Trust
Valves and Flow Control Specialist

FIRSAGROUP

CATALOGUE 2012 - PART 2
WATER TREATMENT

BUTTERFLY VALVES – API 609
WAFER – LUG – U-SECTION BODY STYLE

DIAPHRAGM VALVES EN13397:2000
WEIR BODY STYLE

DIAPHRAGM VALVES EN13397:2000 STRAIGHT-THROUGH BODY STYLE

PNEUMATIC ACTUATOR
RACK & PINION TYPE

LIMIT SWITCH BOX – SOLENOID VALVES POSITIONERS

CAST IRON VALVES – GATE, GLOBE & CHECK

WAFER CHECK VALVES

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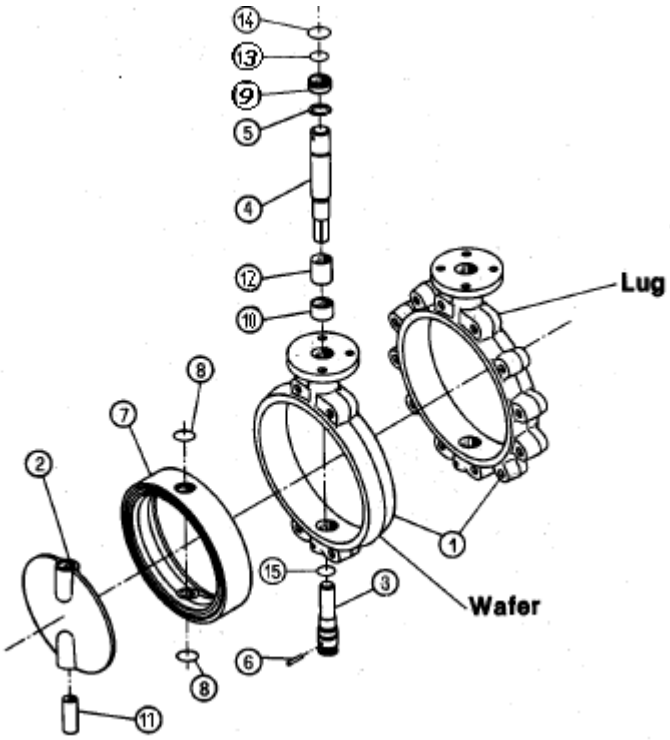
BUTTERFLY VALVES – API 609
WAFER – LUG – U-SECTION BODY STYLE



No.	Part.
1	Body
2	Disc
3	Lower stem
4	Upper stem
5	Retainer pin
6	Spring pin
7	Seat
8	O-Ring
9	Bushing
10	Bushing
11	Bushing
12	Spacer
13	O-Ring
14	O-Ring
15	O-Ring

Standard Materials	
Body	Ductile iron GGG40.3 – Carbon steel A216 WCB – Stainless Steel A351 CF8M – Br.Al.
Disc	Ductile iron GGG40.3 – Stainless Steel CF8M – Br.Al
Seat	BUNA – EPDM – EPDM HT - Viton® - Silicone – Hypalon – Gomma nat. - Neoprene
Up-shaft	AISI 420 – AISI 316
Stem "Chevron" seat	BUNA
Anti blow-out	Alluminium
Bushing	Nylon-6 (DN 50÷500) – Bronze (DN 600÷1200)
Screw	Stainless steel
Lower shaft	AISI 420 – AISI 316
Plug	Alluminium
Other materials available on request.	

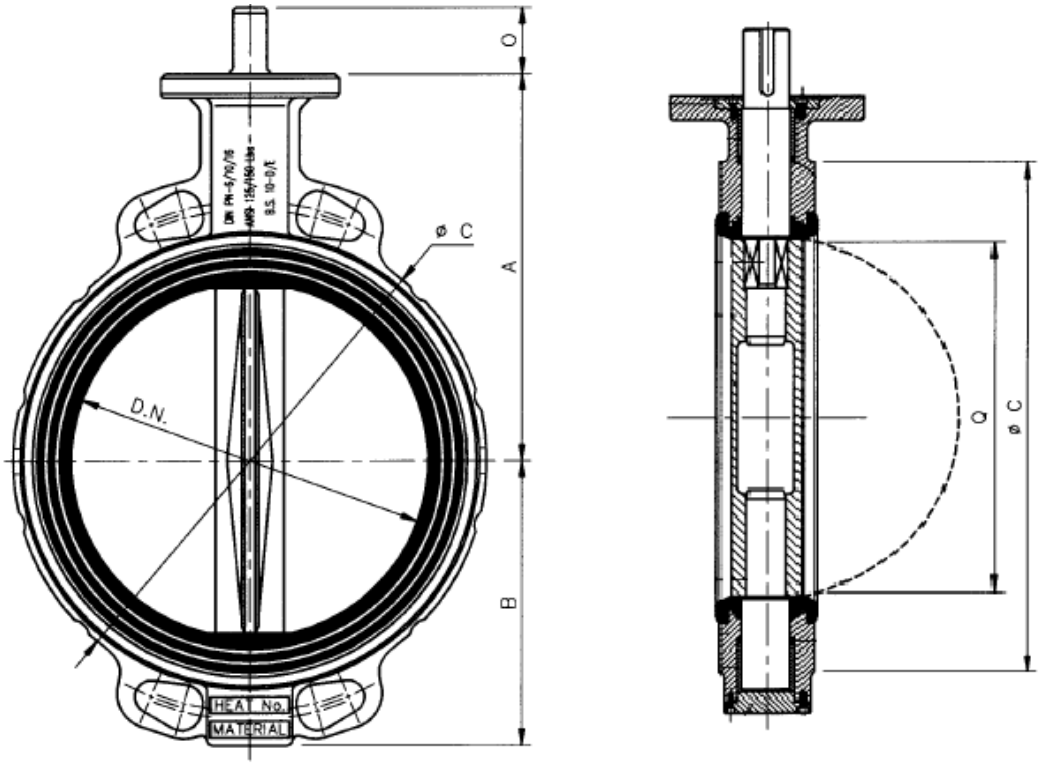


Fig. 2100 - Butterfly Valve – API 609 – Wafer Type
Face to face ISO 5752/20 – End Connections DIN PN 6/10/16 ANSI 150

