

XOMOX®



SEAL
THE FUTURE.

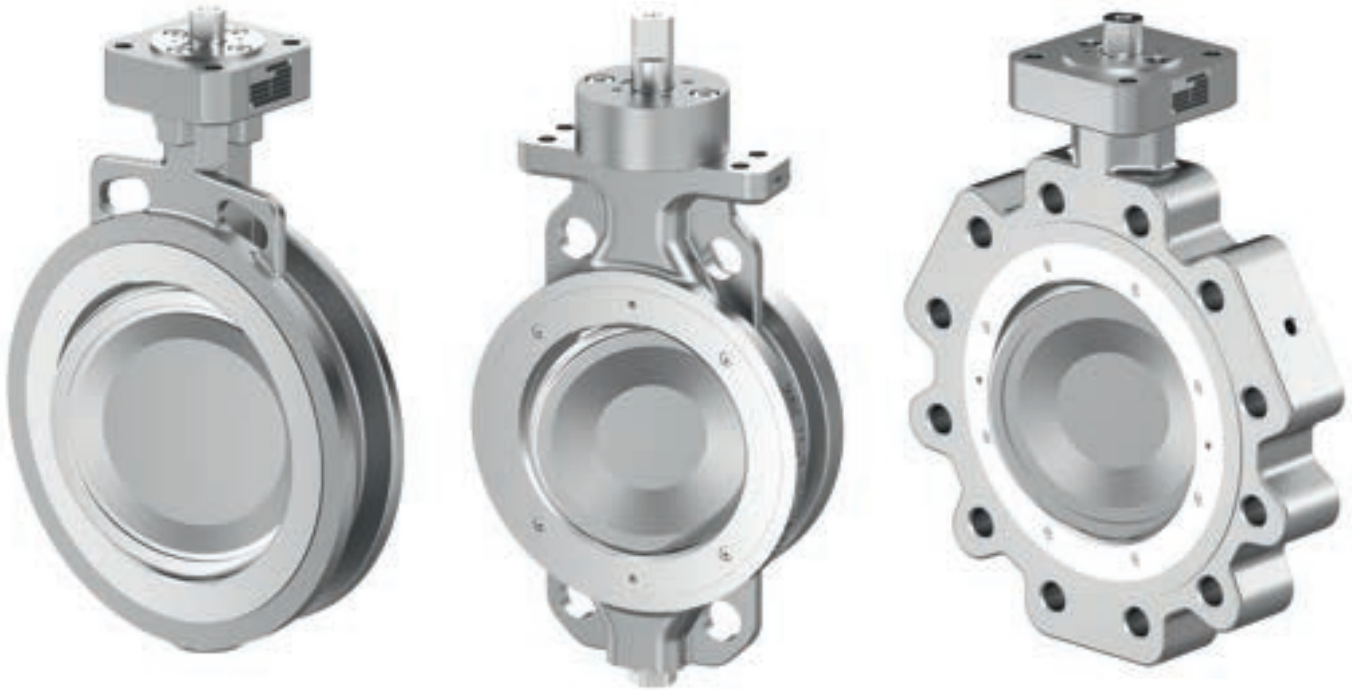
HIGH PERFORMANCE BUTTERFLY VALVES

CRANE

v in

www.cranecpe.com

XOMOX® HPBV Reliability and Sealing Performance



1

Certified for Safety

Tested to TA Luft 2021, ISO 15848: 2017, and API 641 standards to ensure safe operation and prevent costly unplanned shutdowns.

2

Uninterrupted Sealing

The 800ISO (-R) design offers a continuous sealing surface for higher efficiency and bi-directional double dead-end service under full differential pressure.

3

Leak-Free Reliability

ISO mounting flange enables direct actuator installation, while the integral stuffing box eliminates extra leak paths compared to bolt-on designs.

4

Durability by Design

Unique axially pliant seat - no springs, o-rings, or metal hoops - delivers consistent bubble-tight shutoff and long-term reliability per EN 12266-1.

XOMOX® HPBV Design Features

XOMOX® HPBV come in two designs; 800ISO addressing all your standard needs for your most common sizes, pressure rating and materials; and Series 800 intended to accommodate any special requirement.

