

# ABO valve

*we make processes work*

## RESILIENT SEATED GATE VALVES

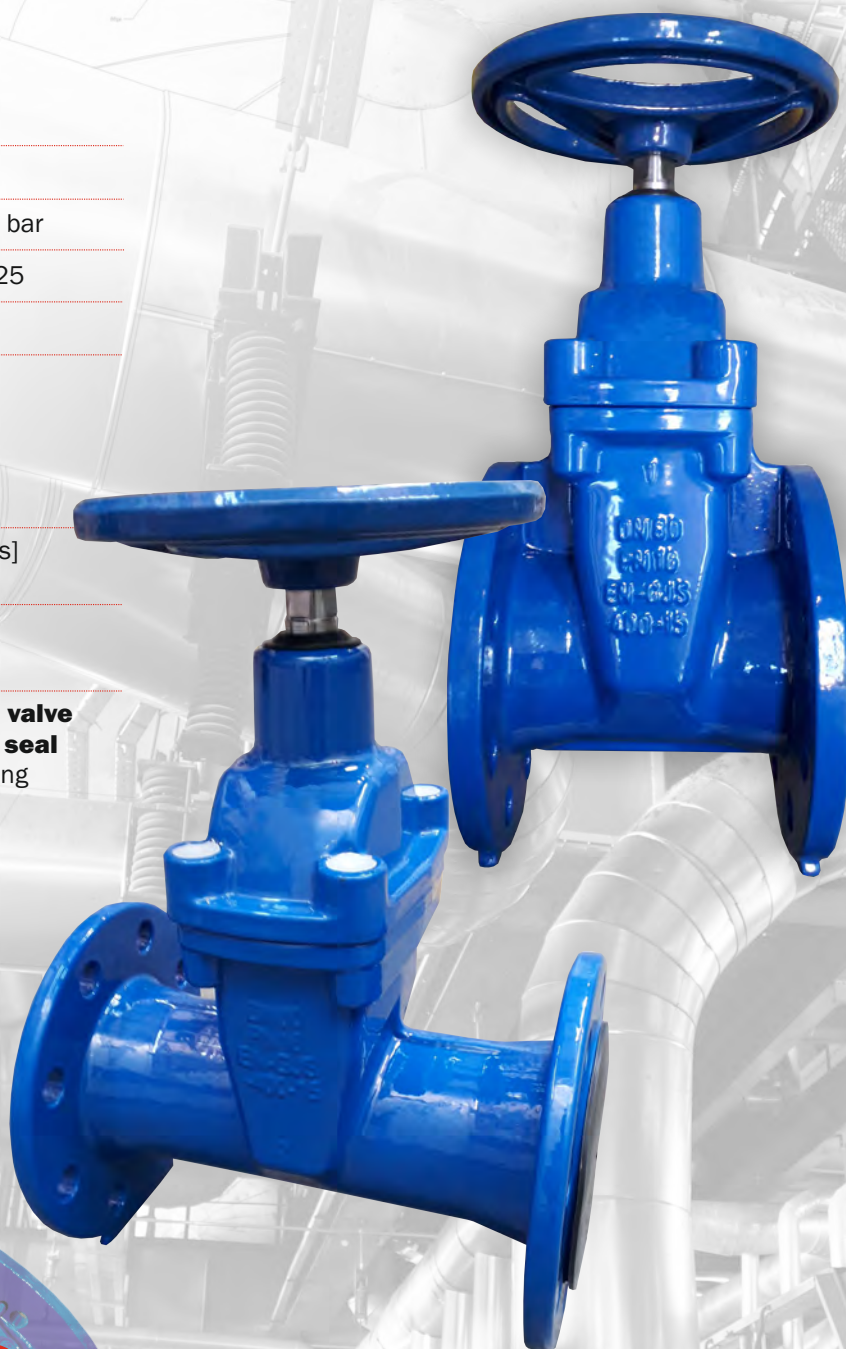
<b>Body type</b>	Flanged
<b>Nominal diameters</b>	DN32 - DN600
<b>Working pressure</b>	6 bar / 10 bar / 16 bar
<b>Flange connection</b>	PN10 / PN16 / PN25
<b>Working temperature</b>	-20°C / +70°C

