

Aftermarket services, spares and retrofit

World-class support for world-leading variable pitch axial fans



Revolving Around You™

Your choice of axial flow fan equipment is a significant investment.

Only L&T Howden spares, services and retrofit can ensure you get the most from it.



For over 160 years our JV partner Howden has been supplying innovative products to key industries where performance and reliability are paramount. Throughout the world, there is Howden equipment underpinning everyday life. It is used in steel mills and coal mines, in electricity generation and in the petrochemical industry. We are world leaders in heavy fan technology and rotary heat exchangers. We supply some of the largest compressor packages in the world.

We have a reputation for high quality, integrity and absolute dependability, crucial in our areas of operation.

Our JV partner Howden is Global leader in Variable Pitch Axial Fans. Since the middle of the last century it has been pushing back the boundaries of axial flow design from its technology centre in Denmark, Sweden and Germany. Howden know-how will extend the life of your PF or VARIAX® axial flow fan installation.

Every fan we supply comes with a lifetime commitment to expert support. Not only can we keep your VARIAX® or PF fan running to specification over many decades, we can introduce upgrades and enhancements that enable it to benefit from recent technological developments, or adapt it to meet new operating conditions. L&T Howden also offers spares, services for Axial Fans of other makes used in boiler application from other OEM fan suppliers.



World-class service on a local basis

The optimum level of service is the one that keeps plant available with minimum downtime, extends the life of the installation and raises performance whenever possible.

Servicing

We keep a full installation and service record of each fan we support, and offer regular assessments of service needs. This enables us to predict the maintenance needed to prevent problems. We know which components can be successfully reconditioned and which should be replaced. And, significantly, we can often turn a problem into an opportunity with an upgrade that improves efficiency and performance. From routine checks through emergency responses and troubleshooting to training plant personnel, we can provide a complete site package.

In addition to VARIAX® and PF axial fans, we service the following brands:

Shenyang

Novenco

Voith Fans

TLT

Inside knowledge

We have a team of supervisors and site engineers dedicated entirely to VARIAX® and PF fans. They are backed up by a highly experienced team of specialist engineers to advise on aerodynamics, construction, noise reduction, stress analysis and mechanical engineering. Where necessary, they can draw on other parts of the Group's worldwide service network.

Starting from the installation of the fan, and supervising the start-up and commissioning, we offer a complete lifetime relationship. In addition to regular monitoring, inspection and repair, we can upgrade to optimise system performance.

From emergencies and troubleshooting through to training your own personnel, we offer the only total service package.

Service options include:

