

Manual Override Actuator



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ACTUATECH
ACTUATOR TECHNOLOGY

GDV – GSV series Actuotech Manual Override Actuator

Actuator Performances

- Special scotch yoke design that gives an increased torque and the seat break out point.
- Bush steel alloy and Scotch yoke steel alloy: use of steel parts instead of aluminium parts, ensures high wear resistance to the internal mechanism and consequent longer working life.
- Compact design with reduced overall dimension allows an easy handling & minimal air (energy) consumption.
- Special compound seals and guide on the sliding pistons, ensures self lubrication for life.
- The special double on one sealing rings grants a longer life maintenance free without O-ring sticking and replacement.
- Internal bores are fine lapped and have anodized surface treatment for lower friction and perfect piston sealing and increases the life of the sliding parts.
- Maintenance free for the full actuator working life.
- Standard stainless steel drive shaft protects against the environmental corrosion.
- Shaft anti-blowing system. The driving shaft/lever construction avoids any possible expulsion of the shaft.
- Standard stroke adjustment.
- Atex 94/9/CE for suitability of the equipment intended for the use in Potentially Explosive Atmosphere.

Actuator Nominal Torque: from 53 Nm to 1920 Nm.

Mounting flange according with DIN/ISO 5211, DIN 3337: F05 - F07 - F10 - F12 - F14 - F16.

NAMUR standard pressure connection.

Rotation angle: 92° (-1°+91°).

Stroke Adjustment: 10°.

Nominal pressure: 5,6 bar; maximum operating pressure 8,4 bar.

The torque is directly proportional to the operating pressure.

For the simple acting (spring return) actuators the reverse torque is performed only by the spring action, and is independent from the operating pressure.

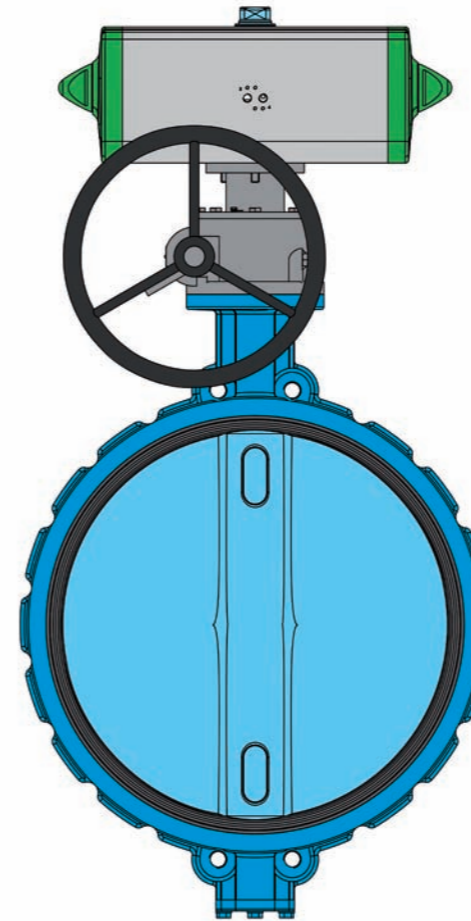
Temperature: from -20°C to +80°C (special version on request).

Operating media: compress filtered air not necessarily lubricated (for temperature under 0°C use dry air).

In case of lubricated air, use non-detergent oil compatible with NBR rubber.

