

Globe Valve

NORI® 500 ZXLR/ZXSR

PN 250-500

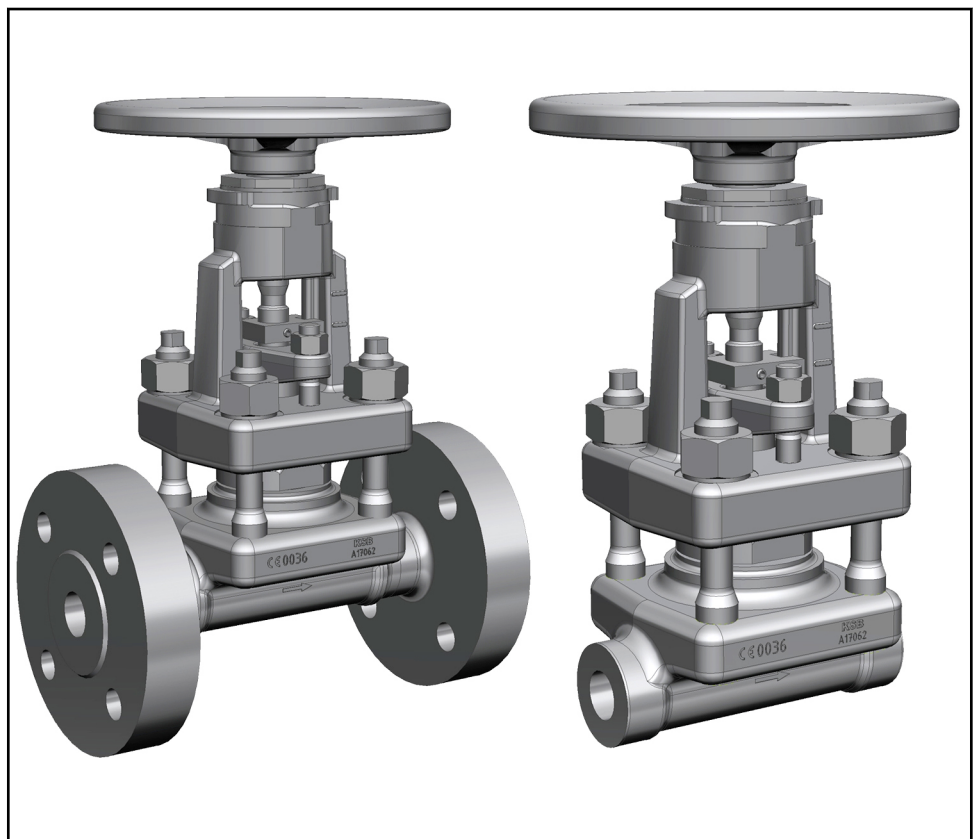
DN 10-50

With Gland Packing

With Back Seat

Flanged or with Butt or Socket Weld Ends

Type Series Booklet



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Type Series Booklet NORI® 500 ZXLR/ZXSR

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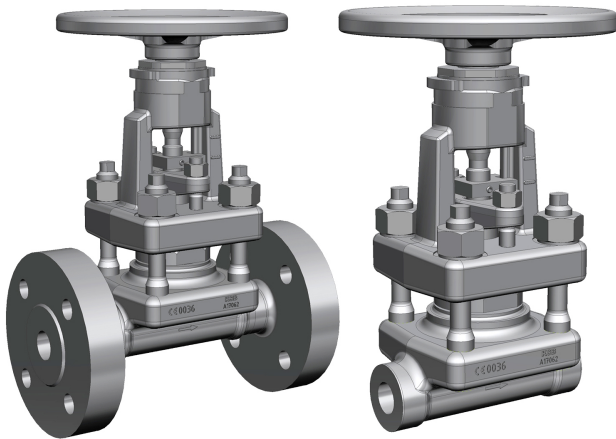
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Globe Valves

Globe Valves with Gland Packing

NORI® 500 ZXLR/ZXSR



Product benefits

- Additional safety and blow-out protection
 - Back seat as standard
 - Bearing supported and disc spring supported stem nut ensures tight shut-off, also in the event of temperature fluctuations
- Additional features ensure safe sealing to atmosphere:
 - Fully confined, serrated bonnet gasket
 - Graphite gland packing with packing end rings, protected against oxidation by metal caps
- One model for shut-off and throttling thanks to standard hard-faced throttling valve plug for all nominal diameters
- Long service life and high functional reliability
 - of the gland packing due to non-rotating stem with burnished shank
 - Hard-faced valve seat made of wear-resistant and corrosion-proof stellite

Fluids handled

- Water
- Steam
- Gas
- Oil
- Other fluids on request.