regular inspection and maintenance

preventive maintenance and system diagnosis

upgrade and optimisation of performance

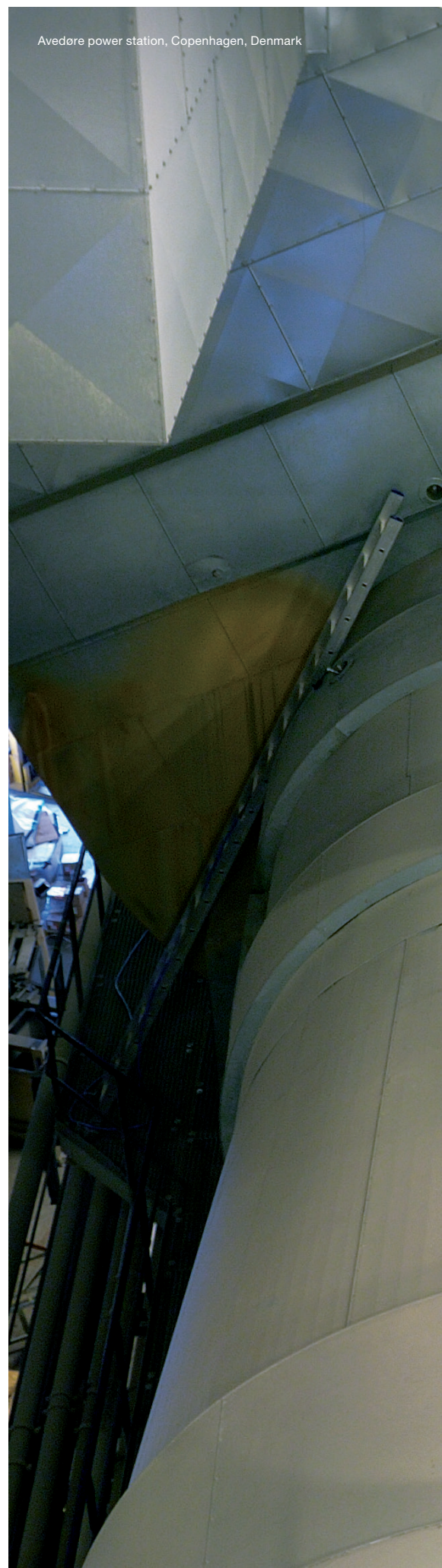
troubleshooting and noise reduction

on-site testing and balancing

training

spare and replacement parts

reconditioning of moving parts





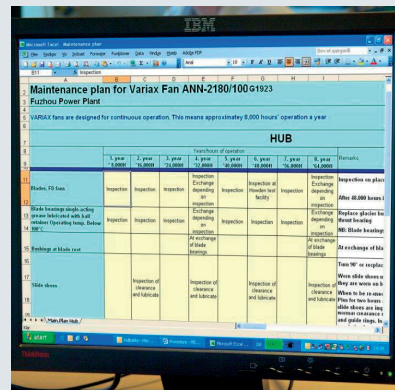
Our JV partner Howden pedigree

To date, we have engineered more than 4,200 fans throughout the world, with power ratings from 2,000 to 16,000kW. The impellers in the fans range from one metre to over five metres in diameter. And, just as each fan is tailored to meet the demands and performance of its unique situation, service and maintenance programmes should be specifically designed to optimise performance throughout the life of the fan, which is typically 40 years or more.

We offer a complete service package, drawing on certified VARIAX® and PF spare parts, servicing and retrofit as required, from the company who engineered and installed

the equipment originally. It is designed to avoid costly downtime and expensive compromises. Howden Axial Fans is the only company with the expertise to lift the maintenance burden from your own personnel, and allow you to concentrate on your core business.

We offer a single point of contact for all your enquiries about VARIAX® and PF fans, whatever their age or location. We will always have the details of your installation on hand. And by using only Howden spares and service, you have the assurance that your VARIAX® or PF fan installation will receive the best possible attention and care.



Dedicated customer maintenance system

VARIAX® spares

When a VARIAX® fan is designed and built, it is tailor-made to the most exacting standards. Every component is selected and tested to ensure it is capable of the extreme performance that will be demanded of it. Behind every installation there are hundreds of hours of engineering expertise and market-leading technology.

Lifetime commitment

When we install a VARIAX® fan, we will continue to provide all the necessary parts and advice to maintain, and often improve, the performance of the installation throughout its working life. We will always have the details of your unique installation on hand.

