
consultation

SERVICE

Flexible service module
Technical training and seminars,
on-site service, comprehensive service
contracts, regional service centers,
replacement products, and original
replacement parts



COMPONENTS

Valves and components
Gaskets, filters, valves, flanges,
electrical feedthroughs, manipu-
lators, bellows components, and
other accessories

MEASUREMENT AND ANALYSIS EQUIPMENT

For all pressure ranges
Leak detectors, gas analyzers,
gauges, and mass
spectrometers

PRODUCT PORTFOLIO

➤ PFEIFFER-VACUUM/PRODUCTS

Our comprehensive product portfolio – the solution enabler

With our comprehensive product portfolio, we are able to offer the matching vacuum solution for each customer and each application.

WHAT IS THE MICRO-FLOW TECHNOLOGY?

The heart of the Micro-Flow technology are our Intelligent Gas Leak Sensors (IGLS). The sensors measure flow, pressure and temperature to provide an output that is directly proportional to the leak rate respectively defect size. When air leaks from the unit or assembly under test, the emitted air is replenished through the Micro-Flow sensor to maintain a constant pressure. The loss causes an electrical signal proportional to the volume flow.

OUR SYSTEMS IN USE

Our complete vacuum systems are used, for example, to test components for the automotive and electronics industry as well as vessels or packaging in the food industry. The range includes systems for leak detection and contamination management as well as multi-stage vacuum systems and the AMI integrity test system for pharmaceutical packs.

DID YOU KNOW?

Pfeiffer Vacuum's patented AMI in-line integrity test system does not require any specific tracer gas. Instead, the gas mixture present in the container headspace of the primary packaging is used to perform high sensitivity tests over a large detection range. It is used to detect contamination such as humidity, oxygen or microbiological ingress, which can impact drug stability or cause biological ingress of parenteral drugs.

BACKING PUMP PORTFOLIO

- Rotary vane pumps
- Multi-stage Roots pumps
- Dry process pumps
- Roots pumping stations



OUR RANGE OF TURBOPUMPS

- Hybrid
- Magnetically levitated
- Turbo pumping stations
- SplitFlow



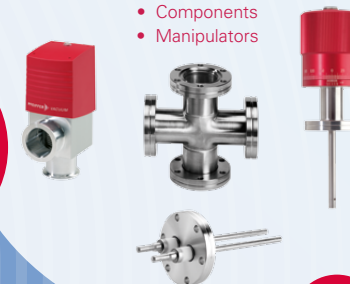
MEASUREMENT AND ANALYSIS EQUIPMENT

- Mass spectrometers
- Gauge heads
- Gas analysis equipment



INSTALLATION ELEMENTS

- Feedthroughs
- Valves
- Components
- Manipulators



Installation elements

Vacuum systems

VACUUM SYSTEMS

- Contamination management solutions
- Multi-stage vacuum systems
- Integrity testing



Vacuum chambers

VACUUM CHAMBERS

- Cylindrical
- Horizontal
- Vertical
- Cubical
- Modular
- For any pressure range



Leak detection

LEAK DETECTION SOLUTIONS

- Leak detectors
- Micro-Flow



Areas of our
product portfolio

➤ PFEIFFER-VACUUM/PRODUCTS

SHARE PERFORMANCE

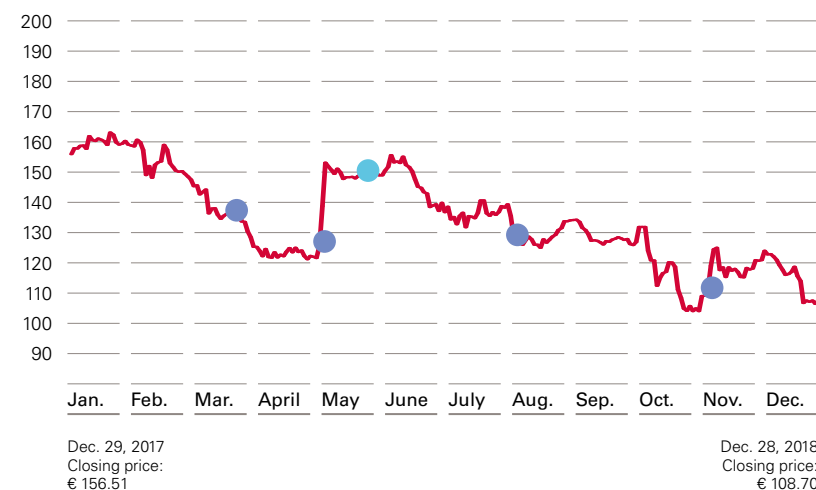
Share price development in the year of strategic realignment, long-term return

