

INDUSTRY SOLUTIONS



MHA ZENTGRAF
FlowControlTechnology





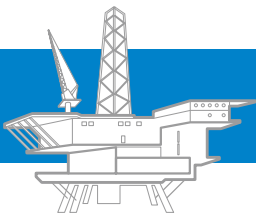
Application- specific ball valves

Our industry solutions

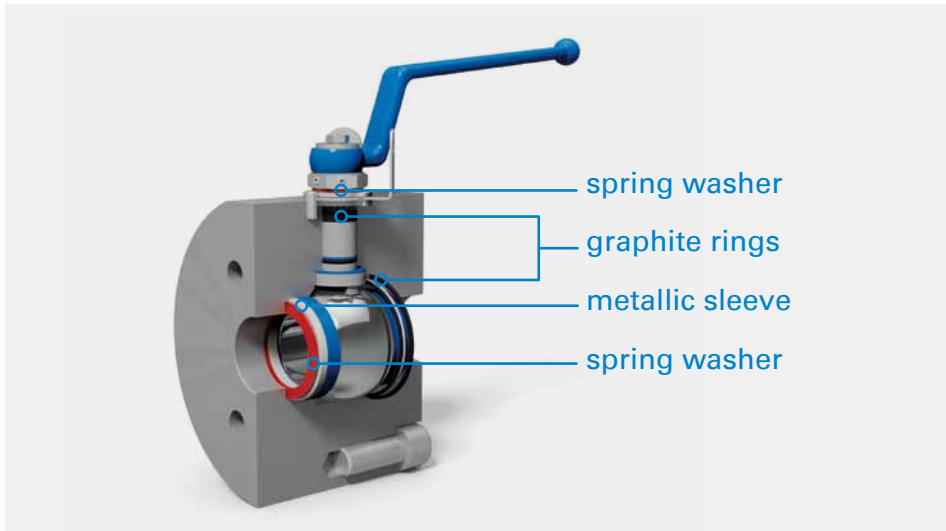
Why do we have just the right product for you? Because we can offer a very large number of standardised solutions and an unlimited number of individual solutions.

We supply high-quality ball valves at reasonable prices – including branch competence in the automotive industry, construction and agricultural machinery, fire protection, renewable energy, ship building & offshore applications, mining and tunnel drilling, oil & gas as well as the steel & chemical industry.

For all of these branches of industries, we give you the good feeling that you have acquired a safe, first class product.



Firesafe ball valves



When handling flammable liquids, safety must be a prime consideration. Great importance is therefore attributed to the design of “fire-safe” shut-off valves utilized in many industrial environments including:

- chemical and petrochemical plants
- oil drilling and refineries
- on- /offshore installations

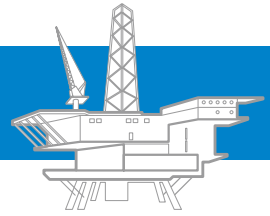
When fire does break out, it is important that it does not spread through failures in pipe-work systems. Even under the most extreme conditions shut-off valves must provide:

- secure operation
- reliable sealing in shut-off position
- reliable sealing to the outside

Due to their quarter turn shut-off design, MHA ball valves provide a solution to meet these demands. Metal seat edges at the ball seats guarantee the sealing function during and after contact with fire, even if the seals are burnt. In addition, both housings and shafts are sealed with heat resistant seats, ensuring their continued operation.

MHA ball valves of the BKH- and KH-series have been tested successfully according to firesafe standard ISO 10497. Currently MHA is certified for the BKH series with nominal sizes from DN 4 to DN 50 and the KH series with nominal sizes from DN 25 to DN 125, within a nominal pressure range up to PN 420 bar.



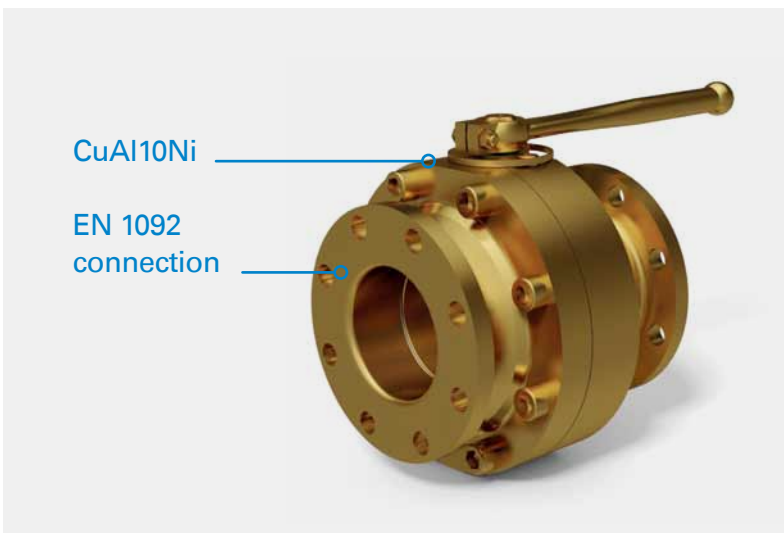


Flangeable cylinder valves for e.g. riser tensioner system

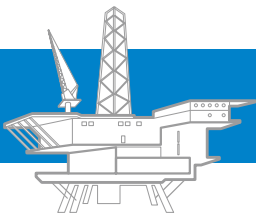


- Sizes from 5/8" to 8" (DN15 to 200)
- Pressure up to 10.000 psi (690 bar)
- Steel, stainless steel or duplex
- Bypass option

Highly corrosion-resistant bronze marine valve



- All metal parts made of nickel-aluminum-bronze
- 3" (DN 80)
- 700 psi (50 bar)
- Flange connection EN 1092 (others on request)



Double safety & bleed (DSB) valve



MHA Double Safety and Bleed valves combine various valve functions in one block. This solution is more space saving and contains much less potential leakage points compared to a multiple piped valve solution.

