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,

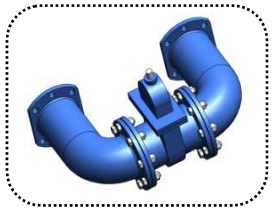
By-pass,

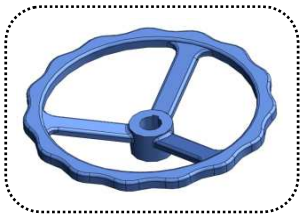
It is a "U" shaped equipment fixed on body, which connects outlet of valve to inlet from outside of main pipe line. There is a gate valve between two elbows.

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.

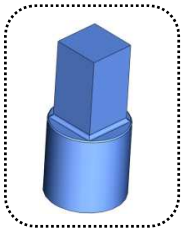
By-pass is applied for valves comply with EN558-1 S19 and S15 face-to-face standard.





Hand wheel,

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



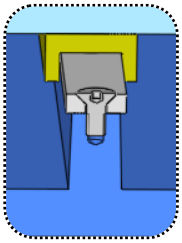
Cap-Top,

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

Headstock, Product Code, HS

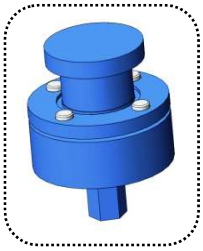
If valve is installed at first floor but operational equipments are at second floor, headstock and operational equipments are placed at second floor. Extension shafts and guide brackets are between valve and headstock. So, it is not needed to be next to valve to operate it.

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.

RISING SPINDLE GATE VALVE

At these valves, threaded section of valve spindle is outside of the valve chamber. When valve is operated, spindle does not rotate. To open and close the valve, spindle nut is rotated. Unthreaded end of spindle is fixed on disc. When spindle nut is rotated to open the valve, spindle is pulled up. Disc is also pulled up together with spindle and drawn into the bonnet and valve opens. To close the valve, spindle nut is rotated in opposite direction.

This type of valve can be used for any kind of fluid including sea water, sewage and aggressive chemicals as long as suitable spindle material is selected.

For shaft sealing, non-asbestos packing or other special items are used.

Accessories of Rising Spindle Gate Valve:

Mechanical Indicator,

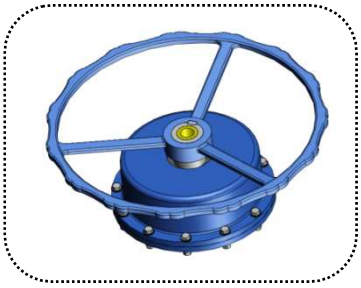
It is a mechanical equipment that shows position of disc of gate valve installed in pipe-line. It slides on a pin according to operation of spindle.

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.

Shaft Protection Tube,

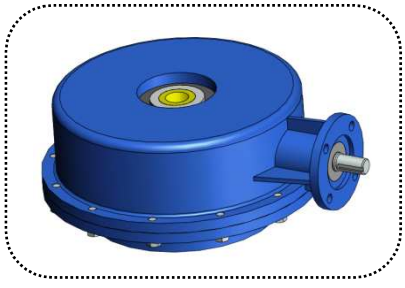
It is a pipe to protect valve shaft from any damage. Upon request, material is selected transparent to use like a mechanical indicator.



Bevel Gearbox, Product Code, GGB-B

Spindle Nut Box,

For operation of gate valves without gearbox, this accessory is used.



