S.D.E.

Product Code : GV www.sde.com.tr

GATE VALVE GENERAL INFORMATION

It is a type of valve to be used for general purpose which consists of a long, flat or oval body, a disc inside it, a spindle and a spindle nut to operate the disc.

Gate valves are not used only for clean water but also can be used for sewage as long as materials of components are selected correctly.

Disc is drawn into the bonnet. It is an advantage that when valve is open, pipe line is fully clear without any obstacle; flow path is not interrupted. This advantage gives the possibility of "pigging" for cleaning of pipe line.

When valve is fully closed, disc sits on the seat surface completely. Bottom side of disc is narrower than top side. As a result of this feature, the contact between seat surfaces is interrupted and disc travels by sliding on body and bonnet guides while valve is opening. Seat surfaces are never in contact while valve is opening or closing. So, they are not worn or scratched due to friction; they are long lasting.

Gate valves, that have an operation system consists of spindle and nut, shall not be used for throttling purpose but can be used as isolation valve for on-off duty.

Gate valves are manufactured as rising spindle type or non-rising spindle type depending on usage area and selecting correct shaft material accordingly.

Installation Position, Valve should be installed as spindle in vertical position. For horizontal installation, valve should be equipped with guides and slippers.

Common Accessories for All Type of Gate Valves,

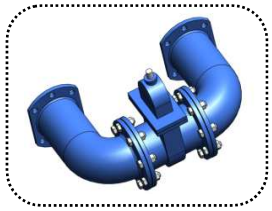
By-pass,

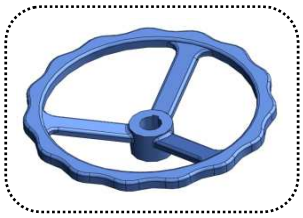
It is a "U" shaped equipment fixed on body, which connects outlet of valve to inlet from outside of main pipe line. There is a gate valve between two elbows.

In closed position of disc, by-pass valve is used to transfer the fluid from outlet side to inlet side. If chamber of pump is emptied, fluid can be transferred into the pump by opening by-pass valve.

It is difficult to open big diameter gate valves and valves under high differential pressure. Before opening main valve, by-pass valve opens; pressure difference on different faces of disc is balanced or decreased. It helps to open main valve with less torque requirement; valve opens easily without any damage on seats.

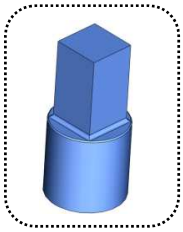
By-pass is applied for valves comply with EN558-1 S19 and S15 face-to-face standard.





Hand wheel,

It is a wheel to open and close the valve manually.



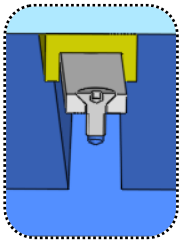
Cap-Top,

It is an accessory allows using T-key to open and close valve.

Headstock, Product Code, HS

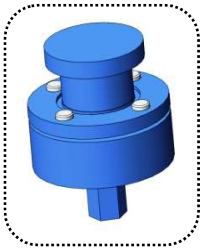
If valve is installed at first floor but operational equipments are at second floor, headstock and operational equipments are placed at second floor. Extension shafts and guide brackets are between valve and headstock. So, it is not needed to be next to valve to operate it.

Chain wheel, If valve is installed at a high point, chain wheel is more practical to use than hand wheel. Chain is used to operate the valve.



Guides and Slippers,

They are used to achieve a smoother disc travel and longer valve life. Guides on body are made of stainless steel and slippers on disc are made of bronze. Disc travels on that guide-slipper system. For horizontally installed valves, that accessory is strongly recommended.



Jacking Screw,

It is located inside the valve, at the bottom of body. It is a mechanism used to move the disc upwards if there is a sticking problem. It is applied upon request.

Bevel Gearbox (1:1 Rated), Product Code, B

This is a bevel type gearbox with 1:1 ratio and 90 degrees angle between axes of input and output gears. It can be fitted on top of gearbox of any type of valve in place of hand-wheel. While fitting, four holes on connection flange are used. So, four different positions for operation are available.

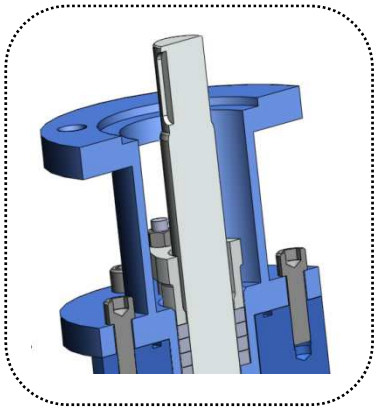
NON RISING SPINDLE GATE VALVE
with PACKING DESIGN

Threaded section of valve spindle is inside valve chamber.

When spindle is operated, spindle nut, which is located in the groove of disc, also travels on spindle. Disc is drawn into the bonnet and valve opens. To close the valve, direction of operation is changed.

Gate valve should not be used for sea water and sewage media that includes very aggressive chemicals.

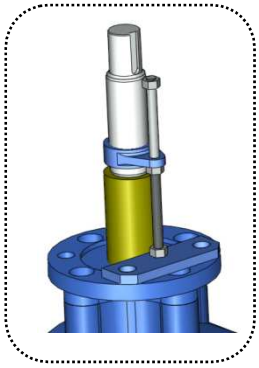
Installation Position, Valve should be installed as spindle in vertical position. For horizontal installation, valve should be equipped with guides and slippers.



Non-asbestos packing or other special items are used for shaft sealing.

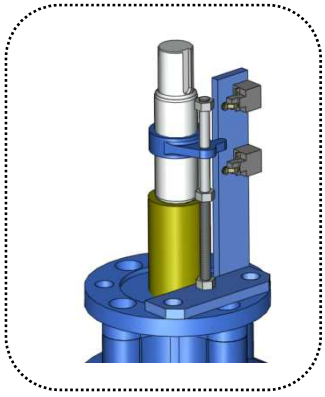
That design is applicable for all diameters and pressure ratings of gate valves.

Accessories of Non-Rising Spindle Gate Valve,



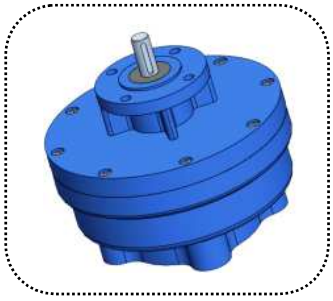
Mechanical Indicator,

It is mechanical equipment that shows position of disc of gate valve installed in pipe-line. It slides on a pin according to operation of spindle.



Indicator with Switch,

It is the same mechanical indicator which additionally has limit switches fixed on. Signals, indicating fully open and fully closed positions of valve, are sent to panel at operation room.



