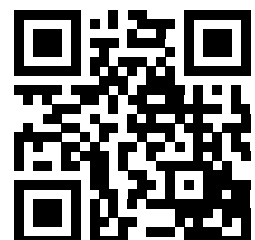




Nuclear valves

- Globe valves
- Gate valves
- Swing check valves





Impressum

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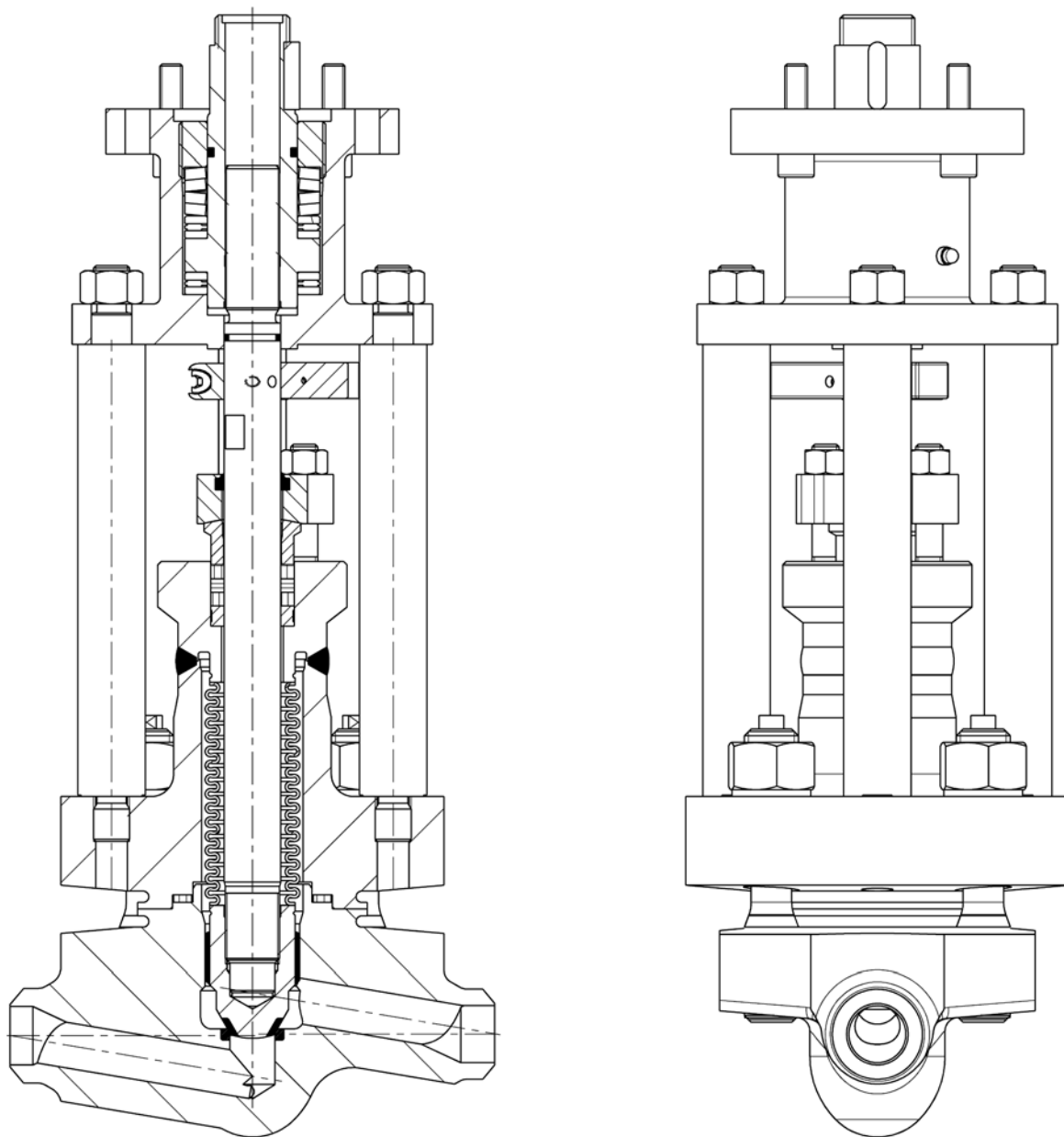
Specification / instruction				
AD 2000, DIN EN 12516-2				
EN 1591-1				
KS D 7021 / 50 Rev. D				
KS D 3021 / 50 Rev. C				
KS D 2021 / 50 Rev. C				
KT A 3211.2				
OTT 87				
NP-068-05				
TBM Edition 5				

■ **Bellow seal globe valve** ■ **DN 10 to DN 65/50**

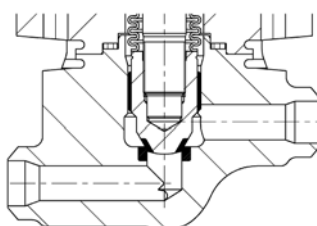
Design size P4–P20/P25

200 AL ... (Straight pattern)

205 AL ... (Z-Form)



205 AL-execution



■ Bellow seal globe valve ■ DN 10 to 65/50

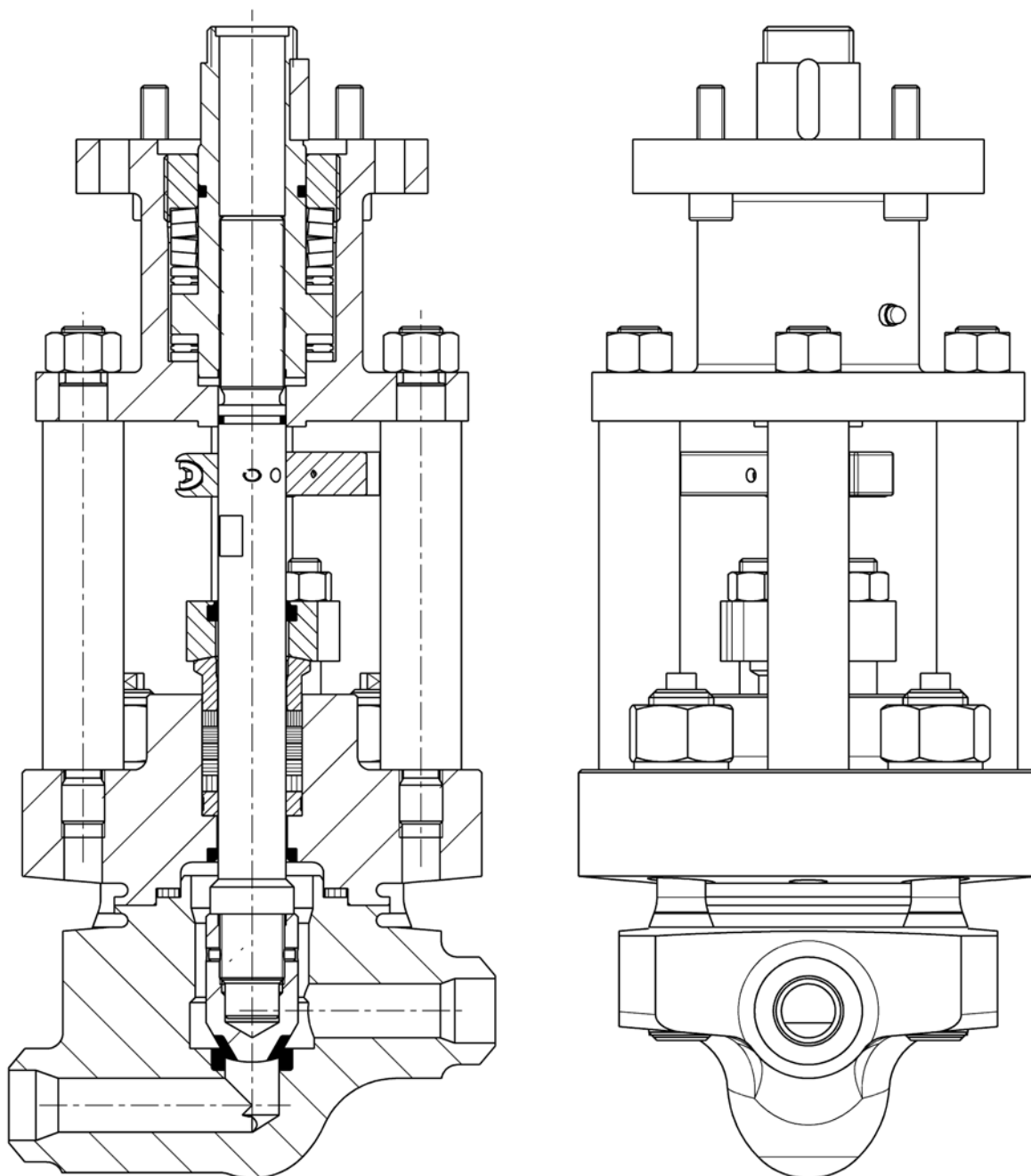
Valve type	Bellow seal-shut-off globe valve in straight pattern or Z-form with butt weld ends				
Series	200 AL 21.2 (205 AL 21.2)	1.0460	(A 105)	forged steel	
	200 AL 84.2 (205 AL 84.2)	1.4541	(A 182 F 321)	forged steel	
Nominal diameter	DN 10 to DN 65/50				
Design data	4 Mpa – 250 °C	design size	P4		
	11 Mpa – 350 °C	design size	P11		
	20 Mpa – 350 °C	design size	P20		
	25 Mpa – 350 °C	design size	P25		
Shut-off differential pressure	Pa = Delta_P or max. operating pressure				
Flow direction	below / above the disc				
Body-/Disc-sealing surfaces	Co-free welded				
Stem sealing	metal bellows 1.4541/1.4571				
Stem material	1.4057				
Secondary seal	highest-grade graphite 99,85 % packing (nuclear-quality)				
Body/bonnet-gasket	in force bypass / spiral wound gasket / 1.4541 with graphite (nuclear-quality)				
Lip seals gasket	for seal welding in an emergency				
Mechanical position indication	on/off				
Safety relevant task	function during and after an accident				
Seismic design	function after an earthquake				
Tightness	outside	DIN EN 12266-2, Leakage rate A			
	in the seat	DIN EN 12266-1, Leakage rate A			
Installation position	preferably horizontal line / vertical spindle				
Actuating versions	handwheel				
	gear box with handwheel				
	electric actuator				
	coupling device for remote control				
	pneumatic actuator				

