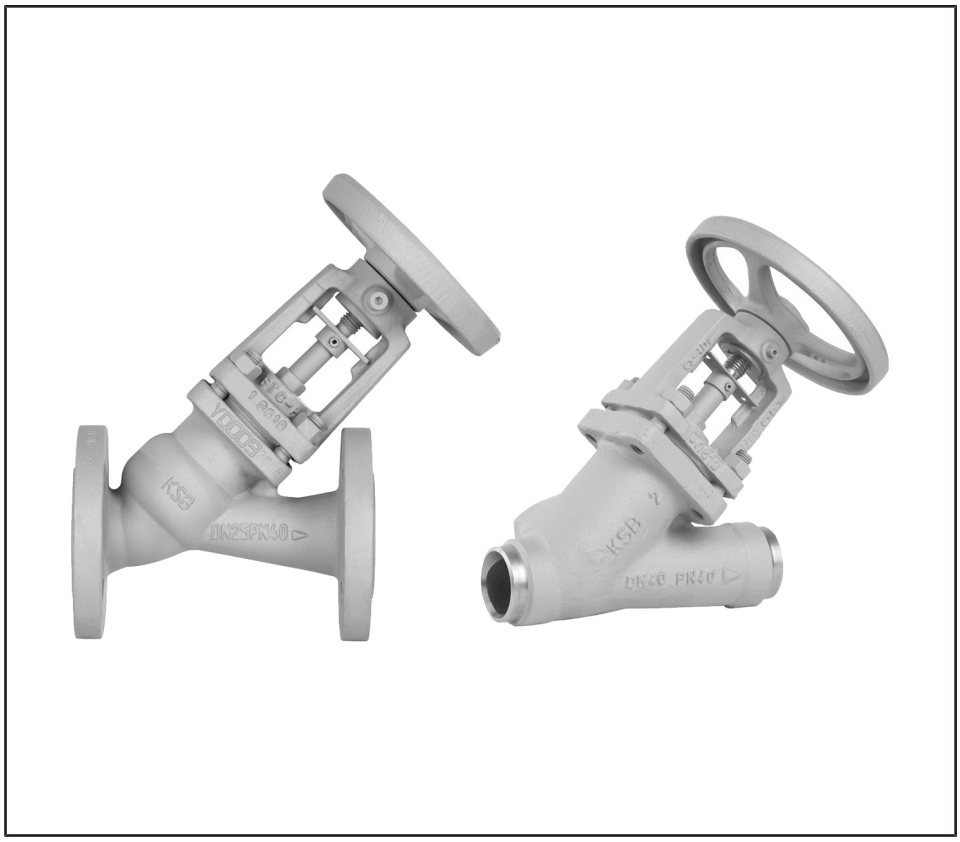
Globe Valve

NORI 40 ZYLB/ZYSB

Type Series Booklet



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Type Series Booklet NORI 40 ZYLB/ZYSB

Contents

Globe Valves

Bellows-type Globe Valves to DIN/EN

NORI 40 ZYLB/ZYSB

Main applications

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

Fluids handled

- Water
- Steam
- Thermal oil
- 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 15 - 300
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

Table 2: Overview of available materials

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

Design details

Design

- Straight-way Y-pattern valve
- Throttling plug ≤ DN 100
- On / off disc ≥ DN 125
- Non-rotating stem
- Non-rising handwheel
- Stem sealed by double-walled bellows and back-up gland packing
- Fully confined bonnet gasket
- Position indicator
- Locking device
- Travel stop
- Materials free from non-ferrous metals
- High-temperature resistant paint (grey aluminium)

Variants

- Throttling plug ≥ DN 125
- Balanced plug ≥ DN 150
- Studs and nuts made of A4-70 (low-temperature steel)
- Other flange designs
- Limit switch(es)

Product benefits

- Reliable sealing. Bonnet gasket fully confined to prevent creep.
- Leak-proof and easy to service due to double-walled bellows welded to the stem at the lower end. No vibration from plug to bellows. Plug easy to replace.
- Hard-faced valve seat made of wear-resistant and corrosion-proof materials for long service life and high functional reliability.
- Economical thanks to cast body with optimised flow path. Excellent zeta values and low pressure loss.
- Space-saving non-rising handwheel.
- Easy to operate with adjustable travel stop, position indicator and locking device supplied as standard. Travel stop with internal screw prevents risk of injury.
- Added safety and easy re-adjustment due to graphite back-up gland packing
- One model for shut-off and throttling by throttling plug up to DN 100 as standard. Reduces numbers of spares and spare parts stock.