Planet Gearbox, Product Code, GGB-P,

It is used for operation of non-rising spindle gate valve.

Maintenance,

In case of a problem at top group sealing, more packing can be added or replaced totally even valve is installed in the pipe-line. To do this, disc is opened fully to prevent water pass through shaft hole.

If there is a gearbox mounted on valve, gears are lubricated. If valve is uninstalled, cleaning of valve is advised, only.

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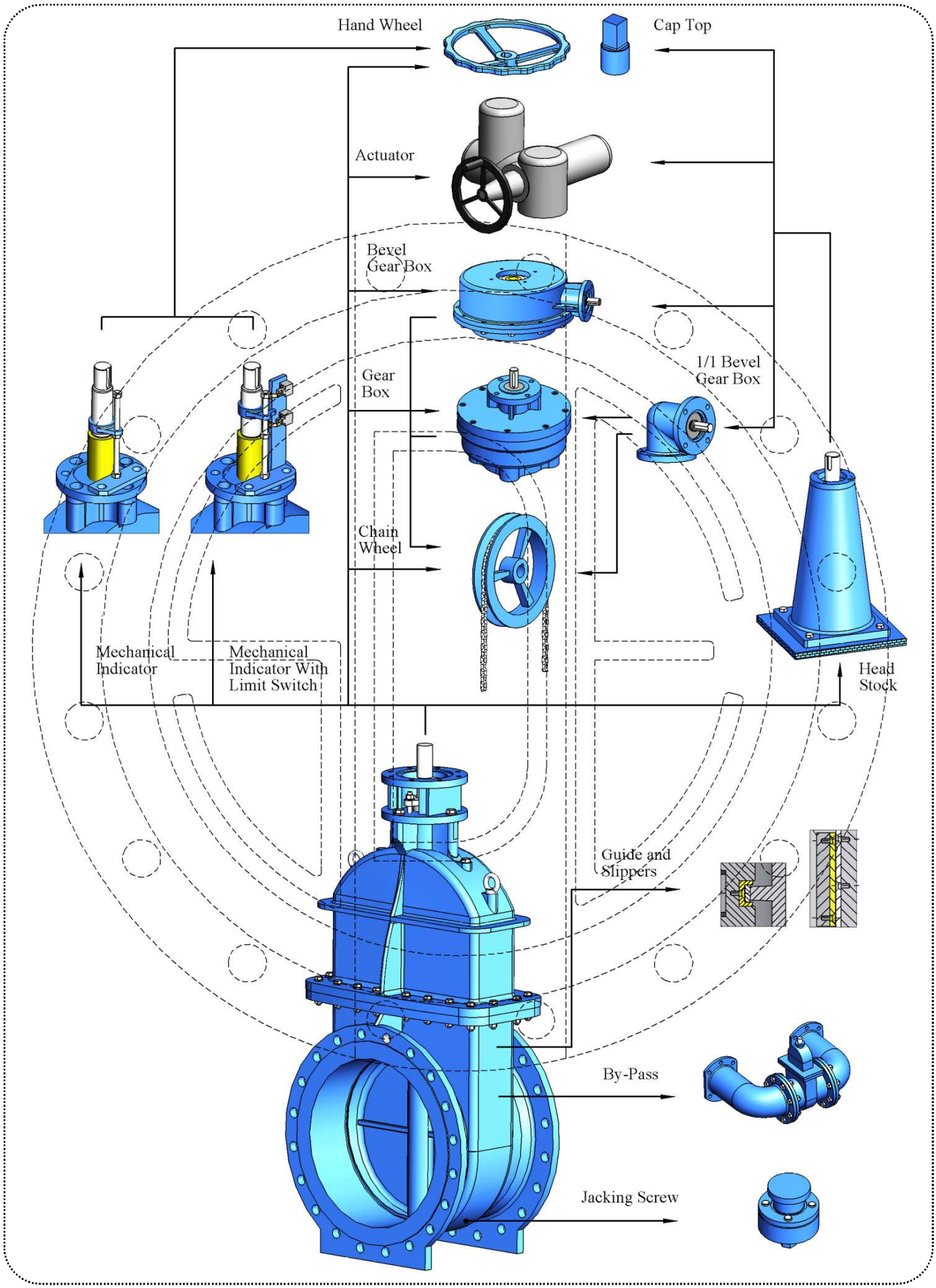
ACCESSORIES OF
NON RISING SPINDLE GATE VALVE with PACKING DESIGN



S.D.E.

Product Code : GV-NR-S

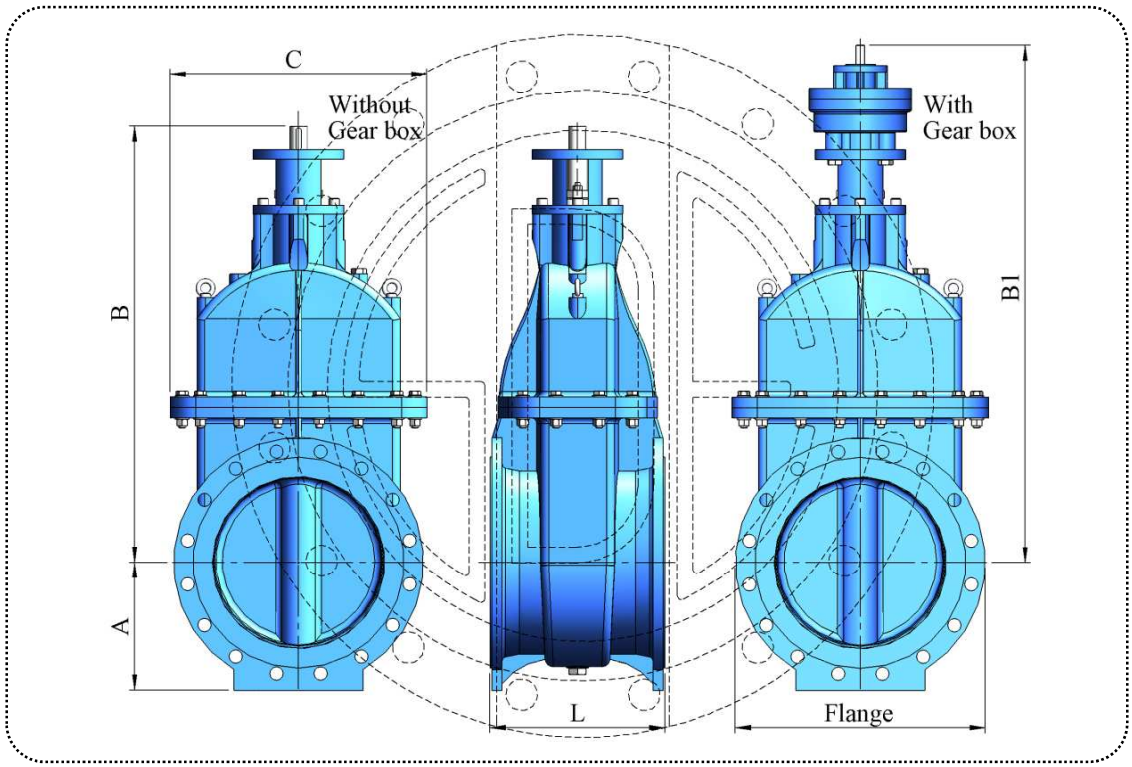
www.sde.com.tr

GATE VALVE
NON RISING SPINDLE with PACKING DESIGN PN 20

Body Length Standard : EN 558-1, S 19, By-Pass applicable.

