



AX24 SERIES

Pneumatic actuators from 0,36 to 2,16 kN

DESCRIPTION

Linear multispring diaphragm actuators able to satisfy a wide range of applications for throttling and on/off operations. Fitted with a mechanical travel indicator, the integral yoke is in compliance with standard **CEI EN 60534-6-1** and is designed for the mounting of various accessories, such as positioners, limit switches, ect...

The AX24 actuators can be provided with:

- Top handwheel for emergency manual override (TX)
- Side handwheel for emergency manual override (LX)
- Mechanical travel stop in both directions^(a)



(a) the mechanical travel stop cannot be combined with the top handwheel

MAIN FEATURES

- ◆ Reversible on the field, without auxiliary components ^(b)
- ◆ Wide range of available thrusts
- ◆ Compact design
- ◆ Yoke according to CEI EN 60534-6-1 (Namur)
- ◆ Mechanical travel adjustment
- ◆ Construction with integral yoke made of carbon steel or stainless steel
- ◆ Full stainless steel construction on request
- ◆ Strong operating force by admissible pressure supply up to 6 bar
- ◆ Smoothly sliding stems to guarantee an extremely low hysteresis
- ◆ Versatile pairing between stem and valve, composed of a female thread M10 + removable OMC clamp attachment (see Fig.3 and Fig.4 Pag.5 SEC: B-B)

(b)except for top handwheel construction


TYPE

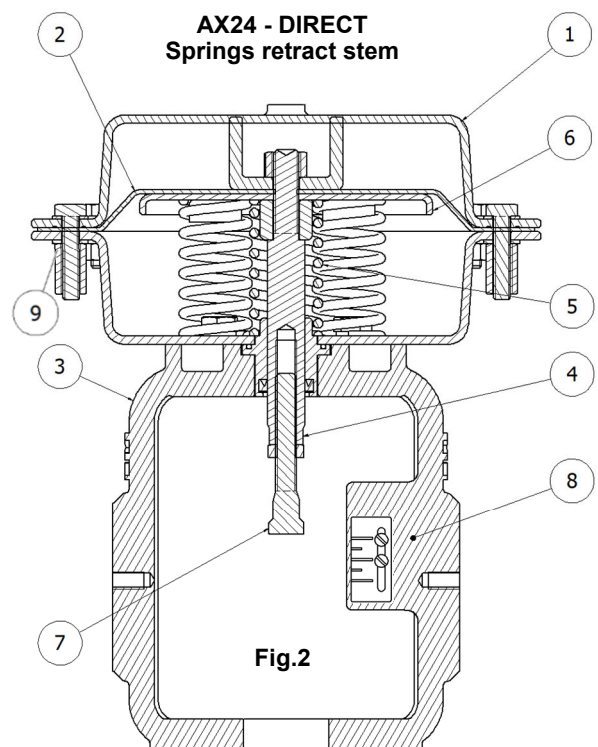
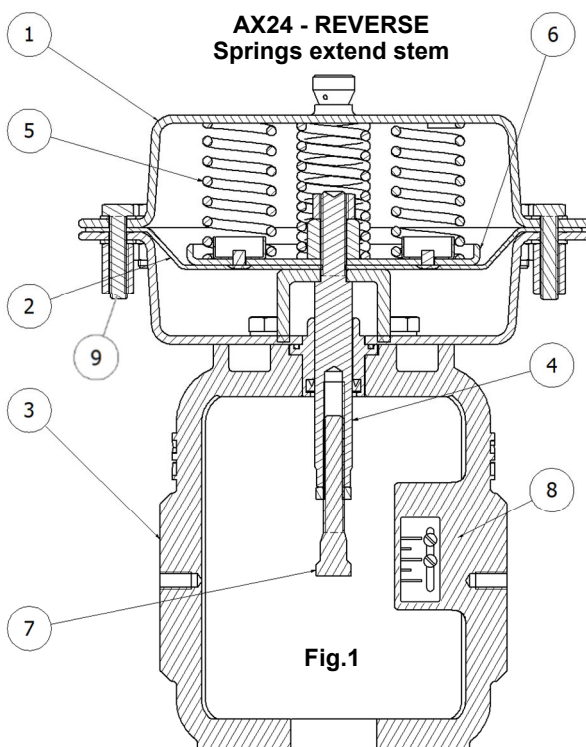
TYPE	Multispring Diaphragm
ACTION	Direct Action (Springs retract stem) - REVERSIBLE ON SITE Reverse Action (Springs extend stem) - REVERSIBLE ON SITE
MAXIMUM ALLOWABLE PRESSURE	87 psi (6 bar)
PNEUMATIC CONNECTIONS	1/4" NPT-F

MATERIALS (*RECOMMENDED SPARE PARTS)