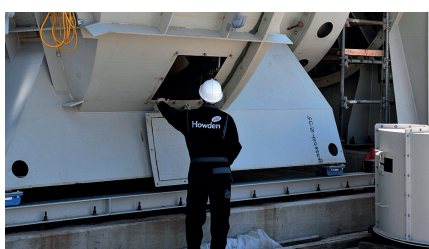
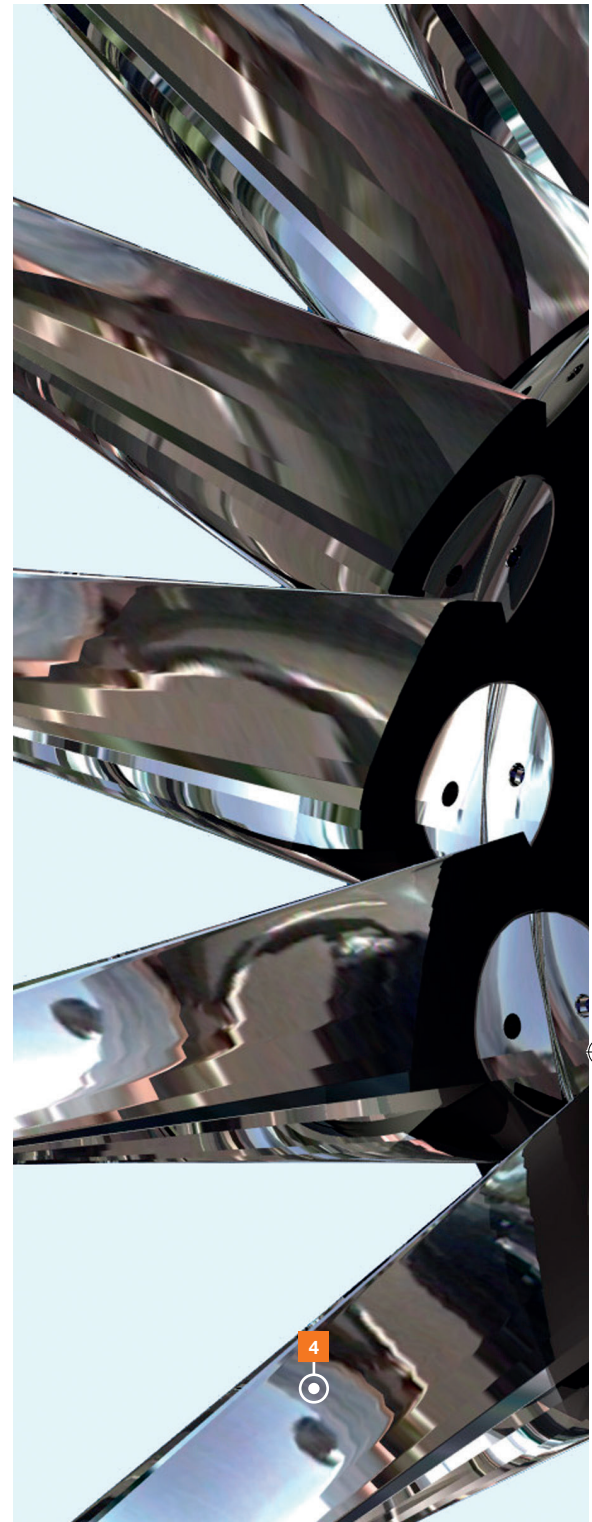
Each fan has well over 1,500 different replaceable parts, and every part of every fan has been designed with its specific site and application in mind. The advantages of using original VARIAX® spares, that meet the exact specification, tolerances and performance of the original part, are obvious. Lower cost alternatives or adaptations can prove very expensive when they fail, and they may place intolerable burdens on other parts of the machinery.

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All of the handling of spares, from initial enquiry through to shipping, is carried out by our highly knowledgeable and experienced staff. Crucially, they have access to the specification and maintenance history of your own installation. They can not only ensure that the replacement sent out is correct in every respect, they can advise on new technologies and developments that may be appropriate to your situation. We call this 'customer orientation' and we take it very seriously.

From our knowledge of your installation, we can also help you to plan your future needs, recommending a list of parts to stock or replace or suggesting upgrades that will improve economy or performance, based on your maintenance record.