Installation Position,

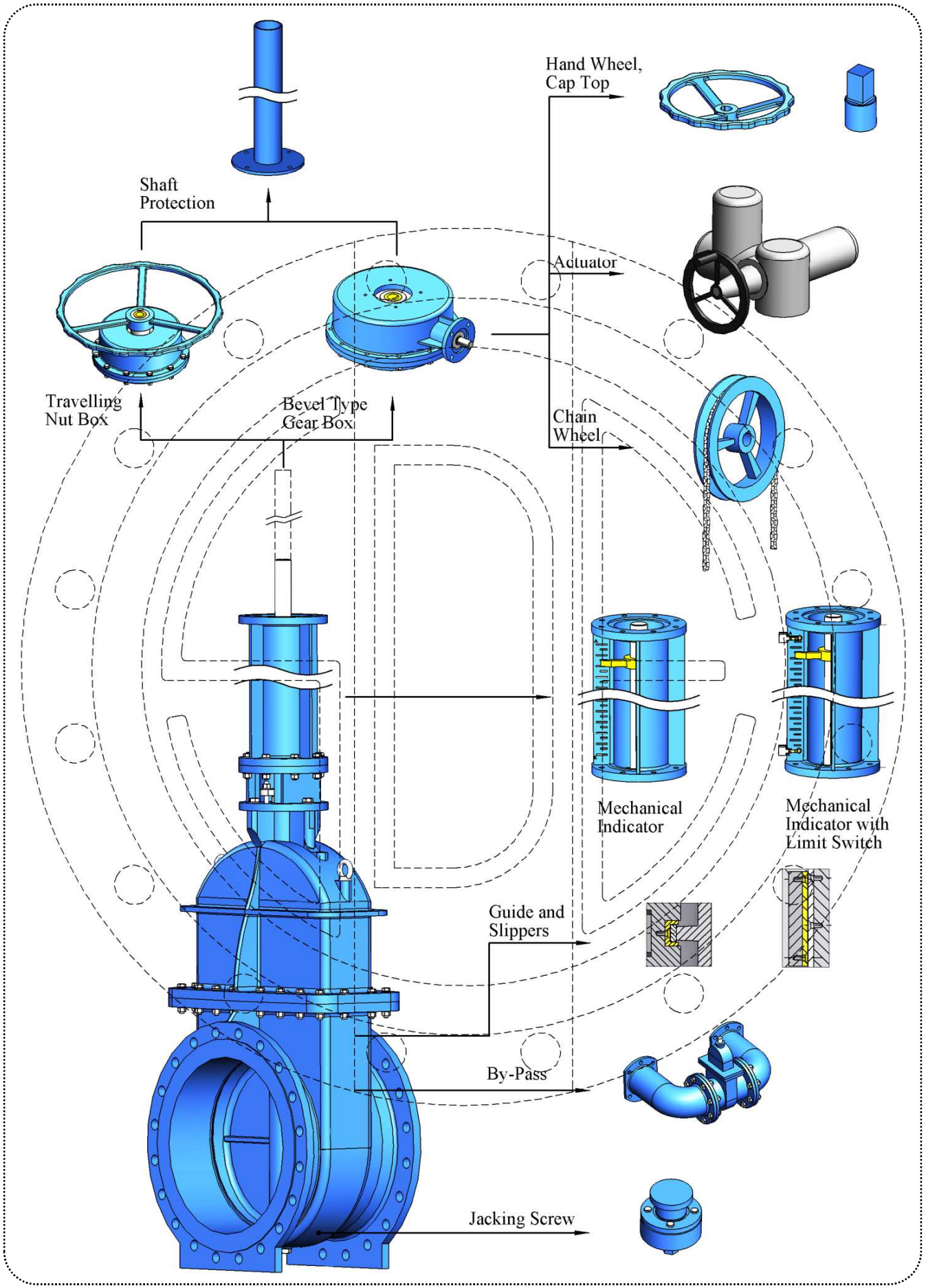
Valve should be installed as spindle in vertical position. For horizontal installation, valve should be equipped with guides and slippers.

Maintenance,

In case of a problem at shaft sealing, to add more packing or to change completely, disc is opened fully to prevent water pass through shaft hole when valve is installed in the pipe line.

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

ACCESSORIES OF RISING SPINDLE GATE VALVE



S.D.E.

Product Code : GV - R

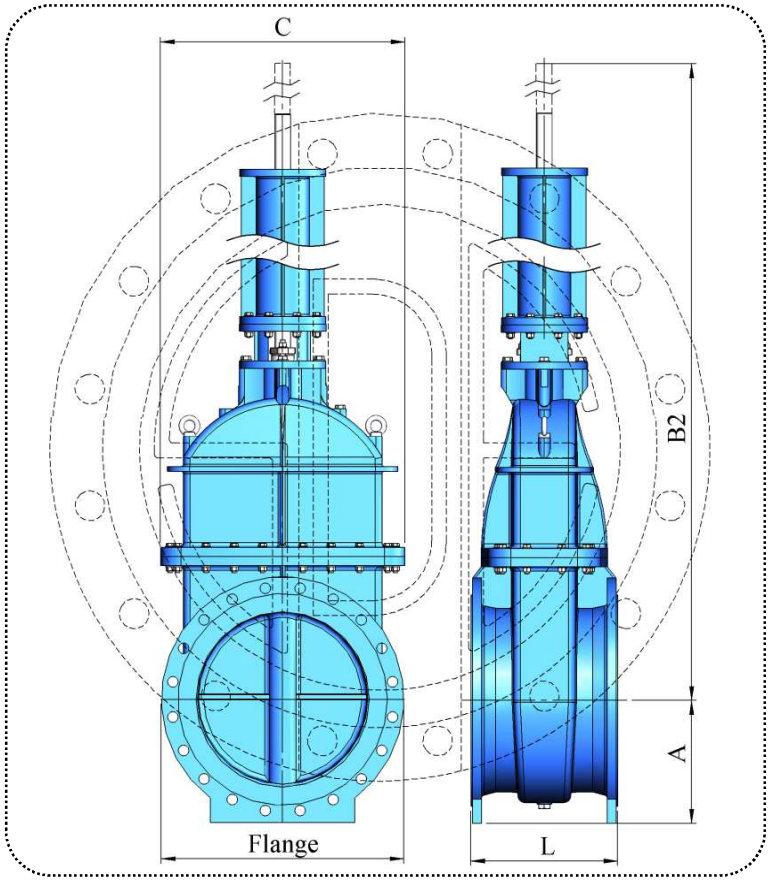
www.sde.com.tr

GATE VALVE
RISING SPINDLE PN 10

Body Length Standard : EN 558-1, S 14, By-Pass not applicable.