■ Shut-off globe valve ■ DN 10 to DN 65/50

Design size P4–P20/P25

205 AJ ... (Z-Form)

200 AJ ... (Straight pattern)



■ Shut-off globe valve ■ DN 10 to DN 65/50

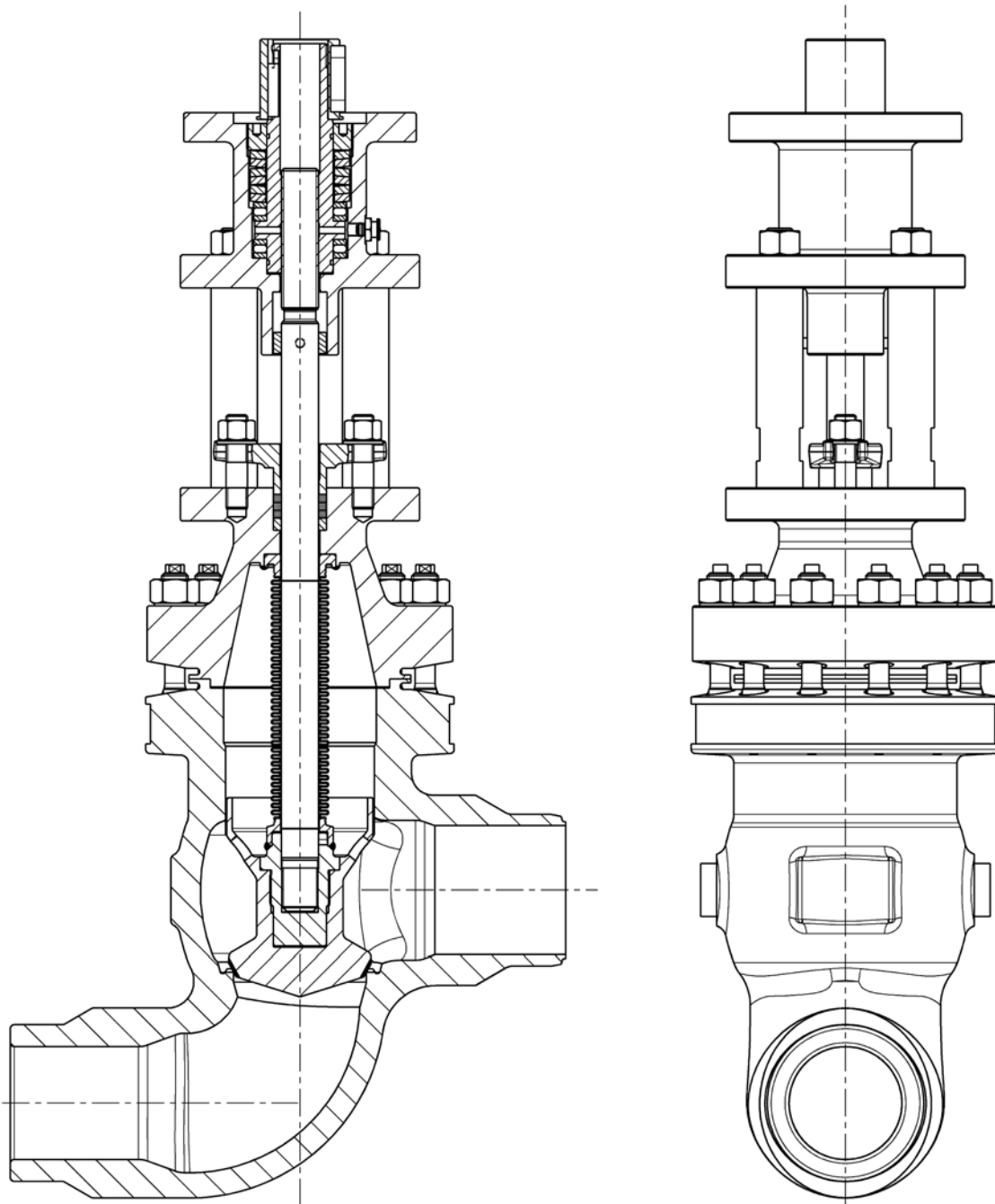
Valve type	Shut-off globe valve in straight pattern or Z-form with butt weld ends				
Series	200 AJ 21.2 (205 AJ 21.2)	1.0460	(A 105)	forged steel	
	200 AJ 84.2 (205 AJ 84.2)	1.4541	(A 182 F 321)	forged steel	
Nominal diameter	DN 10 to DN 65/50				
Design data	4 Mpa – 250 °C design size P4				
	11 Mpa – 350 °C design size P11				
	20 Mpa – 350 °C design size P20				
	25 Mpa – 350 °C design size P25				
Shut-off differential pressure	Pa = Delta_P or max. operating pressure				
Flow direction	below / above the disc				
Body-/Disc-sealing surfaces	Co-free welded				
Stem sealing	highest-grade graphite 99,85 % packing (nuclear-quality)				
Stem material	1.4057				
Body/bonnet-gasket	in force bypass / spiral wound gasket / 1.4541 with graphite (nuclear-quality)				
Lip seals gasket	for seal welding in an emergency				
Mechanical position indication	on/off				
Safety relevant task	function during and after an accident				
Seismic design	function after an earthquake				
Tightness	outside	DIN EN 12266-2, Leakage rate A			
	in the seat	DIN EN 12266-1, Leakage rate A			
Installation position	preferably horizontal line / vertical spindle				
Actuating versions	handwheel				
	gear box with handwheel				
	electric actuator				
	coupling device for remote control				
	pneumatic actuator				

