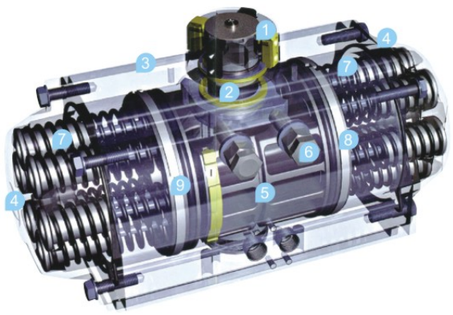
PNEUMATIC ACTUATORS

» DESIGN FEATURES

XM series pneumatic actuators are studied, developed and designed on the basis of comprehensive application of new technologies, new materials, new processes and innovative concepts at home and abroad, having following characteristics:

- Fully in line with international regulations: IS05211, DIN3337 and VDI/VDE-3845, NAMUR standards.
- To extruded high-strength aluminum cylinder, the inner surface is finely ground and hard anodized, with long service life, low friction coefficient and quick action.
- The beautiful compact modern shape and multiple specification make the selection more economical.
- All active surfaces adopt high quality bearings with low friction, long life and no noise.
- Two independent stroke adjustment mechanisms are installed to adjust extra ±5° at full open or full closed position easily
- Actuators with the same external structure are available in double-acting and single-acting (spring-return) versions. Single-acting version have normal-closed and normal-open type
- The NAMUR standard multi-function indicator indicates the position visually, where can install and output all accessories.
- The pre-compression load spring is safe and convenient to install and disassemble.
- The piston and end cap are made of die-cast aluminum alloy with high strength and light weight.
- Change the seal O rings material can apply for high-temperature or low-temperature worksite.
- Solenoid valves can be installed directly without a connecting plate.



» SPARE PARTS INTRODUCTION

1. Indicator: The NAMUR standard indicator is easy to install Limit Switch Box, Electric- pneumatic Valve Positioner and other accessories.
2. Output shaft: nickel-plated alloy steel, high-precision integrated output shaft meets NAMUR, IS05211, DIN3337 standards. Dimension and stainless steel material can be customized according to customer requirements.
3. Cylinder: ASTM6005 extruded aluminum alloy cylinder can be hard oxidized, oxidized, pure polyester powder spray, epoxy powder spray (multiple color optional), PTFE coating to meet different requirements.
4. End cap: Die-cast aluminum alloy, multi-color powder coating on the surface, PTFE coating treatment.
5. Piston: Double-rack piston, oxidized by die-casting aluminum alloy or galvanized by cast steel, whose installation position is symmetrical, movement is fast, service life is long. It can simply change direction by reverse pistons.
6. Stroke adjustment: Two independent stroke adjustment screws allow easy and precise adjustment of extra ±5° at the opening or closing position.
7. High-performance spring: It adopts imported high-quality materials, modular pre-compression assembly with coating, which is easy and safe to disassemble. It has strong corrosion resistance and long service life. It can safely and simply disassemble single-acting actuators and meet different torque output ranges by changing the number of springs.
8. Bearings and guide plates: Low-friction, long-life composite materials are used to avoid direct contact between metal and metal. Maintenance and replacement are simple and convenient.
9. Seal: NBR is used at normal temperature, VITON, silicone, high or low temperature NBR is used at high or low temperature.

» TECHNICAL CHARACTERISTICS

Intergrading with unique style, advanced technology, precise manufacturing, economical practical aspect, saving space, modular design, XM series Pneumatic Actuators can install other accessories directly to increase efficiency and economy.

- General data: The maximum rated air pressure is 8 bar and the minimum air pressure is 2.5 bar.
- Operating temperature: Standard: -20 ° C (-4 ° F) to +80 ° C (+ 176 ° F)
  High temperature: -15℃ (+5℉) to +150℃ (+302℉)
  Low temperature: -40℃ (-40℉) to +80℃ (+176℉)
- Applicable gas source: clean non-corrosive gas that has been dry filtered or lubricated.

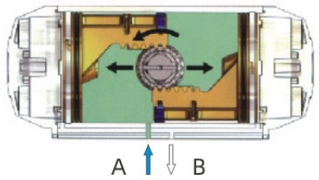
Full Open and Full Close position adjustment.When in closed or open position, the two adjustable bolts can adjust the actuator from extra -5° to +5° accurately at 0° or 90°. Screw the adjustable bolts at clockwise or counterclockwise direction, and lock nut in the right position.

» WORKING PRINCIPLE AND ROTARY DIRECTION

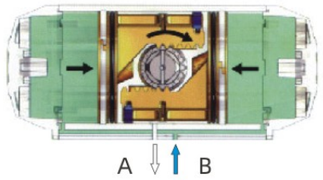
The standard rotary direction is clockwise to close, and counterclockwise to open.