<b>Working medium</b>	Potable water Industrial water Sewage from sanitary and industrial systems
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<b>Maximal medium flow rate</b>	Liquids up to 4 [m/s] Gas up to 30 [m/s]
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<b>Wedge</b>	<b>NBR / EPDM</b> Fully vulcanized
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<b>Features</b>	<ul style="list-style-type: none"><li>■ <b>Cast-iron flanged valve wedges with soft seal</b></li><li>■ With a wedge (closing device enclosed in 100% with elastomer</li><li>■ Non-rinsing valve spindle</li><li>■ With head seal of the valve stem in the cover (O-rings)</li></ul>
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# SERIES 420/421

blue line

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# GENERAL VALVE DESCRIPTION

Czech Industrial Valve Manufacturer

## Gate valves with soft seal series S420/S421

are intended for use in water transport system, especially for potable water as well as sewage from sanitary and industrial systems. They may be used in above-ground and underground applications, in horizontal pipelines.



Gate valves with soft seal are intended for:

- water and sewage networks and tanks
- transport of non aggressive liquids

## Basic characteristics

- ductile cast iron EN-GJS 400-15
- full bore gate valve
- NBR/EPDM fully vulcanised wedge
- application of low friction sliding element
- wedge nut made of forged brass - replaceable
- stainless steel spindle with rolled thread
- low friction double spindle bearing acting both horizontal and vertical way
- O-ring spindle sealing packing cork protected against contact with medium under pressure replaceable packing cork
- forged packing cork protected against unscrewing
- packing cork protected against dirt penetration
- body bonnet Zinc coated screws protected by wax
- epoxy coating minimum 250 microns according to EN 14091

## Main accessories

- extension spindle
- pillar with handwheel
- pillar for electric actuator
- handwheel

## Performance alternatives

- ductile cast iron EN-GJS 500-7
- stainless steel body and bonnet screws
- with ISO top flange for actuator
- with electric or pneumatic actuator
- with inductive or electromechanical
- sensor
- with opening indicator

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## TYPE DESIGNATION

S 4 2 1 80

- **Nominal dimensions**  
DN32 - DN600
- **Face to Face Standard**  
0 - Series 15 (S420) according EN 558  
1 - Series 14 (S421) according EN 558
- **Series type**  
Series 400

DN32-DN350  
PN10/PN16

Type  
S421  
Series 14



Type  
S420  
Series 15

DN400-DN600  
PN10/PN16/PN25

Type  
S421  
Series 14



Type  
S420  
Series 15

## Standards

<b>Product according</b>	EN 1074-1, EN 1074-2, EN 1171
<b>Face to face dimensions</b>	<b>Valve type S420</b> According to EN 558-A1 F5 (DIN 3202) <b>Valve type S421</b> According to EN 558-A1 F4 (DIN 3202)
<b>Product marking</b>	EN 19, EN 1074 DIN 2631
<b>Coating</b>	Epoxy one / minimum 250 microns according to EN 14901
<b>Flange connection</b>	According to EN 1092-2; (DIN 2501) pressure PN10; PN16; PN25
<b>Test control</b>	Hydraulic test acc. EN 1074-1, EN 1074-2, EN 12266-1 Seat PN x 1,1 Body PN x 1,5

