Flange valves
Tough, durable, reliable

Long service life
High functional reliability
Easy to service
Low maintenance
Compact design

Engineering GREAT Solutions
Engineering GREAT solutions through people, products, innovation and service

IMI Precision Engineering is a world-leader in fluid and motion control. Building close, collaborative relationships with our customers, we gain a deep understanding of their engineering needs and then mobilise our resources and expertise to deliver distinctive products and solutions.

Wherever precision, speed and engineering reliability are essential, our global footprint, problem-solving capability and portfolio of high performance products enables us to deliver GREAT solutions which help customers tackle the world’s most demanding engineering challenges.

> **Reliability**
We deliver and support our high quality products through our global service network.

> **High performance products**
Calling on a world-class portfolio of fluid and motion control products including IMI Norgren, IMI Buschjost, IMI FAS, IMI Herion and IMI Maxseal. We can supply these singly, or combined in powerful customised solutions to improve performance and productivity.

> **Partnership & Problem solving**
We get closer to our customers to understand their exact challenges.
In use for more than half a century – IMI Buschjost flange valves

Tough, durable, reliable: IMI Buschjost branded flange valves have proven reliable in the field for many years. Customers in various industries have relied on IMI Precision Engineering’s innovative products for more than 50 years – including general mechanical engineering and plant construction, the chemical industry, right up to the power plant sector.

The flange valves are developed and produced in Bad Oeynhausen, North Rhine-Westphalia – from the smallest to the largest nominal diameter, all valves proudly display their “Made in Germany” seal of quality. Expert teams are continually working to improve the innovative technology even more, building on more than half a century of comprehensive expertise which has already been invested in the products. The aim of this continuous development is to always give our users a competitive advantage. Close partnerships help the experts at IMI Precision Engineering develop solutions that are perfectly tailored to our clients’ unique challenges.

The IMI Buschjost range of flange valves is broad and includes not only standard specifications but also special solutions and customised variants. So different fluids and fields of application can be handled equally well.

Product highlights:

- Long service life
- High functional reliability
- Low maintenance
- Smooth-moving piston
- Compact design
- Easy to service
<table>
<thead>
<tr>
<th>Series</th>
<th>Type</th>
<th>Operation</th>
<th>Connection</th>
<th>Fluid temperature (max.)</th>
<th>Pressure range (bar)</th>
<th>Material</th>
<th>Body</th>
<th>Features</th>
</tr>
</thead>
<tbody>
<tr>
<td>83030</td>
<td>Diaphragm solenoid valves</td>
<td>Indirect</td>
<td>Flange</td>
<td>90 °C</td>
<td>0,1 ... 10 / 16</td>
<td>Cast steel / Brass</td>
<td>Option: Flange connection acc. to ASME B 16.5 150 lb/sq. In.</td>
<td></td>
</tr>
<tr>
<td>83040</td>
<td>Diaphragm solenoid valves</td>
<td>Forced lifting</td>
<td>Flange</td>
<td>90 °C</td>
<td>0 ... 10 / 16</td>
<td>Cast steel / Brass</td>
<td>Option: Flange connection acc. to ASME B 16.5 150 lb/sq. In.</td>
<td></td>
</tr>
<tr>
<td>85780</td>
<td>Piston solenoid valve</td>
<td>Forced lifting</td>
<td>Flange</td>
<td>60 °C</td>
<td>0 ... 16 / 25</td>
<td>Stainless steel (1.4408) / (1.4031)</td>
<td>Option: Flange connection acc. to ASME B 16.5 150 lb/sq. In.</td>
<td>Option: Flange connection acc. to ASME B 16.5 300 lb/sq. In.</td>
</tr>
<tr>
<td>86480</td>
<td>Piston solenoid valve</td>
<td>Forced lifting</td>
<td>Flange</td>
<td>90 °C</td>
<td>0 ... 25</td>
<td>Ductile iron</td>
<td>Option: Flange connection acc. to ASME B 16.5 150 lb/sq. In.</td>
<td></td>
</tr>
<tr>
<td>86520</td>
<td>Piston solenoid valve</td>
<td>Forced lifting</td>
<td>Flange</td>
<td>200 °C</td>
<td>0 ... 16</td>
<td>Stainless steel (1.4406) / Brass</td>
<td>Option: Flange connection acc. to ASME B 16.5 150 lb/sq. In.</td>
<td>Option: Flange connection acc. to ASME B 16.5 300 lb/sq. In.</td>
</tr>
<tr>
<td>85660</td>
<td>Piston solenoid valve</td>
<td>Indirect</td>
<td>Flange</td>
<td>90 °C</td>
<td>0,5 ... 40</td>
<td>Cast steel / Brass</td>
<td>Option: Flange connection acc. to ASME B 16.5 150 lb/sq. In.</td>
<td>Option: Flange connection acc. to ASME B 16.5 300 lb/sq. In.</td>
</tr>
</tbody>
</table>

