NORI® 500

High-pressure globe valves

with gland packing

with non-rotating stem

bonnetless, with bajonet-type body / yoke connection

Butt weld ends
or socket weld ends

PN 250-500
DN 10-65

Applications

- In industrial plants, power stations, process and marine engineering
- For water, steam, gas, oil and other non-aggressive fluids
- Other fluids on request

Operating data

- Maximum permissible pressure 600 bar
- Maximum permissible temperature 650 °C
- Selection as per pressure / temperature ratings (see overleaf)

Materials

• 16 Mo 3	1.5415	up to 530 °C
• 13 CrMo 4-5	1.7335	up to 550 °C
• 10 CrMo 9-10	1.7380	up to 580 °C
• 15 NiCuMoNb 5	1.6368	up to 450 °C
• X 10 CrMoVNb 9-1	1.4903	up to 650 °C
• X 10 CrMoVNb 9-2	1.4901	up to 650 °C

Other materials upon request

Standard design

- Straight-way pattern
- Throttling valve disc
- Forged body and yoke
- Single-piece body, bonnetless
- Stem sealed by gland packing with packing end rings
- Non-rotating stem
- Position indicator
- Stem nut with cup spring support
- Lubricating nipple for T ≥ 600 °C
- Seat / disc interface made of wear-resistant and corrosion-proof stellite
- Yoke head designed for mounting electric and pneumatic actuators (DIN ISO 5210/5211)
- EC type-tested (Module B), comonent mark TÜ.A. 331

The valves satisfy the safety requirements of Annex I of the European Pressure Equipment Directive 97/23/EC (PED) for fluids in Groups 1 and 2.

TÜV CERT PED 97/23/EC

CE

Variants

- Shut-off disc DN 32-65
- Stepped throttling
- Gland cover with scraper ring
- Spring-loaded gland (live-loading)
- Position switch
- Valve combination
- Special gland packing
- Weldneck flanges
- Combined non-return / shut-off valve
- Angle pattern
- Locking device
- Stem nut free of non-ferrous heavy metals
- Lubricating nipple for T < 600 °C
- Parts for actuator installation
- Electric and pneumatic actuators
- Other weld end designs
- Inspections to technical codes such as TRD/TRB/AD2000 – German Steam Boiler / Pressure Vessel Regulations – or to customer specification

Additional information

- NORI® 320 globe valves, type ZXSV, bonnetless, with single-piece body, see type series booklet: 7640.1
- NORI®-A globe valves, type ZXLR/ZXSR, with bolted bonnet and back seat, see type series booklet 7655.1
- NORI®-A non-return valves, type RXLR/RXSR, see type series booklet 7693.1
- Operating instructions: 0570.82

On all enquiries / orders please specify

1	Type	7	Material
2	PN	8	Fluid
3	DN	9	Flow rate
4	Operating pressure	10	Pipe connection
5	Differential pressure	11	Variants
6	Operating temperature	12	Type series booklet number

When ordering spare parts, please indicate original works number and year of manufacture.

The valves do not have a potential internal source of ignition and can be used in potentially explosive atmospheres, group II, category 2 (zones 1+21) and category 3 (zones 2+22) according to ATEX 94/9/EC.

KSB

Pressure / Temperature ratings

Butt weld ends unmachined

Nom. pressure	Material	Material No.	Permissible operating pressures in bar at temperatures in °C 1)																										
			up to 100	150	200	250	300	350	400	425	450	475	500	510	520	530	540	550	560	570	580	590	600	610	620	630	640	650
PN 500	16Mo 3	1.5415	550	550	550	550	500	471	441	434	426	419	274	218	174	138												
	13CrMo 4-5	1.7335	550	550	550	550	550	550	529	515	500	493	403	341	276	229	179	144										
	10CrMo 9-10	1.7380	550	550	550	550	550	550	544	529	515	500	397	347	303	265	229	200	171	150	129							
	15NiCuMoNb 5	1.6368	600	600	600	600	600	600	600	600	600																	
	X10CrMoVNb 9-1	1.4903	550	550	550	550	550	550	550	550	550	550	550	550	520	510	500	477	427	383	338	300	265	229	200	173	150	129
	X11CrMoWVNb 9-2	1.4901	550	550	550	550	550	550	550	550	550	550	550	550	550	550	550	550	506	462	418	374	332	294	256	221	191	165