# DESIGN FEATURES



## Design description

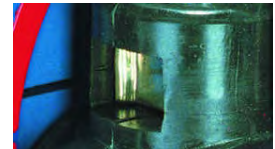
- gate valves with soft seal series S420 and S421 manufactured by ABO valve have unobstructed passage through the body, non-rising valve spindle, o-ring seals of the spindle located in the cover. The spindle is held by a sleeve in the cover and a seal plug. The valve spindle is sealed using a plug unit based on a system of o-ring seals. The valve gate consist of a cast-iron wedge that is completely encased in rubber with a replaceable nut for connection to the valve spindle located in the wedge lug.
- the valve spindle has a flange closed by crimping. From the bottom the valve spindle is supported on the bottom of the head socket using a sleeve that acts as a sealed bearing. The plug above the flange is secured against unscrewing using a spring ring. The cover is connected to the body using hexagon socket head cap bolts inset in the cover and secured using paraffin paste.
- the connection between the body and the cover is sealed using a rubber gasket that also seals the bolts preventing any leaks near them. All internal and external cast-iron surfaces of the gate valve are powder coated with epoxy paint.
- the spindle may be operated manually using a hand wheel or, in case of gate valves located underground, through the hood and gate valve housing, using a T-type wrench
- in gate valves between DN350 and DN600 the wedge is supported on plastic inserts. The spindle in gate valves between DN400 and DN600 is installed in a separate head fitted to the cover using longitudinal bearings supporting the spindle flange.



Packing cork protected against unscrewing and fully covered by additional cleaning gasket



Horizontal and vertical double spindle bearing

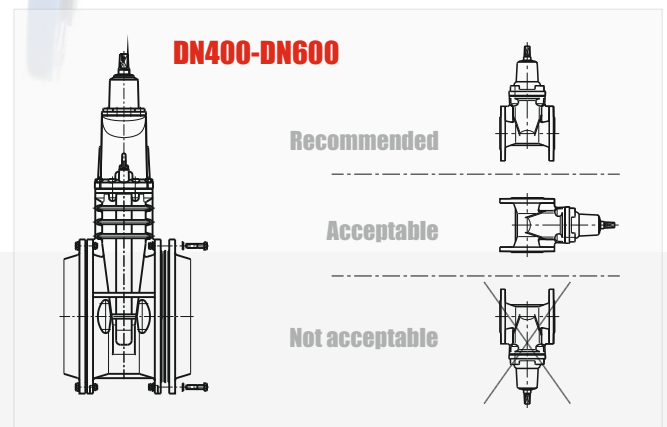
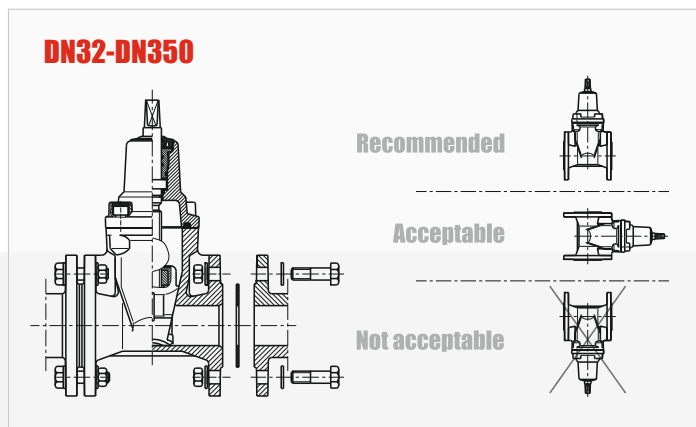


