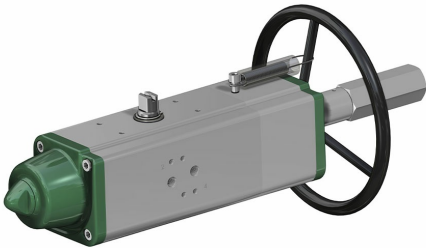


GSV (spring return) pneumatic actuator with integrated manual control

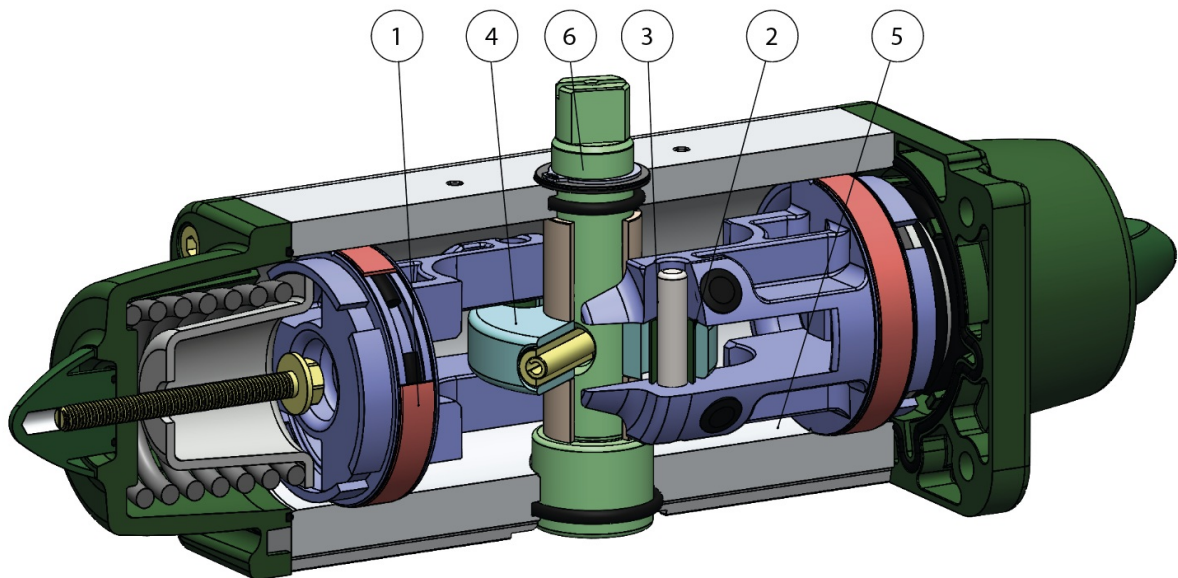
Macro Pneumatic actuators

Category Actuators with integrated handwheel

Nominal torque of the actuator: from 30 Nm to 1920 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 30 Nm to 1920 Nm

Mounting flange according to EN ISO 5211

F05 - F07 - F10 - F12 - F14 - F16

In compliance with EN 15714-3

Rotation angle: 92° (-1°, +91°)

Torque: the return torque depends on spring action only notwithstanding the air supply. The spring is provided in four different sizes (see table)

The actuator automatic closing takes place in clockwise direction by means of its springs

In the code of standard version GSV actuators, it is indicated the size of the springs (6=5,6 bar) followed by the breakaway torque in Nm at 5,6 bar air supply.

ATEX version in conformity with directive 2014/34/EU

WORKING CONDITION

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.