Main applications

- Fossil-fuelled power stations
- Boiler feed applications
- Process engineering
- Petrochemical industry
- Chemical industry
- Shipbuilding
- Paper and cellulose industry
- Sugar industry
- Descaling units
- Mining
- Nuclear power stations

Operating data

Operating properties

Characteristic	Value
Nominal pressure	PN 250-500
Nominal diameter	DN 10-50
Max. permissible pressure	500 bar
Max. permissible temperature	580 °C ¹⁾

Body materials

Overview of available materials

Material	Material number	Temperature limit
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
X 10 CrMoVNb 9-1	1.4903	up to 580 °C ²⁾

Other materials on request.

Design details

Design

- Straight-way pattern
- Throttling valve plug
- Forged body and yoke
- Stem sealed by gland packing with packing end rings
- Non-rotating stem
- Back seat
- Position indicator
- Stem nut with disc spring support
- Seat/disc interface made of wear-resistant and corrosion-proof stellite
- Stem with burnished shank
- Stem nut supported by needle bearings on both sides, with disc spring support and cover disc
- Fully confined serrated cover gasket
- Yoke head designed for mounting electric and pneumatic actuators (DIN ISO 5210/5211)

¹⁾ Higher temperatures on request

²⁾ Higher temperatures on request

- 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

- Shut-off plug for DN 32-50
- Position switch(es)
- Connecting pipe for valve combinations
- Stem nut made of non-ferrous metal
- Locking device
- Hard-faced back seat
- Special gland packing
- Actuator installation kit
- Electric actuators
- Pneumatic actuators
- Other flange or weld end designs
- Inspections to technical codes such as TRD/TRB/AD2000 – German Steam Boiler / Pressure Vessel Regulations – or to customer specification

Related documents

- Globe valves, bonnetless, with single-piece body, type NORI 500 ZXSV, see type series booklet 7641.1
- Non-return valves, type NORI 500 RXLR/RXSR, see type series booklet 7693.1
- Operating manual 0570.82

On all enquiries/orders please specify

1. Type
2. Nominal pressure
3. Nominal diameter
4. Operating pressure
5. Differential pressure
6. Operating temperature
7. Material
8. Fluid handled
9. Flow rate
10. Pipe connection
11. Variants
12. Number of type series booklet

Always indicate the original serial number and the year of construction when ordering spare parts.

Pressure/temperature ratings

Permissible operating pressures in bar at temperatures in °C⁴⁾

Flanges (to EN 1092-1)³⁾

Material	Material number	up to 100	150	200	250	300	350	400	450	460	470	480	490	500	510	520	530	540	550	
PN 250	16 Mo 3	1.5415	250	250	250	244	214	202	187	173	160	148	136	123	111	88	70	56		
	13 CrMo 4-5	1.7335	250	250	250	250	250	238	225	211	201	190	180	170	163	138	112	93	73	58
	10 CrMo 9-10	1.7380	250	250	250	250	250	244	232	220	208	196	185	173	161	140	123	107	93	81
PN 320	16 Mo 3	1.5415	320	320	320	312	274	259	239	221	205	189	173	158	142	113	90	72		
	13 CrMo 4-5	1.7335	320	320	320	320	320	305	288	270	257	244	231	218	209	177	143	119	93	75
	10 CrMo 9-10	1.7380	320	320	320	320	320	312	297	282	267	251	236	221	206	180	157	137	119	104

