

Globe Valve

NORI 40 ZXLF/ZXSF

Type Series Booklet



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Type Series Booklet NORI 40 ZXLF/ZXSF

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Globe Valves

Globe Valves to DIN/EN with Gland Packing

NORI 40 ZXLF/ZXSF



Main applications

- Process engineering
- Chemical industry
- Petrochemical industry
- Fossil-fuelled power stations
- Boiler feed applications
- Boiler recirculation
- Condensate transport
- Descaling units
- Snow-making systems
- Paper industry / pulp industry
- Sugar industry
- Shipbuilding
- Mining
- Nuclear power stations

Fluids handled

- Water
- Steam
- Other non-aggressive fluids such as gas or oil on request.

Operating data

Table 1: Operating properties

Characteristic	Value
Nominal pressure	PN 25/40
Nominal size	DN 10 - 200
Max. permissible pressure [bar]	40
Min. permissible temperature [°C]	≥ -10
Max. permissible temperature [°C]	≤ +450

Selection as per pressure/temperature ratings (⇒ Page 5)

Valve body materials

Model with flanged ends, DN 10-40, and model with butt weld ends, DN 10-50

Table 2: Overview of available materials

Material	Material number	Temperature limit
P 250 GH	1.0460	≤ 450 °C

Model with flanged ends, DN 50-200, and butt weld ends, DN 65-200

Table 3: Overview of available materials

Material	Material number	Temperature limit
GP 240 GH+N	1.0619+N	≤ 450 °C

Design details

Design

- Straight-way pattern
- On/off disc
- Position indicator
- Non-rotating stem
- Seat/disc interface made of wear-resistant and corrosion-resistant chrome (Cr) steel or chrome nickel (CrNi) steel
- Back seat
- Stem sealed by gland packing
- Fully confined bonnet gasket
- EC type tested (Module B), component mark TÜ.A.-290
- Exterior coating: blue, RAL 5002

Variants

- Single-piece stem and throttling plug assembly
- Balanced plug
- PTFE-encapsulated bonnet/cover gasket (250 °C max.)
- Serrated bonnet/cover gasket (PTFE-lined or graphite lined)
- Gland follower with scraper ring
- Lantern ring in gland packing
- Locking device
- Stellite seat/disc interface
- Studs and nuts made of A4-70 (low-temperature steel)
- TA-Luft-compliant model (with or without spring loading) for applications to VDI 2440 at temperatures ≤ 250 °C and > 250 °C (400 °C maximum)
- PTFE gland packing (250 °C max.)
- Oil and grease free (wetted parts)
- Oil and grease free for oxygen
- Actuator installation kit
- Electric actuators
- Pneumatic actuators
- Mechanical position switches

- Inductive position switches
- 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

- Standard DIN/ISO top flange at the yoke head simplifies actuator mounting. No modifications required. No need to dismantle pressure-retaining components.
- Long service life and high functional reliability
 - of the gland packing due to non-rotating stem with burnished shank.
 - Threaded bush runs in needle bearings for smooth actuation.
 - Hard-faced valve seat made of wear-resistant and corrosion-resistant materials.
- Reliable sealing. Bonnet gasket fully confined to prevent creep.
- Additional safety and blow-out protection by standard back seat.
- Easy to repair due to corrosion-protected bolts/screws and nuts

Product information

Product information as per Regulation No. 1907/2006 (REACH)

For information as per European chemicals regulation (EC) No. 1907/2006 (REACH) see <https://www.ksb.com/en-global/company/corporate-responsibility/reach>.

Product information as per Directive 2014/34/EU (ATEX)

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 (zone 2+22) to ATEX 2014/34/EU.

Product information as per Pressure Equipment Directive 2014/68/EU (PED)

The valves satisfy the safety requirements of Annex I of the European Pressure Equipment Directive 2014/68/EU (PED) for fluids in Groups 1 and 2.

Product information as per UK Equipment and Protective Systems Intended for Use in Potentially Explosive Atmospheres Regulations 2016

The valves do not have a potential internal source of ignition and can be used in accordance with the UK's Equipment and Protective Systems Intended for Use in Potentially Explosive Atmospheres Regulations 2016 in potentially explosive atmospheres, Group II, category 2 (zones 1+21) and category 3 (zone 2+22).