DN	50	65	80	100	125	150	200	250	300	350	400
A	140	152	159	178	191	203	245	275	315	307	342
B	83	93	98	111	127	143	172	204	242	291	325
O	26	26	26	30	30	33	33	47	47	55	65
ØC	102	122	139	159	189	214	269	331	380	442	493
E	43	46	46	52	56	56	60	68	78	78	102
Q	32	51	69	89	115	143	194	243	293	332	382
Kg.	3,3	4	4,3	5,7	7,4	8,9	13,5	22,8	31,7	43,2	65,2
ISO	F-07	F-07	F-07	F-07	F-07	F-07	F-07	F-10	F-10	F-12	F-14

DN	450	500	600	700	750	800	900	1000	1050	1100	1200
A	387	425	532	573	622	650	707	755	781	800	900
B	357	381	488	506	555	578	643	729	755	774	855
O	65	65	110	110	110	110	110	110	110	110	130
ØC	544	601	840	927	984	1060	1168	1255	1346	1403	1511
E	113	126	146	175	176	215	246	280	280	280	360
Q	432	478	585	683	733	755	852	958	1013	1050	1098
Kg.	84,5	119	281	414	508	572	639	918	1034	1150	1760
ISO	F-14	F-14	F-25	F-25	F-25	F-25	F-25	F-25	F-25	F-25	F-30

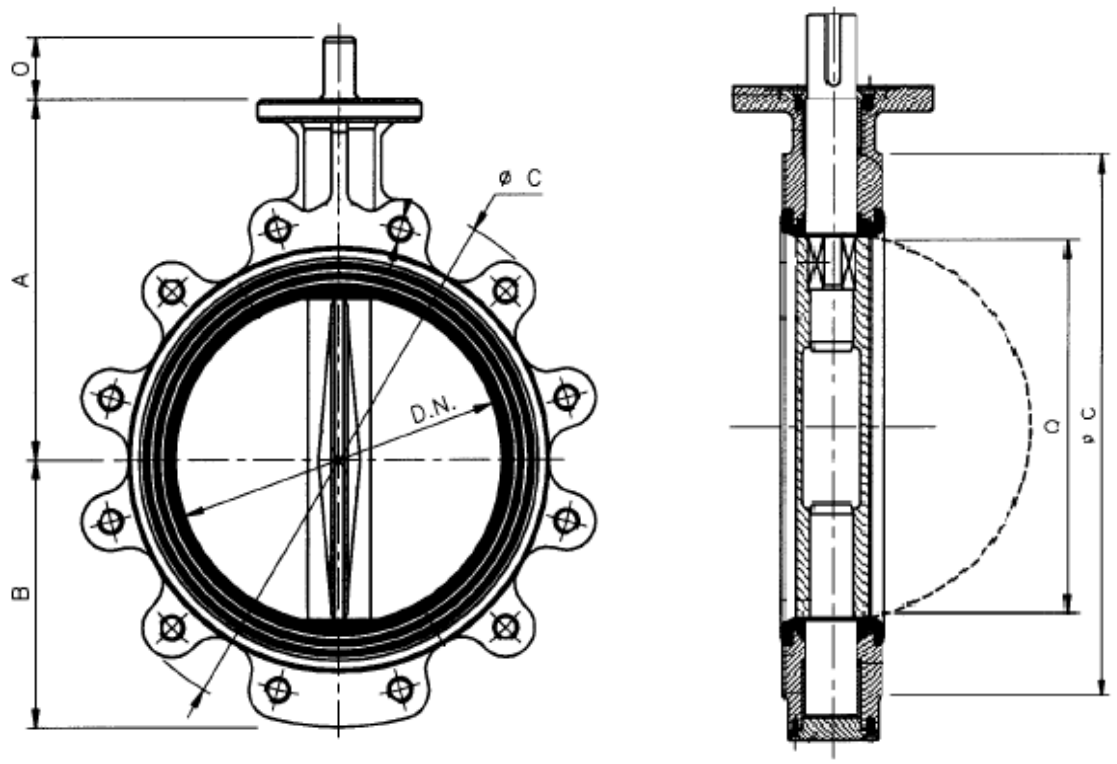


Fig. 2200 - Butterfly Valve – API 609 – LUG type
Face to face ISO5752/20 – End Connections DIN PN 10/16 ANSI 150

DN	50	65	80	100	125	150	200
A	140	152	159	178	191	203	245
B	63	73	81	97	112	122	149
O	26	26	26	30	30	33	33
ØC	152	178	200	229	254	280	343
E	43	46	46	52	56	56	60
Q	32	51	69	89	115	143	194
Kg.	3,3	4,5	6	8	9,8	11,5	18,3
ISO	F-07	F-07	F-07	F-07	F-07	F-07	F-07

DN	250	300	350	400	450	500	600
A	275	315	307	342	387	425	532
B	203	241	291	325	357	381	488
O	47	47	55	65	65	65	110
ØC	406	483	535	597	635	715	840
E	68	78	78	102	113	126	146
Q	243	293	332	382	432	478	585
Kg.	31,5	48,3	57,6	93,1	114,1	158,3	297
ISO	F-10	F-10	F-12	F-14	F-14	F-14	F-25