Permissible operating pressures in bar at temperatures in °C⁴⁾

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

Material	Material number	up to 100	150	200	250	300	350	400	425	450	475	500	510	520	530	540	550	560	570	580	
PN 250	16 Mo 3	1.5415	250	250	241	220	193	182	171	169	166	163	96	73	57	46					
	13 CrMo 4-5	1.7335	250	250	250	246	230	214	203	198	193	190	147	123	97	79	64	50			
	10 CrMo 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	16 Mo 3	1.5415	320	320	313	290	253	238	223	218	216	212	134	101	80	64					
	13 CrMo 4-5	1.7335	320	320	320	320	305	283	268	260	253	249	204	171	135	110	89	69			
	10 CrMo 9-10	1.7380	320	320	320	320	320	305	290	282	275	266	201	175	153	134	116	101	86	76	65

Permissible operating pressures in bar at temperatures in °C⁴⁾

Butt weld ends, unmachined

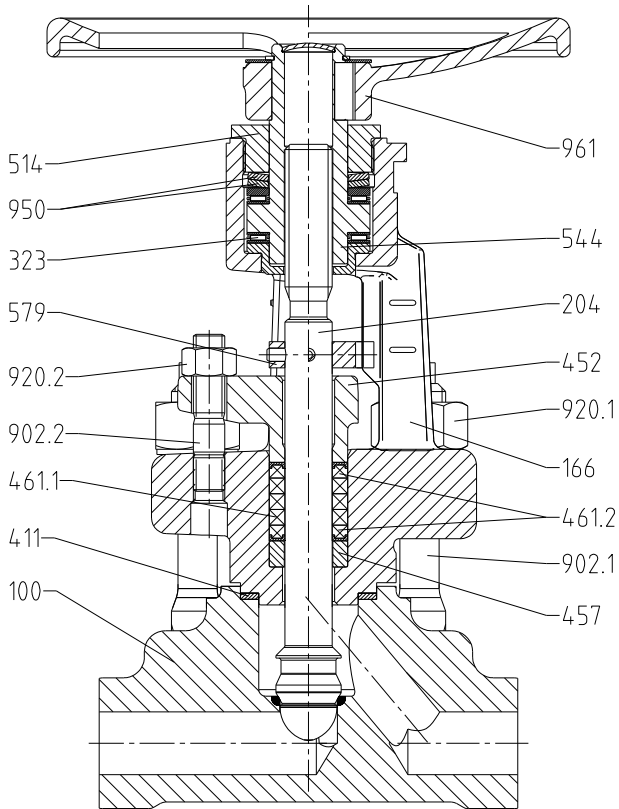
Material	Material number	20	150	250	300	350	400	425	450	475	500	510	520	530	540	550	560	570	580	
PN 500	16 Mo 3	1.5415	500	484	458	439	420	400	387	375	354	274	218	174	138					
	13 CrMo 4-5	1.7335	500	484	458	439	420	400	387	375	354	297	275	248	221	179	144			
	10 CrMo 9-10	1.7380	500	484	458	439	420	400	387	375	354	297	275	248	221	190	163	134	106	78
	X10CrMoVNb 9-1 ⁵⁾	1.4903	550	550	550	550	550	550	534	508	482	457	418	399	380	350	320	287	275	270

³⁾ Operating pressures to DIN 2401 are also permissible.

⁴⁾ The valves are suitable for temperatures down to -10 °C.