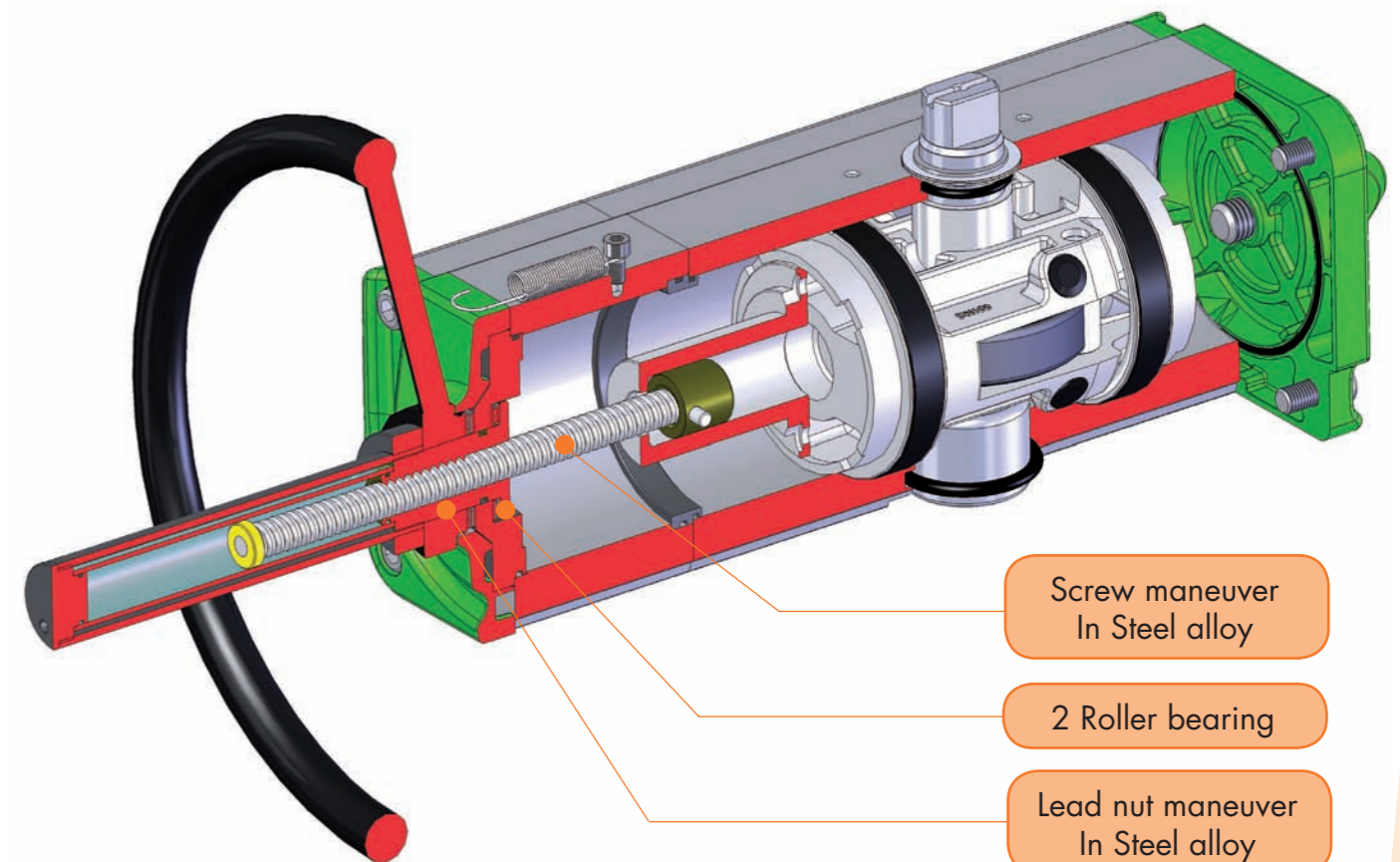
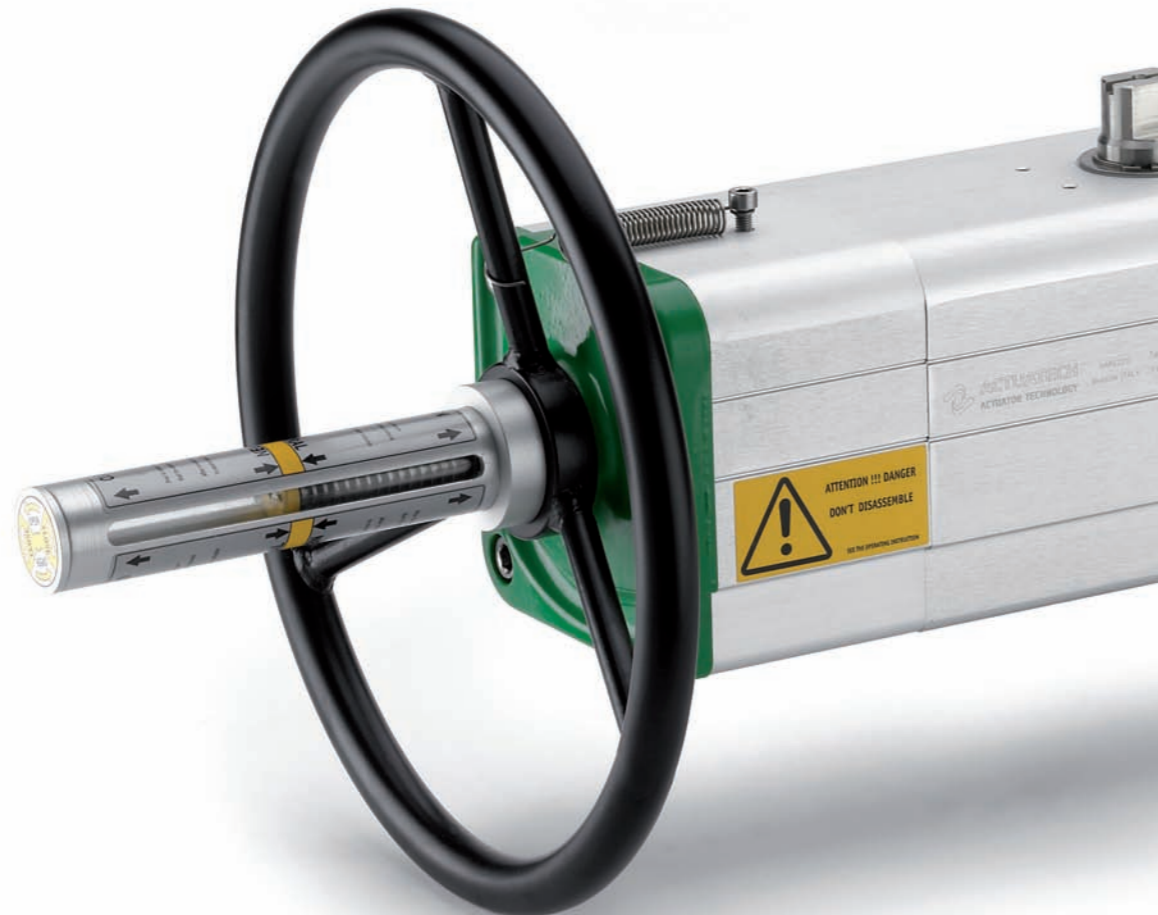
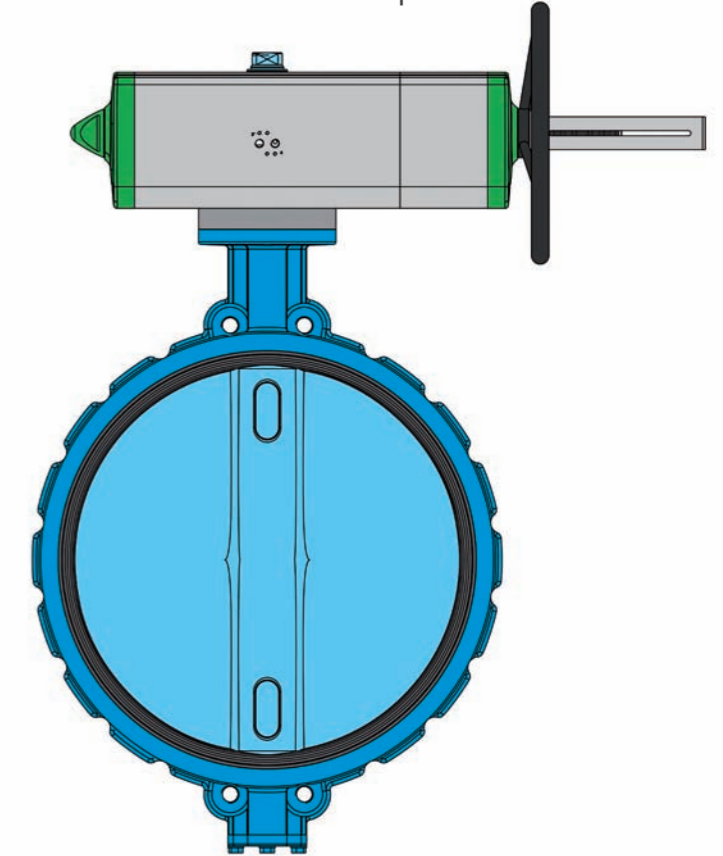
All the models are available in double acting "GDV" and simple acting "GSV" version.

Actuotech typical actuator with decluchable gear box



New Actuotech manual override actuator

More light -20% than decluchable gear box
Compact size
Easy to use, easy to mount
Actuator may be locked in open or in closed position