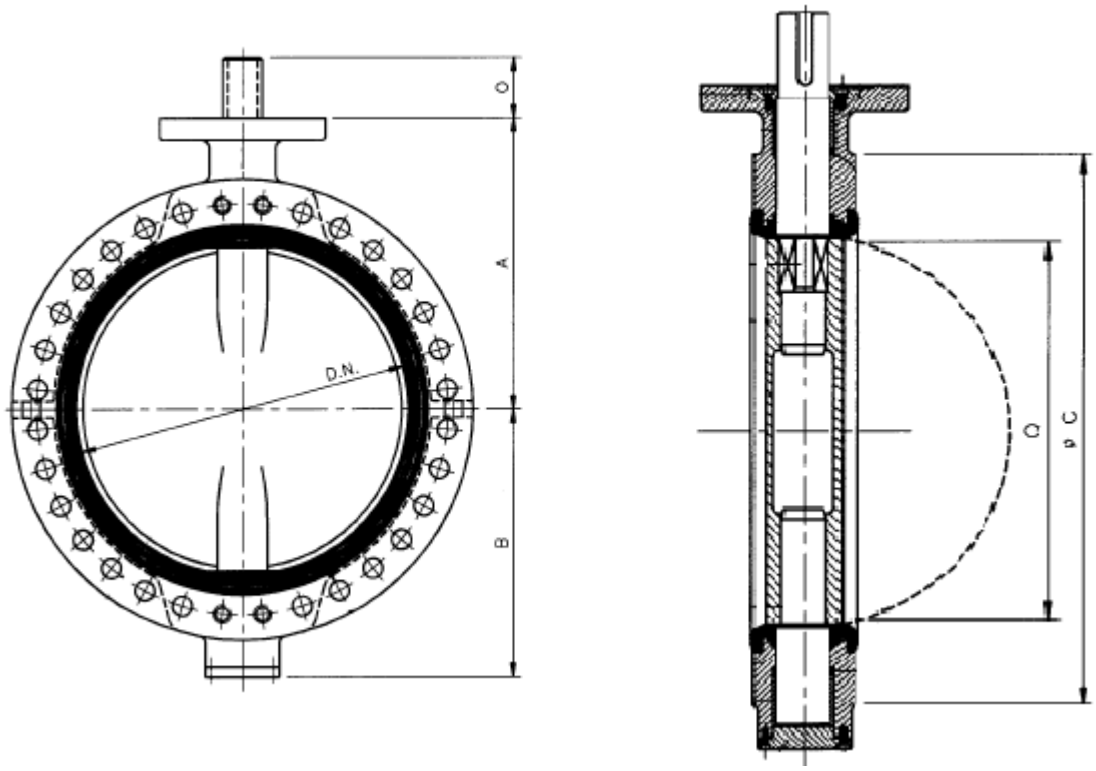
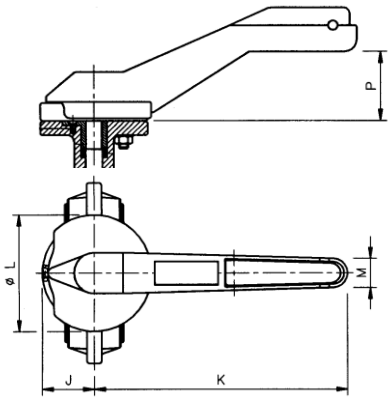


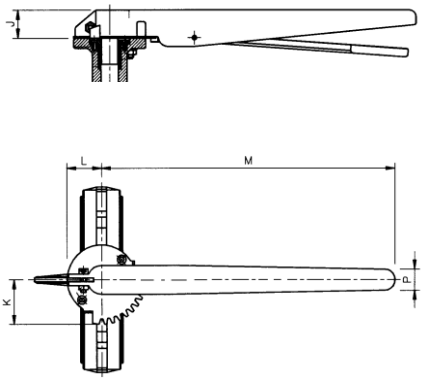
Fig. 2300 - Butterfly Valve – API 609 – U-SECTION type
Face to face ISO5752/20 – End Connections DIN PN 10/16 ANSI 150

DN	100	125	150	200	250	300	350	400	450	500
A	178	191	203	245	275	315	307	342	387	425
B	120	132	148	180	211	251	291	325	357	381
O	30	30	33	33	47	47	55	65	65	65
ØC	229	254	285	343	406	483	535	497	635	715
E	52	56	56	60	68	78	78	102	113	126
Q	89	115	143	194	243	293	332	382	432	478
Kg.	10,3	13,6	17,3	22,5	38,8	50,3	66,7	98,7	128,6	171,1
ISO	F-07	F-07	F-07	F-07	F-10	F-10	F-12	F-14	F-14	F-14

DN	600	700	750	800	900	1000	1050	1100	1200
A	532	573	622	657	707	755	781	800	900
B	488	506	555	583	643	729	755	774	855
O	110	110	110	110	110	110	110	110	130
ØC	840	927	984	1060	1168	1255	1346	1403	1511
E	146	175	176	215	246	280	280	280	360
Kg.	304	456	556	608	745	1038	1364	1690	1880
ISO	F-25	F-25	F-25	F-25	F-25	F-25	F-25	F-25	F-30

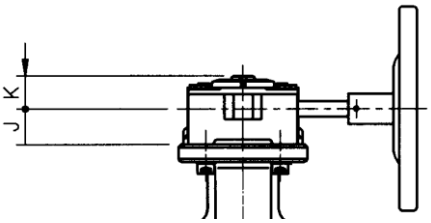
Handlever

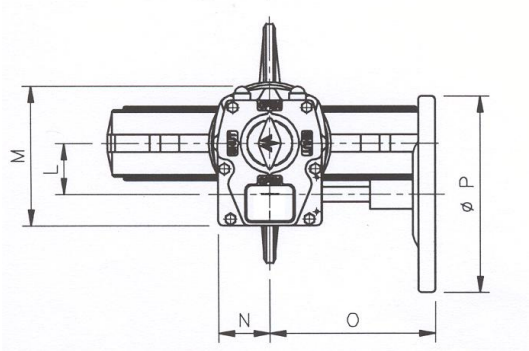




	up to DN 150				DN 200 and above				
DN	**50**	**65**	**80**	**100**	**125**	**150**	**200**	**250**	**300**
J	45	45	45	45	45	45	45	50	50
K	220	220	220	220	320	320	320	80	80
øL	100	100	100	100	100	100	100	-	-
L	-	-	-	-	-	-	-	62,5	62,5
M	25	25	25	25	25	25	25	560	560
P	58	58	58	58	58	58	58	38	38

