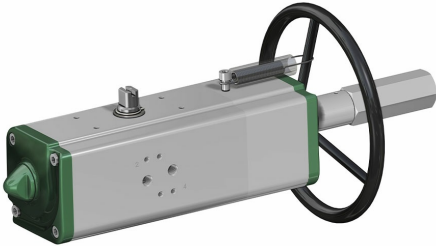


GDV (double acting) pneumatic actuator with integrated manual control

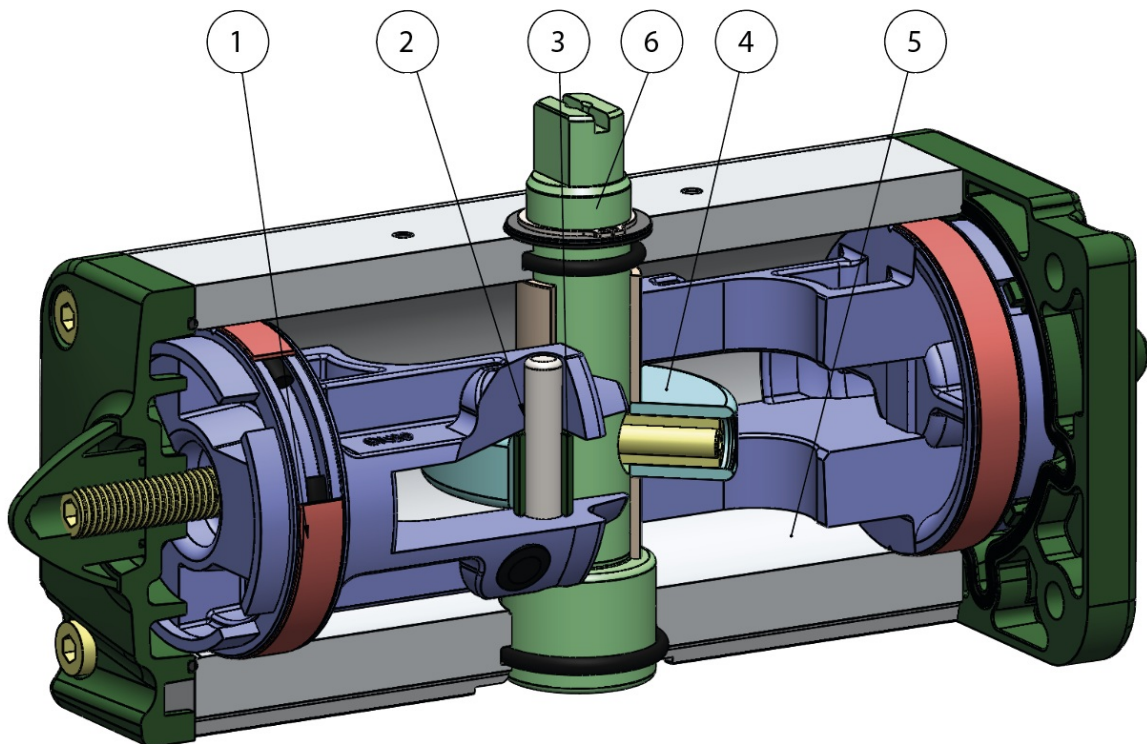
Macro Pneumatic actuators

Category Actuators with integrated handwheel

Nominal torque of the actuator: from 60 Nm to 3840 Nm



benefits



1.Energized and self-lubricated strips

Less friction between piston and cylinder

It prevents the bonding of the seal to the cylinder even after long periods of inactivity

2.Slots, bushes and pins made by steel with hardness higher than 50 HRC

Higher resistance to the forces inside the actuator

3.Rolling friction between piston and slot

Less friction

4.Scotch yoke with rolling friction (transforming rotary motion into linear motion using piston and shaft without teeth/gears)

Reduced friction between piston and shaft with consequently less wear on the relevant parts

Empowered Breakaway Torque (BTO & BTC)

Smaller volume/size than rack and pinion actuators (with the same torque) therefore less space required for installation

Less weight than the rack and pinion (-30% kg / Nm), with consequent savings on the construction sizing of the plant/equipment

Lower air consumption compared to the rack and pinion actuators (-40% air cm³/Nm for Double Acting and -20% air cm³/Nm for Spring Return) therefore less load on the compressor or the possibility of using a smaller compressor's size.

5.Rolled cylinder

Less wear of the energized ties thanks to the low roughness of the surface

6.Stainless steel shaft

Higher corrosion resistance

From sizes bigger than GD15, NAMUR interface for solenoid valve is already integrated

No need for extra plate.

100% in- house manufacturing process technology

Maximum control and accuracy in all the stages of the manufacturing process

ATEX Certificate

Installation is allowed in a potential explosive environment

Up to SIL 3 Certified

Guarantee of the high level of functional safety.

features

TECHNICAL FEATURES

Torque from 60 Nm to 3840 Nm

Mounting flange according to EN ISO 5211

F05 - F07 - F10 - F12 - F14 - F16

In accordance with EN 15714-3

Rotation angle: 92° (-1°, +91°)

Torque: directly proportional to the air supply (see table)

In the code of standard version GDV actuators, it is indicated the breakaway torque in Nm at 5,6 bar air supply.

ATEX version in conformity with directive 2014/34/EU

WORKING CONDITIONS

Temperature: from -20°C to +80°C. (Special versions: high temperature: -20°C +150°C; low temperature: -50°C +60°)

Air supply: 5,6 bar; maximum 8,4 bar

Actuating media: filtered dry compressed air, not necessarily lubricated

In case of lubricated air, either non detergent oil, NBR compatible oil, must be used.