Replaceable wedge nut



Application of low friction sliding element

## Recommendations for installation



**DN32-DN350  
PN25**

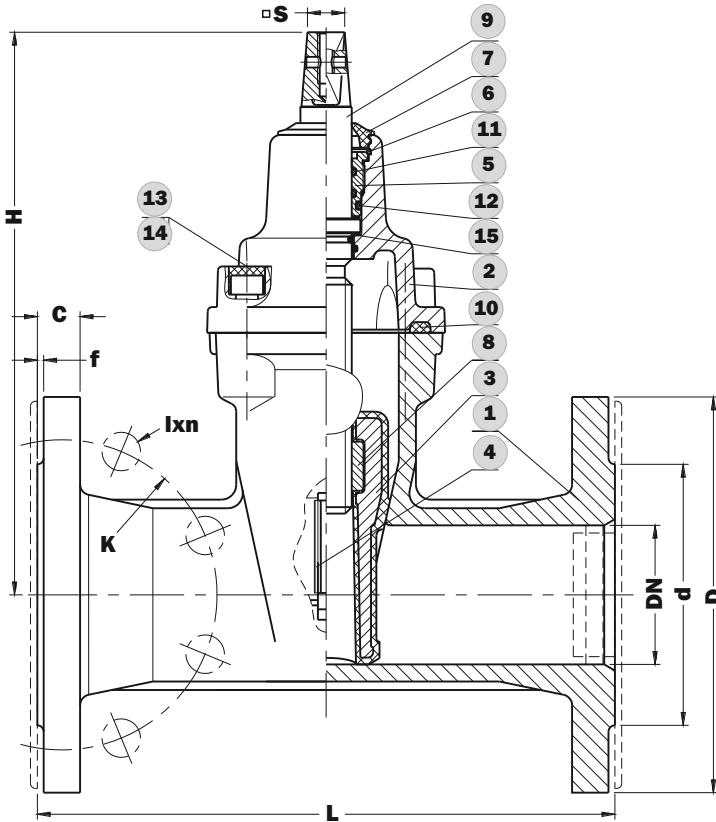
**Type  
S421  
Series 14**



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# MATERIAL PERFORMANCE / MAIN DIMENSIONS

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No.	Name	Material
1	Body	Ductile cast iron EN-GJS-400-15 or EN-GJS-500-7 EN 1563
2	Bonnet	Ductile cast iron EN-GJS-400-15 or EN-GJS-500-7 EN 1563
3	Wedge	Brass acc. to EN 1982 (DN32) Ductile cast iron (DN40-DN350) EN-GJS-400-15 or EN-GJS-500-7 EN 1563 Rubber EPDM NBR EN ISO 1629
4	Wedge slider	POM EN ISO 1874-1
5	Packing cork	Brass EN 1982
6	Protection ring	Steel 1.1260
7	Cleaning gasket	Rubber EPDM or NBR EN ISO 1629
8	Spindle nut	Brass EN 1982
9	Spindle	Stainless steel 1.4021 EN 10088-1
10	Body-bonnet gasket	Rubber EPDM or NBR EN ISO 1629
11	O-ring	Rubber EPDM or NBR EN ISO 1629
12	O-ring	Rubber EPDM or NBR EN ISO 1629
13	Screw	Steel Fe/Zn5, stainless steel EN ISO 4762
14	Screw stopper	Wax
15	Washer	Polyamide Pa6 EN ISO 1874-1