Valve Standard : EN 1171

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



DIMENSIONS

DN	A	B2	C	L	Kg			
					Bare Shaft	Travelling Nut	With Gear box	
						Ratio 1/1	Ratio 1/4	Ratio 1/8
300	228	1.253	455	270	256	301	315	315
350	258	1.498	519	290	324	403	427	427
400	288	1.643	583	310	401	479	503	503
450	313	1.823	637	330	482	621	663	663
500	340	1.965	696	350	588	727	769	769
550	368	2.168	754	370	758	896	938	938
600	395	2.310	813	390	901	1.149	1.225	1.225
650	424	2.454	875	410	1.080	-	1.403	1.403
700	453	2.598	936	430	1.216	-	1.540	1.540
750	488	2.788	1.011	450	1.438	-	1.762	1.762
800	513	2.928	1.065	470	1.688	-	2.276	2.276
900	563	3.208	1.172	510	2.093	-	2.681	2.681
1.000	620	3.495	1.295	550	2.584	-	3.172	3.172
1.050	648	3.698	1.355	570	3.170	-	3.757	3.757
1.100	676	3.841	1.415	590	3.615	-	4.203	4.203
1.200	733	4.128	1.535	630	4.159	-	4.746	4.746

S.D.E.

Product Code : GV-R

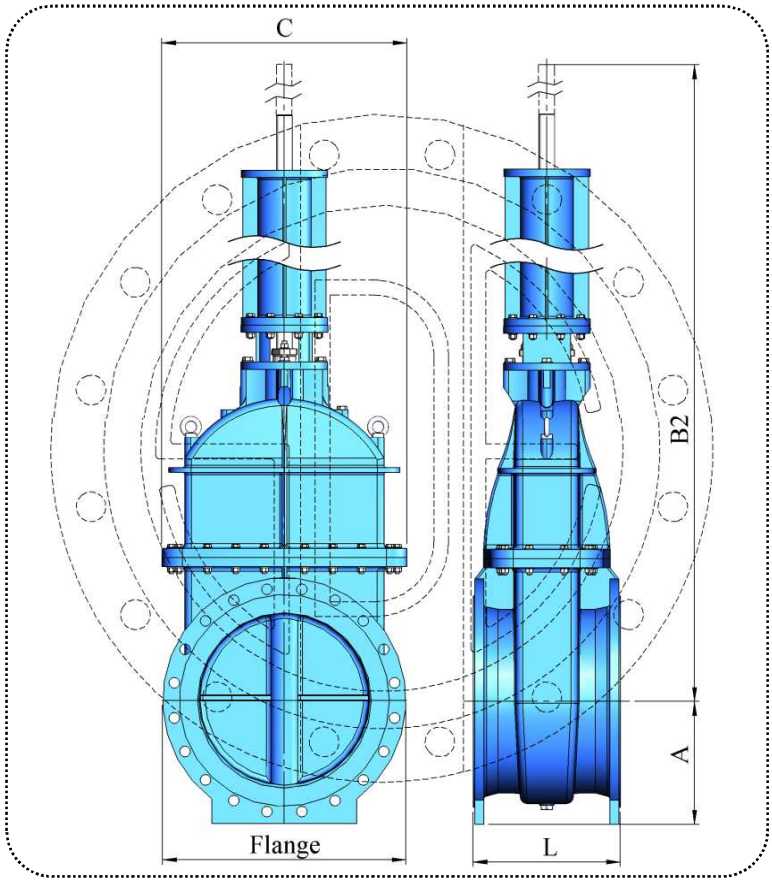
www.sde.com.tr

GATE VALVE RISING SPINDLE PN 10

Body Length Standard : EN 558-1, S 3, By-Pass applicable.