Once required the quarter turn pneumatic actuator can be equipped with a manual handwheel.

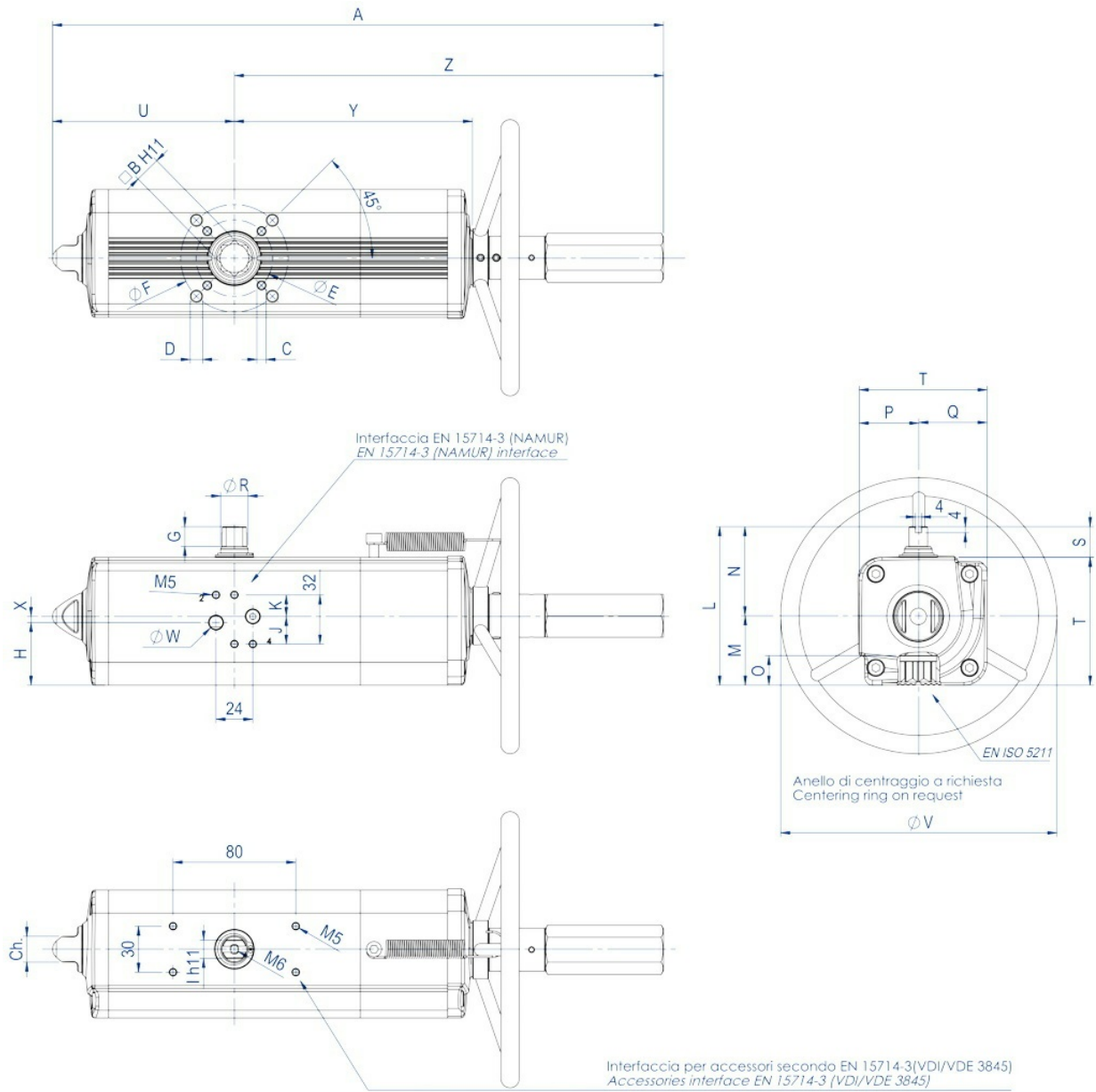
The device can be integrated either in Double Acting and Spring Return versions.

For the proper functioning of the system and for the mechanical integrity of the device is essential to ensure that the pneumatic actuator is disconnected from the power lines of compressed air before performing any operation using the manual handwheel.

The manual handwheel acts on the transmission of the primary mechanical transmission of the pneumatic actuator and with torques applied to the handwheel according to EN 12570 it releases output torque of equal value of the nominal torque of the actuator.