COMPONENT	STANDARD	OPTIONAL
1 - HOUSING	Painted steel 1.0332 / 1.0335 (T.amb \geq -50°C / -58°F)	Stainless Steel AISI 316 (T.amb \geq -268°C / -450°F)
2 - DIAPHRAGM (*)	NBR (T.amb -35+90°C / -31+194°F)	EPDM (T.amb -50+120°C / -58+248°F) PVMQ (T.amb -60+90°C / -76+194°F)
3 - YOKE	Painted ASTM A216 WCB (T.amb \geq -29°C / -20°F)	ASTM A351 CF8M (T.amb \geq -268°C / -450°F)
4 - STEM	Stainless Steel 1.4057 (T.amb \geq -40°C / -40°F)	Stainless Steel ASTM 182 F316 (T.amb \geq -268°C / -450°F)
5 - SPRINGS (*)	Painted EN 10270-1 SH (T.amb \geq -30°C / -22°F)	EN 10270-3 1.4310 (AISI 301) EN 10270-3 1.4401 (AISI 316) (T.amb \geq -268°C / -450°F)
6 - INTERNAL PARTS	Painted Steel 1.0332 / 1.0335 (T.amb \geq -50°C)	Stainless Steel AISI 316 (T.amb \geq -268°C / -450°F)
7 - ADJUSTABLE OMC VALVE CLAMP CONNECTION	Stainless Steel 1.4057 (T.amb \geq -40°C / -40°F))	Stainless Steel ASTM 182 F316 (T.amb \geq -268°C / -450°F)
8 - TRAVEL INDICATOR	ANODIZED ALLUMINUM	///
9 - BOLTS AND NUTS	A193 8M - A194 8M (St. St. A4) (T.amb \geq -268°C / -58°F)	OTHER

PROTECTIVE COATINGS

STANDARD	Electrostatic painting with epoxy powder RAL 7047 matte (standard)
OPTIONAL	Special paintings (Es. ISO12944-2 C4 / C5 Etc...), galvanizing, ect..

ACTUATOR INTERNAL PARTS



TECHNICAL DATA

Nr. of springs	MAX TRAVEL	NOMINAL TRAVEL	THRUST AREA	TRAVEL VOLUME	SPRING RANGE	kN (c) (d) (e)	THRUST AT 1 psi
2	30mm 1,18 inch	20mm 0,787 inch	176 cm ² 6,92 inch ²	352 cm ³ 13,85 inch ³	3+15 psi	0,36	0,12 kN
2					6+18 psi	0,72	
4					6+30 psi	0,72	
4					12+36 psi	1,44	
5					18+52 psi	2,16	


c - for reverse actuators, generated thrust by extended springs at signal = 0 psi

d - for direct actuators, generated thrust by retracted springs at signal = 0 psi


e - generated thrust at minimum spring range value

Example: Example: with nominal actuator signal 6+30 PSI; to achieve 0,72 kN the actuator signal must be 0+36 psi


DIFFERENTIAL PRESSURES CHARTS IN bar ON TWO WAY OMC VALVES UNBALANCED TRIM - FLOW TO OPEN


REVERSE ACTION - SPRINGS TO CLOSE - N.C. ↓				LEAKAGE CLASS												cl. IV		
				ANSI FCI 70.2 - IEC 60534-4														
SPRING RANGE (psi)	SPRING RANGE CODE	ACTUATOR SIGNAL (psi) (g)	TRAVEL	MAX DIFFERENTIAL PRESSURES IN bar on SEAT DIAMETER in mm														
				3mm 0,118"	4mm 0,157"	5mm 0,196"	6mm 0,236"	7mm 0,275"	8mm 0,314"	9mm 0,354"	10mm 0,393"	20mm 0,787"	25mm 0,984"	30mm 0,984"	38mm 1,496"	49mm 1,929"	kN (g)	
3+15	1	0+15	20mm 0,787"	392	220	141	98	72	55	44	35	8,8	5,6	3,9	2,4	1,5	0,36	
6+18	2	0+18		780	439	281	195	143	110	87	70	17,5	11,2	7,8	4,9	2,9	0,72	
6+30	3	0+30		780	439	281	195	143	110	87	70	17,5	11,2	7,8	4,9	2,9	0,72	
12+36	4	0+36		1559	877	561	390	286	219	173	140	35,1	22,4	15,6	9,7	5,8	1,44	
18+52	5	0+52		2351	1323	846	588	432	331	261,2	211,6	52,9	33,9	23,5	14,7	8,8	2,16	

g - thrust on seat by actuator signal

REVERSE ACTION - SPRINGS TO CLOSE - N.C. ↓				LEAKAGE CLASS												cl. V		
				ANSI FCI 70.2 - IEC 60534-4														
SPRING RANGE (psi)	SPRING RANGE CODE	ACTUATOR SIGNAL (psi) (g)	TRAVEL	MAX DIFFERENTIAL PRESSURES IN bar on SEAT DIAMETER in mm														
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3+15	1	0+15	20mm 0,787"	351	198	126	87,8	64,5	49,4	39,0	31,6	7,9	5,1	3,5	2,2	1,3	0,36	
6+18	2	0+18		703	396	253	176	129	99	78,2	63,3	15,8	10,1	7,0	4,4	2,6	0,72	
6+30	3	0+30		703	396	253	176	129	99	78,2	63,3	15,8	10,1	7,0	4,4	2,6	0,72	
12+36	4	0+36		1406	791	506	351	258	198	156,2	126,5	31,6	20,2	14,1	8,8	5,3	1,44	
18+52	5	0+52		2108	1186	759	527	387	296	234,2	189,7	47,4	30,4	21,1	13,1	7,9	2,16	