Materials

- Standard: 1.0619, 1.4408; A216 Gr. WCB, A351 Gr. CF8M
- Optional materials available upon request including but not limited to Duplex, Superduplex, LCC/LCB, WC6, CF3M, Monel®, Inconel®, Hastelloy®, Alloy 20; 1.4469, 1.7357, 1.4409, 2.4460, 1.4539

Size Range

- 800ISO: DN 80 to DN 600 ; 3" to 24"
- Series 800: up to DN 2600 or 102"

Pressure Ratings

- 800ISO: PN 10, 16, 25, 40; ASME Class 150 & 300#
- Series 800: up to PN 100 or 600#

Temperature Range

- PTFE / RPTFE: -70°C to +232°C; -94°F to 450°F
- Metal-PEEK: -70°C to +260°C; -94°F to 500°F
- Fire Safe (Metal/PTFE): -70°C to +300°C; -94°F to 572°F
- Metal/Graphite: -70°C to +550°C; -94°F to 1022°F
- Cryogenic (Metal-PCTFE): -196°C to +50°C; -321°F to 122°F

Body Configurations

- Lug design
- Wafer design
- Others upon request

Typical Applications

Industrial Branches:

- Chemical and petrochemical industry
- Oil and gas
- Air separation
- Chlorine liquefaction
- Power generation
- Energy
- Offshore platforms
- Pulp & paper
- Desalination
- Steam
- Corn processing
- HVAC
- Maritime vessels

Processes:

- Various chemicals
- Hot gases
- Chlorine gas
- Methanol
- Propane
- Liquid nitrogen
- Oxygen
- Carbon monoxide & carbon dioxide
- Sewage
- Reausticizing
- White water
- River water
- Cooked starch
- Scrubber effluent
- Fly and bottom ash
- Gasoline
- Tail gases
- Off gases
- Sour gas
- Sea water

XOMOX® HPBV Design Features

Standard Features and Compliance

- TA-Luft 2021 compliance or acc. to VDI 2440
- ISO 15848-1: 2017, Class BH, level CO3 standard, SSA0
- EPA Method 21 (Fugitive Emissions Compliance)
- API 609 and ASME B16.34; EN 12016 valve design standard
- Zero leakage as per API 598; EN12266 leakage rate A
- Fire-Safe acc. to API 607 and EN ISO 10497:2000
- Quality certification as per ISO 9001
- CE-marking according to DGRL 2014/68/EU
- ISO 5211 actuator mounting bracket
- SIL 2 and 3
- API 641
- CRN (Canada) certified
- TSG (China) certified
- EAC (Russia) certified

Special Options

- Fire-Safe
- Leakage Detection
- Primary stem seal
- Oil-free/Grease-free (various designs as per customer request)
- Oxygen application
- Chlorine and phosgene applications
- Smooth seat retainer
- Cryogenic design & Steam traced discs
- Heating jackets + others up on request

Along with the XOMOX® 800 series, the XOMOX® high performance butterfly valve 800ISO (-R) is the only double offset design butterfly valve on the market with uninterrupted sealing surfaces that provide double dead-end service under full differential pressure.

The ISO mounting flange allows levers, gear mechanisms, and actuators to be mounted directly via a standardized ISO interface.

The one-piece body design that includes the stuffing box and mounting pad without intermediate openings and sealing surfaces allow the connecting piping and valve to be completely insulated while eliminating potential leak paths.

XOMOX® HPBV 800ISO Flange Options

| | | Flange design | | | | | | | | |
|------------|--------------|---------------|-----|-------|-----|-------|-----|-------|-----|---|
| DN (mm) | NPS (in.) | EN 558 | | | | | | | | API 609 Table 3a ASME B16.10 Table 9 Column 7 MSS-SP-68 Table 1 |
| | | PN 10 | | PN 16 | | PN 25 | | PN 40 | | Class 150 |
| | | R20 | R25 | R20 | R25 | R20 | R25 | R20 | R25 | |
| 80 | 3 | • | • | • | • | • | • | • | • | - |
| 100 | 4 | • | • | • | • | • | • | • | • | - |
| 150 | 6 | • | • | • | • | • | • | • | • | - |
| 200 | 8 | • | • | • | • | • | • | • | • | - |
| 250 | 10 | • | • | • | • | • | • | • | • | - |
| 300 | 12 | • | • | • | • | • | • | • | • | - |
| 350 | 14 | - | • | - | • | - | - | - | - | • |
| 400 | 16 | • | • | • | • | - | - | - | - | • |
| 450 | 18 | • | • | • | • | - | - | - | - | • |
| 500 | 20 | • | • | • | • | - | - | - | - | • |
| 600 | 24 | • | • | • | • | - | - | - | - | • |