■ Bellow seal globe valve ■ DN 80 to DN 150

Design size P4

205 AL ... (Z-Form)

200 AL ... (Straight pattern)

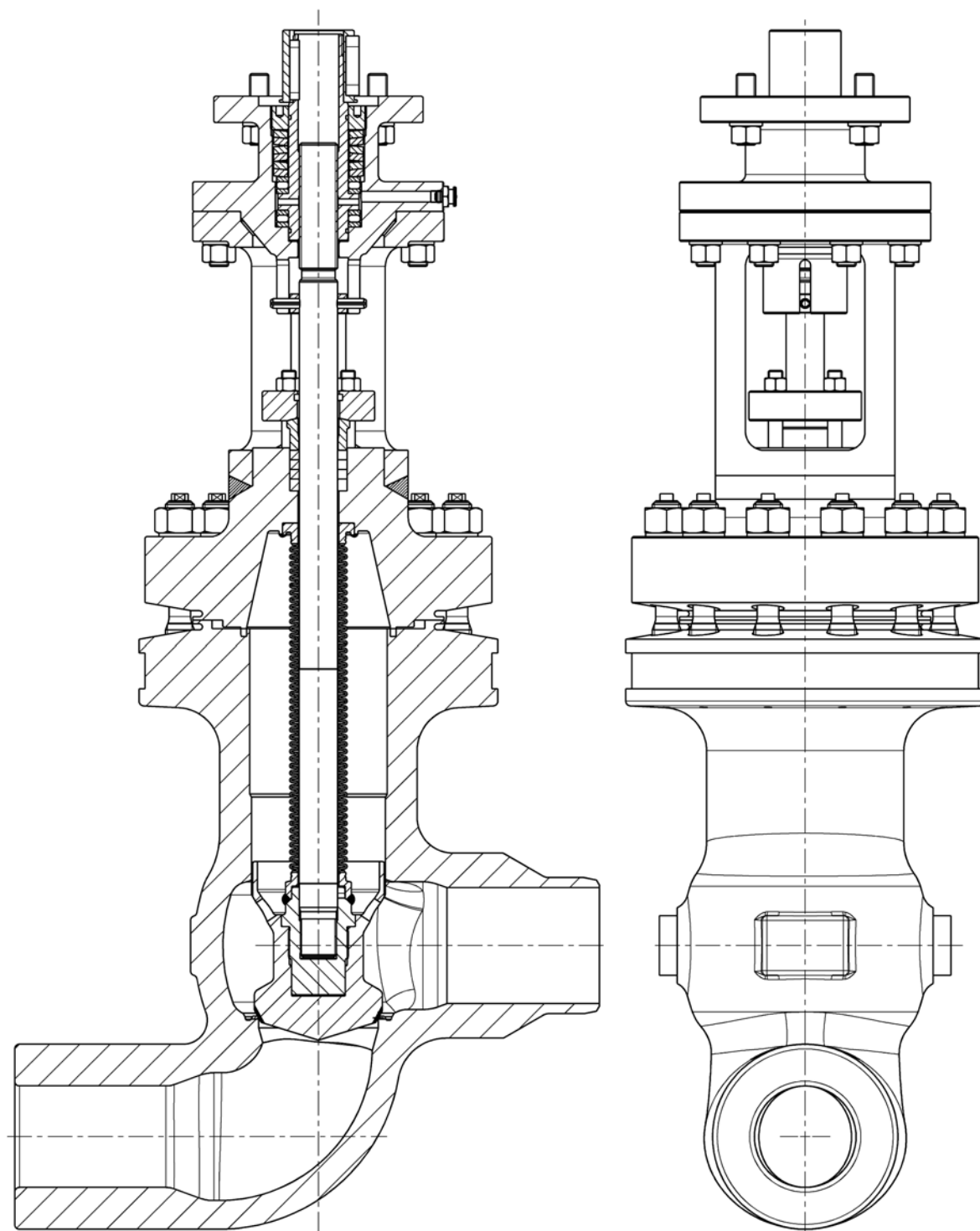


■ Bellow seal globe valve ■ DN 80 to DN 150

Design size P11

205 AL ... (Z-Form)

200 AL ... (Straight pattern)

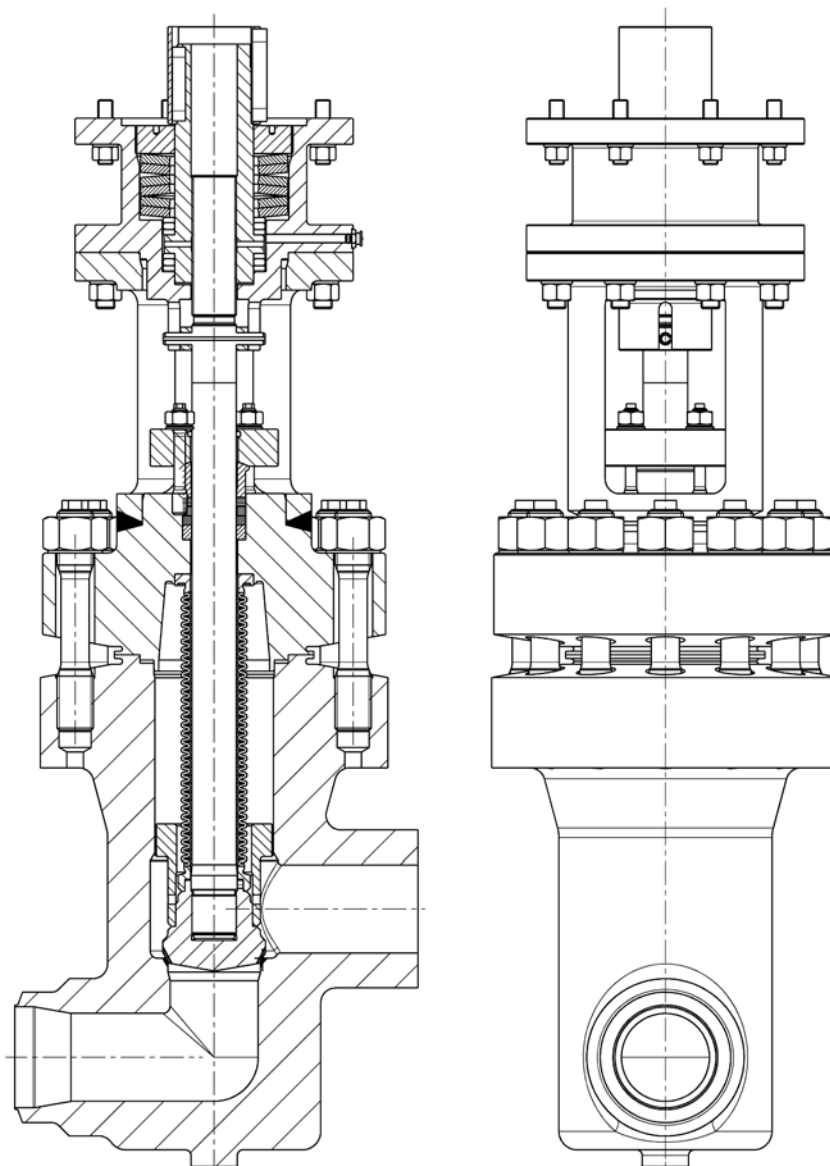


■ Bellow seal globe valve ■ DN 80 to DN 150

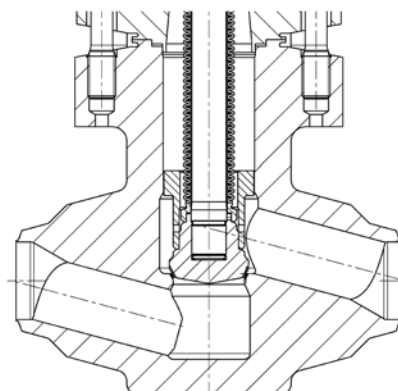
Design size P20/P25

205 AL ... (Z-Form)

200 AL ... (Straight pattern)



200 AL-execution



■ Bellow seal globe valve ■ DN 80 to DN 150

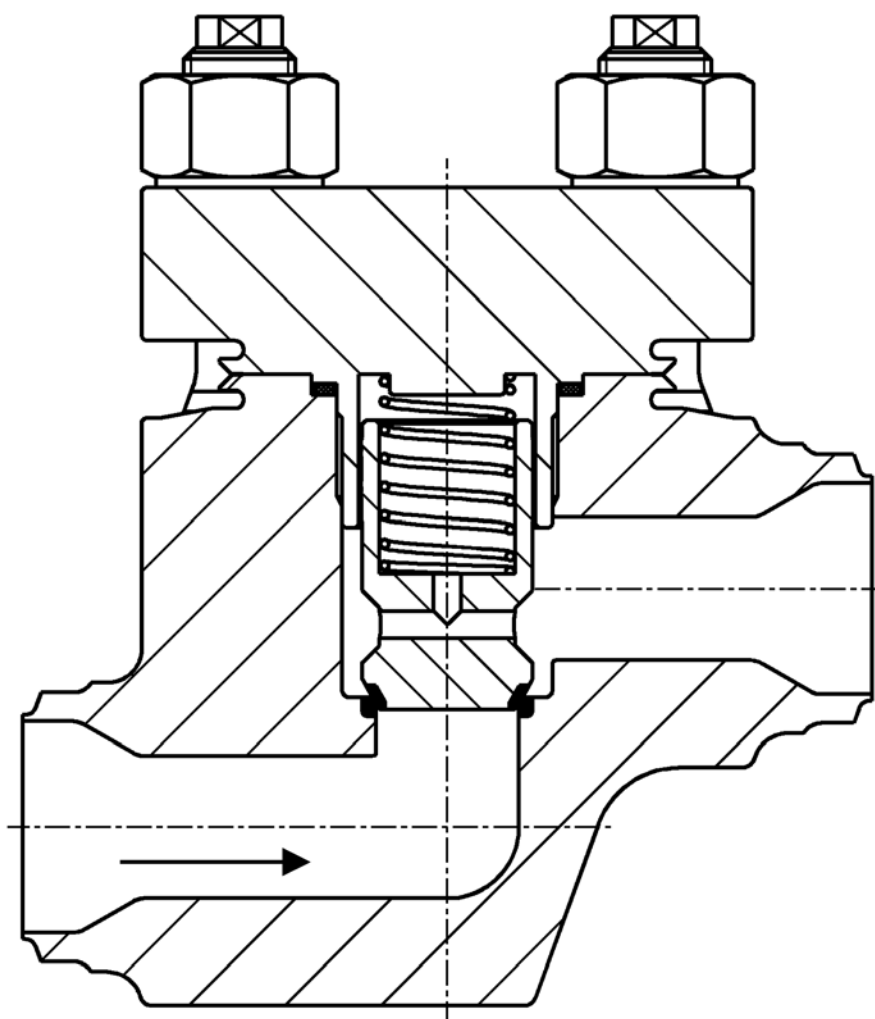
Valve type	Bellow seal-shut-off globe valve in straight pattern or Z-form with butt weld ends				
Series	205 AL 11.2 (200 AL 11.2)	1.0619	(A 216 WCB)	casting	
	205 AL 74.2 (200 AL 74.2)	1.4552	(A 351 CF8C)	casting	
	205 AL 21.2 (205 AL 21.2)	1.0460	(A 105)	forged steel	
	205 AL 84.2 (200 AL 84.2)	1.4541	(A 182 F 321)	forged steel	
Nominal diameter	DN 80 to DN 150				
Design data	4 Mpa – 250 °C	design size P4		casting	
	11 Mpa – 350 °C	design size P11		casting	
	20 Mpa – 350 °C	design size P20		forged steel	
	25 Mpa – 350 °C	design size P25		forged steel	
Shut-off differential pressure	Pa = Delta_P or max. operating pressure				
Flow direction	below / above the disc				
Body-/Disc-sealing surfaces	Co-free welded				
Stem sealing	metal bellows 1.4541/1.4571				
Stem material	1.4057				
Secondary seal	highest-grade graphite 99,85 % packing (nuclear-quality)				
Body/bonnet-gasket	in force bypass / spiral wound gasket / 1.4541 with graphite (nuclear-quality)				
Lip seals gasket	for seal welding in an emergency				
Mechanical position indication	on/off				
Safety relevant task	function during and after an accident				
Seismic design	function after an earthquake				
Tightness	outside	DIN EN 12266-2, Leakage rate A			
	in the seat	DIN EN 12266-1, Leakage rate A			
Installation position	preferably horizontal pipes / vertical spindle				
Actuating versions	handwheel				
	gear box with handwheel				
	electric actuator				
	coupling device for remote control				
	pneumatic actuator				
Option	forged inlet and outlet stubs (welded on), 1.5415, 1.4541				