g - thrust on seat by actuator signal

REVERSE ACTION - SPRINGS TO CLOSE - N.C. ↓				LEAKAGE CLASS												cl. VI		
				ANSI FCI 70.2 - IEC 60534-4														
SPRING RANGE (psi)	SPRING RANGE CODE	ACTUATOR SIGNAL (psi) (g)	TRAVEL	MAX DIFFERENTIAL PRESSURES IN bar on SEAT DIAMETER in mm														
				3mm 0,118"	4mm 0,157"	5mm 0,196"	6mm 0,236"	7mm 0,275"	8mm 0,314"	9mm 0,354"	10mm 0,393"	20mm 0,787"	25mm 0,984"	30mm 0,984"	38mm 1,496"	49mm 1,929"	kN (g)	
3+15	1	0+15	20mm 0,787"	425	239	153	106,1	78,0	59,7	47,2	38,2	9,6	6,1	4,2	2,6	1,6	0,36	
6+18	2	0+18		850	478	306	212	156	120	94,4	76,5	19,1	12,2	8,5	5,3	3,2	0,72	
6+30	3	0+30		850	478	306	212	156	120	94,4	76,5	19,1	12,2	8,5	5,3	3,2	0,72	
12+36	4	0+36		1699	956	612	425	312	239	188,7	152,9	38,2	24,5	17,0	10,6	6,4	1,44	
18+52	5	0+52		2547	1433	917	637	468	358	283,0	229,2	57,3	36,7	25,5	15,9	9,5	2,16	

g - thrust on seat by actuator signal



DIRECT ACTION - SPRINGS TO OPEN - N.O.



LEAKAGE CLASS

ANSI FCI 70.2 - IEC 60534-4



cl. IV

SPRING RANGE (psi)	SPRING RANGE CODE	ACTUATOR SIGNAL (psi) (g)	TRAVEL	MAX DIFFERENTIAL PRESSURES IN bar on SEAT DIAMETER in mm													
				3mm 0,118"	4mm 0,157"	5mm 0,196"	6mm 0,236"	7mm 0,275"	8mm 0,314"	9mm 0,354"	10mm 0,393"	20mm 0,787"	25mm 0,984"	30mm 0,984"	38mm 1,496"	49mm 1,929"	kN (g)
3+15	1	3+18	20mm 0.787"	351	198	126	87,8	64,5	49,4	39,0	31,6	7,9	5,1	3,5	2,2	1,3	0,36
	1	3+21		703	396	253	176	129	99	78,2	63,3	15,8	10,1	7,0	4,4	2,6	0,72
	1	3+27		1406	791	506	351	258	198	156,2	126,5	31,6	20,2	14,1	8,8	5,3	1,44
	1	3+33		2108	1186	759	527	387	296	234,2	189,7	47,4	30,4	21,1	13,1	7,9	2,16

g - thrust on seat by actuator signal

DIRECT ACTION - SPRINGS TO OPEN - N.O.



LEAKAGE CLASS

ANSI FCI 70.2 - IEC 60534-4



cl. V

SPRING RANGE (psi)	SPRING RANGE CODE	ACTUATOR SIGNAL (psi) (g)	TRAVEL	MAX DIFFERENTIAL PRESSURES IN bar on SEAT DIAMETER in mm													
				3mm 0,118"	4mm 0,157"	5mm 0,196"	6mm 0,236"	7mm 0,275"	8mm 0,314"	9mm 0,354"	10mm 0,393"	20mm 0,787"	25mm 0,984"	30mm 0,984"	38mm 1,496"	49mm 1,929"	kN (g)
3+15	1	3+18	20mm 0.787"	351	198	126	87,8	64,5	49,4	39,0	31,6	7,9	5,1	3,5	2,2	1,6	0,36
	1	3+21		703	396	253	176	129	99	78,2	63,3	15,8	10,1	7,0	4,4	3,2	0,72
	1	3+27		1406	791	506	351	258	198	156,2	126,5	31,6	20,2	14,1	8,8	6,4	1,44
	1	3+33		2108	1186	759	527	387	296	234,2	189,7	47,4	30,4	21,1	13,1	10,0	2,16

g - thrust on seat by actuator signal

DIRECT ACTION - SPRINGS TO OPEN - N.O.



LEAKAGE CLASS

ANSI FCI 70.2 - IEC 60534-4



cl. VI

SPRING RANGE (psi)	SPRING RANGE CODE	ACTUATOR SIGNAL (psi) (g)	TRAVEL	MAX DIFFERENTIAL PRESSURES IN bar on SEAT DIAMETER in mm													
				3mm 0,118"	4mm 0,157"	5mm 0,196"	6mm 0,236"	7mm 0,275"	8mm 0,314"	9mm 0,354"	10mm 0,393"	20mm 0,787"	25mm 0,984"	30mm 0,984"	38mm 1,496"	49mm 1,929"	kN (g)
3+15	1	3+18	20mm 0.787"	425	239	153	106,1	78,0	59,7	47,2	38,2	9,6	6,1	4,2	2,6	1,6	0,36
	1	3+21		850	478	306	212	156	120	94,4	76,5	19,1	12,2	8,5	5,3	3,2	0,72
	1	3+27		1699	956	612	425	312	239	188,7	152,9	38,2	24,5	17,0	10,6	6,4	1,44
	1	3+33		2669	1501	961	667	490	375	296,6	240,2	60,1	38,4	26,7	16,6	10,0	2,16