Screw maneuver
In Steel alloy

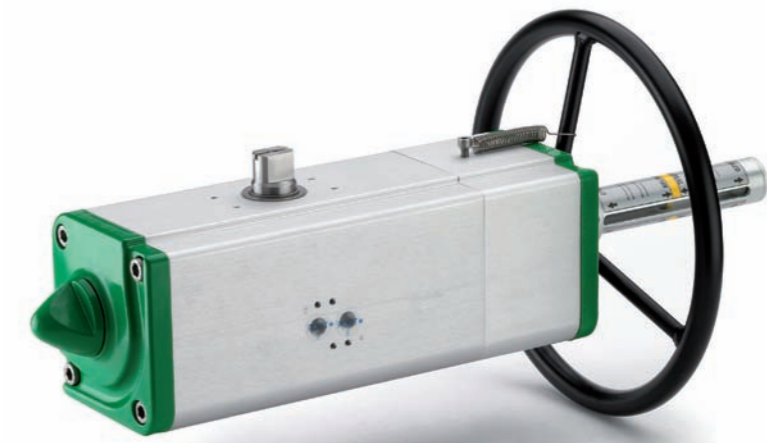
2 Roller bearing

Lead nut maneuver
In Steel alloy

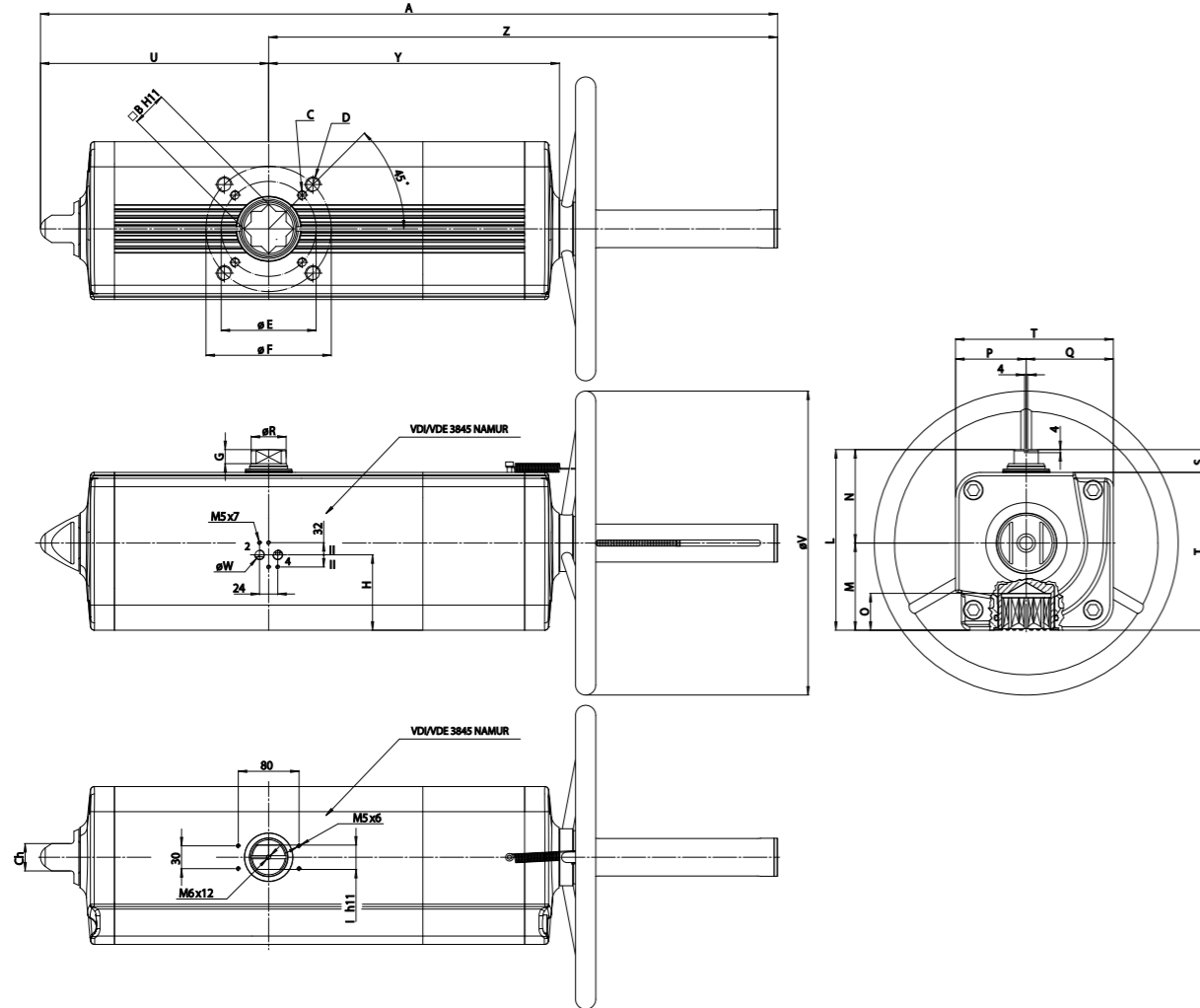
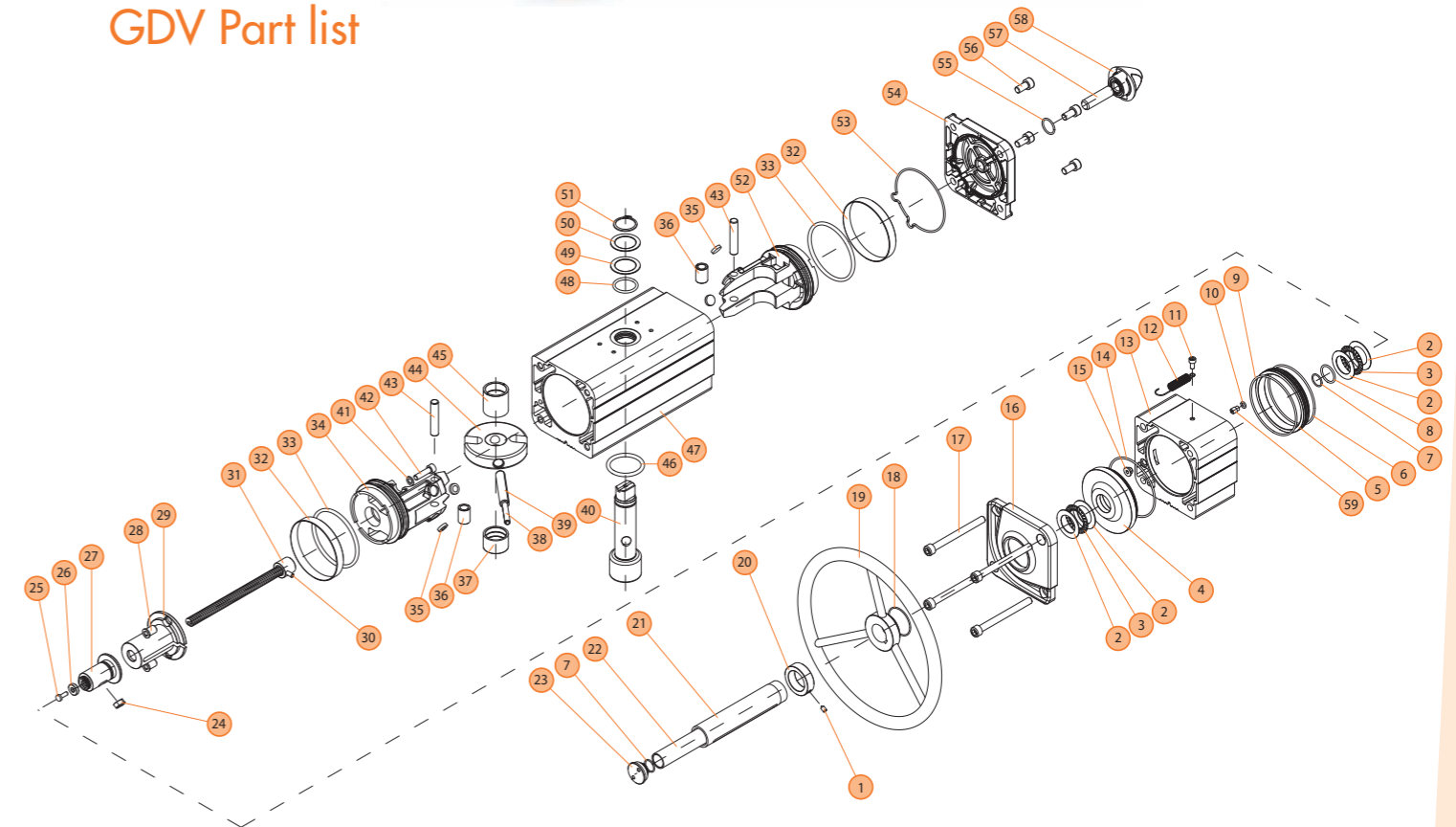
Double Acting Actuators GDV data and dimensions

TYPE	GDV106	GDV180	GDV240	GDV360	GDV480	GDV720	GDV960	GDV1440	GDV1920
Nominal Torque (Nm at 5,6 Bar)	106	180	240	360	480	720	960	1440	1920
Rim pull forces to obtain the nominal torque (N)	13,9	22,2	27,3	33,7	41,7	54,4	64,3	68,5	81,3
Theoretical n° of turns to close / open starting from neutral position	13	16	18	15	16	19	20	25	26
Weight (Kg)	4	6	8	10,2	13,2	17,8	23,8	33,6	43
Air consumption dm3/cycle (l/cycle)	0,7	1,2	1,65	2,3	3,2	4,6	6,05	9,7	12,9

(for torque table and other information see the actuator standard catalogue)



GDV Part list



*All dimensions are in mm.