■ Lift check valve ■ DN 10 to DN 65/50

Design size P4–P20/P25

245 MT ... (Z-Form)

240 MT ... (Straight pattern)



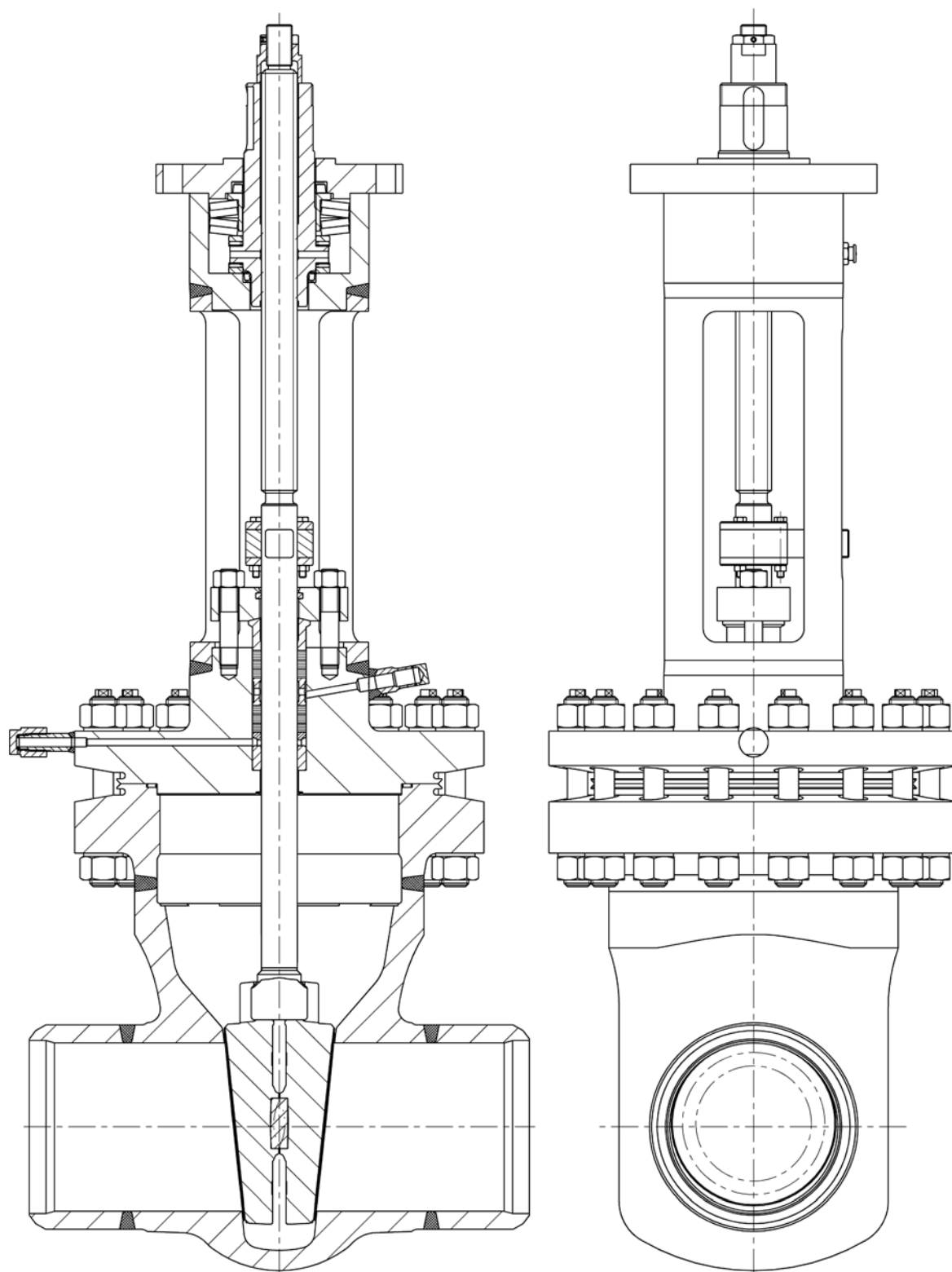
■ Lift check valve ■ DN 10 to DN 65/50

Valve type	Lift check valve in straight pattern or Z-form with butt weld ends				
Series	245 MT 21.2 (240 MT 21.2)	1.0460	(A 105)	forged steel	
	245 MT 84.2 (240 MT 84.2)	1.4541	(A 182 F 321)	forged steel	
Nominal diameter	DN 10 to DN 65/50				
Design data	4 Mpa – 250 °C	design size	P4		
	11 Mpa – 350 °C	design size	P11		
	20 Mpa – 350 °C	design size	P20		
	25 Mpa – 350 °C	design size	P25		
Shut-off differential pressure	Pa = Delta_P or max. operating pressure				
Flow direction	below the disc (according to drawing)				
Body-/Disc-sealing surfaces	Co-free welded				
Body/bonnet-gasket	in force bypass / spiral wound gasket / 1.4541 with graphite (nuclear-quality)				
Lip seals gasket	for seal welding in an emergency				
Safety relevant task	function during and after an accident				
Seismic design	function after an earthquake				
Tightness	outside	DIN EN 12266-2, Leakage rate A			
	in the seat	DIN EN 12266-1, Leakage rate C			
Installation position	preferably horizontal line				

■ Gate valve ■ DN 80 to DN 150

Design size P4

700 JJ



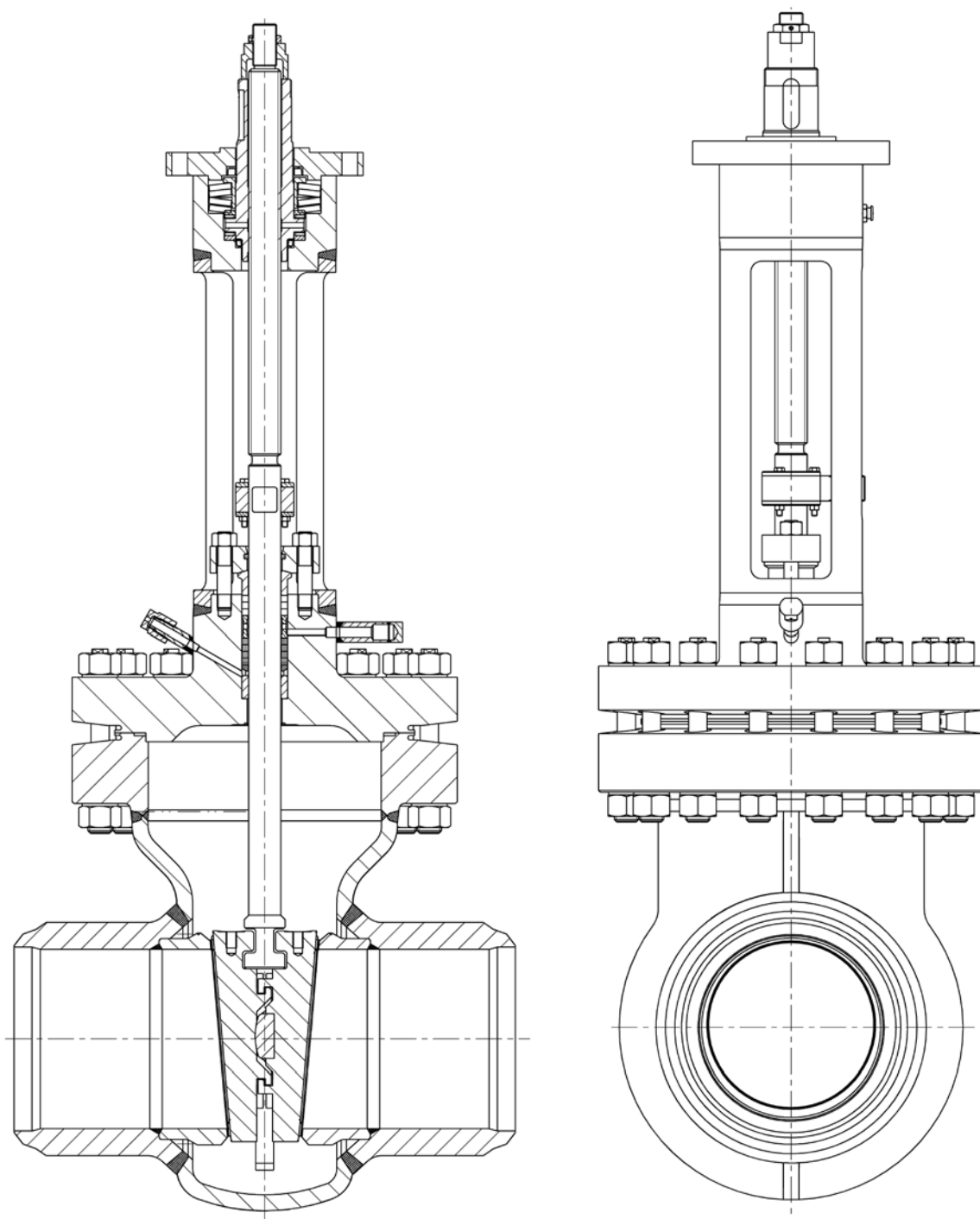
■ Gate valve ■ DN 80 to DN 150

Valve type	Gate valve with butt weld ends			
Series	700 JJ 21.2	1.0460	(A 105)	forged steel casting
	700 JJ 74.2	1.4552	(A 351 CF8C)	
Nominal diameter	DN 80 to DN 150			
Design data	4 Mpa – 250 °C design size P4			
Shut-off differential pressure	Pa = Delta_P or max. operating pressure			
Flow direction	bi-directional			
Body-/Disc-sealing surfaces	Co-free welded			
Stem sealing	highest-grade graphite 99,85 % packing (nuclear-quality)			
Body/bonnet-gasket	in force bypass / spiral wound gasket / 1.4541 with graphite (nuclear-quality)			
Lip seals gasket	for seal welding in an emergency			
Mechanical position indication	on/off			
Safety relevant task	function during and after an accident			
Seismic design	function after an earthquake			
Tightness	outside	DIN EN 12266-2, Leakage rate A		
	in the seat	DIN EN 12266-1, Leakage rate A		
Installation position	preferably horizontal line / vertical spindle			
Actuating versions	handwheel			
	gear box with handwheel			
	electric actuator			
	coupling device for remote control			
	pneumatic actuator			