Socket weld ends (to DIN EN 12760) and butt weld ends (to DIN EN 12627) machined

Nom. pressure	Material	Material No.	Permissible operating pressures in bar at temperatures in °C 1)																										
			up to 100	150	200	250	300	350	400	425	450	475	500	510	520	530	540	550	560	570	580	590	600	610	620	630	640	650
PN 250	16Mo 3	1.5415	250	250	241	220	193	182	171	169	166	163	96	73	57	46												
	13CrMo 4-5	1.7335	250	250	250	246	230	214	203	198	193	190	147	123	97	79	64	50										
	10CrMo 9-10	1.7380	250	250	250	243	236	220	209	203	198	192	144	126	110	96	83	72	62	54	47							
PN 320	16Mo 3	1.5415	320	320	313	290	253	238	223	218	216	212	134	101	80	64												
	13CrMo 4-5	1.7335	320	320	320	320	305	283	268	260	253	249	204	171	135	110	89	69										
	10CrMo 9-10	1.7380	320	320	320	320	320	305	290	282	275	266	201	175	153	134	116	101	86	76	65							

1) The valves can be used down to −10 °C
Dimensions see page 5

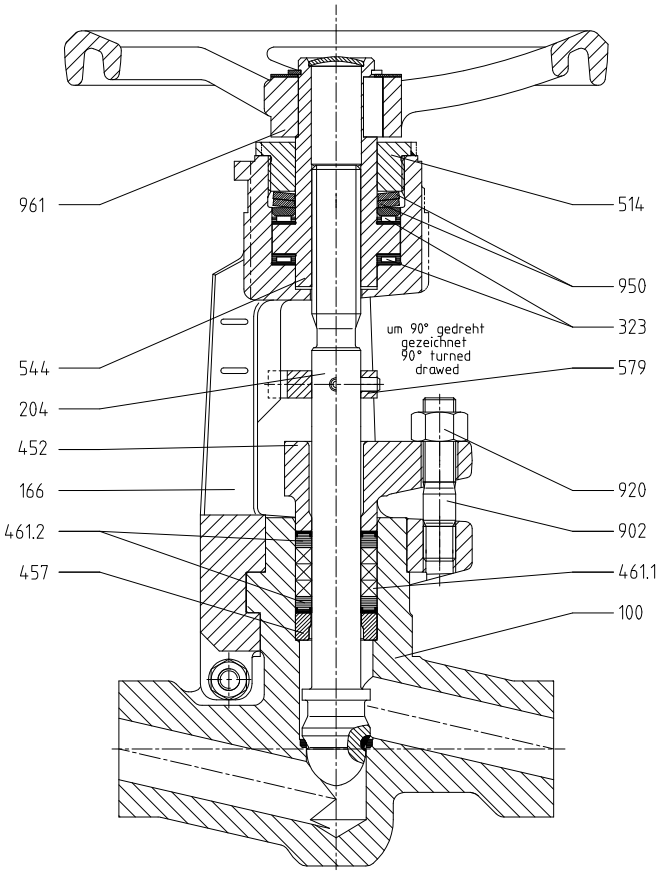
Installation

Shut-off valves must be installed in the line so as to ensure that the fluid enters the valve beneath the disc and flows out above the disc. They can also be installed in lines with alternating flow.