Possible options for MHA DSB valves are

Fig. 1: MHA Double Safety and Bleed valves ensures a two stage isolation with an integrated bleed valve at high security work areas. When maintenance service is conducted both valves are closed. Through the bleed valve the isolation of the valve can be proven. Through integrated test points the fluid conditions can constantly be monitored.

Fig. 2: MHA DSB valves allow to carry out maintenance service at components without shutting the HPU down: Main valve A is closed. Through opening valve C fluid from maintenance component is bled. After closing valve B maintenance can be conducted with double isolation safety level.

Available options

- Double Safety & Bleed
- Double Safety & Bleed + Bypass
- Double Safety & Bypass

Available connections

- ISO 6162-1/2
- ISO 6164
- ANSI RF

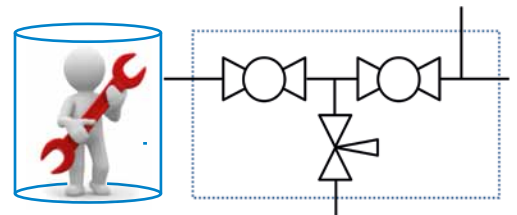


Fig. 1: Double safety & bleed option

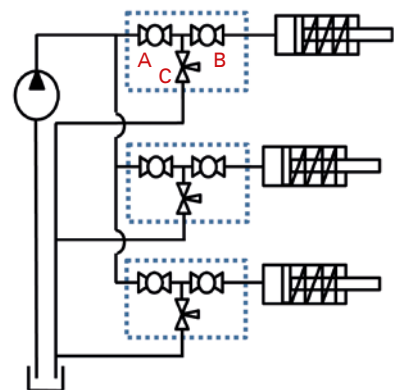
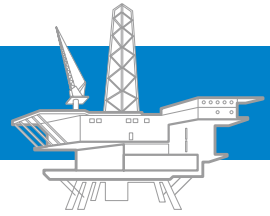
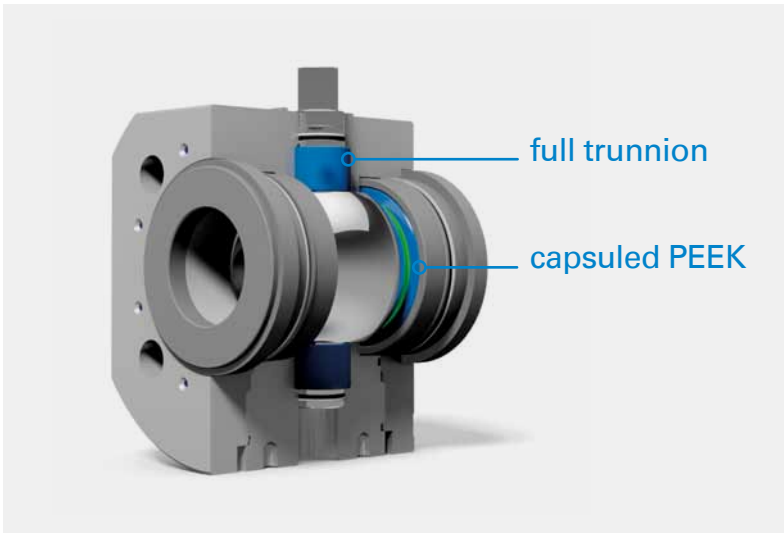


Fig. 2: System maintenance optimisation

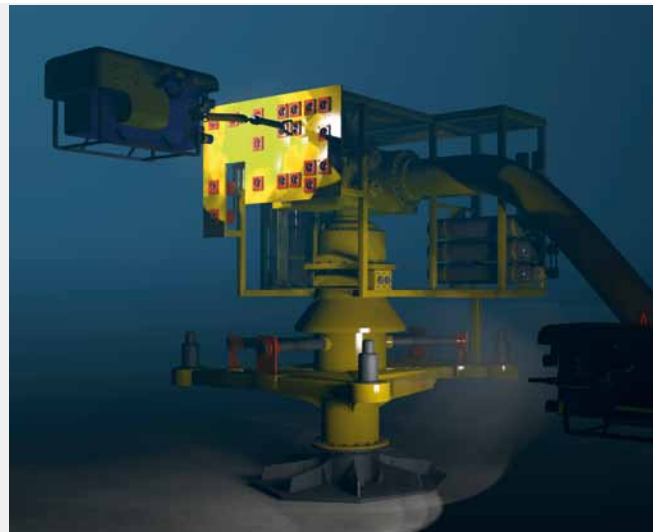


Full trunnion gas valve



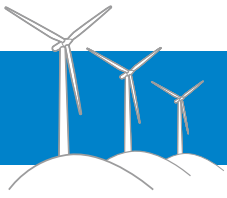
- 5.000 psi (350 bar) full ΔP
- Carbon or stainless steel up to 8" (DN200)
- Full trunnion design with capsuled PEEK seats
- VDS tested
- LRS or other classification society approvals

Subsea ball valves

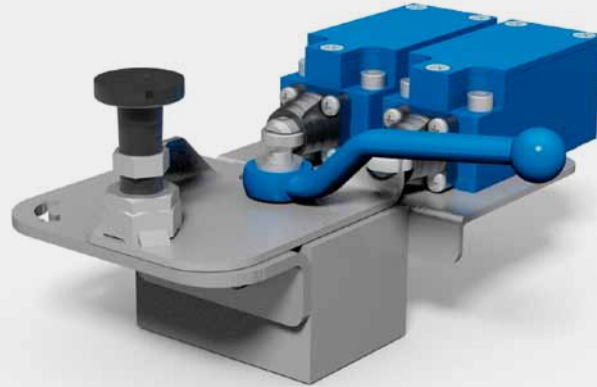


Ball valves for subsea control panels

- Trunnion design
- max depth 3.500 m below sea level
- Pressure rating 10.000 psi (690 bar)
- Sizes up to 1"