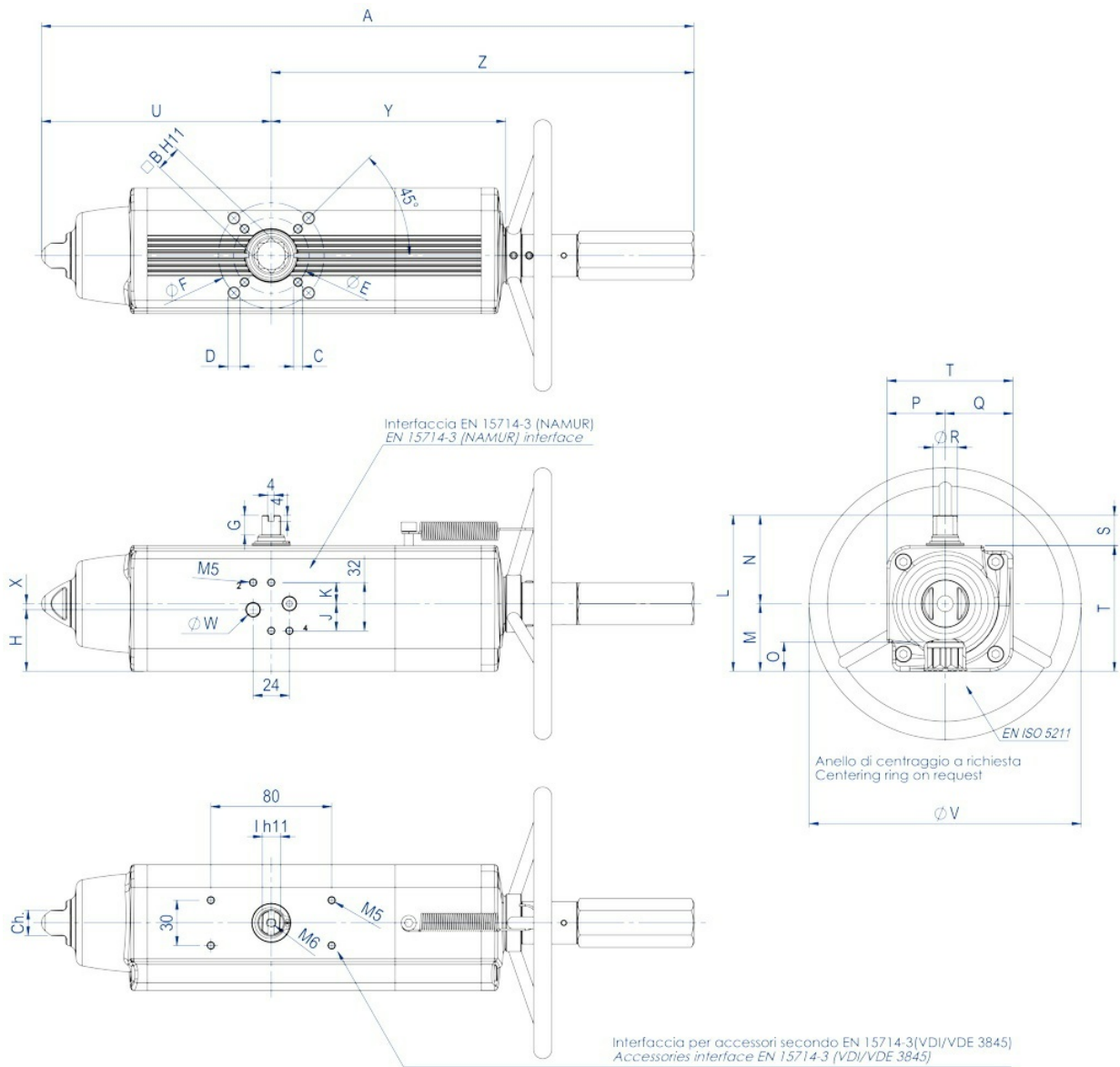
Once required the quarter turn pneumatic actuator can be equipped with a manual handwheel.

