Pneumatic Actuator

ACTAIR NG

Type Series Booklet

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Type Series Booklet ACTAIR NG

Contents

Pneumatic Actuators

Double-acting Pneumatic Quarter-turn Actuators

ACTAIR NG

Main applications

- Water
- Waste water
- Energy
- Industry
- Shipbuilding
- Oil and gas

Operating data

Table 1: Operating properties

Characteristic	Value
Min. permissible pressure [bar]	3
Max. permissible pressure [bar]	8
Min. permissible temperature [°C]	≥ -50
Max. permissible temperature [°C]	≤ +150
Output torque [Nm]	≤ 8000
Enclosure	IP68 30 metres of water 169 hours

Design details

Design

- Double-acting pneumatic actuators of the ACTAIR NG type series are designed for actuating all types of quarter-turn valves (butterfly valves, ball valves). In conjunction with an AMTROBOX/AMTRONIC/SMARTRONIC control unit, they offer all the control and monitoring functions required by process control systems.
- This pneumatic actuator with scotch-yoke kinematics develops a variable torque with a maximum at valve closure.
- The translatory movement of the pistons generated by the control pressure results in a clockwise quarter turn of the pinion and, consequently, a quarter turn of the valve shaft connected to the pinion, causing the valve to close.
- The control medium is air or any neutral gas in compliance with ISO 8573-1 Class 5.
- Pneumatic interface to NAMUR
- VDI/VDE 3845 interface for connecting control units
- Actuator/valve connection flange to ISO 5211
- Mounts on the top flange of quarter-turn valves either directly or via installation components
- Standard actuator features:
  - One position indicator
  - Adjustable mechanical travel stops:

    - Closed position of ACTAIR NG 2 to 160: -4° to +6°

    - Closed position and open position of ACTAIR NG 240 to 700: -5° to +5°
- The actuators are lubricated with silicone-free grease at the factory.
- Housing made of light metal alloy, anodised, thickness: 20 µm
- End caps made of light metal alloy with polyurethane coating, thickness: 150 µm, colour: black, RAL 9011, for ACTAIR NG 2 to 160
- Versions available:
  - Standard: -20 °C to +80 °C
  - Low-temperature version (-50 °C to +60 °C), optional
  - High-temperature version (-20 °C to +150 °C), optional

Variants

- Open / closed position signalling by AMTROBOX and all limit switch boxes with a VDI/VDE interface
- Position indication and compressed air control by AMTRONIC
- Integral manual override – ACTAIR NGV type series:
  - Maximum actuating torque: 4000 Nm
  - Force transmission by scotch-yoke kinematics
- Declutchable manual override:
  - Protection against splashing water and dust ingress (IP65)
  - Design in accordance with IP67 on request
  - Polyurethane coating, thickness 80 µm, colour: RAL 7016 anthracite grey
  - Temperature range -20 °C to +80 °C

Product benefits

- Actuator for all types of quarter-turn valves (butterfly valves, ball/plug valves)
- Position indicator and one or several adjustable travel stops

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- Unlike rack-and-pinion kinematics, the actuator's scotch-yoke kinematics develops maximum torque at both valve opening and closure.
  - Reduced dimensions and actuating time
  - Reduced weight
  - Reduced control air consumption
  - Higher durability of piston seal rings
  - Versions with integral manual override
  - Actuator designed to require no lubricants, for long service life

Product information

Product information as per Regulation No. 1907/2006 (REACH)

For information as per chemicals Regulation (EC) No. 1907/2006 (REACH), see https://www.ksb.com/ksb-en/About-KSB/Corporate-responsibility/reach/ .

Related documents

Table 2: Information/documents

Document	Reference number
AMTROBOX type series booklet	8525.1
AMTRONIC type series booklet	8514.837
SMARTRONIC MA type series booklet	8520.803
ACTAIR NG / DYNACTAIR NG operating manual	8513.81
ACTAIR NG / DYNACTAIR NG operating manual	8513.82
ACTAIR NGV / DYNACTAIR NGV operating manual	8513.83
Type series booklet for RMD declutchable manual override	5350.1

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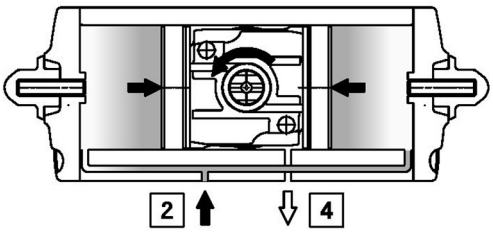
Technical data

Function

The scotch-yoke kinematics develop a variable torque that is ideally suited for actuating quarter-turn valves.

Open

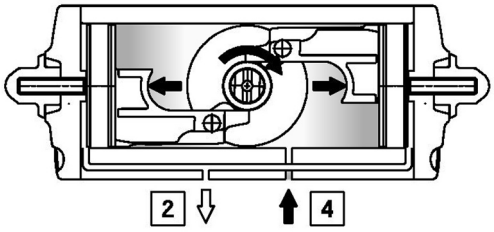
Port 2 communicates with both the left-hand and the right-hand cylinder chamber. When control air is supplied to port 2, the shaft of the double-acting pneumatic actuator rotates in anti-clockwise direction, causing the valve to open.



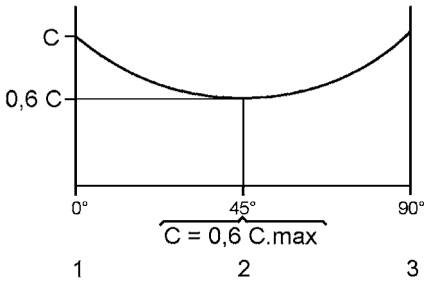
Top view

Closed

Port 4 communicates with the intermediate chamber. When control pressure is supplied, the shaft of the double-acting pneumatic actuator rotates in clockwise direction, causing the valve to close.



Top view



C:	Output torque
0° to 90:	Angle of rotation
0°:	Closed
90°:	Open

Curve of scotch-yoke kinematics

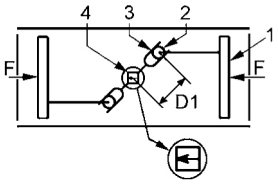


Fig. 1 - Closed
Output torque C = F x D1
for F = constant

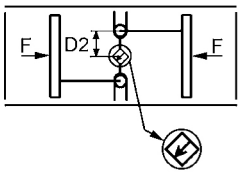


Fig. 2 - 45°
Output torque C = F x D2
for F = constant

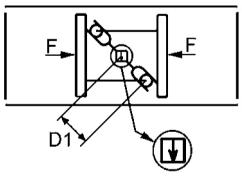


Fig. 3 - Open
Output torque C = F x D1
for F = constant

The translation of the movement is achieved via the piston system **1**, the rollers **2**, the yoke **3** and the shaft . The translatory movement of the pistons **1** generated by the control pressure results in a sliding movement of the rollers **2** in the grooves of the yoke **3**. The yoke **3** then rotates the shaft **4** together with the valve shaft.