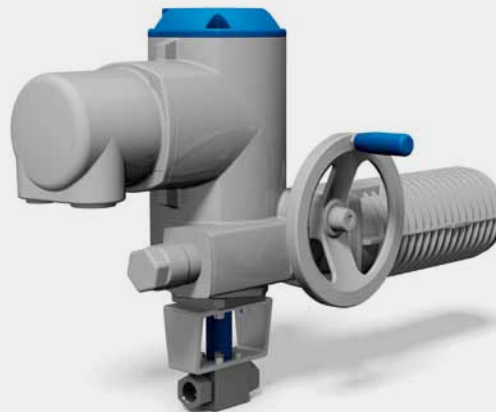
Maintenance ball valves for pitch systems in windpower plants



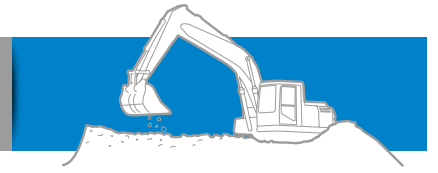
Block-type ball valve with integrated functions

- Position feedback with sensor
- Mechanism against unintentional actuation
- Optical display of position
- Also available for offshore or low-temperature applications

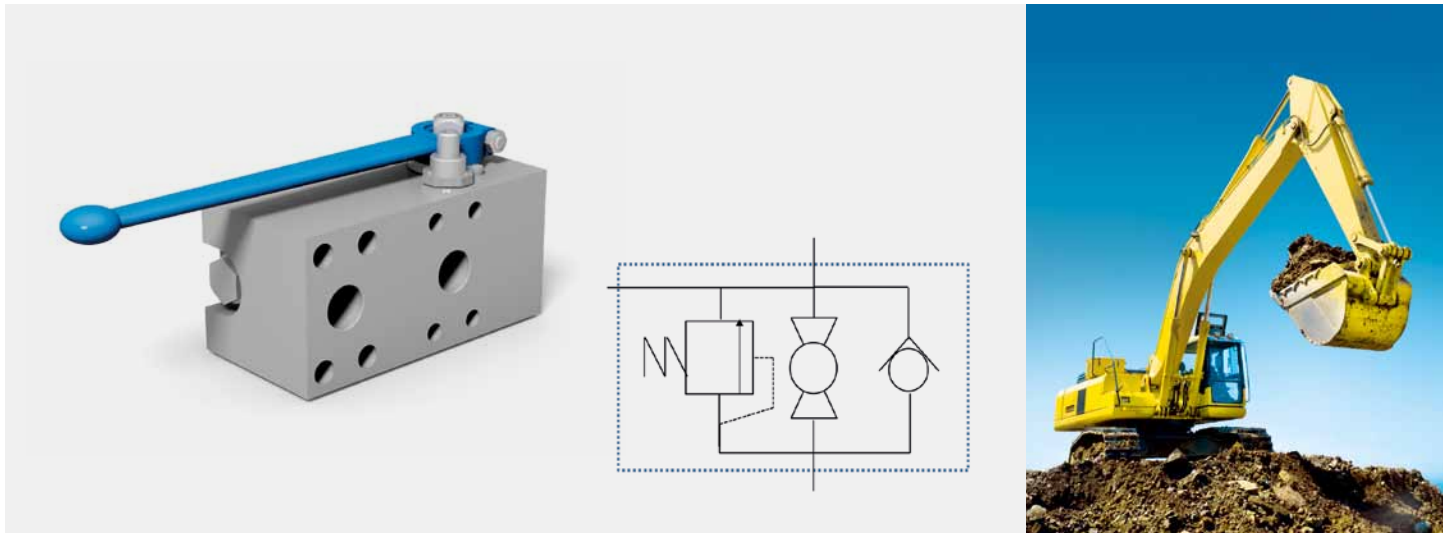
Electrically-operated ball valves for power plant hydraulics



- Electrical actuator in accordance with customer specifications
- ATEX certified
- Emergency manual override