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

GSV30 ÷ GSV960



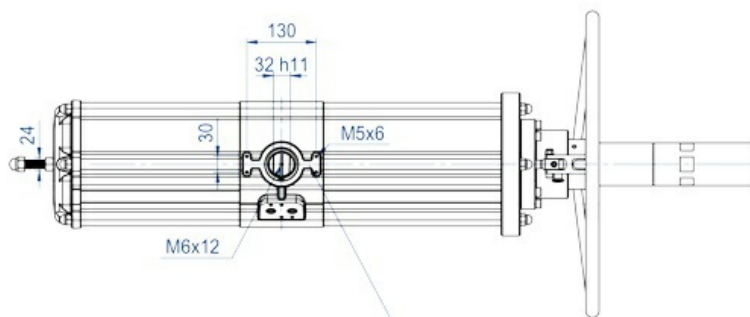
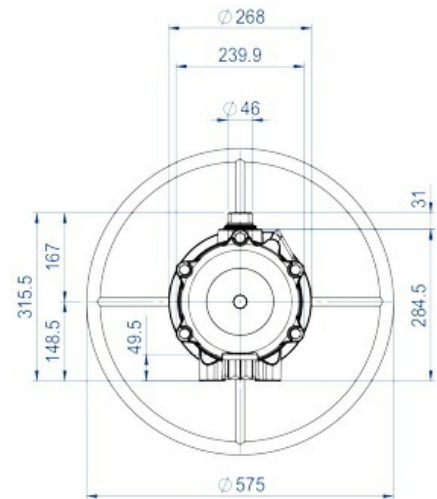
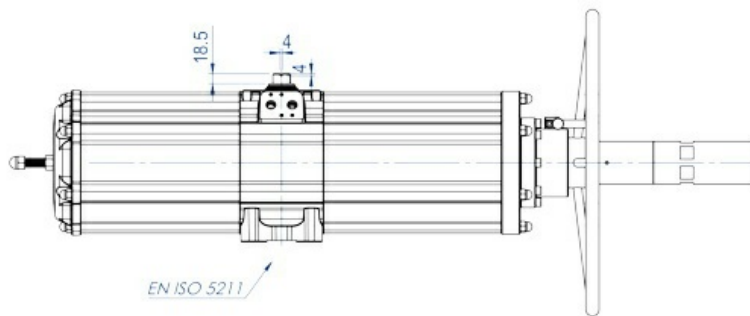
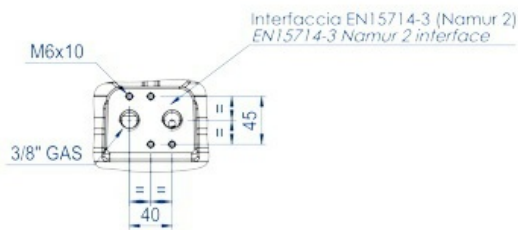
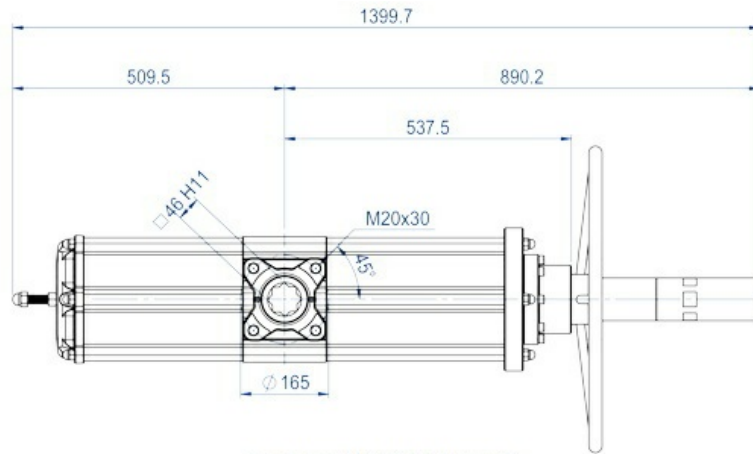
DATA SHEET GSV30 ÷ GSV240								
Spare Seals	KGGI0016VX	KGGI0016VX	KGGI0060VX	KGGI0018VX	KGGI0019VX	KGGI0020VX	KGGI0021VX	KGGI0022VX
Size	GSV30	GSV30	GSV53	GSV60	GSV90	GSV120	GSV180	GSV240
ISO	F04	F05/F07	F05/F07	F05/F07	F07/F10	F07/F10	F07/F10	F10/F12
A	392,7	392,7	431,4	457,7	534,9	558,5	635	700,8
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	129,4	129,4	152,1	169,3	196,8	204,8	237	260,2
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)	3,2	3,2	4,5	5,3	6,8	9	11,7	15,2
Air (dm ³ /cycle)	0,17	0,17	0,3	0,33	0,55	0,8	1	1,5

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

DATA SHEET GSV360 ÷ GSV960							
Spare Seals	KGGI0023VX	KGGI0024VX	KGGI0024VX	KGGI0025VX	KGGI0025VX	KGGI0026VX	KGGI0026VX
Size	GSV360	GSV480	GSV480	GSV720	GSV720	GSV960	GSV960
ISO	F10/F12	F10/F12	F14	F14	F12	F14	F12/F16
A	810,1	842,4	842,4	1035,4	1035,4	1067,7	1067,7
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	306,6	324,1	324,1	399	399	414	414
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	20	25	25	26	26
Weight (Kg)	19,5	28,1	28,1	38,8	38,8	50,6	50,6
Air (dm ³ /cycle)	2	2,8	2,8	4,2	4,2	5,9	5,9