dimensions

GDV60 ÷ GDV1920



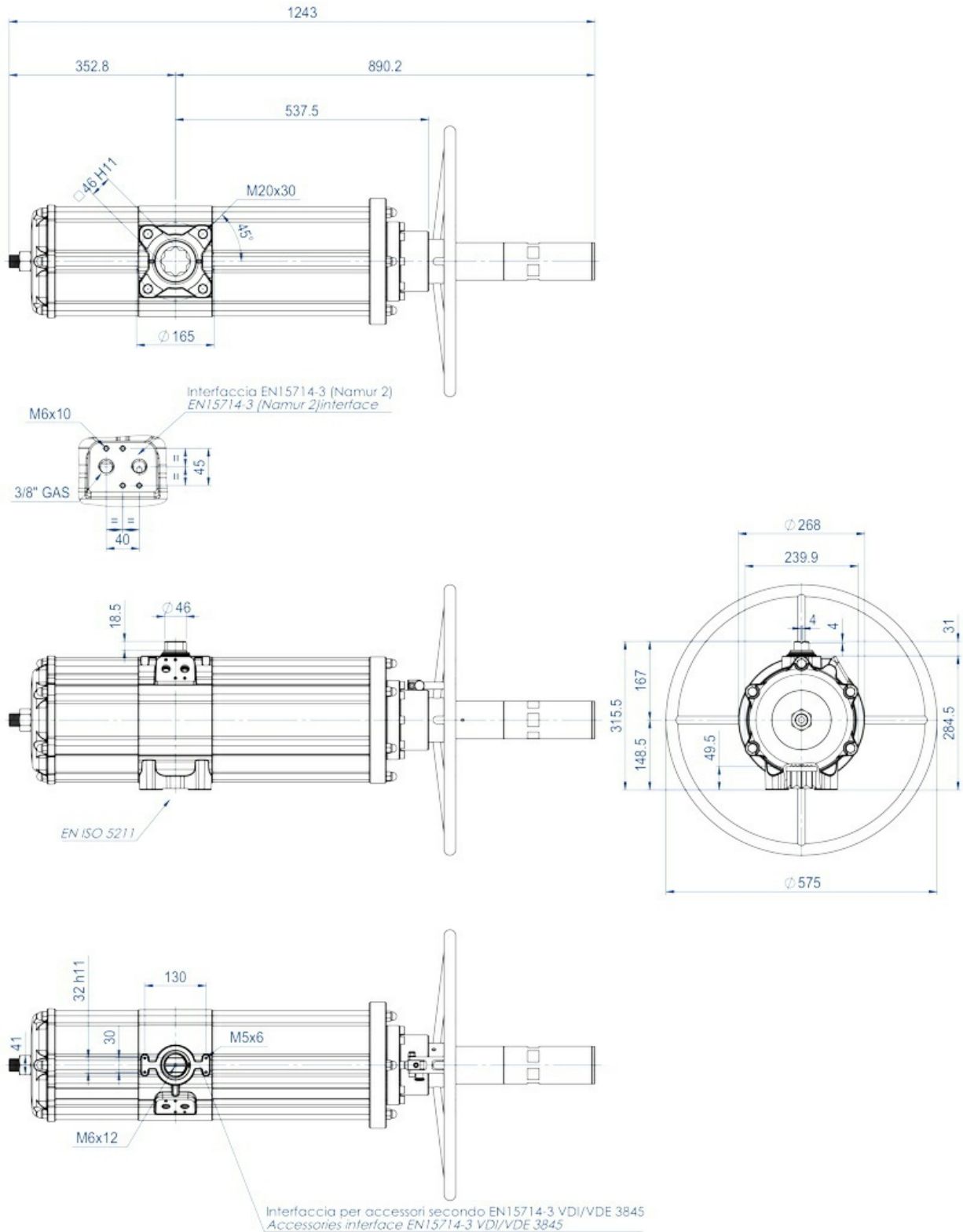
DATA SHEET GDV60 ÷ GDV480								
Spare Seals	KGGI0016VX	KGGI0016VX	KGGI0060VX	KGGI0018VX	KGGI0019VX	KGGI0020VX	KGGI0021VX	KGGI0022VX
Size	GDV60	GDV60	GDV106	GDV120	GDV180	GDV240	GDV360	GDV480
ISO	F04	F05/F07	F05/F07	F05/F07	F07/F10	F07/F10	F07/F10	F10/F12
A	362,3	362,3	397,8	410,5	483	510,5	567,6	634,4
B	14	14	17	17	22	22	22	27
C x depth	M5x8	M6x9	M6x9	M6x9	M8x12	M8x12	M8x12	M10x15
D x depth	-	M8x12	M8x12	M8x12	M10x15	M10x15	M10x15	M12x18
E	42	50	50	50	70	70	70	102
F	-	70	70	70	102	102	102	125
G	13	13	13	13	16	17	19	19
H	33,7	33,7	40,8	42,8	52,5	56,1	58	57,4
J	18	18	18	18	18	18	18	16
K	14	14	14	14	14	14	14	16
I	10	10	12	12	15	15	19	19
L	90,4	90,4	103,3	107	137,5	141,1	148	164,9
M	37,7	37,7	44,8	46,8	56,5	60,1	62	72,9
N	52,7	52,7	58,5	60,2	81	81	86	92
O	16,5	16,5	19,3	19,3	24,8	24,8	24,3	29,5
P	32,7	32,7	38,5	40,2	51	51	56	62
Q	37,7	37,7	44,8	46,8	56,5	60,1	62	72,9
R	14,5	14,5	16,2	18	20,2	22,5	25,5	29
S	20	20	20	20	30	30	30	30
T	70,4	70,4	83,3	87	107,5	111,1	118	134,9
U	99	99	118,5	122,1	144,9	156,8	169,6	193,8
V	180	180	180	180	220	220	300	300
W (Gas)	1/8"	1/8"	1/8"	1/8"	1/8"	1/8"	1/8"	1/4"
X	4	4	4	4	4	4	4	-
Y	137,6	137,6	154,8	163,9	183,5	199,1	220,8	236,4
Z	263,3	263,3	279,3	288,4	338,1	353,7	398	440,6
Ch	13	13	17	17	22	22	22	27
N°of turns*	11	11	13	14	16	18	15	16
Weight (Kg)	2,8	2,8	4	4,5	6	8	10,2	13,2
Air (dm³/cycle)	0,3	0,3	0,7	0,59	1,2	1,65	2,3	3,2

* Theoretical n° of turns to close/open starting from neutral position.