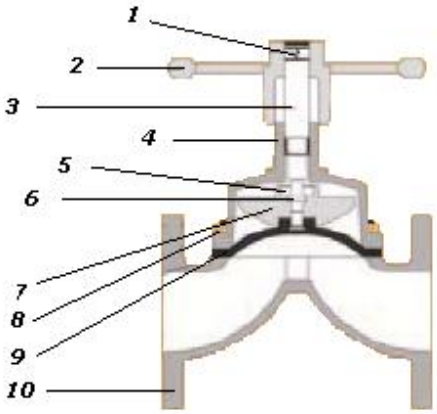
Gear





DN	**50**	**65**	**80**	**100**	**125**	**150**	**200**	**250**	**300**	**350**	**400**
J	26,5	26,5	26,5	26,5	26,5	26,5	26,5	35	35	42	50
K	31,5	31,5	31,5	31,5	31,5	31,5	31,5	32	32	39	43,5
L	38,5	38,5	38,5	38,5	38,5	38,5	38,5	52	52	66,5	89,5
M	107	107	107	107	107	107	107	141,5	141,5	180	217
N	42	42	42	42	42	42	42	53	53	66	82,5
O	152	152	152	152	152	152	152	184	184	223	240
ØP	125	125	125	125	125	125	125	250	250	300	300
DN	450	500	600	700	750	800	900	1000	1050	1100	1200
J	50	50	66	66	66	66	65	65	65	65	75
K	55,5	55,5	62	62	62	62	125	125	125	125	123
L	123	123	80	80	80	80	97	97	97	97	237
M	292	292	390	390	390	390	439	439	439	439	528
N	111	111	155	155	155	155	178	178	178	178	232
O	331	331	462	462	462	462	529	529	529	529	652

DIAPHRAGM VALVES
WEIR BODY STYLE



No.	Part.
1	Handwheel Pin
2	Handwheel
3	Stem
4	Bonnet
5	Compressor Pin
6	Thrust disc
7	Compressor
8	Studs/bolts
9	Diaphragm
10	Body

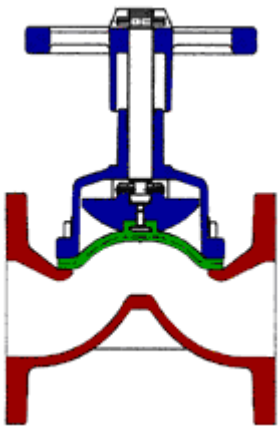
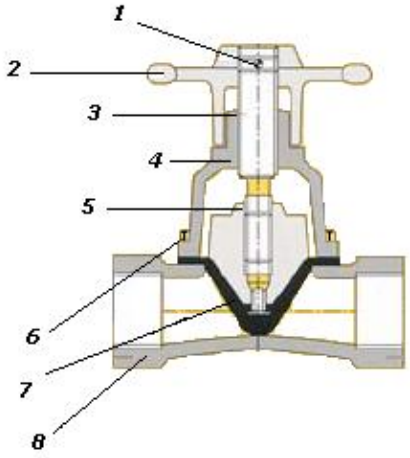


Fig. 2400 - Diaphragm Valves WEIR Type
Face to Face Dimensions

DN	**15**	**20**	**25**	**32**	**40**	**50**	**65**
BS 5156	108	117	127	146	159	190	216
DIN 3202	130	150	160	180	200	230	290
SP-88	101,6	140	140	152	165	190	216
DN	**80**	**100**	**125**	**150**	**200**	**250**	**300**
BS 5156	254	305	356	406	521	635	749
DIN 3202	310	350	400	480	600	730	850
SP-88	254	317	-	406	520	635	749

DIAPHRAGM VALVES
STRAIGHT-THROUGH BODY STYLE



No.	Part.
1	Handwheel Pin
2	Handwheel
3	Stem
4	Bonnet
5	Compressor
6	Studs/bolts
7	Diaphragm
8	Body

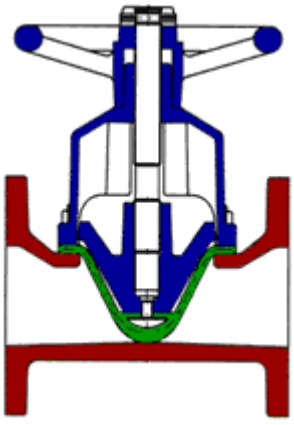


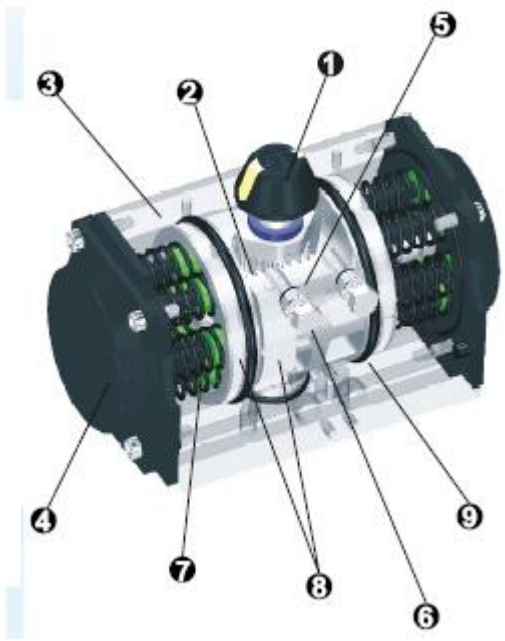
Fig. 2500 - Diaphragm Valves STRAIGHT-TROUGH Type Face to Face Dimensions