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.

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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 3: Information/documents

Document	Reference number
NORI 40 ZXL/ZXS type series booklet (globe valves with gland packing and rotating stem)	7621.1
NORI 40 ZXLF/ZXSF type series booklet (globe valves with gland packing and non-rotating stem)	7622.1
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 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 4: Permissible operating pressure [bar] (to EN 1092-1) [1)]

PN	Material	[°C]								
		RT[2)]	100	150	200	250	300	350	400	450
25	GP 240 GH+N	25,0	23,2	22,0	20,8	19,0	17,2	16,0	14,8	8,2
40		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

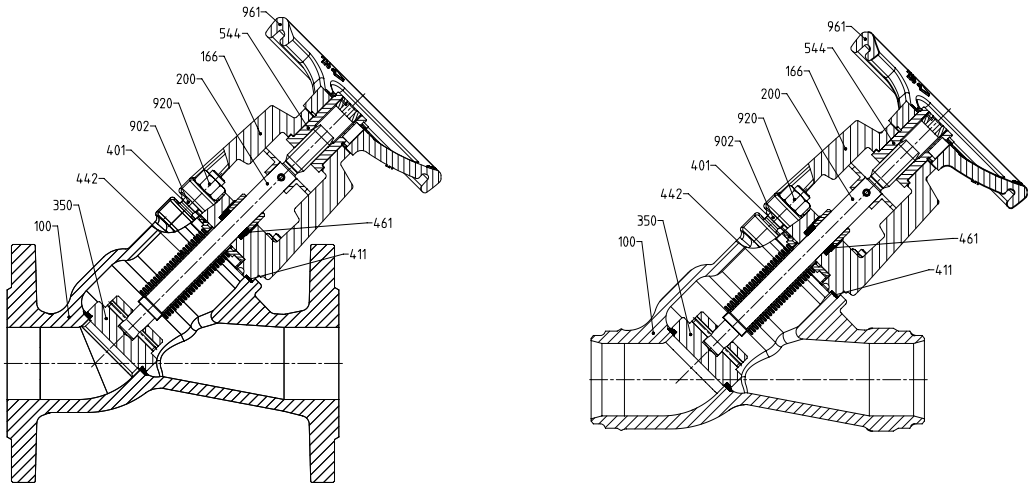
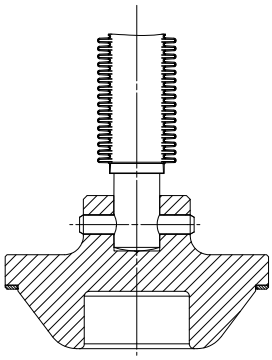


Fig. 1: Sectional drawings

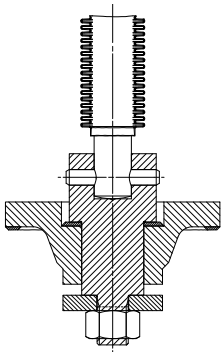
Table 5: Parts list

Part No.		Description	Material	Material number	Note
100		Body	GP 240 GH+N	1.0619+N	Hard-faced with stainless steel (1.4370)
166		Yoke	GP 240 GH+N	1.0619+N	-
440[3)]		Bellows assembly comprising:			
	166	Yoke	GP 240 GH+N	1.0619+N	-
	200	Stem	X 20 Cr 13	1.4021	-
	442	Bellows	X 6 CrNiMoTi 17 12-2	1.4571	-
	401	Weld ring	X 20 Cr 13	1.0421	-
350[3)]		Valve disc	X 20 Cr 13	1.4021	DN 15 - 150
			C22	1.0402	DN 200-300, hard-faced with stainless steel (1.4370)
411[3)]		Joint ring	CrNi steel/graphite	-	-
461[3)]		Gland packing	Pure graphite	-	-
544[3)]		Threaded bush	Coated steel	-	-
902		Stud	21 CrMoV 5-7	1.7709	-
920		Hexagon nut	25 CrMo 4	1.7218	-
961		Handwheel	EN-GJS-400-15	5.3106	-