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Type series

ACTAIR NG 2 to160

ACTAIR NG 240 to 700

Table 3: Dimensions [mm]

Size	Actuator/valve interface to ISO 5211	Shaft end dimensions [mm]		
		Depth	Flat end	Square end
2	F03/F05	13,2	M11	-
5	F05/F07	16,5	M14	-
10	F05/F07	19,3	M14	-
15	F07/F10	24,8	M19	-
20	F07/F10	24,8	M19	-
30	F07/F10	25,3	M22	-
40	F10/F12	41	-	C30
60	F10/F12	41	-	C30
80	F14	50	-	C36
120	F14	50	-	C36
160	F12/F16	65	-	C50
240	F16	65	-	C50
340	F16	65	-	C50
500	F25	80	-	C50
700	F25	80	-	C60

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Output torques (in Nm)

The output torque generated by the actuator depends on the control fluid pressure.

The following tables specify the torques that can be achieved depending on the control pressure applied (8 bar on request).

Table 4: Force transmission: scotch yoke

Size	[1)][Nm]	Control pressure [bar]											
		3			4			5			6		
		0°	50°	90°	0°	50°	90°	0°	50°	90°	0°	50°	90°
2	32,1	16,1	8,0	12,1	21,4	10,7	16,1	26,8	13,4	20,1	32,1	16,1	24,1
5	64,3	32,1	16,1	24,1	42,9	21,4	32,1	53,6	26,8	40,2	64,3	32,1	48,2
10	113,6	56,8	28,4	42,9	75,7	37,9	57,1	94,6	47,3	71,4	113,6	56,8	85,7
15	192,9	96,4	48,2	72,3	128,6	64,3	96,4	160,7	80,4	120,5	192,9	96,4	144,6
20	247,1	128,6	64,3	96,4	171,4	85,7	128,6	214,3	107,1	160,7	247,1	128,6	192,9
30	385,7	192,9	96,4	144,6	257,1	128,6	192,9	321,4	160,7	241,1	385,7	192,9	289,3
40	514,3	257,1	128,6	192,9	342,9	171,4	257,1	428,6	214,3	321,4	514,3	257,1	385,7
60	771,4	385,7	192,9	289,3	514,3	257,1	385,7	642,9	321,4	482,1	771,4	385,7	578,6
80	1028,6	514,3	257,1	385,7	685,7	342,9	514,3	857,1	428,6	642,9	1028,6	514,3	771,4
120	1542,9	771,4	385,7	578,6	1028,6	514,3	771,4	1285,7	642,9	964,3	1542,9	771,4	1157,1
160	2057,1	1028,6	514,3	771,4	1371,4	685,7	1028,6	1714,3	857,1	1285,7	2057,1	1028,6	1542,9
240	3085,7	1542,9	771,4	1157,1	2057,1	1028,6	1542,9	2571,4	1295,7	1928,6	3085,7	1542,9	2314,3
340	4114,3	2057,1	1028,6	1542,9	2742,9	1371,4	2057,1	3428,6	1714,3	2571,4	4114,3	2057,1	3085,7
500	6171,4	3085,7	1542,9	2314,3	4114,3	2057,1	3085,7	5142,9	2571,4	3857,1	6171,4	3085,7	4628,6
700	8571,4	4285,7	2142,9	3214,3	5714,3	2857,1	4285,7	7142,9	3571,4	5357,1	8571,4	4285,7	6428,6

Control fluid

Operating pressure	3 to 6 bar (44 to 87 psi)
Filtration level	ISO 8573-1 Class 5 (< 40 µm)
Dew point	ISO 8573-1 Class 5 (< 7 °C, and if temperature is 5 °C below ambient temperature)
Lubrication	ISO 8573-1 Class 5 (< 25 mg/m³)

Actuating time up to 5.5 bar: without valve

Table 5: Actuating times

Size	Actuating time [+/-0.5 s]					
	5/2-way directional control valve to NAMUR		AMTRONIC R1300 / R1301		SMARTRONIC R1310 / R1311 / R1312 / R1313	
	0° to 90°	90° to 0°	0° to 90°	90° to 0°	0° to 90°	90° to 0°
2	0,08	0,08	1,0	1,0	1,0	1,0
5	0,1	00,9	1,0	1,0	1,0	1,0
10	0,12	0,13	1,0	1,0	1,0	1,0
15	0,2	0,21	1,2	1,2	1,5	1,5
20	0,28	0,25	1,7	1,7	2,0	2,0
30	0,38	0,36	2,0	2,0	2,7	2,7
40	0,46	0,4	2,6	2,6	3,9	3,9
60	0,64	0,59	3,0	3,0	4,5	4,5
80	0,81	0,73	4,5	4,5	6,3	6,3
120	1,36	1,21	6,5	6,5	7,5	7,5
160	1,59	1,44	8,5	8,5	9,5	9,5
240	1,77	1,41	16,5	16,5	17,0	17,0
340	2,09	1,68	18,0	18,0	18,0	18,0
500	3,12	2,52	28,5	28,5	28,5	28,5
700	3,91	3,4	37,5	37,5	37,5	37,5

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1 Max. permissible output torque

Control air volume

Table 6: Control air volume

Size	Control air volume [dm³/cycle]
2	0,15
5	0,3
10	0,55
15	0,95
20	1,3
30	1,8
40	2,6
60	3,5
80	4,9
120	7,6
160	10,2
240	20
340	24,3
500	38
700	50

A cycle corresponds to one opening/closing process of the valve.