DN	15	20	25	32	40	50	65
BS 5156	-	-	127	-	159	190	216
DIN 3202	-	-	160	-	200	230	290
SP-88	-	-	140	-	165	190	216
DN	**80**	**100**	**125**	**150**	**200**	**250**	**300**
BS 5156	254	305	356	406	521	635	749
DIN 3202	310	350	400	480	600	730	850
SP-88	254	317	-	406	520	635	749

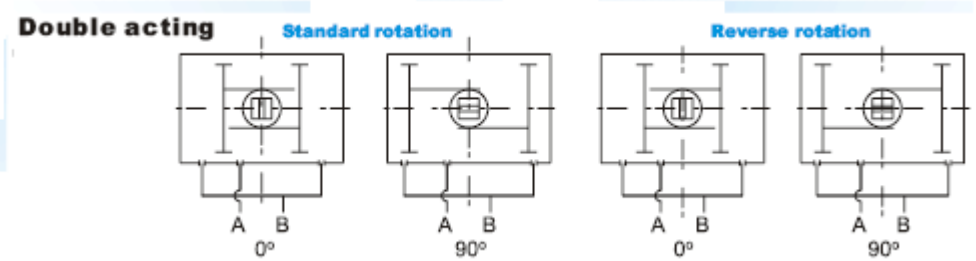
Valve Size		Pressure With Rubber Diaphragm		Pressure With PTFE Diaphragm	
DN (mm)	inch	bar	psi	bar	psi
8 - 50	¼ - 2	16	232	10	145
65 - 125	2½ - 5	10	145	10	145
150	6	10	145	8	116
200	8	8	116	7	102

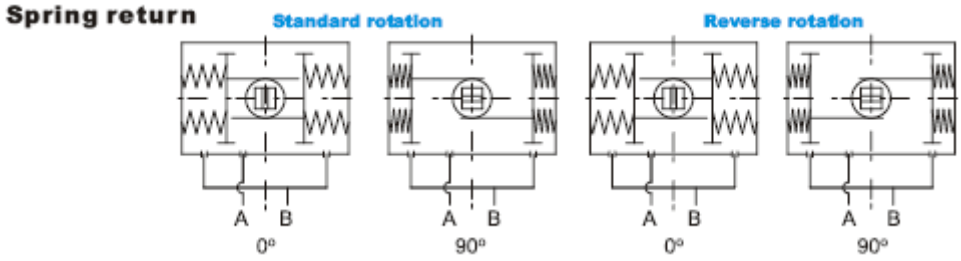
Diaphragm Range			
Material	Temperature		Typical Services
	°C	°F	
Natural rubber	-30 to 90	-22 to 194	General purpose, abraisives, water, dilute mineral acids
Natural rubber composite	-30 to 80	-22 to 176	Abrasives, slurry & suspended solids
White natural rubber	-30 to 90	-22 to 194	Food & pharmaceuticals
EDPM/black	-40 to 140	-40 to 284	General purpose, higly-resistant to temperatures most corrosive chemicals and abrasive liquids
EPDM/food grade	-40 to 120	-22 to 248	Food & pharmaceuticals
Butyl rubber	-20 to 130	-4 to 266	Acids, alkalis, hot water, low pressure steam
Nitrile rubber	-20 to 115	-4 to 239	Oils, fats & fuels
Neoprene	-30 to 100	-22 to 212	Air, weak chemicals, greases
Hypalon	-50 to 130	-58 to 260	Concentrated acids & alkalis, chlorine services
Viton	-30 to 149	-22 to 300	Concentrated sulphuric & other acids, aromatic hydrocarbons, chlorine services
Silicone	-40 to 175	-40 to 347	Moderate or oxidizing chemicals, ozone, concentrated sodium hydroxide -- recommended for food
PTFE/Butyl backed	-20 to 149	-4 to 300	Highest chemical resistance
PTFE/Hypalon backed	-18 to 130	0 to 260	Highest chemical resistance
PTFE/Viton backed	-18 to 175	0 to 347	Highest chemical resistance