Valve Standard : EN 1171

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



DIMENSIONS

DN	A	B2	C	L	Kg				
					Bare Shaft	Travelling Nut	With Gear box		
						Ratio 1/1	Ratio 1/4	Ratio 1/8	Ratio 1/16
300	228	1.253	455	356	273	318	332	332	347
350	258	1.498	519	381	345	423	447	447	472
400	288	1.643	583	406	426	504	528	528	554
450	313	1.823	637	432	512	650	693	693	738
500	340	1.965	696	457	623	761	803	803	848
550	368	2.168	754	483	802	941	983	983	1.028
600	395	2.310	813	508	953	1.201	1.276	1.276	1.357
650	424	2.454	875	560	1.150	-	1.474	1.474	1.555
700	453	2.598	936	610	1.304	-	1.627	1.627	1.708
750	488	2.788	1.011	635	1.538	-	1.862	1.862	1.942
800	513	2.928	1.065	660	1.802	-	2.389	2.389	2.536
900	563	3.208	1.172	711	2.227	-	2.815	2.815	2.962
1.000	620	3.495	1.295	811	2.789	-	3.377	3.377	3.524
1.050	648	3.698	1.355	811	3.381	-	3.968	3.968	4.115
1.100	676	3.841	1.415	811	3.823	-	4.411	4.411	4.558
1.200	733	4.128	1.535	838	4.387	-	4.975	4.975	5.122
1.300	793	4.418	1.664	1.120	6.359	-	7.438	7.438	7.708
1.400	843	4.758	1.771	1.120	7.975	-	9.054	9.054	9.324
1.500	898	5.043	1.889	1.200	9.877	-	10.957	10.957	11.227
1.600	963	5.338	2.028	1.200	11.639	-	13.643	13.643	14.143
1.700	1.013	5.698	2.135	1.350	13.262	-	15.265	15.265	15.766
1.800	1.063	5.978	2.242	1.500	14.739	-	16.742	16.742	17.243
1.900	1.115	6.260	2.354	1.500	16.998	-	19.001	19.001	19.502
2.000	1.168	6.543	2.466	1.500	18.714	-	20.718	20.718	21.218

S.D.E.