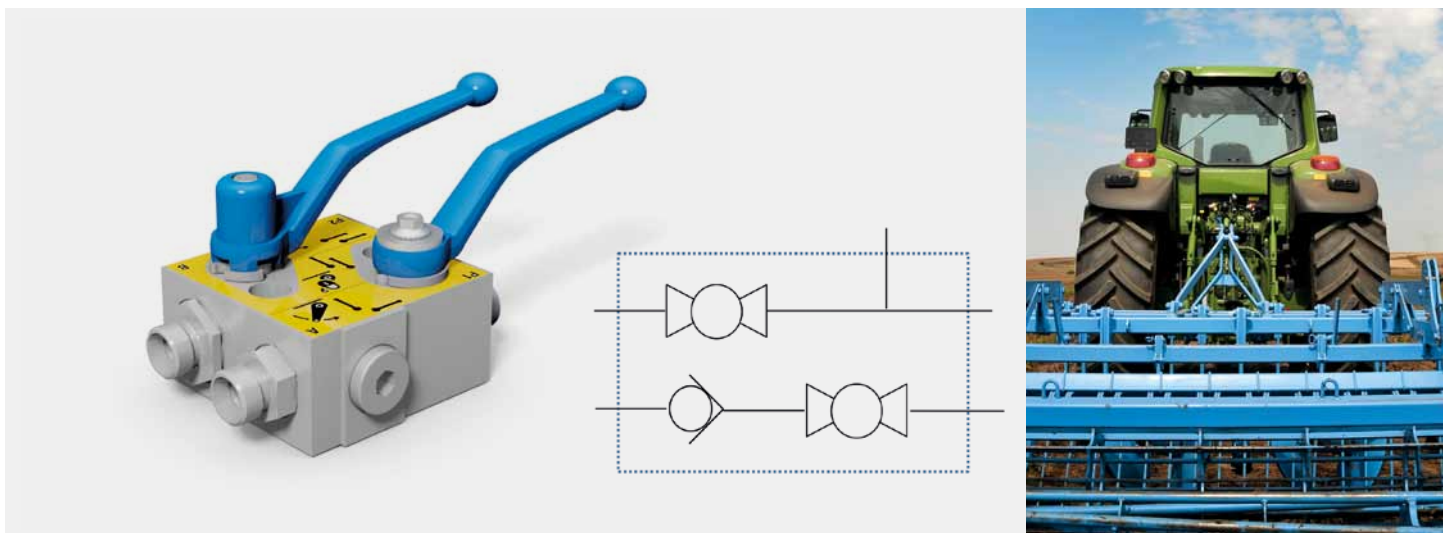


Excavator grab tooling valve



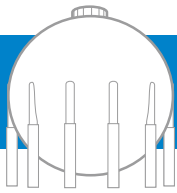
This valve combination is used in excavators for special tooling. Integrated safety function against overload pressure, combining ball valve, check valve and pressure relief valve in one valve block. Robust and space optimized design with fewer potential leakage points than piped solution.

Examples of multi-functional valve modules



Changeover block for front linkage

This changeover block is mainly used in agricultural equipment. Allows for manual override of equipment movement functions. Space-saving valve block design, combining two ball valves and one check valve. The valve can be directly panel-mounted and is protected against unintentional operation.



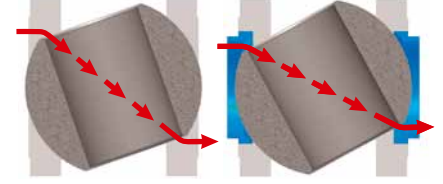
Ball seat design for gas applications

During opening gas can cause significant damage to standard ball seats through increased flow rates.

The **MHA ZENTGRAF** seat design with an inner metal ring protects the ball seat from erosion and increases the lifetime of the ball valve significantly.



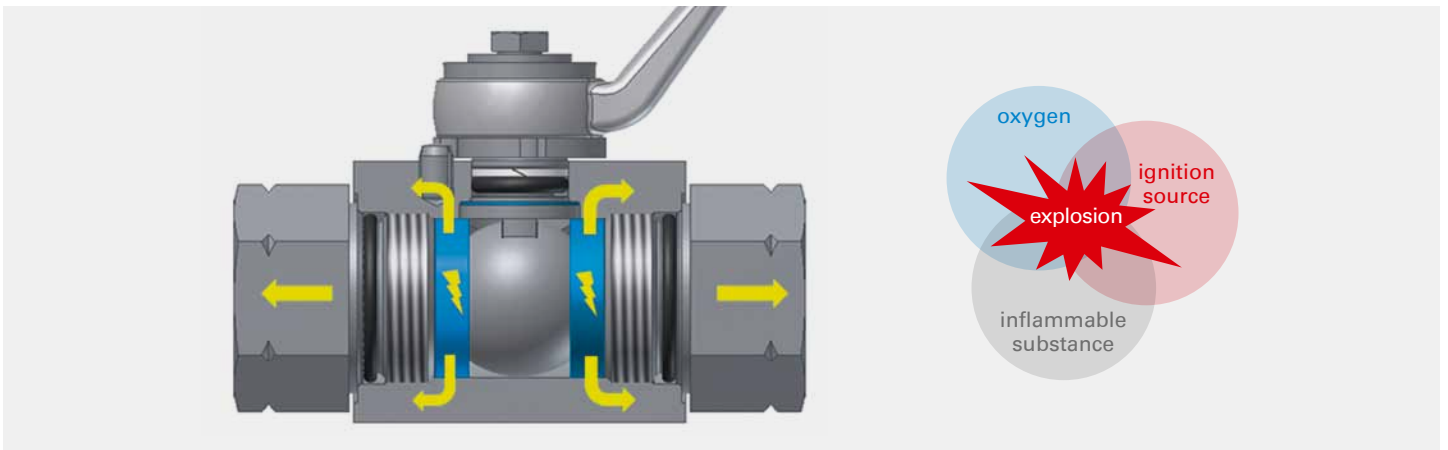
eroded ball seat



standard seat design

MHA ZENTGRAF gas seat design

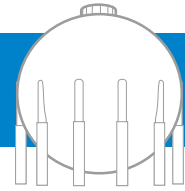
ATEX ball valves



Explosions can cause loss of life and serious injuries as well as significant damage. The aim of the ATEX directive is both to apply a single level for health and safety requirements and to overcome trade barriers. The main purpose of the ATEX directive is to minimize or completely eliminate the risk of ignition in explosive areas and to limit the harmful effects in case of an explosion. Explosive atmospheres (Ex areas) can be found where a mixture of air, flammable gases, vapors, mists or dusts are being produced, transformed or stored in the presence of oxygen. This may, for example, be the case in power plants, refineries, chemical facilities, paint facilities, air- and seaport storage tanks.

The new ATEX directive 2014/34/EU specifies some changes regarding ball valves classification. According to that regulation ball valves are not classified to be marked with the Ex-Symbol as they are not classified as "fast acting/shifting valves". Therefore they are said not to be affected by the ATEX directive.