Double acting principle (standard rotation) overlooks:

Air into Port A forces the pistons outwards,causing the pinion to turn counterclockwise while the air is being exhausted from Port B.



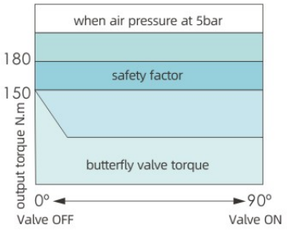
Air into Port B forces the pistons inwards,causing the pinion to turn clockwise while the air is being exhausted from Port A.



Double acting actuator model selection example

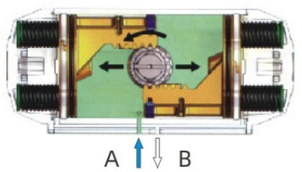
When selecting the actuator, at first confirm the valve torque including safety factor. The factor between valve safety factor and different media, temperature, pressure, friction between valve core and valve seat, as well as many other factors affecting the operating torque.

For example, The torque of the butterfly valve is 120 Nm. The medium is water; at normal temperature, the on-site air pressure is 5 bar. Calculated with a safety factor of 30%, the safety torque is 120x (1+30%) = 156Nm. Check the pressure in the double acting actuator torque table at 5 bar, and find the data equal to or close to 156 Nm along the column, select 162.9Nm, find the model at left, and then select the model XM-DA105 .

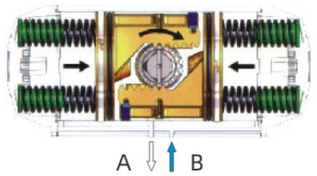


Single-acting operating principle (standard rotation) overlooks:

Air into Port A forces the pistons outwards, causing the springs to compress, the pinion turns counterclockwise while air is being exhausted from Port B.



In the event of loss air pressure or power, the stored energy in the springs forces the pistons inwards, causing the pinion turns clockwise while air is being exhausted from Port A, and air to Port B can accelerate closing the valve.



Single-acting actuator model selection example

At first, consider air pressure torque and spring elongation torque. The torque of the butterfly valve is 200 Nm, and the medium is steam: the temperature is 160 ° C, the on-site air source pressure is 5.5 bar, the safety factor is 30%; the safety torque is 200 x (1 + 30%) = 260 Nm. Check the single-acting actuator torque table: when the air pressure is at 5 bar, find the torque along the column (start and end), and then check the spring torque at the beginning and end at right. The result of the selection is XM-AT160 and the spring QTY is 10, the following values:

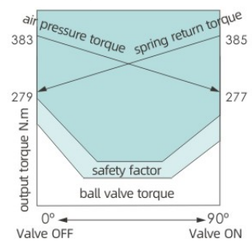
When at 0°, air pressure torque=383N.m,

When at 90°, air pressure torque =277N.m,

When at 0°, spring output torque =279N.m,

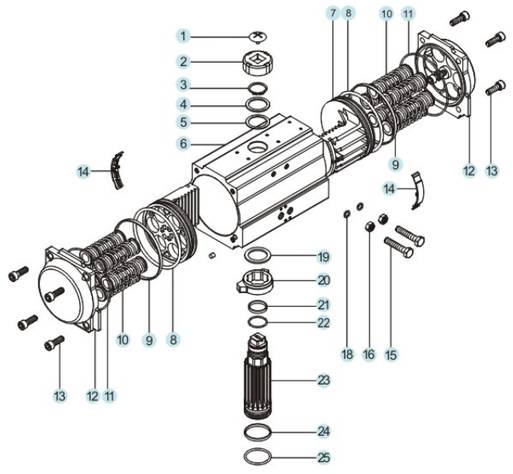
When at 90°, spring output torque =385N.m,

Note: The selected torque should be equal or close to the torque including safety factor.