Product Code : GV-R

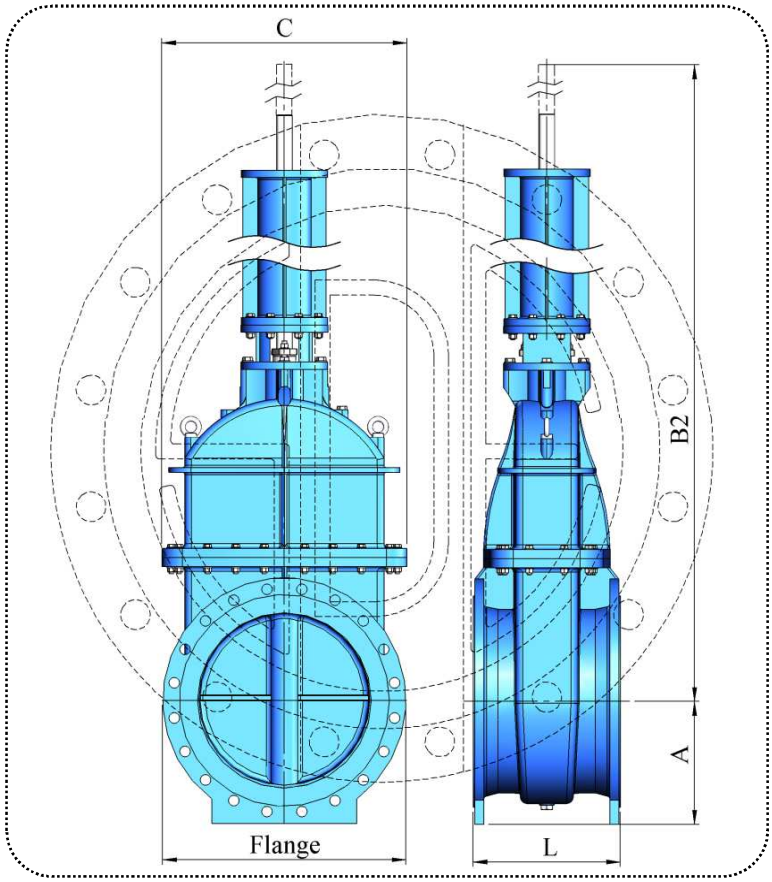
www.sde.com.tr

GATE VALVE RISING SPINDLE PN 10

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	B2	C	L	Kg				
					Bare Shaft	Travelling Nut	With Gear box		
						Ratio 1/1	Ratio 1/4	Ratio 1/8	Ratio 1/16
300	228	1.253	455	502	317	362	376	376	390
350	258	1.498	519	572	400	478	502	502	527
400	288	1.643	583	610	503	581	605	605	631
450	313	1.823	637	660	609	748	790	790	835
500	340	1.965	696	711	742	881	923	923	968
550	368	2.168	754	750	955	1.094	1.136	1.136	1.181
600	395	2.310	813	787	1.130	1.378	1.454	1.454	1.535
650	424	2.454	875	800	1.315	-	1.639	1.639	1.719
700	453	2.598	936	810	1.446	-	1.770	1.770	1.851
750	488	2.788	1.011	810	1.676	-	1.999	1.999	2.080
800	513	2.928	1.065	810	1.933	-	2.520	2.520	2.667
900	563	3.208	1.172	838	2.351	-	2.938	2.938	3.085
1.000	620	3.495	1.295	1.000	3.006	-	3.594	3.594	3.740
1.050	648	3.698	1.355	1.050	3.687	-	4.274	4.274	4.421
1.100	676	3.841	1.415	1.100	4.221	-	4.808	4.808	4.955
1.200	733	4.128	1.535	1.200	4.969	-	5.556	5.556	5.703
1.300	793	4.418	1.664	1.300	6.668	-	7.747	7.747	8.017
1.400	843	4.758	1.771	1.400	8.629	-	9.708	9.708	9.978
1.500	898	5.043	1.889	1.500	10.647	-	11.726	11.726	11.996
1.600	963	5.338	2.028	1.600	12.819	-	14.822	14.822	15.323
1.700	1.013	5.698	2.135	1.700	14.299	-	16.302	16.302	16.803
1.800	1.063	5.978	2.242	1.800	15.623	-	17.626	17.626	18.127
1.900	1.115	6.260	2.354	1.900	18.372	-	20.375	20.375	20.876
2.000	1.168	6.543	2.466	2.000	20.638	-	22.641	22.641	23.142

S.D.E.