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Materials

Materials ACTAIR NG 2 - 160

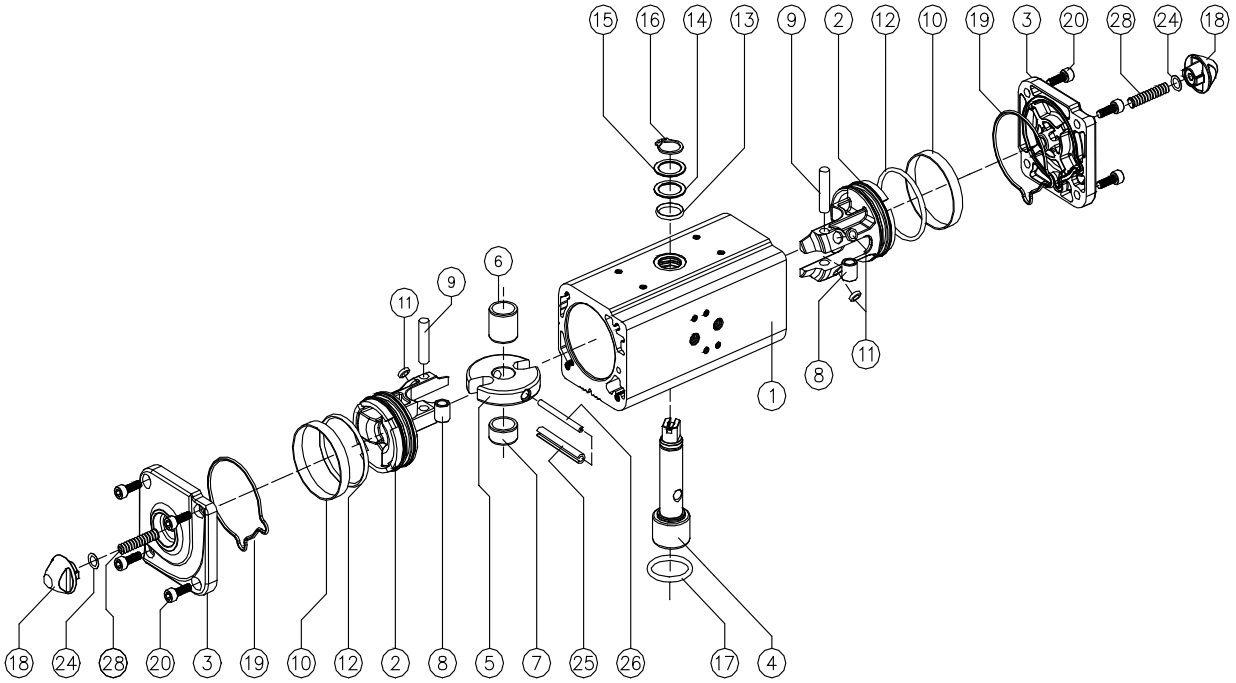

Fig. 1: Exploded view of size 2 - 160

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Table 7: List of components

Part No.		Description	Materials	Quantity
1		Cylinder	Light metal alloy, anodised	1
2		Piston	Light metal alloy	2
3		End cap	Light metal alloy	2
4		Shaft	Stainless steel AISI 303	1
5		Yoke	Steel	1
6		Bush	Light metal alloy	1
7		Guiding element	Acetal	2
8		Roller	Steel	2
9		Roller hinge pin	Steel	2
10	[2]	Dynamic piston seal ring	Reinforced PTFE	2
11	[2]	Sliding pad	Reinforced PTFE	4
12	[2][3][4]	Piston seal ring	Nitrile	2
13	[3][4]	O-ring	FKM	1
14		Seal retainer	Nitrile	1
15		Washer	Light metal alloy	1
16		Circlip	Stainless steel	1
17	[3][4]	O-ring	FKM	1
18		Nut	Light metal alloy	2
19	[2]	End cap seal	Nitrile	2
20		Screw	Stainless steel	8
24	[2][3][4]	O-ring	Nitrile	2
25		Outer yoke pin	Steel	1
26		Inner yoke pin	Steel	1
27		Adjustable travel stop screw	Stainless steel 304	2

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2 Parts are included in the spare parts kit.
3 Low-temperature version (-50 °C to +120 °C): O-ring = fluorosilicone (FVMQ)
4 High-temperature version (-20 °C to +150 °C): O-Ring = FKM (FVMQ)