Product information as per UK Pressure Equipment (Safety) Regulations 2016

The valves satisfy the safety requirements of the UK Pressure Equipment (Safety) Regulations 2016 (PER) for fluids in Groups 1 and 2.

Related documents

Table 4: Information/documents

Document	Reference number
NORI 40 ZXL/ZXS type series booklet (globe valves with gland packing and rotating stem)	7621.1
NORI 40 RXL/RXS type series booklet (lift check valves)	7673.1
NORI 40 ZXLB/ZXSB type series booklet (bellows-type globe valves with two-piece stem)	7165.1
NORI 40 ZXLBV/ZXSbv type series booklet (bellows-type globe valves with two-piece stem)	7168.1
NORI 40 ZYLB/ZYSB type series booklet (Y-pattern bellows-type globe valves)	7160.1
NORI 40 FSL/FSS type series booklet (strainers)	7127.1
Operating manual	0570.82

Purchase order specifications

Please specify the following information in all enquiries or purchase orders:

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. Reference number

Pressure/temperature ratings

Table 5: Permissible operating pressure [bar] (to EN 1092-1) ¹⁾

PN	Material	[°C]								
		RT ²⁾	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

¹⁾ Operating pressures to DIN 2401 are also permissible.

²⁾ RT: room temperature (-10 °C to +50 °C)