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

GSV1920

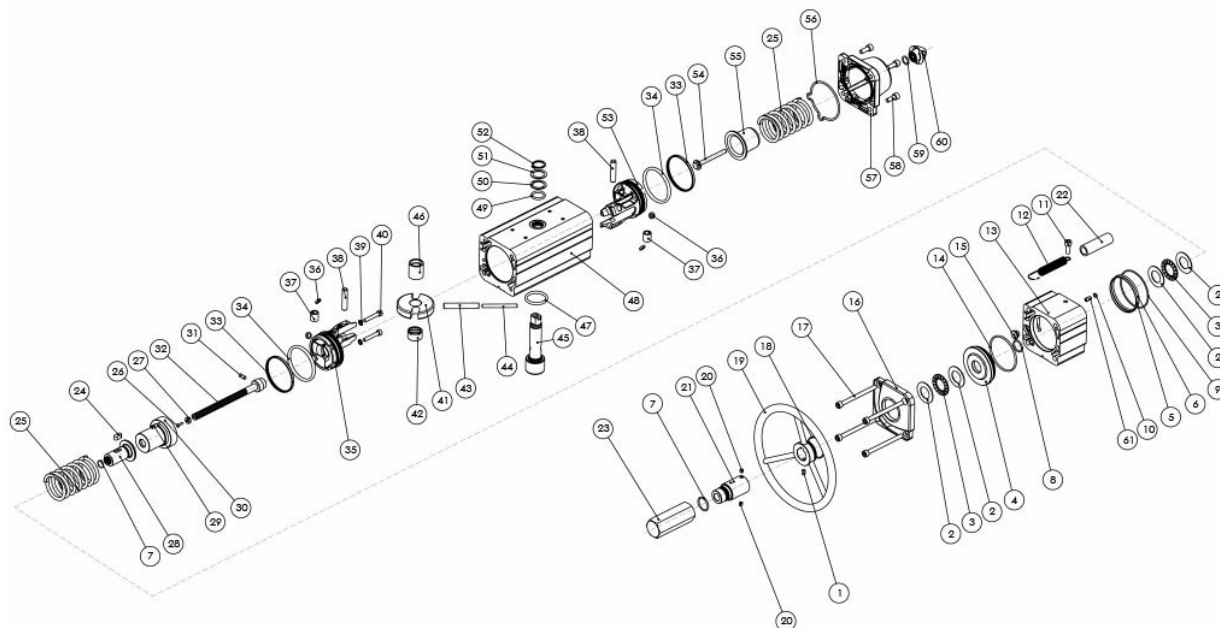


Interfaccia per accessori secondo (EN15714-3 VDI/VDE 3845)
Accessories intercate EN15714-3 (VDI/VDE 3845)

DATA SHEET GSV1920	
Spare Seals	KGGI0230VX
Size	GSV1920
ISO	F16
N°of turns*	30
Weight (Kg)	91
Air (dm ³ /cycle)	12,5