Materials ACTAIR NG 240

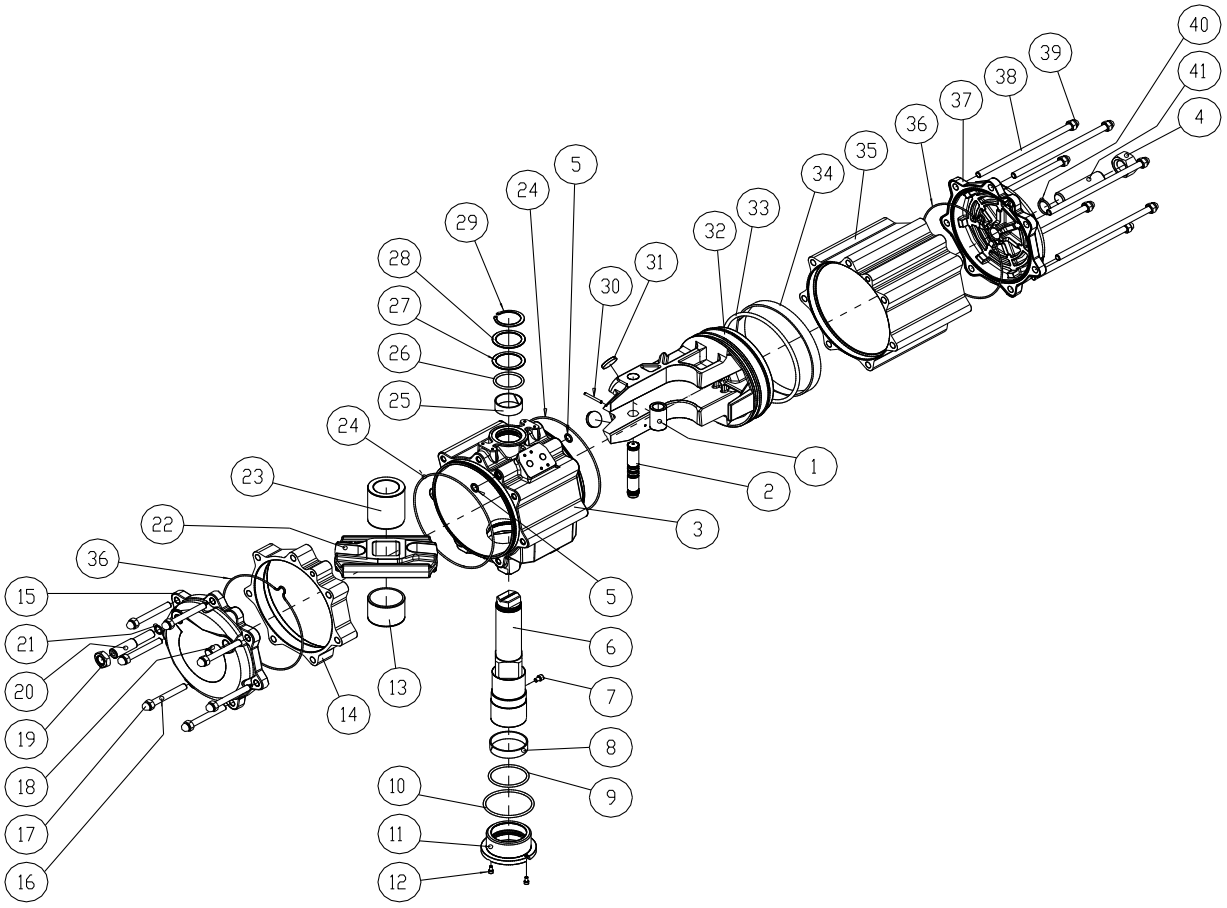

Fig. 2: Exploded view of size 240

Table 8: List of components

Part No.		Description	Materials	Quantity
1		Ring	Steel	1
2		Pin	Steel	1
3		Housing	Light metal alloy, anodised	1
4		Nut	Stainless steel	1
5	5)6)7)	O-ring	Nitrile	2
6		Shaft	Steel	1
7		Screw	Steel	1
8	5)	Lower shaft bearing	Light metal alloy, anodised	1
9	5)6)7)	O-ring	FKM	1
10	5)6)7)	O-ring	FKM	1
11		Lower bearing bush	Light metal alloy, anodised	1
12		Screw	Steel	2
13		Shaft bearing	Acetal	1
14		Spacer ring	Light metal alloy, anodised	1
15		End cap	Light metal alloy, anodised	1
16		Tie rod	Steel	7
17		End cap nut	Stainless steel	7
18		Grub screw	Stainless steel	1
19		Nut	Stainless steel	1
20		Grub screw	Stainless steel	1
21	5)6)7)	O-ring	Nitrile	1
22		Yoke	Steel	1
23		Shaft bearing	Acetal	1
24	5)6)7)	O-ring	Nitrile	2
25	5)	Upper shaft bearing	Acetal	1
26	5)6)7)	O-ring	FKM	1
27	5)	Fixed bearing	Acetal	1
28		Washer	Steel	1
29		Circlip	Steel	1
30		Spring-type straight pin	Steel	1
31	5)	Lower piston bearing	Acetal	2
32		Piston	Light metal alloy	1
33	5)6)7)	O-ring	Nitrile	1
34		Upper piston bearing	Acetal	1
35		Cylinder	Light metal alloy	1
36	5)6)7)	O-ring	Nitrile	2
37		End cap	Light metal alloy	1
38		Tie rod	Steel	7
39		End cap nut	Stainless steel	7
40	5)6)7)	O-ring	Nitrile	1
41		Grub screw	Stainless steel	1

5 Parts are included in the spare parts kit.
6 Low-temperature version (-50 °C to +120 °C): O-ring = fluorosilicone (FVMQ)
7 High-temperature version (-20 °C to +150 °C): O-Ring = FKM (FVMQ)

Materials ACTAIR NG 340

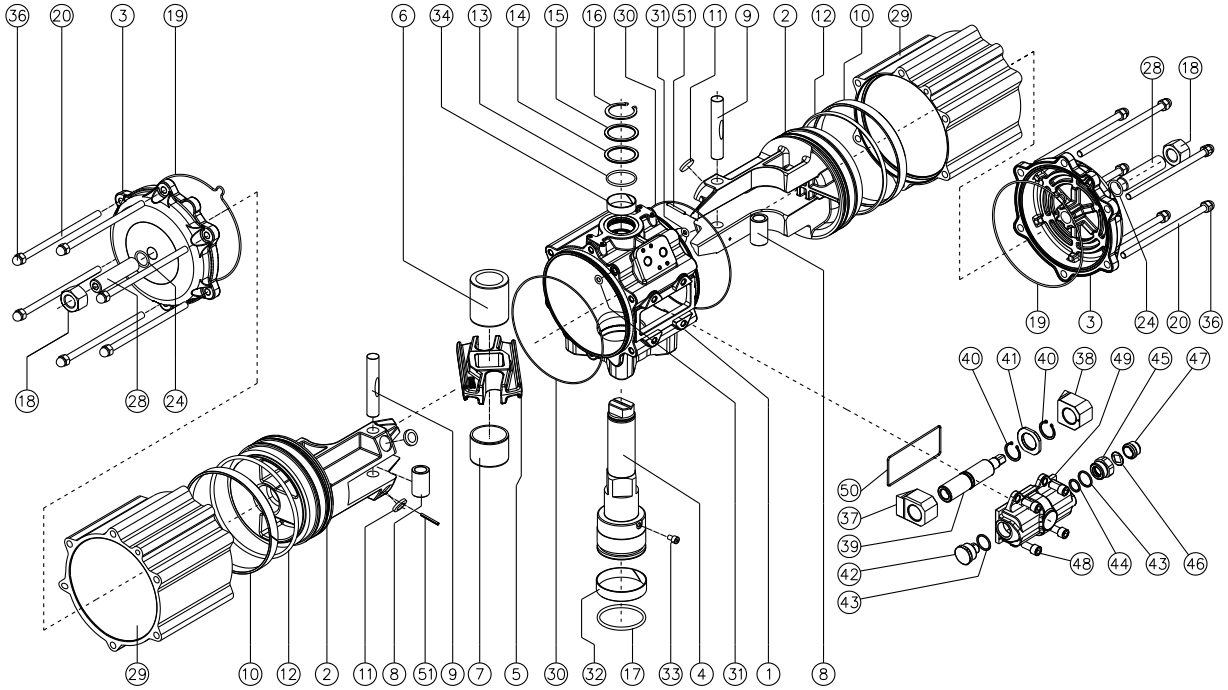

Fig. 3: Exploded view of size 340

Table 9: List of components

Part No.		Description	Materials	Quantity
1		Cylinder	Light metal alloy, anodised	1
2		Piston	Light metal alloy	2
3		End cap	Light metal alloy, anodised	2
4		Shaft	Stainless steel	1
5		Yoke	Steel	1
6		Bush	Acetal	1
7		Shaft sleeve	Acetal	1
8		Bush	Steel	2
9		Rotation ring	Steel	2
10	[8]	Dynamic piston seal ring	Acetal	2
11	[8]	Piston damper	Acetal	4
12	[8][9][10]	Piston seal ring	Nitrile	2
13	[8][9][10]	Joint ring for upper shaft	FKM	1
14	[8]	Outer support ring	Acetal	1
15		Washer	Stainless steel	1
16		Circlip	Stainless steel	1
17	[8][9][10]	O-ring for lower shaft	FKM	1
18		Nut	Stainless steel	2
19	[8][9][10]	Joint ring for end cap	Nitrile	2
20		End cap screw	Steel	12
24	[8][9][10]	O-ring	Nitrile	2
28		Adjustable travel stop screw	Stainless steel	2
29		Cylinder	Light metal alloy, anodised	2
30	[8][9][10]	O-ring for cylinder	Nitrile	2
31	[8][9][10]	O-ring	Nitrile	2
32	[8]	Lower support ring	Acetal	1
33		Safety screw	Stainless steel	1
34	[8]	Upper support ring	Acetal	1
36		End cap nut	Stainless steel	12
37		Spring-type straight pin	Steel	2