g - thrust on seat by actuator signal

DIFFERENTIAL PRESSURES CHARTS IN bar ON THREE WAY OMC VALVES UNBALANCED TRIM



DIRECT OR REVERSE ACTION



LEAKAGE CLASS

ANSI FCI 70.2 - IEC 60534-4



cl. IV

SPRING RANGE (psi)	SPRING RANGE CODE	ACTUATOR SIGNAL (psi) (g)	TRAVEL	MAX DIFFERENTIAL PRESSURES IN bar on SEAT DIAMETER in mm													
				3mm 0,118"	4mm 0,157"	5mm 0,196"	6mm 0,236"	7mm 0,275"	8mm 0,314"	9mm 0,354"	10mm 0,393"	20mm 0,787"	25mm 0,984"	30mm 0,984"	38mm 1,496"	49mm 1,929"	kN (g)
3+15	1	0+18	20mm 0.787"	392	220	141	98	72	55	44	35	8,8	5,6	3,9	2,4	1,5	0,36
6+18	2	0+24		780	439	281	195	143	110	87	70	17,5	11,2	7,8	4,9	2,9	0,72
6+30	3	0+36		780	439	281	195	143	110	87	70	17,5	11,2	7,8	4,9	2,9	0,72
12+36	4	0+48		1559	877	561	390	286	219	173	140	35,1	22,4	15,6	9,7	5,8	1,44
18+52	5	0+70		2351	1323	846	588	432	331	261,2	211,6	52,9	33,9	23,5	14,7	8,8	2,16

g - thrust on seat by actuator signal

DIRECT OR REVERSE ACTION



LEAKAGE CLASS

ANSI FCI 70.2 - IEC 60534-4



cl. VI

SPRING RANGE (psi)	SPRING RANGE CODE	ACTUATOR SIGNAL (psi) (g)	TRAVEL	MAX DIFFERENTIAL PRESSURES IN bar on SEAT DIAMETER in mm													
				3mm 0,118"	4mm 0,157"	5mm 0,196"	6mm 0,236"	7mm 0,275"	8mm 0,314"	9mm 0,354"	10mm 0,393"	20mm 0,787"	25mm 0,984"	30mm 0,984"	38mm 1,496"	49mm 1,929"	kN (g)
3+15	1	0+15	20mm 0.787"	425	239	153	106,1	78,0	59,7	47,2	38,2	9,6	6,1	4,2	2,6	1,6	0,36
6+18	2	0+18		850	478	306	212	156	120	94,4	76,5	19,1	12,2	8,5	5,3	3,2	0,72
6+30	3	0+30		850	478	306	212	156	120	94,4	76,5	19,1	12,2	8,5	5,3	3,2	0,72
12+36	4	0+36		1699	956	612	425	312	239	188,7	152,9	38,2	24,5	17,0	10,6	6,4	1,44
18+52 (f)	5	0+70		2547	1433	917	637	468	358	283,0	229,2	57,3	36,7	25,5	15,9	9,5	2,16