Valve Standard : EN 1171

Maximum allowable working temperature for all types of our valves is 80 degrees Celcius.



DIMENSIONS

DN	A	B	B1	C	L	Kg			
						Bare Shaft	With Gear box		
							Ratio 1/4	Ratio 1/8	Ratio 1/16
300	248	723	873	498	502	361	414	414	428
350	283	818	1.018	572	572	451	531	531	551
400	315	910	1.110	642	610	584	705	705	736
450	340	995	1.215	696	660	690	812	812	842
500	370	1.085	1.305	760	711	845	967	967	997
550	399	1.174	1.424	821	750	1.097	1.218	1.218	1.249
600	428	1.263	1.513	883	787	1.288	1.473	1.473	1.519
650	456	1.351	1.601	944	800	1.499	1.685	1.685	1.731
700	485	1.440	1.690	1.006	810	1.644	1.829	1.829	1.876
750	515	1.530	1.800	1.070	810	1.921	2.106	2.106	2.153
800	548	1.623	1.893	1.140	810	2.194	2.479	2.479	2.550
900	598	1.793	2.063	1.247	838	2.681	2.966	2.966	3.037
1.000	665	1.980	2.250	1.391	1.000	3.465	3.750	3.750	3.821
1.050	691	2.066	2.366	1.447	1.050	4.261	4.545	4.545	4.617
1.100	718	2.153	2.453	1.503	1.100	4.914	5.353	5.353	5.462
1.200	770	2.325	2.625	1.616	1.200	5.784	6.223	6.223	6.333

S.D.E.

Product Code : GV-NR-S

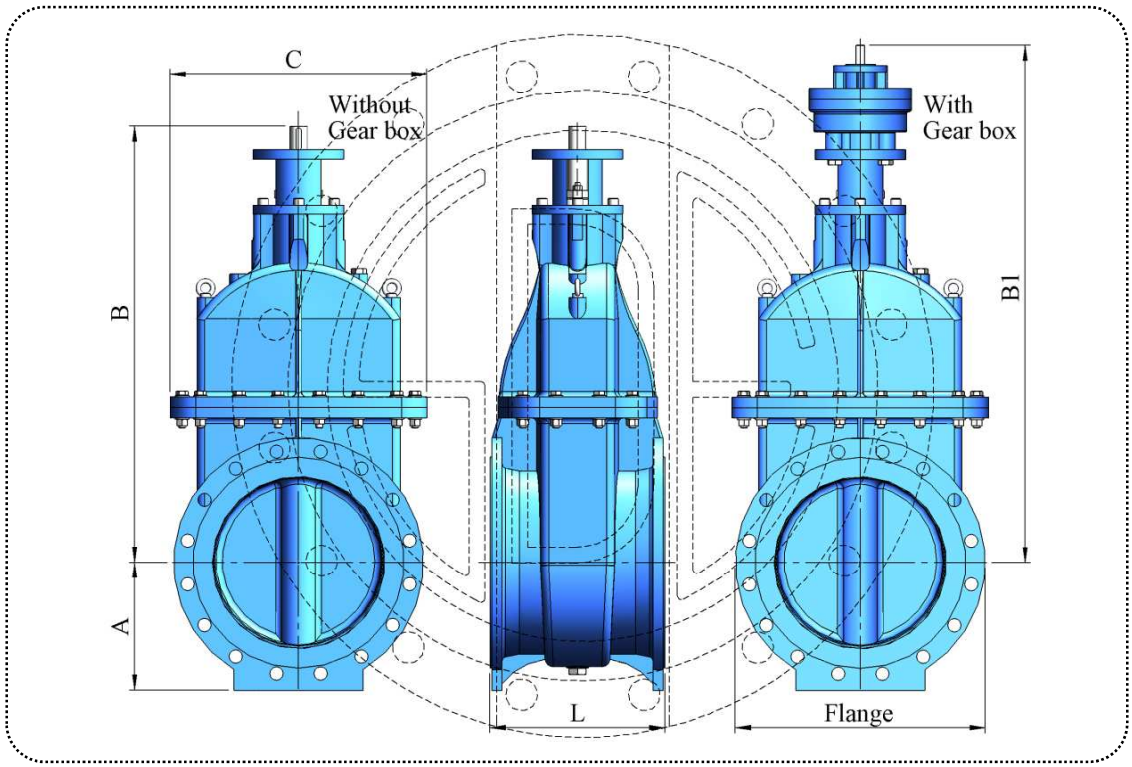
www.sde.com.tr

GATE VALVE
NON RISING SPINDLE with PACKING DESIGN PN 20

Body Length Standard : EN 558-1, S 15, By-Pass applicable.