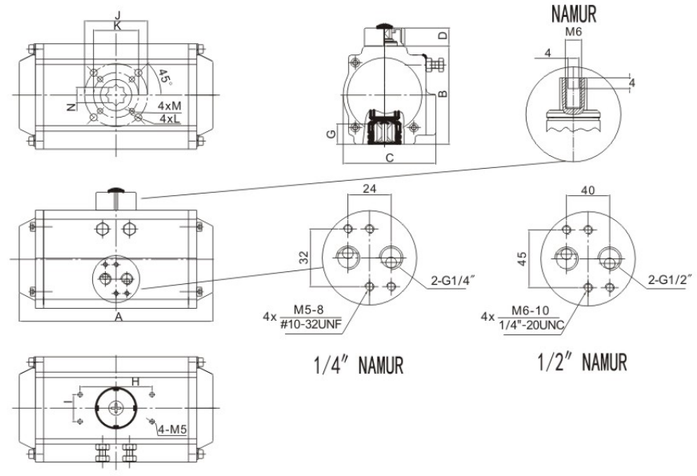
PNEUMATIC ACTUATORS

SPARE PARTS AND MATERIAL



No.	Spare Part	Quantity	Material	Anticorrosive treatment	Optional material
1	Indicator screw	1	Engineering plastic		
2	Indicator	1	Engineering plastic		
3	Circlip	1	Stainless steel		
4	washer	1	Stainless steel		
5	Outer gasket	1	Tetrafluoro		
6	Cylinder body	1	Aluminum alloy	Hard oxidation,etc.	
7	Piston	2	Aluminum alloy	Hard oxidation	stainless steel
8	Piston O ring	2	NBR		VITON/silicone rubber
9	Piston bearing	2	Engineering plastic		
10	Spring assembly	0–12	Spring steel	Dipping paint	
11	End cap O ring	2	NBR		VITON/silicone rubber
12	End cap	2	Aluminum alloy	Powder coating, etc.	
13	End cap bolt	8	Stainless steel		
14	Piston guide	2	Engineering plastic		
15	Adjustable bolt	2	Stainless steel		
16	Adjustable screw nut	2	Stainless steel		
17	Adjustable screw spacer	2	Stainless steel		Optional
18	Adjustable screw O ring	2	NBR		VITON/silicone rubber
19	Inner gasket	1	Engineering plastic		
20	Cam	1	Alloy steel		
21	Upper shaft bearing	1	Engineering plastic		
22	Upper shaft O ring	1	NBR		VITON/silicone rubber
23	Pinion	1	alloy steel	Nickel plating / chrome plating	stainless steel
24	Lower shaft bearing	1	Engineering plastic		
25	Lower shaft O ring	1	NBR		VITON/silicone rubber

