



Resilient Soft Seated Gate Valve Series

- NRS resilient soft seated flange gate valve
- RS resilient soft seated flange gate valve
- NRS resilient soft seated (PVC/PE PIPE) socket gate valve
- NRS resilient soft seated (DI PIPE) socket gate valves
- Anti-theft NRS resilient soft seated gate valve
- Electric actuated NRS resilient soft seated gate valve
- Gate valves with extension spindle
- Heavy type NRS resilient soft seated flange gate valve
- BS Electric soft-seal gate valve

SAFETY

Body

The body is made of ductile iron by precision casting molding. It was designed by 3D software, with finite element analysis for the structure. The safety coefficient is over 2.5. The bottom of the channel is without groove, no accumulation of rubbish, and with small flow resistance.



Stem

The stem is made of stainless steel by rolling. Integral type, avoiding the use of the brass half rings to reduce stem diameter. The smooth modified ladder type screw is extruded. Global mirror polish, it fits the O rings well, to ensure that the rotation is flexible and labor saving.



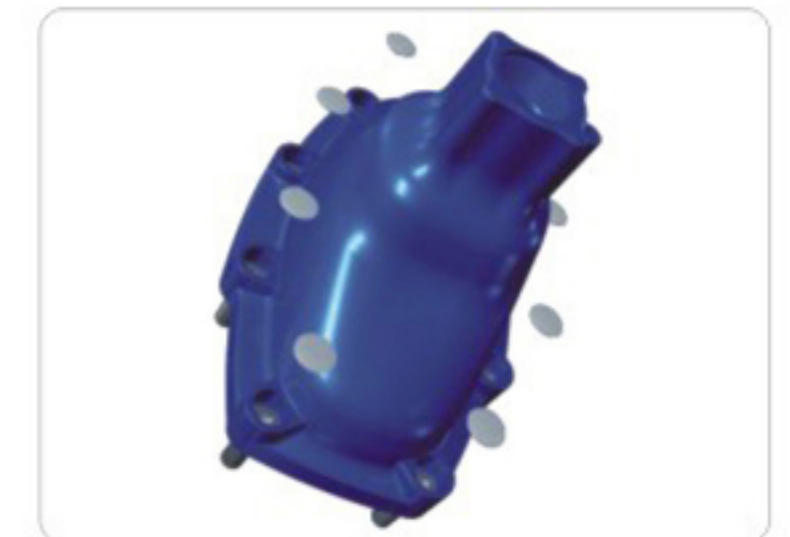
Wedge

The frame of the wedge is made of ductile iron by the percoated sand molding, the wedge is covered by EPDM totally. Double seal design, each seal line can work independently.



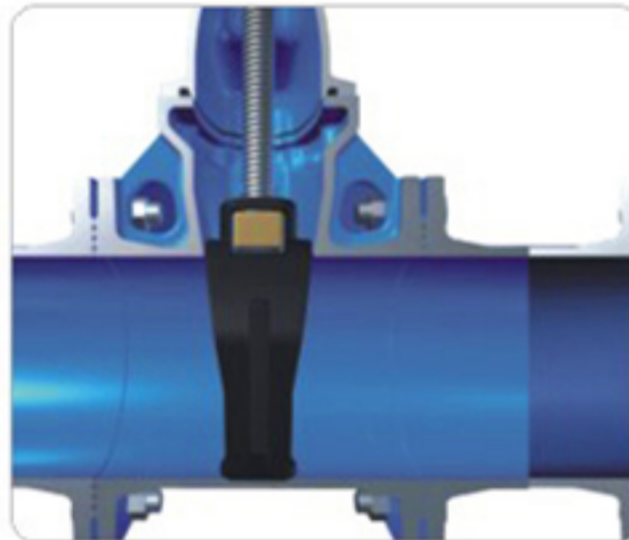
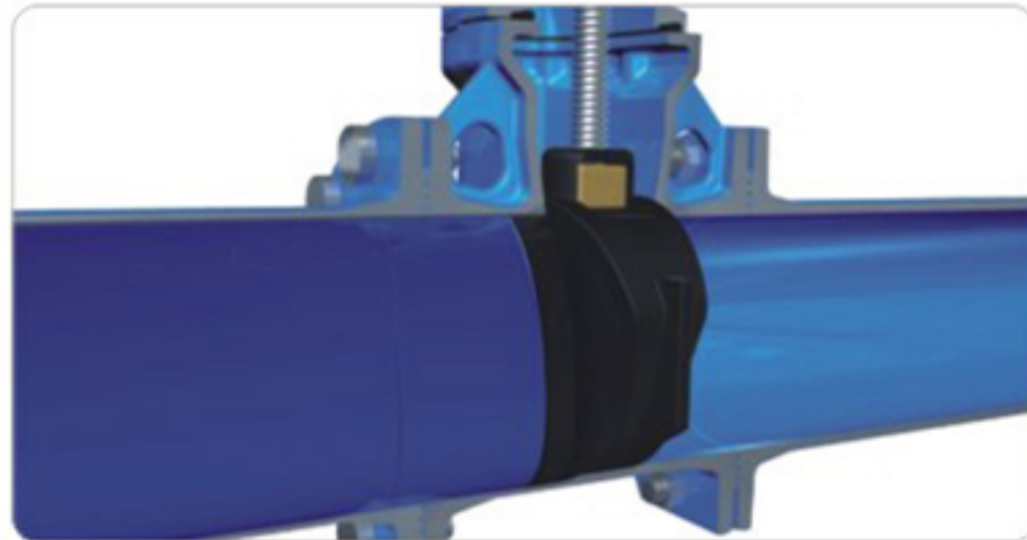
Bonnet

The grade 8.8 bolts connect the bonnet and the body, the bolts were covered by hot-melt glue which protect the bolts for anti-corrosion. The gasket between the bonnet and body is made of EPDM. The valve cover is with a retaining groove, make sure that the rubber gasket won't be extruded out under high water pressure.



Environmental-friendly

The inside and outside surface of the valve is coated with sanitary epoxy powder by static electricity, the average thickness is above 250 μm. The adhesion of the coating is strong; it won't be destroyed under the impact force test of 3J. Internal parts can meet with the environmental protection demand, and can be used for the potable water, food and pharmaceutical area directly. The electrostatic powder coating process can promise high adhesion force and strong corrosion resistance.



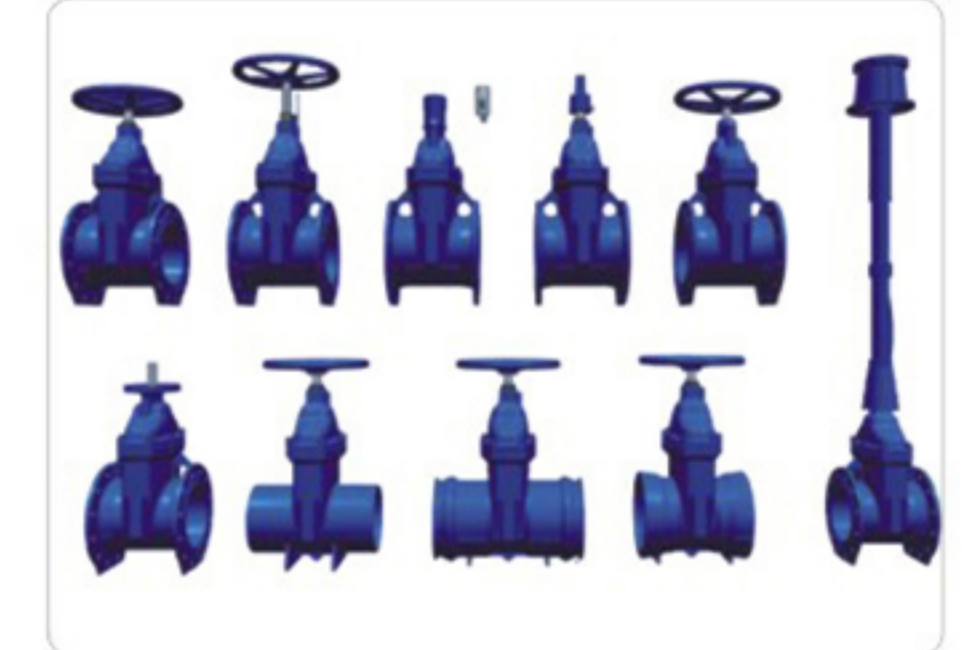
The rubber parts are made of high quality EPDM or NBR, which is in accordance with the drinking water requirements, avoiding the problem of the common rubber which is easy to breed microorganism. The products is not only approved by the national quality standards for drinking water related products, but also reached the UK WRAS standards. The stem nut is forged and rolled from the national standard brass rod (low lead), and no pollution to water.



Convenient

Convenient installation and operation

We offer various kinds of interface such as flange connection, PVC pipe socket, Ductile iron pipe socket, reducing etc.). The special connection design can be developed as the requests of the customers. The gate valves can be operated by electric actuator, handwheels, square nuts or special key. It's convenient to install the valves in different positions of the pipe lines. Except for the vertical installation, the valves also can be horizontal installation. In some narrow spaces, you can choose the installation way which is convenient for the operation of the valves.