TYPE	GDV106	GDV180	GDV240	GDV360	GDV480	GDV720	GDV960	GDV1440	GDV1920			
ISO	F05/F07	F07/F10	F07/F10	F07/F10	F10/F12	F10/F12	F10/F12	F14	F12	F14	F12/F16	F14
A	403,9	493,2	520,6	578,8	618,8	732,8	770,2	770,2	936,9	936,9	970,3	970,3
B	17	22	22	22	27	27	36	36	36	36	46	46
C x depth	M6x9	M8x12	M8x12	M8x12	M10x15	M10x15	M10x15	M16x24	M12x18	M16x24	M12x18	M16x24
D x depth	M8x12	M10x15	M10x15	M10x15	M12x18	M12x18	M12x18	-	-	-	M20x30	-
E	50	70	70	70	102	102	102	140	125	140	125	140
F	70	102	102	102	125	125	125	-	-	-	165	-
G	13	16	17	19	19	19,5	19,5	19,5	19,5	19,5	18,5	18,5
H	42,8	54,5	58,1	60	57,4	61,5	78	78	86,5	86,5	99,2	99,2
I	12	15	15	19	19	22	24	24	27	27	32	32
L	103,3	137,5	141,1	148	164,9	178	198	198	216	216	237,7	237,7
M	44,8	56,5	60,1	62	72,9	78,5	93,5	93,5	101,5	101,5	114,7	114,7
N	58,5	81	81	86	92	99,5	104,5	104,5	114,5	114,5	123	123
O	19,3	24,8	24,8	24,3	29,5	29,5	38,5	38,5	38,5	38,5	48,5	48,5
P	38,5	51	51	56	62	69,5	74,5	74,5	84,5	84,5	93	93
Q	44,8	56,5	60,1	62	72,9	78,5	93,5	93,5	101,5	101,5	114,7	114,7
R	16,2	20,2	22,5	25,5	29	31,8	36,5	36,5	41	41	46	46
S	20	30	30	30	30	30	30	30	30	30	30	30
T	83,3	107,5	111,1	118	134,9	148	168	168	186	186	207,7	207,7
U	118,5	144,9	156,8	169,6	193,8	216,6	239,7	239,7	283,5	283,5	300,4	300,4
V	180	220	220	300	300	350	350	350	400	400	400	400
W (Gas)	1/8"	1/8"	1/8"	1/8"	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"
Y	154,8	183,5	199,1	220,8	236,4	282,3	297,1	297,1	365,6	365,6	382,9	382,9
Z	285,4	348,3	363,9	409,1	425	516,2	530,5	530,5	653,4	653,4	670	670
Ch	17	22	22	22	27	27	27	27	36	36	36	36

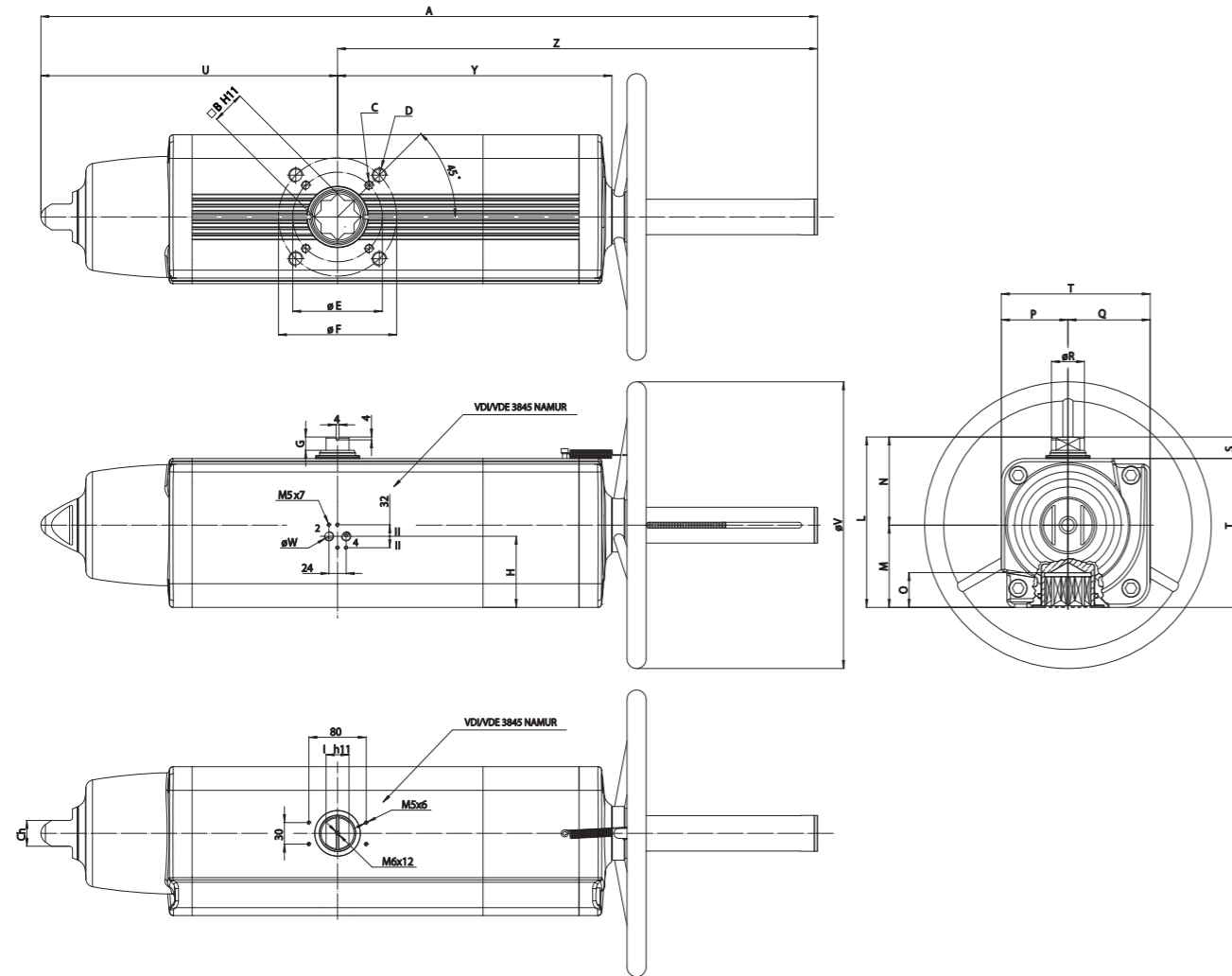
Pos	Denomination	Quantity	Materials
1	Screw	1	Stainless steel
2	Washer for roller bearing	4	Steel alloy
3	Roller bearing	2	Steel alloy
4	Flange	1	Aluminium alloy
5	Centering ring (only for GDV 720)	1	Aluminium alloy
6	O ring (only for GDV 720)	1	Nitrilic rubber
7	O ring	2	Nitrilic rubber
8	O ring	1	Nitrilic rubber
9	O ring	1	Nitrilic rubber
10	O ring	1	Nitrilic rubber
11	Screw	1	Stainless steel
12	Spring	1	Stainless steel
13	Cylinder spacer	1	Aluminium alloy
14	O ring	1	Nitrilic rubber
15	Seal cap	1	Brass + Nitrilic rubber
16	Cap (Modified)	1	Aluminium alloy
17	Screw	4	Stainless steel
18	O ring (for seal)	1	Nitrilic rubber
19	Handwheel for maneuver	1	Steel alloy
20	Protecting ring	1	Aluminium alloy
21	Protecting tube	1	Aluminium alloy
22	Transparent tube	1	Polycarbonate
23	Protecting cap	1	Aluminium alloy
24	Key	1	Steel alloy
25	Rivet	1	Steel alloy
26	Indicator	1	Polypropylene
27	Lead nut maneuver	1	Steel alloy
28	Threaded bush (only for GDV 480)	2	Stainless steel
29	Special spring cap	1	Aluminium alloy
30	Pin	1	Steel alloy