The Pfeiffer Vacuum Technology AG share (Pfeiffer Vacuum) started the trading year on January 2, 2018 at a price of € 157.00 and reached the high for the year of € 164.20 on January 19, 2018. In the further course of the first quarter, the development of the Pfeiffer Vacuum share was much more volatile than the market. At the beginning of May, it again exceeded the value of € 150.00 and remained within a range of between € 150.00 and € 125.00 until the end of the third quarter. The Pfeiffer Vacuum share was unable to escape the increasing geopolitical uncertainties and weaker forecasts for the financial market in the fourth quarter. On October 26, 2018, it reached its low of € 105.00 for the year. At the beginning of November, the publication of the Q3 results and the announcement of the planned strategic cooperation with the Busch Group SE led to a significant recovery of the share price. In the general weakness of the market at the end of the year (DAX on December 27, 2018 with the low for the year 2018), the Pfeiffer Vacuum share finished the year at a price of € 108.70.

Compared to the benchmark indices TecDAX, SDAX, DAX and HDAX, the Pfeiffer Vacuum share was 9 to 26 % lower for the full year. In the medium to long term, the Pfeiffer

Vacuum share performs significantly better than the SDAX, DAX and HDAX.

SHARE PRICE DEVELOPMENT OF PFEIFFER VACUUM IN 2018



● Dividend payment
● Earnings

Feb. 16, 2018	Record sales in 2017 € 587 million
Mar. 7, 2018	Management Board and Supervisory Board decide on the € 150 million 3-year investment plan, dividend € 2.00
Mar. 21, 2018	Earnings 2017, sales plus 23.8 %
May 3, 2018	Q1 earnings, sales plus approx. 24.4 %
May 23, 2018	Annual General Meeting 2018
May 28, 2018	Dividend payment (2017)
Aug. 2, 2018	H1 earnings, sales plus 22.4 %
Nov. 5, 2018	Strategic cooperation with the Busch Group planned
Nov. 6, 2018	Q3 earnings, sales plus 14.1 %
Nov. 28, 2018	Capital Markets Day 2018

Pfeiffer Vacuum Technology AG: Member of major international stock indices

SELECTED INDICES

Ticker	Name	Index weighting in %
TDXP	Deutsche Börse TecDAX Total Return Selection Index	0.73
SDYP	Deutsche Börse SDAX Performance Index (XETRA)	1.15
HDAX	Deutsche Börse AG HDAX Index	0.05
NMDP	Deutsche Börse Technology All Share Performance Index	0.97
BEUMCHD	Bloomberg Europe Machinery Diversified Index	1.03

The Pfeiffer Vacuum share is listed in numerous European and international indices. The average daily XETRA trading volume was 32,075 shares in 2018. With a weighting of 0.72 % in the TecDAX, since the index reform of Deutsche Börse in September 2018, the share has ranked 26th out of a total of 30 index values. Since the reorganization of the indices by Deutsche Börse in September 2018, the Pfeiffer Vacuum share is also listed in the SDAX. This increases the visibility especially for index-oriented investors. The listing in the TecDAX also shows the Pfeiffer Vacuum share in HDAX and other international indices. For example, in the MSCI World IMI Index, an index of more than 5,500 stocks from over 20 developed countries.

Dividend proposal of € 2.30 per share

Pfeiffer Vacuum closed the 2018 fiscal year with very good operating results and would like its shareholders to participate in this success. The Management Board and Supervisory Board will propose to the Annual Shareholders' Meeting on May 23, 2019, that a dividend in the amount of € 2.30 per share be distributed. This represents an increase of 15 % compared to the previous year (2018: € 2.00). If the Annual General Meeting agrees to this proposal, the dividend will be paid out on May 28, 2019. A total of € 22.7 million would then be distributed. This would represent a payout ratio of 33 % and a dividend yield of 2.1 %.