The actual operating torque is only 80% of diameter



The products passed the switch life test of 5000 times



The gate valves can bear the MST of 3*DN N.M



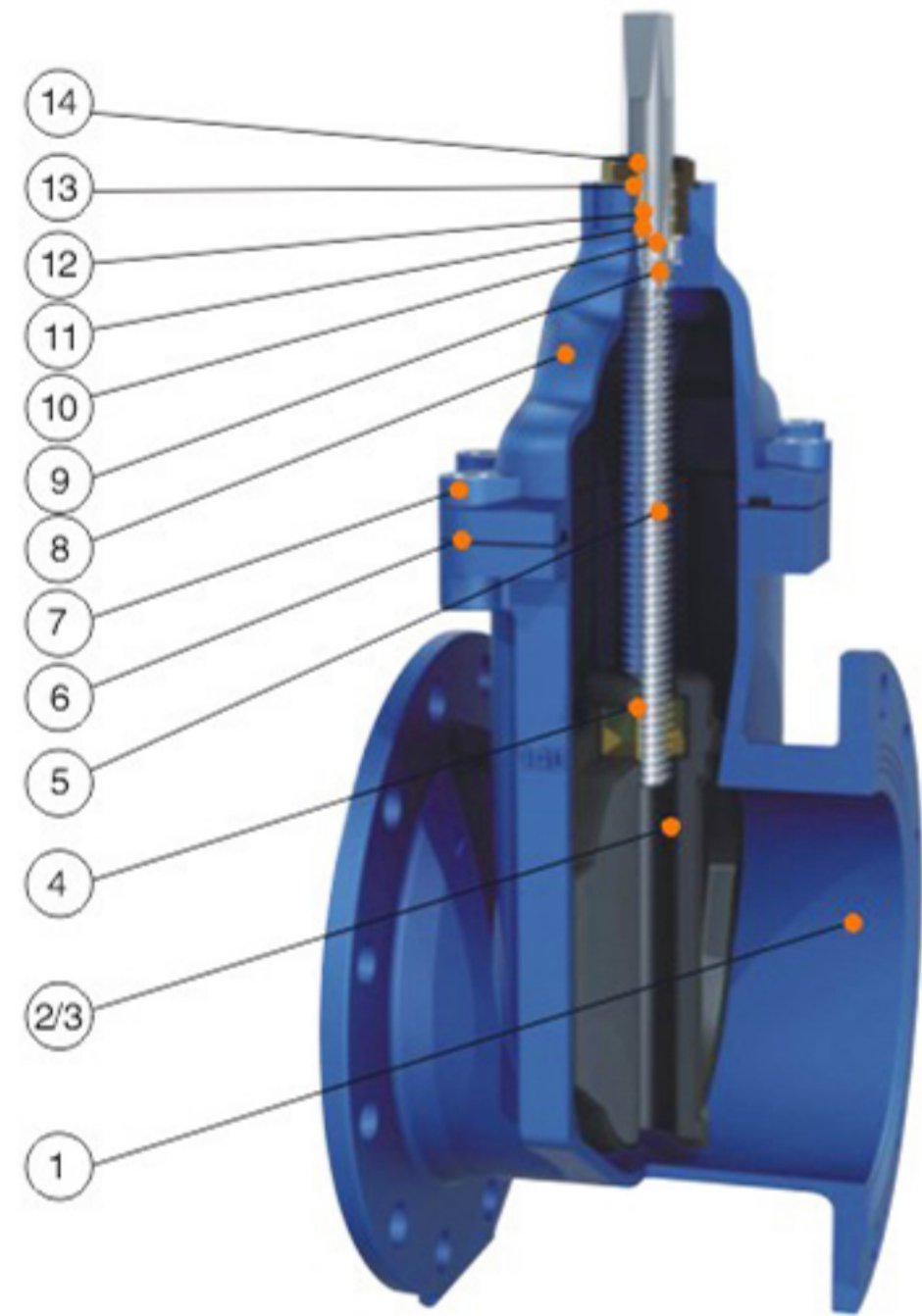
The valve can be completely closed and reach at 0 leakage with small torque. The actual operating torque is only 80% of diameter, and the gate valves can bear the MST of 3*DN N.M. The products passed the switch life test of 5000 times. For the valves of bigger diameter, we can offer the labour saving devices, to ensure that all the valves can be opened and closed by one person. The handwheel is strong, with accurate dimensions, it fits well with the valve stem, the shape is in accordance with human mechanics, to ensure easy operation.

Convenient maintenance

The seal ring can be replaced without cutting off the water, it's easier for the maintenance and reduce the maintenance time as much as possible. The friction between the brass bushing and the "O" type seal ring is small, and the seal can work for long time. The Max. Operate torque is under the control.



DN40–DN1000 (DIN/BS), 2"–12"(ANSI)



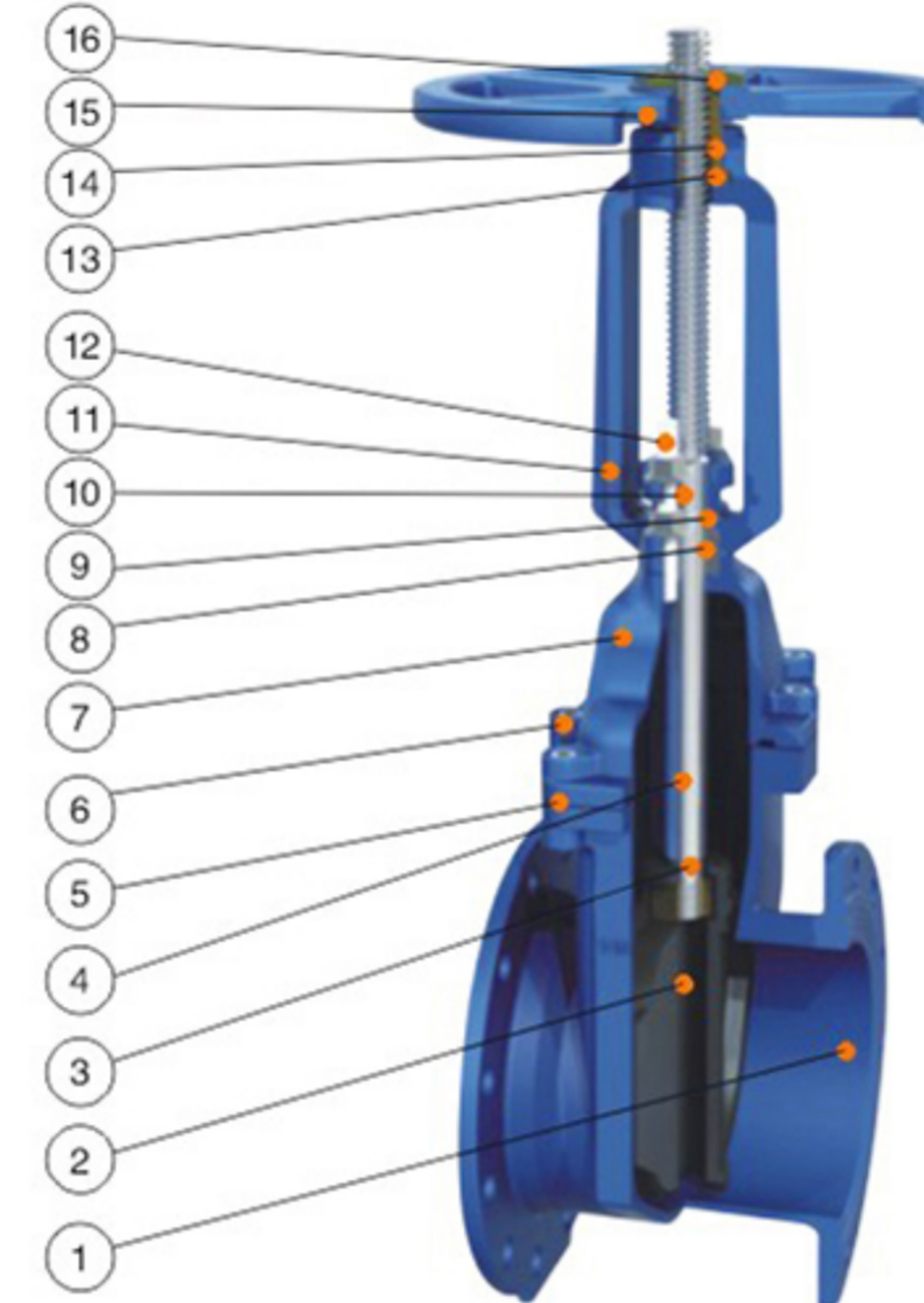
Application standards

Design standard	EN1171:2002
Face to face	According to EN558–1 series 14(DIN F4), series 15 (DIN F5), series 3 (BS5163) and ASME B16.10
Flange drilling	According to EN1092 PN10–16, ASME B16.1–16.5
Size scope	DN40–DN1000(DIN/BS), 2"–12"(ANSI)
Working temperature	NBR 0–70°C, EPDM 0–80°C
Working pressure	PN10–16, Class 125–150
Suitable medium	Water
Coating	Epoxy coating with thickness $\geq 250\mu\text{m}$

Parts list

No.	Part Name	Material
1	Body	Ductile Iron
2	Wedge	Ductile Iron with EPDM / NBR
3	Guide collar	Nylon
4	Wedge nut	Brass
5	Stem	2Cr13
6	Gasket	NBR / EPDM
7	Bonnet bolt	Galvanized Carbon steel / SS304
8	Bonnet	Ductile Iron
9	"O" ring	NBR
10	Locating washer	Nylon
11	Bushing	Brass
12	"O" ring	NBR
13	"O" ring	NBR
14	Dust ring	NBR / EPDM