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8 Parts are included in the spare parts kit.
9 Low-temperature version (-50 °C to +120 °C): O-ring = fluorosilicone (FVMQ)
10 High-temperature version (-20 °C to +150 °C): O-Ring = FKM (FVMQ)

Materials ACTAIR NG 500

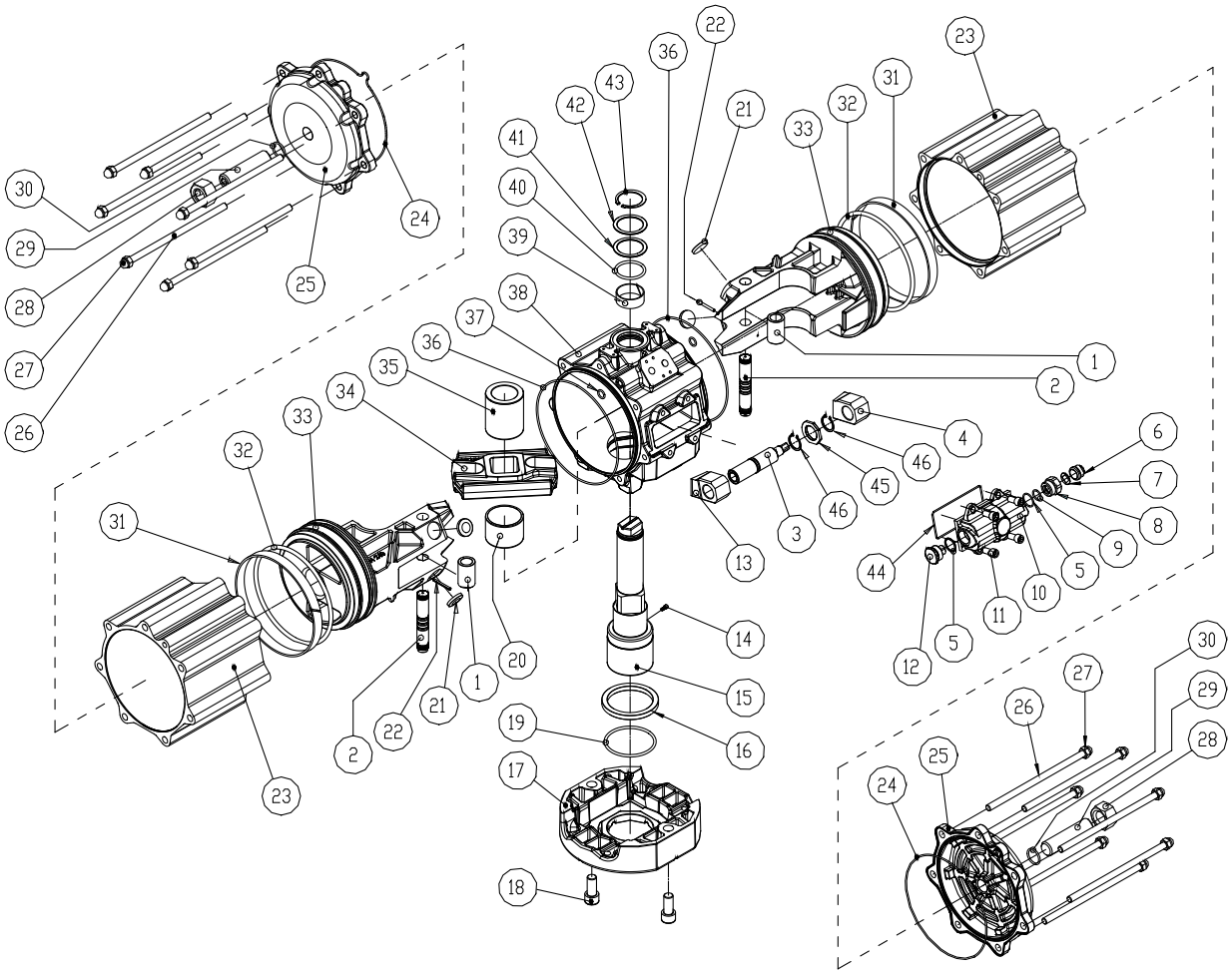

Fig. 4: Exploded view of size 500

Table 10: List of components

Part No.		Description	Materials	Quantity
1		Ring	Steel	1
2		Pin	Steel	1
3		Adjusting screw	Steel	1
4		Locking device, left	Steel	1
5	11)12)13)	O-ring	Nitrile	2
6		Protective cover	Light metal alloy, anodised	1
7		Lock washer	Steel	1
8		Metal ring	Stainless steel	1
9	11)12)13)	O-ring	Nitrile	1
10		Gear housing	Light metal alloy, anodised	1
11		Screw	Steel	4
12		Metal ring	Stainless steel	1
13		Lock washer	Steel	1
14		Screw	Steel	1
15		Shaft	Steel	1
16	11)	Lower shaft bearing	Acetal	1
17		Connection flange	Light metal alloy, anodised	1
18		Screw	Steel	2
19	11)12)13)	O-ring	FKM	1
20		Shaft bearing	Acetal	1
21	11)	Lower piston bearing	Acetal	4
22		Spring-type straight pin	Steel	2
23		Cylinder	Light metal alloy, anodised	2
24	11)12)13)	O-ring	Nitrile	2
25		End cap	Light metal alloy, anodised	2
26		Tie rod	Steel	14
27		End cap nut	Stainless steel	14
28		Nut	Stainless steel	2
29		Grub screw	Stainless steel	2
30	11)12)13)	O-ring	Nitrile	2
31	11)	Upper piston bearing	Acetal	2
32	11)12)13)	O-ring	Nitrile	2
33		Piston	Light metal alloy	2
34		Yoke	Steel	1
35		Shaft bearing	Acetal	1
36	11)12)13)	O-ring	Nitrile	2
37	11)12)13)	O-ring	Nitrile	2
38		Housing	Light metal alloy, anodised	1
39	11)	Upper shaft bearing	Acetal	1
40	11)12)13)	O-ring	FKM	1
41	11)	Fixed bearing	Acetal	1
42		Washer	Steel	1
43		Circlip	Steel	1
44	11)12)13)	Joint ring	Nitrile	1
45		Washer	Steel	1
46		Circlip	Steel	2