Nevertheless **MHA ZENTGRAF** did a risk analysis in the past and found out that there is a risk of electrical current emerging inside the valve. Therefore **MHA ZENTGRAF** highly recommends special electrically discharging ball seats to be used for potentially explosive areas.



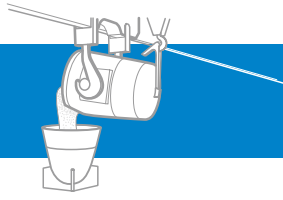
Distributor block for gas filtration stations



- Several integrated functions and ball valves in one block
- Mutual activation of two blocks
- Material suitability in accordance with NACE MR0175
- O-rings against explosive decompression and suitable for temperatures down to -46°C

Components for all CNG processing steps





CO₂ extraction trunnion ball valve



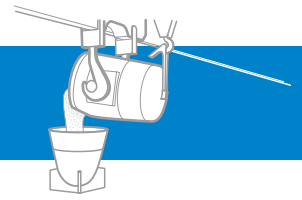
- Pneumatically operated
- Full trunnion ball
- ANSI flange connection (others on request)

Highest pressure ball valves for hydrogen service

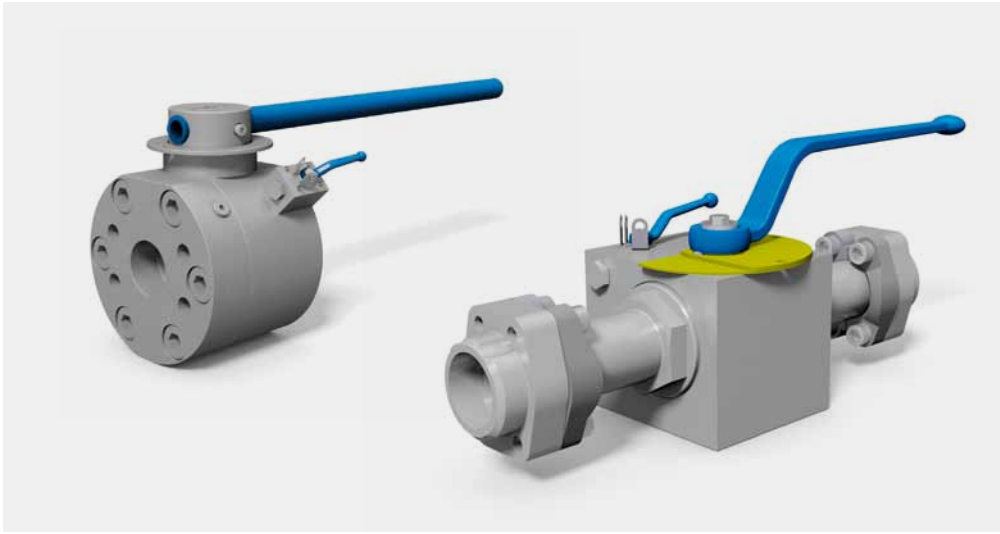


Hydrogen storage, transportation and filling stations require higher pressure ratings to achieve higher levels of energy density. This also leads to higher security factors for all equipment.

MHA ZENTRGAF can supply valves for the most common hydrogen pressure levels of 420 bar (6.000 psi), 800 bar (11.600 psi) or even special valves up to 2.000 bar (29.000 psi).



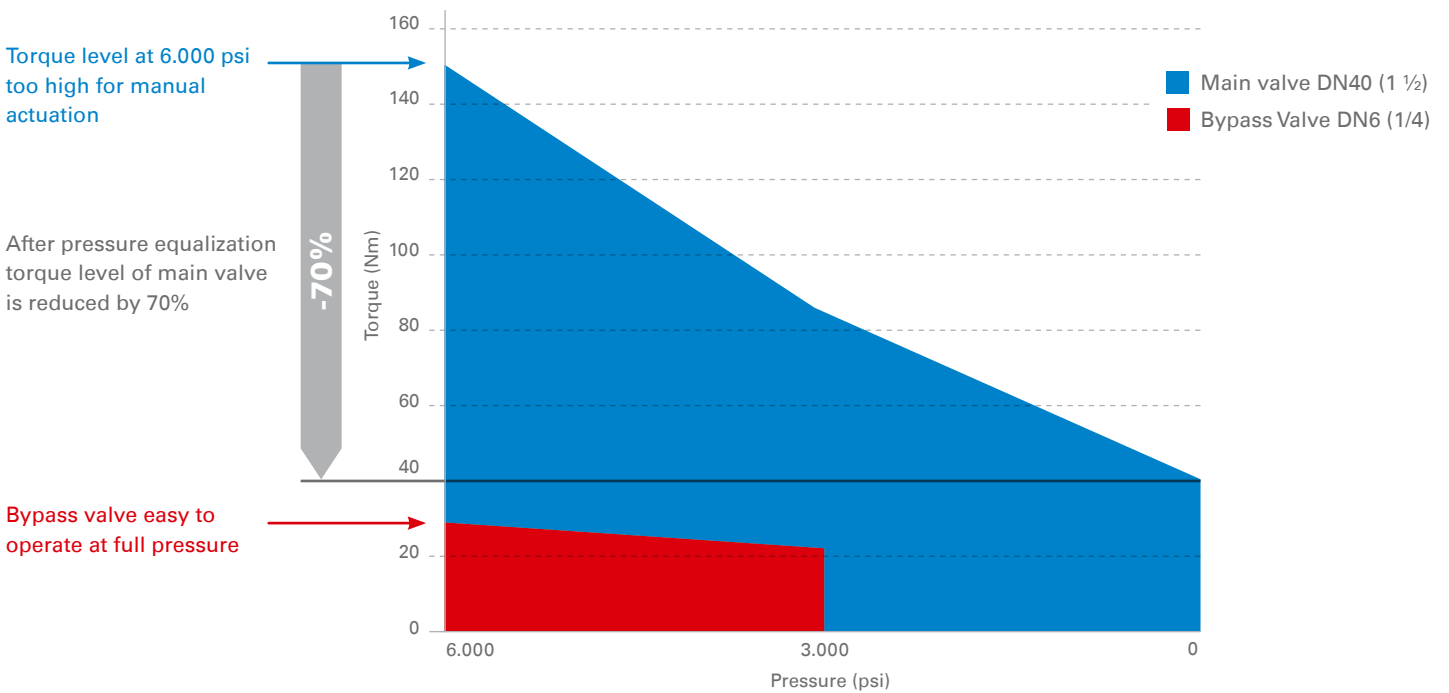
Bypass ball valve with flange connection