NEW! 86480

NEW! 86500

NEW! 86540

**Tough, durable, reliable – flange valves**
Tough, durable and reliable – IMI Buschjost flange valves impress with their proven and innovative technology

Over the past five decades, IMI Buschjost branded flange valves have successfully established themselves in the market. They have a wide application range, so as a result the valves can be used in a variety of industries.

For example, in general mechanical and plant engineering they are installed in tunnel boring machines, while in building technology they are used in temperature control and air-conditioning functions. They can be found in cooling or turbine auxiliary systems in power plants and in water treatment for the chemical industry. In short: IMI Buschjost branded flange valves have been developed to handle a wide range of different challenges.

A wide range of products and many designs and sizes are available to choose from. The valves are outstanding in their durability, reliability and value for money, as well as their robust construction and innovative technology. Experts continuously strive to improve the products to give users new and decisive competitive advantage. Recently, the larger sized DN 65, DN 80 and DN 100 flange valves have been completely revised, creating a completely new generation of valves.
The IMI Buschjost DN 65, DN 80 and DN 100 nominal diameter flange valves have been completely revised to be compliant with the current version of the Pressure Equipment Directive 2014/68/EU, with fundamental improvements and many benefits for users.

As with the smaller DN 15 to DN 50 nominal diameters, the new valve generation works on the basis of the force lifted piston principle. The proven labyrinth piston, which has PTFE guide rings instead of grooved seals, is new to the larger nominal diameters. These are particularly resilient, wear-resistant and durable – more information can be found on page 7 in the text “DN 65, DN 80 and DN 100 flange valves now also with innovative labyrinth technology”.

Another highlight of the new valve generation is the innovative manual override. This unconventional solution, which acts directly on the valve spindle, provides a fast response: the valves can be fully opened or closed with a single 180 degree movement. A spindle, which is mechanically connected to the plunger, eliminates the need for manual stroke adjustment, making service and maintenance significantly easier and shorter.

An improved position indicator is yet another impressive feature of the new flange valves. Two displays have been reduced to one, so there is only one sensor for the two “open” and “closed” switch positions. The programmable sensor makes operation significantly easier, meaning that operating errors are practically impossible. The compact design and size of the position indicator, which has been reduced by 50%, greatly minimise the risk of damage, for example during transport, installation or maintenance.

The new flange-generation is particularly easy to install with its slim construction and appealing design; its simple handling is also a plus point. DN 65, DN 80 and DN 100 flange valves are available both in stainless steel and high-grade ductile iron, suitable for both PN16 and PN40 pressure stages and withstanding temperatures from -40 to + 200 degrees Celsius easily. The life span of the valves is more than 200,000 switching cycles, depending on the application, which is more than double that of the previous models.

The new generation of IMI Buschjost flange valves is available from spring 2017. Other models are currently being planned and available from mid-2017. The following products will then be added to the range:

- Version with compact magnets and overexcitation
- Low-temperature version for extreme temperatures as low as -40 degrees Celsius
- Steam version for high temperatures up to +200 degrees Celsius
- Version with ATEX-magnet 9540 & IECEx

<table>
<thead>
<tr>
<th>Medium</th>
<th>Operating pressure</th>
<th>Port size (mm)</th>
<th>Old Series</th>
<th>New Series</th>
<th>Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neutral gases and fluids</td>
<td>0 ... 16 bar</td>
<td>15 20 25 32 40 50 65 80 100</td>
<td>83580, 84100, 84120, 84320</td>
<td>86480</td>
<td>Ductile iron</td>
</tr>
<tr>
<td>Neutral gases and fluids</td>
<td>0 ... 25 bar</td>
<td>15 20 25 32 40 50 65 80 100</td>
<td>84200, 84220, 84340</td>
<td>86500</td>
<td>Ductile iron</td>
</tr>
<tr>
<td>Slightly aggressive gases and liquid fluids</td>
<td>0 ... 25 bar</td>
<td>15 20 25 32 40 50 65 80 100</td>
<td>84140, 84240</td>
<td>86540</td>
<td>Stainless steel (1.4408)</td>
</tr>
</tbody>
</table>

The series will also be renamed with the development of the new generation of flange valves.