Pos	Denomination	Quantity	Materials
31	Screw maneuver	1	Steel alloy
32	Dynamic seal (piston)	2	Polyurethane
33	O ring	2	Nitrilic rubber
34	Piston (modified)	1	Aluminium alloy
35	Piston's support	4	P.T.F.E. Carbo-Graphite filled
36	Bush	2	Steel alloy
37	Shaft support	1	Acetalic resin
38	Internal elastic pin of the yoke	1	Steel alloy
39	External elastic pin of the yoke	1	Steel alloy
40	Shaft	1	Stainless steel
41	Bounded	2	Stainless steel + Nitrilic rubber
42	Screw	2	Stainless steel
43	Rotative sleeve	2	Steel alloy
44	Scotch yoke	1	Steel alloy
45	Support bush	1	Acetalic resin
46	O ring (lower sealing shaft)	1	Fkm
47	Cylinder	1	Aluminium alloy
48	O ring (upper sealing shaft)	1	Fkm
49	External support ring	1	Acetalic resin
50	Washer	1	Stainless steel
51	Seeger	1	Stainless steel
52	Piston (standard)	1	Aluminium alloy
53	Cap O ring	1	Nitrilic rubber
54	Cap (standard)	1	Aluminium alloy
55	O ring	1	Nitrilic rubber
56	Screw	4	Stainless steel
57	Stroke adjustment screw	1	Stainless steel
58	Nut	1	Aluminium alloy
59	Insert for O ring (for GDV 106-240-360-720)	1	Stainless steel

Spring Return Actuators GSV data and dimensions

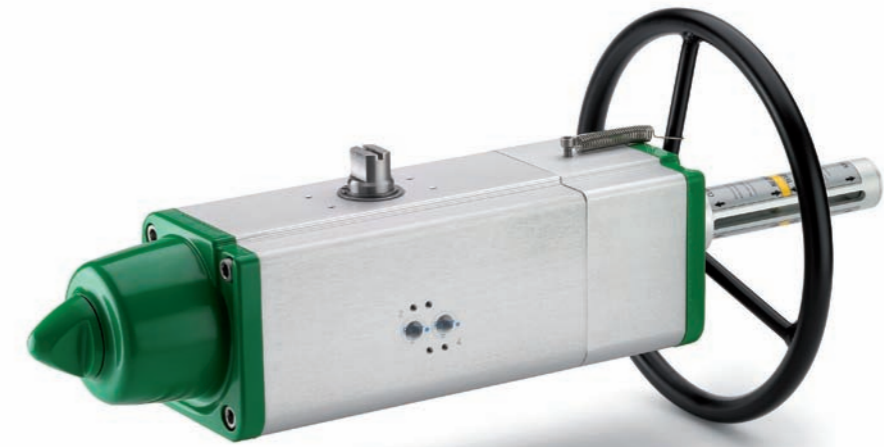
TYPE	GSV53	GSV90	GSV120	GSV180	GSV240	GSV360	GSV480	GSV720	GSV960
Nominal Torque (Nm at 5,6 Bar)	53	90	120	180	240	360	480	720	960
Rim pull forces to obtain the nominal torque (N)	13,9	22,2	27,3	33,7	41,7	54,4	64,3	68,5	81,3
Theoretical n° of turns to close / open starting from neutral position	13	16	18	15	16	19	20	25	26
Weight (Kg)	4,5	6,8	9	11,7	15,2	19,5	28,1	38,8	50,6
Air consumption dm3/cycle (l/cycle)	0,3	0,55	0,8	1	1,5	2	2,8	4,2	5,9

(for torque table and other information see the actuator standard catalogue)

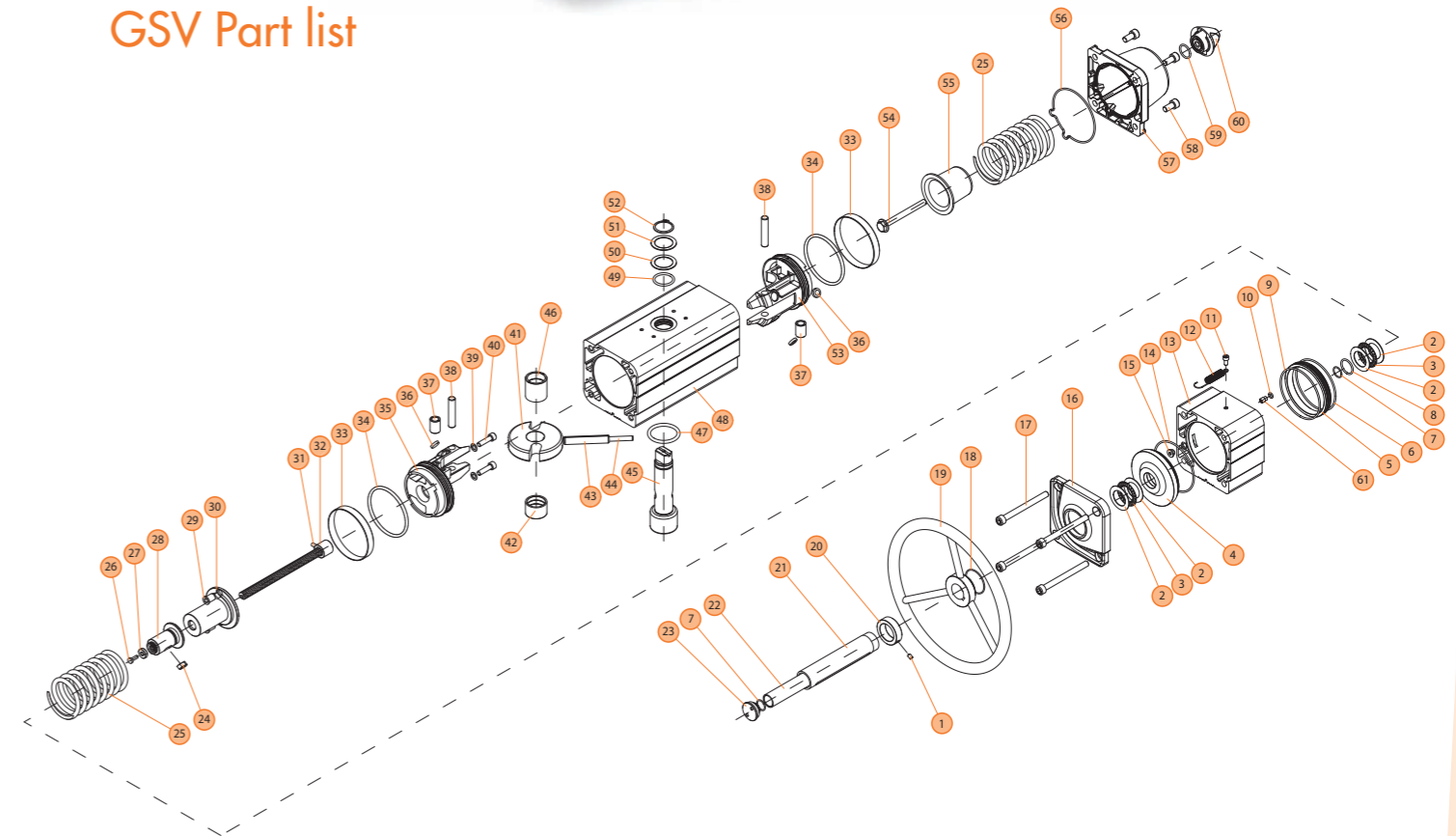


*All dimensions are in mm.

