

Globe Valve

NORI 40 ZXLBV/ZXSBV

PN 25/40
DN 10-200
Bellows
Two-piece Stem
Flanged/Butt Weld Ends
or Socket Weld Ends

Type Series Booklet



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Type Series Booklet NORI 40 ZXLBV/ZXS BV

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Globe Valves

Bellows-type Globe Valves

NORI 40 ZXLBV/ZXSBV



Main applications

- Process engineering
- Chemical industry
- Petrochemical industry
- Sugar industry
- Heat recovery systems
- Boiler feed applications
- Nuclear power stations

Fluids handled

- Water
- Steam
- Gas
- Other non-aggressive fluids
- Other fluids on request.

Operating data

Operating properties

Characteristic	Value
Nominal pressure	PN 25/40
Nominal size	DN 10-200
Max. permissible pressure	40 bar
Max. permissible temperature	450 °C

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- 1) DN 10-40
 2) DN 50-200
 3) DN 10-50
 4) DN 65-200

Selection as per pressure/temperature ratings (⇒ Page 4)

Body materials

Overview of available materials for flanged model

Material	Material number	Temperature limit
P 250 GH ¹⁾	1.0460	Up to 450 °C
GP 240 GH+N ²⁾	1.0619+N	Up to 450 °C

Overview of available materials for model with butt weld ends

Material	Material number	Temperature limit
P 250 GH ³⁾	1.0460	Up to 450 °C
GP 240 GH+N ⁴⁾	1.0619+N	Up to 450 °C

Design details

Design

- Tapered valve disc
- Two-piece stem
- Back seat
- Back-up gland packing with follower
- Position indicator
- Fully confined bonnet gasket
- Materials free from non-ferrous metals
- EC type-tested (Module B), component mark TÜ.A.-209
- Exterior coating: blue RAL 5002
- The valves meet the requirements specified in TA-Luft (German Technical Guidelines on Air Quality Control, VDI 2440).
- 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.
- 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) to ATEX 94/9/EC.

Variants

- Throttling plug
- Balanced plug from DN 125
- Locking device
- Travel stop
- Studs and nuts of A4-70 (low-temperature steel)
- Oil and grease-free (wetted parts)
- Other flange designs
- Other butt weld end versions
- Other socket weld end versions
- Inspections to technical codes such as TRD/TRB/AD2000 – German Steam Boiler / Pressure Vessel Regulations – or to customer specification

Product benefits

- High functional reliability and long service life
 - Two-piece stem. Burnished, non-rotating lower stem makes for minimal wear and long service life of the packing.
 - Hard-faced valve seat made of wear and corrosion-resistant materials.
- Reliable sealing: bonnet gasket fully confined to prevent creep.
- Additional stem seal for emergency operation and blow-out protection by standard back seat as well as back-up gland packing made of pure graphite.
- Reliable shut-off due to tapered valve disc with angled seat/disc interface. Can also be used for contaminated fluids thanks to self-cleaning properties.
- Corrosion-resistant and easy to repair due to olive-chromated nuts and bolts/screws.

Related documents

- NORI 40 globe valves with gland packing and rotating stem, type ZXL/ZXS, see type series booklet 7621.1.
- NORI 40 globe valves with gland packing and non-rotating stem, type ZXLF/ZXSf, see type series booklet 7622.1.

- NORI 40 non-return valves, type RXL/RXS, see type series booklet 7673.1.
- NORI 40 bellows-type globe valves, type ZXLB/ZXSB, ZYLB/ZYSB, see type series booklets 7165.1 and 7160.1.
- NORI 40 strainers, type FSL/FSS, see type series booklet 7127.1.
- Operating manual 0570.82

On all enquiries/orders please specify

1. Type
2. Nominal pressure
3. Nominal size
4. Operating pressure
5. Differential pressure
6. Operating temperature
7. Fluid handled
8. Pipe connection
9. Variants
10. Number of type series booklet

