

# BORSIG

BORSIG  
SERVICE  
GMBH

## PRODUCT PORTFOLIO VALVES



# ABOUT BORSIG VALVES



BORSIG offers comprehensive products and service solutions for power generation, the oil and gas industries as well as the chemical and petrochemical industries.

Our **VALVE PROGRAM**  
**„MADE in GERMANY“**  
is focussing on high pressure control and shut-off valves for extreme operating conditions.



All our valve solutions are tailor-made to the respective applications and manufactured by the application of Duplex, Super Duplex and other special materials for extreme operating conditions.

The company looks back on more than 60 years of valve experience and has manufactured over 50,000 control and shut-off valves. Our locations are in Gladbeck and Leegebruch.

#### TRUE METAL SEATED CONTROL AND SHUT-DOWN VALVES

We design and manufacture high quality trunnion mounted ball valves tailored to your specific control processes. Based on the application of customized control discs our control valve product line is engineered to suit very high differential pressure applications giving you an exceptionally high rangeability for your plant operation.



Sizes: NPS 2" - 36"  
DN 25 - 600  
Classes: ANSI 600 - 2500  
PN 100 - 420

# CONTROL BALL VALVE - CBV

Massflow Control / Pressure Reduction /  
Pre-Filling



## TECHNICAL CHARACTERISTICS

Nominal sizes:	2"-36" / DN 50-900
Temperature:	- 60°C ... +400°C
Rating:	ANSI Class 600 - 2500 / PN100 - 420
Pressure reduction:	0,1% - 85% $\Delta p$
Control range:	1:50
Control characteristic:	Linear, equal percentage
Leakage rate:	A acc. ISO 5208 or EN 12266-1 / VI acc. EN 1349

## MATERIALS

Material acc. DIN	Description acc. DIN	Material ASTM/AISI/ASME
1.0460	P250GH	ASTM A105
1.0566	TStE355	ASTM A350LF2
1.8912	S420NL	ASTM A350LF6
1.4462	X2CrNiMoN22-5-3	ASTM A182F51
1.4006	X12Cr13	ASTM A182F6a
1.4021	X20Cr13	ASTM A276-420
1.4313	X3CrNiMo13-4	ASTM A182F6NM

## SHORT DESCRIPTION

- **Control function**
- Multistage **pressure reduction**
- Different control disc designs for individual control characteristics
- Extreme durability and robust design ideal for severe service applications
- **Metal to metal seated**
- **Full shut-off and ESD function against full  $\Delta p$**

## TYPES AND VARIATIONS

- Split body / top entry / fully welded
- Forged steel
- Ceramic inserts for slurries
- Uni- or bidirectional
- Welded ends, flanges

## MEDIA

- Natural gas / sour gas/ crude oil
- Process water / salt water / brine
- Slurries
- Petrochemicals (petroleum distillates)
- Steam
- Nitrogen

# TOP ENTRY BALL VALVE - TEV

Control Ball Valves and Shut-Off Ball Valves

## SHORT DESCRIPTION

- Control and shut-off function possible
- Erosion and corrosion resistance
- Extreme durability and robust design ideal for severe service applications
- **Quick maintenance** is possible because the housing remains in the pipeline during maintenance
- **Metal to metal seated**
- **Full shut-off and ESD function against full  $\Delta p$**

## TYPES AND VARIATIONS

- Forged and casted steel
- Uni- or bidirectional
- Welded ends, flanges

## MEDIA

- Natural gas / sour gas / crude oil
- Process water / salt water / brine
- Slurries
- Petrochemicals (petroleum distillates)
- Steam
- Nitrogen



## TECHNICAL CHARACTERISTICS

Nominal sizes:	2"-36" / DN 50-900
Temperature:	- 60°C ... +400°C
Rating:	ANSI Class 600 - 2500 / PN100 - 420
Leakage rate:	A acc. ISO 5208 or EN 12266-1 / VI acc. EN 1349