DIMENSION DIAGRAM



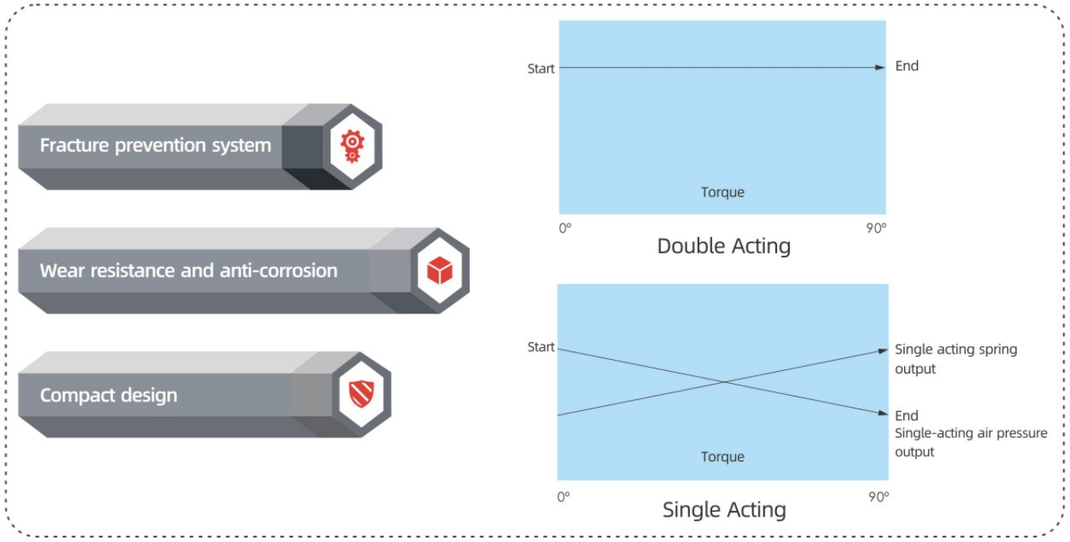
TECHNICAL PARAMETER

Model	A	B	C	D	H×I	G	N	J	K	L	M	Air source interface
XM-32	110	45. 5	49. 5	20	50×25	12	9	Φ36		M5×7. 5		G1/8"
XM-40	122	60	65	20	80×30	14	11	Φ50	Φ36	M6×10	M5×7. 5	NAMUR G1/4"
XM-52	147	72	72	20	80×30	14	11	Φ50	Φ36	M6×10	M5×7. 5	NAMUR G1/4"
XM-63	167	88	83	20	80×30	18	14	Φ70	Φ50	M8×13	M6×10	NAMUR G1/4"
XM-75	184	100	95	20	80×30	20	14	Φ70	Φ50	M8×13	M6×10	NAMUR G1/4"
XM-83	210	109	103	20	80×30	21	17	Φ70	Φ50	M8×13	M6×10	NAMUR G1/4"
XM-92	262	117	109	20	80×30	22	17	Φ70	Φ50	M8×13	M6×10	NAMUR G1/4"
XM-105	268	133	121	20	80×30	26	22	Φ102	Φ70	M10×16	M8×13	NAMUR G1/4"
XM-125	301	155	143	20	80×30	27	22	Φ102	Φ70	M10×16	M8×13	NAMUR G1/4"
XM-140	394	173	152	20	80×30	32	27	Φ125	Φ102	M12×20	M10×16	NAMUR G1/4"
XM-160	458	198	174	20	80×30	34	27	Φ125	Φ102	M12×20	M10×16	NAMUR G1/4"
XM-190	528	232	206	30	130×30	40	36	Φ140		M16×24		NAMUR G1/4"
XM-210	532	257	226	30	130×30	40	36	Φ140		M16×24		NAMUR G1/4"
XM-240	608	291	260	30	130×30	50	46	Φ165		M20×25		NAMUR G1/4"
XM-270	716	330	294	30	130×30	50	46	Φ165		M20×25		NAMUR G1/2"
XM-300	820	354	336	30	130×30	60	46	Φ165		M20×25		NAMUR G1/2"
XM-350	926	408	385	30	130×30	60	46	Φ254	Φ165	8-M16×25	M20×25	NAMUR G1/2"
XM-400	934	464	516	30	130×30	60	55	Φ254	Φ165	8-M16×25	M20×25	NAMUR G1/2"

-The company is working on research and improvement at any time, so the size and design features specified in this catalogue are subject to change without notice.

PNEUMATIC ACTUATORS

XM PNEUMATIC ACTUATOR TORQUE DIAGRAM



XM DOUBLE ACTING ACTUATOR OUTPUT TORQUE

Model	Input air pressure (bar)					
	3	4	5	6	7	8
	Air pressure output torque (N.m)					
XM-DA32	4. 6	6. 1	7. 6	9. 2	10. 7	12. 2
XM-DA40	7. 2	9. 6	12. 0	14. 4	16. 8	19. 2
XM-DA52	12. 0	16. 0	20. 0	24. 0	28. 0	32. 0
XM-DA63	21. 7	28. 9	36. 0	43. 4	50. 6	57. 8
XM-DA75	30. 0	40. 0	50. 0	60. 0	70. 0	80. 0
XM-DA83	46. 8	62. 4	78. 0	93. 6	109. 2	124. 8
XM-DA92	67. 6	90. 1	112. 6	135. 2	157. 7	180. 2
XM-DA105	97. 7	130. 3	162. 9	195. 5	228. 0	260. 6
XM-DA125	150. 5	200. 6	250. 8	301. 0	351. 1	401. 3
XM-DA140	260. 7	347. 6	433. 8	521. 4	608. 3	695. 2
XM-DA160	397. 2	529. 6	662. 0	794. 4	926. 8	1059. 2
XM-DA190	640	853	1067	1280	1493	1707
XM-DA210	798	1064	1330	1596	1862	2128
XM-DA240	1154	1539	1923	2308	2693	3078
XM-DA270	1755	2340	2924	3510	4095	4680
XM-DA300	2291	3055	3819	4582	5346	6110
XM-DA350	3426	4568	5710	6852	7994	9136
XM-DA400	4872	6496	8120	9744	11368	12992

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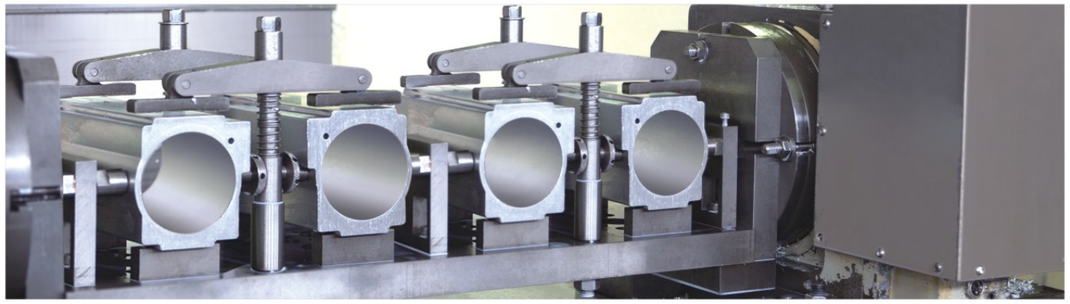
XM SINGLE ACTING ACTUATOR OUTPUT TORQUE