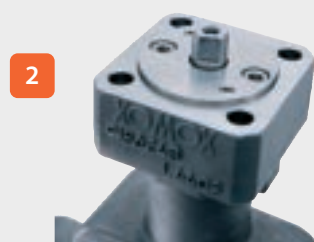
* Larger sizes and higher pressure ratings available in Series 800 displayed in Technical Data Sheet.

XOMOX® HPBV 800ISO Key Product Features



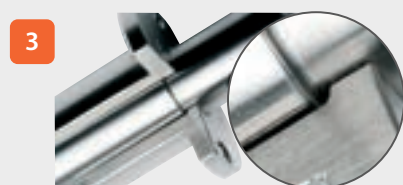
1

Exclusive, flexible O-ring inside the packing flange prevents dirt from entering the inside of the valve and the packing.



2

DIN-ISO mounting head permits the use of standardized ISO brackets for actuation. Also, actuation can be directly mounted on the valve more economically.



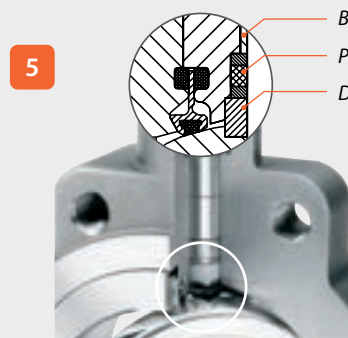
3

Increased blow-out safety is achieved through improved shaft design. Even if the tapered pin connection between shaft and disc is lost, the shaft is still in a stable position.



4

The LUG design comes standard with a screwed seat retainer, while the WAFER design features a smooth seat retainer. To meet diverse application needs, all valve designs can be equipped with clamped smooth seat retainers, bolted smooth retainers for double dead-end service, or standard bolted seat retainers.



5

Bearing
PTFE seal
Disc Spacer Seal

The optional **disc spacer sealing** prevents dirt from entering the bearing area above and below the disc. This is especially important for sticky or dusty media, or media that tends to polymerize.



6

The extended body neck enables standardized insulation. With thicker insulation, there is less heat loss, improving process efficiency.

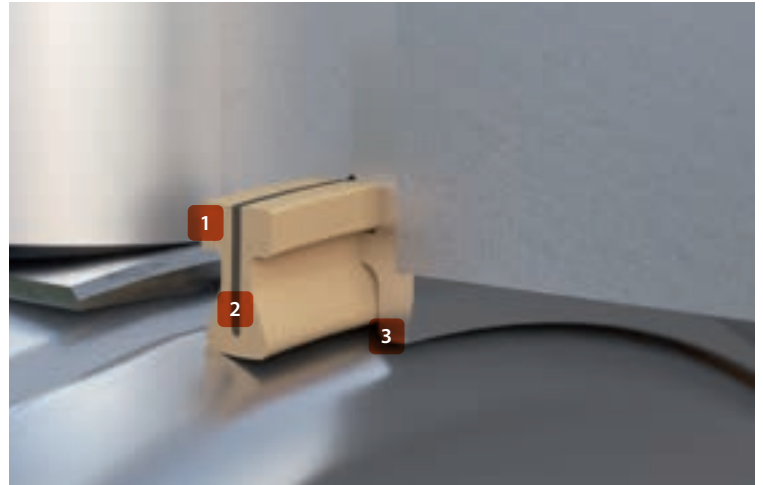
7

The closed bottom of the valve body eliminates a potential leak path. The increased safety improves economic efficiency of the plant. Starting with DN 350, an improved plug seal provides superior fugitive emissions control.