Product Code : GV-R

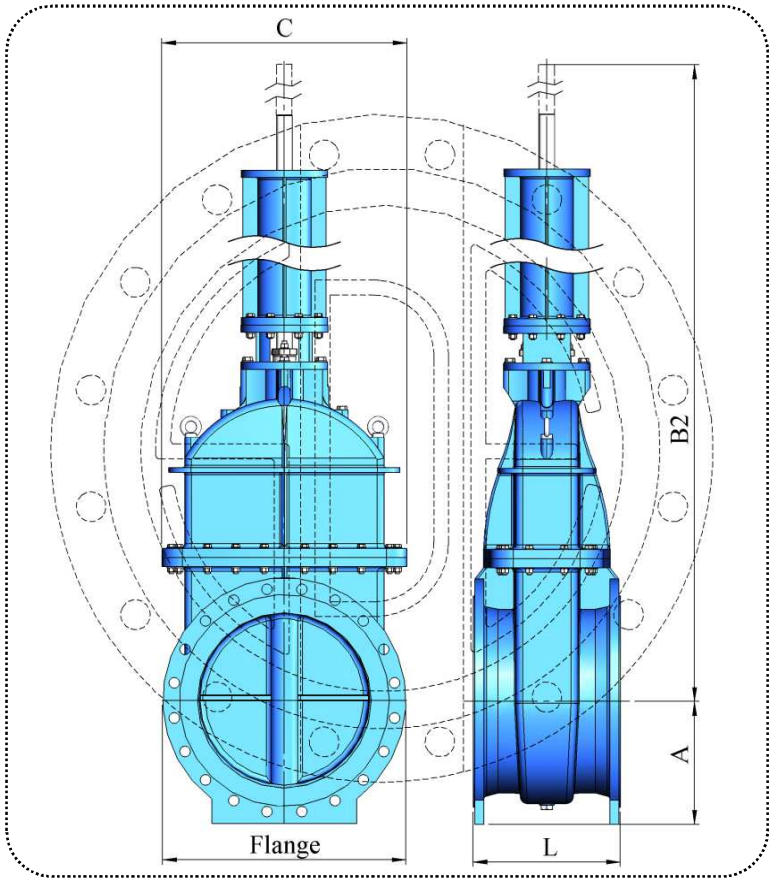
www.sde.com.tr

GATE VALVE RISING SPINDLE PN 10

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

Valve Standard : EN 1171

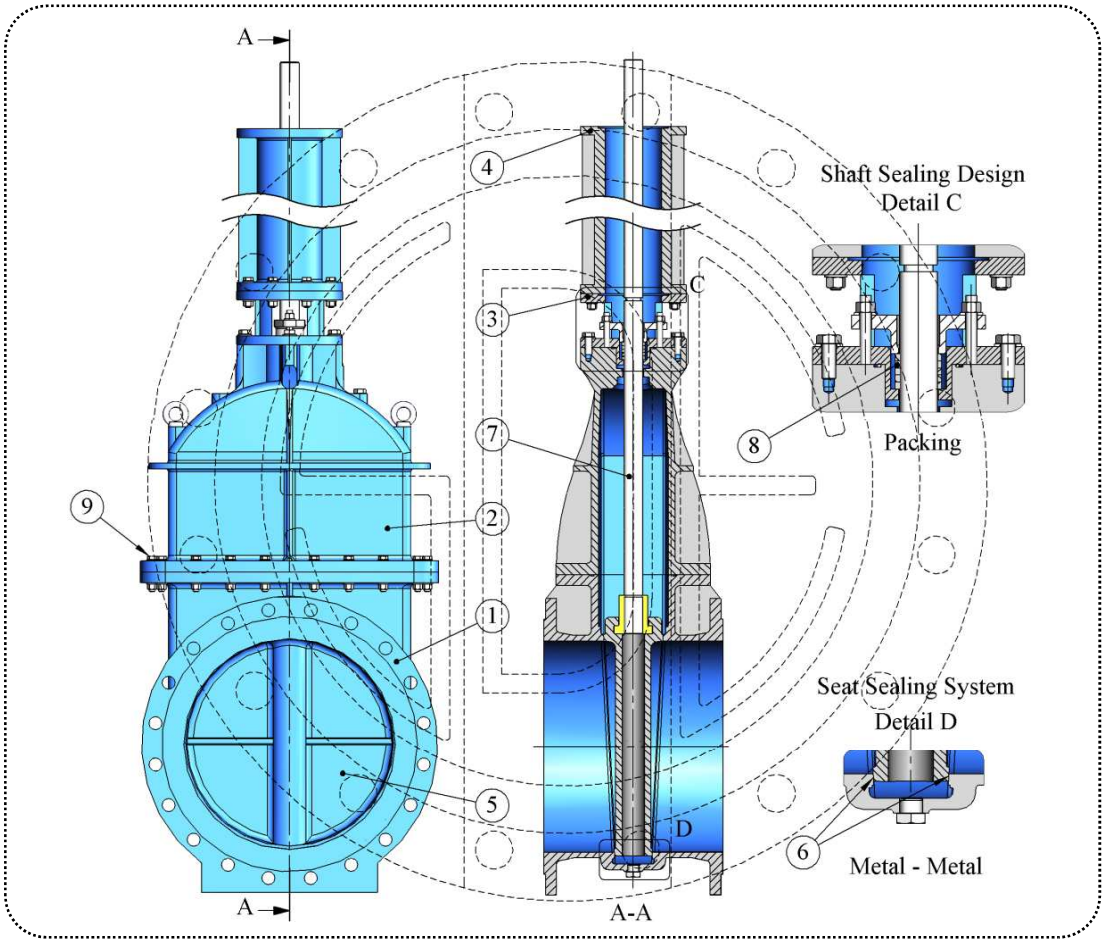
Maximum allowable working temperature for all types of our valves is 80 degrees Celcius.



DIMENSIONS

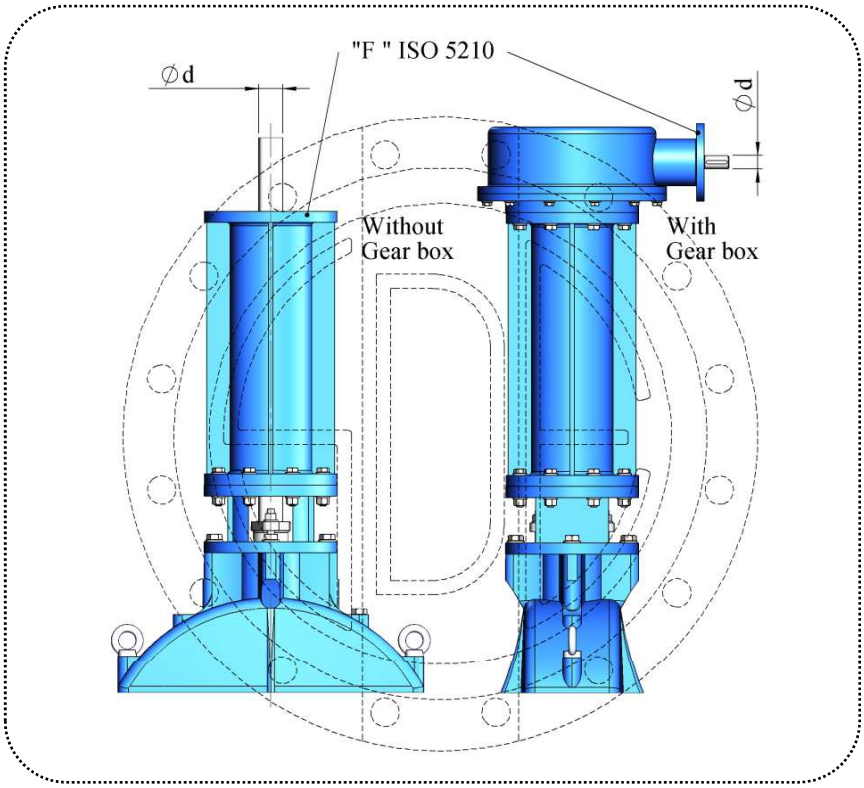
DN	A	B2	C	L	Kg				
					Bare Shaft	Travelling Nut	With Gear box		
						Ratio 1/1	Ratio 1/4	Ratio 1/8	Ratio 1/16
300	228	1.253	455	500	316	361	375	375	390
350	258	1.498	519	550	399	477	501	501	527
400	288	1.643	583	600	499	578	602	602	627
450	313	1.823	637	650	605	744	786	786	831
500	340	1.965	696	700	737	876	918	918	963
550	368	2.168	754	750	955	1.094	1.136	1.136	1.181
600	395	2.310	813	800	1.138	1.387	1.462	1.462	1.543
650	424	2.454	875	850	1.349	-	1.673	1.673	1.754
700	453	2.598	936	900	1.510	-	1.834	1.834	1.915
750	488	2.788	1.011	950	1.786	-	2.110	2.110	2.190
800	513	2.928	1.065	1.000	2.099	-	2.686	2.686	2.833
900	563	3.208	1.172	1.100	2.606	-	3.193	3.193	3.340
1.000	620	3.495	1.295	1.200	3.235	-	3.823	3.823	3.970
1.050	648	3.698	1.355	1.250	3.943	-	4.531	4.531	4.678
1.100	676	3.841	1.415	1.300	4.496	-	5.083	5.083	5.230
1.200	733	4.128	1.535	1.400	5.290	-	5.878	5.878	6.024
1.300	793	4.418	1.664	1.500	7.011	-	8.091	8.091	8.361
1.400	843	4.758	1.771	1.600	9.096	-	10.175	10.175	10.445
1.500	898	5.043	1.889	1.700	11.159	-	12.239	12.239	12.509
1.600	963	5.338	2.028	1.800	13.409	-	15.412	15.412	15.913
1.700	1.013	5.698	2.135	1.900	14.892	-	16.895	16.895	17.396
1.800	1.063	5.978	2.242	2.000	16.213	-	18.216	18.216	18.717
1.900	1.115	6.260	2.354	2.100	19.059	-	21.063	21.063	21.563
2.000	1.168	6.543	2.466	2.200	21.407	-	23.410	23.410	23.911