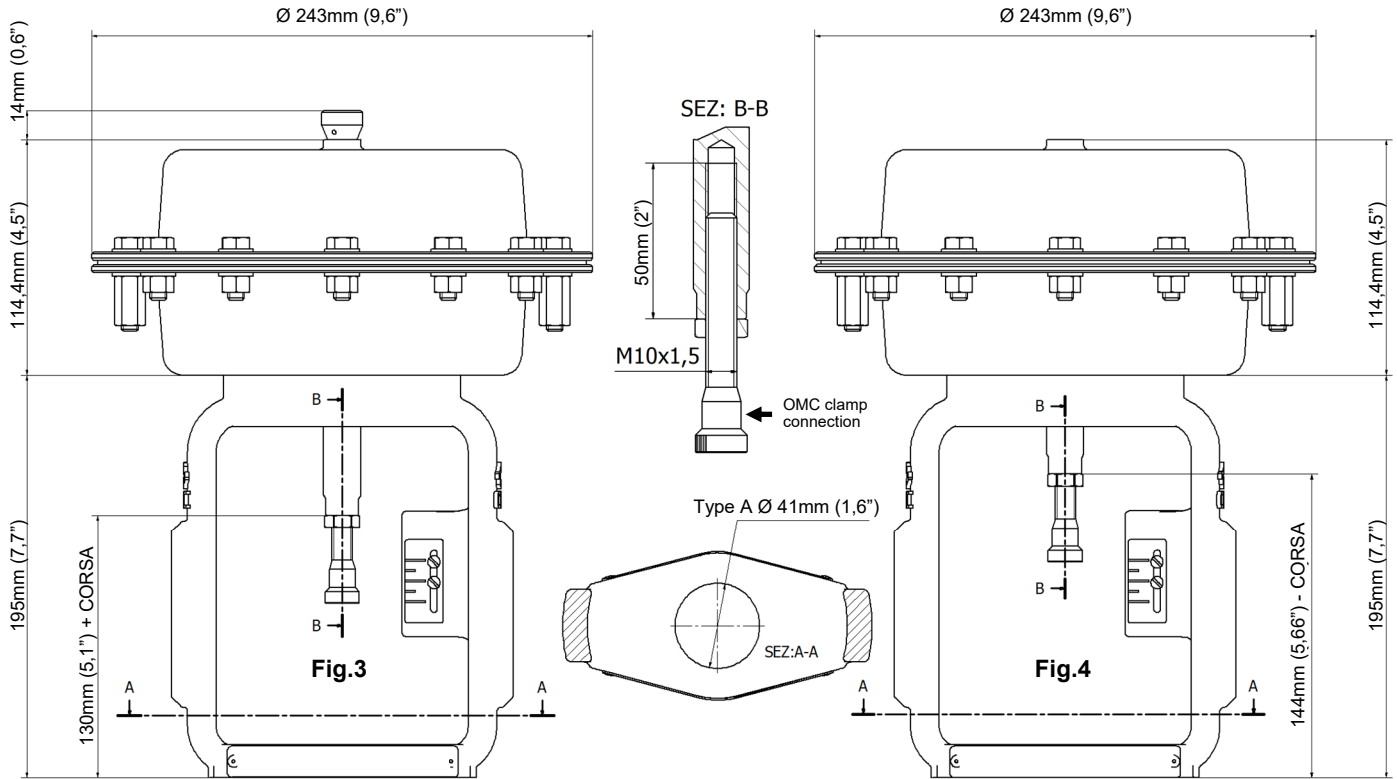
g - thrust on seat by actuator signal



ACTUATOR DIMENSIONS

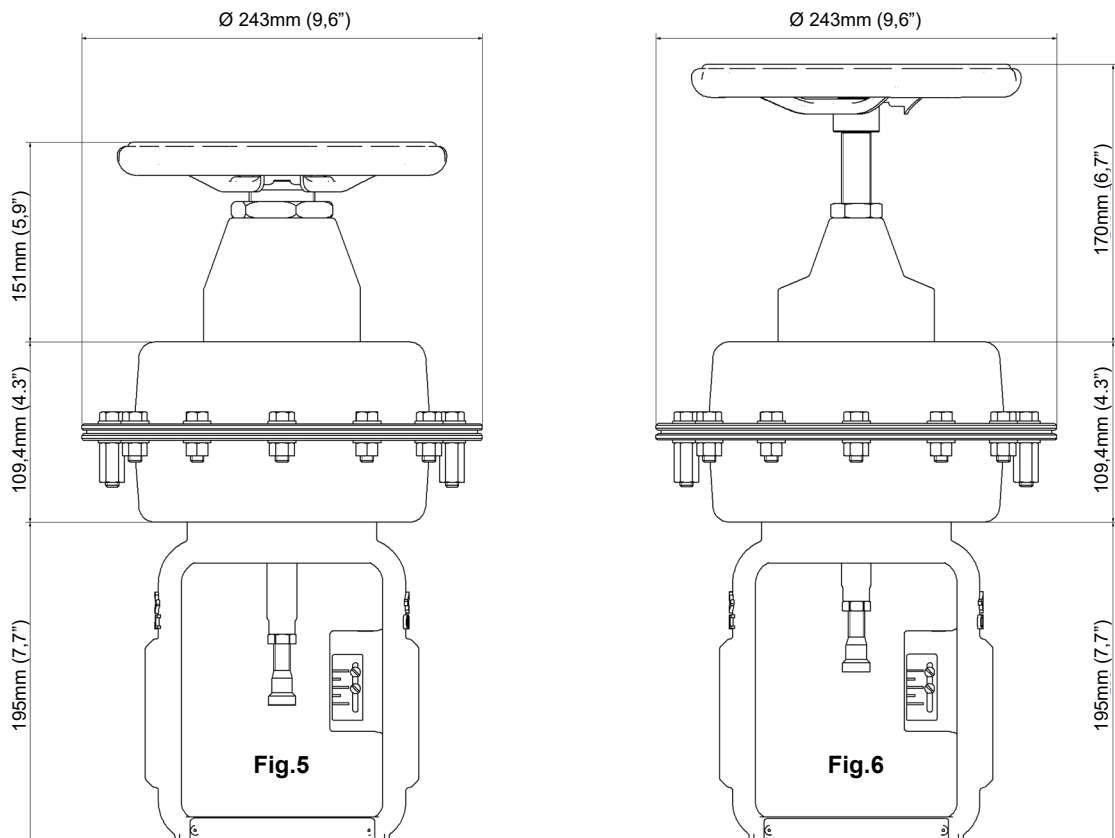
AX24 - REVERSE