11 Parts are included in the spare parts kit.
12 Low-temperature version (-50 °C to +120 °C): O-ring = fluorosilicone (FVMQ)
13 High-temperature version (-20 °C to +150 °C): O-Ring = FKM (FVMQ)

Materials ACTAIR NG 700

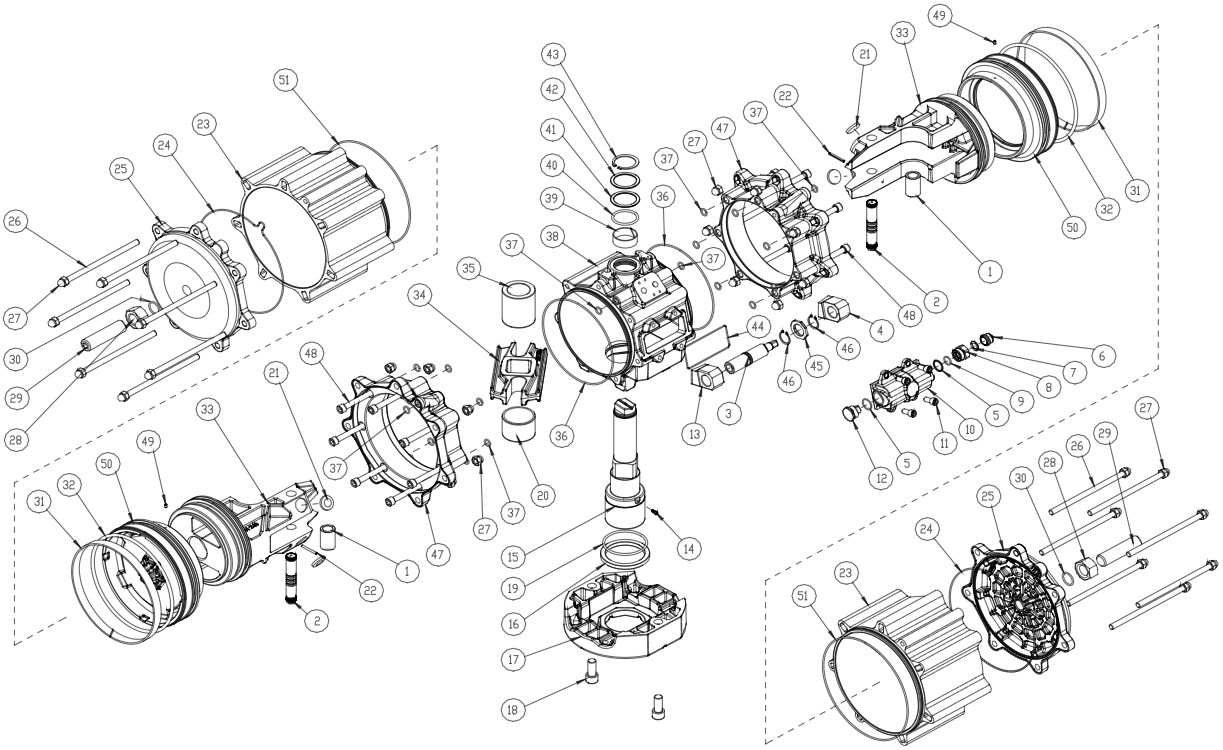

Fig. 5: Exploded view of size 700

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Table 11: List of components

Part No.		Description	Materials	Quantity
1		Ring	Steel	2
2		Pin	Steel	2
3		Adjusting screw	Steel	1
4		Locking device, left	Steel	1
5	14)15)16)	O-ring	Nitrile	2
6		Protective cover	Light metal alloy, anodised	1
7		Lock washer	Steel	1
8		Metal ring	Stainless steel	1
9	14)15)16)	O-ring	Nitrile	1
10		Gear housing	Light metal alloy, anodised	1
11		Screw	Steel	4
12		Metal ring	Stainless steel	1
13		Lock washer	Steel	1
14		Screw	Steel	1
15		Shaft	Steel	1
16	14)	Lower shaft bearing	Acetal	1
17		Connection flange	Light metal alloy, anodised	1
18		Screw	Steel	2
19	14)15)16)	O-ring	FKM	1
20		Shaft bearing	Acetal	1
21	14)	Lower piston bearing	Acetal	4
22		Spring-type straight pin	Steel	2
23		Cylinder	Light metal alloy, anodised	2
24	14)15)16)	O-ring	Nitrile	2
25		End cap	Light metal alloy, anodised	2
26		Tie rod	Steel	14
27		End cap nut	Stainless steel	28
28		Nut	Stainless steel	2
29		Grub screw	Stainless steel	2
30	14)15)16)	O-ring	Nitrile	2
31	14)	Upper piston bearing	Acetal	2
32	14)15)16)	O-ring	Nitrile	2
33		Piston	Light metal alloy	2
34		Yoke	Steel	1
35		Shaft bearing	Acetal	1
36	14)15)16)	O-ring	Nitrile	2
37	14)15)16)	O-ring	Nitrile	18
38		Housing	Light metal alloy, anodised	1
39	14)	Upper shaft bearing	Acetal	1
40	14)15)16)	O-ring	FKM	1
41	14)	Fixed bearing	Acetal	1
42		Washer	Steel	1
43		Circlip	Steel	1
44	14)15)16)	Joint ring	Nitrile	1
45		Washer	Steel	1
46		Circlip	Steel	2
47		Flange	Light metal alloy, anodised	2
48		Screw	Steel	14
49		Grub screw	Steel	2
50		Flange	Light metal alloy	2
51	14)15)16)	O-ring	Nitrile	2

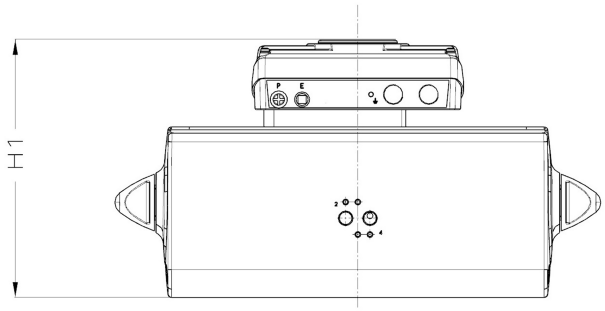
14 Parts are included in the spare parts kit.
15 Low-temperature version (-50 °C to +120 °C): O-ring = fluorosilicone (FVMQ)
16 High-temperature version (-20 °C to +150 °C): O-Ring = FKM (FVMQ)