XOMOX® HPBV Superior Sealing and Extended Service Life

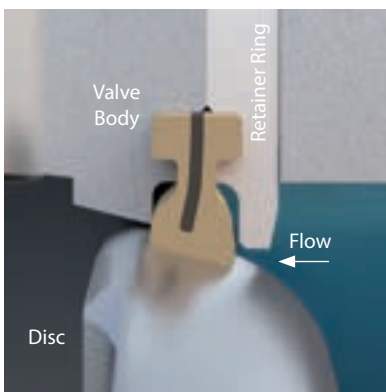
An important feature of the seat is that it is axially pliant. Unlike other seats, it is not susceptible to radial stretch. When the valve opens, the seat flexes axially and returns to its original compact shape. It does not “relax” into the flow path. This seat design includes two components:

- 1 An outer segment of PTFE or R-PTFE.
- 2 A deformation-resistant, memory-core membrane.
- 3 The seat retainer covers the seat, protecting it from erosion and abrasion.



Simply Superior

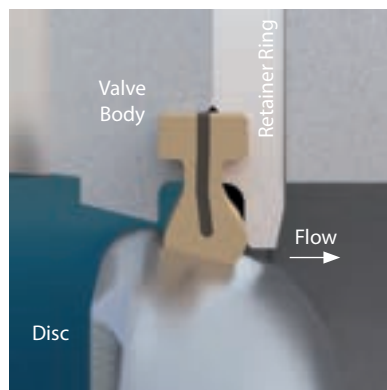
The genius is in its simplicity. There are no springs to break, O-rings to swell, or metal hoops to corrode. Installation is also simple and virtually error-proof. Two versions are available: soft and firesafe seat.



Valves closed, with right-to-left flow

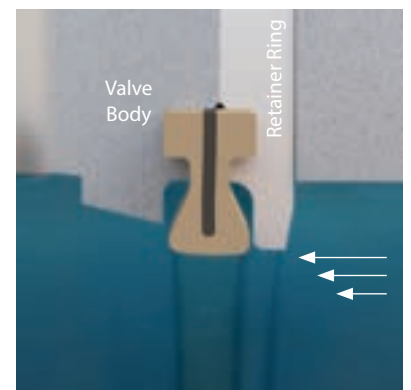
The axial movement of the seat in the direction of the flow produces a pressure-assisted virtually leak-tight seal. (As line pressure increases, the seal tightens.) From vacuum through high pressure, tight shutoff is maintained.

Preferred flow direction for PTFE and R-PTFE seats, particularly for vacuum conditions.



Valve closed, with left-to-right flow

Bi-directional flow and shutoff are easily accommodated. The same, simple, axial movement of the seat assures a reliable seal in either direction.



Valve open, with media flowing

To further extend seat life, the inside diameter of the retainer ring is smaller than that of the PTFE seat. This protects the seat from erosion and abrasion.

Even after 100,000 cycles the seat maintains a tight seal. The seat's internal pliant membrane is the “memory core” that inhibits radial deformation.

XOMOX® HPBV Soft Seat Sealing with Fire-Tested Safety

For applications involving flammable media, the dual component seat offers both superior sealing and fire-tested security. It provides tightness according to leak rate A (EN12266-1) up to 300°C.

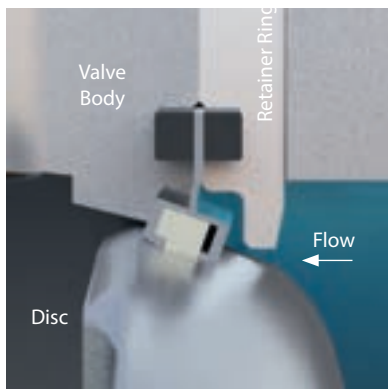
Proven Performance

Numerous test results demonstrate that this valve meets or exceeds the requirements of API-607 4th edition as well as EN ISO 10497:20. The seat combines PTFE and metal sealing elements. The metal component is available in a variety of different alloys.

This seat establishes both a PTFE-to-metal seal and a dual metal-to-metal seal.



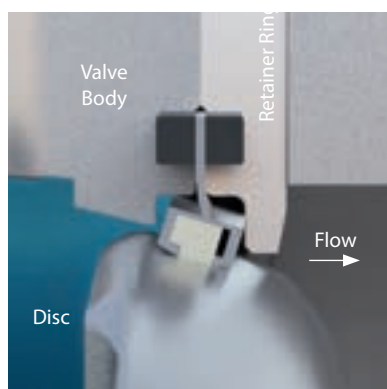
- | | | |
|----------------------------------|------------------------------|-----------------------------|
| 1 Seat sealing (graphite) | 3 Metal-to-metal seal | 5 PTFE-to-metal seal |
| 2 Metal seat component | 4 PTFE seat component | |



Normal operation – right-to-left flow

This unique seat is designed for bidirectional flow control.