⁵⁾ Temperatures >580 °C on request

Materials

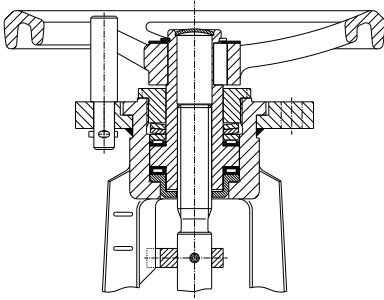


Overview of available materials

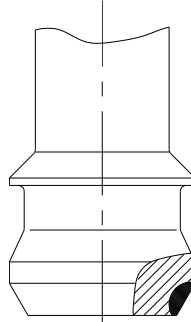
Part No.	Description	Temperature [°C]	Material	Material number	Note	Seat/plug interface
100	Body	up to 530	16 Mo 3	1.5415	die-forged	Stellited body seat
		up to 550	13 CrMo 4-5	1.7335		
166	Yoke	up to 580	10 CrMo 9-10	1.7380		
		up to 580	X10CrMoVNb 9-1	1.4903		
204 ⁶⁾	Throttling plug stem	up to 580	X 39 CrMo 17-1	1.4122		stellited
323 ⁶⁾	Thrust needle bearing		St			
411 ⁶⁾	Joint ring		X 6 CrNiTi 18 10	1.4571/ graphite	serrated	
452	Gland follower		13 CrMo 4-5	1.7335	die-forged	
457 ⁶⁾	Gland ring		G-X 70 CrMo 292	1.4136		
461.1 ⁶⁾	Packing ring		Pure graphite		Anti-extrusion design with packing end rings/ stainless steel cap	
461.2 ⁶⁾	Packing end ring		Graphite / 1.4571			
544 ⁶⁾	Stem nut		CW713R	2.0550		
579	Stop		S 275 JR			
902.1/2	Stud		21 CrMoV 5-7	1.7709		
920.1/2	Hexagon nut		25 CrMo 4	1.7218		
950 ⁶⁾	Disc spring		50 CrV 4	1.8159		
961	Handwheel		GJS-400-15	JS1013		

⁶⁾ Recommended spare parts

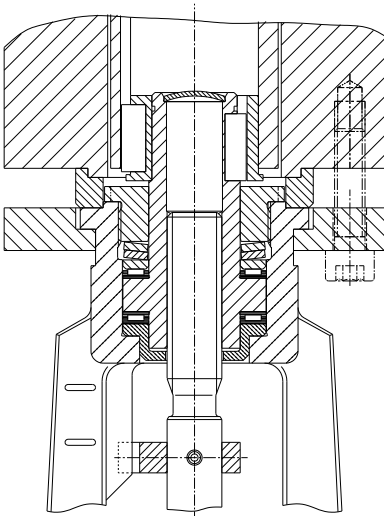
Variants



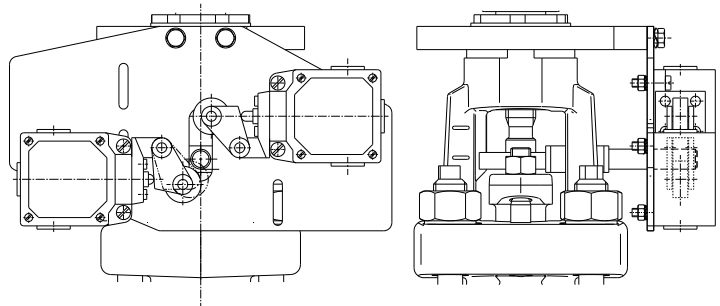
Locking device



Single-piece stem
and plug assembly
(DN 32-50)



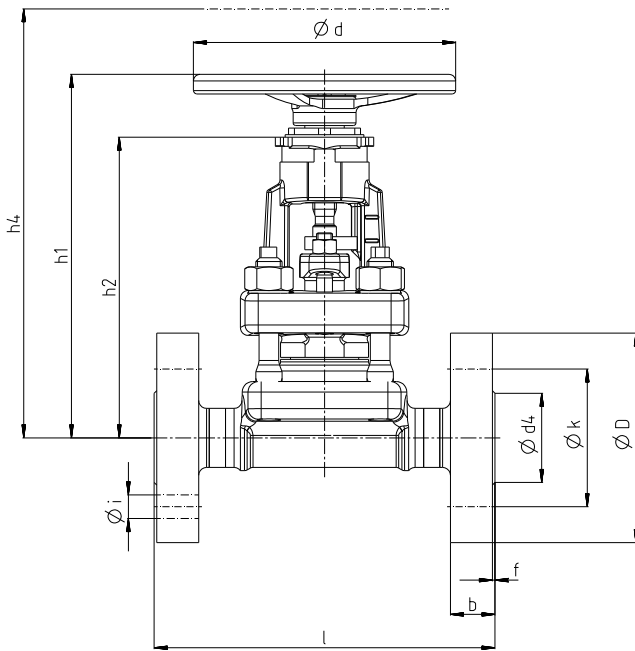
Mounting of electric actuators



Version with position switch(es)