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

SPRING RETURN ACTUATOR COMPONENTS WITH MANUAL INTEGRATED HANDWHEEL - SIZES: UP TO GSV960



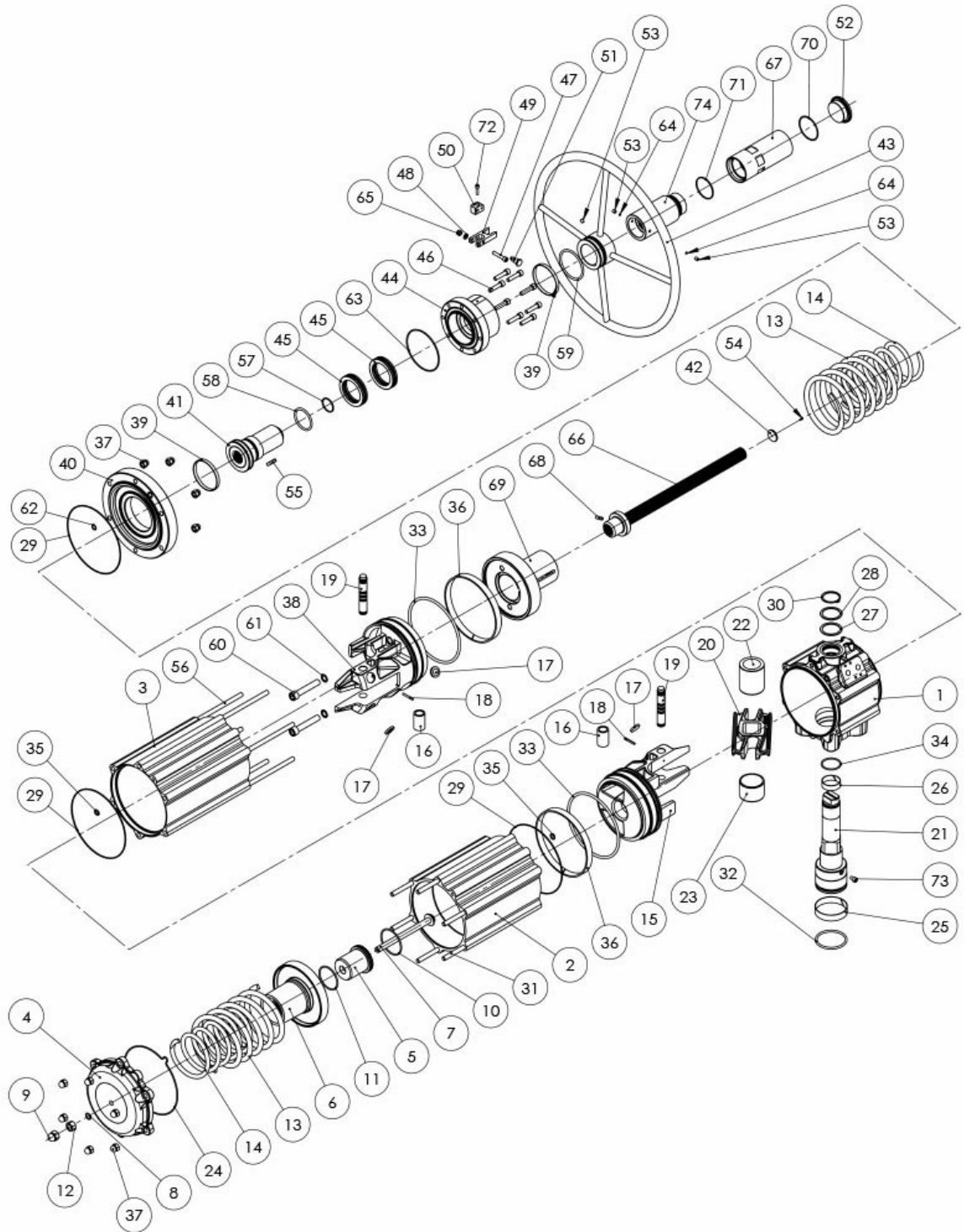
MATERIALS UP TO GSV960

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 GSV360)	1	Aluminium alloy
6*	O'ring (Only for GSV360)	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	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	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 GSV240)	2	Stainless Steel
30	Special spring cap	1	Aluminium alloy
31	Pin	1	Steel alloy
32	Screw maneuver	1	Steel alloy
33*	Dynamic seal (Piston)	2	Polyurethane
34*	Piston 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	Steel alloy+Nitrilic rubber
40	Screw	2	Stainless Steel
41	Scotch yoke	1	Steel alloy
42	Shaft support	1	Acetalic 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	Acetalic resin
47	Lower sealing shaft	1	FKM
48	Cylinder	1	Aluminium alloy
49	Upper sealing shaft	1	FKM
50	External support ring	1	Acetalic 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 (Only for GSV53-120-180-360)	1	Stainless Steel

* Components of spare part kit

SPRING RETURN ACTUATOR COMPONENTS WITH MANUAL INTEGRATED HANDWHEEL - SIZE: GSV1920



MATERIALS GSV1920

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	Internal spring support	1	Aluminium alloy
6	External spring support	1	Aluminium alloy
7	Spring loading screw	1	Stainless Steel
8*	O'ring	1	Nitrilic rubber