Variants

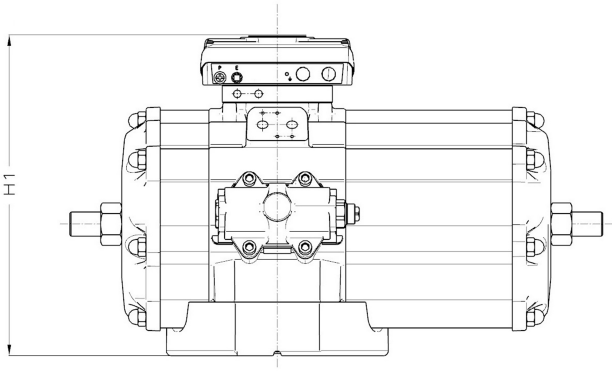
Open/closed position signalling function

AMTROBOX and all limit switch boxes with a VDI/VDE interface

This limit switch box provides open/closed position signalling via electrical microswitches or inductive proximity sensors (1 for Open and 1 for Closed, 1 for one intermediate position on request).



Size 2 - 160



Size 240 - 700

Table 12: Dimensions [mm] and weights [kg]

Size	H1	Weight
2	145,2	3,1
5	156,4	3,7
10	169,3	4,6
15	193,5	6,7
20	197,1	7,5
30	204	8,6
40	220,9	11,7
60	234	14,1
80	254	19,5
120	272	25,5
160	293,7	34,1
240	422	58,8
340	377	54,8
500	437	88,8
700	467	108,1

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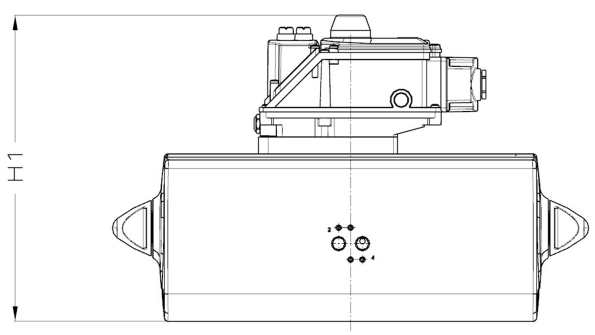
Control function

Control by AMTRONIC positioner
Positioner functions:

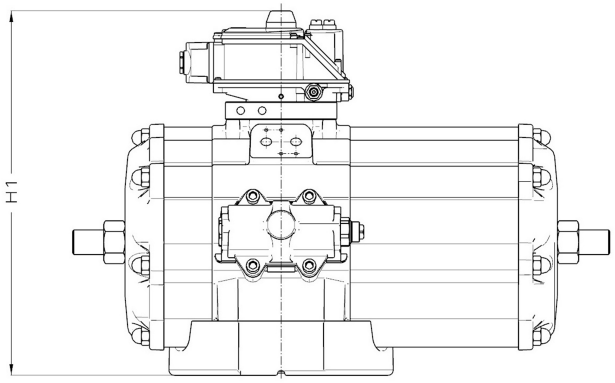
- Control air supply via a monostable or bistable 4/2 or 4/3 directional control valve, power supply: alternating or direct current
- Setting of actuating times

Options

- Open/closed position signalling (2 microswitches or inductive proximity sensors)
- Proportional position signalling via 4-20 mA signal
- Field bus AS-i, Profibus DP



Size 2 - 160



Size 240 - 700

Table 13: Dimensions [mm] and weights [kg]

Size	H1	Weight
2	198,2	3,5
5	209,4	4,1
10	222,3	5,0
15	246,5	7,1
20	250,1	7,9
30	257	9,0
40	273,9	12,1
60	287	14,5
80	307	19,9
120	325	25,9
160	346,7	34,5
240	475	59,2
340	430	55,2
500	490	89,2
700	520	109,2

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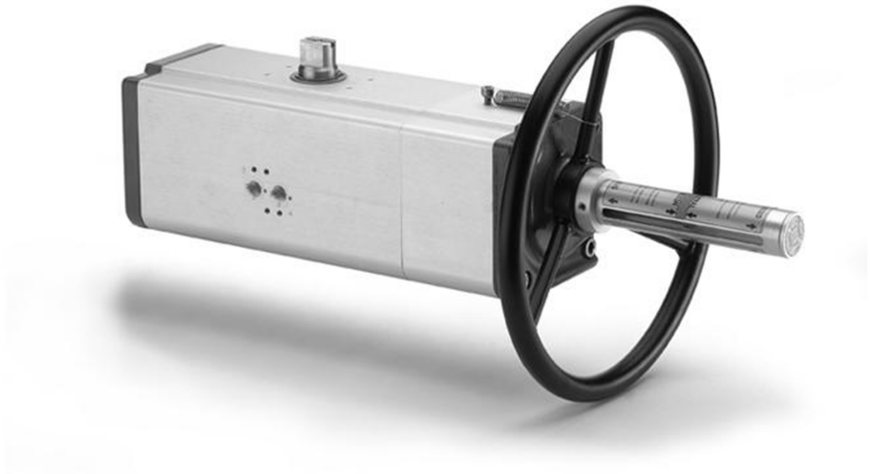
Integral manual override – ACTAIR NGV type series:



The design of this manual override is based on the ACTAIR NG pneumatic actuator.

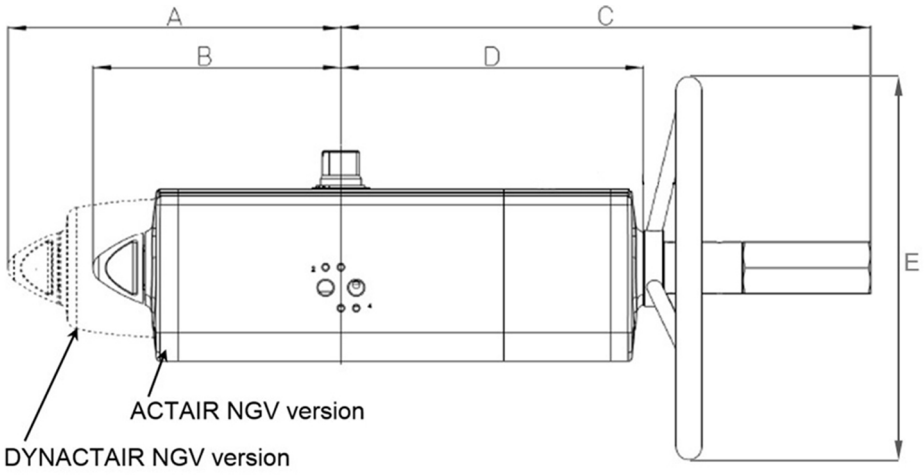
The integral manual override comprises a steel handwheel for manual actuation in emergencies.