Materials

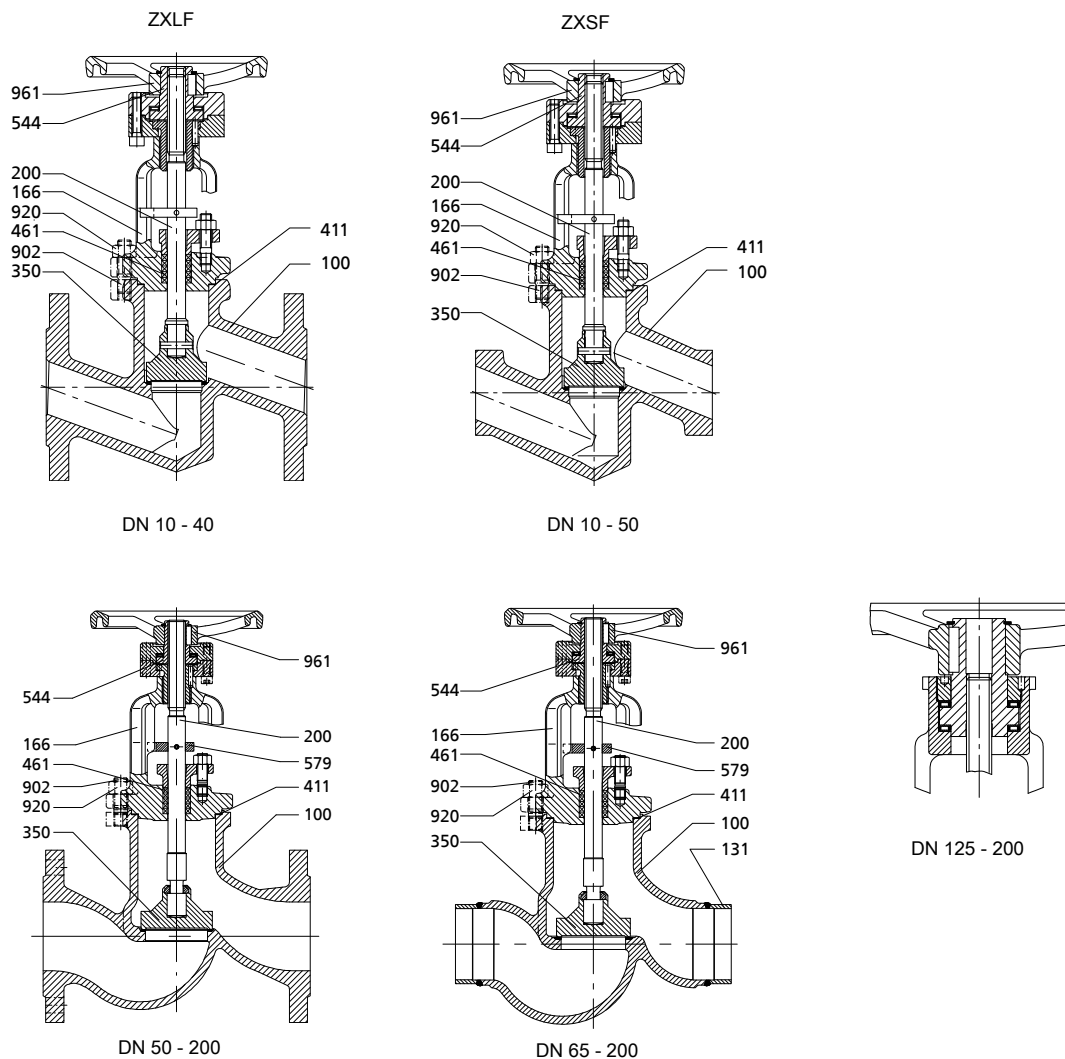


Fig. 1: Sectional drawings

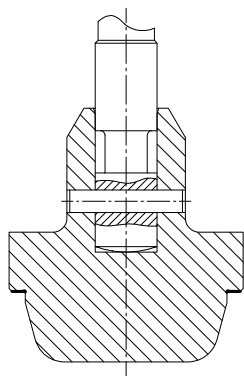
Table 6: Parts list

Part No.	Description	Material	Material number	DN	Note
100	Body	P 250 GH	1.0460	DN 10 - 40 type ZXLF DN 10 - 50 type ZXSf	Hard-faced with stainless steel (1.4370)
		GP 240 GH+N	1.0619+N	DN 50 - 200 type ZXLF DN 65 - 200 type ZXSf	
131	Connection branch	P 235 GH	1.0305	-	-
166	Yoke	P 250 GH	1.0460	-	-
200 ³⁾	Stem	X 20 Cr 13	1.4021	-	-
204	Stem and throttling plug assembly	X 20 Cr 13	1.4021	-	-
350 ³⁾	Valve disc	X 20 Cr 13	1.4021	≤ DN 100	-
		P 250 GH	1.0460	≥ DN 125	Hard-faced (1.4115)
411 ³⁾	Joint ring	CrNi steel/graphite	-	-	-
461 ³⁾	Gland packing	Graphite	-	-	-
544 ³⁾	Threaded bush	C 45 N	1.0503	≤ DN 50	Nitrided
		46S20+C	1.0727+C	≥ DN 65	Nitrocarburised
902	Stud	21 CrMoV 5-7	1.7709	-	Corrosion-protected

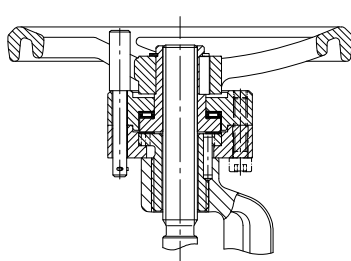
³⁾ Recommended spare parts

Part No.	Description	Material	Material number	DN	Note
920	Hexagon nut	25CrMo4	1.7218	-	Corrosion-protected
961	Handwheel	Cast iron	-	-	-

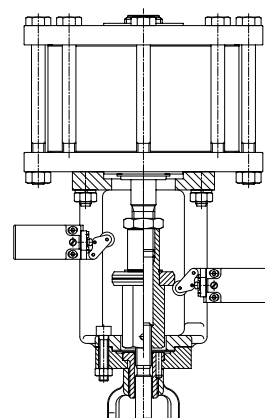
Variants



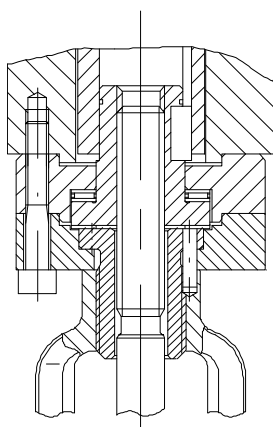
Single-piece stem and
throttling plug assembly
(DN 65-200)