TYPE	GSV53	GSV90	GSV120	GSV180	GSV240	GSV360	GSV480	GSV720	GSV960			
ISO	F05/F07	F07/F10	F07/F10	F07/F10	F10/F12	F10/F12	F10/F12	F12	F12	F12/F16	F14	
A	437,5	545,1	568,6	646,1	685,2	822,8	854,6	854,6	1052,4	1052,4	1084	1084
B	17	22	22	22	27	27	36	36	36	36	46	46
C x depth	M6x9	M8x12	M8x12	M8x12	M10x15	M10x15	M10x15	M16x24	M12x18	M16x24	M12x18	M16x24
D x depth	M8x12	M10x15	M10x15	M10x15	M12x18	M12x18	M12x18	-	-	M20x30	-	-
E	50	70	70	70	102	102	102	140	125	140	125	140
F	70	102	102	102	125	125	125	-	-	165	-	-
G	13	16	17	19	19	19,5	19,5	19,5	19,5	18,5	18,5	18,5
H	42,8	54,5	58,1	60	57,4	61,5	78	78	86,5	86,5	99,2	99,2
I	12	15	15	19	19	22	24	24	27	27	32	32
L	103,3	137,5	141,1	148	164,9	178	198	198	216	216	237,7	237,7
M	44,8	56,5	60,1	62	72,9	78,5	93,5	93,5	101,5	101,5	114,7	114,7
N	58,5	81	81	86	92	99,5	104,5	104,5	114,5	114,5	123	123
O	19,3	24,8	24,8	24,3	29,5	29,5	38,5	38,5	38,5	38,5	48,5	48,5
P	38,5	51	51	56	62	69,5	74,5	74,5	84,5	84,5	93	93
Q	44,8	56,5	60,1	62	72,9	78,5	93,5	93,5	101,5	101,5	114,7	114,7
R	16,2	20,2	22,5	25,5	29	31,8	36,5	36,5	41	41	46	46
S	20	30	30	30	30	30	30	30	30	30	30	30
T	83,3	107,5	111,1	118	134,9	148	168	168	186	186	207,7	207,7
U	152,1	196,8	204,8	237	260,2	306,6	324,1	324,1	399	399	414	414
V	180	220	220	300	300	350	350	350	400	400	400	400
W (Gas)	1/8"	1/8"	1/8"	1/8"	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"
Y	154,8	183,5	199,1	220,8	236,4	282,3	297,1	297,1	365,6	365,6	382,9	382,9
Z	285,4	348,3	363,9	409,1	425	516,2	530,5	530,5	653,4	653,4	670	670
Ch	17	22	22	22	27	27	27	27	36	36	36	36



GSV Part list



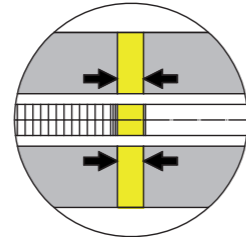
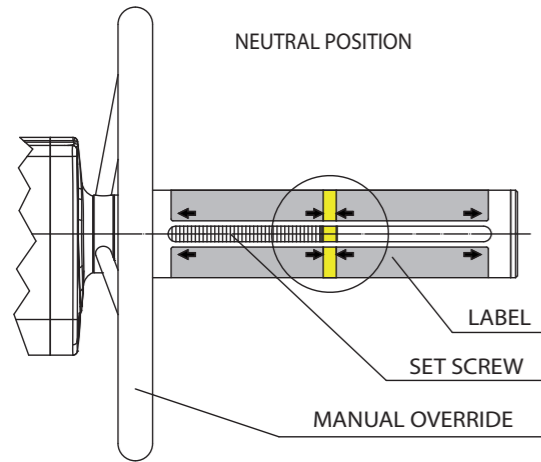
Pos	Denomination	Quantity	Materials
1	Screw	1	Stainless steel
2	Washer for roller bearing	4	Steel alloy
3	Roller bearing	2	Steel alloy
4	Flange	1	Aluminium alloy
5	Centering ring (only for GSV 360)	1	Aluminium alloy
6	O ring (only for GSV 360)	1	Nitrilic rubber
7	O ring	2	Nitrilic rubber
8	O ring	1	Nitrilic rubber
9	O ring	1	Nitrilic rubber
10	O ring	1	Nitrilic rubber
11	Screw	1	Stainless steel
12	Spring	1	Stainless steel
13	Cylinder spacer	1	Aluminium alloy
14	O ring	1	Nitrilic rubber
15	Seal cap	1	Brass + Nitrilic rubber
16	Cap (Modified)	1	Aluminium alloy
17	Screw	4	Stainless steel
18	O ring (for seal)	1	Nitrilic rubber
19	Handwheel for maneuver	1	Steel alloy
20	Protecting ring	1	Aluminium alloy
21	Protecting tube	1	Aluminium alloy
22	Transparent tube	1	Polycarbonate
23	Protecting cap	1	Aluminium alloy
24	Key	1	Steel alloy
25	Spring	2	Steel alloy
26	Rivet	1	Steel alloy
27	Indicator	1	Polypropylene
28	Lead nut maneuver	1	Steel alloy
29	Threaded bush (only for GSV 240)	2	Stainless steel
30	Special spring cap	1	Aluminium alloy
31	Pin	1	Steel alloy

Pos	Denomination	Quantity	Materials
32	Screw maneuver	1	Steel alloy
33	Dynamic seal (piston)	2	Polyurethane
34	O ring	2	Nitrilic rubber
35	Piston (modified)	1	Aluminium alloy
36	Piston's support	4	P.T.F.E. Carbo-Graphite filled
37	Bush	2	Steel alloy
38	Rotative sleeve	2	Steel alloy
39	Bounded	2	Stainless steel + Nitrilic rubber
40	Screw	2	Stainless steel
41	Scotch yoke	1	Steel alloy
42	Shaft support	1	Acetolic resin
43	External elastic pin of the yoke	1	Steel alloy
44	Internal elastic pin of the yoke	1	Steel alloy
45	Shaft	1	Stainless steel
46	Support bush	1	Acetolic resin
47	O ring (lower sealing shaft)	1	Fkm
48	Cylinder	1	Aluminium alloy
49	O ring (upper sealing shaft)	1	Fkm
50	External support ring	1	Acetolic resin
51	Washer	1	Stainless steel
52	Seeger	1	Stainless steel
53	Piston (standard)	1	Aluminium alloy
54	Spring loading screw	1	Stainless steel
55	Spring cap (standard)	1	Steel alloy or Aluminium alloy
56	Cap O ring	1	Nitrilic rubber
57	Cap (standard)	1	Aluminium alloy
58	Screw	4	Stainless steel
59	O ring	1	Nitrilic rubber
60	Nut	1	Aluminium alloy
61	Insert for O ring (for GSV 53-120-180-360)	1	Stainless steel