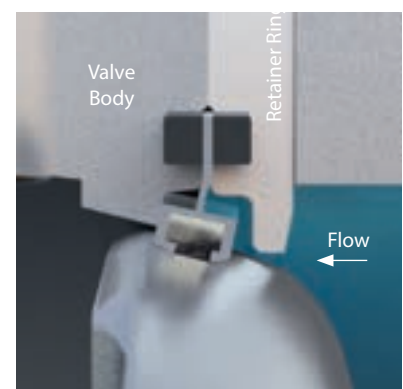
As pressure increases, the seat flexes axially in the direction of the flow. This tightens the seat contact with the disc for effective sealing.



Normal operation – left-to-right flow

Both the metal seat and the PTFE seat are in tight contact with the disc. As line pressure increases, the seal tightens axially.

Preferred flow direction for Firesafe and metal-to-metal seats.



Impact of fire

In case of fire, as the PTFE portion of the seat deteriorates, the metal portion of the seat maintains the integrity of the seal.

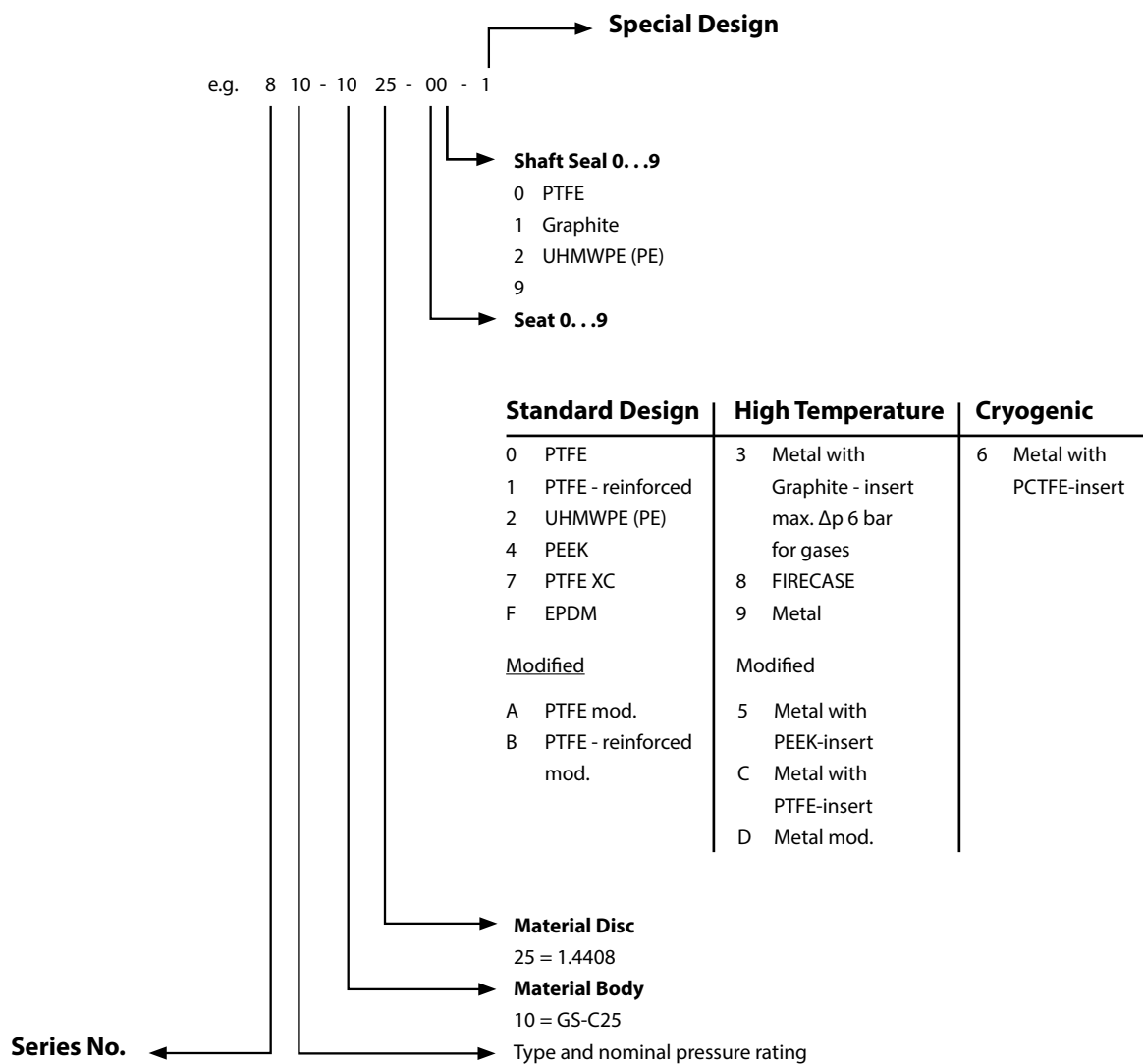
XOMOX® HPBV 800ISO Coding - How to Order