DN50–DN300 (DIN/BS), 2"–12"(ANSI)



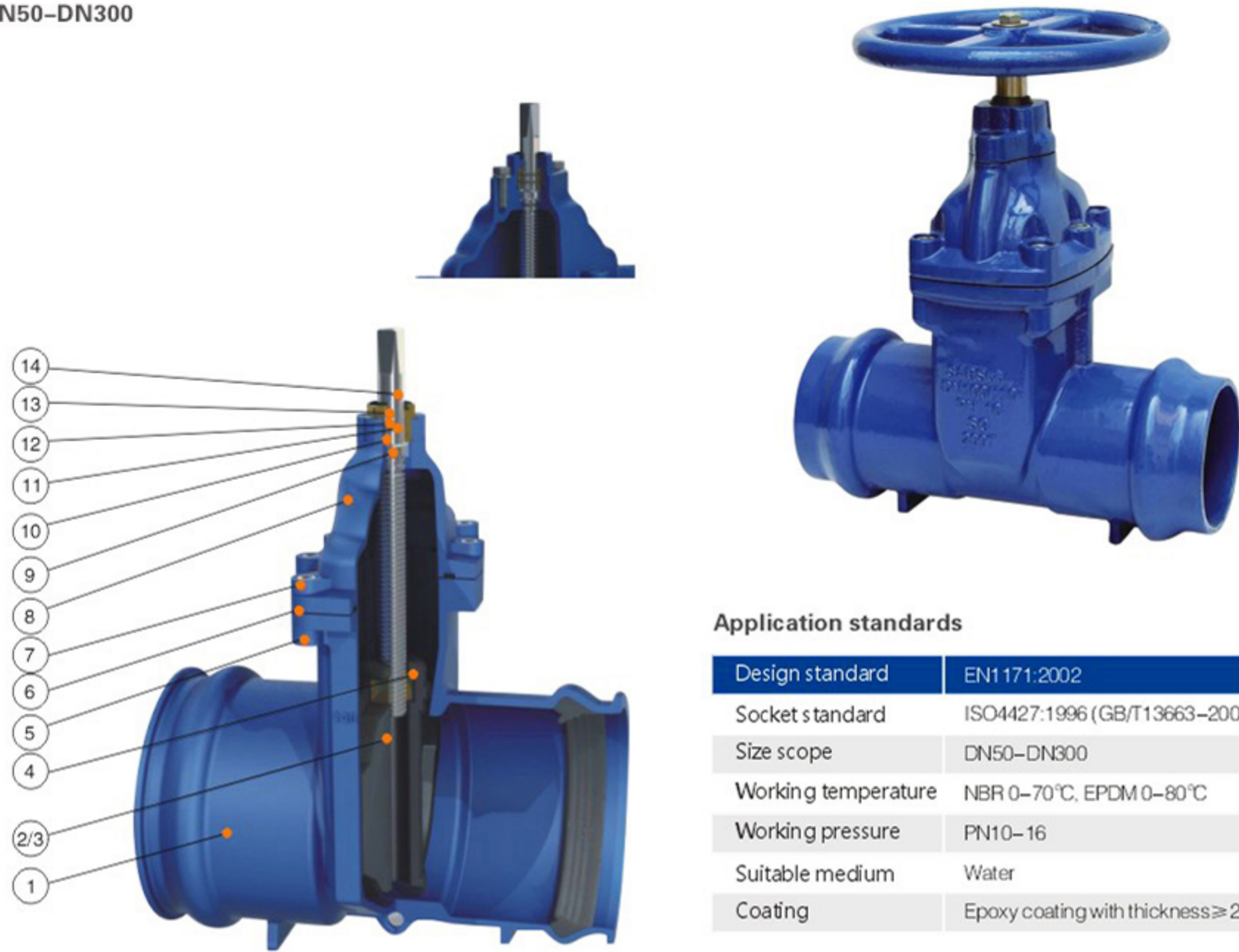
Application standards

Design standard	EN1171:2002
Face to face	According to EN558–1 series 14(DIN F4), series 3 (BS5163), and ASME B16.10
Flange drilling	According to EN1092 PN10–16, ASME B16.1–16.5
Size scope	DN50–DN300(DIN/BS), 2"–12"(ANSI)
Working temperature	NBR 0–70°C, EPDM 0–80°C
Working pressure	PN10–16, Class 125–150
Suitable medium	Water
Coating	Epoxy coating with thickness $\geq 250\mu\text{m}$

Parts list

No.	Part Name	Material
1	Body	Ductile Iron
2	Disc	Ductile Iron with EPDM / NBR
3	Disc nut	Brass
4	Stem	2Cr13
5	Gasket	NBR / EPDM
6	Bonnet bolt	Galvanized Carbon steel / SS304
7	Bonnet	Ductile Iron
8	Filler	Graphit
9	"O" ring	NBR
10	Gland	Ductile
11	Yoke	Ductile
12	Bolt	2Cr13
13	Nut	Brass
14	Nut	Ductile Iron
15	Handwheel	Ductile Iron
16	Nut	Brass

DN50-DN300



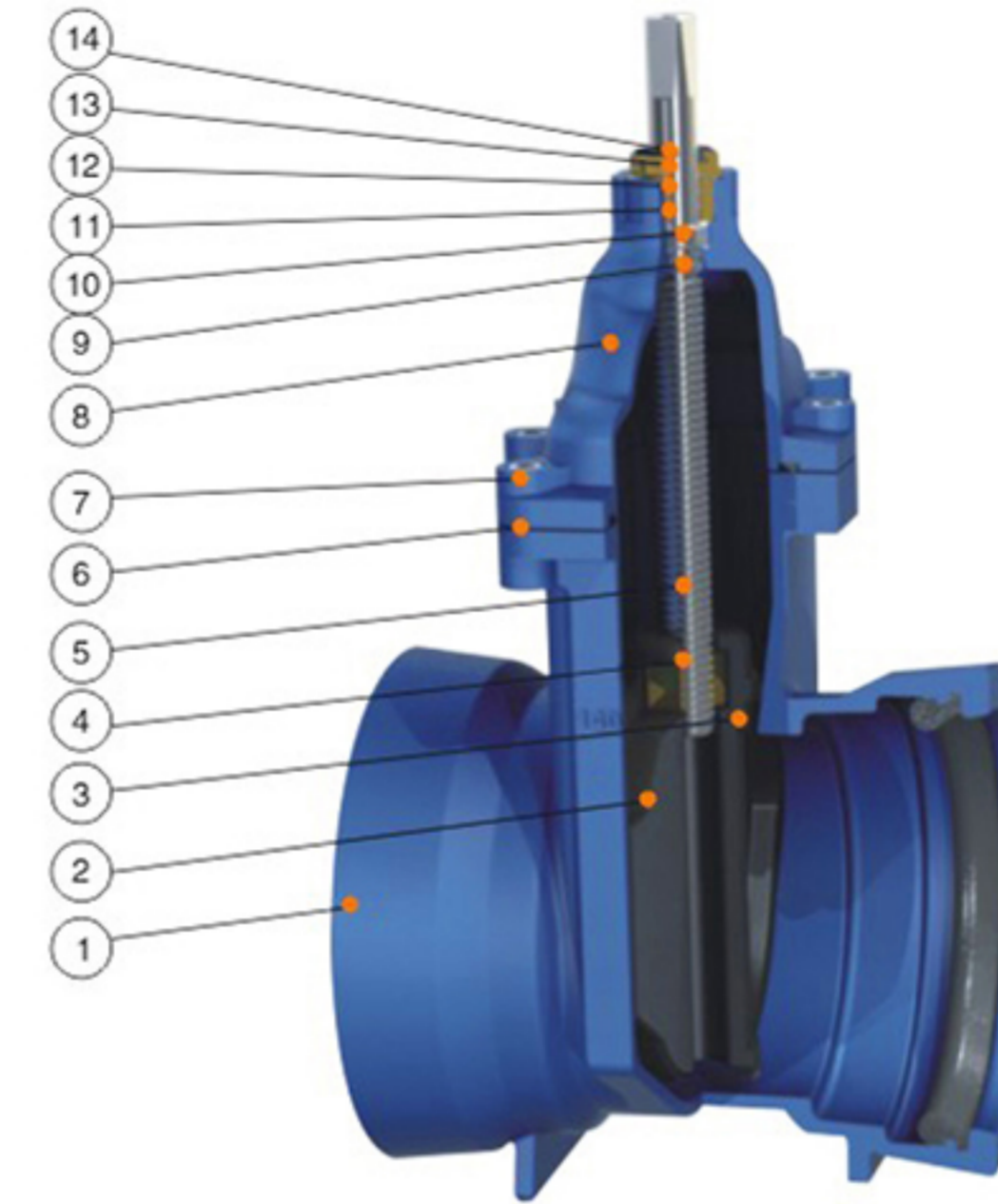
Application standards

Design standard	EN1171:2002
Socket standard	ISO4427:1996 (GB/T13663-2000)
Size scope	DN50-DN300
Working temperature	NBR 0-70°C, EPDM 0-80°C
Working pressure	PN10-16
Suitable medium	Water
Coating	Epoxy coating with thickness ≥ 250µm