This eliminates the need for a separate manual override to be mounted on the actuator, resulting in a compact, light-weight product.

The actuator can be locked in open or closed position. It is irreversible.

Like RMD manual gearboxes, the manual override must not be operated unless the control air has been completely evacuated from the actuator.

Dimensions and weights



Type NGV

Table 14: Dimensions [mm] and weights [kg]

Type NGV	B	C	D	E	Weight
5	99	263,3	137,6	180	2,8
10	118,5	279,6	154,8	180	4
15	144,9	338,7	183,5	220	6
20	156,8	354,3	199,1	220	8
30	169,6	398,4	220,8	300	10,2
40	193,8	414,2	236,4	300	13,2
60	216,6	504,5	282,3	350	17,8
80	239,7	518,8	297,1	350	23,8
120	283,5	637,1	365,6	400	33,6
160	300,4	653,7	382,9	400	43
340	353,3	890,2	537,5	575	75

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Declutchable manual override

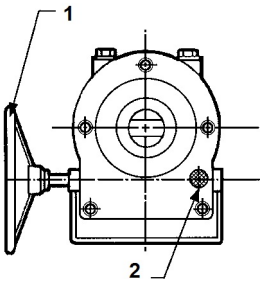
A manual override via declutchable manual gearbox with handwheel can be mounted between the valve and the actuator.
It overrides the pneumatic actuator and can be used in either clutched (engaged) or declutched (disengaged) position.
A worm reduction gearbox is used.
Contact KSB.

The manual override must not be operated unless

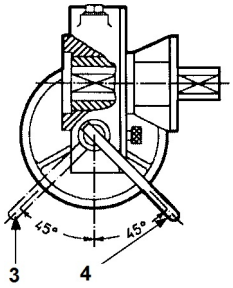
- **the control air has been completely evacuated from the actuator and**
- **all pressure has been released from the actuator's internal chambers**

Do not declutch the manual override as long as the actuator is pressurised.

Declutchable manual override



Top view

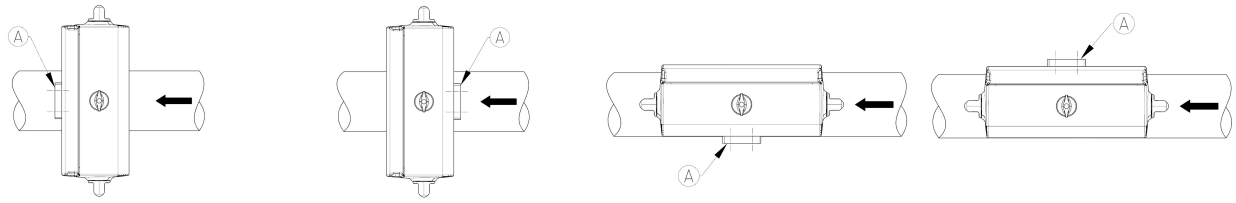


Side view

Mounting onto the valve

The actuator can be mounted onto the valve in 4 different positions, offset by 90°. Unless otherwise specified, the actuator is mounted onto the valve according to mounting option N, position 1.

Mounting option N **Mounting option M**



Position 1 Position 2 Position 1 Position 2

Flow direction of fluid handled – Valve shown in closed position

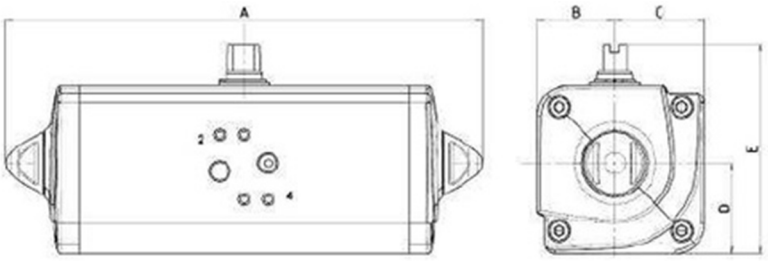
Interface A: pneumatic connection

Every ACTAIR NG pneumatic actuator size is available in two non-interchangeable versions:

- Version for mounting option N
- Version for mounting option M

Dimensions and weights

Dimensions and weights of ACTAIR NG 2 - 160



Size 2 - 160

Table 15: Dimensions [mm] and weights [kg]

Size	A	B	C	D	E	Weight
2	174,3	27,7	31,5	31,5	79,2	1,0
5	198,1	32,7	37,7	37,7	90,4	1,6
10	237,1	38,5	44,8	44,8	103,3	2,5
15	289,9	51,0	56,5	56,5	127,5	4,6
20	313,6	51,0	60,1	60,1	131,1	5,4
30	339,3	56,0	62,0	62,0	148,0	6,5
40	387,7	62,0	72,9	72,9	164,9	9,6
60	433,0	69,5	78,5	78,5	178,0	12,0
80	479,4	74,5	93,5	93,5	198,0	17,4
120	567,0	84,5	101,5	101,5	216,0	23,4
160	601,0	93,0	114,7	114,7	237,7	32,0

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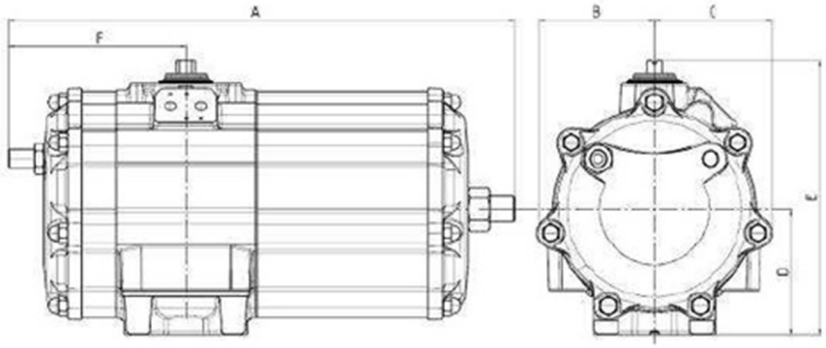
Dimensions and weights of ACTAIR NG 240 - 700



Size 240 - 700

Table 16: Dimensions [mm] and weights [kg]

Size	A	B	C	D	E	F	Weight
240	667	155,5	155,5	164	359	234	56
340	765	120,0	178	148,5	314,5	382,5	52
500	885	155,5	206	179	374	442,5	86
700	1044	188	206	179	374	522	106

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