GATE VALVE RISING SPINDLE



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	Extension Pipe	GGG 50	Ductile Iron	EN-GJS-500-7	0.7050
5	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
6	Seats	CuAl8	Aluminium Bronze Welding	14640 S Cu 6100	2.0921
7	Spindle	420	Stainless Steel	X20Cr13	1.4021
		304		X5CrNi 18-10	1.4301
		316		X5CrNiMo17-12-2	1.4401
		431		X17CrNi16-2	1.4057
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 RISING TYPE
PN 10



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	14	30	189	27	10	20	51	106	10	20	26	213	10	20	13	426
350	16	40	288	31	10	20	78	124	10	20	39	247	10	20	20	494
400	16	40	375	35	10	20	102	141	10	20	51	282	10	20	25	563
450	16	40	471	39	14	30	128	158	14	30	64	316	10	20	32	632
500	16	40	646	44	14	30	176	175	14	30	88	350	10	20	44	700
550	16	40	861	48	14	30	234	192	14	30	117	385	10	20	59	769
600	25	50	1.022	52	14	30	278	209	14	30	139	419	10	20	69	838
650	25	50	1.308	57	14	30	355	227	14	30	178	453	10	20	89	906
700	25	50	1.511	61	14	30	410	244	14	30	205	488	10	20	103	975
750	25	50	1.886	65	14	30	513	261	14	30	256	522	10	20	128	1.044
800	30	60	2.147	70	16	40	583	278	14	30	292	556	14	30	146	1.112
900	30	60	2.926	78	16	40	795	312	14	30	398	625	14	30	199	1.250
1.000	30	60	3.591	87	16	40	976	347	14	30	488	694	14	30	244	1.387
1.050	30	60	4.587	91	16	40	1.246	364	14	30	623	728	14	30	312	1.456
1.100	30	60	5.056	95	16	40	1.374	381	14	30	687	762	14	30	343	1.524
1.200	30	60	6.014	104	16	40	1.634	415	14	30	817	831	14	30	409	1.662
1.300	35	70	8.038	112	25	50	2.184	450	16	40	1.092	900	14	30	546	1.799
1.400	35	70	9.262	121	25	50	2.517	484	16	40	1.258	968	14	30	629	1.936
1.500	35	70	11.950	130	25	50	3.247	518	16	40	1.624	1.037	14	30	812	2.074
1.600	40	80	13.690	138	30	60	3.720	553	25	50	1.860	1.106	16	40	930	2.211
1.700	40	80	15.470	147	30	60	4.204	587	25	50	2.102	1.174	16	40	1.051	2.348
1.800	40	80	17.318	155	30	60	4.706	621	25	50	2.353	1.243	16	40	1.176	2.486
1.900	40	80	23.235	164	30	60	6.314	656	25	50	3.157	1.312	16	40	1.578	2.623
2.000	40	80	25.644	173	30	60	6.968	690	25	50	3.484	1.380	16	40	1.742	2.760