■ Gate valve ■ DN 200 to DN 800/700

Design size P4

700 JJ



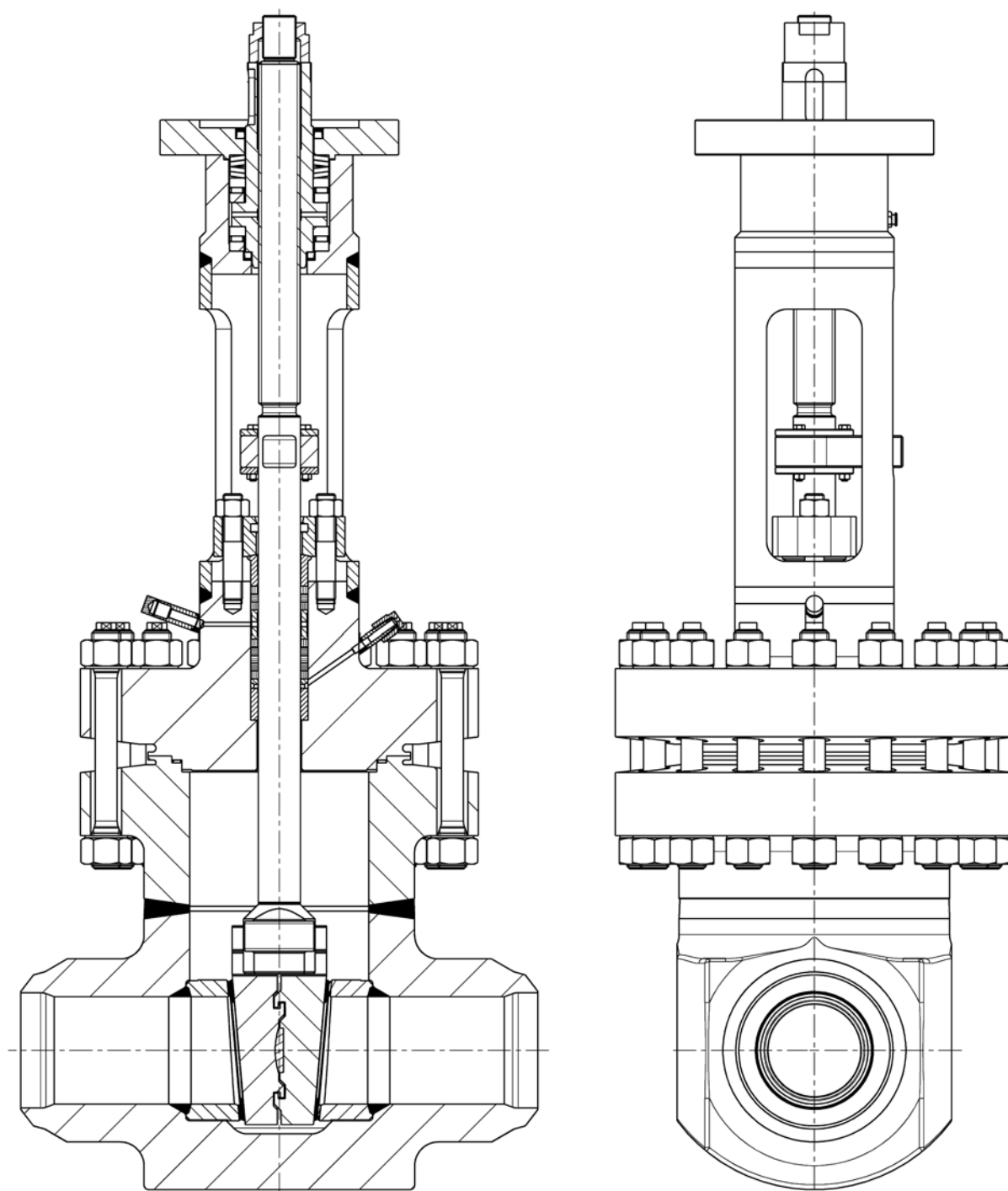
■ Gate valve ■ DN 200 to DN 800/700

Valve type	Gate valve with butt weld ends			
Series	700 JJ 21.2	1.0460	(A 105)	forged steel
	700 JJ 84.2	1.4541	(A 182 F 321)	forged steel
Nominal diameter	DN 200 to DN 800/700			
Design data	4 Mpa – 250 °C design size P4			
Shut-off differential pressure	Pa = Delta_P or max. operating pressure			
Flow direction	bi-directional			
Body-/Disc-sealing surfaces	Co-free welded			
Stem sealing	highest-grade graphite 99,85 % packing (nuclear-quality)			
Body/bonnet-gasket	in force bypass / spiral wound gasket / 1.4541 with graphite (nuclear-quality)			
Lip seals gasket	for seal welding in an emergency			
Mechanical position indication	on/off			
Safety relevant task	function during and after an accident			
Seismic design	function after an earthquake			
Tightness	outside	DIN EN 12266-2, Leakage rate A		
	in the seat	DIN EN 12266-1, Leakage rate A		
Installation position	preferably horizontal line / vertical spindle			
Actuating versions	handwheel gear box with handwheel electric actuator coupling device for remote control pneumatic actuator, dependent on nominal size and technical data			