Functional Description

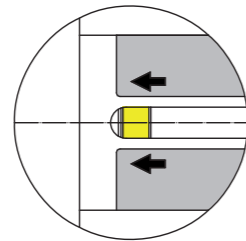
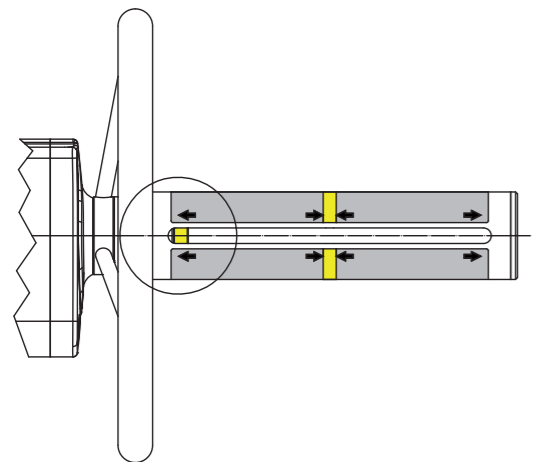
ATTENTION:

Prior to operate manually, ensure that the actuator is free from pressure



NEUTRAL POSITION

With the screw in neutral position the piston can move freely and the actuator can be driven pneumatically.



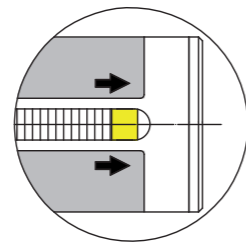
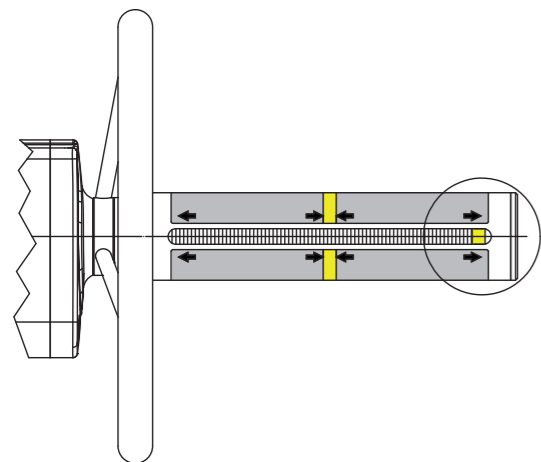
MANUAL OPERATION

GDV: When the hand wheel is turned counter clockwise, the screw and pistons are pushed inwards.

The valve opens.

GSV: When the hand wheel is turned clockwise, the screw and pistons are pushed inwards.

The valve closes.



MANUAL OPERATION

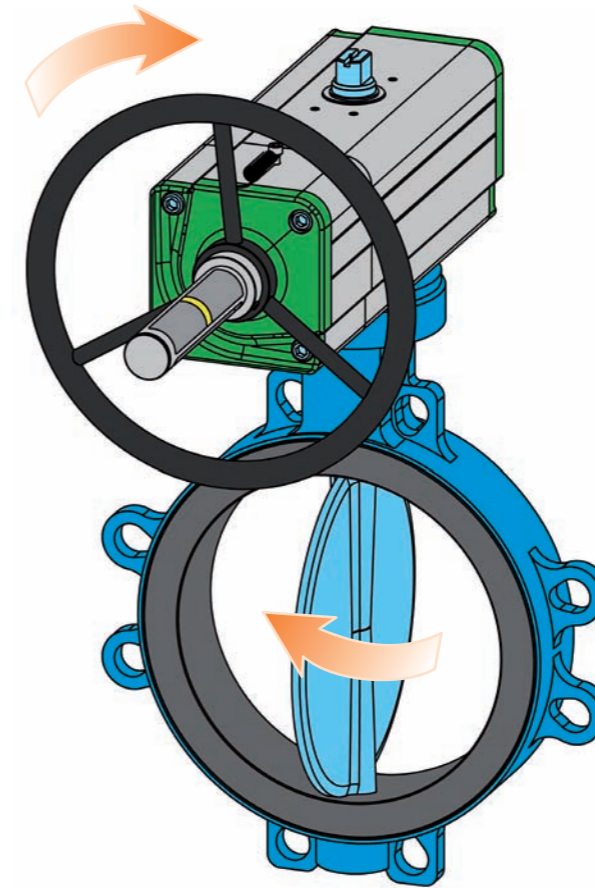
GDV: When the hand wheel is turned clockwise, the screw and pistons are drawn outwards.

The valve closes.

GSV: When the hand wheel is turned counter clockwise, the screw and the pistons are drawn outwards.

The valve opens.

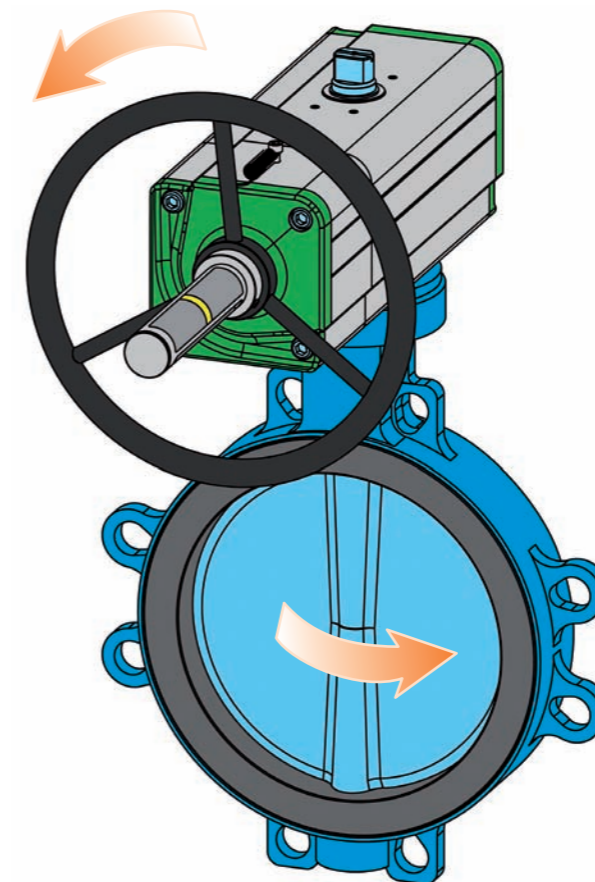
When the actuator has been operated manually, return to the neutral position prior to normal operation.



TO CLOSE THE VALVE

To close the valve turn the wheel in clockwise direction.

(for standard actuator)



TO OPEN THE VALVE

To open the valve turn the wheel in counter clockwise direction.