AX24 - DIRECT



AX24 WITH TOP HANDWHEEL - REVERSE

AX24 - WITH TOP HANDWHEEL - DIRECT



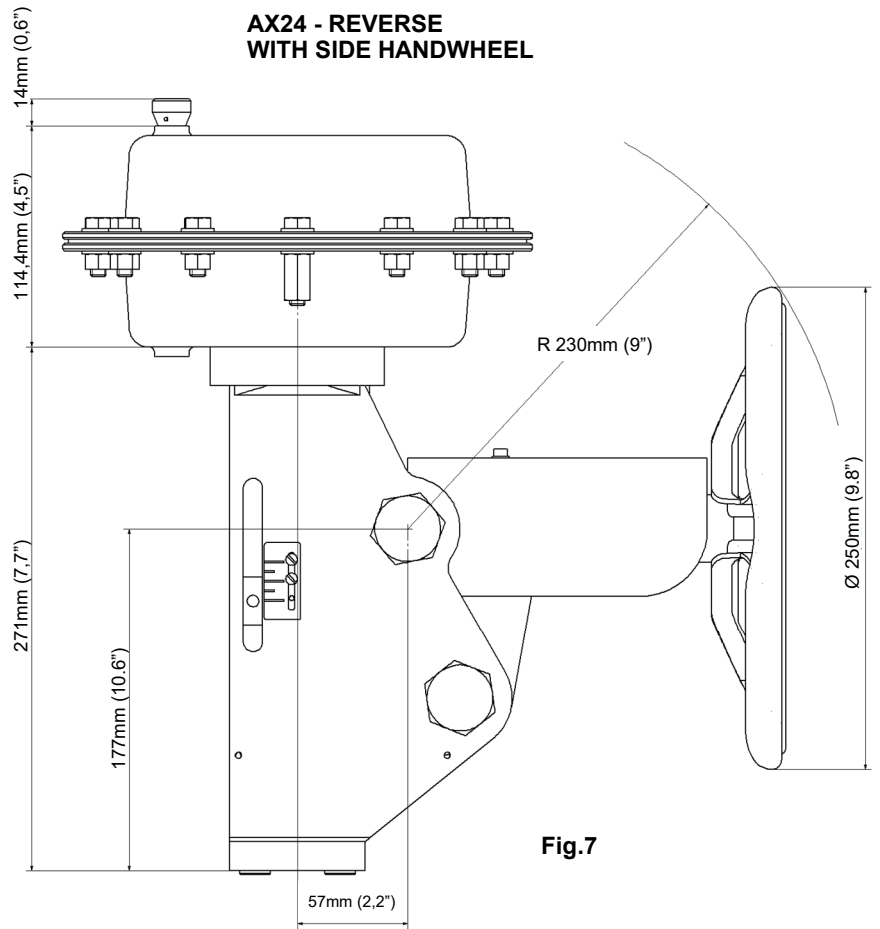
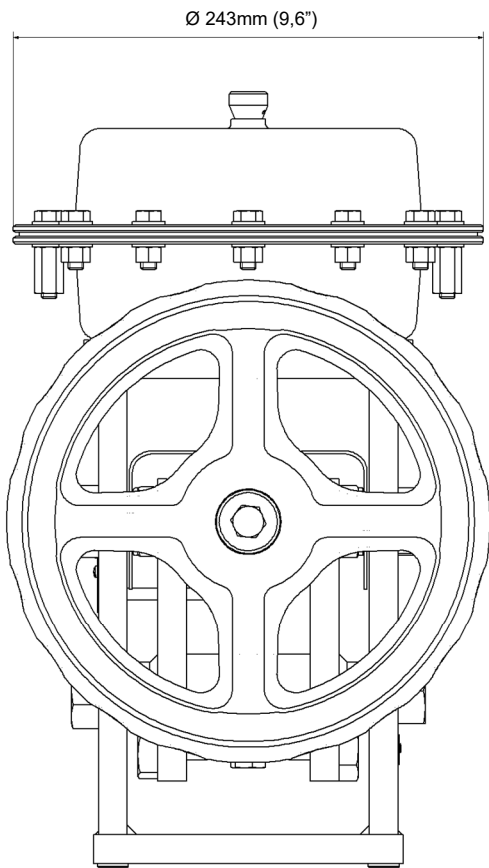