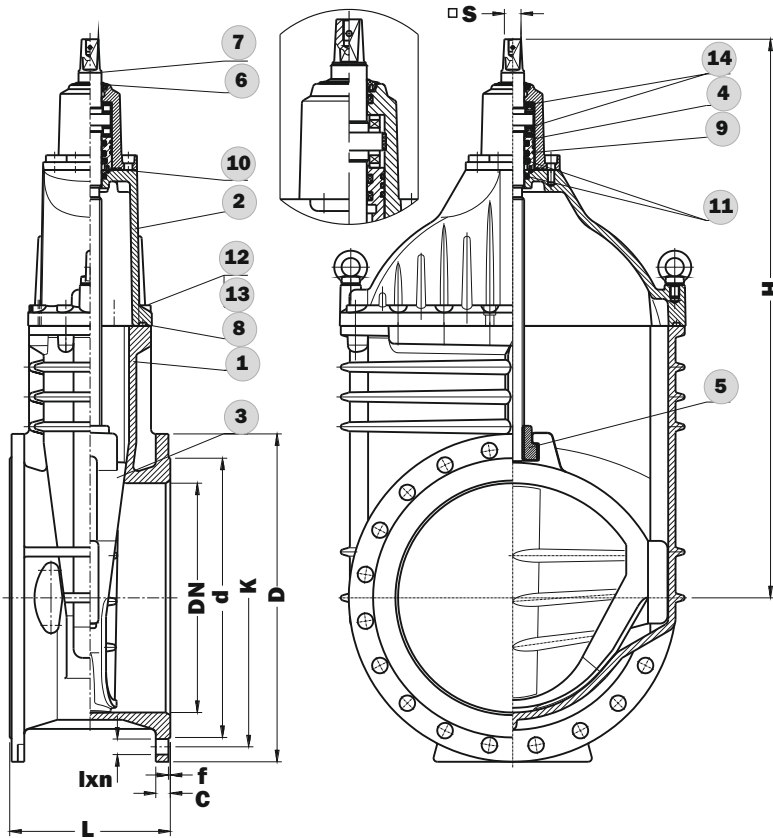
## DN32-DN350 / PN10/PN16

DN	421 L	420 L	H	d	D	K PN10/(PN16)	I PN10/(PN16)	C	f	n PN10/(PN16)	Turns for full open	S	421 (kg)	420 (kg)
32	130	140	145	76	140	100	19	18	3	4	9	12	5	6
40	140	240	220	84	150	110	19	19	3	4	11	14	9	10
50	150	250	230	99	165	125	19	19	3	4	13,5	14	10	11
65	170	270	265	118	185	145	19	19	3	4	14	17	14	16
80	180	280	290	132	200	160	19	19	3	8	17	17	15	17
100	190	300	325	156	220	180	19	19	3	8	21	19	21	23
125	200	325	365	184	250	210	19	19	3	8	26	19	31	39
150	210	350	457	211	285	240	23	19	3	8	26	19	41	48
200	230	400	534	266	340	295	23	20	3	12 (8)	34,5	24	62	77
250	250	450	633	319	405	355 (350)	28 (23)	22	3	12	42,5	27	94	106
300	270	500	708	370	460	410 (400)	28 (23)	25	4	12	51	27	122	148
350	290	550	790	429	520	470 (460)	28 (23)	27	4	16	60	27	216	254

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# MATERIAL PERFORMANCE / MAIN DIMENSIONS



No.	Name	Material
1	Body	Ductile cast iron EN-GJS-400-15 or EN-GJS-500-7 EN 1563
2	Bonnet	Ductile cast iron EN-GJS-400-15 or EN-GJS-500-7 EN 1563
3	Wedge + slider	Ductile cast iron (DN40-DN350) EN-GJS-400-15 or EN-GJS-500-7 EN 1563 Rubber EPDM / NBR: EN ISO 1629 POM EN ISO 1874-1
4	Sealing sleeve	Brass EN 1982
5	Spindle nut	Brass EN 1982
6	Cleaning gasket	Rubber EPDM or NBR EN ISO 1629
7	Spindle	Stainless steel 1.4021 EN 10088-1
8	Body-bonnet gasket	Rubber EPDM or NBR EN ISO 1629
9, 10 11	O-ring	Rubber EPDM or NBR EN ISO 1629
12	Screw	Steel Fe/Zn5, stainless steel EN ISO 4762
13	Screw stopper	Wax
14	Bearing	Catalogue producer