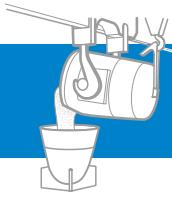


When large diameter ball valves have to be activated at full differential pressure, a smaller bypass ball valve is used before activation in order to equalize the pressure. We combine the bypass and main activation in one block in order to prevent leakage points compared to a piped solution.

Benefits

- Designed for use in harsh conditions
- Locking device to prevent unintentional activation





Chemical industry ball valves

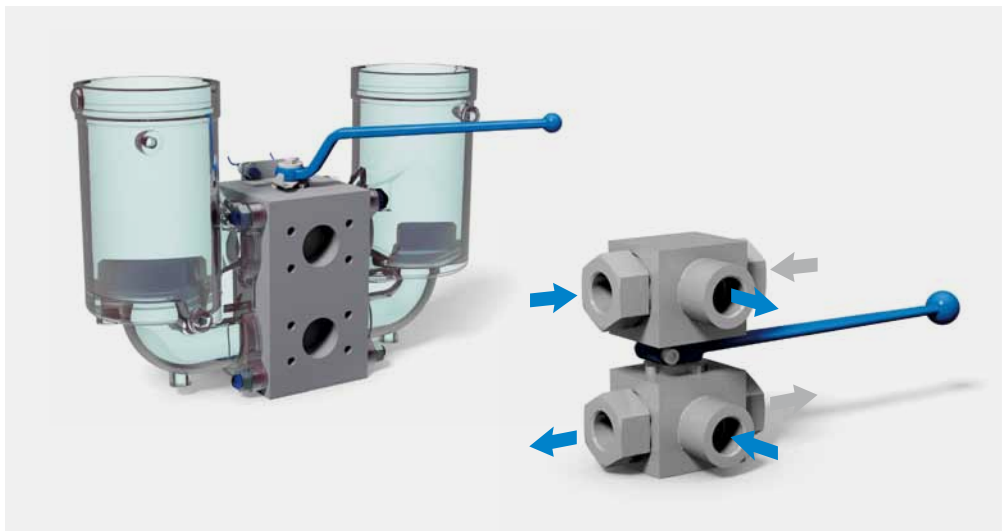


Extreme conditions such as hot sulfuric acid service require special coatings and superior corrosion resistance of all components used within the system.

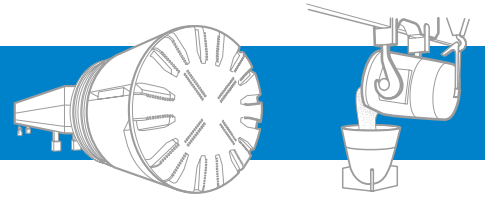
MHA ZENTGRAF can supply a large variety of valve body materials (e.g. Inconel, Hastelloy, Superduplex) as well as special coatings such as tantalum coating. Such coatings provide extreme corrosion resistance on an economic price level compared to valves made of complete bar stocks.

Furthermore special services such as valve cleanliness certificates or helium leakage rate test protocols can be provided.