Parts list

No.	Part Name	Material
1	Body	Ductile Iron
2	Disc	Ductile Iron with EPDM / NBR
3	Guide collar	Nylon
4	Disc nut	Brass
5	Stem	2Cr13
6	Gasket	NBR / EPDM
7	Bonnet bolt	Galvanized Carbon steel / SS304
8	Bonnet	Ductile Iron
9	*O' ring	NBR
10	Locating washer	Nylon
11	Brass nut	Brass
12	*O' ring	NBR
13	*O' ring	NBR
14	Dust ring	EPDM

DN80-DN400



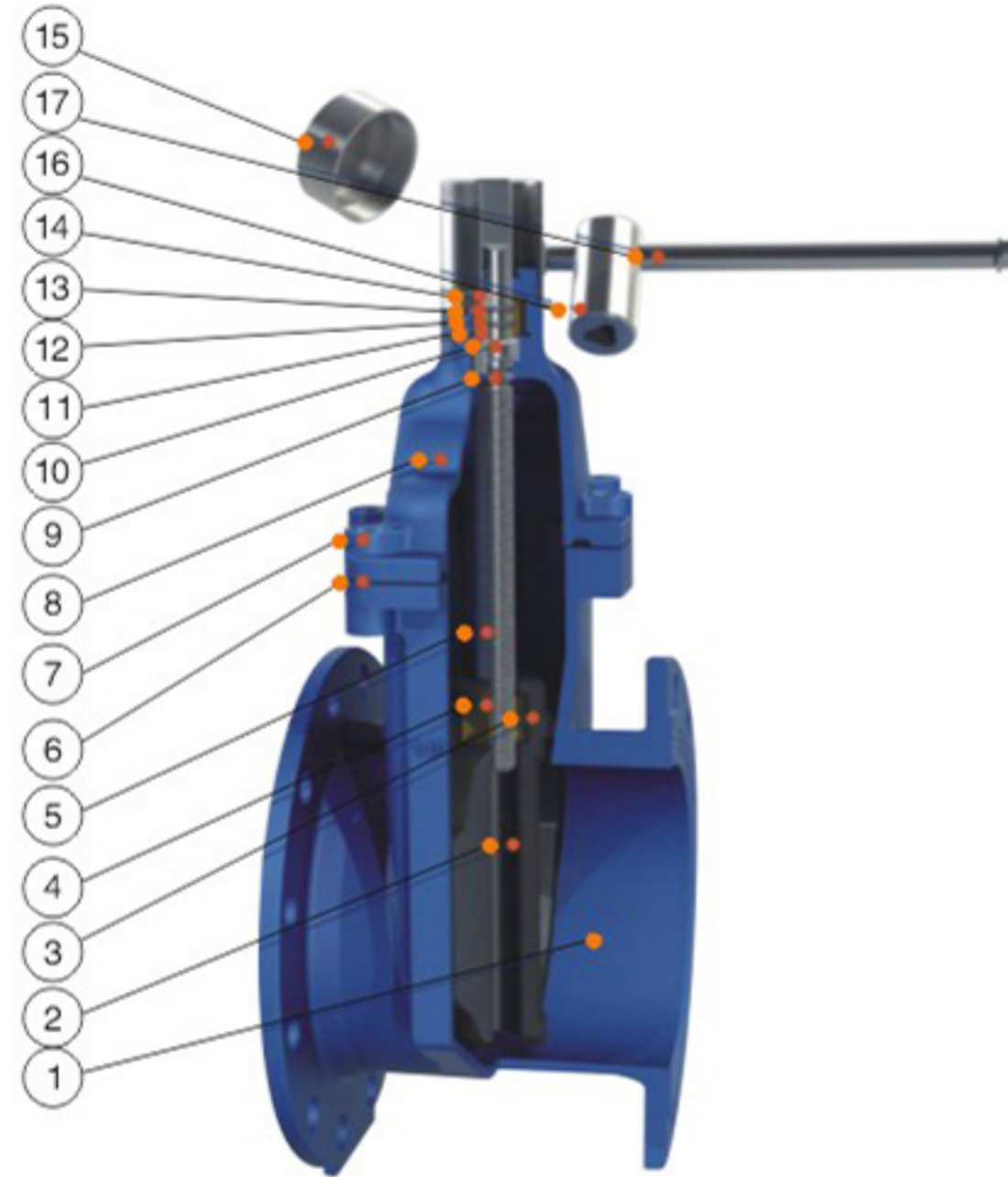
Application standards

Design standard	EN1171:2002
Socket standard	ISO2531:1998 (GB/T13295-2008)
Size scope	DN80-DN400
Working temperature	NBR 0-70°C, EPDM 0-80°C
Working pressure	PN10-16
Suitable medium	Water
Coating	Epoxy coating with thickness ≥ 250µm

Parts list

No.	Part Name	Material
1	Body	Ductile Iron
2	Disc	Ductile Iron with EPDM / NBR
3	Guide collar	Nylon
4	Disc nut	Brass
5	Stem	2Cr13
6	Gasket	NBR / EPDM
7	Bonnet bolt	Galvanized Carbon steel / SS304
8	Bonnet	Ductile Iron
9	*O' ring	NBR
10	Locating washer	Nylon
11	Brass nut	Brass
12	*O' ring	NBR
13	*O' ring	NBR
14	Dust ring	EPDM

DN80–DN400 (DIN/BS), 3"–12" (ANSI)



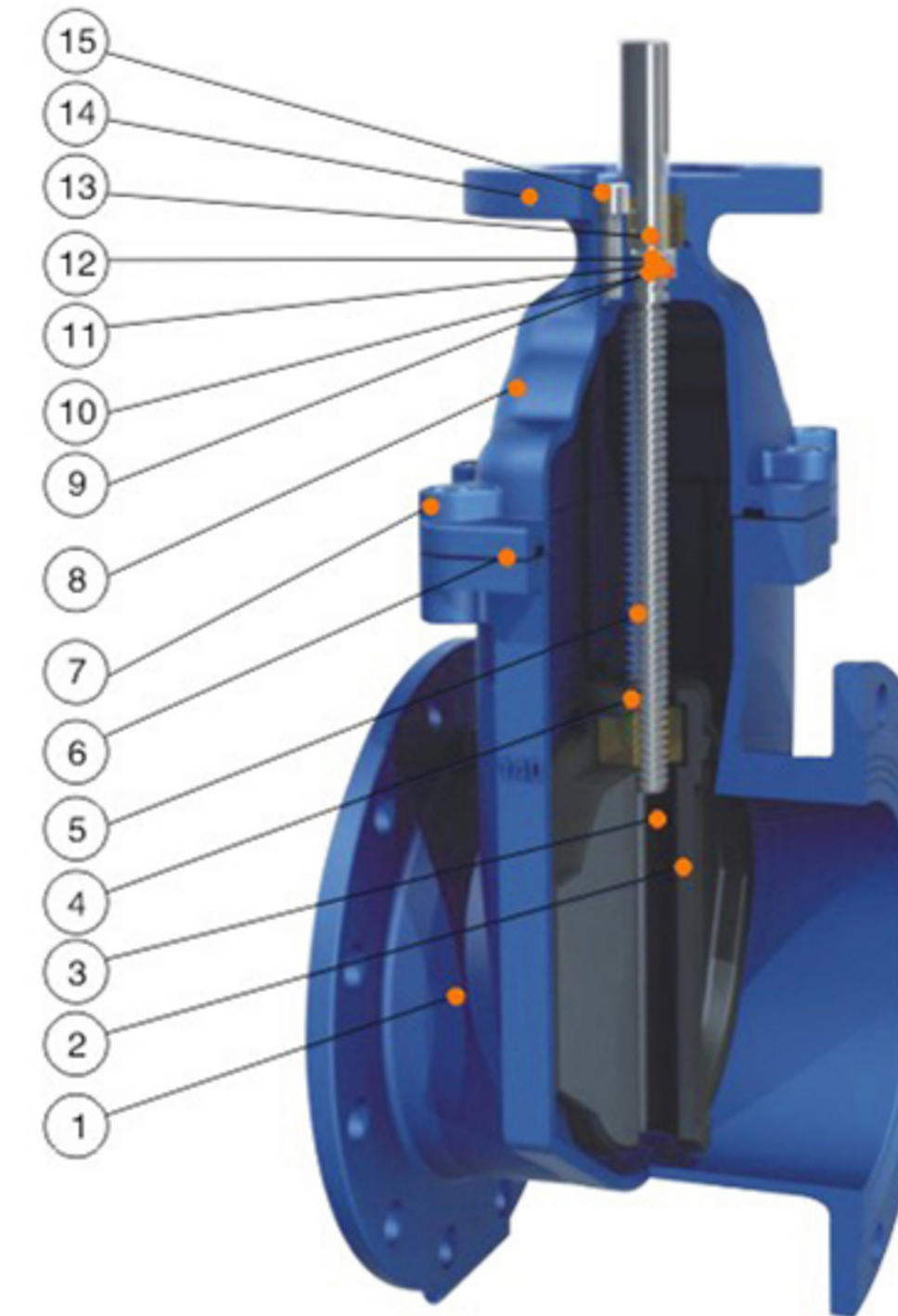
Application standards

Design standard	EN1 171:2002
Face to face	According to EN558–1 series 14(DIN F4), series 15 (DIN F5), series 3 (BS5163) and ASME B16.10
Flange drilling	According to EN1092 PN10–16, ASME B16.1–16.5
Size scope	DN80–DN400(DIN/BS), 3"–12"(ANSI)
Working temperature	NBR 0–70°C, EPDM 0–80°C
Working pressure	PN10–16, Class 125–150
Suitable medium	Water
Coating	Epoxy coating with thickness $\geq 250\mu\text{m}$