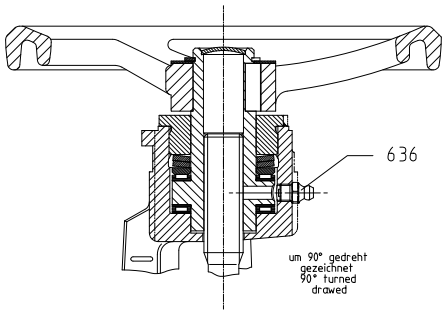
Combined non-return / **shut-off valves** must always be installed in the line so as to ensure that the fluid enters the valve beneath the disc and flows out above the disc.

Note:
In the case of machined weld ends, the permissible operating pressures are governed by the actual dimensions obtained.

For throttling valves, it it recommended to have the pressure above the disc. Exact particulars on the operating conditions are required to allow optimum valve selection.



ZXSV



Standard for T ≥ 600 °C
Variant for T < 600 °C

Materials

Part No.	Description	Temperature °C	Material		Comments
100	Body	up to 450	15 NiCuMoNb 5	1.6368	die-forged, stellited seat / disc interface
		up to 530	16 Mo 3	1.5415	
		up to 550	13 CrMo 4-5	1.7335	
		up to 580	10 CrMo 9-10	1.7380	
		up to 650	X 10 CrMoVNb 9-1	1.4903	
		up to 650	X 10 CrMoVNb 9-2	1.4901	
166	Yoke	up to 560	13 CrMo 4-5	1.7335	die-forged
		up to 650	X 10 CrMoVNb 9-1	1.4903	
204 *)	Throttling disc stem	up to 550	X 39 CrMo 17-1	1.4122	stellited seat / disc interface
		up to 600	X 22 CrMoV 12-1	1.4923 / 1.4913	stellited seat / disc interface
		up to 650	**)	**)	(1.4986-1.4913-H6)
323 *)	Thrust needle bearing	up to 600 **)	St		
452	Gland cover		13 CrMo 4-5	1.7335 **)	
457 *)	Gland ring	up to 550	G-X70 CrMo 29-2	1.4136	
		up to 650	X 20 CrMo 12-1	1.4922	plasma-nitrided
461.1 *)	Packing ring	up to 650	High-purity graphite		Anti-extrusion design with packing end rings / Stainless steel cap
461.2 *)	Packing end ring				
514	Threaded ring	up to 560	9SMn28K	1.0718	
		up to 650	X 39 CRMo 17-1	1.4122	
544 *)	Stem nut	up to 600 **)	CuZn37Mn3AL2PbSi-R540	CW713R (2.0550)	
579	Anti-rotation device		S 275 JR		
636	Lubricating nipple	up to 650	St		Standard for T ≥ 600 °C Variant for T < 600 °C
902	Stud	up to 600 **)	21 CrMo V 5-7	1.7709	
920	Hex. nut		25 CrMo 4	1.7218	
950 *)	Cup spring		50 CrV 4	1.8159	
961	Handwheel		GJS-400-15	JS1030	