Dimensions

Dimensions of NORI 500 ZXLR



Dimensions in mm

PN	DN	l ₁	ø D	ø k	No. of bolt holes z	Bolt hole dia. i	ø d ₄ x f	b	h ₁	h ₂	h ₄	ø d	Weight [kg]
250	10	230	125	85	4	18	40 x 2	24	278	230	340	200	18.5
	15	230	130	90	4	18	45 x 2	26	278	230	340	200	19.0
	20	260	135	95	4	18	58 x 2	26	278	230	340	200	19.5
	25	260	150	105	4	22	68 x 2	28	278	230	340	200	21.5
	32	300	165	120	4	22	78 x 2	32	375	320	450	250	43.0
	40	300	185	135	4	26	88 x 3	34	375	320	450	250	46.0
	50	350	200	150	8	26	102 x 3	38	375	320	450	250	50.0
320	10	230	125	85	4	18	40 x 2	24	278	230	340	200	18.5
	15	230	130	90	4	18	45 x 2	26	278	230	340	200	19.0
	20	260	150	105	4	22	58 x 2	30	278	230	340	200	21.5
	25	260	160	115	4	22	68 x 2	34	278	230	340	200	24.0
	32	300	180	130	4	26	78 x 2	36	375	320	450	250	46.0
	40	300	195	145	4	26	88 x 3	38	375	320	450	250	49.5
	50	350	210	160	8	26	102 x 3	42	375	320	450	250	53.5