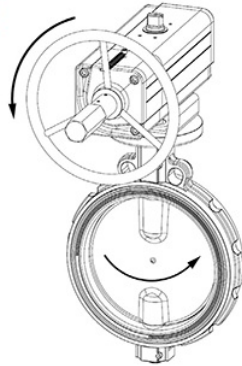
9	Cap Nut	1	Stainless Steel
10	O'ring	1	Nitrilic rubber
11	O'ring	1	Nitrilic rubber
12	Nut	1	Stainless Steel
13	External spring	2	Steel alloy
14	Internal spring	2	Steel alloy
15	Piston (Standard)	1	Aluminium alloy
16	Bush	2	Steel alloy
17*	Piston's support	4	Acetalic resin
18	Pin	2	Steel alloy
19	Rotative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

61*	Bounded	2	Steel alloy+Nitrilic rubber
62*	O'ring	1	Nitrilic rubber
63*	O'ring	1	Nitrilic rubber
64*	Plug	2	P.T.F.E
65	Nut	1	Stainless Steel
66	Screw maneuever	1	Stainless Steel
67	Protecting removable tube	1	Aluminium alloy
68	Pin	1	Stainless Steel
69	Special spring cap	1	Steel alloy
70*	O'ring	1	Nitrilic rubber
71*	O'ring	1	Nitrilic rubber
72	Screw	1	Stainless Steel
73	Safety screw	1	Stainless Steel
74	Protecting tube	1	Aluminium alloy
* Components of spare part kit			

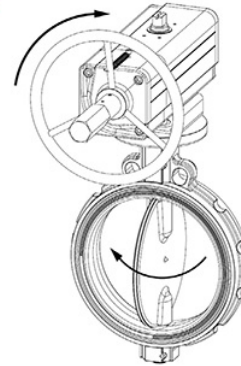
Working plane pneumatic actuator with integrated handwheel

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.

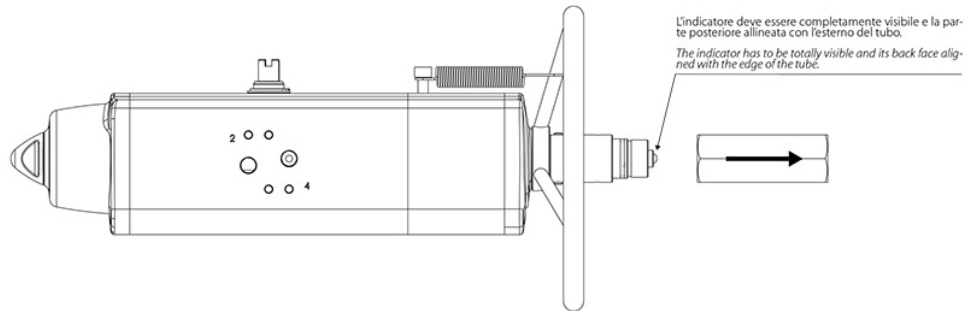
APRIRE LA VALVOLA
TO OPEN THE VALVE



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

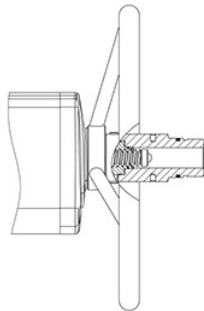
Con la vite in posizione neutrale, il pistone può muoversi liberamente e l'attuatore può essere comandato pneumaticamente.
Whit the screw in neutral position the piston can move freely and the actuator can be driven pnaumatically.

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.

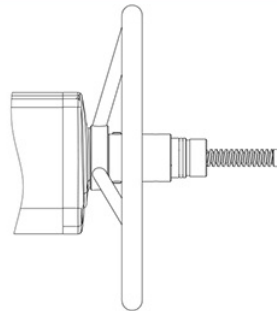


AZIONAMENTO MANUALE

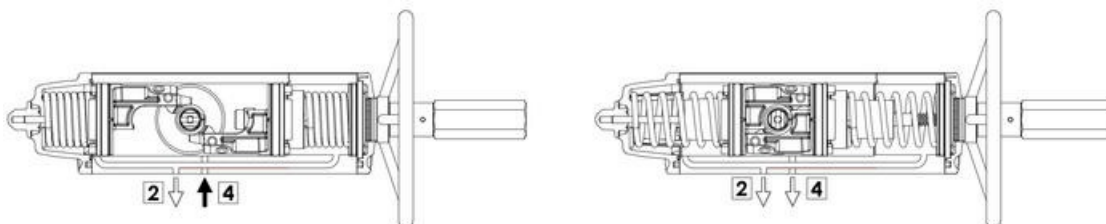
GDV: Quando il volantino gira in senso orario, tira la vite e i pistoni verso l'esterno. La valvola si chiude.
GSV: Quando il volantino gira in senso antiorario, tira la vite e i pistoni verso esterno. La valvola si apre.