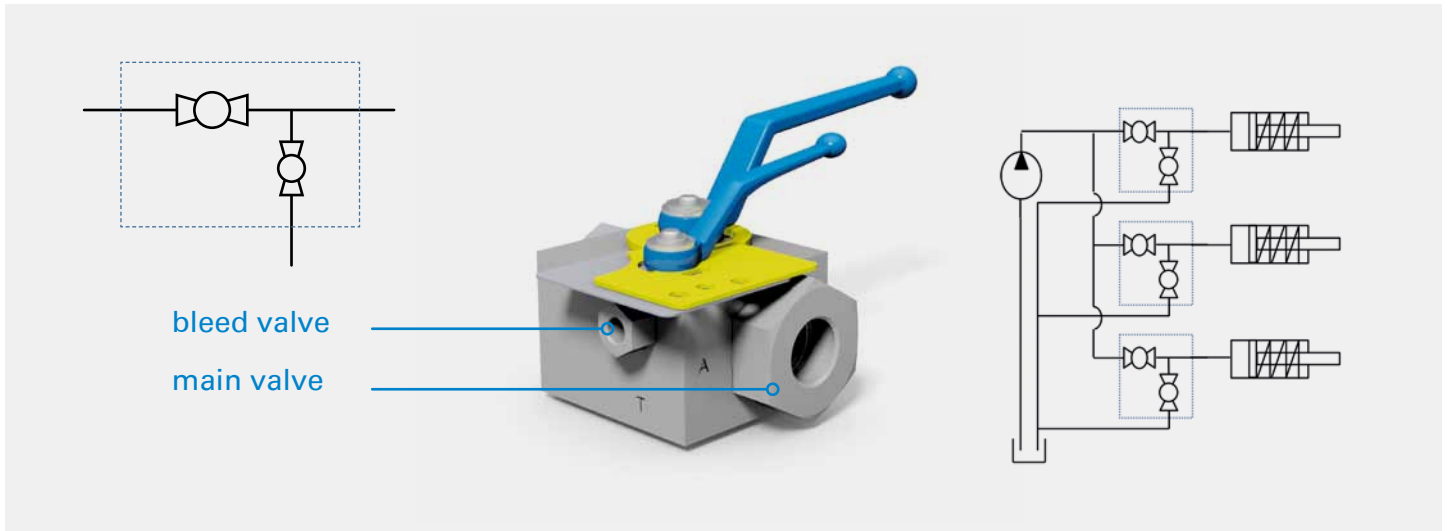
Filtration applications



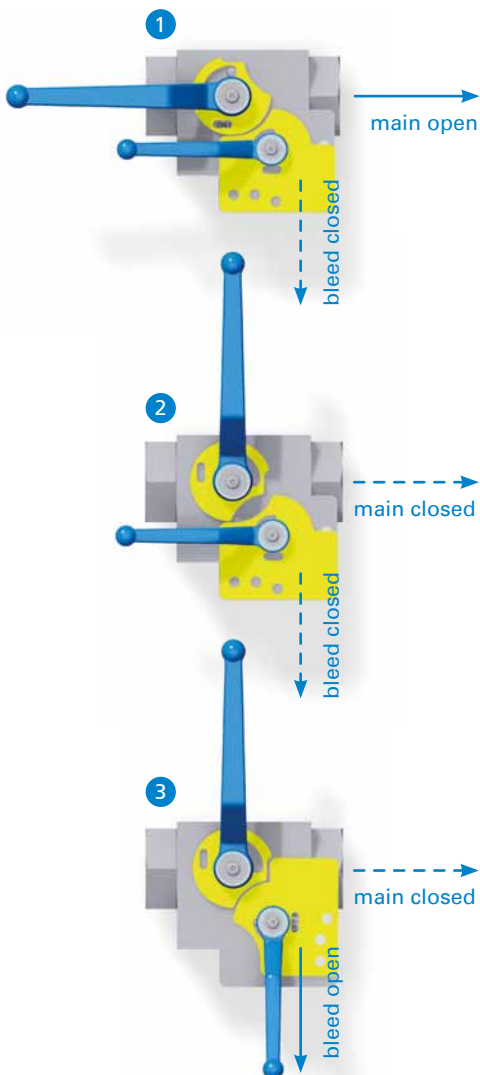
- Core design of most filtration applications is a combination of two 3/2-way ball valves actuated with one handle
- Sizes from 1/4" to 3"
- Threaded or flanged connection
- Pressure rating up to 420 bar (6.000 psi)



Safety bleed valve



Maintenance valve used for example in tunnel boring machines, allowing for service of cylinders without shutting down the hydraulic system. Separated shut off and bleed valve guarantees safe isolation of media in accordance with DIN EN 982 with locking device for up to 3 padlocks and integrated on/off label.



1 Normal operating position

In this position the main valve is open and the bleed valve is closed.

2 Main close position

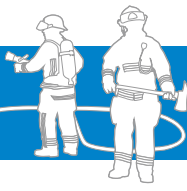
First step in locking out the hydraulic supply to the machine is to close the main valve.

3 Bleed position

Second step is to bleed the hydraulic consumer through the bleed valve. Through the cam plate design the bleed valve can only be operated if the main valve is closed. The possibility to lock the valve position with up to three padlocks ensures a safe maintenance service for the workers.

Valve configuration also available as manifold mounting version





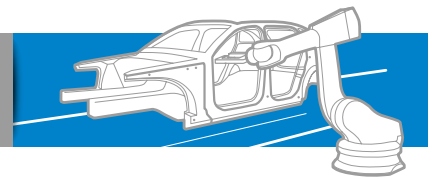
Fire protection application examples for railway, tunnel, buildings and marine



Product range for fire extinguishing systems

- Nominal diameter: 4 - 200 mm
- 15.000 section valves per year
- Steel, stainless steel
- Manually operated or actuated (pneumatic, electric, hydraulic)

Valves can be used with typical fire extinguishing media like water mist, argonite, nitrogen, CO2 and others.



Sealing, gluing

e.g. sheet metal overlapping for corrosion protection, windscreen, ceiling

Typical media:

- Polyurethane
- Thermoplastics (PVC, PA, PET)
- PVC, rubber

Painting

Typical requirement:

LABS-free (the valves can be specially cleaned to remove paint wetting disruptive substances)

Protection / damping

e.g. noise protection, protective undercoating

Typical media:

- Polyurethane
- Plastisol
- Mastic (protective undercoating)

Polyurethane (PUR)

e.g. seat padding

Typical media:

- Isocyanate (MDI, TDI)

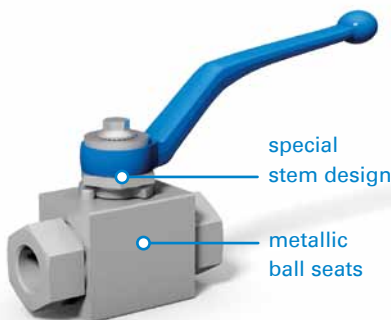


MHA ZENTGRAF offers a wide range of suitable valve setups for different automotive industry processes. In many cases highly viscous or abrasive fluids are used which provide major challenges for valve seat materials. For those media **MHA ZENTGRAF** uses metallic ball seats with a specially hardened ball to ensure a long lifetime in the process. **MHA ZENTGRAF** ball valves are also available with heating devices and temperature sensors in order to keep the temperature regulated during the manufacturing process. On request the valves can be specially cleaned to remove paint wetting disruptive substances (LABS-free). Equipped with actuators and limit switches our ball valves can be integrated into any automation concept.