■ Gate valve ■ DN 80 to DN 500

Design size P11–P20/25

700 JJ



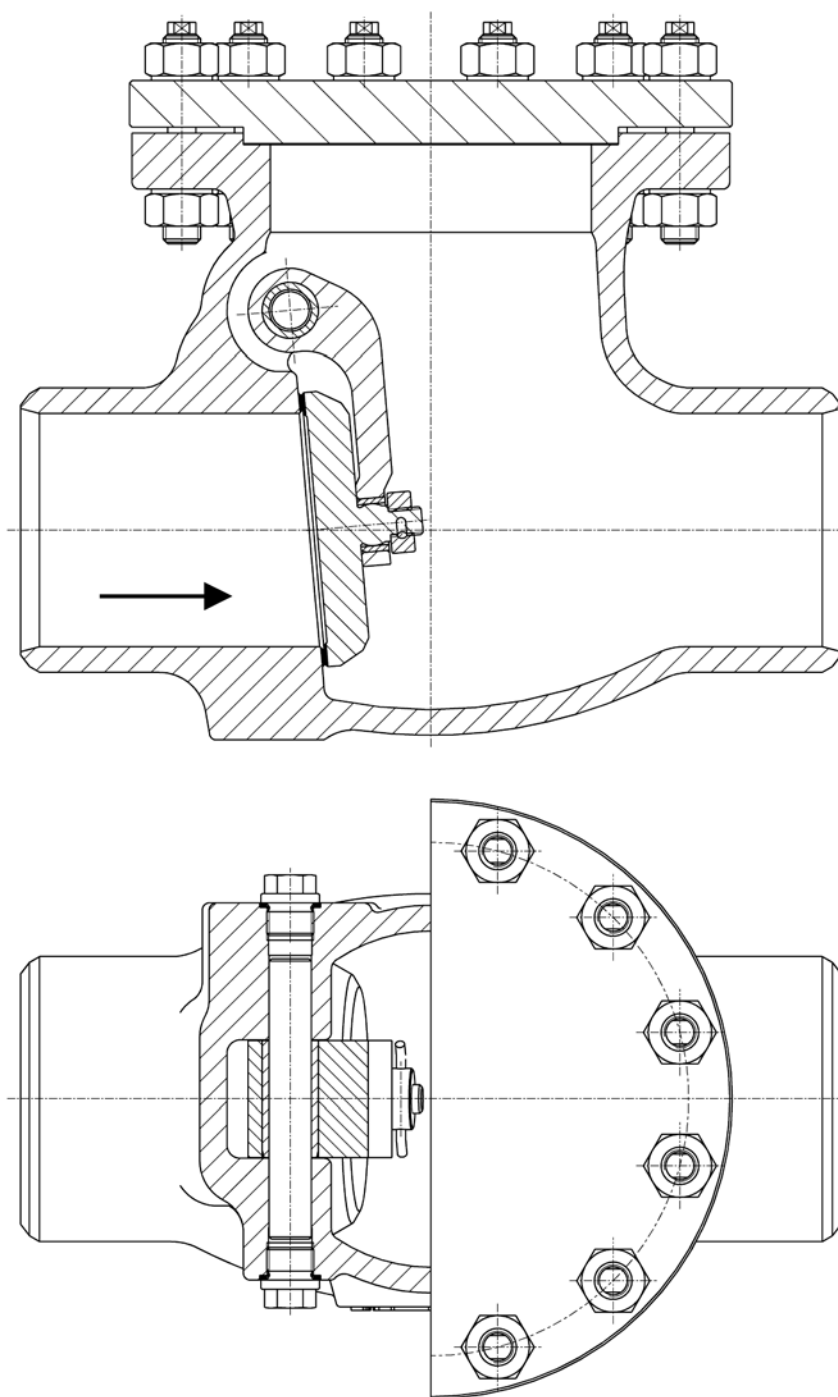
■ Gate valve ■ DN 80 to DN 500

Valve type	Gate valve with butt weld ends			
Series	700 JJ 21.2	1.0460	(A 105)	forged steel
	700 JJ 84.2	1.4541	(A 182 F 321)	forged steel
Nominal diameter	DN 80 to DN 500			
Design data	11 Mpa – 350 °C	design size	P11	
	20 Mpa – 350 °C	design size	P20	
	25 Mpa – 350 °C	design size	P25	
Shut-off differential pressure	Pa = Delta_P or max. operating pressure			
Flow direction	bi-directional			
Body-/Disc-sealing surfaces	Co-free welded			
Stem sealing	highest-grade graphite 99,85 % packing (nuclear-quality)			
Body/bonnet-gasket	in force bypass / spiral wound gasket / 1.4541 with graphite (nuclear-quality)			
Lip seals gasket	for seal welding in an emergency			
Mechanical position indication	on/off			
Safety relevant task	function during and after an accident			
Seismic design	function after an earthquake			
Tightness	outside	DIN EN 12266-2, Leakage rate A		
	in the seat	DIN EN 12266-1, Leakage rate A		
Installation position	preferably horizontal line / vertical spindle			
Actuating versions	gear box with handwheel			
	electric actuator			
	coupling device for remote control			
	pneumatic actuator, dependent on nominal size and technical data			
	handwheel, dependent on nominal size and technical data			

■ **Swing check valve** ■ **DN 80 to DN 250**

Design size P4

640 AA



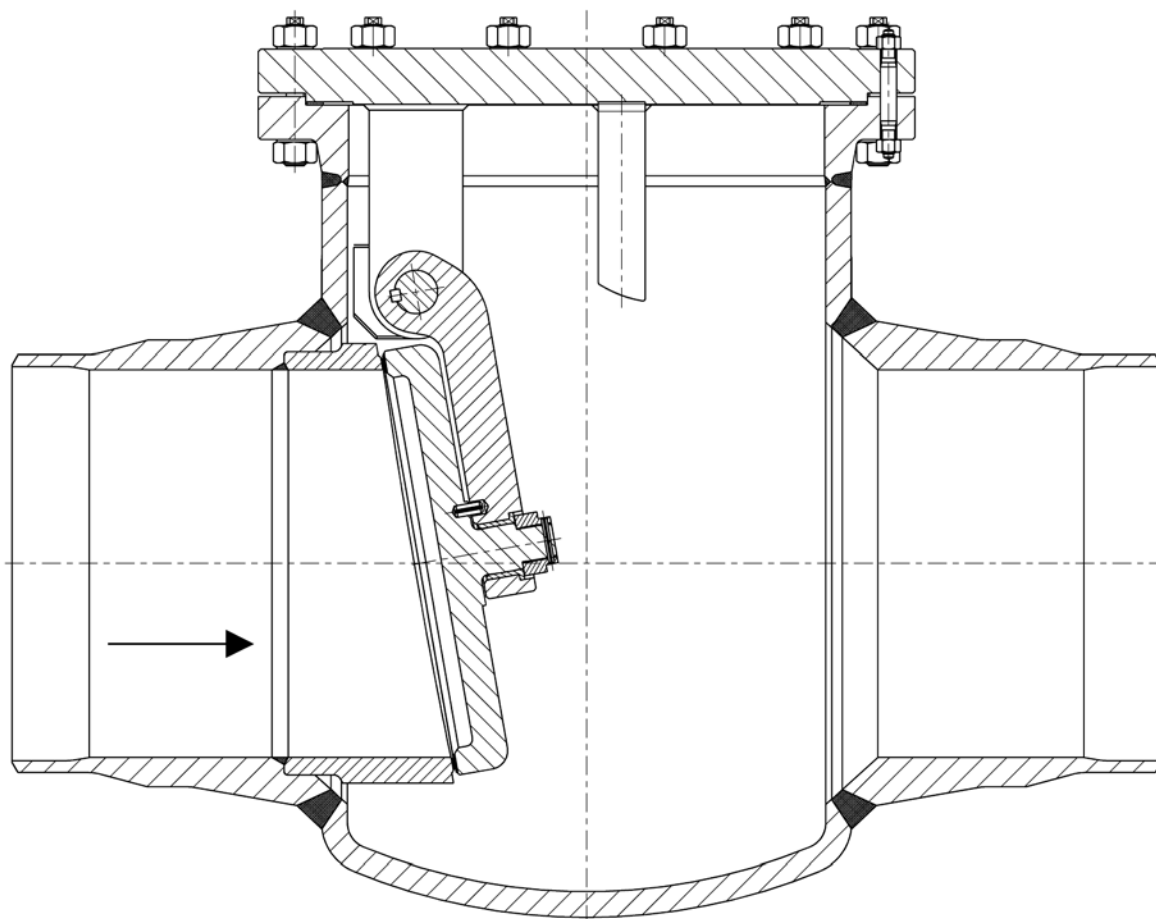
■ Swing check valve ■ DN 80 to DN 250

Valve type	Swing check valve with butt weld ends			
Series	640 AA 11.2	1.0619	(A 216 WCB)	casting
	640 AA 74.2	1.4552	(A 351 CF8C)	casting
Nominal diameter	DN 80 to DN 250			
Design data	4 Mpa – 250 °C design size P4			
Shut-off differential pressure	Pa = Delta_P or max. operating pressure			
Flow direction	according to drawing			
Body-/Disc-sealing surfaces	Co-free welded			
Body/bonnet-gasket	in main force / serrated profile gasket / 1.4541 with graphite (nuclear-quality)			
Safety relevant task	function during and after an accident			
Seismic design	function after an earthquake			
Tightness	outside	DIN EN 12266-2, Leakage rate A		
	in the seat	DIN EN 12266-1, Leakage rate C		
Installation position	preferably horizontal line			
Option	lip seals gasket			
	body / gasket in force bypass			

■ Swing check valve ■ DN 300 to DN 500

Design size P4

640 AA



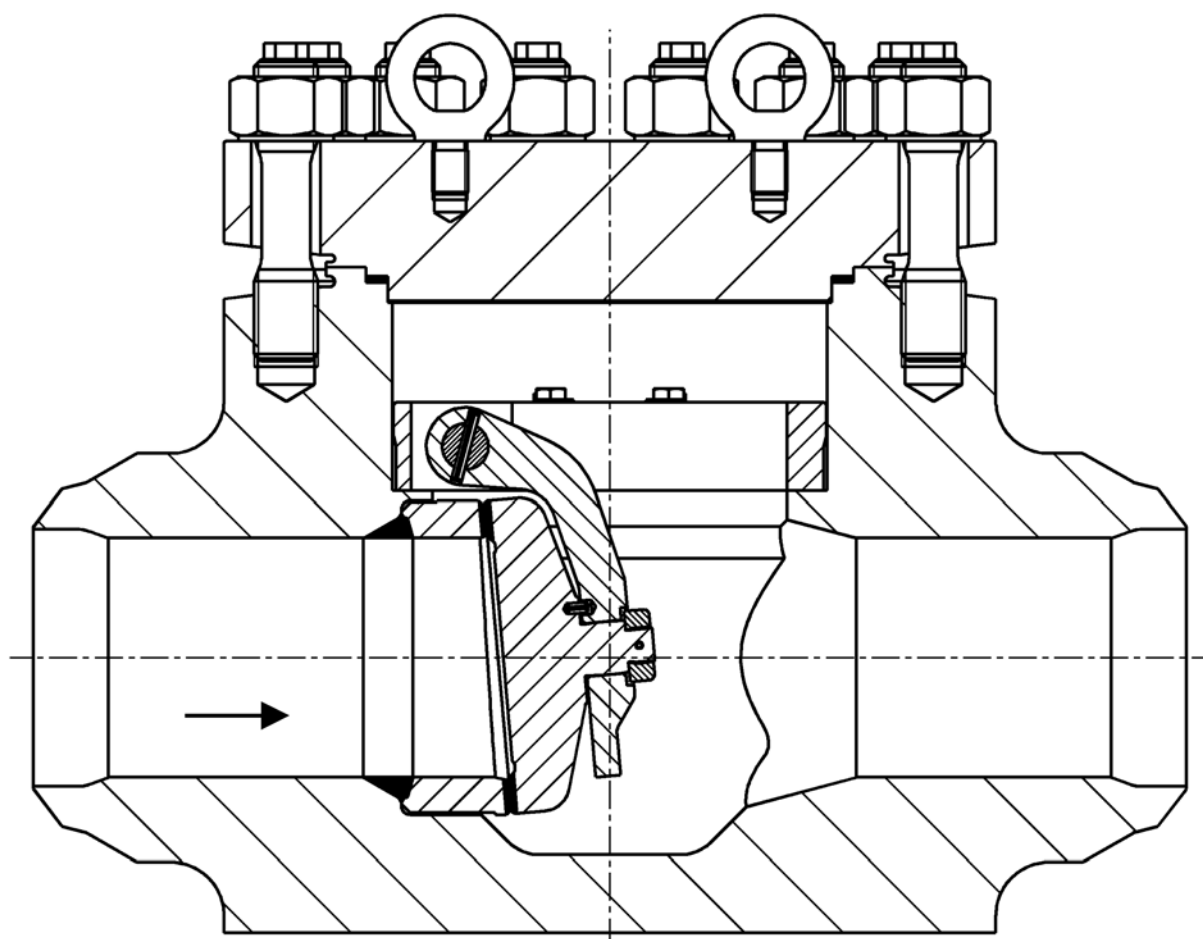
■ Swing check valve ■ DN 300 to DN 500

Valve type	Swing check valve with butt weld ends			
Series	640 AA 21.2	1.0460	(A 105)	forged steel
	640 AA 84.2	1.4541	(A 182 F 321)	forged steel
Nominal diameter	DN 300 to DN 500			
Design data	4 Mpa – 250 °C design size P4			
Shut-off differential pressure	Pa = Delta_P or max. operating pressure			
Flow direction	according to drawing			
Body-/Disc-sealing surfaces	Co-free welded			
Body/bonnet-gasket	in main force / serrated profile gasket / 1.4541 with graphite (nuclear-quality)			
Safety relevant task	function during and after an accident			
Seismic design	function after an earthquake			
Tightness	outside	DIN EN 12266-2, Leakage rate A		
	in the seat	DIN EN 12266-1, Leakage rate C		
Installation position	preferably horizontal line			
Option	lip seals gasket			
	body / gasket in force bypass			