Valve Standard : EN 1171

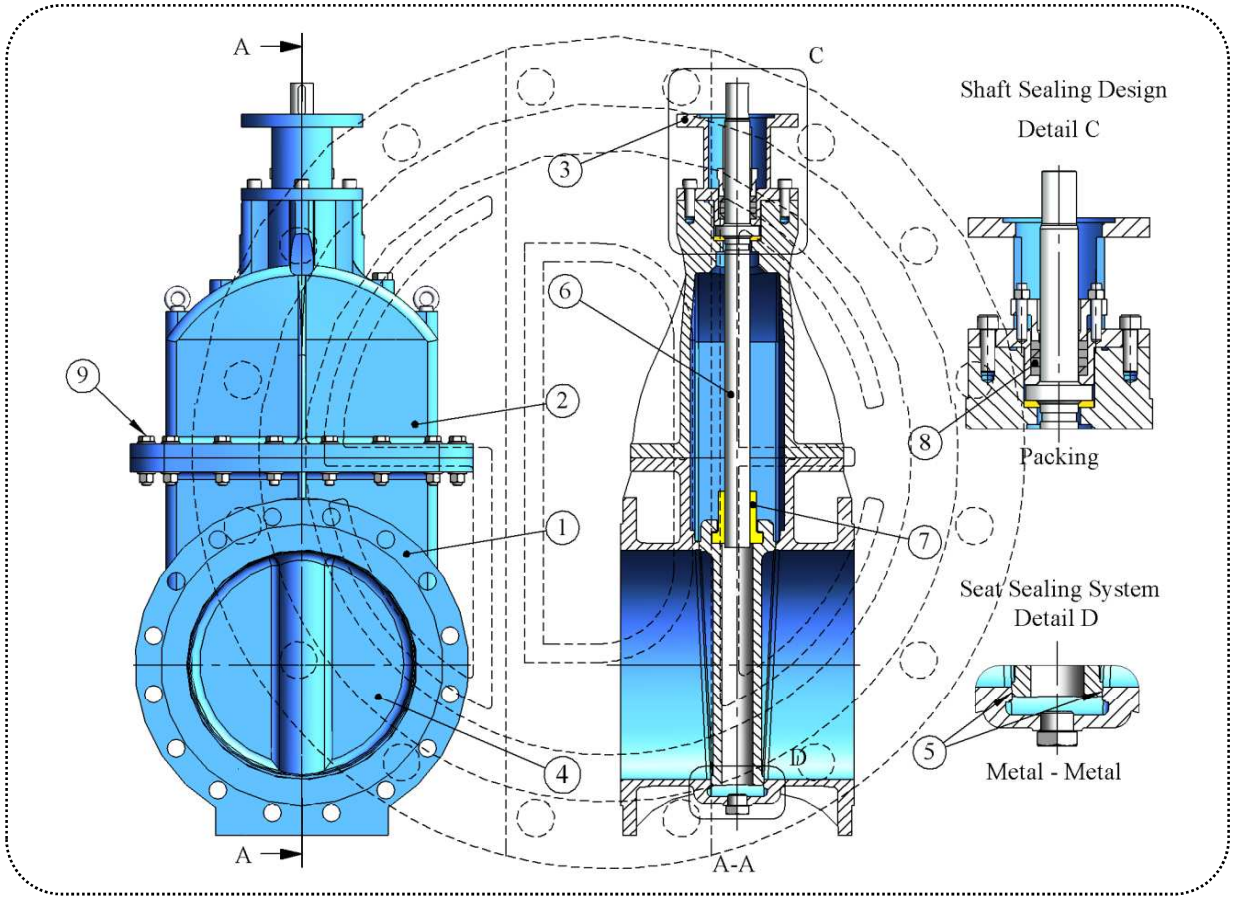
Maximum allowable working temperature for all types of our valves is 80 degrees Celcius.



DIMENSIONS

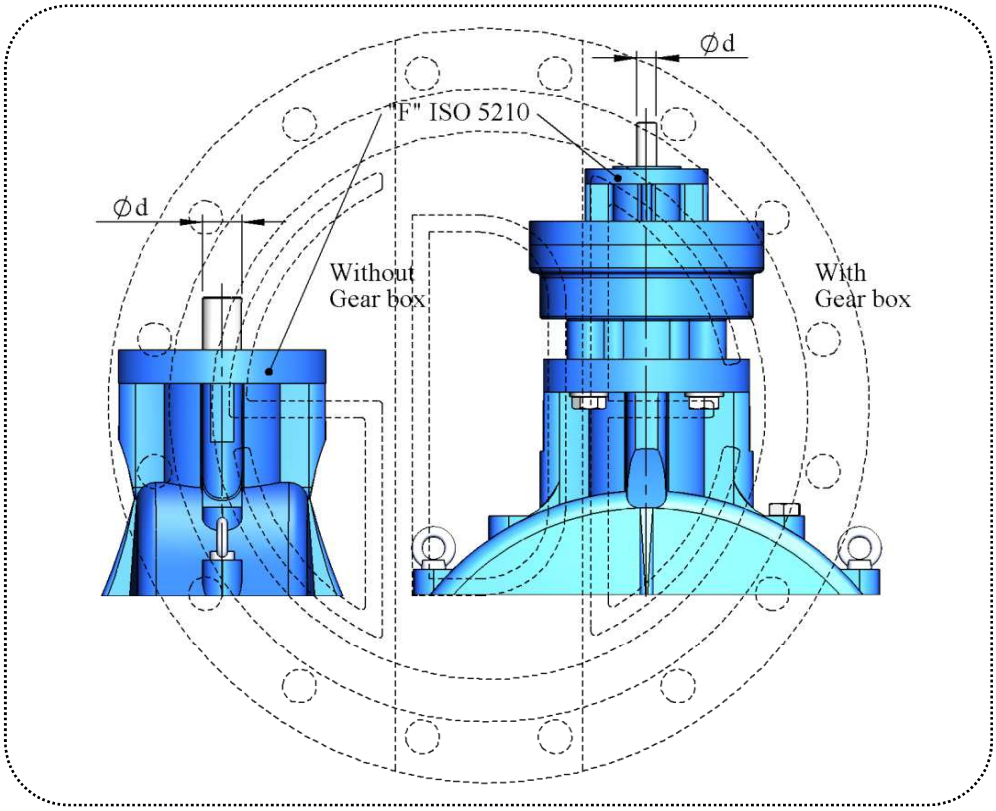
DN	A	B	B1	C	L	Kg			
						Bare Shaft	With Gear box		
							Ratio 1/4	Ratio 1/8	Ratio 1/16
300	248	723	873	498	500	360	414	414	427
350	283	818	1.018	572	550	450	530	530	550
400	315	910	1.110	642	600	579	701	701	731
450	340	995	1.215	696	650	685	807	807	837
500	370	1.085	1.305	760	700	839	960	960	991
550	399	1.174	1.424	821	750	1.097	1.218	1.218	1.249
600	428	1.263	1.513	883	800	1.298	1.483	1.483	1.530
650	456	1.351	1.601	944	850	1.542	1.728	1.728	1.774
700	485	1.440	1.690	1.006	900	1.724	1.909	1.909	1.956
750	515	1.530	1.800	1.070	950	2.059	2.244	2.244	2.290
800	548	1.623	1.893	1.140	1.000	2.402	2.686	2.686	2.758
900	598	1.793	2.063	1.247	1.100	3.000	3.284	3.284	3.356
1.000	665	1.980	2.250	1.391	1.200	3.752	4.037	4.037	4.108
1.050	691	2.066	2.366	1.447	1.250	4.581	4.865	4.865	4.937
1.100	718	2.153	2.453	1.503	1.300	5.258	5.696	5.696	5.806
1.200	770	2.325	2.625	1.616	1.400	6.186	6.625	6.625	6.734