DATA SHEET GDV720 ÷ GDV1920							
Spare Seals	KGGI0023VX	KGGI0024VX		KGGI0025VX		KGGI0026VX	
Size	GDV720	GDV960		GDV1440		GDV1920	
ISO	F10/F12	F10/F12	F14	F14	F12	F14	F12/F16
A	720,1	758	758	919,9	919,9	954,1	954,1
B	27	36	36	36	36	46	46
C x depth	M10x15	M10x15	M16x24	M16x24	M12x18	M16x24	M12x18
D x depth	M12x18	M12x18	-	-	-	-	M20x30
E	102	102	140	140	125	140	125
F	125	125	-	-	-	-	165
G	19,5	19,5	19,5	19,5	19,5	18,5	18,5
H	61,5	78	78	86,5	86,5	99,2	99,2
J	16	16	16	16	16	16	16
K	16	16	16	16	16	16	16
I	22	24	24	27	27	32	32
L	178	198	198	216	216	237,7	237,7
M	78,5	93,5	93,5	101,5	101,5	114,7	114,7
N	99,5	104,5	104,5	114,5	114,5	123	123
O	29,5	38,5	38,5	38,5	38,5	48,5	48,5
P	69,5	74,5	74,5	84,5	84,5	93	93
Q	78,5	93,5	93,5	101,5	101,5	114,7	114,7
R	31,8	36,5	36,5	41	41	46	46
S	30	30	30	30	30	30	30
T	148	168	168	186	186	207,7	207,7
U	216,6	239,7	239,7	283,5	283,5	300,4	300,4
V	350	350	350	400	400	400	400
W (Gas)	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"
X	-	-	-	-	-	-	-
Y	282,3	297,1	297,1	365,6	365,6	382,9	382,9
Z	503,5	518,3	518,3	636,4	636,4	653,7	653,7
Ch	27	27	27	36	36	36	36
N°of turns*	19	20		25		26	
Weight (Kg)	17,8	23,8		33,6		43	
Air (dm³/cycle)	4,6	6,05		9,7		12,9	

* Theoretical n° of turns to close/open starting from neutral position.

GDV3840

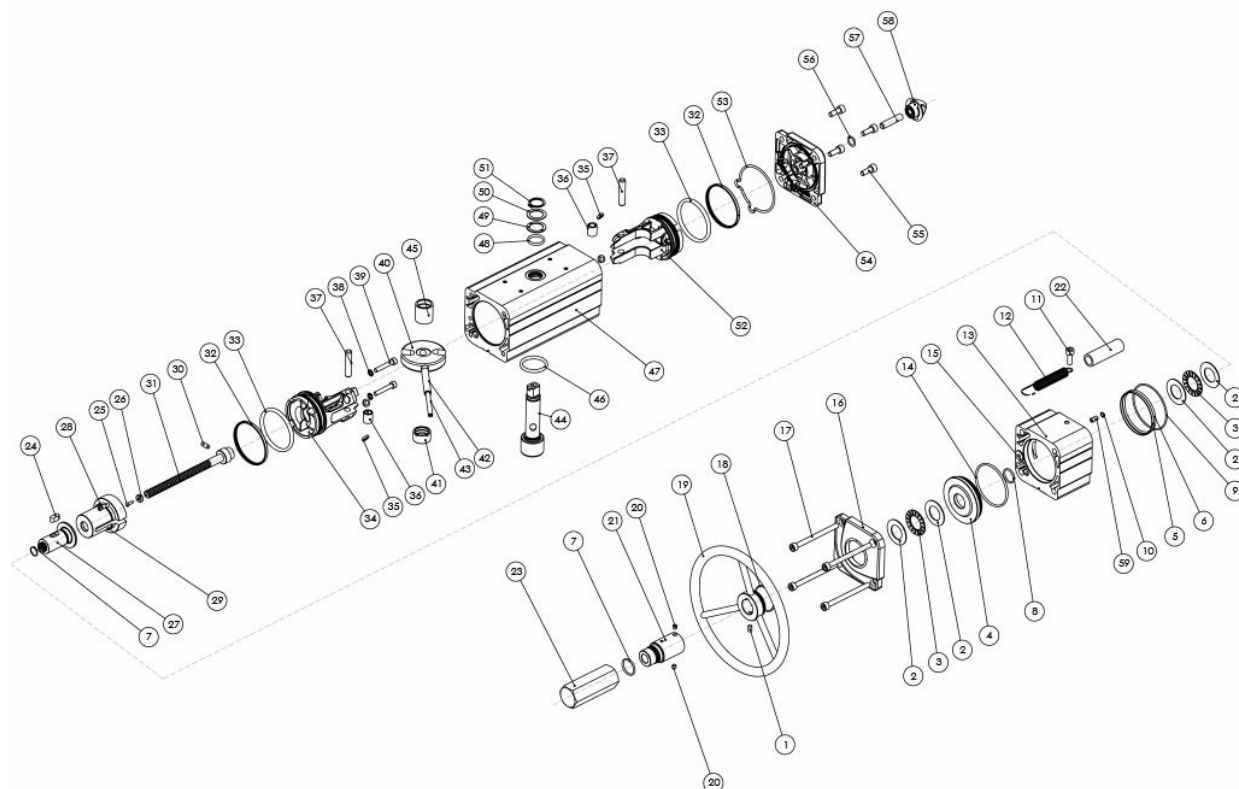


DATA SHEET GDV3840	
Spare Seals	KGGI0130VX
Size	GDV3840
ISO	F16
N°of turns*	30
Weight (Kg)	75
Air (dm ³ /cycle)	24,3

* Theoretical n° of turns to close/open starting from neutral position.