■ Swing check valve ■ DN 80 to DN 500

Design size P11–P20/25

640 AA



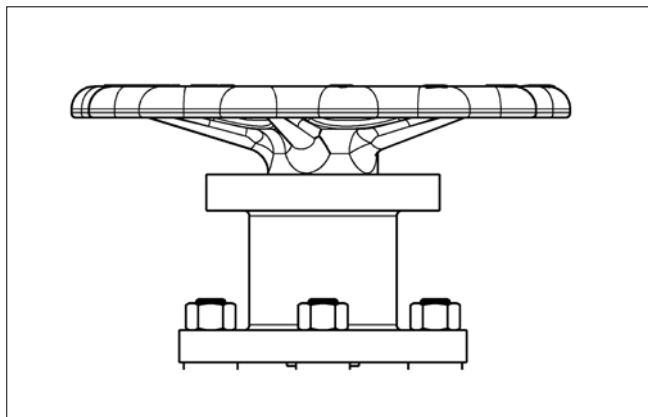
■ Swing check valve ■ DN 80 to DN 500

Valve type	Swing check valve with butt weld ends			
Series	640 AA 21.2	1.0460	(A 105)	forged steel
	640 AA 84.2	1.4541	(A 182 F 321)	forged steel
Nominal diameter	DN 80 to DN 500			
Design data	11 Mpa – 350 °C	design size	P11	
	20 Mpa – 350 °C	design size	P20	
	25 Mpa – 350 °C	design size	P25	
Shut-off differential pressure	Pa = Delta_P or max. operating pressure			
Flow direction	according to drawing			
Body-/Disc-sealing surfaces	Co-free welded			
Body/bonnet-gasket	in force bypass / spiral wound gasket / 1.4541 with graphite (nuclear-quality)			
Lip seals gasket	for seal welding in an emergency			
Safety relevant task	function during and after an accident			
Seismic design	function after an earthquake			
Tightness	outside	DIN EN 12266-2, Leakage rate A		
	in the seat	DIN EN 12266-1, Leakage rate C		
Installation position	preferably horizontal line			