Pressure/temperature ratings

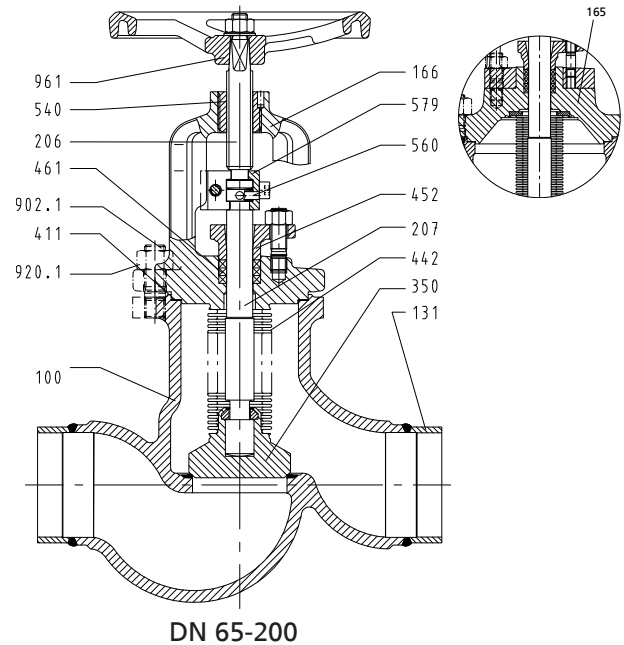
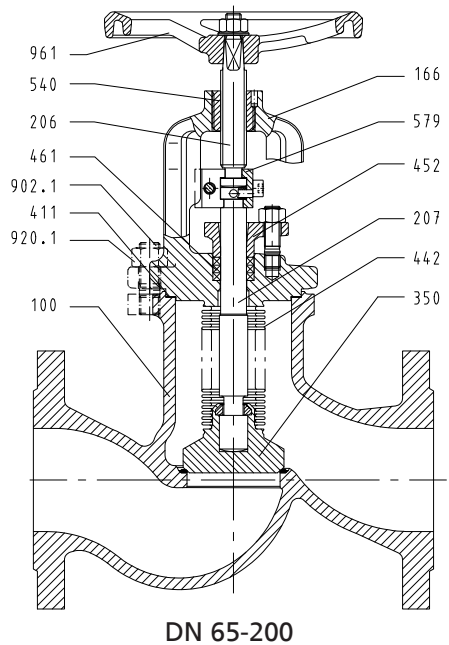
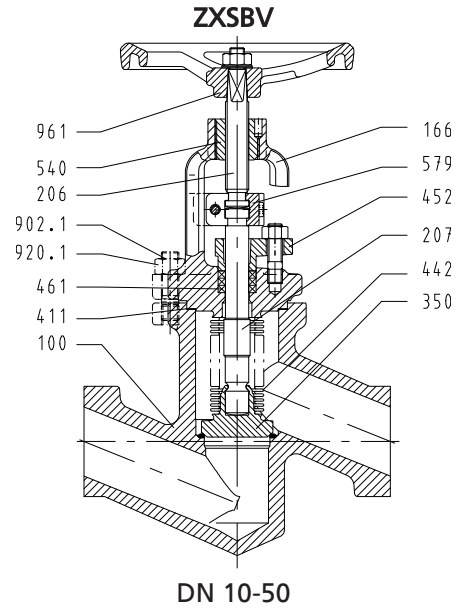
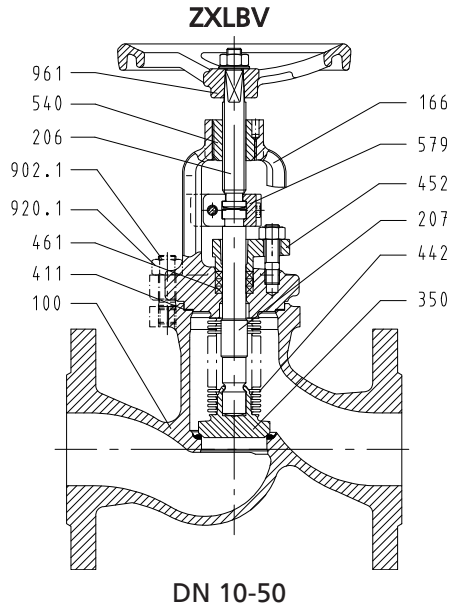
Permissible operating pressures in bar at a temperature of °C (to EN 1092-1)⁵⁾

Nominal pressure	Material	RT ⁶⁾	100	150	200	250	300	350	400	450
25	P 250 GH	25,0	23,2	22,0	20,8	19,0	17,2	16,0	14,8	8,2
40	GP 240 GH+N	40,0	37,1	35,2	33,3	30,4	27,6	25,7	23,8	13,1

⁵⁾ Operating pressures to DIN 2401 are also permissible.