## DN400-DN600 / PN10/PN16

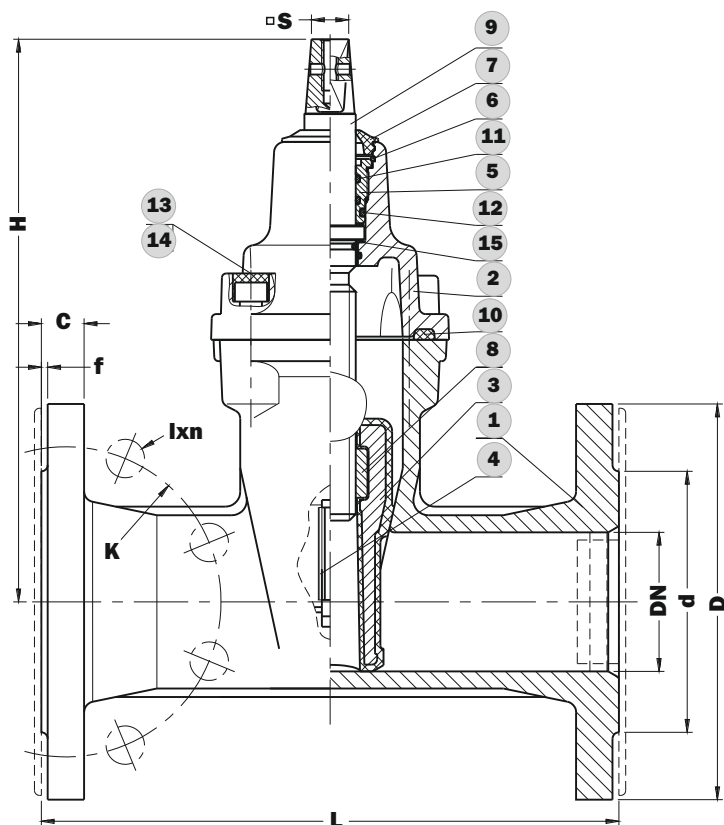
DN	421 L	420 L	H	d PN10/(PN16)	D PN10/(PN16)	K PN10/(PN16)	I PN10/(PN16)	C	f	n	Turns for full open	S	421 (kg)	420 (kg)
400	310	600	1220	480	580	525 (515)	31 (28)	28	4	16	58	32	298	345
450	330	-	1090	548 (530)	640	585 (565)	31 (28)	30	4	20	65	32	360	-
500	350	700	1220	609 (582)	715 (670)	650 (620)	34 (28)	32	4	20	63	36	458	540
600	390	800	1390	720 (682)	840 (780)	770 (725)	37 (31)	36	5	20	77	36	640	776
600*	430	900	1390	794	910 (895)	840	37 (31)	36	5	24	77	36	670	-

\*Flange connection EN 1092-2 for DN700 - valve diameter DN600



# MATERIAL PERFORMANCE / MAIN DIMENSIONS

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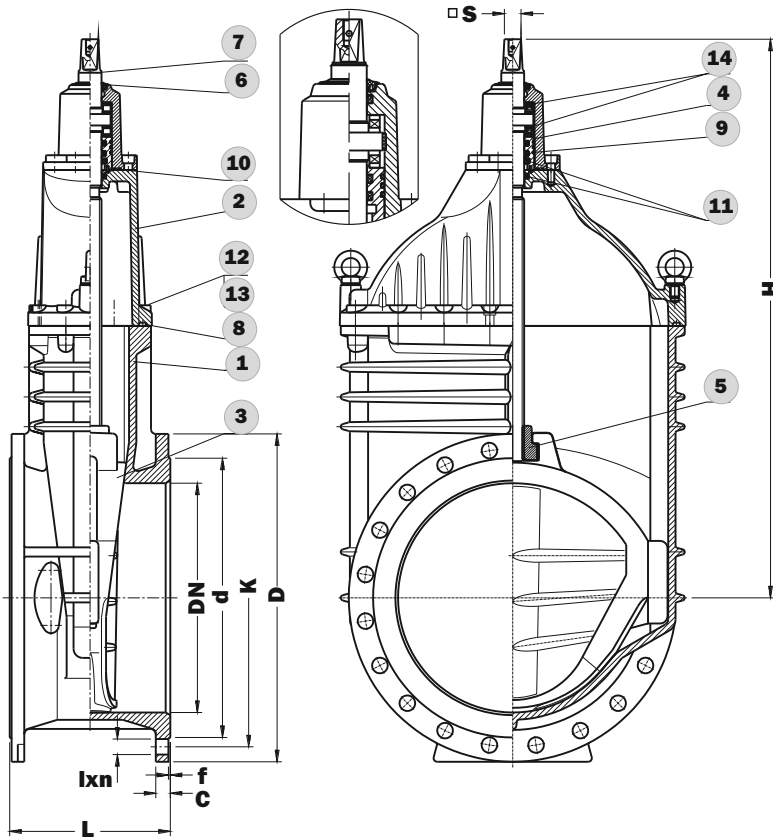
No.	Name	Material
1	Body	Ductile cast iron EN-GJS-400-15 or EN-GJS-500-7 EN 1563
2	Bonnet	Ductile cast iron EN-GJS-400-15 or EN-GJS-500-7 EN 1563
3	Wedge	Brass acc. to EN 1982 (DN32) Ductile cast iron (DN40-DN350) EN-GJS-400-15 or EN-GJS-500-7 EN 1563 Rubber EPDM NBR EN ISO 1629
4	Wedge slider	POM EN ISO 1874-1
5	Packing cork	Brass EN 1982
6	Protection ring	Steel 1.1260
7	Cleaning gasket	Rubber EPDM or NBR EN ISO 1629
8	Spindle nut	Brass EN 1982
9	Spindle	Stainless steel 1.4021 EN 10088-1
10	Body-bonnet gasket	Rubber EPDM or NBR EN ISO 1629
11	O-ring	Rubber EPDM or NBR EN ISO 1629
12		
13	Screw	Steel Fe/Zn5, stainless steel EN ISO 4762
14	Screw stopper	Wax
15	Washer	Polyamide Pa6 EN ISO 1874-1