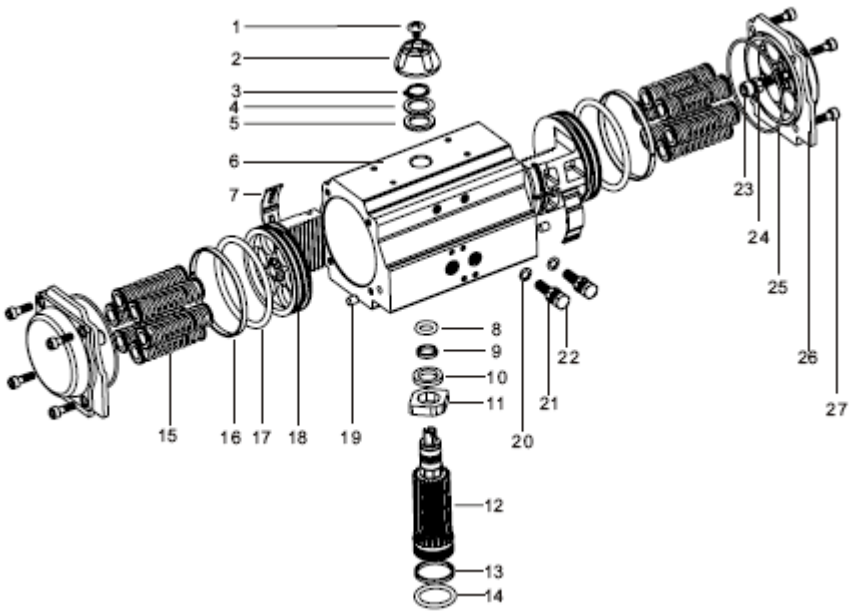
PNEUMATIC ACTUATOR
RACK & PINION TYPE



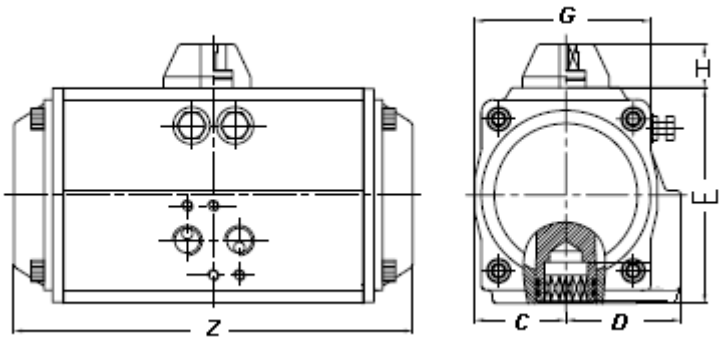
No.	Part.
1	Indicator
2	Pinion
3	Actuator body
4	End caps
5	Pistons
6	Travel adjustment
7	Springs
8	Bearings & guides
9	O-Ring







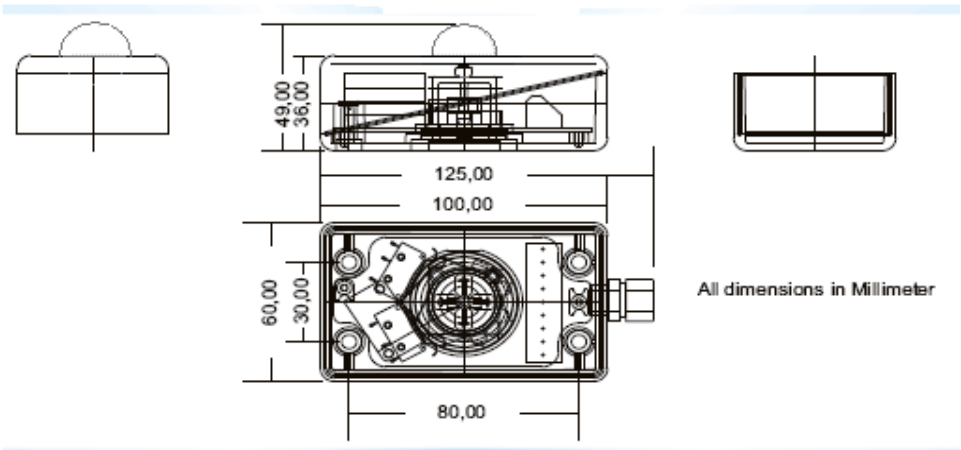
No	Description	Q.ty	Standard Material	Protection
1	Indicator screw	1	Plastic (ABS)	
2	Indicator	1	Plastic (ABS)	
3	Spring clip	1	Stainless Steel SS304	
4	Metal washer	1	Stainless Steel SS304	
5	Outside washer	1	Polyoxymethylene	
6	Body	1	Extruded alluminium alloy	Hard anodized ASTM B117-73
7	Piston	2	Polyoxymethylene	
8	O-ring pinion top	1	Viton	
9	Bearing pinion top	1	Polyoxymethylene	
10	Inside washer	1	Polyoxymethylene	
11	Travel stop	1	Alloy steel	
12	Pinion	1	Alloy steel	Nickel plated
13	Bearing pinion bottom	1	Viton	
14	O-ring pinion bottom	1	Polyoxymethylene	
15	Spring clip	0-12	Spring steel	Dip coating
16	Bearing piston	2	Polyoxymethylene	
17	O-ring piston	2	Viton	
18	Piston	2	Cast alluminium	Anodized/zinc/galvanized
19	Hole sealant	2	Viton	
20	O-ring adjust srew	2	Viton	
21	Nut adjust srew	2	Stainless Steel SS304	
22	Adjust screw	2	Stainless Steel SS304	
23	Stop screw	2	Stainless Steel SS304	
24	Nut stop screw	2	Stainless Steel SS304	
25	O-ring end cap	2	Viton	
26	End cap	2	Cast alluminium	Powder polyester painted
27	Cap screw	8	Stainless Steel SS304	



Rack and Pinion Pneumatic Actuator							
Dimension (mm)							
MODEL	**Z**	**C**	**D**	**E**	**H**	**G**	**Air connection**
AC-A52	147	30	41,5	72	20	65	G1/4" (1/4" NPT)
AC-A63	168	36	47	87,5	20	72	G1/4" (1/4" NPT)
AC-A75	184	42	53	99,5	20	81	G1/4" (1/4" NPT)
AC-A83	204	46	57	108,8	20	92	G1/4" (1/4" NPT)
AC-A92	262	50	61	116,5	20	98	G1/4" (1/4" NPT)
AC-A105	268	57,5	64	133	20	109,5	G1/4" (1/4" NPT)
AC-A125	301	67,5	74,5	155	20	127,5	G1/4" (1/4" NPT)
AC-A140	390	75	77	172	20	137,5	G1/4" (1/4" NPT)
AC-A160	458	87	87	197	20	158	G1/4" (1/4" NPT)
AC-A190	528	103	103	230	30	189	G1/4" (1/4" NPT)
AC-A210	532	114	114	255	30	211	G1/4" (1/4" NPT)
AC-A240	602	130	130	289	30	245	G1/4" (1/4" NPT)
AC-A270	722	147	147	328	30	273	G1/2" (1/2" NPT)

Air Consumption in Liters					
Model	**Air volume opening**	**Air volume closing**	**Model**	**Air volume opening**	**Air volume closing**
AC-A52	0,12	0,16	AC-A140	2,5	2,2
AC-A63	0,21	0,23	AC-A160	3,7	3,2
AC-A75	0,3	0,34	AC-A190	5,9	5,4
AC-A83	0,43	0,47	AC-A210	7,5	7,5
AC-A92	0,64	0,73	AC-A240	11	9
AC-A105	0,95	0,88	AC-A270	17	14
AC-A125	1,6	1,4			