Fig.7

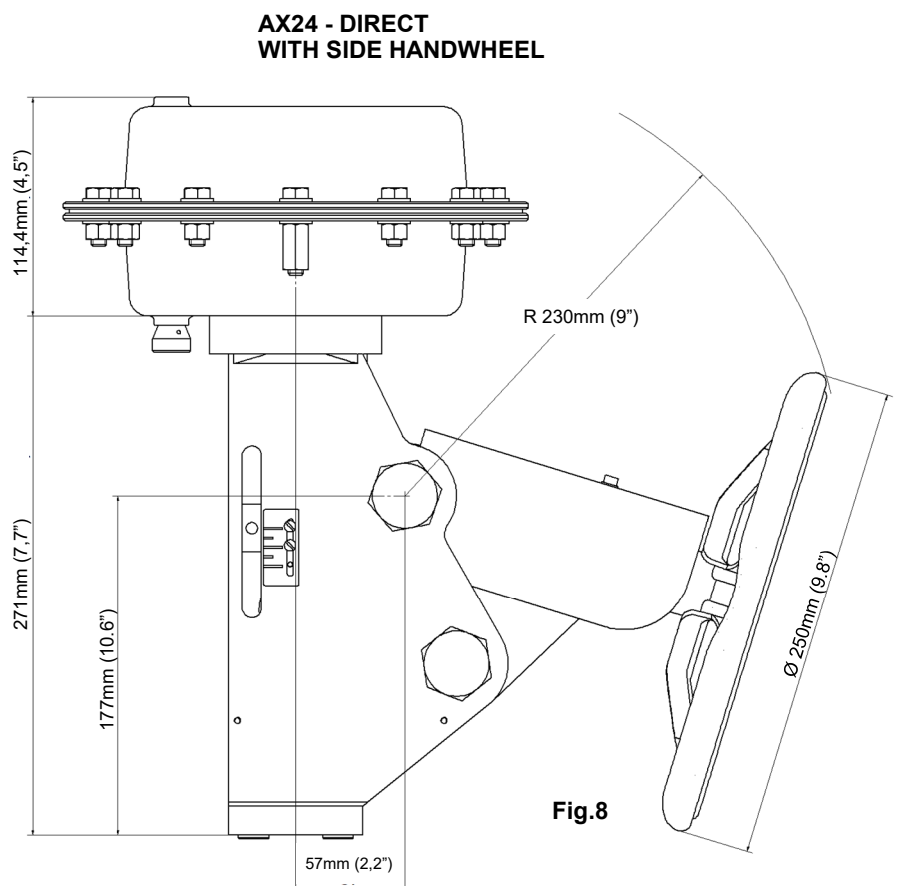
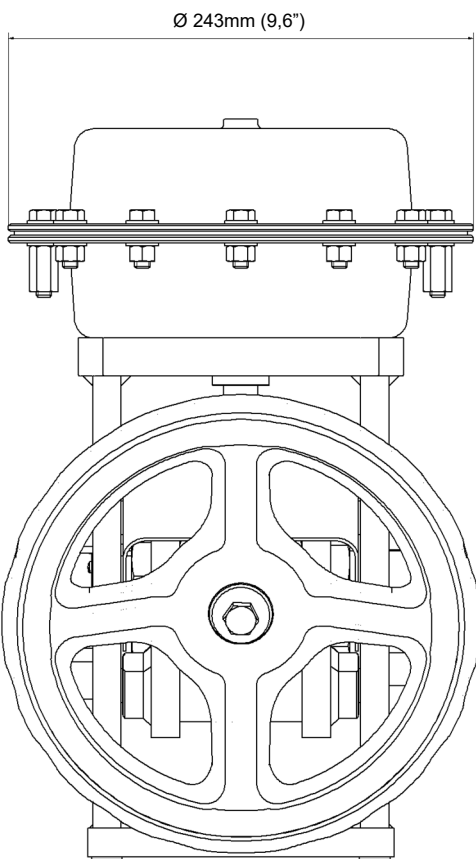
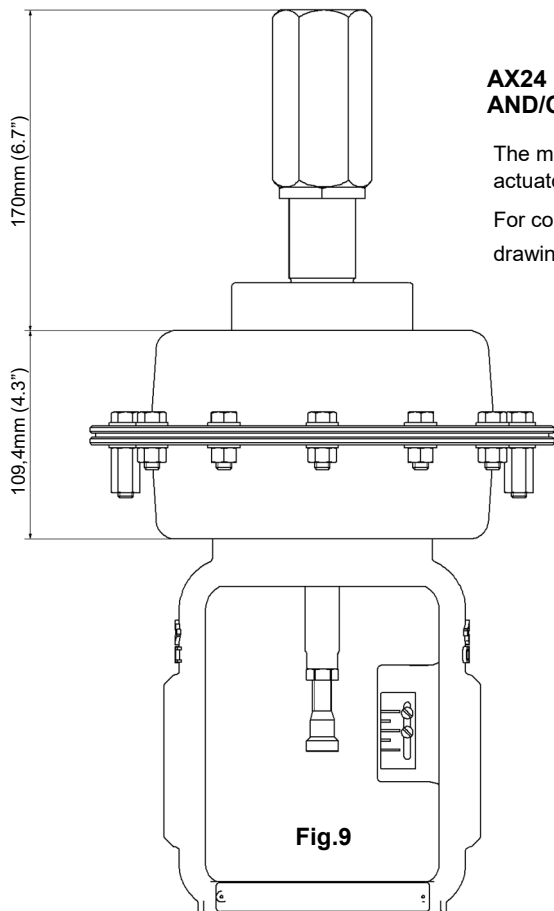


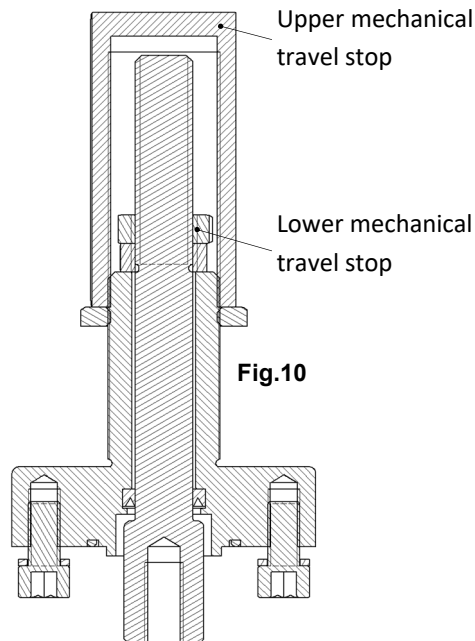
Fig.8



AX24 - MECHANICAL TRAVEL STOP IN OPENING AND/OR CLOSING

The mechanical travel stops can be mounted on standard actuators or actuators with side handwheel.

For connections, please consult the corresponding drawings.