## DN32-DN350 / PN25

DN	421 L	420 L	H	d	D	K	I	C	f	n	Turns for full open	S	421 (kg)	420 (kg)
32	130	140	145	76	140	100	19	19	3	4	9	12	5,3	6,1
40	140	240	220	84	150	110	19	19	3	4	11	14	9	10
50	150	250	230	99	165	125	19	19	3	4	13,5	14	10	10,5
65	170	270	265	118	185	145	19	19	3	8	14	17	14,5	15
80	180	280	290	132	200	160	19	19	3	8	17	17	17	19
100	190	300	325	156	220	190	23	19	3	8	21	19	24	26
125	200	325	365	184	270	220	28	19	3	8	26	19	31	36
150	210	350	457	211	300	250	28	20	3	8	26	19	44	50
200	230	400	534	274	360	310	28	22	3	12	34,5	24	63	80
250	250	450	633	330	425	370	31	25	3	12	42,5	27	100	111
300	270	500	708	389	485	430	31	28	4	16	51	27	127	162
350	290	550	790	448	555	490	34	30	4	16	60	27	230	245

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# MATERIAL PERFORMANCE / MAIN DIMENSIONS



No.	Name	Material
1	Body	Ductile cast iron EN-GJS-400-15 or EN-GJS-500-7 EN 1563
2	Bonnet	Ductile cast iron EN-GJS-400-15 or EN-GJS-500-7 EN 1563
3	Wedge + slider	Ductile cast iron (DN40-DN350) EN-GJS-400-15 or EN-GJS-500-7 EN 1563 Rubber EPDM / NBR: EN ISO 1629 POM EN ISO 1874-1
4	Sealing sleeve	Brass EN 1982
5	Spindle nut	Brass EN 1982
6	Cleaning gasket	Rubber EPDM or NBR EN ISO 1629
7	Spindle	Stainless steel 1.4021 EN 10088-1
8	Body-bonnet gasket	Rubber EPDM or NBR EN ISO 1629
9, 10 11	O-ring	Rubber EPDM or NBR EN ISO 1629
12	Screw	Steel Fe/Zn5, stainless steel EN ISO 4762
13	Screw stopper	Wax
14	Bearing	Catalogue producer

## DN400-DN500 / PN25

DN	421 L	420 L	H	d	D	K	I	C	f	n	Turns for full open	S	421 (kg)	420 (kg)
400	310	600	1220	503	620	550	37	32	4	16	58	32	315	343
450	330	-	1090	548	670	600	37	32	4	20	65	32	385	-
500	350	700	1220	609	730	660	37	34	4	20	63	36	480	550



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