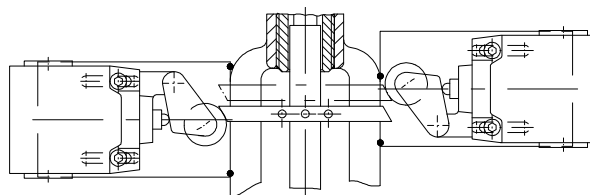
Locking
device



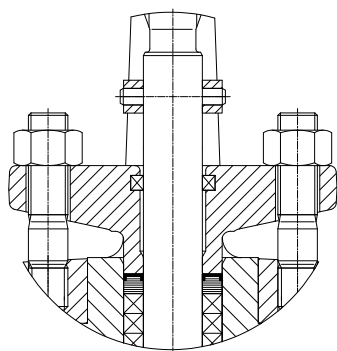
Mounting of pneumatic
actuators



Mounting of electric actuators



Limit switches



Gland follower with scraper ring

Dimensions and weights

Dimensions and weights of NORI 40 ZXLF

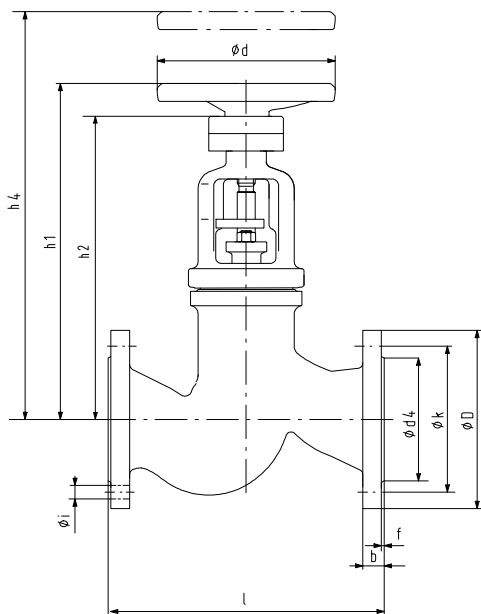


Fig. 2: NORI 40 ZXLF

Table 7: Dimensions and weights

PN	DN	l	ø D	ø k	No. of bolt holes z	Bolt hole dia. i	ø d ₄ × f	b	h ₁ ⁴⁾	h ₂	h ₄ ⁵⁾	ø d	[kg]
		[mm]	[mm]	[mm]		[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	
25/40	10	130	90	60	4	14	40 × 2	16	240	205	310	125	5,9
	15	130	95	65	4	14	45 × 2	16	240	205	310	125	6,1
	20	150	105	75	4	14	58 × 2	18	250	220	340	125	7,8
	25	160	115	85	4	14	68 × 2	18	250	220	340	125	8,3
	32	180	140	100	4	18	78 × 2	18	275	245	385	160	10,8
	40	200	150	110	4	18	88 × 3	18	280	250	395	160	11,8
	50	230	165	125	4	18	102 × 3	20	300	265	425	160	16,3
	65	290	185	145	8	18	122 × 3	22	331	295	480	200	25,0
	80	310	200	160	8	18	138 × 3	24	378	340	555	200	39,5
	100	350	235	190	8	22	162 × 3	24	428	385	635	315	53,0
	125	400	270	220	8	26	188 × 3	26	535	480	715	400	75,0
	150	480	300	250	8	26	218 × 3	28	540	485	740	400	104,0
25	200	600	360	310	12	26	278 × 3	30	670	605	935	500	182,0
40	200	600	375	320	12	30	285 × 3	34	670	605	935	500	210,0