Ball valves for isocyanates and abrasive media

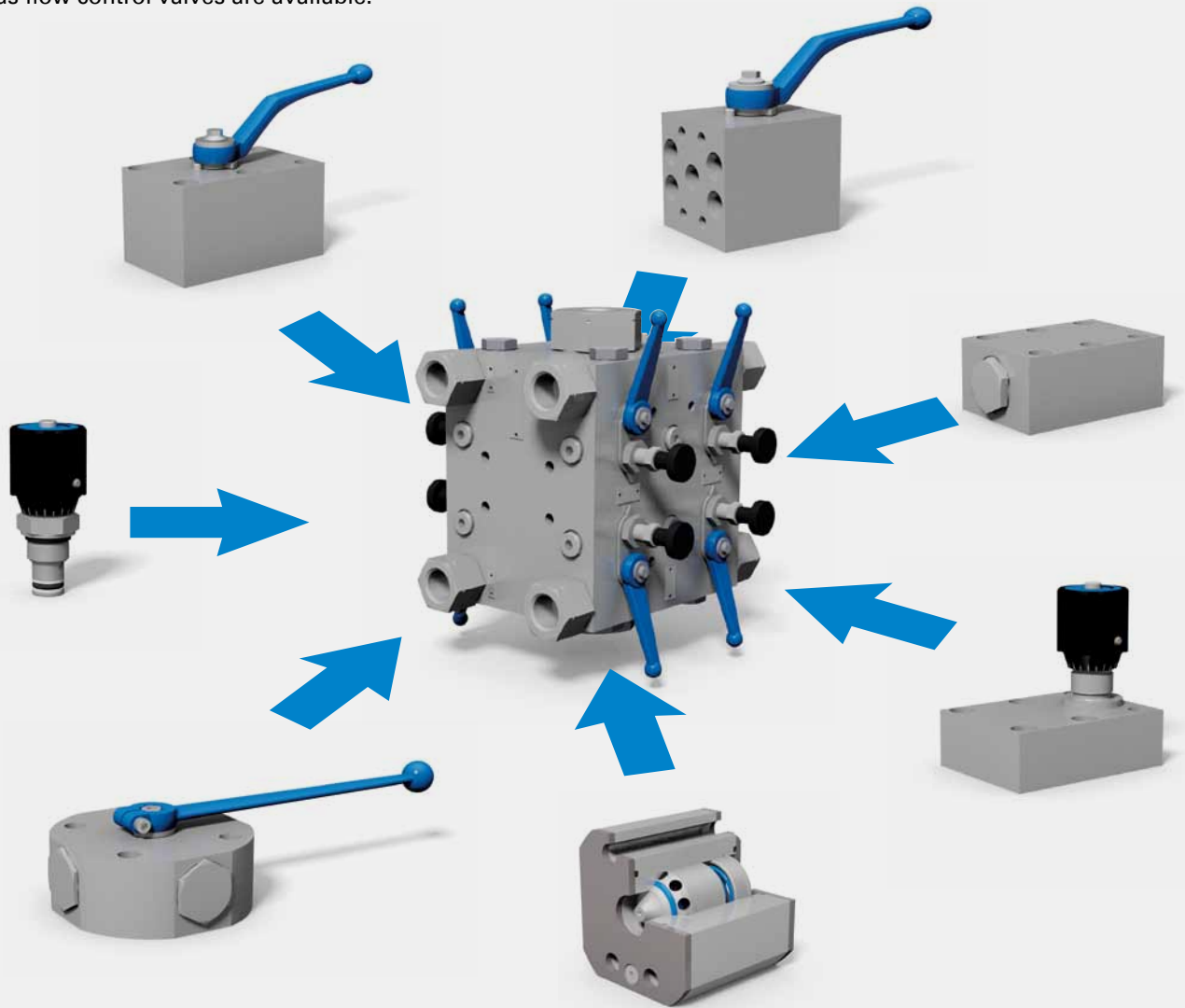
Isocyanates require a special seat setup as they react with humidity and develop crystalline particles. To prevent the fluid from coming into contact with environmental humidity, the ball valves have to be leakproof. This is ensured through a special stem setup.

Furthermore, some isocyanate types would damage standard plastic ball seats. That's why metallic ball seats are used for this application to increase the lifetime of the ball valves.



Your manifold - Our solution

MHA ZENTGRAF offers a variety of product solutions for your manifold project. A variety of block mounting ball valves as well as flow control valves are available.



Looking for a ready-to-install solution?

We are able to supply complete manifold solutions with integrated valve components.

- Space saving
- Less potential leakage points



Certificates



MHA ZENTGRAF is certified according to the relevant pressure equipment directive CE and DIN EN ISO 9001 as well as the environmental standard DIN EN ISO 14001 and carries out acceptance procedures under the supervision of all notable classification societies such as ABS the American Bureau of Shipping, BV Bureau Veritas, CC China Classification, DNV Det Norske Veritas, GL Germanischer Lloyd, NK Nippon Kaiji Kyokai, TÜV Technischer Überwachungsverein.

If desired, acceptance test certificates according to DIN EN 10204 3.1 and 3.2 can be issued. **MHA ZENTGRAF** fulfills the requirements under code of practice AD-Merkblatt HP 0. Fire-safe ball valves are supplied in compliance with BS 6755T.2, API 6 FA and ISO 10497.

COMPANY

ISO 9001:2015	de	en	fr	it
ISO 14001:2015	de	en	fr	it
PED/DGRL 2014/68/EU	de	en	fr	it
AD2000 HP-0	de	en	fr	
VdS approved manufacturer	de	en		

PRODUCT

ATEX 2014/34/EU Declaration	de	en	
Fire-Safe	de	en	
DNV-GL Type Approval		en	
ABS Design Approval		en	

OTHERS

EAC		ru	
UKRSEPRO			ukr

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