The following overview shows the old and new names:
DN 65, DN 80 and DN 100 flange valves now with innovative labyrinth technology

Labyrinth technology has revolutionised IMI Buschjost branded piston valves from IMI Precision Engineering. For over five years now, the IMI Buschjost DN 15 to DN 50 nominal diameter flange valves have featured the technology that has been proven in numerous tests and found to be particularly durable. Labyrinth technology will now be introduced to the DN 65, DN 80 and DN 100 nominal diameters on revising these product lines.

The pistons have a wear-resistant graphite-covered labyrinth seal instead of a grooved seal. This consist of floating fitted and slotted PTFE guide rings which withstand temperatures up to 200 degrees Celsius. The labyrinth seal is impervious to pressure surges contrary to the flow direction, making its simple and compact construction, long life and high flow rate particularly impressive.

Force lifted valves with labyrinth pistons have a particular and decisive advantage: the piston’s friction and resistance to motion are reduced due to the special nature of the seal. The effective force is increased in this way, leading to a significant improvement in functional reliability even under difficult conditions.
New flange valves for the process industry

Benefits for the user:

> Long service life
> High functional reliability
> Low motion resistance
> Compact design
> Simplified maintenance thanks to easy to mount profile seals
> Economical solution due to modular system
> Easy to implement explosion-proof design
> Innovative position indicator – a sensor for both switching positions

Series 86480/86500
DN 65 ... DN 100
PN16 / PN40
Operating pressure 0 ... 16 bar / 0 ... 25 bar
Fluid temperature –20 ... +90 °C
Ambient temperature –20 ... +50 °C
Power consumption 80 W

New version in ductile iron
Options & variations

Normally open (NO)
Manual override
Low temperature version –40 °C
Steam version
Ex-Solenoid 9540

Series 86540
DN 15 ... DN 100
PN40 (PN16 Option)
Operating pressure 0 ... 16 bar / 0 ... 25 bar
Fluid temperature –20 ... +90 °C
Ambient temperature –20 ... +50 °C
Power consumption 80 W

Reduces energy costs by up to 60 %
Saves up to 250 kWh per year
Coming soon!

Reduced solenoid power consumption by electronic device
Pick-up power 80 ... 100 W
Holding power 24 ... 30 W
Solenoid 84xx instead of 95xx

New version in Stainless steel

Tough, durable, reliable – flange valves 09
Areas of application
Nuclear power plants
During steam generation in nuclear power stations, hydrogen is produced as a waste product, which is initially stored in a secure container and then discharged through the exhaust chimney into the atmosphere. IMI Buschjost branded flange valves regulate the hydrogen flow in this process. What is needed here are valves in nominal diameters from DN 65 suitable for use in potentially explosive atmospheres (EExdIIT4) and which have at least a 3.1 approval certificate.

Heating up in coal-fired power stations
It takes approximately 40,000 to 60,000 litres of heating oil or 4,000 to 6,000 cubic metres of gas to heat up the boiler fire in a coal-fired power station, for example during the initial commissioning or after maintenance. IMI Buschjost flange valves regulate the flow of the fuel to the burner. The valves with a minimum nominal diameter of DN 65 need to be explosion-proof (EExdIIT4/5) and have SIL 2 certification.

Waste incineration plants
In vertically mounted boilers of waste incineration plants so-called water cannons are being used to clean the boiler walls. IMI Buschjost branded flange valves ensure that the correct amount of water is injected to produce a steam explosion. Thus residual particles sticking on the boiler walls can be removed and disposed of via a conveyor belt. Valves of nominal diameters from DN 65 upwards are required in this application.

Gas engine applications
In gas engine applications, which have to withstand extremely low temperatures down to -40 degrees Celsius, IMI Buschjost flange valves are installed in the cooling circuits of heat exchangers. They switch to the closed position when the gas engine is shut down to slow the drop in temperature of the cooling medium. In this way, the engine needs less time to warm up when next started.

Metal production
IMI Buschjost flange valves are also installed in the cooling circuits of metal rolling mills. Cooling processes are necessary during the different steps during which the metal is processed. These are controlled by the flange valves.
IMI Precision Engineering operates four global centres of technical excellence and a sales and service network in 75 countries, as well as manufacturing capability in the USA, Germany, China, UK, Switzerland, Czech Republic, Mexico and Brazil. For information on all IMI Precision Engineering companies visit www.imi-precision.com

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