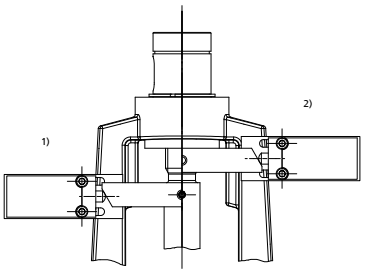
Variants



Throttling plug for
DN 125 and above



Balanced plug for DN 125
and above



Limit switch
1) Closed
2) Open

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3 Recommended spare parts

Dimensions and weights

Dimensions and weights of NORI 40 ZYLB

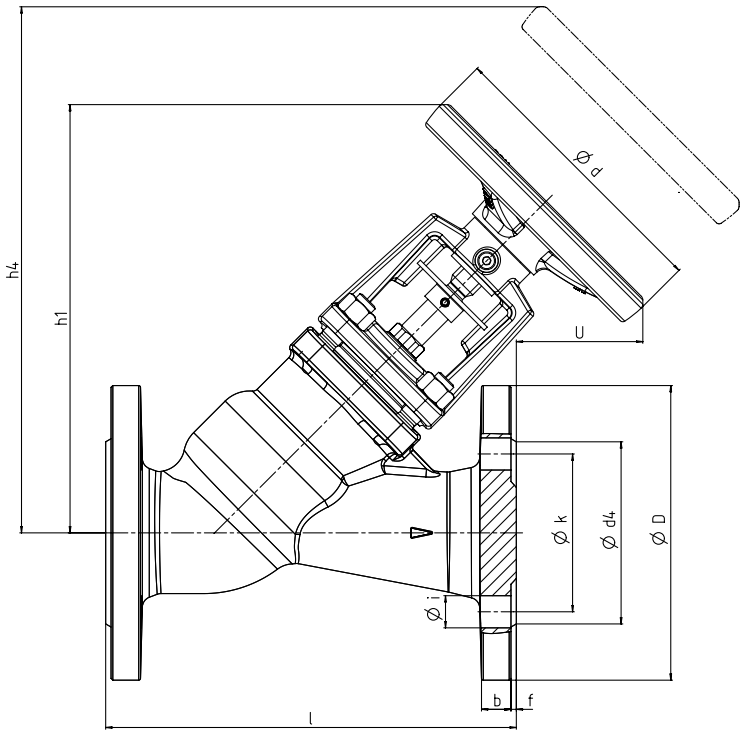

Fig. 2: NORI 40 ZYLB

Table 6: 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_4 [5]	U	ø d	[kg]
		[mm]	[mm]	[mm]		[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	
25/40	15	130	95	65	4	14	45 × 2	16	187	229	69	125	4,9
	20	150	105	75	4	14	58 × 2	18	181	220	59	125	5,4
	25	160	115	85	4	14	68 × 2	18	194	244	70	125	6,4
	32	180	140	100	4	18	78 × 2	18	195	244	55	125	8,1
	40	200	150	110	4	18	88 × 2	18	238	313	83	160	11,8
	50	230	165	125	4	18	102 × 3	20	240	316	73	160	14,6
	65	290	185	145	8	18	122 × 3	22	314	420	104	200	25,8
	80	310	200	160	8	18	138 × 3	24	317	425	92	200	28,5
	100	350	235	190	8	22	162 × 3	24	363	488	103	250	43,0
	125	400	270	220	8	26	188 × 3	26	420	569	100	315	63,2
	150	480	300	250	8	26	218 × 3	28	446	622	66	315	85,9
25	200	600	360	310	12	26	278 × 3	30	553	765	93	400	147,1
	250	730	425	370	12	30	335 × 3	32	639	907	94	500	221,1
	300	850	485	430	16	30	395 × 3	34	692	1003	77	500	320,0

Mating dimensions as per standard

Face-to-face length:	EN 558-1/1, ISO 5752/1
Flanges:	Mating dimensions to DIN EN 1092-1, ISO 7005
Flange facing:	Type B

4 Open
5 Vertical clearance for removal

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

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Dimensions and weights of NORI 40 ZYSB