Model	Spring quantity	Spring output torque (N.m)		Input air pressure (bar)									
				3		4		5		6		7	
				Air pressure output torque (N.m)									
		0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°
XM-SR52	5	4. 0	6. 2	8. 1	5. 8	12. 1	9. 8						
	6	4. 7	7. 4	7. 3	4. 6	11. 3	8. 6						
	7	5. 5	8. 7	6. 5	3. 3	10. 5	7. 3	14. 5	11. 3				
	8	6. 3	9. 9			9. 7	6. 1	13. 7	10. 1				
	9	7. 1	11. 2			8. 9	4. 8	12. 9	8. 8	16. 9	12. 8		
	10	7. 9	12. 4			8. 1	3. 6	12. 1	7. 6	16. 1	11. 6	20. 1	15. 6
	11	8. 7	13. 6			7. 3	2. 4	11. 3	6. 4	15. 3	10. 4	19. 3	14. 4
	12	9. 5	14. 9					10. 5	5. 1	14. 5	9. 1	18. 5	13. 1
XM-SR63	5	6. 8	10. 4	14. 9	11. 3	22. 1	18. 5						
	6	8. 2	12. 5	13. 5	9. 2	20. 7	16. 4						
	7	9. 6	14. 6	12. 1	7. 1	19. 3	14. 3	26. 5	21. 5				
	8	10. 9	16. 7			18. 0	12. 2	25. 2	19. 4				
	9	12. 3	18. 9			16. 6	10. 0	23. 8	17. 2	31. 1	24. 5		
	10	13. 7	20. 9			15. 2	8. 0	22. 4	15. 2	29. 7	22. 5	36. 9	29. 7
	11	15. 0	22. 9					21. 1	13. 2	28. 4	20. 5	35. 6	27. 7
	12	16. 4	25. 0					19. 7	11. 1	27. 0	18. 4	34. 2	25. 6
XM-SR75	5	10. 0	15. 0	20. 0	15. 0	30. 0	25. 0						
	6	12. 0	18. 0	18. 0	12. 0	28. 0	22. 0						
	7	14. 0	21. 0	16. 0	9. 0	26. 0	19. 0						
	8	16. 0	24. 0			24. 0	16. 0	34. 0	26. 0				
	9	18. 0	27. 0			22. 0	13. 0	32. 0	23. 0	42. 0	33. 0		
	10	20. 0	30. 0			20. 0	10. 0	30. 0	20. 0	40. 0	30. 0	50. 0	40. 0
	11	22. 0	33. 0			18. 0	7. 0	28. 0	17. 0	38. 0	27. 0	48. 0	37. 0
	12	24. 0	36. 0					26. 0	14. 0	36. 0	24. 0	46. 0	34. 0
XM-SR83	5	15. 5	23. 0	30. 5	23. 0	46. 5	39. 0						
	6	18. 6	27. 6	27. 4	18. 4	43. 4	34. 4						
	7	21. 7	32. 2			40. 3	29. 8	56. 3	45. 8				
	8	24. 8	36. 8			37. 2	25. 2	53. 2	41. 2				
	9	27. 9	41. 4			34. 1	20. 6	50. 1	36. 6	65. 1	51. 6		
	10	31. 0	46. 0			31. 0	16. 0	47. 0	32. 0	62. 0	47. 0	77. 0	62. 0
	11	34. 1	50. 6					43. 9	27. 4	58. 9	42. 4	73. 9	57. 4
	12	37. 2	55. 2					40. 8	22. 8	55. 8	37. 8	70. 8	52. 8
XM-SR92	5	23. 0	33. 0	44. 6	34. 7	67. 1	57. 2						
	6	27. 6	39. 5	40. 0	28. 1	62. 5	50. 6						
	7	32. 2	46. 1			57. 9	44. 0	80. 4	66. 5				
	8	36. 8	52. 7			53. 3	37. 4	75. 8	59. 9				
	9	41. 4	59. 3			48. 7	30. 8	71. 2	53. 3	93. 8	75. 9		
	10	46. 0	65. 9			44. 1	24. 2	66. 6	46. 7	89. 2	69. 3	111. 7	91. 8
	11	50. 6	72. 5					62. 0	40. 1	84. 6	62. 7	107. 1	85. 2
	12	55. 2	79. 1					57. 4	33. 5	80. 0	56. 1	102. 5	78. 6
XM-SR105	5	31. 8	49. 3	66. 0	48. 4	98. 6	81. 0						
	6	38. 1	59. 2	59. 6	38. 5	92. 2	71. 1						
	7	44. 5	69. 0			85. 9	61. 3	118. 5	93. 9				
	8	50. 8	78. 9			79. 5	51. 4	112. 1	84. 0				
	9	57. 2	88. 7			73. 2	41. 6	105. 8	74. 2	138. 4	106. 8		
	10	63. 5	98. 6			66. 8	31. 7	99. 4	64. 3	132. 0	96. 9	164. 5	129. 4
	11	69. 9	108. 5					93. 1	54. 4	125. 7	87. 0	158. 2	119. 5
	12	76. 2	118. 3					86. 7	44. 6	119. 3	77. 2	151. 8	109. 7
XM-SR125	5	50	78	100	72	150	122						
	6	60	94	90	56	140	106						
	7	70	109			130	91	181	142				
	8	80	125			120	75	171	126				
	9	90	140			110	60	161	110	211	161		
	10	100	156			100	44	151	95	201	145	251	195
	11	110	172					141	79	191	129	241	179
	12	120	187					131	64	181	114	231	164
XM-SR140	5	86	129	174	131	261	218						
	6	103	155	157	105	244	192						
	7	120	181			227	166	314	253				
	8	138	206			209	141	296	228				
	9	155	232			192	115	279	202	366	289		
	10	172	258			175	89	262	176	349	263	436	350
	11	189	284					245	150	332	237	585	324
	12	206	310					228	124	315	211	402	298