Parts list

No.	Part Name	Material
1	Body	Ductile Iron
2	Wedge	Ductile Iron with EPDM / NBR
3	Guide collar	Nylon
4	Wedge nut	Brass
5	Stem	2Cr13
6	Gasket	NBR / EPDM
7	Bonnet bolt	Galvanized Carbon steel / SS304
8	Bonnet	Ductile Iron
9	'O' ring	NBR
10	Locating washer	Nylon
11	Bushing	Brass
12	'O' ring	NBR
13	'O' ring	NBR
14	Dust ring	EPDM
15	Theftproof cap	2Cr13
16	Theftproof cover	2Cr13
17	Theftproof lever	2Cr13

DN40–DN1000 (DIN/BS), 2"–12" (ANSI)



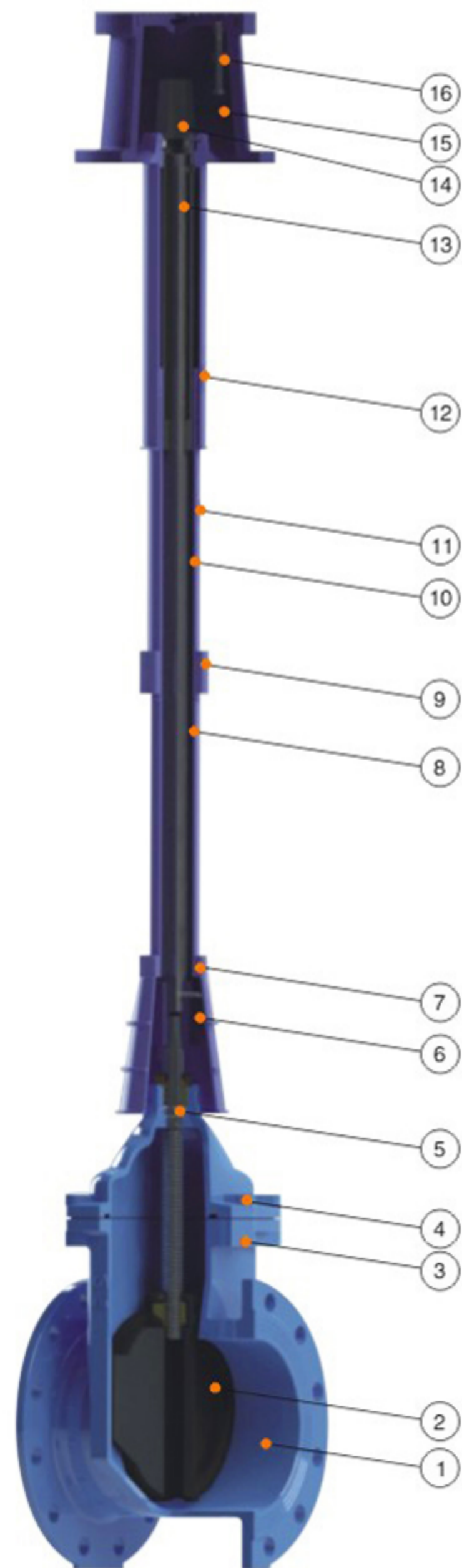
Application standards

Design standard	EN1 171:2002
Face to face	According to EN558–1 series 14(DIN F4), series 15 (DIN F5), series 3 (BS5163) and ASME B16.10
Flange drilling	According to EN1092 PN10–16, ASME B16.1–16.5
Size scope	DN40–DN1000(DIN/BS), 2"–12"(ANSI)
Working temperature	NBR 0–70°C, EPDM 0–80°C
Working pressure	PN10–16, Class 125–150
Suitable medium	Water
Coating	Epoxy coating with thickness $\geq 250\mu\text{m}$

Parts list

No.	Part Name	Material
1	Body	Ductile Iron
2	Disc	Ductile Iron with EPDM / NBR
3	Guide collar	Nylon
4	Disc nut	Brass
5	Stem	2Cr13
6	Gasket	NBR / EPDM
7	Bonnet bolt	Galvanized Carbon steel / SS304
8	Bonnet	Ductile Iron
9	'O' ring	NBR
10	Locating washer	Nylon
11	Locating	Brass
12	'O' ring	NBR
13	Bushing	Brass
14	Top flange	Ductile Iron
15	Bolt	2Cr13

DN40-DN1000 (DIN/BS), 2"-12" (ANSI)



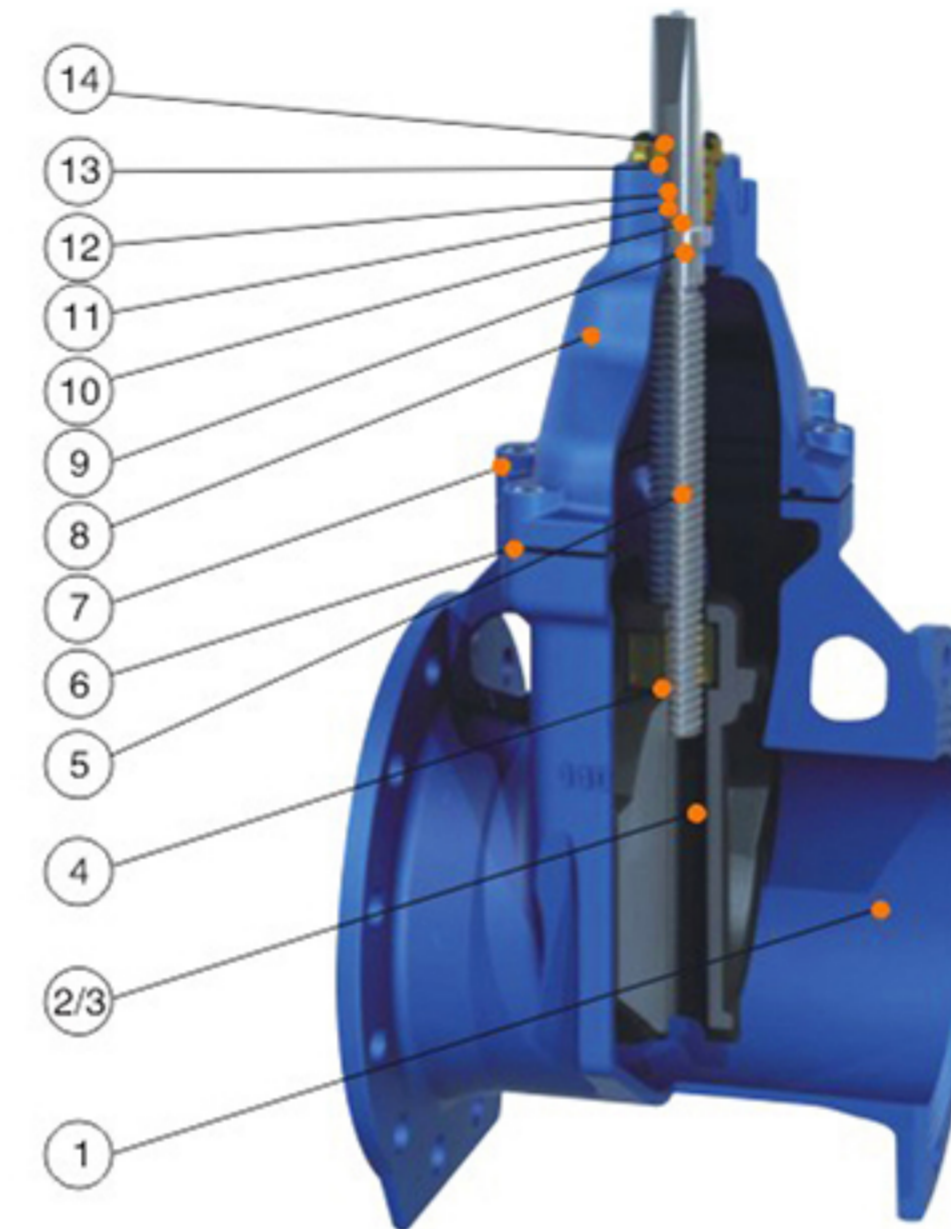
Application standards

Design standard	EN1171:2002
Face to face	According to EN558-1 series 14(DIN F4), series 15 (DIN F5), series 3 (BS5163) and ASME B16.10
Flange drilling	According to EN1092 PN10-16, ASME B16.1-16.5
Size scope	DN40-DN1000(DIN/BS), 2"-12"(ANSI)
Working temperature	NBR 0-70°C, EPDM 0-80°C
Working pressure	PN10-16, Class 125-150
Suitable medium	Water
Coating	Epoxy coating with thickness $\geq 250\mu\text{m}$