GATE VALVE
NON RISING SPINDLE with PACKING DESIGN



No	Item Name	Material	Description	EN Standard	Material No
1-2	Body - Bonnet	GGG 40	Ductile Iron	EN-GJS-450-15	0.7040
		GGG 50		EN-GJS-500-7	0.7050
		ST 37-2	Steel Construction	EN 10025	1.0037
3	Top Thrust Cover	GGG 50	Ductile Iron	EN-GJS-500-7	0.7050
4	Disc	GGG 40	Ductile Iron	EN-GJS-450-15	0.7040
		GGG 50		EN-GJS-500-7	0.7050
		304	Stainless Steel Casting	G - X6CrNi 18-9	1.4308
		316		G - X6CrNiMo 18-10	1.4408
		CC 331G-GS	Aluminium Bronze	CuAl10Fe2-C	2.0940.01
5	Seats	CuAl8	Aluminium Bronze Welding	14640 S Cu 6100	2.0921
6	Spindle	420	Stainless Steel	X20Cr13	1.4021
		304		X5CrNi 18-10	1.4301
		316		X5CrNiMo17-12-2	1.4401
		431		X17CrNi16-2	1.4057
7	Travelling Nut	Rg 10	Bronze	-	2.1086.01
8	Shaft Sealing	Packing	Non Asbestos	-	-
9	Bolts Nuts	Galvanized	Steel	-	-
		A 2 - A 4	Stainless Steel	-	-
Coating		WRAS approved fusion bonded epoxy, 300 microns dft as standard.			
Maximum allowable working temperature for all types of our valves is 80 degrees Celcius.					

OPERATION
GATE VALVE NON RISING TYPE
PN 20



DN	Bare Shaft, Ratio 1/1				Gear Box, Ratio 1/4				Gear Box, Ratio 1/8				Gear Box, Ratio 1/16			
	F	d	Torque Nm	Number of turn	F	d	Torque Nm	Number of turn	F	d	Torque Nm	Number of turn	F	d	Torque Nm	Number of turn
300	16	40	360	27	10	20	98	106	10	20	49	213	10	20	24	426
350	16	40	550	31	14	30	149	124	14	30	75	247	10	20	37	494
400	25	50	717	35	14	30	195	141	14	30	97	282	10	20	49	563
450	25	50	905	39	14	30	246	158	14	30	123	316	10	20	62	632
500	25	50	1.240	44	14	30	337	175	14	30	168	350	10	20	84	700
550	25	50	1.649	48	14	30	448	192	14	30	224	385	10	20	112	769
600	30	60	1.960	52	16	40	533	209	14	30	266	419	14	30	133	838
650	30	60	2.505	57	16	40	681	227	14	30	340	453	14	30	170	906
700	30	60	2.899	61	16	40	788	244	14	30	394	488	14	30	197	975
750	30	60	3.609	65	16	40	981	261	14	30	490	522	14	30	245	1.044
800	35	70	4.107	70	25	50	1.116	278	16	40	558	556	14	30	279	1.112
900	35	70	5.598	78	25	50	1.521	312	16	40	761	625	14	30	380	1.250
1.000	35	70	6.892	87	25	50	1.873	347	16	40	936	694	14	30	468	1.387
1.050	35	70	8.736	91	25	50	2.374	364	16	40	1.187	728	14	30	593	1.456
1.100	40	80	9.614	95	30	60	2.613	381	25	50	1.306	762	16	40	653	1.524
1.200	40	80	11.445	104	30	60	3.110	415	25	50	1.555	831	16	40	778	1.662
1.300	40	80	15.184	112	30	60	4.126	450	25	50	2.063	900	16	40	1.032	1.799
1.400	48	90	17.530	121	35	70	4.764	484	30	60	2.382	968	25	50	1.191	1.936

S.D.E.

Product Code : GGB - P www.sde.com.tr

PLANET TYPE GEARBOX
TO BE USED FOR NON-RISING SPINDLE GATE VALVES

It is a type of gearbox which consists of a body, a cover and gears.

Valves can be operated by means of a hand-wheel which is mounted at the top of spindle.

But, direct operation is not possible for valves that require high torque values. In that case, a suitable size gearbox is mounted at the top of valve and hand-wheel is mounted on gearbox pinion.

Number of turns is increased but smaller forces are capable to operate the valve.

Other advantage of gearbox is that if actuator operation is required for a valve, smaller size and cheaper actuator can be used.

Properties of Gearbox input force required to operate the valve can easily be applied by one person.

To achieve output force, suitable gear ratio is selected.

Input and output flanges and shafts are manufactured in accordance with ISO 5210 F standards.

Thus, gearbox can be mounted to another valve with same size. Or gearbox can be removed and another brand can be mounted instead.

If required, a suitable size actuator can be fitted or existing one can be changed with another brand.