XM SINGLE ACTING ACTUATOR OUTPUT TORQUE

Model	Spring quantity	Spring output torque (N.m)		Input air pressure (bar)									
				3		4		5		6		7	
				Air pressure output torque (N.m)									
		0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°
XM-SR160	5	140	193	258	205	390	337						
	6	167	231	230	166	362	298						
	7	195	270			334	260	467	393				
	8	223	308			306	221	439	354				
	9	251	347			278	183	411	316	543	448		
	10	279	385			250	144	383	277	515	409	647	541
	11	307	424					355	239	487	371	619	503
	12	335	462					327	200	459	332	591	464
XM-SR190	5	190	320	451	320	664	533						
	6	227	384	413	256	626	469						
	7	265	448			588	405	802	619				
	8	303	512			550	341	764	555				
	9	341	576			512	277	726	491	939	704		
	10	379	640			474	213	688	427	901	640	1114	853
	11	417	704					650	363	863	576	1076	789
	12	455	768					612	299	825	512	1038	725
XM-SR210	5	261	400	538	398	804	664						
	6	313	480	485	318	751	584						
	7	365	560			699	504	965	770				
	8	417	640			647	424	913	690				
	9	469	720			595	344	861	610	1127	876		
	10	521	800			543	264	809	530	1075	796	1341	1062
	11	573	880					757	450	1023	716	1289	982
	12	625	960					705	370	971	636	1237	902
XM-SR240	5	389	583	766	572	1151	957						
	6	467	700	688	455	1073	840						
	7	545	816			995	724	1379	1108				
	8	622	933			918	607	1302	991				
	9	700	1049			840	491	1224	875	1610	1261		
	10	778	1166			762	374	1146	758	1532	1144	1916	1528
	11	856	1283					1068	641	1454	1027	1838	1411
	12	934	1399					990	525	1376	911	1760	1295
XM-SR270	5	505	960	1250	795	1835	1380						
	6	606	1152	1149	603	1734	1188						
	7	707	1344			1633	996	2217	1580				
	8	808	1536			1532	804	2116	1388				
	9	909	1728			1431	612	2015	1196	2601	1782		
	10	1010	1920			1330	420	1914	1004	2500	1590	3085	2175
	11	1111	2112					1813	812	2399	1398	2984	1983
	12	1212	2304					1712	620	2298	1206	2883	1791
XM-SR300	5	725	1145	1522	1102	2271	1851						
	6	870	1374	1377	873	2126	1622						
	7	1015	1603			1981	1393	2730	2142				
	8	1160	1832			1836	1164	2585	1913				
	9	1305	2061			1691	935	2440	1684	3189	2433		
	10	1450	2290			1546	706	2295	1455	3044	2204	3793	2953
	11	1595	2519					2150	1226	2899	1975	3648	2724
	12	1740	2748					2005	997	2754	1746	3503	2495
XM-SR350	5	1173	1703	2003	1474	3145	2616						
	6	1408	2043	1768	1133	2910	2275						
	7	1642	2384			2676	1935	3818	3077				
	8	1877	2724			2441	1594	3583	2736				
	9	2111	3065			2207	1254	3349	2396	4491	3538		
	10	2346	3405			1972	913	3114	2055	4256	3197	5398	4339
	11	2581	3746					2879	1715	4021	2857	5413	3999
	12	2815	4086					2645	1374	3787	2516	4928	3658
XM-SR400	7	1837	2881	2812	1768								
	8	2099	3292	2550	1225								
	9	2362	3704	2259	768	3887	2396						
	10	2624	4115	1967	311	3595	1939	5223	3567				
	11	2886	4527			3303	1482	4931	3110	6559	4738		
	12	3149	4938			3012	1025	4641	2653	6268	4281	7895	5908
	13	3411	5350					4348	2195	5976	3823	7603	5450
	14	3674	5761					4057	1738	5685	3366	7312	4993
	15	3936	6173					3765	1281	5393	2909	7020	4536
	16	4198	6584							5101	2452	6728	4079