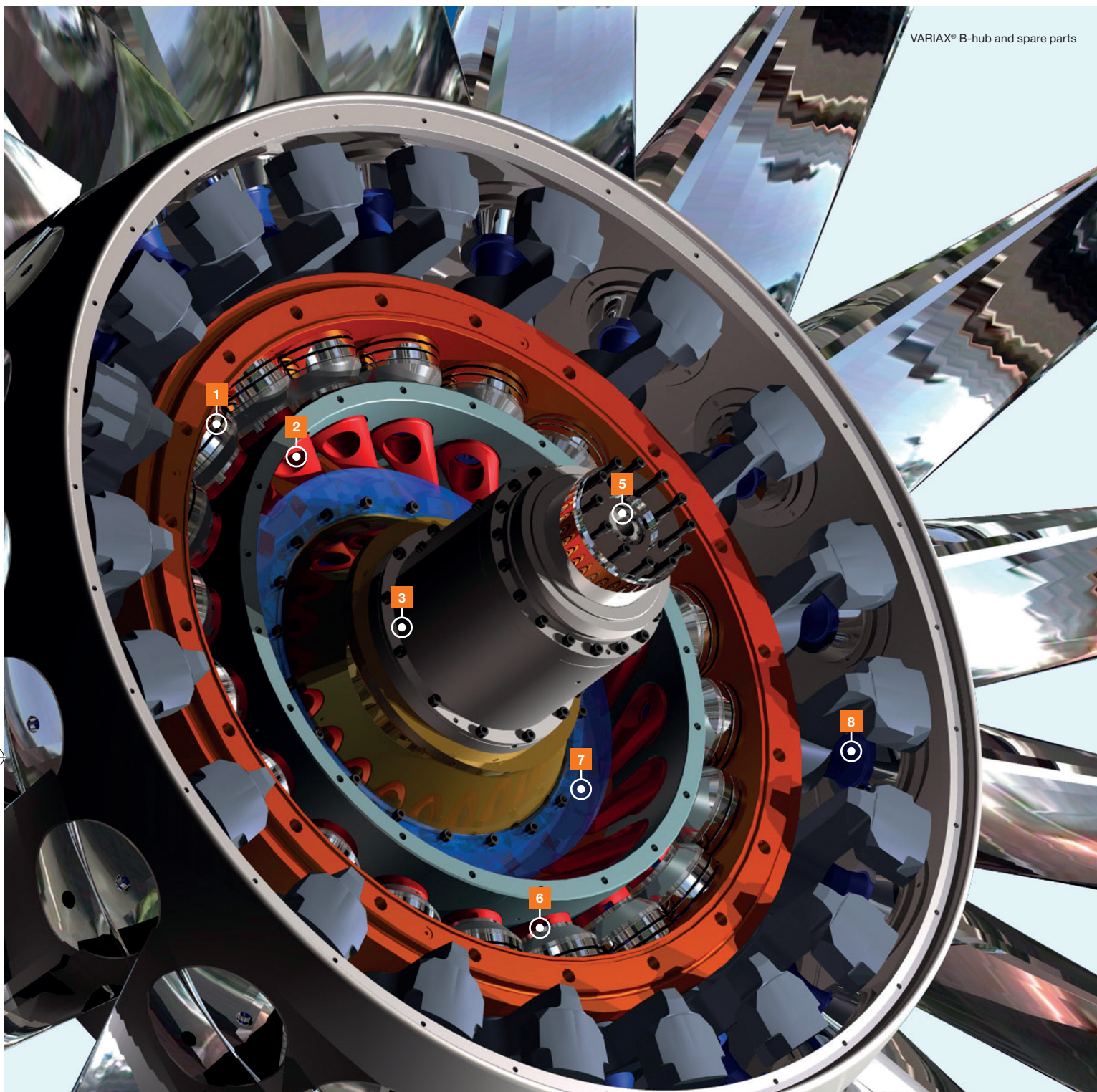
The advantages of using experienced service personnel to carry out the fitting of new parts is also clear. Our engineers are skilled in replacing or upgrading these parts with the minimum of downtime.



Precisely the right spares. Guaranteed.

We can supply spare parts for every VARIAX® fan we have ever made, and every part is manufactured to the same production drawings, specification and tolerances as the original. Our detailed records ensure that every component is precisely engineered to individual requirements.

Certified VARIAX® spares are the route to continued VARIAX® efficiency.