Broadly diversified investor structure and anchor investor with sector expertise

With Pangea GmbH, the family-owned investment company of the international vacuum group Busch SE, Pfeiffer Vacuum has a long-term oriented anchor shareholder.

Shareholders with other noteworthy shares are international fund companies such as Allianz Global Investors, Universal Investment, Deka, the State of Norway and Investmentaktien-gesellschaft für langfristige Investoren TGV (TGV).

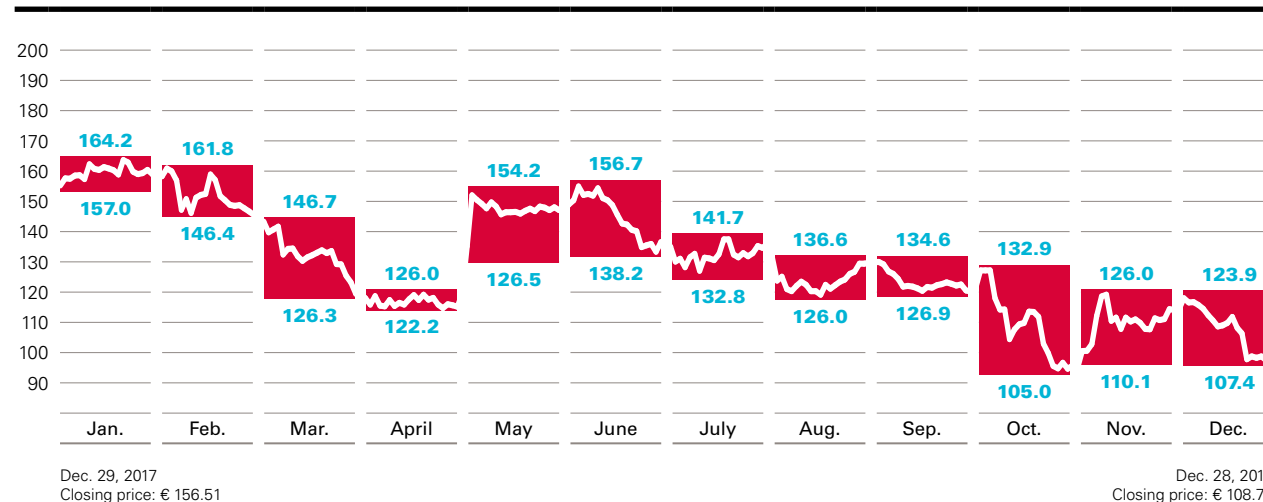
RELATIVE SHARE PRICE DEVELOPMENT OF PFEIFFER VACUUM, SDAX, TECDAX, DAX AND HDAX BETWEEN 2014 AND 2018

in %



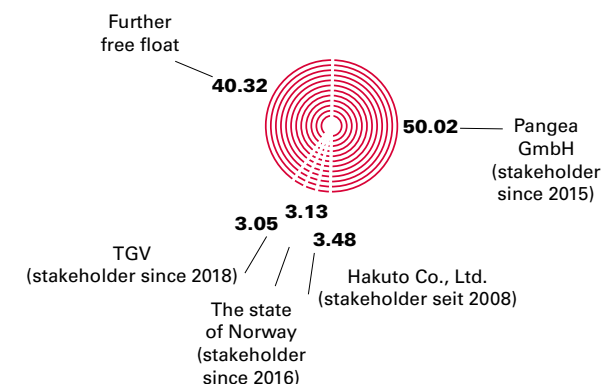
MONTHLY HIGHS AND LOWS OF THE PFEIFFER VACUUM SHARE IN 2018

in €



SHAREHOLDER STRUCTURE AS OF DEC. 31, 2018

in %



Good analyst coverage: multipliers and opinion leaders

As a TecDAX and small cap value, Pfeiffer Vacuum regularly receives international and comprehensive support from more than ten analysts. Regular analyst studies are available to investors for informed opinion. Another number of well-known buy-side analysts from international fund companies and insurance companies analyze Pfeiffer Vacuum's financial results for their own investment opportunities. As well as publishing comprehensive sector studies, many analysts have in-depth knowledge of peer groups and Pfeiffer Vacuum customers. In addition to Pfeiffer Vacuum, four analyst firms alone follow not just Pfeiffer Vacuum but also at least one peer group company.

The multitude of institutional investors, including insurance companies, pension funds, investment advisors and family offices, ensure a structurally broad diversification.