ALUMINUM PNEUMATIC ACTUATOR OPEN/CLOSE TIME, GAS CONSUMPTION, WEIGHT TABLE



Model	Single acting K10 open/close time		Double acting open/close time		Gas consumption open/close volume		Actuator weight table	
	Open time (S)	Close time (S)	Open time (S)	Close time (S)	Open volume (L)	Close volume (L)	Double acting (Kg)	Single acting K10 (Kg)
XM-32	/	/	<0.5	<0.5	0.04	0.04	0.5	
XM-40	/	/	<0.5	<0.5	0.09	0.11	0.9	
XM-52	0.5	0.3	<1	<1	0.12	0.16	1.4	1.5
XM-63	0.5	0.3	<1	<1	0.21	0.23	2.1	2.3
XM-75	0.5	0.3	<1	<1	0.3	0.34	2.7	2.9
XM-83	0.8	0.5	<1	<1	0.43	0.47	3.3	3.6
XM-92	1	0.5	<1	<1	0.64	0.73	4.7	5.3
XM-105	2	1	<1	<1	0.95	0.88	6.0	6.8
XM-125	3	1.5	<1	<1	1.6	1.4	9.5	10.6
XM-140	3.9	1.8	<1	<1	2.5	2.3	14.2	16.0
XM-160	4	2	<1.5	<1.5	3.8	3.4	20.7	23.7
XM-190	5	2.5	<1.5	<1.5	6.1	5.6	32.8	37.4
XM-210	5.5	3	<2	<2	7.8	7.8	38.9	46.7
XM-240	9	4	<3	<3	11.3	9.5	56.7	67.9
XM-270	10	5	<5	<5	17.5	14.8	79	96.5
XM-300	13	6	<6	<6	23.8	29.7	114.8	141.3
XM-350	16	8	<8	<8	35.1	46.3	141	191
XM-400	18	9	<9	<9	52.6	56	222	293

Note:

Single Acting type: 0.5Mpa, K10

The open/close time above is for standard model, and customized type can make speed up.

Double Acting type:

It is 0.5MPa, no load, air tube diameter is 6mm, the length from air storage bag to actuator tube is 8m. (The shorter the tube length and bigger tube diameter is, the faster the speed is.)

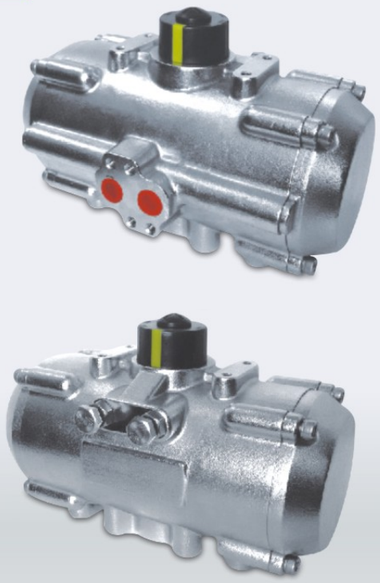
Air consumption:

The air consumption depends on the air supply pressure, on-off stroke, volume and movement times. The calculation is as follows:

L/min = cylinder volume (opening volume + closing volume) x [supply pressure (Kpa) + 101.3]/101.3 x times / minute

STAINLESS STEEL PNEUMATIC ACTUATOR

- Corrosion protection
- Good wear resistance
- Reliable connection
- High strength



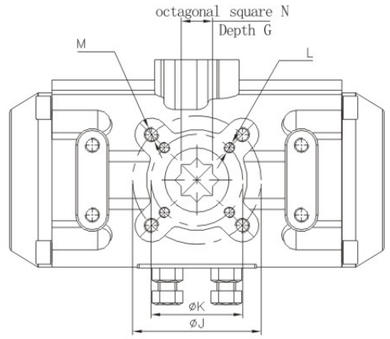
INSTALLATION STANDARD

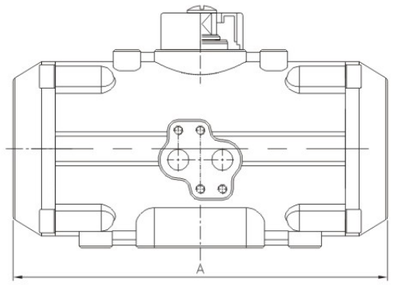
The air supply interface complies with the NAMUR standard and allows easy and convenient installation of solenoid valves.