⁶⁾ RT: room temperature (-10 °C to +50 °C)

Materials



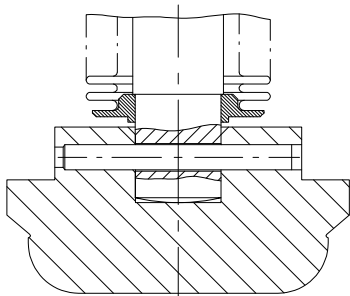
Overview of available materials

Part No.	Description	DN	Material	Material number	Note
100	Body	10-40 type ZXLBV	P 250 GH	1.0460	Hard-faced with stainless steel (1.4370)
		10-50 type ZXSBV			
		50-200 type ZXLBV	GP 240 GH+N	1.0619+N	
		65-200 type ZXSBV			
131	Connection branch	From DN 65	P 235 GH	1.0305	
166	Yoke	DN 125-200	GP 240 GH	1.0619	
206 ⁷⁾	Upper stem		X 20 Cr 13 V	1.4021	Nitrided

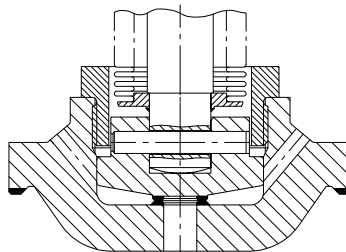
⁷⁾ Recommended spare parts

Part No.	Description	DN	Material	Material number	Note
411 ⁷⁾	Joint ring		CrNi steel/graphite		
440 ⁷⁾	Bellows set	Includes:			
165	Bonnet	DN 125-200	P 250 GH	1.0460	
166	Yoke	DN 10-100	P 250 GH	1.0460	
207	Lower stem		X 20 Cr 13 V	1.4021	
350 ⁷⁾	Valve disc	DN 10-100	X 39 CrMo 17-1	1.4122	
		DN 125-200	P 250 GH	1.0460	Hard-faced (1.4115)
442	Bellows		X 6 CrNiMoTi 17-12-2	1.4571	
452	Gland follower	DN 10-50	GP 240 GH+N	1.0619+N	
		DN 65-200	P 250 GH	1.0460	
461 ⁷⁾	Gland packing		Graphite		
540 ⁷⁾	Yoke bush		11 SMn30+C	1.0715	Nitrided
579	Stop	DN 10-65	G-X 20 Cr 14 G	1.4027	
		DN 80-200	St 37 K	1.0120	Olive-chromated
902.1	Stud		21 CrMoV 5-7	1.7709	Olive-chromated
920.1	Hexagon nut		25CrMo4	1.7218	
961	Handwheel		JL 1030	0.6020	