Maintenance,

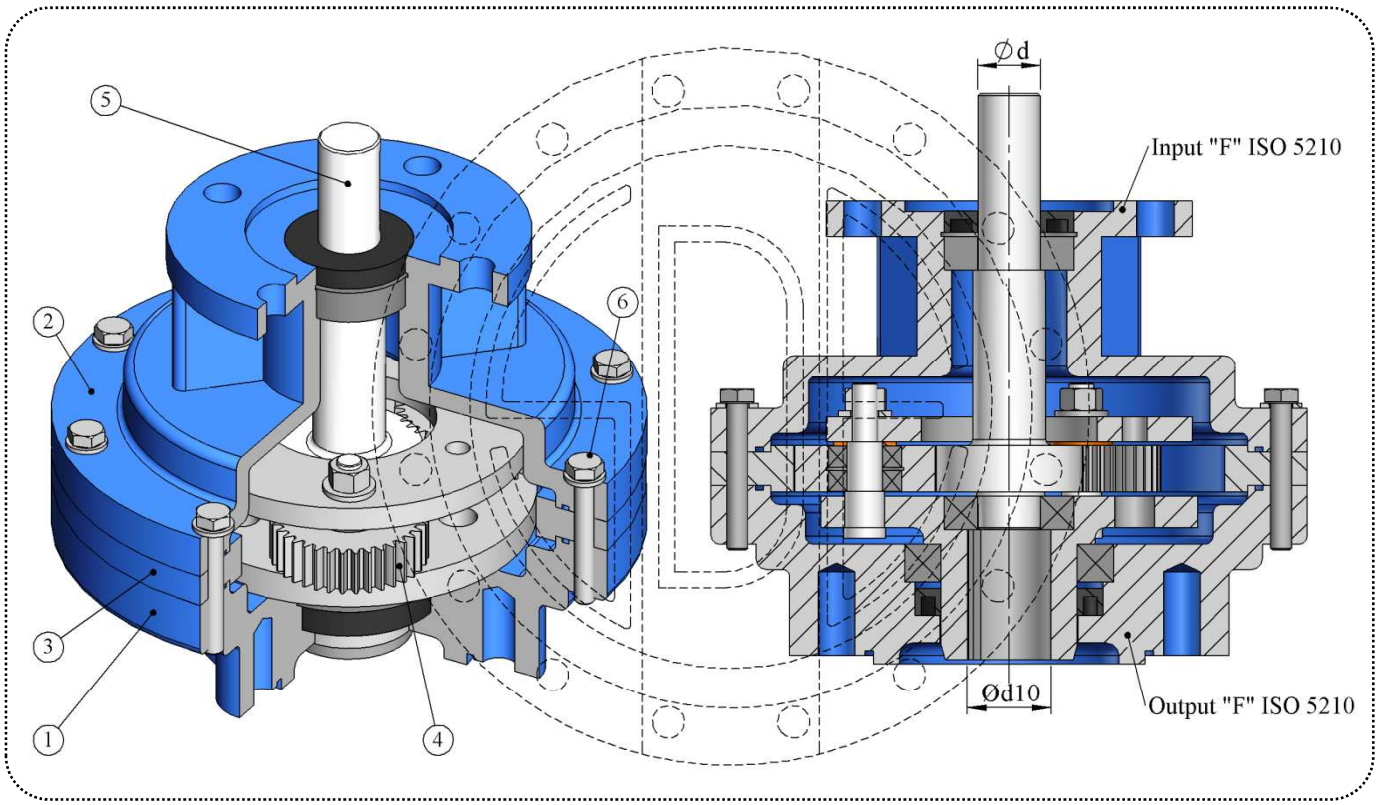
No maintenance is needed except lubricating gears.

S.D.E.

Product Code: GGB-P

www.sde.com.tr

GEARBOX, PLANET TYPE
FOR NON RISING type GATE VALE



PARTS

No	Item Name	Material	Description	EN Standard	Material No
1-2	Body - Cover	GGG 50	Ductlie Iron	EN-GJS-500-7	0.7050
3	Gear	1050	Steel	100083-3	1.1191
4	Gears	1050	Steel	100083-3	1.1191
5	Pinion Gear	420	Stainless Steel	X20Cr13	1.4021
		304		X5CrNi 18-10	1.4301
6	Bolts	Galvanized	Steel	-	-
		A 2, A 4	Stainless Steel	-	-
Coating		WRAS approved fusion bonded epoxy, 300 microns dft as standard.			
Maximum allowable working temperature for all types of our valves is 80 degrees Celcius.					

TECHNICAL INFORMATION

No	Input Ratio 1/4				Input Ratio 1/8				Input Ratio1/16				Output		
	F	d	Torque Nm	Kg	F	d	Torque Nm	Kg	F	d	Torque Nm	Kg	F	d	Torque Nm
1	10	20	68	24	10	20	34	24	10	20	17	30	10	25	250
2	10	20	136	36	10	20	68	36	10	20	34	45	12	30	500
3	10	20	272	53	10	20	136	53	10	20	68	67	14	40	1.000
4	14	30	543	80	14	30	272	80	10	20	136	100	16	40	2.000
5	14	30	1.359	121	14	30	679	121	10	20	340	152	25	50	5.000
6	16	40	2.717	185	14	30	1.359	185	14	30	679	232	30	60	10.000
7	25	50	5.435	285	16	40	2.717	285	14	30	1.359	356	35	70	20.000
8	30	60	10.870	439	25	50	5.435	439	16	40	2.717	549	40	80	40.000

S.D.E.

Product Code : GGB-B www.sde.com.tr

BEVEL GEARBOX

TO BE USED FOR RISING SPINDLE GATE VALVES

It is a type of gearbox which consists of a body, a cover and gears.

Valves can be operated by means of a hand-wheel which is mounted at the top of spindle.

But, direct operation is not possible for valves that require high torque values. In that case, a suitable size gearbox is mounted at the top of valve and hand-wheel is mounted on gearbox pinion.

Number of turns is increased but smaller forces are capable to operate the valve.

This is a bevel type gearbox where conical gears are used. The angle between these gears is 90 degrees. While fitting, according to size of gearbox, four or eight holes on connection flange are used. So, four or eight different positions for operation are available.

Other advantage of gearbox is that if actuator operation is required for a valve, smaller size and cheaper actuator can be used.

Properties of Gearbox, Input force required to operate the valve can easily be applied by one person.

To achieve output force, suitable gear ratio is selected.

Input and output flanges and shafts are manufactured in accordance with ISO 5210 F standards.

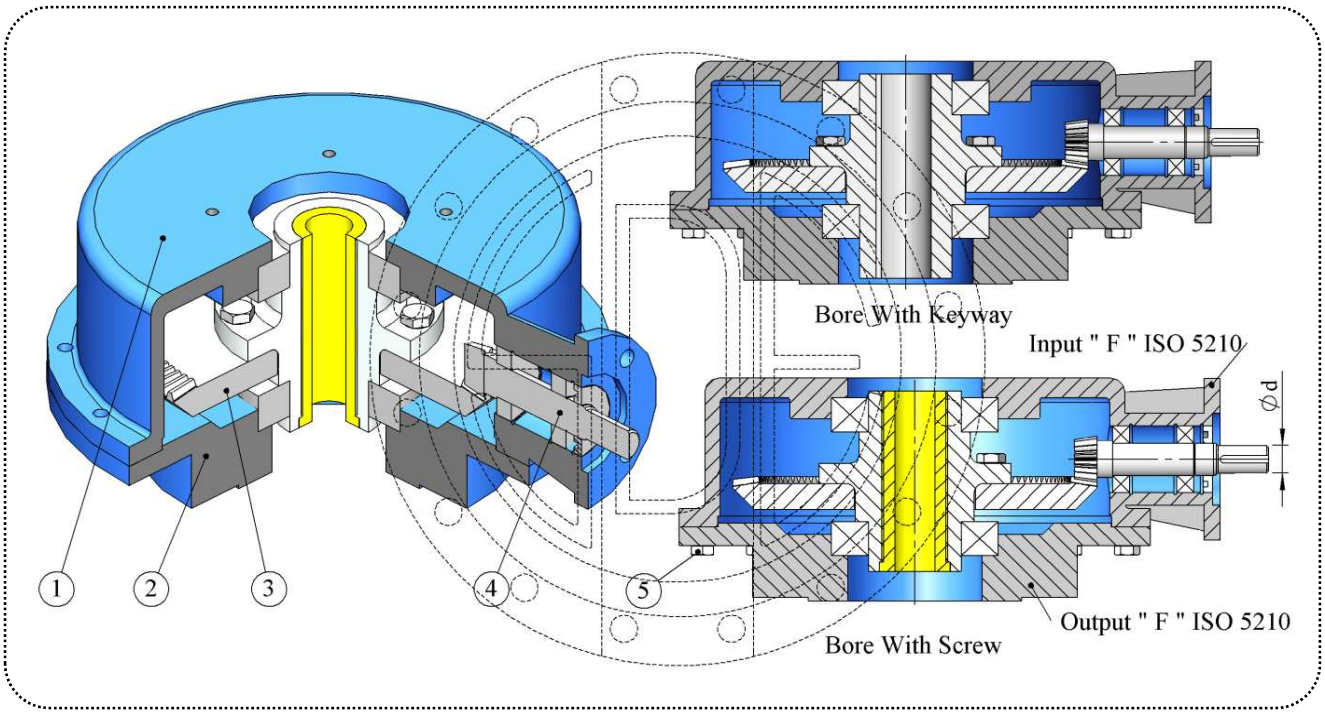
Thus, gearbox can be mounted to another valve with same size or gearbox can be removed and another brand can be mounted instead.