materials

DOUBLE ACTING ACTUATOR COMPONENTS WITH MANUAL INTEGRATED HANDWHEEL - SIZES: UP TO GDV1920

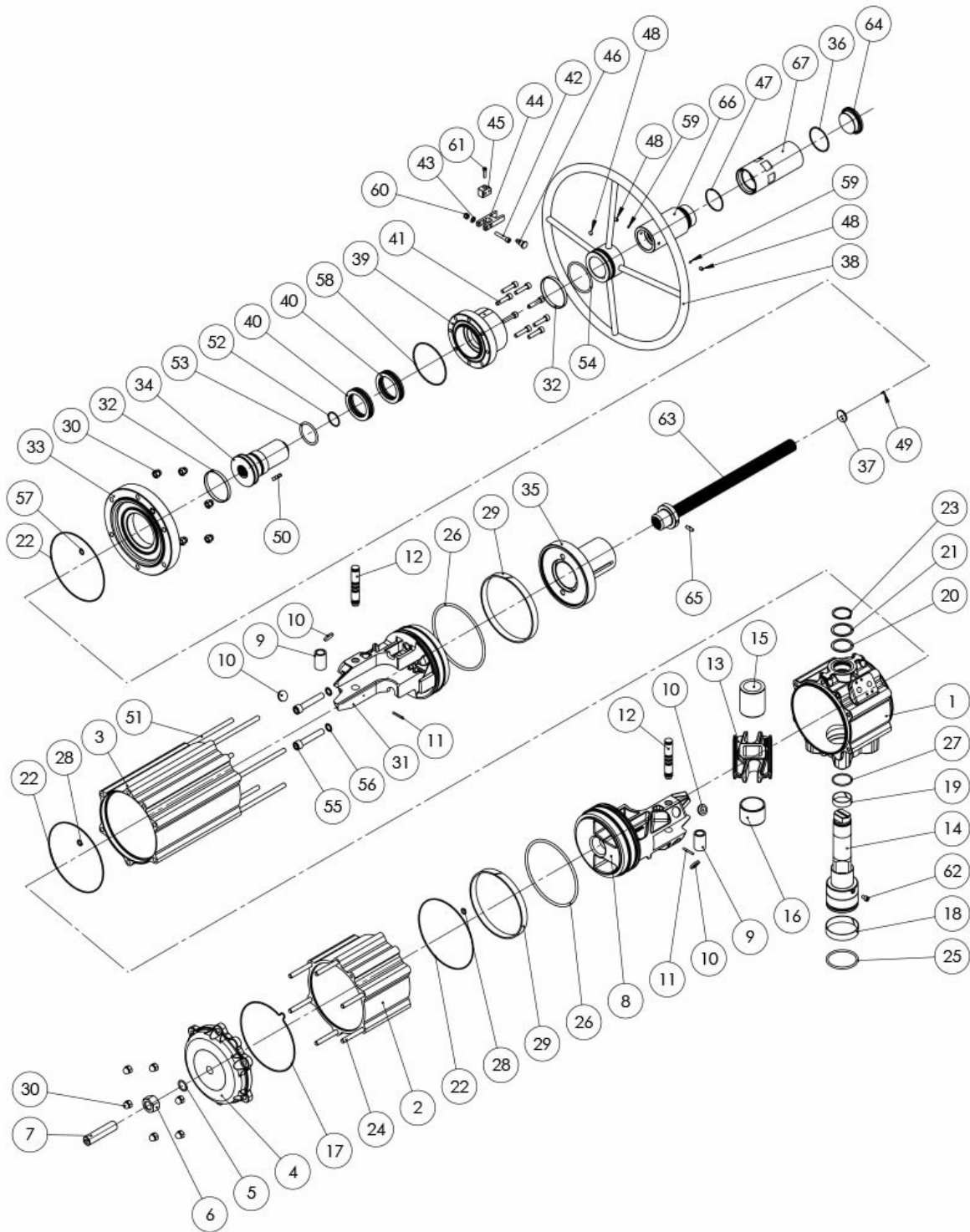


MATERIALS UP TO GDV1920

Pos	Denomination	Q.	Material
1	Screw	1	Stainless Steel
2*	Washer for roller bearings	4	Steel alloy
3*	Roller bearings	2	Steel alloy
4	Flange	1	Aluminium alloy
5	Centering ring (Only for GDV720)	1	Aluminium alloy
6*	O'ring (Only for GDV720)	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	Ottone+Gomma nitrilica
16	Cap (modified)	1	Aluminium alloy
17	Vite	4	Stainless Steel
18*	O'ring	1	Nitrilic rubber
19	Handwheel for maneuver	1	Steel alloy
20	Set screw	2	Stainless Steel
21	Protecting tube	1	Aluminium alloy
22	Trasparent tube	1	PVC
23	Protecting cap	1	Aluminium alloy
24	Key	1	Steel alloy

25*	Rivet	1	Steel alloy
26*	Indicator	1	Polipropilene
27	Lead nut maneuver	1	Steel alloy
28	Threaded bush (Only for GDV480)	2	Stainless Steel
29	Special spring cap	1	Aluminium alloy
30	Pin	1	Steel alloy
31	Screw maneuver	1	Steel alloy
32*	Dynamic seal (Piston)	2	Polyurethane
33*	Piston 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	Rotative sleeve	2	Steel alloy
38*	Bounded	2	Steel alloy+Nitrilic rubber
39	Screw	2	Stainless Steel
40	Scotch yoke	1	Steel alloy
41	Shaft support	1	Acetalic resin
42	External elastic pin of the yoke	1	Steel alloy
43	Internal elastic pin of the yoke	1	Steel alloy
44	Shaft	1	Stainless Steel
45	Support bush	1	Acetalic resin
46	Lower sealing shaft	1	FKM
47	Cylinder	1	Aluminium alloy
48	Upper sealing shaft	1	FKM
49	External support ring	1	Acetalic resin
50	Rondella	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	Screw	4	Stainless Steel
56*	O'ring	1	Nitrilic rubber
57	Grub screw	1	Stainless Steel
58	Nut	1	Aluminium alloy
59	Insert for o'ring (Only for GDV106-240-360-720)	1	Stainless Steel
*Components of spare part kit			