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,

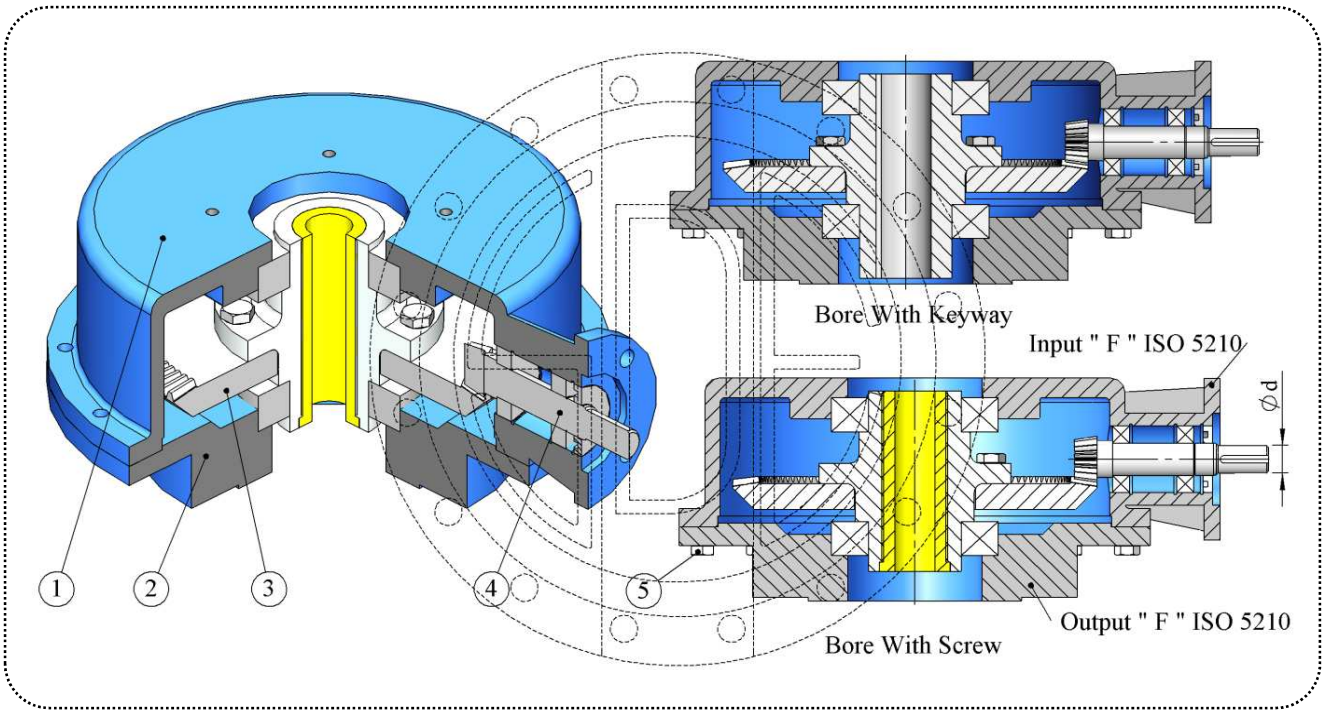
No maintenance is needed except lubricating gears.

S.D.E.

Product Code : GGB-B

www.sde.com.tr

BEVEL GEARBOX
FOR RISING TYPE GATE VALVE



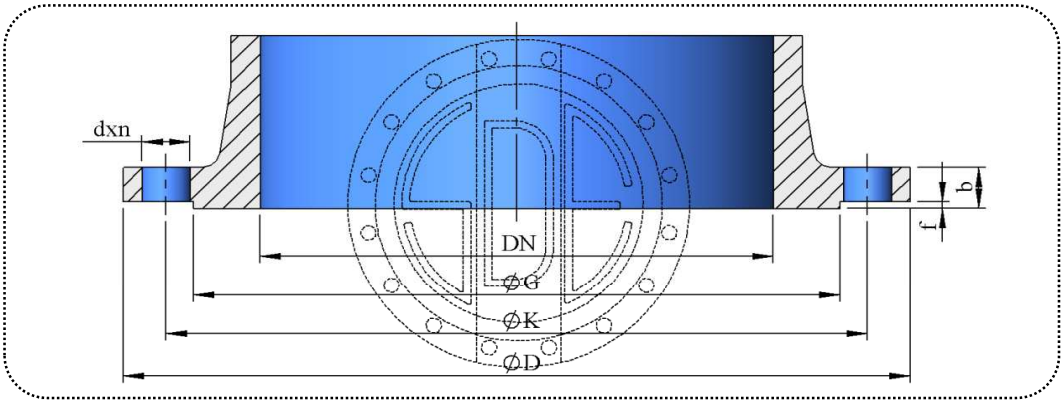
PARTS

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

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							