Mating dimensions as per standard

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

Flanges: DIN EN 1092

Flange facing: Type B

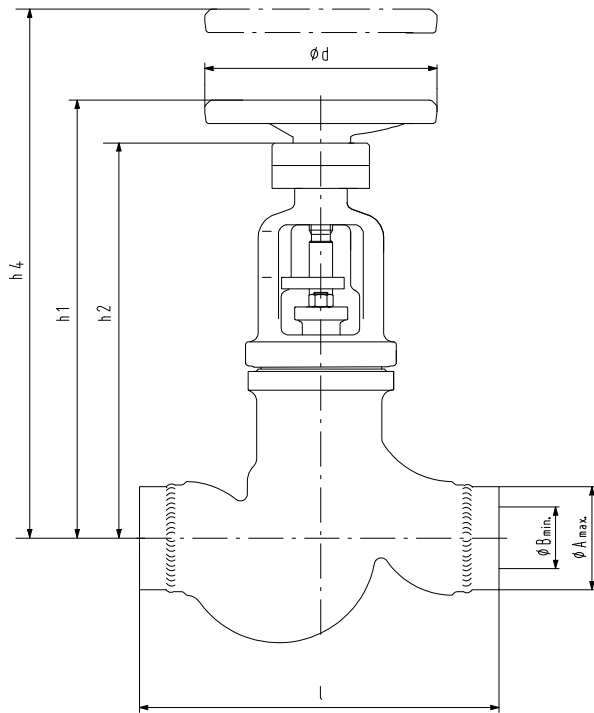
Other flange designs

- 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

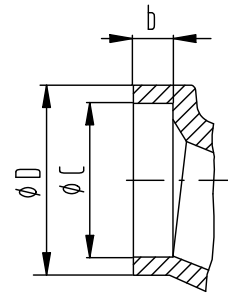
⁴ Open

⁵ Vertical clearance for removal

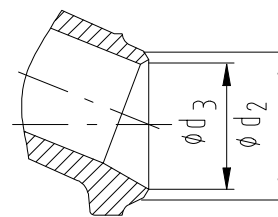
Dimensions and weights of NORI 40 ZXSF



NORI 40 ZXSF



Socket weld
end



Butt weld end

Table 8: Dimensions and weights

PN	DN	I	Butt weld ends, unmachined		Butt weld ends to DIN EN 12627			Socket weld ends to DIN EN 12760			h ₁ ⁶⁾	h ₂	h ₄ ⁷⁾	ø d	[kg]
			ø A _{max.}	ø B _{min.}	ø d ₂	ø d ₃	Associated pipe dimensions	ø D _{-0,5}	ø C ^{+0,2}	b _{min.}					
			[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]					
25/40	10	130	44	10	18	13	17,2 × 2,0	25	17,6	10	255	220	345	160	5,6
	15	130	44	15	22	17	21,3 × 2,0	30,5	21,7	10	255	220	345	160	5,6
	20	130	44	20	28	22	26,9 × 2,3	36,5	27,1	13	255	220	345	160	5,6
	25	130	44	24	34	28,5	33,7 × 2,6	44,5	33,8	13	255	220	345	160	5,6
	32	160	60	33	43	37	42,4 × 2,6	53,5	42,5	13	285	250	400	160	9,8
	40	180	60	38	49	43	48,3 × 2,6	60,5	48,7	13	285	250	400	160	9,8
	50	210	73	48	61	54	60,3 × 3,2	73,5	61,1	16	295	265	420	160	13,3
	65	290	76,1	64,9	76,1	69	76,1 × 3,6	-	-	-	331	295	480	200	20,0
	80	310	88,9	79,9	88,9	81	88,9 × 4,0	-	-	-	378	340	555	200	34,0
	100	350	114,3	100,1	114,3	104	114,3 × 5,0	-	-	-	428	385	635	315	43,0
	125	400	139,7	125,5	139,7	130,5	139,7 × 4,5	-	-	-	535	480	715	400	65,0
	150	480	168,3	148,3	168,3	156,5	168,3 × 5,6	-	-	-	540	485	740	400	90,0
	200	600	219,1	199,1	219,1	204,5	219,1 × 7,1	-	-	-	670	605	935	500	160,0

Mating dimensions as per standard

Face-to-face length: EN 12982/64
Butt weld ends: DIN EN 12627 Figure 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.

⁶ Open

⁷ Vertical clearance for removal

Installation instructions

Install shut-off globe valves in such a way that the fluid enters the valve beneath the valve disc and flows out above the valve disc. Installation in piping with alternating flow is also possible.

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.

Table 9: Differential pressure in bar (standard valve disc)

DN	Δp
125	33
150	21
200	14

Valves with single-piece stem and throttling plug assembly must be installed in such a way that the pressure to be sealed off lies above the plug.

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



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