(for standard actuator)

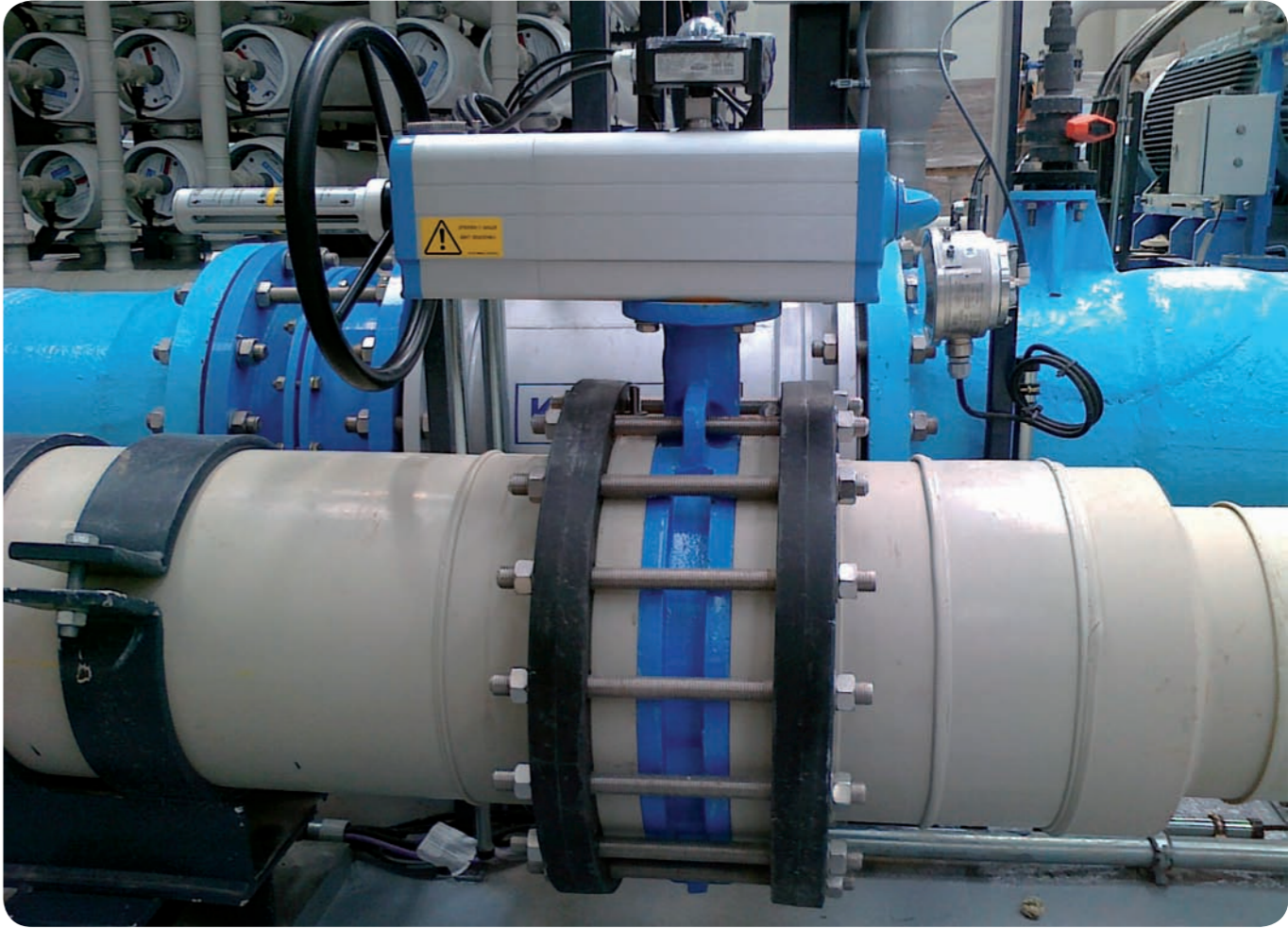
Application



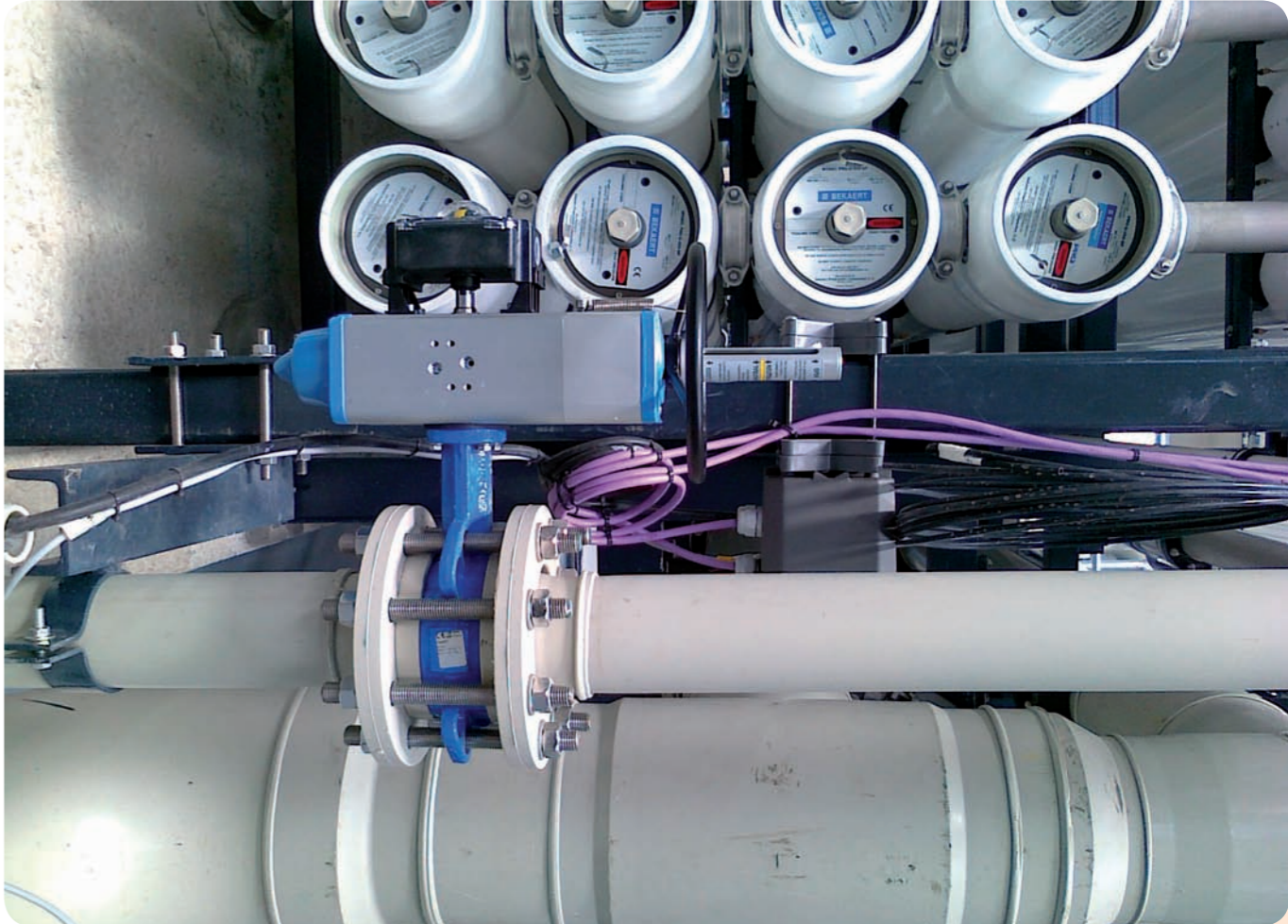
GDV with stainless steel ball valve



GSV with stainless steel butterfly valve



Desalination plant



Desalination plant