MINIMUM CLEARANCE REQUIRED TO REMOVE THE ACTUATOR ON OMC VALVES

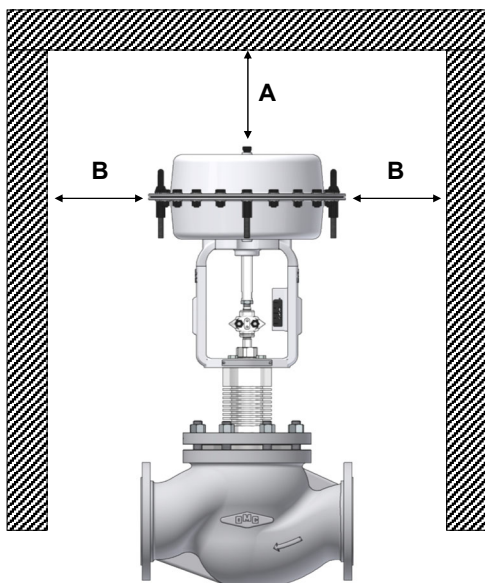


Fig.11

A = 140mm (5,5") + required distance for the use of lifting equipment
B = 200mm (7,9") + required distance for the use of lifting equipment

Note: necessary space must be verified by the customer

PNEUMATIC ACTUATOR WEIGHT (Kg)

STANDARD	WITH TOP HANDWHEEL	WITH SIDE HANDWHEEL	WITH TRAVEL STOP
~ 10kg (22 lb)	~ 14,5kg (32 lb)	~ 25kg (55 lb)	~ 13kg (29 lb)

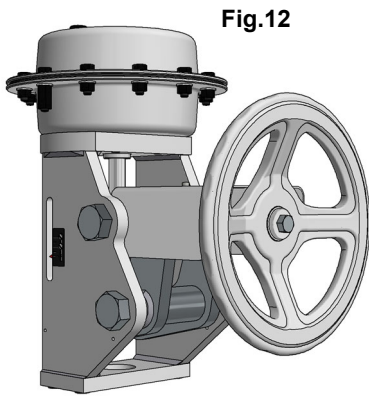


Fig.12

AX24 WITH SIDE HANDWHEEL



Fig.13

AX24 WITH TOP HANDWHEEL

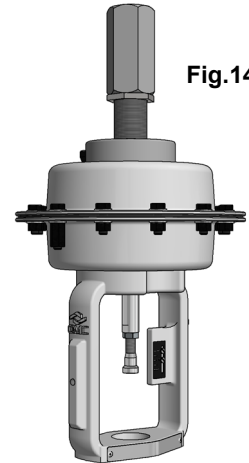


Fig.14

AX24 WITH TRAVEL STOP

HOW TO ORDER

Actuator type:
AX = Standard (WCB version)
TX = With top handwheel (WCB version)
LX = With side handwheel (WCB version)
AS = Standard (Stainless Steel version)
TS = With top handwheel (Stainless Steel version)
LS = With side handwheel (Stainless Steel version)

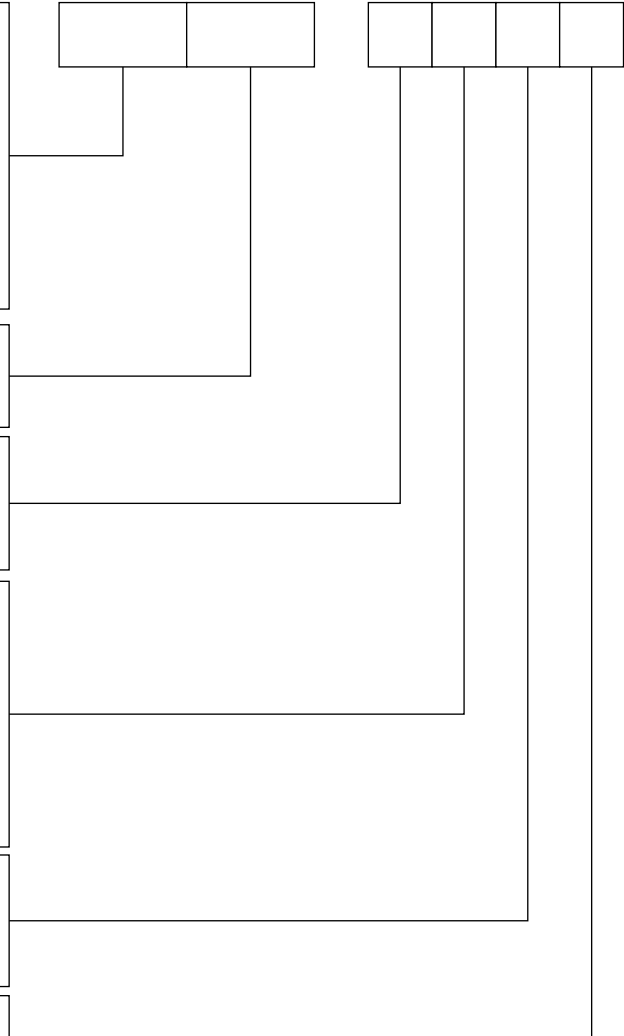
Actuator model
24 = Diameter 243

Yoke connection
A = Type A - hole Ø41mm - for OMC valves:
 - DN15+50 PN16+100
 - 1/2" + 2" ANSI 150+600

Spring range:
1 = 3÷15 psi
2 = 6÷18 psi
3 = 6÷30 psi
4 = 12÷36 psi
5 = 18÷52 psi

Action:
D = Direct / Springs retract stem
R = Reverse / Springs extend stem

Stroke:
A = 20mm (0,787")



The content of this publication is for informational purposes.
 OMC reserves the right to modify and improve the technical drawings and specifications without any prior notice.

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