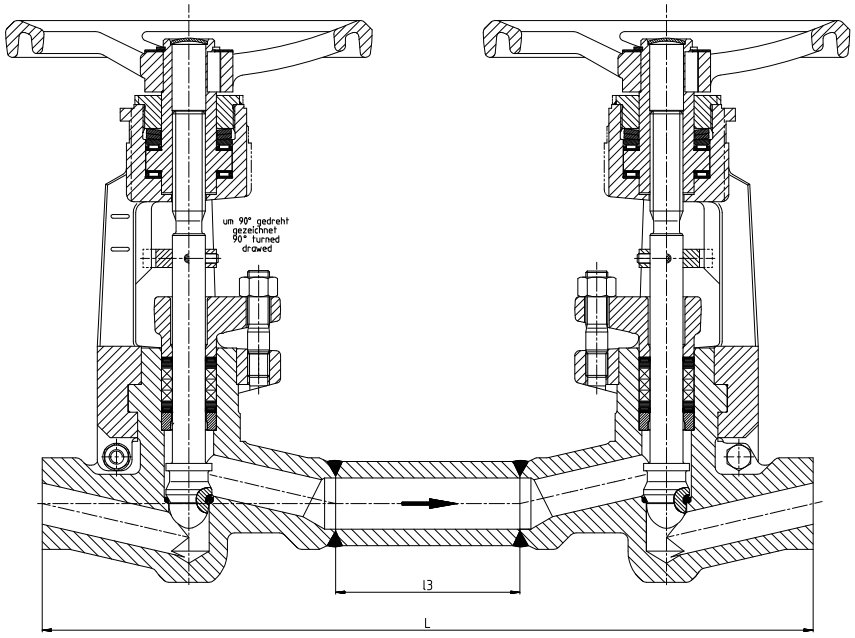
*) Recommended spare parts

**) For temperatures > 600 °C materials are selected according to requirements

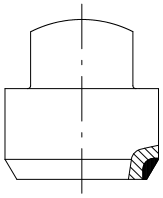
Dimensions for “Valve combination” variant

Drainage, vent or manual start-up pipes are normally fitted with valve combinations consisting of a shut-off valve (pressure beneath the valve disc) and a throttling valve (pressure above the valve disc).

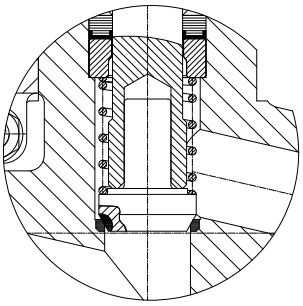
Nominal diameter	Valve combination		
DN	l 3	L	approx. kg
10	60	360	13
15	60	360	13
20	100	420	19
25	100	420	19
32	60	560	41
40	60	560	41
50	60	560	41
65	100	700	68