Coding - How to Order

| Size | | Pressure Class | | Type | Body | Disc | Seat | Shaft Seal Material | Optional Equipment | | |
|-----------|------|----------------|------|--------|-------------|------|--------|---------------------|--------------------|--|------|
| 080 | | 10 | | 870ISO | 025 | 025 | 0 | 0 | x | | |
| DN | Code | NPS | Code | | | | | | | Optional Equipment | Code |
| 80 | 080 | | | | | | | | | Leak Control | I |
| 100 | 100 | | | | | | | | | Disc Spacer Seals | 9 |
| 150 | 150 | | | | | | | | | Uninterrupted Seat Retainer (Double Dead End Service) | R |
| 200 | 200 | | | | | | | | | Extended Shaft Seal | 2 |
| 250 | 250 | | | | | | | | | Uninterrupted Seat Retainer (Clamped) | 5 |
| 300 | 300 | | | | | | | | | Flange Connection „Groove“ acc. EN1092-1 FORM D | 6D |
| 350 | 350 | 14" | 14" | | | | | | | TA-Luft 2021 / ISO 15848:2017 | FE0 |
| 400 | 400 | 16" | 16" | | | | | | | Various cleaning options (oil & grease free, cleaned for Oxygen Services, ...) | |
| 450 | 450 | 18" | 18" | | | | | | | | |
| 500 | 500 | 20" | 20" | | | | | | | | |
| 600 | 600 | 24" | 24" | | | | | | | | |
| | | | | Design | Max. Press. | FTF | Code | Disc Material | Code | Shaft Seal Material | Code |
| | | | | Wafer | PN 16 | R20 | 870ISO | 1.4408 | 025 | PTFE | 0 |
| | | | | Wafer | PN 16 | R25 | 810ISO | CF8M | 035 | Graphite | I |
| | | | | Wafer | PN 40 | R20 | 877ISO | | | | |
| | | | | Wafer | PN 40 | R25 | 830ISO | | | | |
| Pressure | Code | | | Lug | PN 16 | R20 | 872ISO | Body Material | Code | Seat Material | Code |
| PN 10 | 10 | | | Lug | PN 16 | R25 | 812ISO | 1.4408 | 025 | PTFE | 0 |
| PN 16 | 16 | | | Lug | PN 40 | R20 | 876ISO | 1.0619 | 010 | R-PTFE | I |
| PN 25 | 25 | | | Lug | PN 40 | R25 | 832ISO | WCB | 018 | Firesafe | 8 |
| PN 40 | 40 | | | Wafer | Class 150 | ASME | 801ISO | CF8M | 035 | PTFE Modified | A |
| Class 150 | 150 | | | Lug | Class 150 | ASME | 821ISO | | | R-PTFE Modified | B |

Optionally, the lug-design valves are available with a bolted seat retainer for double dead-end service. Larger sizes, higher pressure and temperature ranges, and ASME dimensions are still offered under our valve type "800". Special materials as per customer request are also provided under type "800".