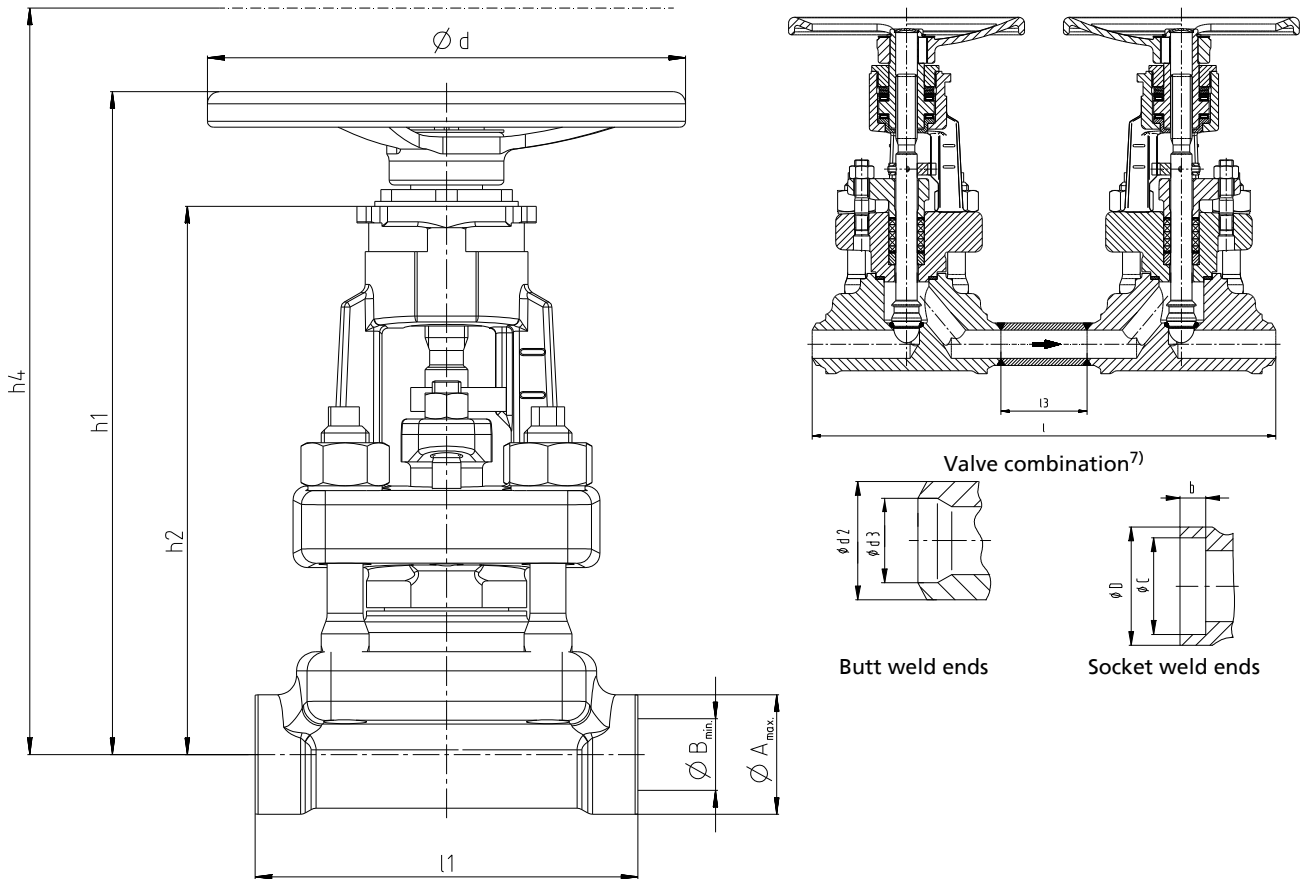
Mating dimensions - Standards

Face-to-face lengths: See table
 Flanges: Mating dimensions to DIN EN 1092-1
 Flange facing: DIN EN 1092-1, type B1

Other flange designs

- e.g. grooved both ends type D, tongue type F to EN 1092-1 or lens-shaped joint type L to DIN 2696
- Other flange designs on request

Dimensions of NORI 500 ZXSR



Dimensions in mm

PN	DN	l ₁	Butt weld ends, unmachined PN 500		Butt weld ends to DIN EN 12627				Socket weld ends to DIN EN 12760 PN 320 ⁸⁾			h ₁	h ₂	h ₄	ø d	[kg]	Valve combination			
			ø A _{max.}	ø B _{min.}	ø d ₂	PN 250		PN 320		ø D _{-0.5}	ø C ^{+0.2}						b _{min.}	l ₃	L	[kg]
						ø d ₃	Pipe dimensions	ø d ₃	Pipe dimensions											
250	10	150	50	9	18	12	17.2 x 2.6	11.5	17.2 x 2.9	27	17.6	10	278	230	340	200	14	150	450	30
	15	150	50	14	22	16	21.3 x 2.6	15	21.3 x 3.2	32.5	21.8	10	278	230	340	200	14	150	450	30
320	20	160	50	19	28	20	26.9 x 3.6	19	26.9 x 4.0	39.5	27.2	13	278	230	340	200	14	130	450	30
	25	160	50	22	35	26.5	33.7 x 3.6	24	33.7 x 5.0	48	33.9	13	278	230	340	200	14	130	450	30
500	32	270	78	30	44	34	42.4 x 4.5	30.5	42.4 x 6.3	57	42.7	13	375	320	450	250	33	60	600	65
	40	270	78	35	50	39	48.3 x 5.0	36	48.3 x 6.3	64.5	48.8	13	375	320	450	250	33	60	600	65
	50	270	78	35	62	48	60.3 x 6.3	47	60.3 x 7.1	73.5	61.2	16	375	320	450	250	33	60	600	65

Mating dimensions - Standards

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

Installation instructions

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

For globe valves with throttling plug, detailed information about the operating mode is required for optimum valve selection. For throttling valves, it is recommended to have the pressure above the plug.

⁷⁾ Drainage, vent or manual start-up pipes are normally fitted with valve combinations consisting of a shut-off valve (pressure beneath the valve plug) and a throttling valve (pressure above the valve plug).
⁸⁾ DN 50: PN 250 only; socket weld ends for higher pressures on request



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