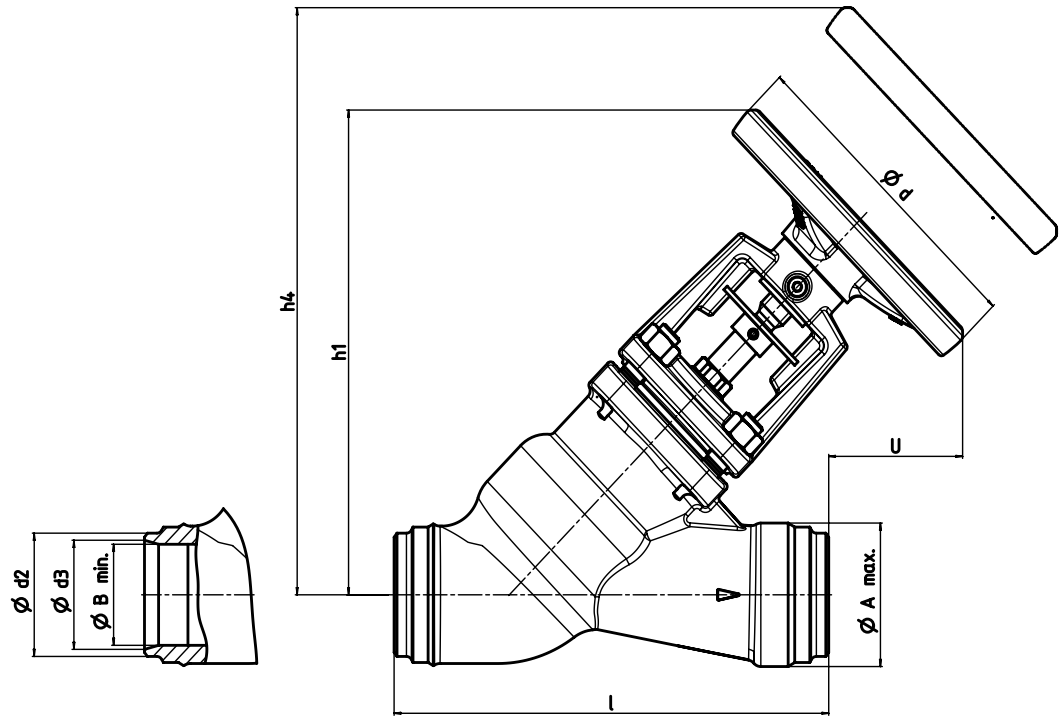

Fig. 3: NORI 40 ZYSB

Table 7: Dimensions and weights

PN	DN	l	Butt weld ends, unmachined		Butt weld ends to DIN EN 12627			h_1 [6]	h_4 [7]	U	ø d	[kg]
			ø $A_{max.}$	ø $B_{min.}$	ø d_2	ø d_3	Pipe dimensions					
		[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	
25/40	15	130	31,0	15,0	22,0	17,0	21,3 × 2,0	187	229	69	125	3,4
	20	150	38,0	20,0	28,0	22,0	26,9 × 2,3	181	220	59	125	3,6
	25	160	44,0	25,0	34,0	28,5	33,7 × 2,6	195	244	70	125	4,0
	32	180	51,0	32,0	43,0	37,0	42,4 × 2,6	195	244	55	125	4,3
	40	200	61,0	40,0	49,0	43,0	48,3 × 2,6	240	313	83	160	6,8
	50	230	71,0	50,0	61,0	54,0	60,3 × 3,2	242	316	73	160	8,5
	65	290	88,0	65,0	77,0	69,0	76,1 × 3,6	314	420	104	200	18,3
	80	310	104,0	80,0	90,0	82,0	88,9 × 4,0	317	425	92	200	19,4
	100	350	131,0	100,0	115,0	104,0	114,3 × 5,0	363	488	103	250	31,4
	125	400	155,0	125,0	142,0	130,5	139,7 × 4,5	420	569	100	315	46,7
	150	480	184,0	150,0	170,0	156,5	168,3 × 5,6	446	622	66	315	65,3
25	200	600	249,0	200,0	222,0	204,5	219,1 × 7,1	553	765	93	400	121,7
	250	730	305,0	250,0	276,0	256,5	273,0 × 8,0	639	907	94	500	185,7
	300	850	356,0	300,0	325,0	306,5	323,9 × 8,8	692	1003	77	500	271,4

Mating dimensions as per standard

Face-to-face lengths: EN 12982/1
Butt weld ends: DIN EN 12627 Fig. 4

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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 300, 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 8: Differential pressure [bar] for standard valve disc

DN	Δp
125	33
150	21
200	14
250	9
300	6

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

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