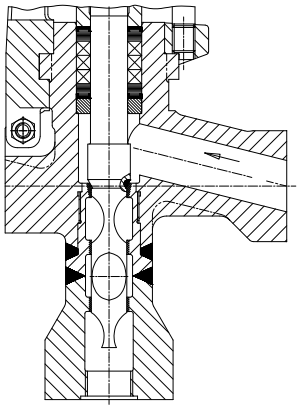
Variants



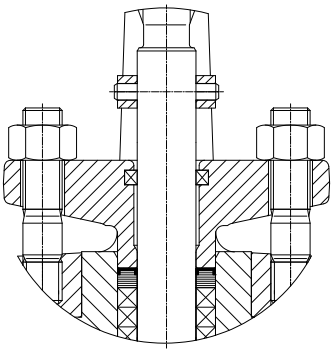
Shut-off disc



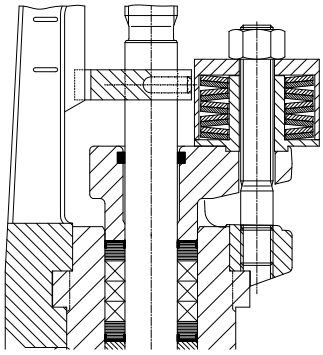
Combined non-return / shut-off valve



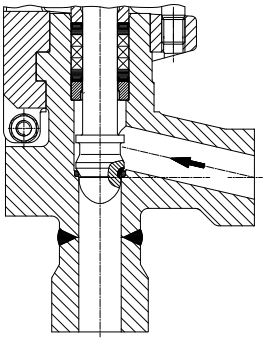
Stepped throttling



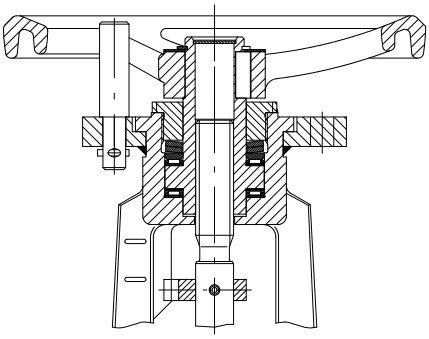
Gland cover with scraper ring



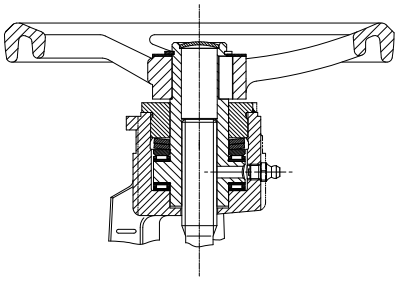
Spring-loaded gland packing



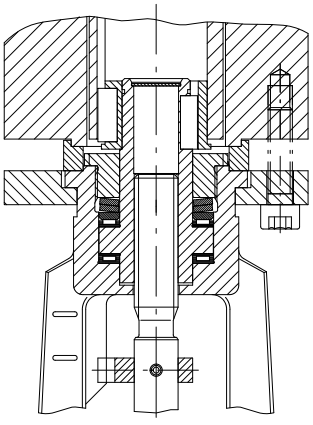
Angle pattern, type ZJSV



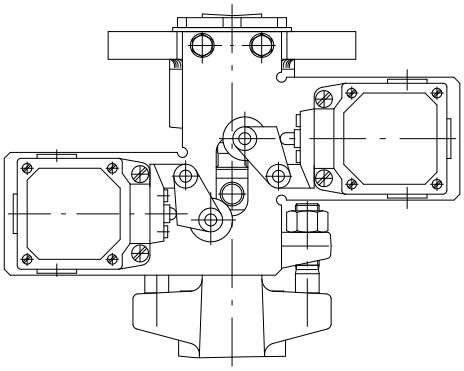
Locking device



Lubricating nipple



Installation of electric actuators

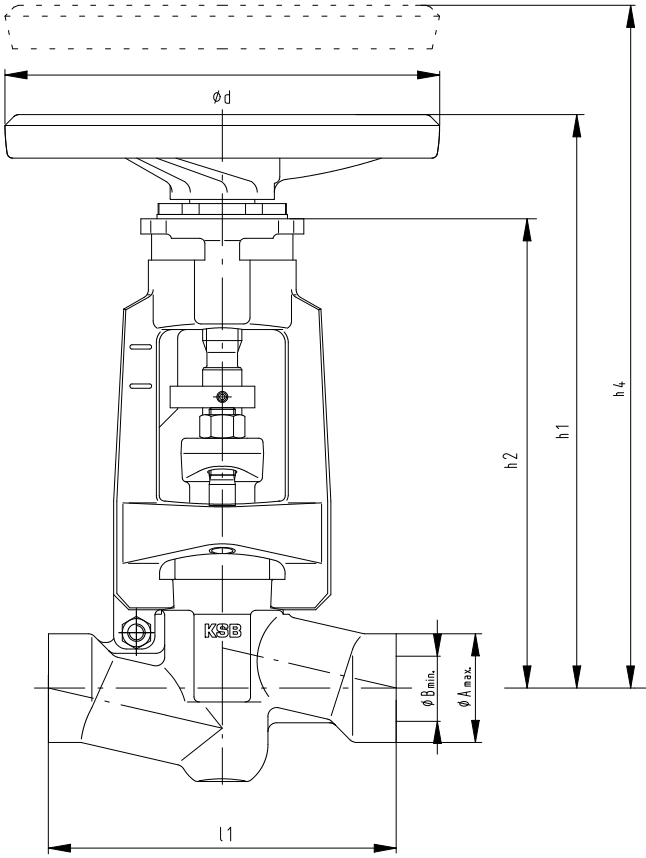


Position switch

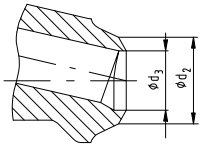
Dimensions

Face-to-face length – see table
Butt weld ends – DIN EN 12627 Fig. 2
Socket weld ends – DIN EN 12760

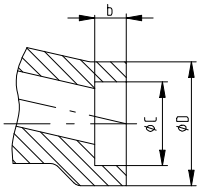
Different designs of butt weld ends, socket weld ends and welding groove types are possible, but only within the dimensions $A_{max.}$ and $B_{min.}$.
Butt weld ends to DIN 3239/1 or socket weld ends to ASME B16.11, DIN 3239/2 are possible.