Geographically, Germany and France form a solid core of European shareholders. Including the Nordic countries, Benelux, Italy, the U.K. and Switzerland, over 75 % of Pfeiffer Vacuum shares are held in the E.U. The shareholder base in the USA increased to more than 10 % compared to previous years. A gratifying effect with regard to the initial listing of Pfeiffer Vacuum shares on the NYSE in 1996. In Asia, Pfeiffer Vacuum has another long-term anchor shareholder and trading partner with Hakuto Co., Ltd., Japan.

PFEIFFER VACUUM ANALYSTS

As of December 2018

Bank	Analyst	Rating	Peer group
HSBC	Philip Saliba	Hold	yes
Bankhaus Lampe	Dr. Karsten Iltgen	Hold	—
Pareto Securities	Cengiz Sen	Buy	yes
Commerzbank	Adrian Pehl	Buy	—
DZ Bank	Harald Schnitzer	Hold	—
Independent Research	Markus Friebe	Hold	—
Kepler Cheuvreux	Craig Abbott	Buy	yes
M.M. Warburg	Eggert Kuhls	Hold	—
Berenberg	Martin Comtesse	Hold	yes
Oddo BHF	Veysel Taze	Buy	—

Pfeiffer Vacuum is constantly available for its stakeholders and values an exchange of opinions and market assessments. We want to establish a sound pool of knowledge with our shareholders, investors and analysts and continue to develop it further through external and internal perspectives of markets, technologies and projects.

Comprehensive investor relations activities, member of the industry association DIRK [German Investor Relations Association]

Thanks to a broad range of investor relations activities, the stakeholders always receive open, transparent information about the development of Pfeiffer Vacuum. As a member of the German Investor Relations Association (DIRK), Pfeiffer Vacuum is committed to adhering to the standards for transparent communication with investors.

Conference calls with the CEO and CFO take place on a quarterly basis to explain business results. In dialogue with investors and analysts, the Management Board receives regular feedback on the Company's strategy and performance.

A long-term orientation and continuity are crucial success factors for sustainable, successful relationship management with stakeholders. All stakeholders take the center stage of any activity focused on their needs. Each quarter, the CEO and CFO have conversations with an average of 50 investors and analysts at roadshows, conferences, during phone calls, as well as corporate appointments in Asslar and Annecy.

The Annual General Meeting took place on May 23, 2018, in Wetzlar. A similar number of shareholders and guests as in the previous year had the opportunity to talk to the Management Board and the Supervisory Board in person. Attendance

amounted to 72.23 % compared to 67.40 % In the votes, a large majority of the shareholders agreed with the proposals of the management.

Ahead of the Annual General Meeting, the shareholders were able to download all relevant documents, as well as the ballot sheet, from the broad information offerings on the Internet at [ANNUAL GENERAL MEETING](#).

On November 28, 2018, Pfeiffer Vacuum invited more than 30 analysts and institutional investors to the capital markets day at Klassikstadt in Frankfurt. The atmosphere of the venue combined tradition and innovation – a perfect setting to spend a day discussing Pfeiffer Vacuum's new strategy, investment program and global organizational structure, and to share a common vision of the Company's future.

PFEIFFER VACUUM SHARE DATA

		2018	2017	2016	2015	2014
Share capital	in € millions	25.3	25.3	25.3	25.3	25.3
Number of shares issued	in units	9,867,659	9,867,659	9,867,659	9,867,659	9,867,659
Highest trading price	in €	164.20	174.50	103.45	115.60	102.05
Lowest trading price	in €	105.00	87.80	75.28	65.69	56.21
Trading price at year-end	in €	108.70	156.15	88.82	93.55	68.60
Market capitalization at year-end	in € millions	1,072.62	1,540.84	876	923	677
Dividend per share ¹	in €	2.30	2.00	3.60	3.20	2.65
Dividend yield ¹	in %	2.1	1.3	4.1	3.4	3.9
Earnings per share	in €	6.98	5.46	4.77	4.25	3.29
Price/earnings ratio		15.6	28.6	18.6	22.0	20.9
Free float ²	in %	49.98	61.04	72.81	72.81	100.0

¹ Subject to the approval of the Supervisory Board and the Annual General Meeting

² According to the definition of Deutsche Börse