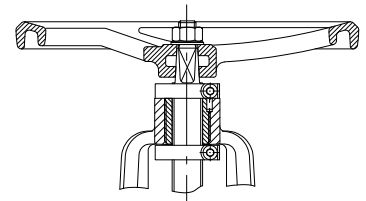
Variants



Throttling plug



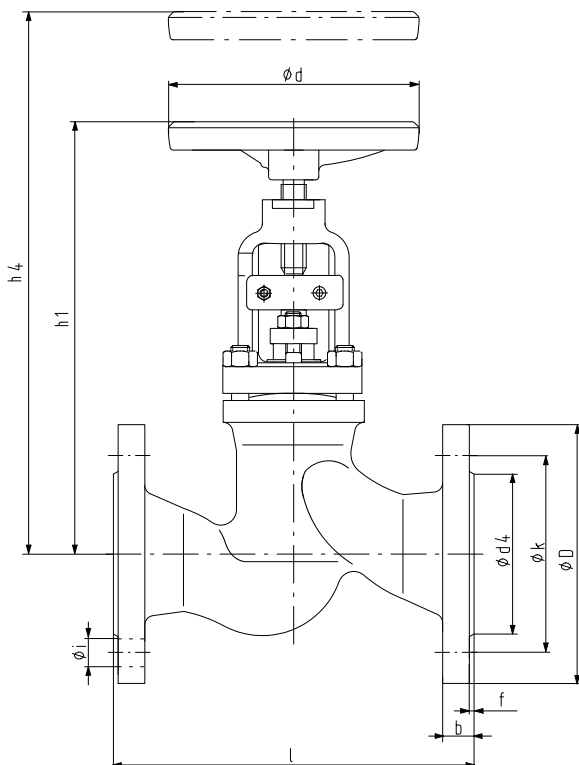
Balanced plug



Locking device / travel stop

Dimensions

Dimensions of NORI 40 ZXLBV



Dimensions in mm

PN	DN	l	ϕD	ϕk	No. of bolt holes z	Bolt hole dia. i	$\phi d_4 \times f$	b	$h_1^{8)}$	$h_4^{9)}$	ϕd	[kg]
25/40	10	130	90	60	4	14	40 x 2	16	215	270	125	4,1
	15	130	95	65	4	14	45 x 2	16	215	270	125	4,3
	20	150	105	75	4	14	58 x 2	18	230	300	125	6,0
	25	160	115	85	4	14	68 x 2	18	230	300	125	6,5
	32	180	140	100	4	18	78 x 2	18	270	340	160	9,0
	40	200	150	110	4	18	88 x 3	18	270	360	160	10,0
	50	230	165	125	4	18	102 x 3	20	290	380	160	14,5
	65	290	185	145	8	18	122 x 3	22	320	470	160	26,0
	80	310	200	160	8	18	138 x 3	24	385	560	200	32,0
	100	350	235	190	8	22	162 x 3	24	425	630	250	42,0
125	400	270	220	8	26	188 x 3	26	530	660	315	65,0	
150	480	300	250	8	26	218 x 3	28	570	700	315	95,0	
25	200	600	360	310	12	26	278 x 3	30	645	820	400	160,0
40	200	600	375	320	12	30	285 x 3	34	645	820	400	175,0