Parts list

No.	Part Name	Material
1	Body	Ductile Iron
2	Wedge	Ductile Iron with EPDM/NBR
3	Bonnet	Ductile Iron
4	Gland	Ductile Iron
5	Stem	2Cr13
6	Gland cover	HDPE
7	Connecting shaft	Galvanized nickel alloy
8	Lower retaining tube	PVC/PE
9	Protective sleeve	HDPE
10	Annular tube	Galvanized nickel alloy
11	Upper retaining tube	PVC/PE
12	Guide shaft tube	Galvanized nickel alloy
13	Square shaft	Galvanized nickel alloy
14	Rotary shaft	Galvanized nickel alloy
15	Box	Ductile Iron
16	Box cover	Ductile Iron

DN50-DN300



Application standards

Design standard	EN1171:2002
Face to face	According to EN558-1 series 3 (BS5163) and 14 (DIN F4)
Flange drilling	According to EN1092 PN10-16
Size scope	DN50-DN300
Working temperature	NBR 0-70°C, EPDM 0-80°C
Working pressure	PN10-16
Suitable medium	Water
Coating	Epoxy coating with thickness $\geq 250\mu\text{m}$

Parts list

No.	Part Name	Material
1	Body	Ductile Iron
2	Wedge	Ductile Iron with EPDM / NBR
3	Guide collar	Nylon
4	Wedge nut	Brass
5	Stem	2Cr13
6	Gasket	NBR / EPDM
7	Bonnet bolt	Galvanized Carbon steel / SS304
8	Bonnet	Ductile Iron
9	"O" ring	NBR
10	Locating washer	Nylon
11	Bushing	Brass
12	"O" ring	NBR
13	"O" ring	NBR
14	Dust ring	NBR / EPDM

DIN standard caps

Square sizes: 32mm*32mm



BS 5163 standard caps



DN	A	B
50, 80, 100, 150, 200, 250, 300	63	35
400, 500, 600, 700, 800	75	48

American standard caps

Square sizes: 2" * 2"



Gear-box



Electric actuator



Extension rod type

Galvanized square pipe extension rod



Retractable stem



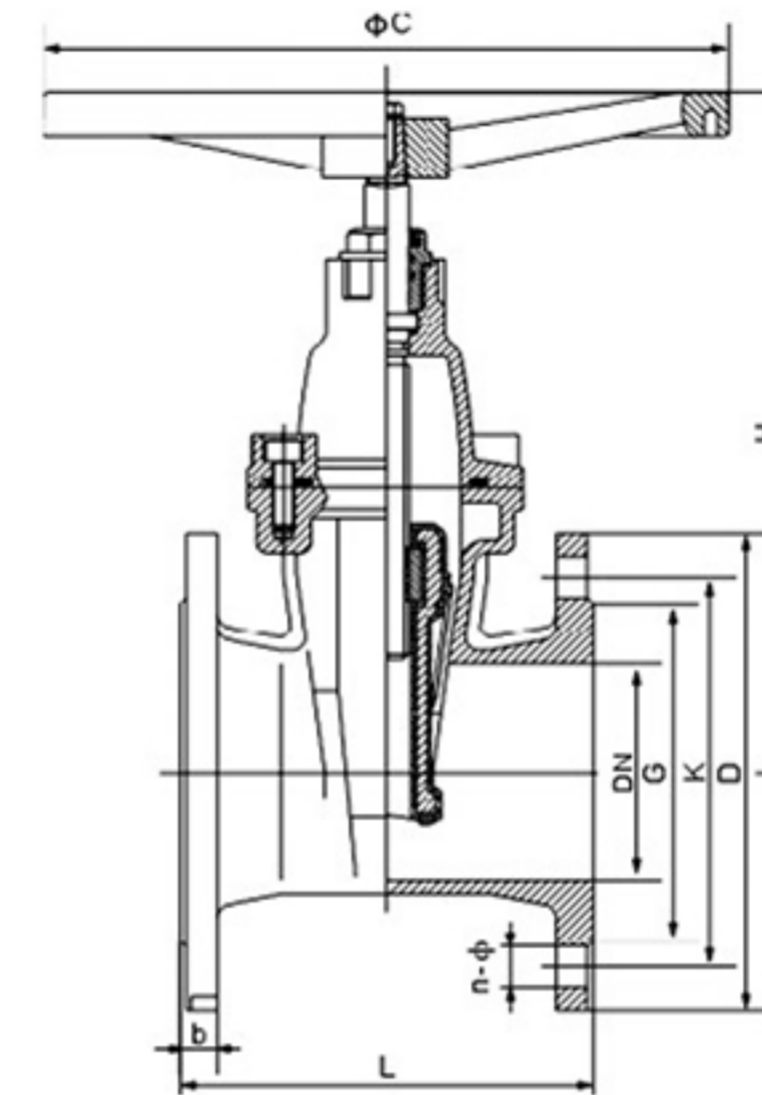
Internal and external sleeve fixed extension rod