XOMOX® HPBV 800 Coding - How to Order



Special Design

| | |
|----|---|
| 1 | Leakage Drain Off |
| 2 | Extended Shaft Seal |
| 3 | Flanges to DIN ISO 5211 Actuator Mounting |
| 4 | Steam Traced Disc |
| 5 | Screwless Retainer Fixing (<DN 300) |
| 6 | Grooved Flange Faces DIN 2512* or EN 1092-1 |
| 7 | With Internal Travel Stop |
| 8 | Full cryogenic max. - 196°C |
| 9 | Disc Spacer Seals |
| K | Semi cryogenic max. - 100° C |
| L | Longer Taper Pins |
| Q1 | Single Quadring Seal |
| Q2 | Double Quadring Seal |
| V | Welded Plug |

| | |
|-----|--|
| S | Secondary seal |
| HR | Steam Jacket with Threaded Connections |
| HJ | Steam Jacket with Flanged Connections |
| 6F | Tongue DIN 2512 |
| R13 | Female-Faced Type R13-DIN 2513 |
| RJ | Ring Joint ASME B 16.5 |
| LF | Large Female ASME B 16.5 |
| LG | Large Groove ASME B 16.5 |
| SG | Small Groove ASME B 16.5 |
| VD | Plug with Safety Lock |
| EA | Grounding Connection |
| SA | Flushing Connection |
| FE0 | TA-Luft 2021 / ISO 15848:2017 |

* DN 50-100 and DN 150: Seat retainer fixed by roll pins.

XOMOX® HPBV 800 Coding - How to Order

| Material Number | Standard | XomoX-Material Code | Former / Alternative Specifications |
|-----------------------------------|-------------------------|---------------------|-------------------------------------|
| 1.4309 G-X2CrNi19-11 | DIN 10213-4 | 067G | A2 1.4306 G-X2CrNiN189 |
| 1.4409 G-X2CrNiMo10-11-2 | EN 10213-4 | 031 | A4 1.4404 G-X2CrNiMoN1810 |
| 1.4552 G-X5CrNiNb10-11 | EN 10213-4 | 028 | A2 |
| 1.4400 G-X5CrNiMo 18 10 | EN 10213-4 | 025 | A4 |
| 1.4361 Casting S-X6CrNiSi 1815 | Not normed | 030 | A2 Argonil FMC 131 |
| Grade CD-4M Cu | ASTM A 743 A 744, A 351 | 413 | Duplex |
| Grade CN7M | ASTM A 743 A 744, A 351 | 178 | Alloy 20 |
| Grade CF8C | ASTM A 743 A 744, A 351 | 036 | A2 |
| Grade CF3 | ASTM A 743 A 744, A 351 | 037 | A2 |
| Grade CF8 | ASTM A 743 A 744, A 351 | 040 | A2 |
| Grade CF3M | ASTM A 743 A 744, A 351 | 038 | A4 |
| Grade CF&M | ASTM A 743 A 744, A 351 | 035 | A4 |
| 3.7031 G-712 | DIN 17865 | 054 | unalloyed |
| 3.7022 | DIN 17865 | 054P | Titanium Casting with Pd |
| Grade C2 | ASTM B 367 | 051 | Titanium Casting |

| | | | |
|------------------------------|-------------------|---------|---|
| N-JS1049 EN GJSF-400S-18S | EN 1563 | 003 | Ductile Iron GGG 40.3 0.7043 |
| 0.7659 GGGNiCrNb 20 2 | DIN 1694 | 004 | Ductile Iron austenitic |
| 1.0038 S235JRG2 | EN 10025 | 059 | Unalloyed rolled-and forged Steel RS137-2 |
| 1.0425 P265GH | EN 10028-1 | 405 | Unalloyed rolled-and forged Steel H11 |
| 1.0566 P355NL1 | EN 10028T3 | 136 | Unalloyed rolled-and forged Steel TStE355 |
| 1.0619 + QT GP240GH + QT | EN 10213-1/2AD W5 | 010 | High Temp. Cast Steel 1.0619.05 GS-C 25 V |
| WCB | ASTM A216 | 018 | High Temp. Cast Steel |
| 1.1138.05 | SEW 685 | 199 | Low Temp. Cast Steel GS-21Mn5V |
| 2.4365.01 G-NiCu30Nb | DIN 17730 | 145 | Monel Casting |
| 2.4170.01 G-Ni 95 | DIN 17730 | 042 | Nickel Casting |
| Grade CW-2M | ASTM A 494 | 021 | Casting C4 |
| Grade N-7M2 | ASTM A 494 | 0145 | Casting B2 |
| Grade CZ-100 | ASTM A 494 | 050 | Nickel Casting |
| Grade M-35-1 | ASTM A 494 | 046 | Monel Casting |
| 2.0975 | EN 1982 | 408/193 | Alu-Bronze AB2 G-CuAl10Ni |



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