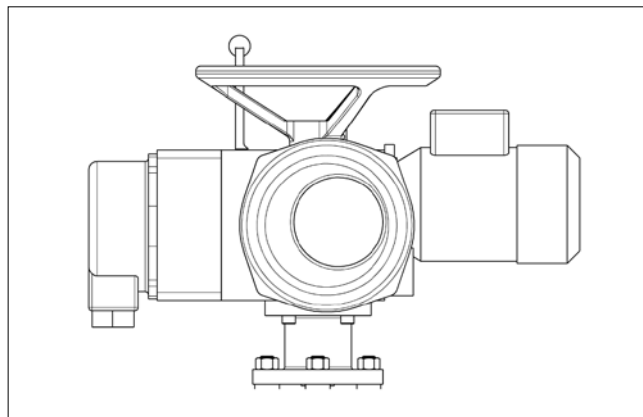
■ Actuating versions

Globe valves and gate valves

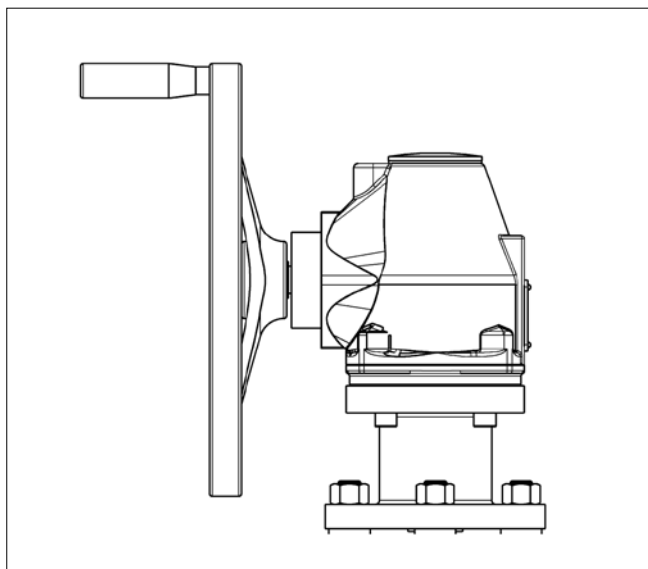
Handwheel



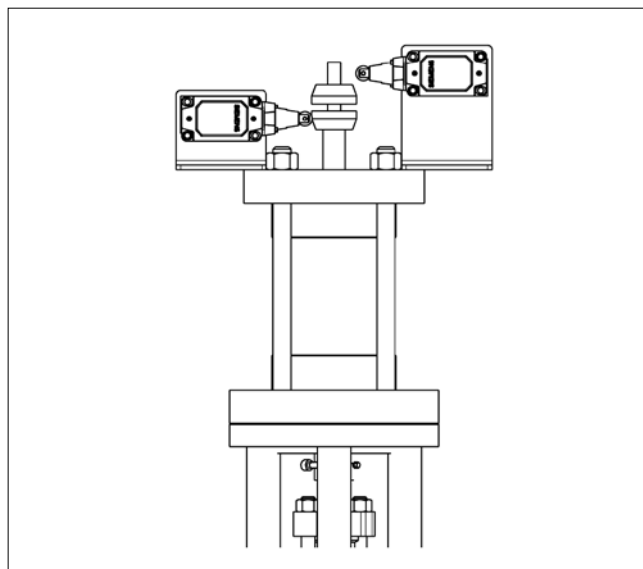
Electric actuator



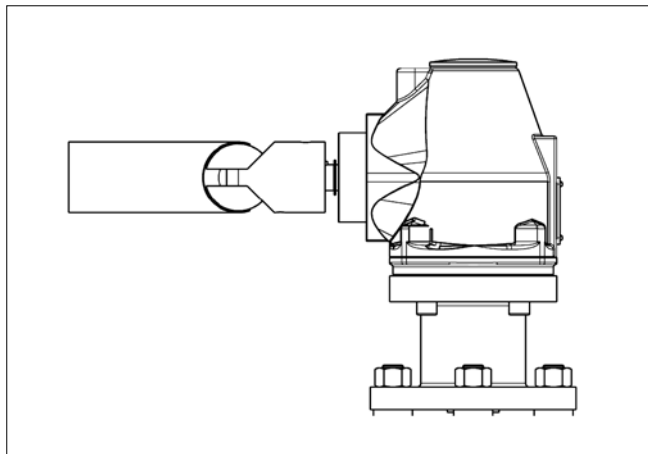
Gear box with handwheel



Pneumatic actuator



Coupling device for remote control



■ References ■ Mochovce, Slovak Republic



Mochovce, Slovak Republic

High pressure control valve Multi-stage, bellows sealed DN 100

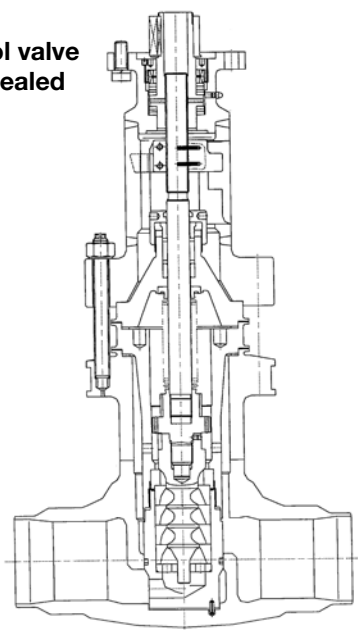
Material: 1.4541

Medium: H_3BO_3

PA 140 bar
TA 335 °C

Qmin 8 t/h
 Δp 118 bar

Qmax 40 t/h
 Δp 9,8 bar



Control valve Angle type, bellows sealed DN 150/100

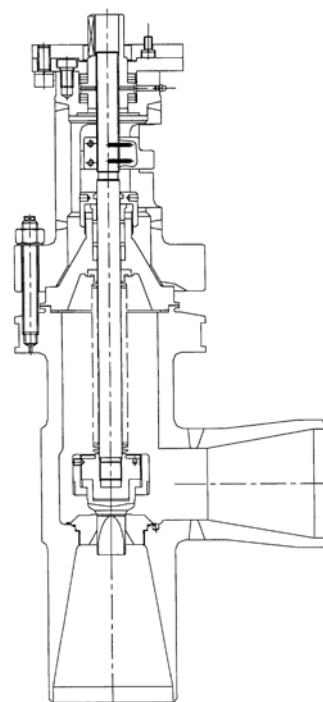
Material: 1.4541

Medium: feed water

PA 92 bar
TA 290 °C

Qmin 2,25 t/h
 Δp 40 bar

Qmax 13,5 t/h
 Δp 40 bar



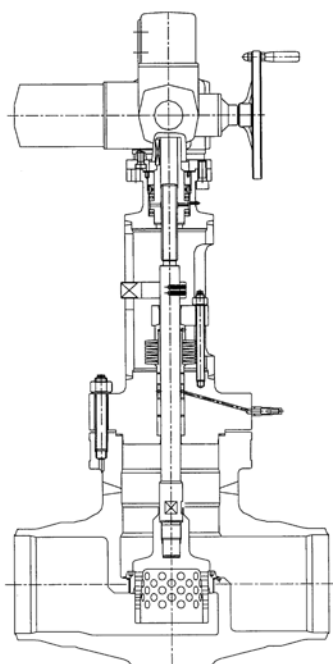
High pressure Control valve DN 250

Material: 1.4541

Medium: feed water

PA 120 bar
TA 250 °C

Qmax 550 t/h
 Δp 14,5 bar



Swing check valve DN 80 + 125 + 250, PN 160

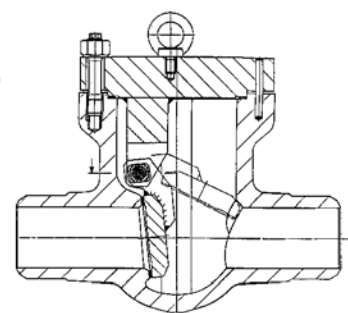
Material: 1.5415

Medium: H_3BO_3

PA 14 bar
TA 335 °C

Medium: demin. water

PA 52,8 bar
TA 25 °C



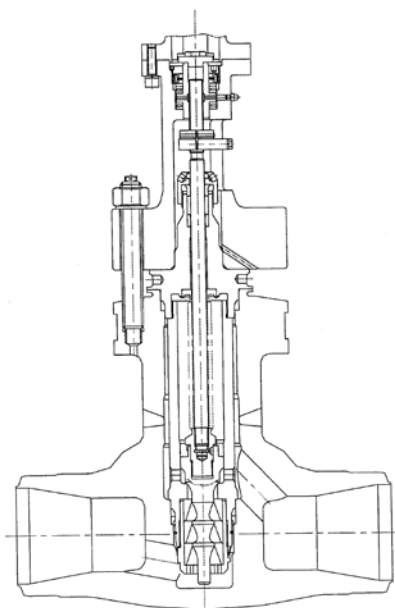
■ **References** ■ **Temelin, Czech Republic**



Temelin, Czech Republic

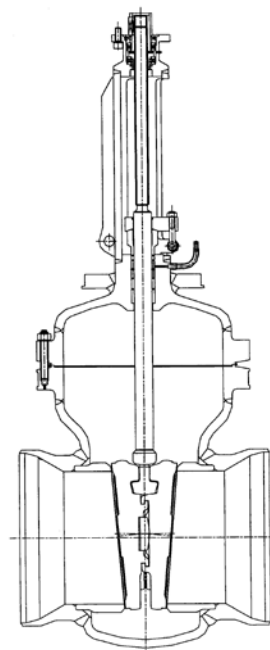
**Control valve
bellows sealed
DN 100**

Material:	1.4541
Medium:	H ₃ BO ₃
PA	180 bar
TA	350 °C
Qmin	0,3 t/h
Δp	2,2 bar
Qmax	55 t/h
Δp	145 bar



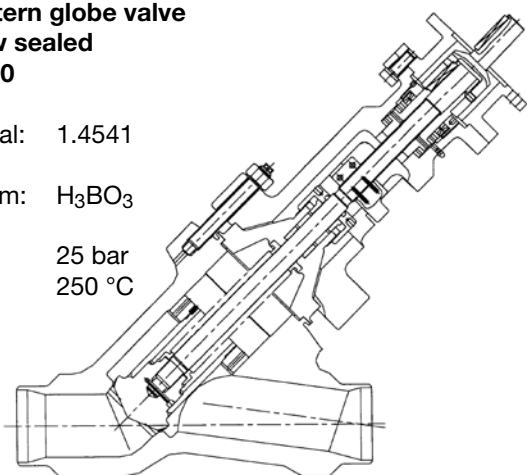
**Gate valve
DN 600/500**

Material:	1.4541
Medium:	H ₃ BO ₃
PA	25 bar
TA	250 °C



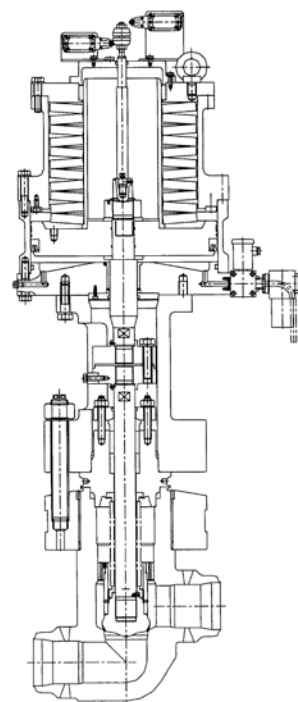
**Y-pattern globe valve
bellows sealed
DN 100**

Material:	1.4541
Medium:	H ₃ BO ₃
PA	25 bar
TA	250 °C



**Z-globe valve
bellows sealed
DN 100**

Material:	1.4541
Medium:	H ₃ BO ₃
PA	200 bar
TA	350 °C

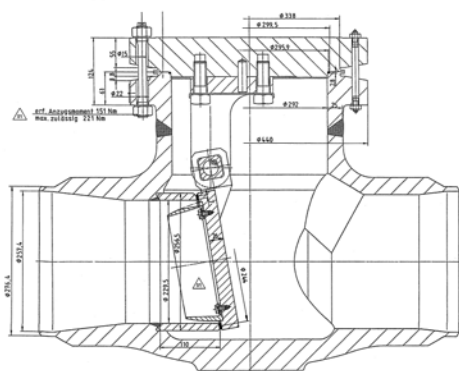
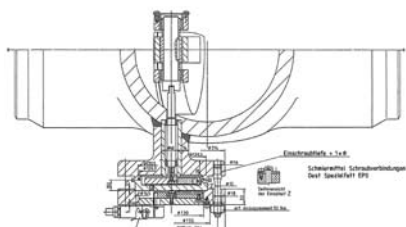


■ **References** ■ Grohnde, Germany ■ Pocerady, Czech Republic ■ Forsmark, Sweden



Grohnde, Germany

**Swing check valve
DN 250**



Pocerady, Czech Republic

**High pressure control valve
Multi-stage angle type
DVR25
DN 300**

Material: 1.7335

Medium: feed water

PA 300 bar

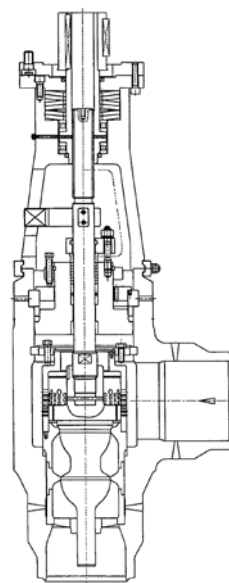
TA 190 °C

Δp_1 10 bar

Qmax 720 t/h

Qnorm 420 t/h

Δp_{open} 220 bar



Forsmark, Sweden

**High pressure control valve
Angle type
in DN 150, out DN 200**

Material: 1.7335

Medium: steam

Kvs 235 m³/h

PA 115 bar

TA 485 °C

Fall 1:

P1 60 bar

T1 450 °C

Qmax 1,55 t/h

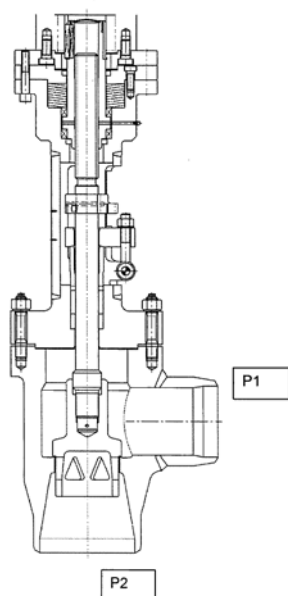
Fall 2:

P1 85 bar

T1 485 °C

P2 37,2 bar

Qmax 37,3 kg/s



■ References

Since many years PERSTA globe, gate, check and special valves have been proven their daily performance in the secondary as well as the primary circuit of nuclear power stations e.g. as listed hereinafter:



Brokdorf (D)



Brunsbüttel (D)



Emsland (D)



Isar (D)



Grohnde (D)



Gundremmingen (D)



Kozloduy (BG)



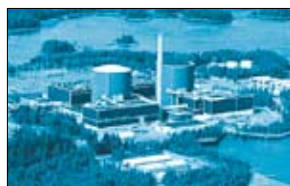
Dukovany (CZ)



Temelin (CZ)



Paks (H)



Loviisa (FIN)



Balakovo (RUS)



Kalinin (RUS)



Kola (RUS)



Bohunice (SK)



Mochovce (SK)



Jsnukrainsk (UA)



Khmel'nizkij (UA)



Rowno (UA)



Saporoshje (UA)



Stahl-Armaturen PERSTA GmbH

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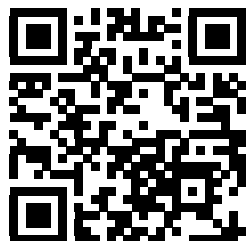
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