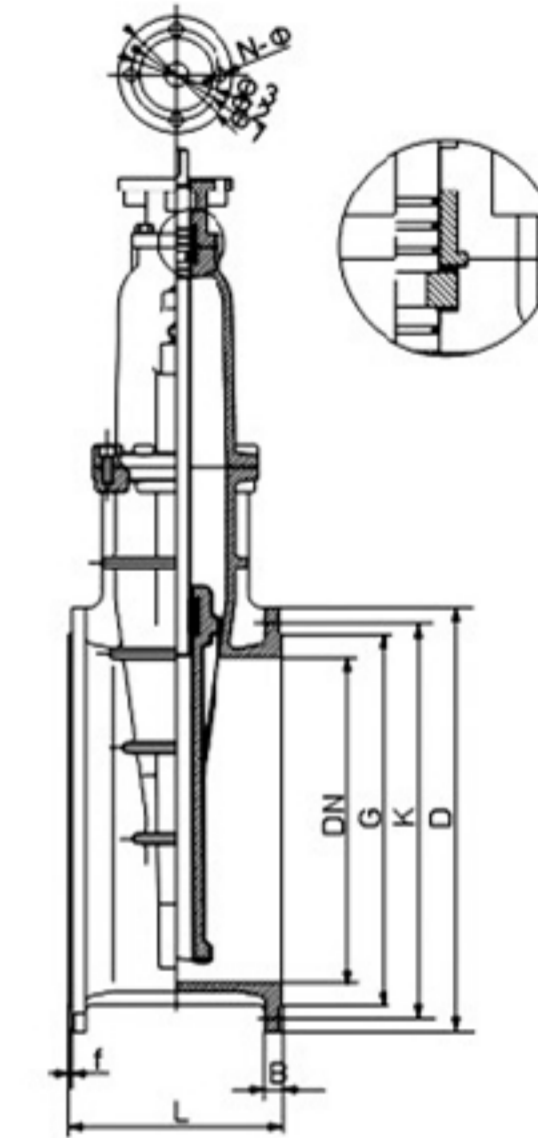
Dimensions

DIN F4/F5 BS 5163

DN50-DN300



DN350-DN1000



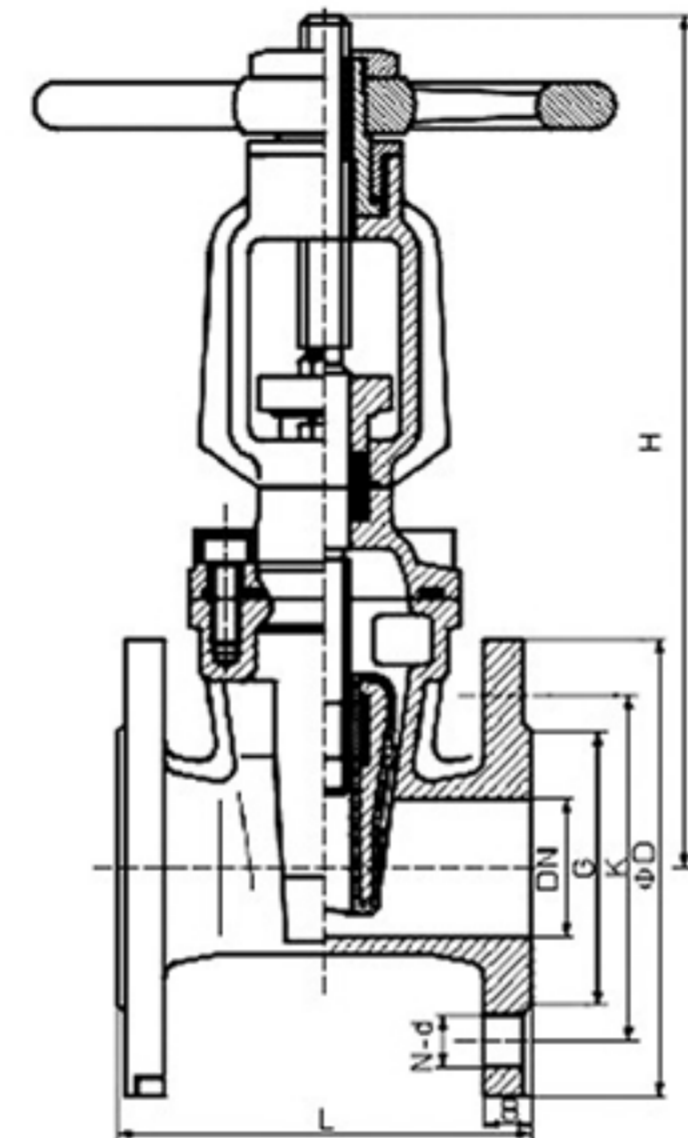
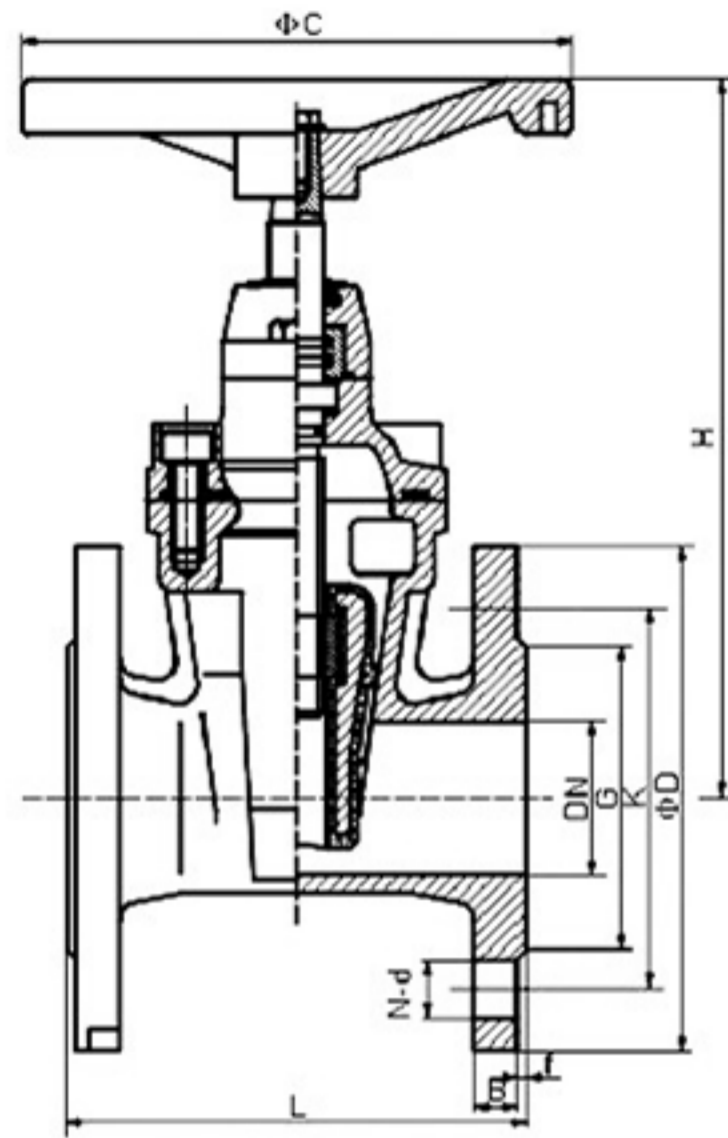
Dimensions

DN	L			D		K		G		f	n-φd		B		
	DIN		BS5163	PN10	PN16	PN10	PN16	PN10	PN16		PN10	PN16	PN10	PN16	
	F4	F5	BS												
2	50	150	250	178	165	165	125	125	99	99	3	4-19	4-19	19	19
2½	65	170	270	190	185	185	145	145	118	118	3	4-19	4-19	19	19
3	80	180	280	203	200	200	160	160	132	132	3	8-19	8-19	19	19
4	100	190	300	229	220	220	180	180	156	156	3	8-19	8-19	19	19
5	125	200	325	254	250	250	210	210	184	184	3	8-19	8-19	19	19
6	150	210	350	267	285	285	240	240	211	211	3	8-23	8-23	19	19
8	200	230	400	292	340	340	295	295	266	266	3	8-φ23	12-φ23	20	20
10	250	250	450	330	395	405	350	355	319	319	3	12-φ23	12-φ28	22	22
12	300	270	500	356	445	460	400	410	370	370	4	12-φ23	12-φ28	24.5	24.5
14	350	290	550	381	505	520	460	470	429	429	4	16-φ23	16-φ28	24.5	26.5
16	400	310	600	406	565	580	515	525	480	480	4	16-φ28	16-φ31	24.5	28
18	450	330	650	432	615	640	565	585	530	548	4	20-φ28	20-φ31	25.5	30
20	500	350	700	457	670	715	620	650	582	609	4	20-φ28	20-φ34	26.5	31.5
24	600	390	800	508	780	840	725	770	682	720	5	20-φ31	20-φ37	30	36
28	700	430	900	610	895	910	840	840	794	794	5	24-φ31	24-φ37	32.5	39.5
32	800	470	1000	660	1015	1025	950	950	901	901	5	24-φ34	24-φ41	35	43
36	900	510	1100	711	1115	1125	1050	1050	1001	1001	5	28-φ34	28-φ41	37.5	46.5
40	1000	550	1200	813	1230	1255	1160	1170	1112	1112	5	28-φ37	28-φ44	40	50

ANSI

DN50-DN300

DN50-DN300



Dimensions

Non-rising stem resilient

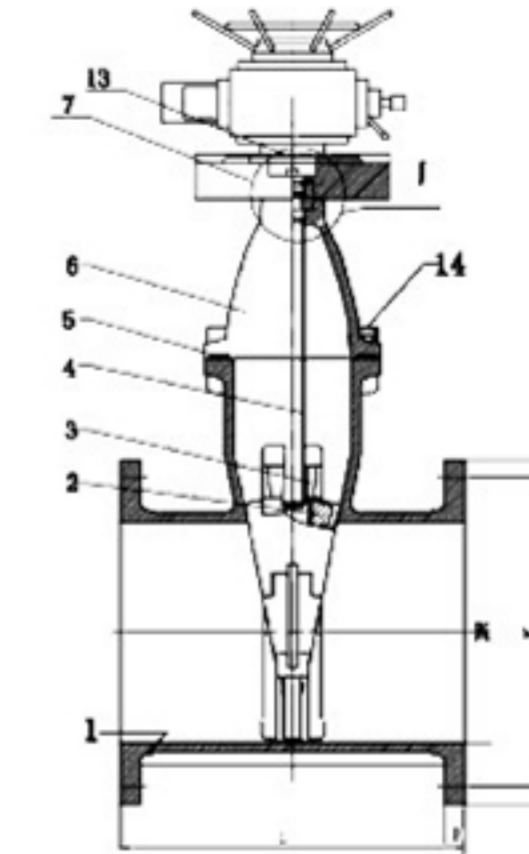
DN	L	(H)		C	D	b		f		K	G		n-d	□S
		iron handwheel	steel handwheel			125	150	125	150		125	150		
2"	178	235.5	248.5	180	152	15.9	14.3	2	120.5	92	4-Φ19	14		
2 1/2"	190	258	274	180	178	17.5	15.9	2	139.5	105	4-Φ19	14		
3"	203	288.5	301.5	200	191	19.1	17.5	2	152	127	4-Φ19	15		
4"	229	319	332	250	229	23.9	22.3	2	190.5	157	8-Φ19	15		
5"	254	360.5	377.5	280	254	23.9	22.3	2	216.5	186	8-Φ22	19		
6"	267	398	415	280	279	25.4	23.9	2	241.5	216	8-Φ22	19		
8"	292	509	533	340	343	28.6	27	2	298.5	270	8-Φ22	19		
10"	330	608	645	340	406	30.2	28.6	2	362	324	12-Φ25	24		
12"	356	683	715	400	483	31.8	30.2	2	432	381	12-Φ25	27		

Rising stem resilient

DN	L	(H)		C	D	b		f		K	G		n-d
		iron handwheel	steel handwheel			125	150	125	150		125	150	
2"	178	327	178	178	152	15.9	14.3	2	120.5	92	4-Φ19		
2 1/2"	190	368	178	178	178	17.5	15.9	2	139.5	105	4-Φ19		
3"	203	405	203	191	191	19.1	17.5	2	152.5	127	4-Φ19		
4"	229	452	254	229	229	23.9	22.3	2	190.5	157	8-Φ19		
5"	254	610	254	254	254	23.9	22.3	2	216.5	186	8-Φ22		
6"	267	615	305	279	279	25.4	23.9	2	241.5	216	8-Φ22		
8"	292	775	356	343	343	28.6	27	2	298.5	270	8-Φ22		
10"	330	900	405	406	406	30.2	28.6	2	362	324	12-Φ25		
12"	356	1008	457	483	483	31.8	30.2	2	432	381	12-Φ25		

BS Electric soft-seal gate valve

Resilient Soft Seated Gate Valve Series



Main parts and materials

No.	Parts	Material
1	Body	GGG50
2	Disc	GGG50+EPDM+NBR
3	Stem nut	Brass (HPb59-1)
4	Stem	2Cr13
5	Gasket	EPDM
6	Bonnet	GGG50

Valve design

Technical specification	
Valve design	BS 5163
Face to Face	EN558
Pressure test	EN12266
Flange Drilling	BS4504

Main external and connecting dimensions(mm)