1 Axial thrust bearing



2 Regulating arm



3 Hydraulic cylinder



4 Blade



5 Rotating oil sealing



6 Blade nut



7 Slide shoe



8 Blade pivot

PF spares

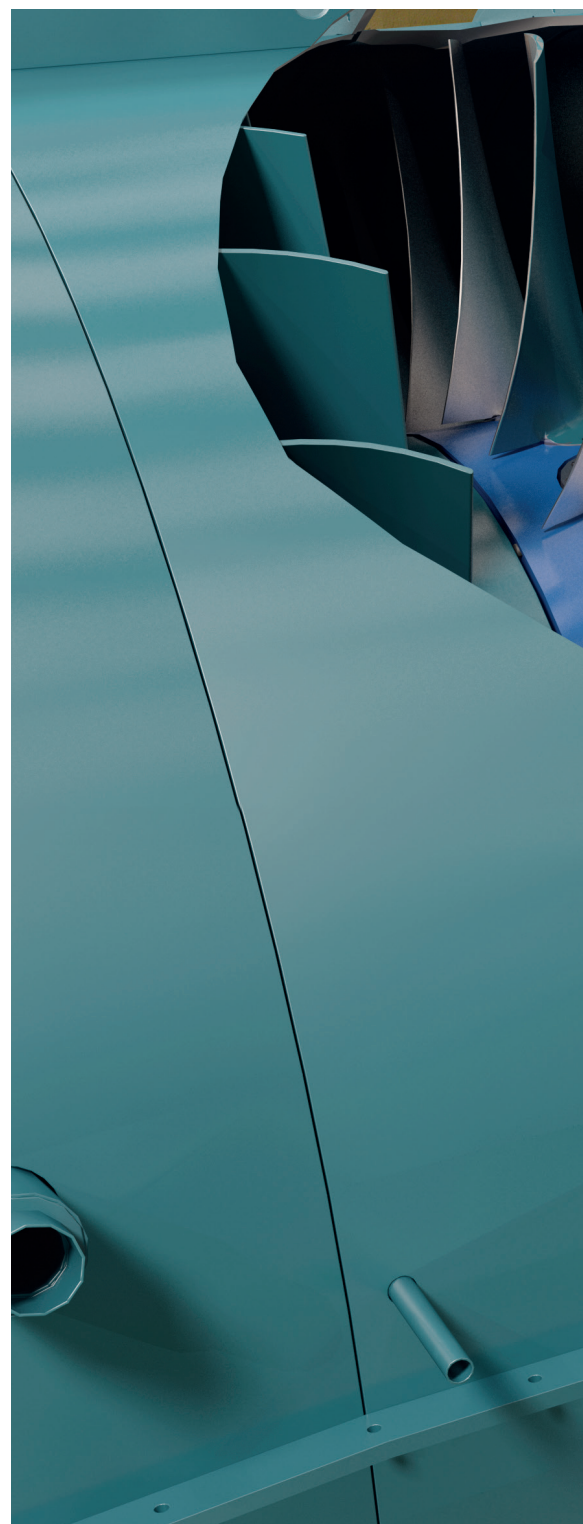
To keep service requirements to a minimum, PF axial fans are designed to operate over long periods without the need for maintenance. Inspection doors are strategically located on the fan for quick and easy maintenance and service.

We regard the supply of spare parts and consumables as an essential part of our business, and we treat it with every bit as much care and attention as we bring to new installations. All enquiries and orders are handled by specialist staff who understand PF fans and the applications where they are used.

We keep full production and service records, and all orders will be checked against the original drawings to make certain that they are appropriate and made to their original specification. All parts are delivered and, if necessary, installed by Howden engineers, as a matter of urgency.