## MATERIALS

Material acc. DIN	Description acc. DIN	Material ASTM/AISI/ASME
1.0619+N	GP240GH+N	ASTM A216 WCB
1.0460	P250GH	ASTM A105
1.0566	TStE355	ASTM A350LF2
1.8912	S420NL	ASTM A350LF6
1.4462	X2CrNiMoN22-5-3	ASTM A182F51
1.4006	X12Cr13	ASTM A182F6a
1.4021	X20Cr13	ASTM A276-420
1.4313	X3CrNiMo13-4	ASTM A182F6NM

# SHUT-OFF BALL VALVE - SOBV

Bubble Tight Isolation & Emergency Shut-Off Ball Valves



## SHORT DESCRIPTION

- Piggable full bore or reduced bore
- Erosion and corrosion resistance
- Extreme durability and robust design ideal for severe service applications
- **Metal to metal seated**
- **Full shut-off and ESD function against full  $\Delta p$**

## TYPES AND VARIATIONS

- Split body / top entry / fully welded
- TWIN ball (DBB Ball)
- Emergency shut down function
- Forged steel
- Ceramic inserts for slurries
- Uni- or bidirectional
- Welded ends, flanges

## TECHNICAL CHARACTERISTICS

Nominal sizes:	2"-36" / DN 50-900
Temperature:	- 60°C ... +400°C
Rating:	ANSI Class 600 - 2500 / PN100-420
Leakage rate:	A acc. ISO 5208 or EN 12266-1 / VI acc. EN 1349

## MEDIA

- Natural gas / sour gas/ crude oil
- Process water / salt water / brine
- Slurries
- Petrochemicals (petroleum distillates)
- Steam
- Nitrogen

## MATERIALS

Material acc. DIN	Description acc. DIN	Material ASTM/AISI/ASME
1.0460	P250GH	ASTM A105
1.0566	TStE355	ASTM A350LF2
1.8912	S420NL	ASTM A350LF6
1.4462	X2CrNiMoN22-5-3	ASTM A182F51
1.4006	X12Cr13	ASTM A182F6a
1.4021	X20Cr13	ASTM A276-420
1.4313	X3CrNiMo13-4	ASTM A182F6NM

# BYPASS - ACCESSORIES FOR SHUT-OFF BALL VALVES

## SHORT DESCRIPTION

- Pressure compensation between valve inlet and downstream piping
- Filling by vent connection and bleeding by drain connection
- For smooth opening (resulting in wear reduction)
- Modular designed - fully serviceable

## DESIGN AND IMPLEMENTATION

- Pipes between valve in- and outlet
- Additional isolation valves for easy bypass operation

## TYPES AND VARIATIONS

- Different bypass design available
- Threaded connections at ball valve flange and cavity
- Welded connections at bypass-piping

## MEDIA

- Natural gas / sour gas / crude oil
- Petrochemicals (petroleum distillates)
- Steam
- Nitrogen

## MATERIALS

Material acc. DIN	Description acc. DIN	Material ASTM/AISI/ASME
1.0460	P250GH	P250GH
1.0566	TStE355	TStE355
1.8912	S420NL	S420NL
1.4462	X2CrNiMoN22-5-3	X2CrNiMoN22-5-3
1.4006	X12Cr13	X12Cr13
1.4021	X20Cr13	X20Cr13
1.4313	X3CrNiMo13-4	X3CrNiMo13-4



## TECHNICAL CHARACTERISTICS

Nominal sizes: 2"-36" / DN 50-900  
Temperature: - 60°C ... +400°C  
Rating: ANSI Class 600 - 2500 / PN 100 - 420

# BALL VALVE WITH STEM EXTENSION

Control Ball Valves and Shut-Off Ball Valves



## TECHNICAL CHARACTERISTICS

Nominal sizes: 2"-36" / DN 50-900  
 Temperature: - 60°C ... +400°C  
 Rating: ANSI Class 600 - 2500 / PN100-420