DOUBLE ACTING ACTUATOR COMPONENTS WITH MANUAL INTEGRATED HANDWHEEL - SIZE: GDV3840



MATERIALS GDV3840

Pos	Denomination	Q.ty	Material
1	Cylinder	1	Aluminium alloy
2	Cylinder	1	Aluminium alloy
3	Cylinder	1	Aluminium alloy
4	Cap (Standard)	1	Aluminium alloy
5*	O'ring	1	Nitrilic rubber
6	Nut	1	Stainless Steel
7	Grub screw	1	Stainless Steel
8	Piston (Standard)	1	Aluminium alloy

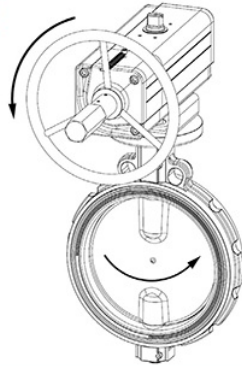
9	Bush	2	Steel alloy
10*	Piston's support	4	Acetalic resin
11	Pin	2	Steel alloy
12	Rotative sleeve	2	Steel alloy
13	Scotch yoke	1	Steel alloy
14	Shaft	1	Stainless Steel
15	Support bush	1	Acetalic resin
16	Shaft support	1	Acetalic resin
17*	Cap o'ring	1	Nitrilic rubber
18*	Bearing (shaft bottom)	1	P.T.F.E. carbo-graphite filled
19*	Bearing (shaft top)	1	P.T.F.E. carbo-graphite filled
20*	External support ring	1	Acetalic resin
21	Washer	1	Stainless Steel
22*	O'ring	3	Nitrilic rubber
23	Seeger	1	Stainless Steel
24	Screw	6	Stainless Steel
25*	Lower sealing shaft	1	FKM
26*	Piston o'ring	2	Nitrilic rubber
27*	Upper sealing shaft	1	FKM
28*	O'ring	2	Nitrilic rubber
29*	Bearing (piston head)	2	P.T.F.E. Carbo-Graphite filled
30	Nut	12	Stainless Steel
31	Piston (modified)	1	Aluminium alloy
32*	Bearings (Handwheel)	2	Poliuretano
33	Cap (modified)	1	Aluminium alloy
34	Lead nut manuever	1	Steel alloy
35	Special spring cap	1	Steel alloy
36*	O'ring	1	Nitrilic rubber
37*	Indicator	1	Polypropylene
38	Handwheel for manuever	1	Steel alloy
39	Flange	1	Aluminium alloy
40*	Thrust bearings	2	Steel alloy
41	Screw	8	Stainless Steel
42	Screw	1	Stainless Steel
43	Washer	1	Stainless Steel
44	Closing fork	1	Aluminium alloy
45	Fork support	1	Aluminium alloy
46	Lock wheel	1	Stainless Steel
47*	O'ring	1	Nitrilic rubber
48	Screw	3	Stainless Steel
49*	Rivet	1	Stainless Steel
50	Key	1	Stainless Steel
51	Screw	6	Steel alloy
52*	O'ring	1	Nitrilic rubber
53*	O'ring	1	Nitrilic rubber
54*	O'ring	1	Nitrilic rubber
55	Screw	2	Stainless Steel
56*	Bounded	2	Steel alloy+Nitrilic rubber
57*	O'ring	1	Nitrilic rubber
58*	O'ring	1	Nitrilic rubber
59*	Plug	2	P.T.F.E
60	Nut	1	Stainless Steel

61	Screw	1	Stainless Steel
62	Safety screw	1	Stainless Steel
63	Screw maneuver	1	Stainless Steel
64	Protecting cap	1	Aluminium alloy
65	Pin	1	Stainless Steel
66	Protecting tube	1	Aluminium alloy
67	Protecting removable tube	1	Aluminium alloy
*Components of spare part kit			

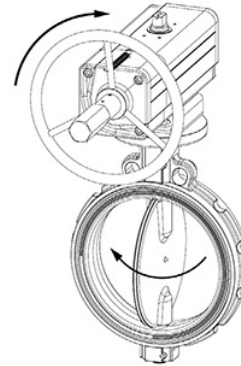
Working plane pneumatic actuator with integrated handwheel

Prima di azionare manualmente, assicurarsi che l'attuatore sia privo d'aria in pressione.
Prior to operate manually, ensure that the actuator is free from pressure.

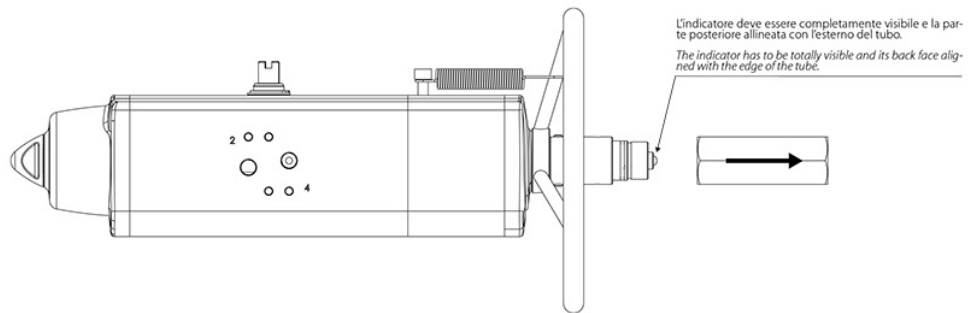
APRIRE LA VALVOLA
TO OPEN THE VALVE



CHIUDERE LA VALVOLA
TO CLOSE THE VALVE

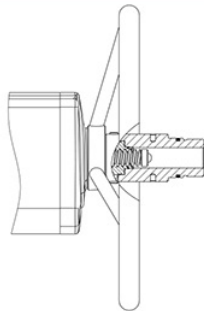


Dopo che l'attuatore è stato azionato manualmente, ritornare alla posizione neutrale prima di riprendere l'azionamento pneumatico.
When the actuator has been manually operated, return to the neutral position prior to start normal operation.