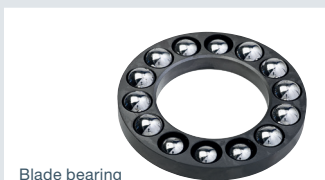
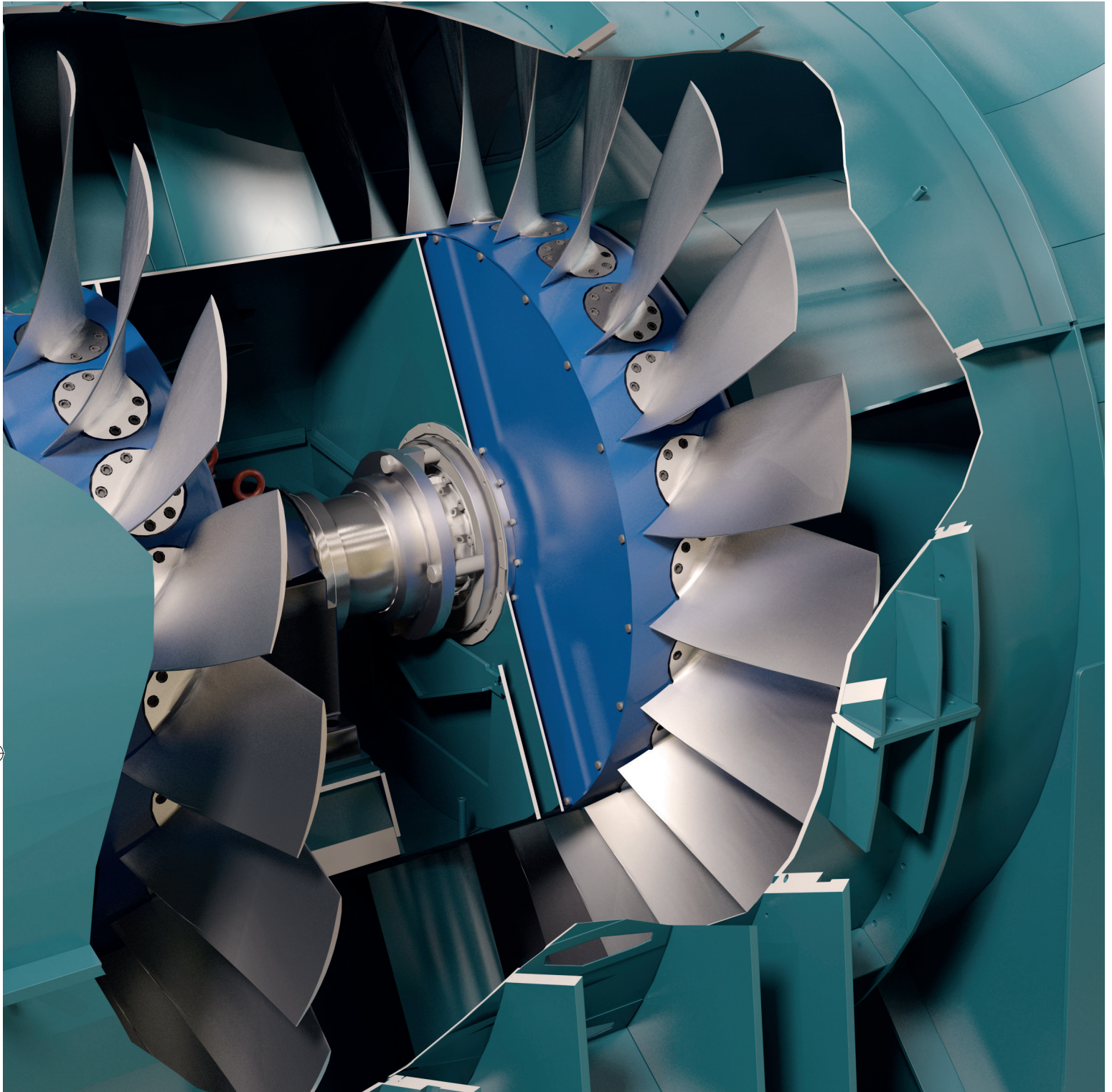
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The PF fan is designed with easy maintenance in mind. For example, the PF fan blades and blade bearings can be accessed through a maintenance door from the outside of the fan casing and be replaced during a normal short outage without full disassembly of the fan – simply unbolt the blades, the blade shaft, take out the axial bearings and replace with new parts. This is just one way of ensuring a cost-effective solution for our customers.