Leakage rate: A acc. ISO 5208 or EN 12266-1 / VI  
 acc. EN 1349

Extension length: Acc. to client specification

## MATERIALS

Material acc. DIN	Description acc. DIN	Material ASTM/AISI/ASME
1.0460	P250GH	ASTM A105
1.0566	TStE355	ASTM A350LF2
1.8912	S420NL	ASTM A350LF6
1.4462	X2CrNiMoN22-5-3	ASTM A182F51
1.4006	X12Cr13	ASTM A182F6a
1.4021	X20Cr13	ASTM A276-420
1.4313	X3CrNiMo13-4	ASTM A182F6NM

## SHORT DESCRIPTION

- Ball valve for over- and underground use
- Extreme erosion and corrosion resistance
- Extreme durability and robust design ideal for severe service applications
- **Metal to metal seated**
- **Full shut-off and ESD function against full  $\Delta p$**

## TYPES AND VARIATIONS

- Forged steel
- Uni- or bidirectional
- Welded ends, flanges

## MEDIA

- Natural gas / sour gas / crude oil
- Process water / salt water / brine
- Slurries
- Petroleum distillates
- Steam
- Nitrogen



# FULLY WELDED BALL VALVE

Control Ball Valves and Shut-Off Ball Valves

## SHORT DESCRIPTION

- Ball valve for over- and underfloor use
- Erosion and corrosion resistance
- Extreme durability and robust design ideal for severe service applications
- **Fully serviceable**
- **Metal to Metal seated**
- **Full shut-off and ESD function against full  $\Delta p$**

## TYPES AND VARIATIONS

- Forged steel
- Uni- or bidirectional
- Welded ends, flanges

## MEDIA

- Natural gas / sour gas / crude oil
- Process water / salt water / brine
- Slurries
- Petrochemicals (petroleum distillates)
- Steam
- Nitrogen



## TECHNICAL CHARACTERISTICS

Nominal sizes:	2"-36" / DN 50-900
Temperature:	- 60°C ... +400°C
Rating:	ANSI Class 600 - 2500 / PN 100 - 420
Leakage rate:	A acc. ISO 5208 or EN 12266-1 / VI acc. EN 1349

## MATERIALS

Material acc. DIN	Description acc. DIN	Material ASTM/AISI/ASME
1.0460	P250GH	ASTM A105
1.0566	TStE355	ASTM A350LF2
1.8912	S420NL	ASTM A350LF6
1.4462	X2CrNiMoN22-5-3	ASTM A182F51
1.4006	X12Cr13	ASTM A182F6a
1.4021	X20Cr13	ASTM A276-420
1.4313	X3CrNiMo13-4	ASTM A182F6NM

# DESUPERHEATER- DSH

Temperature Control of Superheated Steam



## SHORT DESCRIPTION

- Integrated shut-off and control function
- Integrated metal seated ball valve
- Multi stage pressure reduction
- Individual nozzles
- 90° rotary movement (minimizes wear of packings)
- No additional control and shut-off valve for supply of injection water necessary
- Easy exchange of the nozzles

## TYPES AND VARIATIONS

- Forged steel
- Welded ends, flanges

## MEDIA

- Steam
- Feed water

## TECHNICAL CHARACTERISTICS

Probe sizes: 71 – 91 mm  
 Pressure reduction stages: 1 – 3  
 Number of nozzles: 6 – 27  
 Steam temperature: Up to 650°C

Min. steam velocity: 5 m/s

Control range: 1:50

Control characteristic: Linear, equal percentage

## MATERIALS

Material acc. DIN	Description acc. DIN	Material ASTM/AISI/ASME
1.0460	P250GH	ASTM A105
1.7383	11CrMo9-10	ASTM A182F22Class1
1.4903	X10CrMoVNb9-1	ASTM A182F91
1.4923	X22CrMoV12-1	
1.4301	X5CrNi18-10	ASTM A276-304
1.4541	X6CrNiTi18-10	ASTM A276-321
1.4057	X17CrNi16-2	ASTM A276-431
1.4122	X39CrMo17-1	