If required, a suitable size actuator can be fitted or existing one can be changed with another brand.

Maintenance,

No maintenance is needed except lubricating gears.

BEVEL GEARBOX
FOR RISING TYPE GATE VALVE



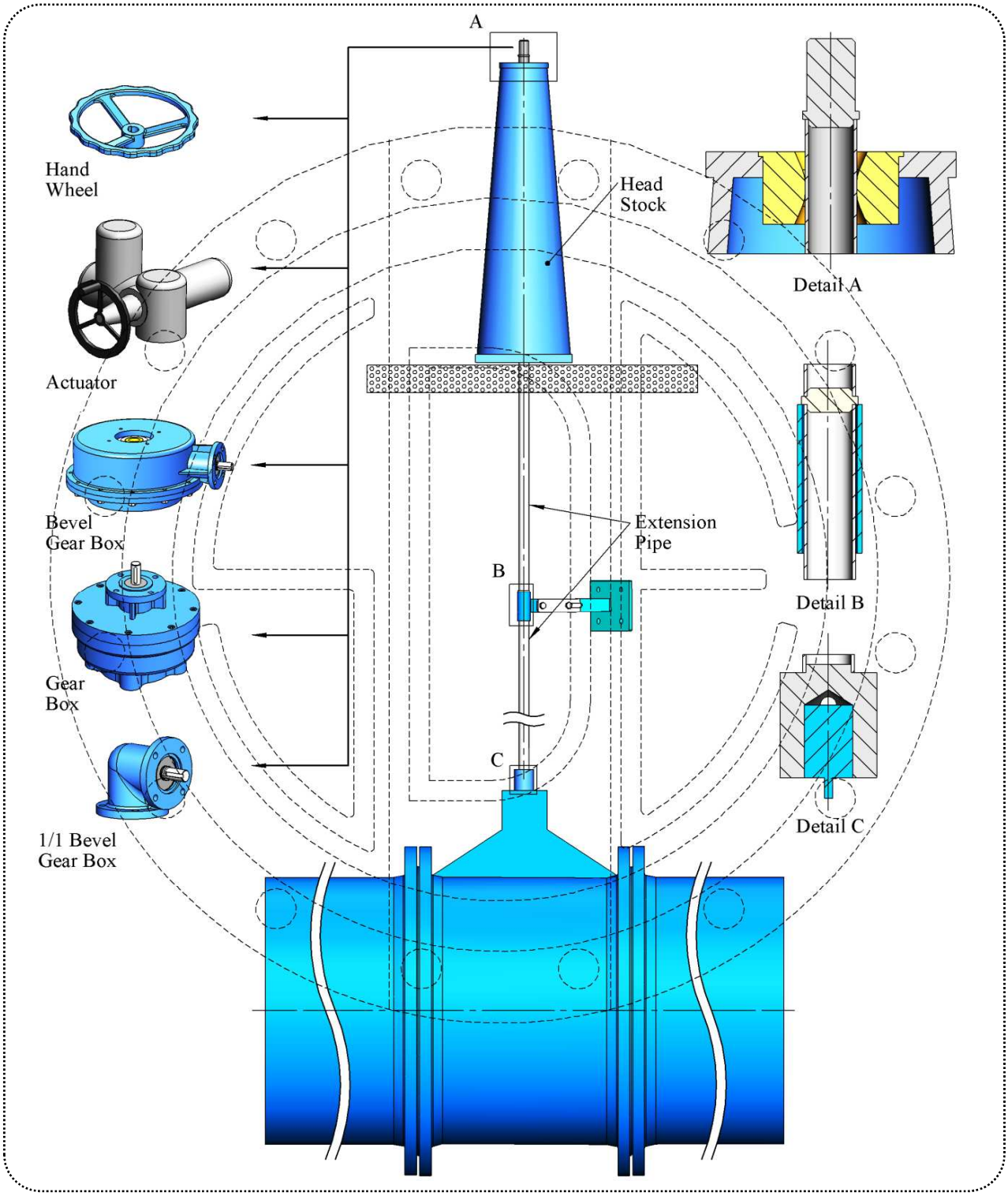
PARTS

No	Item Name	Material	Description	EN Standardı	Material No
1-2	Body - Cover	GGG 50	Ductile Iron	EN-GJS-500-7	0.7050
3	Gear	1050	Steel	100083-3	1.1191
4	Pinion Gear	420	Stainless Steel	X20Cr13	1.4021
		304		X5CrNi 18-10	1.4301
5	Bolts	Galvanized	Steel	-	-
		A 2, A 4	Stainless Steel	-	-
Coating	WRAS approved fusion bonded epoxy. 300 microns dft as standard.				
Maximum allowable working temperature for all types of our valves is 80 degrees Celcius.					

TECHNICAL INFORMATION

GGB-B No	Input 1/4				Input 1/8				Input 1/16				Output		
	F	d	Torque Nm	Kg	F	d	Torque Nm	Kg	F	d	Torque Nm	Kg	F	d	Torque Nm
1	10	20	68	34	10	20	34	34	10	20	17	43	10	25	250
2	10	20	136	59	10	20	68	59	10	20	34	73	12	30	500
3	10	20	272	102	10	20	136	102	10	20	68	128	14	40	1.000
4	14	30	543	181	14	30	272	181	10	20	136	226	16	40	2.000
5	14	30	1.359	324	14	30	679	324	10	20	340	405	25	50	5.000
6	16	40	2.717	588	14	30	1.359	588	14	30	679	735	30	60	10.000
7	25	50	5.435	1.079	16	40	2.717	1.079	14	30	1.359	1.349	35	70	20.000
8	30	60	10.870	2.003	25	50	5.435	2.003	16	40	2.717	2.504	40	80	40.000

HEADSTOCK



Headstock consists of a cast body, extension spindles and guide brackets holding the spindles.