POSIZIONE NEUTRALE NEUTRAL POSITION

Con la vite in posizione neutrale, il pistone può muoversi liberamente e l'attuatore può essere comandato pneumaticamente.
Whit the screw in neutral position the piston can move freely and the actuator can be driven pnaumatically.

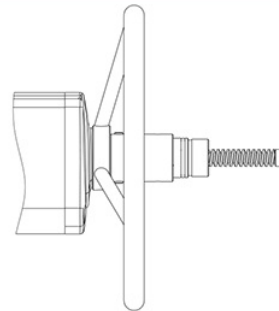


AZIONAMENTO MANUALE

GDV: Quando il volantino gira in senso antiorario, spinge la vite e i pistoni verso l'interno. La valvola si apre.
GSV: Quando il volantino gira in senso orario, spinge la vite e i pistoni verso l'interno. La valvola si chiude.

MANUAL OPERATION

GDV: When the handwheel turned counter clockwise, pushes the screw and piston inwards. The valve opens.
GSV: When the handwheel turned clockwise pushes the screw and piston inwards. The valve closes.



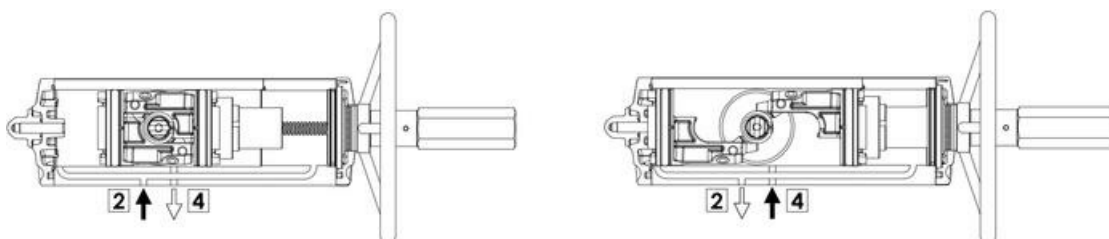
AZIONAMENTO MANUALE

GDV: Quando il volantino gira in senso orario, tira la vite e i pistoni verso l'esterno. La valvola si chiude.
GSV: Quando il volantino gira in senso antiorario, tira la vite e i pistoni verso esterno. La valvola si apre.

MANUAL OPERATION

GDV: When the handwheel is turned clockwise, the screw and piston are drawn outwards. The valve closes.
GSV: When the handwheel is turned counter clockwise, the screw and the piston are drawn outwards. The valve opens.

Actuator operating diagram with integrated manual override

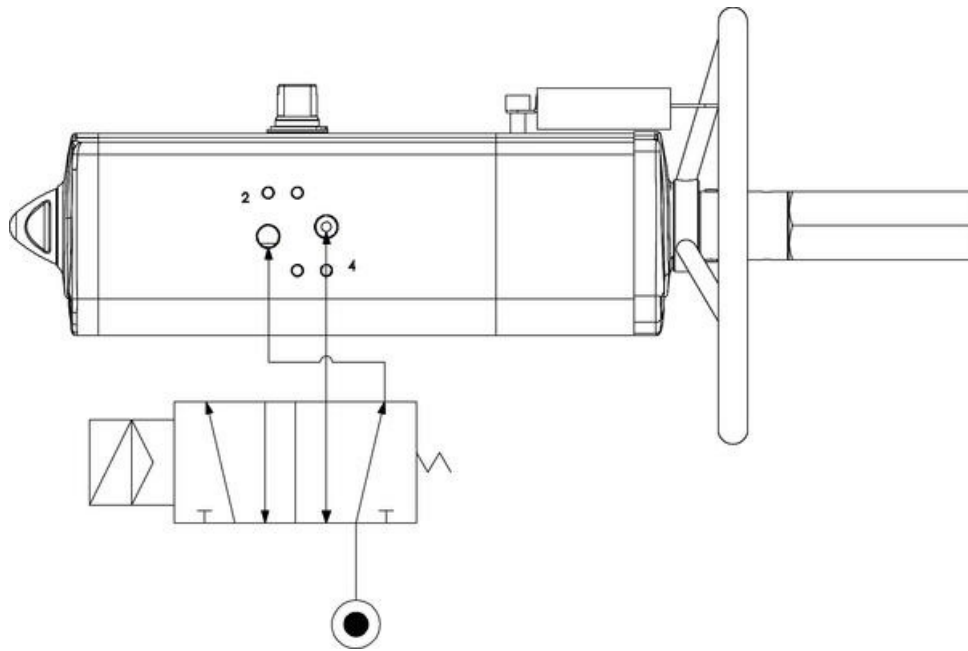


Drawings on the left = valve in open position
 Drawings on the right = valve in closed position

Typical air connection diagram

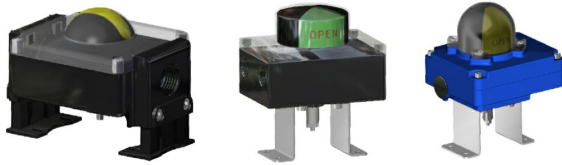
Port 2 connects to the side chambers of the cylinder: by supplying pressurized air to port 2, the drive shaft of the Standard Double Acting actuator rotates anticlockwise to open. Port 4 is instead connected to the middle chamber: when it is pressurized, the shaft rotates clockwise to close. The remote control to operate the actuator must be performed by connecting the solenoid valve directly to the standard interface of the VDE/VDI 3845 NAMUR actuator, or by means of pipes screwed onto the ports marked with numbers 2 and 4 (connected to a separate electrical cabinet).