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.



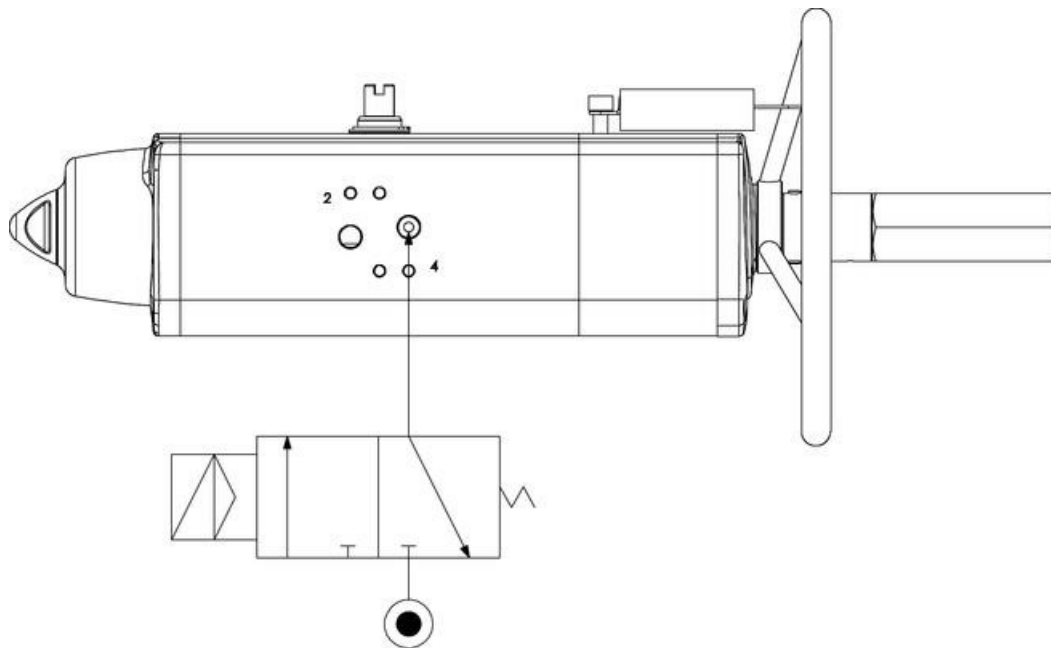
Actuator operating diagram with integrated manual override



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

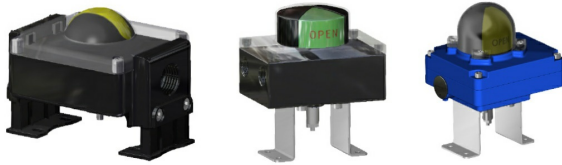
Typical air connection diagram

The pistons of the standard GS actuators are mounted as shown above. Although the spring force is small, the geometry of the mechanism provides more torque at the end of stroke. When the actuator is in the valve open position and the springs are fully compressed, the end stops can be adjusted with precision. Reverse acting spring return actuators are required when the valve needs to open automatically in the case that the pressurized air or power supply is turned off. In reverse acting actuators, the pistons are inserted into the cylinder in the same way as in the Double Acting version and, due to the force of the spring, the actuator opens normally. Caution. The normal torque performance in the reverse acting version, due to its construction, is different from that of the standard version. Caution. To prevent dust or dirt from being sucked into the actuator chamber during spring action, install a filter on port 2. Port 4 is connected to the middle chamber and, when pressurized, the drive shaft rotates anticlockwise to open. 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