# MOTIVE STEAM NOZZLE - MSN

Temperature Control of Superheated Steam

## SHORT DESCRIPTION

- Ideal for low  $\Delta p$  and very short mixing sections
- Combined injection of spray water and motive steam
- External control and shut-off valve for control and isolation of media
- No movable parts

## TYPES AND VARIATIONS

- Forged steel
- Welded ends, flanges

## MEDIA

- Steam
- Feed water

## TECHNICAL CHARACTERISTICS

Sizes:	Steam pipe 6" / DN150 other sizes on request
Pressure rating:	Up to ANSI Class 2500 / PN 400
Steam temperature:	Up to 650 °C



## MATERIALS

Material acc. DIN	Description acc. DIN	Material ASTM/AISI/ASME
1.0460	P250GH	ASTM A105
1.5415	16Mo3	ASTM A335 P1
1.7335	13CrMo4-5	ASTM A335 P12
1.7383	11CrMo9-10	ASTM A182F22Class1
1.4903	X10CrMoVNb9-1	ASTM A182F91
1.4541	X6CrNiTi18-10	ASTM A276-321

# RIGID SPRAYING NOZZLE - RSN

Cooling of Superheated Steam



## SHORT DESCRIPTION

- Ideal for low  $\Delta p$  and low mass flow
- Exchangeable, fixed are nozzles
- External control and shut-off valve for control and isolation of injection water

## TYPES AND VARIATIONS

- Forged steel
- Welded ends, flanges

## MEDIA

- Steam
- Feed water

## TECHNICAL CHARACTERISTICS

Connection to steam pipe: Probe type, flanged

Pressure reduction stages: 1

Number of nozzles: 1 - 6

Min. steam velocity: 5 m/s

Temperature: Up to 650°C

Mass flow: Max. 2,8 t/h

Sizes: From DN 80 / 3" (steam)  
from DN 20 / 1" (water)

## MATERIALS

Material acc. DIN	Description acc. DIN	Material ASTM/AISI/ASME
1.0460	P250GH	ASTM A105
1.5415	16Mo3	ASTM A335 P1
1.7335	13CrMo4-5	ASTM A335 P12
1.7383	11CrMo9-10	ASTM A182F22Class1
1.4903	X10CrMoVNb9-1	ASTM A182F91
1.4541	X6CrNiTi18-10	ASTM A276-321

# STEAM CONDITIONING STATION - SCS

Multistage Pressure Reduction and Additional Temperature Control

## SHORT DESCRIPTION

- Ideal for steam conditioning in power plants
- Multistage pressure reduction
- Integrated motive steam nozzle for steam atomized spray water
- Downstream injection

## TYPES AND VARIATIONS

- Angle form, z-type
- Forged steel, casted steel

## MEDIA

- Steam
- Feed Water

## TECHNICAL CHARACTERISTICS

Sizes: Inlet 2 - 20" / DN25 - 500  
outlet 2 - 80" / DN50 - 2000  
other sizes on request

Pressure rating: ANSI Class 600 - 2500 / PN100 - 420  
Pressure reduction stages: 3 - 10  
Pressure reduction: 70 - 98% of initial steam pressure

Steam temperature: Up to 570°C  
Control range: 1:25 - 1:50  
Control characteristic: Linear, equal percentage



## MATERIALS

Material acc. DIN	Description acc. DIN	Material ASTM/AISI/ASME
1.0345	1.0345	ASTM A106 Gr.A
1.0460	1.0460	ASTM A105
1.0570	1.0570	ASTM A572-50
1.5415	1.5415	ASTM A335 P1
1.7383	1.7383	ASTM A182F22Class1
1.4541	1.4541	ASTM A276-321
1.4057	1.4057	ASTM A276-431
1.4122	1.4122	

# REFERENCES



Split body control ball valve  
at VNG underground gas storage site



Fully welded ball valve  
at Thyssengas gas compressor station



Top entry ball valve installed at Uniper gas storage site

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