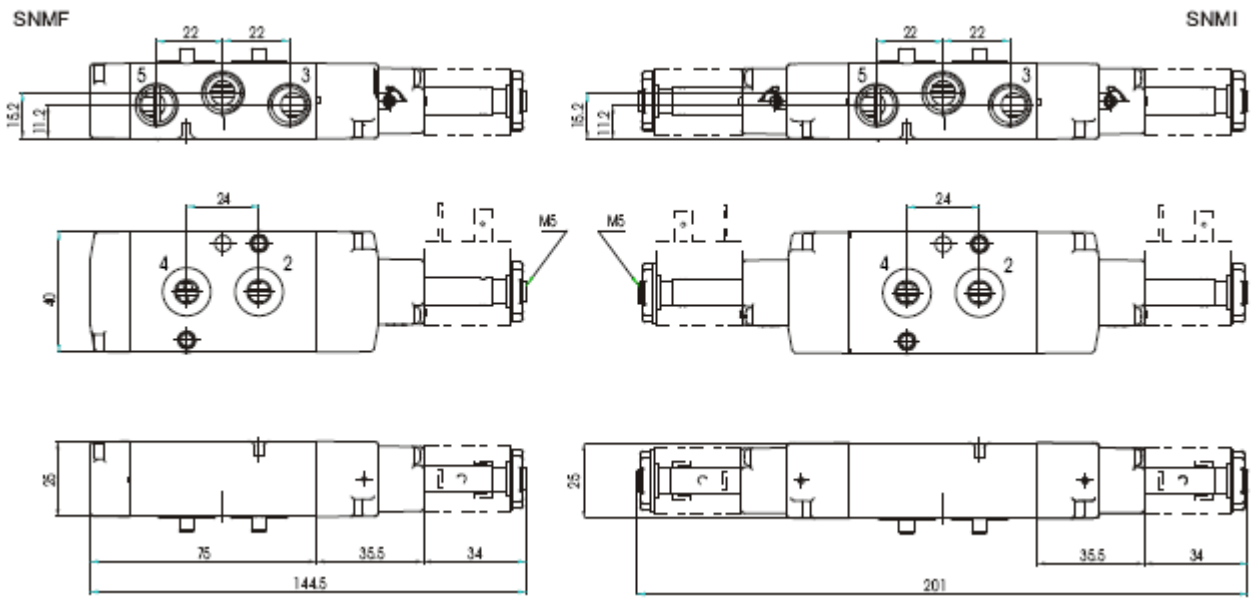
LIMIT SWITCH BOX



Material smart mini box					
Material Part	**Bottom**	**Cover**	**Stem**	**Cams**	**Visual indicator**
PC Polycarbonate black	X				
PC Polycarbonate clear		X			
PA6 Polyamide black			X		
PP Polypropylen black				X	
PA6 Polyamid yellow					X
Vestamide (Eex ia IIC T6)	X	X			
Seals	NBR 70 Sh				
Temperature box	(-20°C +80°C)				
Cable gland	M16x1,5mm or M20x1,5mm				

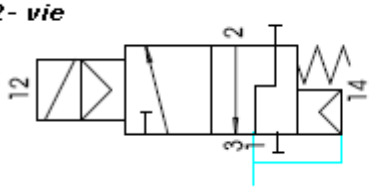
Standard Switch types					
Manufacturer	Crouzet	Pepperl+Fuchs		IFM	
Item no. Box	SMB2M….11	SMB21…..21	SMB21…-ia-22	SMB21…..31	SMB21…..-ia-33
Type	831704	NBB2-V3-E2	NCB2-V3-NO	IS 5001	NS 5002
Explosion class	-	-	EEx ia IIC T6	-	EEx ia IIC T6
ATEX 94/9/EG	-	-	II2G	-	II2G
Contacts	Silver	-	-	-	-
Mechanical switches	X	-	-	-	-
Switching element function	Open/closed	PNP Closed	NAMUR NO	PNP Closed	NAMUR NO
No. Of wires	3-wire	3-wire	2-wire	3-wire	2-wire
Operating voltage	24V-250V	0-30V DC	8V DC	0-36V DC	8,2v dc
Operating current	max 2,5 A	0-100mA	-	0-200mA	-
Temperature switch	(-25°C +125°C)	(-25°C +70°C)	(-25°C +100°C)	(-25°C +80°C)	(-20°C +70°C)
A lot of switches of above mentioned manufacturer and others are available on request					

SOLENOID VALVES

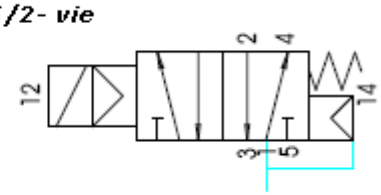


Attacco	G 1/4"				
Dimensione	7mm				
Portata nominale a 6Bar	1050 l/m a 6 Bar				
Pressione di utilizzo	Monostabile 1,5-10 Bar - Bistabile 1-10 Bar				
Temperatura corpo valvola	(-15°C + 60°C)				
Grado di protezione con connettore idoneo	IP65 o IP67				
Tensioni	12VDC	24V DC	24V DC	115V DC	230V AC
Potenza	3W	3W	5VA	5VA	5VA
Corpo centrale	Alluminio nero				
Corpo laterale	Plastica nera				
Pistone	Alluminio nero				
Particolari interni	Plastica nera				
Guarnizioni	NBR				