According to usage area of valve, it can be installed at first floor but operational equipments can be at second floor.

Valve can be in a dirty or humid environment and operational equipments may not be requested to be at the same place.

For such conditions, headstock accessory can be used for any kind of valve.

Valve is located where it has to be, but operational equipments are located at a clean area.

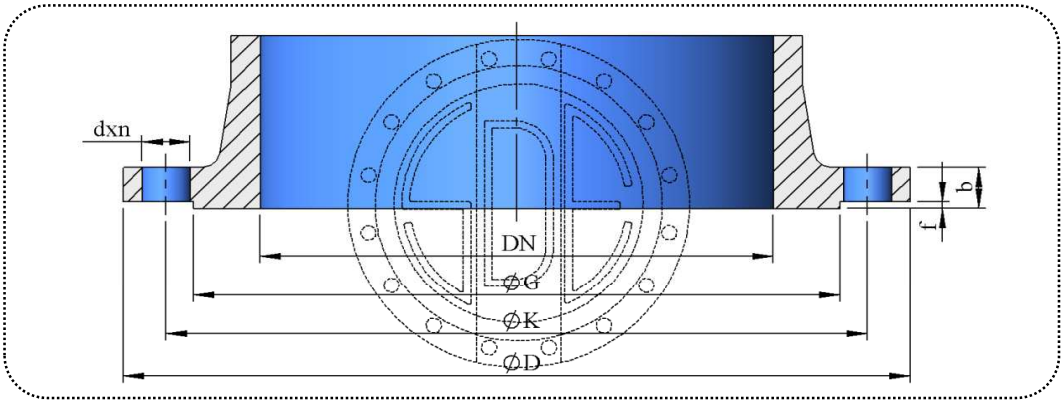
Headstock is fixed on floor by screws. Extension spindles are between valve and headstock.

If space between valve and headstock is more than 3 meters, guide brackets are used to hold spindle and eliminate oscillation.

It is advised to use one guide bracket for each 3 meters.

Upon request, extension spindles can be made of plain carbon steel or stainless steel.

FLANGE DIMENSIONS



Nominal Dia	Outside Dia	Raised Face		Flange Holes			Flange Thickness	Outside Dia	Raised Face		Flange Holes			Flange Thickness
		Dia	Height	Circle Dia.	Dia	Number			Dia	Height	Circle Dia.	Dia	Number	
DN	D	G	f	K	d	n	b	D	G	f	K	d	n	b
PN 10								PN 16						
100	220	158	3	180	19	8	19	220	158	3	180	19	8	19
125	250	188	3	210	19	8	19	250	188	3	210	19	8	19
150	285	212	3	240	23	8	19	285	212	3	240	23	8	19
200	340	268	3	295	23	8	20	340	268	3	295	23	12	20
250	395	320	3	350	23	12	22	405	320	3	355	28	12	22
300	445	370	4	400	23	12	25	460	378	4	410	28	12	25
350	505	430	4	460	23	16	25	520	438	4	470	28	16	27
400	565	482	4	515	28	16	25	580	490	4	525	31	16	28
450	615	532	4	565	28	20	26	640	550	4	585	31	20	30
500	670	585	4	620	28	20	27	715	610	4	650	34	20	32
600	780	685	5	725	31	20	30	840	725	5	770	37	20	36
700	895	800	5	840	31	24	33	910	795	5	840	37	24	40
800	1.015	905	5	950	34	24	35	1.025	900	5	950	41	24	43
900	1.115	1.005	5	1.050	34	28	38	1.125	1.000	5	1.050	41	28	47
1.000	1.230	1.110	5	1.160	37	28	40	1.255	1.115	5	1.170	44	28	50
1.200	1.455	1.330	5	1.380	41	32	45	1.485	1.330	5	1.390	50	32	57
1.400	1.675	1.535	5	1.590	44	36	46	1.685	1.530	5	1.590	50	36	59
1.500	1.785	1.640	5	1.700	44	36	48	1.820	1.640	5	1.710	57	36	63
1.600	1.915	1.760	5	1.820	50	40	49	1.930	1.750	5	1.820	57	40	65
1.800	2.115	1.950	5	2.020	50	44	52	2.130	1.950	5	2.020	57	44	69
2.000	2.325	2.150	5	2.230	50	48	55	2.345	2.150	5	2.230	62	48	73
2.200	2.550	2.370	5	2.440	57	52	59	2.555	2.360	5	2.440	62	52	80
PN 25								PN 40						
100	235	162	3	190	23	8	19	235	162	3	190	23	8	19
125	270	188	3	220	28	8	19	270	188	3	220	28	8	24
150	300	218	3	250	28	8	20	300	218	3	250	28	8	26
200	360	278	3	310	28	12	22	375	285	3	320	31	12	30
250	425	335	3	370	31	12	25	450	345	3	385	34	12	35
300	485	395	4	430	31	16	28	515	410	4	450	34	16	40
350	555	450	4	490	34	16	30	580	465	4	510	37	16	44
400	620	505	4	550	37	16	32	660	535	4	585	41	16	48
450	670	548	4	600	37	20	34	685	560	4	610	41	20	50
500	730	615	4	660	37	20	37	755	615	4	670	44	20	52
600	845	720	5	770	41	20	42	890	735	5	795	50	20	58
700	960	820	5	875	44	24	47	995	840	5	900	50	24	63
800	1.085	930	5	990	50	24	51	1.140	960	5	1.030	57	24	68
900	1.185	1.030	5	1.090	50	28	56	1.250	1.070	5	1.140	57	28	73
1.000	1.320	1.140	5	1.210	57	28	60	1.360	1.180	5	1.250	57	28	80
1.200	1.530	1.360	5	1.420	57	32	69	1.575	1.385	5	1.460	62	32	88
1.400	1.755	1.570	5	1.640	62	36	74	1.795	1.600	5	1.680	62	36	98
1.500	1.865	1.680	5	1.750	62	40	75	1.910	1.700	5	1.790	70	40	102
1.600	1.975	1.790	5	1.860	62	40	81	2.025	1.815	5	1.900	70	40	108
1.800	2.195	2.000	5	2.070	70	44	88							
2.000	2.425	2.230	5	2.300	70	48	95							