In accordance with the international standard ISO 5599-2, the position, location, orientation and shape of the actuator air port connections must be clearly identified and marketed using numbers 2 and 4.



accessories

LIMIT SWITCH BOX



MANUAL OVERRIDE WITH HAND WHEEL



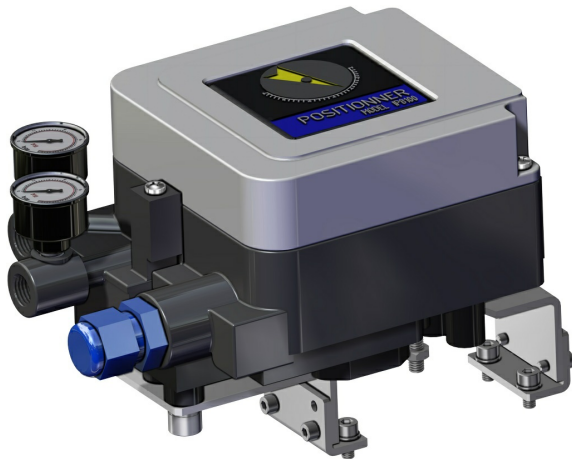
NAMUR SOLENOID VALVES



SOLENOID VALVES



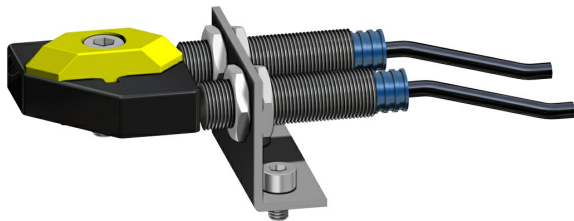
ELECTROPNEUMATIC POSITIONER (INTRINSICALLY SAFE)



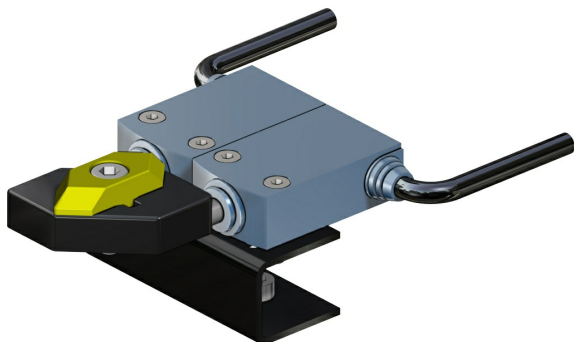
PNEUMATIC POSITIONER



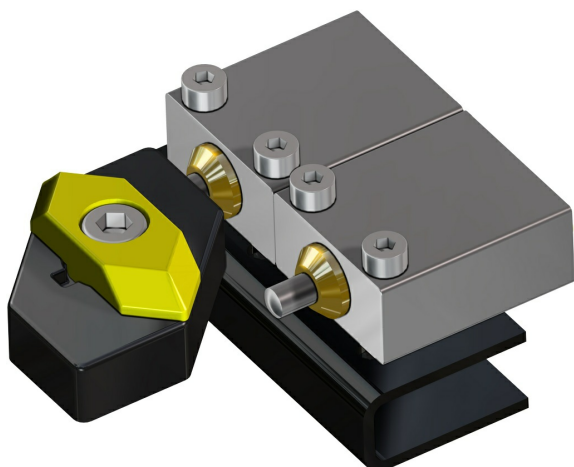
PROXIMITY LIMIT SWITCHES



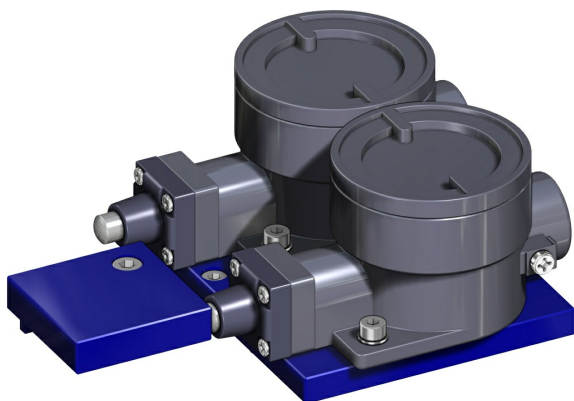
ELECTROMECHANICAL LIMIT SWITCHES



PNEUMATIC LIMIT SWITCHES



EXPLOSION PROOF LIMIT SWITCHES II2GD ExdIIC



For more information check the ACTUATECH Accessories Catalogue.

documents

Manuals

MAN81166 Attuatore Pneumatico con volantino

Certificates

AKNOWLEDGEMENT OF RECEIPT - EC - ATEX
SIL CERTIFICATE GD

Datasheet

GDV0060XF04
GDV0060XF05F07
GDV0106XF05F07
GDV0120XF05F07
GDV0180XF07F10
GDV0240XF07F10
GDV0360XF07F10
GDV0480XF10F12
GDV0720XF10F12
GDV0960XF10F12
GDV0960XF14
GDV1440XF12
GDV1440XF14
GDV1920XF12F16
GDV1920XF14
GDV3840XF16

Catalogs

ATTUATORI CON COMANDO MANUALE INTEGRATO