Mating dimensions - Standards

Face-to-face lengths: EN 558-1/1; ISO 5752/T1

Flanges: Mating dimensions to DIN EN 1092

Flange facing: Type B

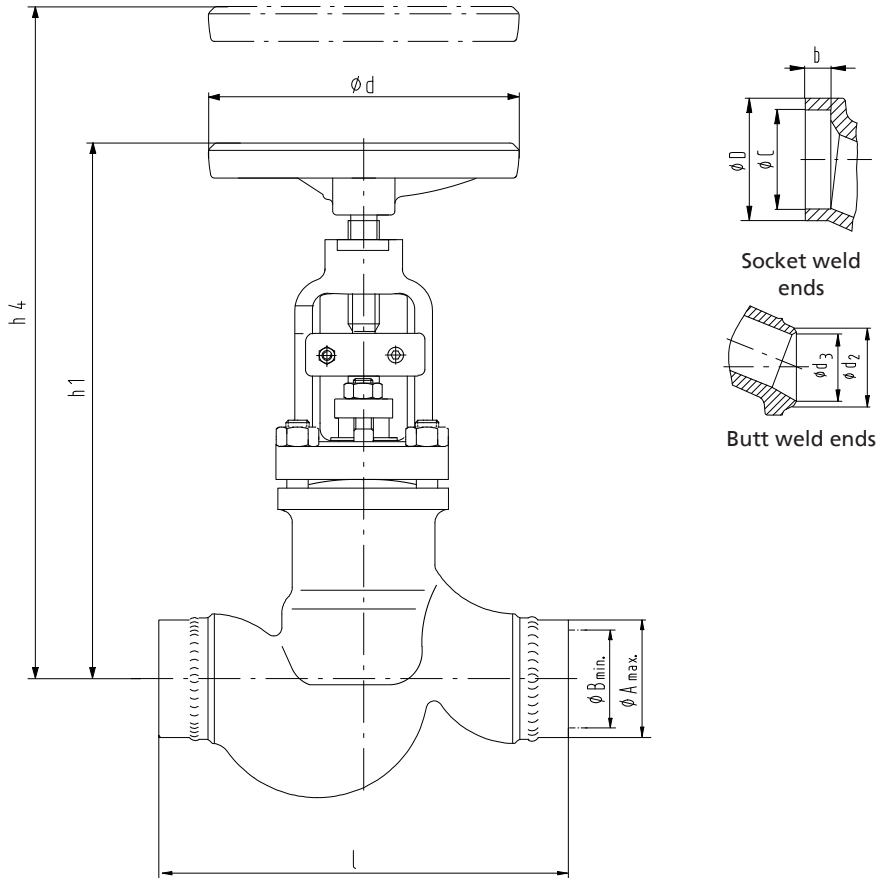
Other flange designs

- E.g. groove (type D), tongue (type C), recess (type F), spigot (type E) to EN 1092-1 at both ends
- Other flange designs on request

8) Open

9) Vertical clearance for removal

Dimensions of NORI 40 ZXSBV



Dimensions in mm

PN	DN	l	Butt weld ends, unmachined		Butt weld ends to DIN EN 12627			Socket weld ends to DIN EN 12760			h ₁ ¹⁰⁾	h ₄ ¹¹⁾	ø d	[kg]
			ø A _{max.}	ø B _{min.}	ø d ₂	ø d ₄	Pipe dimensions	ø D _{-0,5}	ø C ^{+0,2}	b _{min.}				
25/40	10	130	44,0	10,0	18,0	13,0	17,2 x 2,0	25,0	17,6	10	230	300	125	3,8
	15	130	44,0	15,0	22,0	17,0	21,3 x 2,0	30,5	21,7	10	230	300	125	3,8
	20	130	44,0	20,0	28,0	22,0	26,9 x 2,3	36,5	27,1	13	230	300	125	3,8
	25	130	44,0	24,0	34,0	28,5,0	33,7 x 2,6	44,5	33,8	13	230	300	125	3,8
	32	160	60,0	33,0	43,0	37,0	42,4 x 2,6	53,5	42,5	13	270	340	160	8,0
	40	180	60,0	38,0	49,0	43,0	48,3 x 2,6	60,5	48,7	13	270	360	160	8,0
	50	210	73,0	48,0	61,0	54,0	60,3 x 3,2	73,5	61,1	16	290	380	160	11,5
	65	290	76,1	64,9	76,1	69,0	76,1 x 3,6				320	470	160	20,0
	80	310	88,9	79,9	88,9	81,0	88,9 x 4,0				385	560	200	26,0
	100	350	114,3	100,1	114,3	104,0	114,3 x 5,0				425	630	250	36,0
	125	400	139,7	125,5	139,7	130,5	139,7 x 4,5				530	660	315	55,0
	150	480	168,3	148,3	168,3	156,5	168,3 x 5,6				570	700	315	80,0
200	600	219,1	199,1	219,1	204,5	219,1 x 7,1				645	820	400	130,0	

Mating dimensions - Standards

Face-to-face lengths: EN 12982/64
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 and DIN 3239/2 are possible.

¹⁰⁾ Open
¹¹⁾ Vertical clearance for removal

Installation instructions

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

If the max. permissible differential pressures for shut-off are exceeded for valves from DN 125 to 200, a balanced plug design is required. In this case the valve must be installed in such a way that the pressure to be sealed off lies above the valve disc.

The balanced plug works on the bypass principle and can only serve its purpose if backpressure builds up after opening, so that the max. permissible differential pressures for shut-off (see table) are not exceeded.

Differential pressures in bar (standard valve disc)

DN	125	150	200
Δp bar	33	21	14

For globe valves with throttling plug, detailed information about the operating mode is required for optimum valve selection.

Further installation instructions

Durability of bellows

Operating pressures in bar		10	16	25	40
Number of load cycles at 20 °C	DN 10-150	34000	32000	28000	20000
	DN 200	17000	16000	14000	10000



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