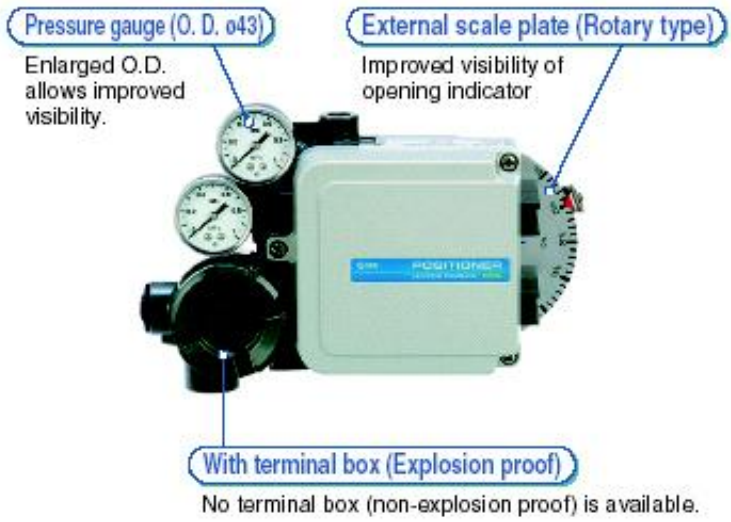
3/2- vie



5/2- vie



POSITIONERS



TYPE	IP 8100	
	Rotary Type Cam	
	Single Action	Double Action
Input Current	4~20 mA DC	
Input Resistance	235 ± 15Ω (4~20 mA DC)	
Supply Air Pressure	0.14~0.7 MPa	
Ambient and Using Fluid Temperature	-20°C ~ 80°C	
Air Connection Port	Rc ¼ (FEMALE)	
Electric Wiring Connection Port	G ½ (FEMALE)	
Output Signal	4~20 mA DC	
Power Supply	12 – 25 V (for output current detenction)	
TYPE	IP 5100 – Pneumatic 3-15 PSI	
	Single Action	Double Action
Supply Air Pressure	0.14~0.7 MPa	
Input Pressure	0.02~0.1 MPa	
Standard Stroke	60° - 100°	
Air Connection Port	Rc ¼	

CAST IRON VALVES – GATE, GLOBE & CHECK

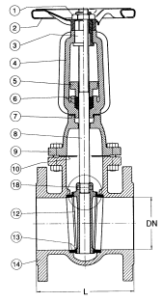


Fig. 2610 – Gate Valve PN 10 - OS&Y Flat Body

DN	50	65	80	100	125	150	200	250	300
L (mm.)	150	170	180	190	200	210	230	250	270
H (mm.)	265	275	335	355	400	495	585	700	830
Kg.	15	22	27	34	43	53	92	130	180

Inside Screw Type is also available on request.

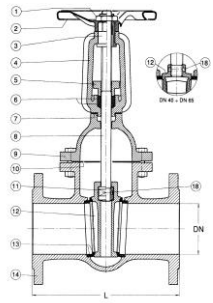


Fig. 2630 – Gate Valve PN 16 - OS&Y Oval Body

DN	50	65	80	100	125	150	200	250	300
L (mm.)	250	270	280	300	325	350	400	450	500
H (mm.)	275	335	380	435	495	585	710	830	965
Kg.	16	20	28	35	47	60	95	140	195

Inside Screw Type is also available on request.

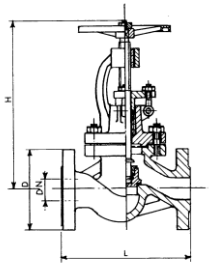


Fig. 2650 – Globe Valve PN 16

DN	15	20	25	40	50	65	80	100	125	150	200	250
L (mm.)	130	150	160	200	230	290	310	350	400	480	600	730
H (mm.)	240	240	250	275	290	360	380	450	470	510	650	720
Kg.	4	5	6	8	12	21	27	36	60	75	165	240

Piston Check Valve is also available on request

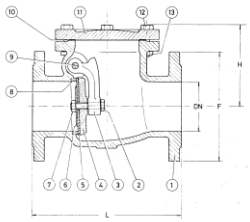


Fig. 2670 – Swing Check Valve

DN	50	65	80	100	125	150	200	250	300
L mm.	200	240	260	300	350	400	500	600	700
H mm.	125	130	140	160	180	200	220	290	330
Kg.	10	15	20	26	35	48	72	135	196

WAFER CHECK VALVES

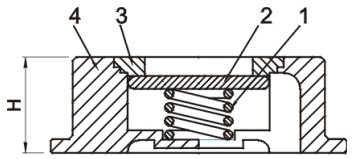


Fig. 1450

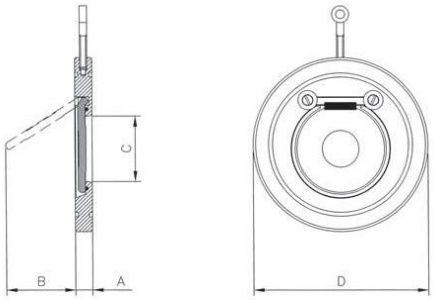


Fig. 1460

Fig. 1450 – Disc Check Valve –Wafer Type
End Connections DIN PN 6/10/16 / 25 / 40 - ANSI 150 / 300

DN	15	20	25	32	40	50	65	80	100
H	16	19	22	28	31.5	40	46	50	60
Kg.	0.1	0.2	0.25	0.5	0.7	1.1	1.4	2	3.2

Fig. 1460 – Single Plate Check Valve –Wafer Type
End Connections DIN PN 6/10/16 / 25 / 40 - ANSI 150 / 300

DN	32	40	50	65	80	100	125	150	200	250	300
A	14	14	14	14	14	18	18	20	22	26	32
B	20	30	35	48	60	78	98	117	160	200	235
C	17	22	32	40	54	70	92	112	154	200	240
D	76	86	105	124	137	175	195	220	279	340	410
Kg.	0.6	0.7	0.9	1.2	1.5	2.4	3.4	4.6	7.5	13.1	20.4

DN	350	400	450	500	600	700	800
A	38	44	50	56	62	68	80
B	258	300	331	368	435	530	620
C	270	310	360	405	486	580	670
D	448	514	548	605	715	830	937
Kg.	32	48	63	87	130	215	280

Materials

Body / Disc	**Carbon Steel (zinc plated) SS AISI 316/L Aluminium Bronze**
Seat	**Metal to Metal NBR – EPDM – FKM - PTFE**