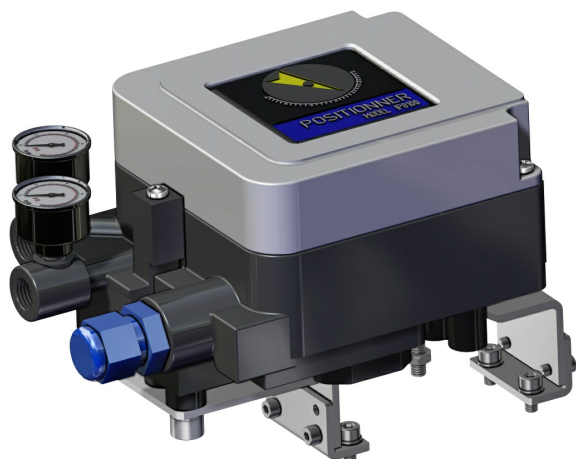
NAMUR SOLENOID VALVES



SOLENOID VALVES



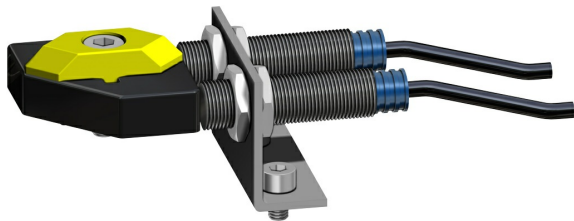
ELECTROPNEUMATIC POSITIONER (INTRINSICALLY SAFE)



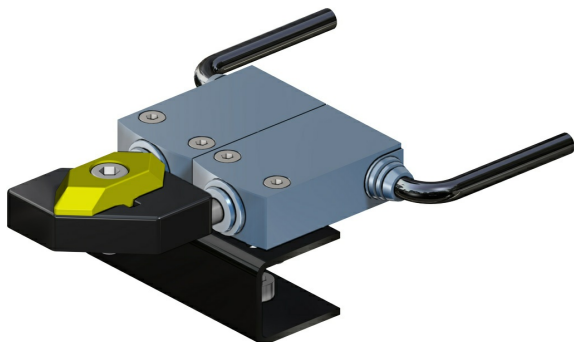
PNEUMATIC POSITIONER



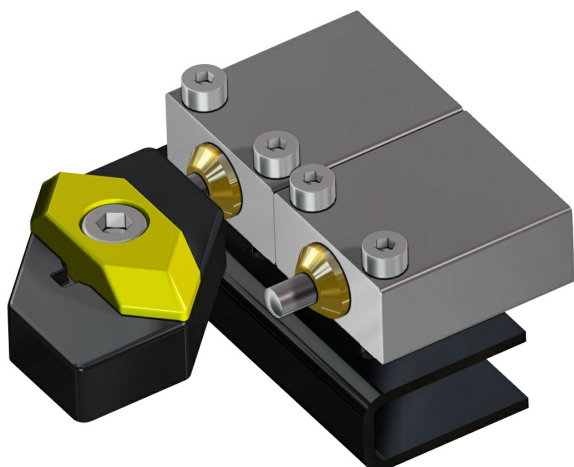
PROXIMITY LIMIT SWITCHES



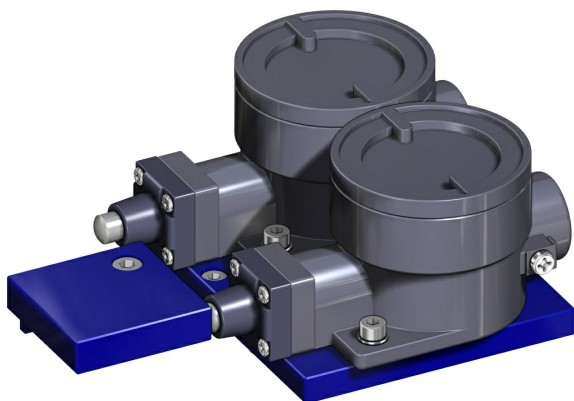
ELECTROMECHANICAL LIMIT SWITCHES



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 GS

Datasheet

GSV0053XF05F07
GSV0090XF07F10
GSV0120XF07F10
GSV0180XF07F10
GSV0240XF10F12
GSV0360XF10F12
GSV0480XF10F12
GSV0480XF14
GSV0720XF12
GSV0720XF14
GSV0960XF12F16
GSV0960XF14
GSV1920XF16
GSV0030XF04
GSV0030XF05F07
GSV0060XF05F07

Catalogs

ATTUATORI CON COMANDO MANUALE INTEGRATO