DN	L	D		K		A	b		N-Φd		Electric Actuator Code
		PN16	PN25	PN16	PN25		PN16	PN25			
40	165	150	150	110	110	3	19	20	4-Φ19	4-Φ19	Z5
50	178	165	165	125	125	3	19	20	4-Φ19	4-Φ19	Z10
65	190	185	185	145	145	3	19	22	4-Φ19	8-Φ19	Z10
80	203	200	200	160	160	3	19	22	8-Φ19	8-Φ19	Z15
100	229	220	235	180	190	3	19	24	8-Φ19	8-Φ23	Z20
125	254	250	270	210	220	3	19	28	8-Φ19	8-Φ26	Z20
150	267	285	300	240	250	3	19	30	8-Φ23	8-Φ26	Z20
200	292	340	360	295	310	3	20	32	12-Φ23	12-Φ26	Z30
250	330	405	435	355	370	3	22	35	12-Φ28	12-Φ30	Z30
300	356	460	485	410	430	4	25	38	12-Φ28	12-Φ30	Z45/Z60
350	381	520	-	470	-	4	27	-	16-Φ28	-	Z90
400	406	580	-	525	-	4	28	-	16-Φ31	-	Z120
450	432	640	-	585	-	4	29	-	20-Φ31	-	Z120
500	457	715	-	650	-	4	32	-	20-Φ34	-	Z180
600	508	830	-	770	-	5	36	-	20-Φ37	-	Z250
700	610	910	-	840	-	5	39.5	-	24-Φ37	-	Z350
800	660	1025	-	950	-	5	43	-	24-Φ41	-	Z350
900	711	1125	-	1050	-	5	46.5	-	28-Φ41	-	Z500
1000	813	1255	-	1170	-	5	50	-	28-Φ44	-	Z800

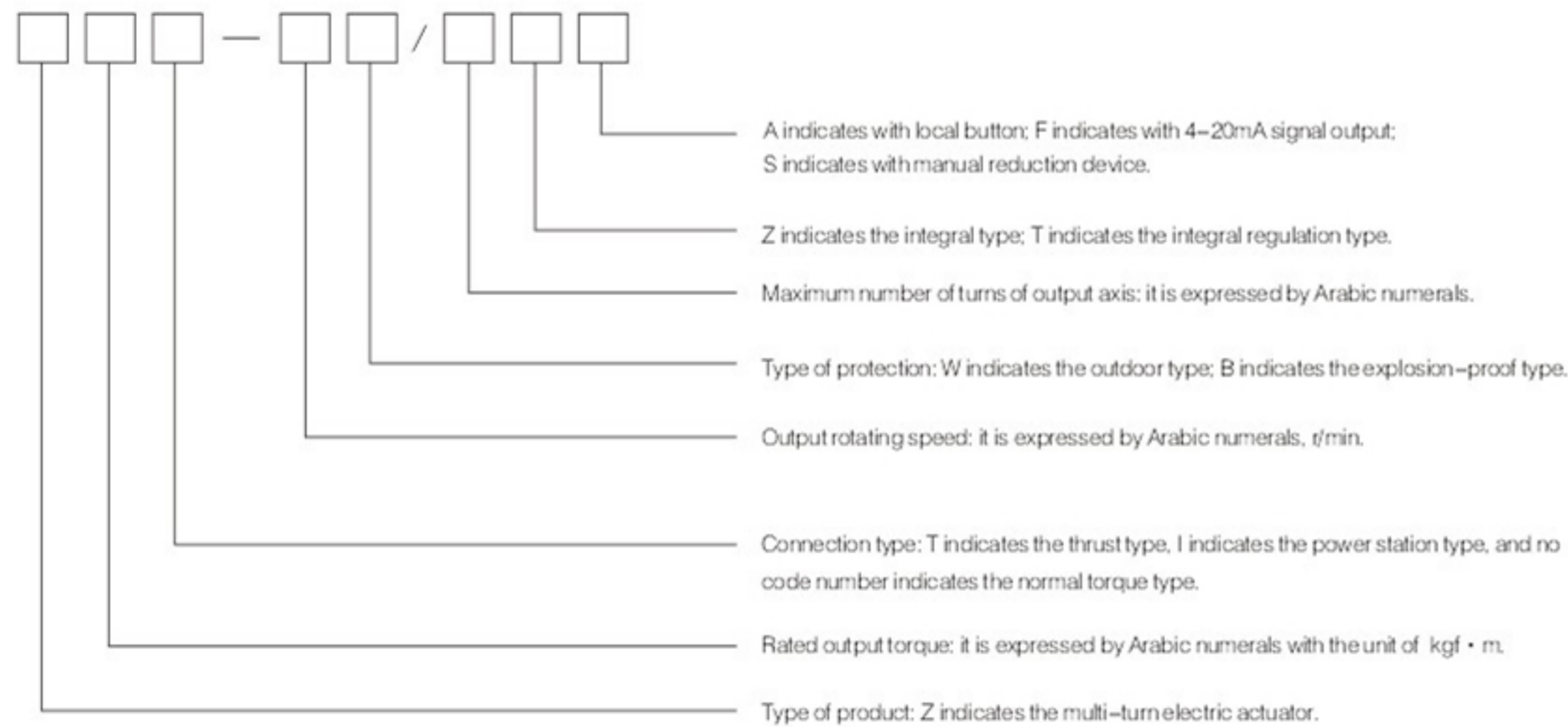
General Instruction

Multi-turn valve electric actuator, known by the name of Z-type, which is used for opening, closing or adjusting the valves, is an essential actuating device which can be used for remote control, centralized control and self control to the valves, with features of comprehensive function, reliable performance, advanced control system, small volume, light weight, convenient application and maintenance and so on. It can be applicable to the valves, whose open-close parts will move in a straight line, such as gate valve, stop valve, diaphragm valve, anchor gate, water gate valve and so on.

The actuator can be used in the industries like electric power, metallurgy, petroleum, chemical engineering, paper-making, sewage disposal and so on.

There are many types for multi-turn electric actuator: outdoor type, explosion-proof type, integral type, integral-regulation type, integral explosion proof type, integral-regulation explosion proof type and so on. It can be divided into torque type and thrust type according to the connection type.

Presentation of Model



Opening Environment and Major Technical Parameters

- 3.1 Power supply: general: single-phase 220V, three-phase 380V(50Hz), long distance DC24V Special: single-phase 110V, three-phase 415V, 660V, (50Hz,60Hz)
- 3.2 Operating environment:
 - 3.2.1 Ambient temperature: 20 ~ +60°C (special order 60 ~ +80°C)
 - 3.2.2 Relative humidity: 95% (when 25°C)
 - 3.2.3.1 The outdoor type can be used in the places without inflammable/explosive and corrosive medium;
 - 3.2.3.2 There are two types of explosion-proof products: d I can be applicable to non-excavating working area for coal mine, and d II BT4, which is applicable to the environment with IIA, IIB grade T1 ~ T4 explosive gas mixture, can be used in the factory. (For details refer to GB3836.1)
 - 3.2.4 Degree of protection: the outdoor type and explosion-proof type is IP 55, IP 65, IP 67.
- 3.3 Working time: 10 minutes for short time (special order can reach to 15-60 minutes).
- 3.4 Refer to table 1 for the model and major performance parameter.

Table 1

Model & Spec.	Torque (Nm)	Thrust (KN)	Maximum diameter of valve stem(mm)	Manual ratio	Output Rotation speed (r/min)	Motor power (KW)	Current (A)	Referential weight (kg)
Z5	50	20	28	1:1	12/36	0.12/0.18	0.57/0.83	28
Z10	100	40	28	1:1	24/36	0.25/0.37	1.03/1.38	45
Z15	150	40	28	1:1	24/36	0.37/0.55	1.38/2.2	46
Z20	200	100	40	1:1	18/36	0.37/0.75	1.38/2.62	56
Z30	300	100	40	1:1	18/36	0.55/1.1	2.2/4	58
Z45	450	150	48	1:1/20:1	24/36	1:1/1.5	4/4.12	110
Z60	600	150	48	1:1/20:1	24/36	1.5/2.2	4.12/5.25	112
Z90	900	200	60	1:1/25:1	24/36	2.2/3	5.25/7.9	140
Z120	1200	200	60	1:1/25:1	24/36	3/4	7.9/8.87	142
Z180	1800	325	70	22.5:1	18/36	4/7.5	8.87/15.6	250
Z250	2500	325	70	22.5:1	18/36	5.5/10	12.05/20.5	255
Z350	3500	700	80	20:1	18/24	7.5/10	15.6/20.5	330
Z500	5000	700	80	20:1	18/24	10/15	20.5/26.6	350

Note: If user requires, we could provide the products with other rotation speed: 12/18/24/30/36/42/48/60(r/min)
Normally, we provide the products with treble counters. If the number of turns is large, give clear indication of it when placing an order, we can provide the products with quadruple counters.

- 4. Outline and connection dimension
- 4.1 Outline and outline dimension (refer to Figure 1 and Table 2)

Table 2 Outline Dimension

Model	H	H1	L1	L2	L3	F	F1	F2	F3	F4	ΦD
Z5	271	96	158	226	249	158	259	-	310	-	316
Z10-Z30	316	130	200	238	295	200	255	317	349	374	400
Z45/Z60	415	195	277	277	394	230	275	391	369	394	460
Z90/Z120	453	195	281	281	412	278	310	426	404	429	556
Z180/Z250	585	250	320	320	474	295	360	476	455	476	320
Z350/Z500	717	280	399	399	1076	433	417	442	417	542	565

Note: 1) L1 is outdoor type/explosion-proof type; L2 is integral type/integral explosion;
2) F1 is outdoor type; F2 is explosion-proof type; F3 is integral type; F4 is integral explosion-proof type/integral regulation explosion-proof type.