Parts made for your installation

The parts we supply for PF fans not only meet or exceed all the relevant international standards, they meet the exact specification, tolerances and performance of the original components because they are custom manufactured using the original drawings for your unique installation.



Blade bearing



Regulating arm



Hydraulic cylinder



Blade



Rotating oil seal



Blade cone



Blade holder



Blade shaft

Improved performance through retrofit

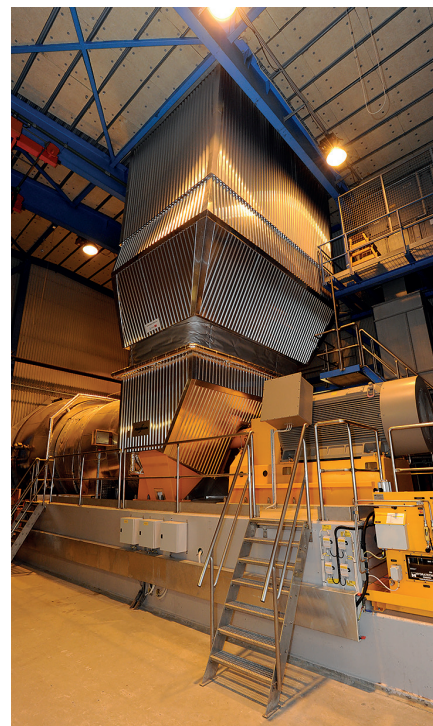
When demands on equipment change and improved performance, higher efficiency, increased availability, reduced noise or lower maintenance are required, or when the equipment is simply getting old, upgrades and retrofits should always be the first option to explore.

Retrofit solutions

We have a comprehensive, flexible and cost-effective retrofit service that enables us to introduce our most recent improvements into fans that have been in service for several years. Building on the superior aerodynamics of the design, with its low dynamic forces and vibration levels, we can integrate the most up-to-date technology into the framework of the existing installation. Retrofit projects normally pay back their investment in reduced running costs within a surprisingly short time. Existing foundation bolt positions, the natural

frequency of the foundation, the duct arrangement and the specification and design of the motor are all taken into consideration.

The rotating system, shaft and bearings will be manufactured to introduce state of the art developments into the static parts already in situ. The outcome offers the performance of a brand new fan at a substantially lower cost and downtime of a full replacement, and adds enormously to the designed life of the plant.



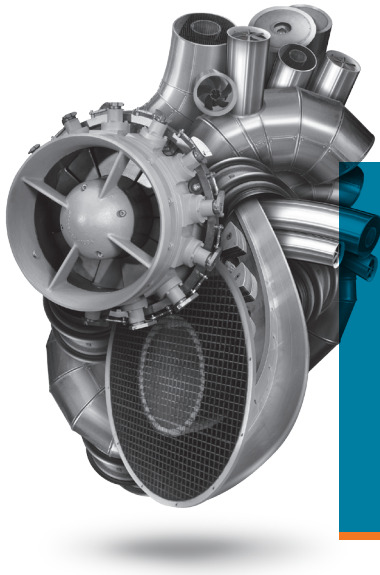


The advantage of partnership

A service partnership with Howden is the simplest and best route to extending the working life of your axial flow fan equipment and ensuring that you benefit fully from our programme of continual improvement.

We are the only supplier of certified VARIAX® and PF spares that meet or exceed all of the relevant international standards. All of the parts we supply are guaranteed and we offer a lifetime service commitment that includes keeping a full maintenance record of your installation. We have ISO 9001:2008 accreditation for our quality assurance procedures, our environmental standards are certified to ISO 14001:2004, and we have a health and safety programme that meets OHSAS 18001:2008 criteria and covers all VARIAX® and PF staff.





At the heart of your operations

Howden people live to improve our products and services and for over 160 years our world has revolved around our customers. This dedication means our air and gas handling equipment adds maximum value to your operations. We have innovation in our hearts and every day we focus on providing you with the best solutions for your vital operations.



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CIN :U31401MH2010PTC204403