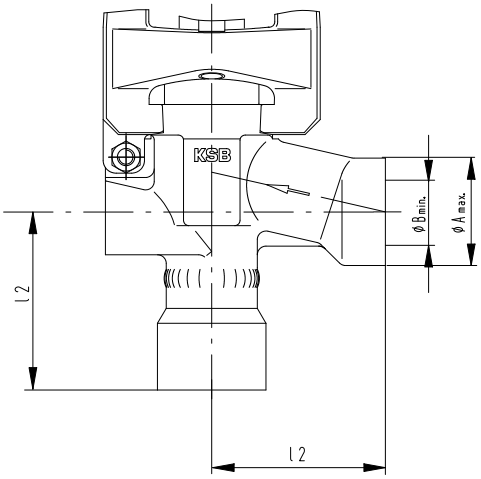
Type ZXSV



Butt weld ends



Socket weld ends

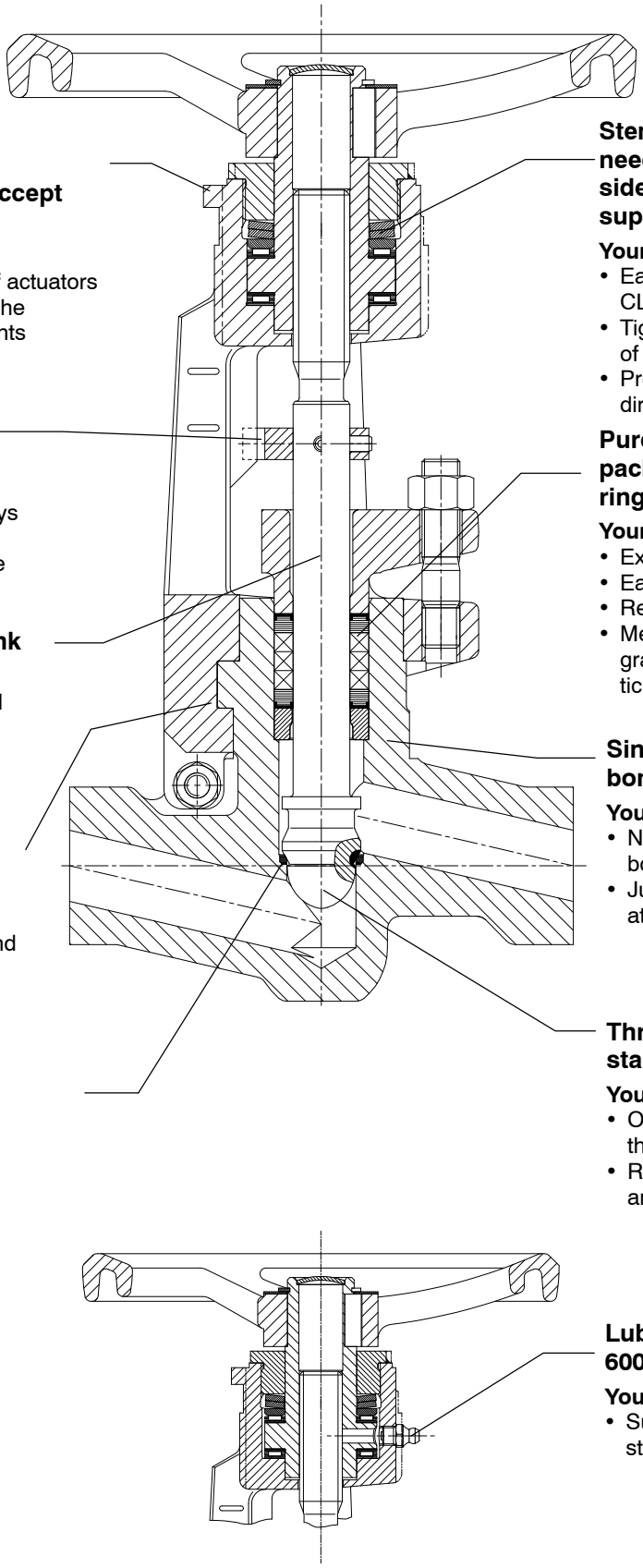


Type ZJSV

Dimensions in mm

Nominal diameter	Face-to-face length	Centre-to-end dimension	Butt weld ends unmachined		Butt weld ends to DIN EN 12627					Socket weld ends to DIN EN 12760			Centre-to-top height		Disassembly height	Travel	Hand-wheel	Weight
			PN **500**			PN **250**		PN **320**		PN **320**								
DN	l 1	l 2	ø A max.	ø B min.	ø d_2	ø d_3	Pipe dimensions	ø d_3	Pipe dimensions	ø D –0,5	ø C + 0,2	b min.	h_1	h_2	h_4		Ø d	approx. kg
10	150	75	35	9	18	12.0	17.2 x 2.6	11.5	17.2 x 2.9	27.0	17.6	10.0	244	200	335	9.5	160	6.0
15	150	75	35	14	22	16.0	21.3 x 2.6	15.0	21.3 x 3.2	32.5	21.8	10.0	244	200	335	9.5	160	6.0
20	160	80	50	19	28	20.0	26.9 x 3.6	19.0	26.9 x 4.0	39.5	27.2	13.0	264	216	375	18.0	200	8.5
25	160	80	50	22	35	26.5	33.7 x 3.6	24.0	33.7 x 5.0	48.0	33.9	13.0	264	216	375	18.0	200	8.5
32	250	125	78	30	44	34.0	42.4 x 4.5	30.5	42.4 x 6.3	57.0	42.7	13.0	345	295	485	25.0	250	20.0
40	250	125	78	35	50	39.0	48.3 x 5.0	36.0	48.3 x 6.3	64.5	48.8	13.0	345	295	485	25.0	250	20.0
50	250	125	78	35	62	48.0	60.3 x 6.3	47.0	60.3 x 7.1	83.0	61.2	16.0	345	295	485	25.0	250	20.0
65	300	150	95	44	77	62.5	76.1 x 7.1	59.5	76.1 x 8.8	106.0	76.9	16.0	415	350	590	35.5	315	33.0

Product features – to our customers' benefit



Yoke head with bayonet connection designed to accept DIN ISO flange

Your benefits:
- Straightforward retrofitting of actuators without having to dismantle the pressure-retaining components
- No modifications required

Position indicator as a standard

Your benefits:
- Valve disc position can always be checked
- Anti-rotation protection of the stem

Stem with burnished shank

Your benefit:
- Long service life of the gland packing

Bayonet-type body / yoke connection

Your benefits:
- Simple and fast assembly and disassembly
- Easy to service

Valve seat made of wear-resistant and corrosion-proof stellite

Your benefits:
- High functional reliability
- Long service life

Stem nut supported by needle bearings on both sides, with cup spring support and cover disc

Your benefits:
- Easy actuation in OPEN and CLOSED direction
- Tight shut-off, also in the event of temperature fluctuations
- Protection against ingress of dirt

Pure graphite gland packing with packing end rings

Your benefits:
- Excellent tightness
- Easy to service
- Reliable sealing to atmosphere
- Metal cap reliably protects graphite against oxidation, particularly at high temperatures

Single-piece valve body, bonnetless

Your benefits:
- No retightening of bonnet bolts
- Just one sealing point to atmosphere

Throttling valve disc as a standard

Your benefits:
- One model for shut-off and throttling
- Reduced number of spares and spare parts stocks

Lubricating nipple for T ≥ 600 °C as standard

Your benefit:
- Subsequent lubrication of stem thread possible

7641.1/9-10 01.05.2010

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