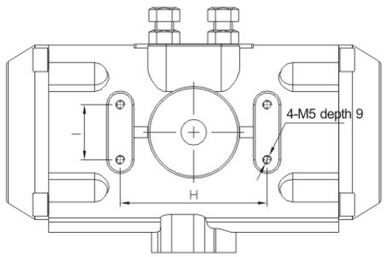
The NAMUR standard slot of the output shaft and the standard mounting hole on the upper part of the actuator allow the limit switch box and positioner to be directly engaged and mounted.

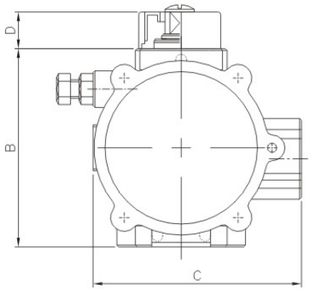
The bottom mounting holes are designed to comply with ISO 1521 and DIN 3337, where can install the clutch (pneumatic handwheel mechanism) or mounting bracket directly.

STAINLESS STEEL PNEUMATIC ACTUATOR DIMENSION DIAGRAM









TECHNICAL PARAMETER

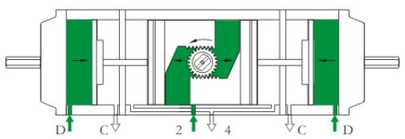
Model	A	B	C	D	H×I	G	N	J	K	L	M	Air source interface
XM-45-SS	138	64	77	20	80×30	14	11	Φ50	Φ36	4-M6×10	4-M5×7.5	G1/4"
XM-52-SS	146	72	79	20	80×30	14	11	Φ50	Φ36	4-M6×10	4-M5×7.5	G1/4"
XM-63-SS	173	88	92	20	80×30	18	14	Φ70	Φ50	4-M8×13	4-M6×10	G1/4"
XM-83-SS	204	109	113.5	20	80×30	21	17	Φ70	Φ50	4-M8×13	4-M6×10	G1/4"
XM-105-SS	270	133	137	20	80×30	26	22	Φ102	Φ70	4-M10×16	4-M8×13	G1/4"
XM-125-SS	302	155	157	20	80×30	27	22	Φ102	Φ70	4-M10×16	4-M8×13	G1/4"
XM-140-SS	394	173	173	20	80×30	32	27	Φ125	Φ102	4-M12×20	4-M10×16	G1/4"
XM-160-SS	456	198	193	20	80×30	34	27	Φ125	Φ102	4-M12×20	4-M10×16	G1/4"
XM-190-SS	568	232	226	30	130×30	40	36	Φ140		4-M16×24		G1/4"
XM-210-SS	568	257	246	30	130×30	40	36	Φ140		4-M16×24		G1/4"
XM-240-SS	608	291	260	30	130×30	50	46	Φ165		4-M20×25		G1/4"
XM-270-SS	716	330	294	30	130×30	50	46	Φ165		4-M20×25		G1/2"
XM-300-SS	820	354	336	30	130×30	60	46	Φ165		4-M20×25		G1/2"
XM-350-SS	926	408	385	30	130×30	60	46	Φ254	Φ165	8-M16×25	4-M20×25	G1/2"
XM-400-SS	934	464	516	30	130×30	60	55	Φ254	Φ165	8-M16×25	4-M20×25	G1/2"

-The company is working on research and improvement at any time, so the size and design features specified in this catalogue are subject to change without notice.

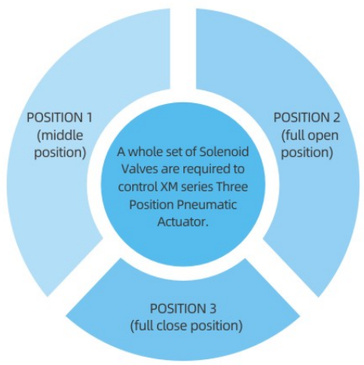
SPECIAL PNEUMATIC ACTUATOR

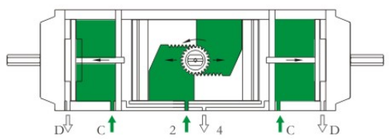
THREE-POSITION PNEUMATIC ACTUATOR

The XM Series three-stage pneumatic actuators are available in a 0° - 45° -90° or 0° -90° -180° mode of operation. The intermediate position is achieved by the mechanical brake produced by the movement of two auxiliary pistons. The intermediate position is adjustable, such as a 90° rotary angle actuator can set intermediate position to be 20°, 30°, 50°, or 75°.

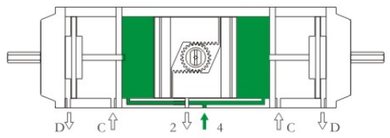


Port 2 and D are filled with air supply at the same time, and air is discharged from port 4 and C.
The air of port D force auxiliary pistons to move to the center. The push rod as a mechanical limit would stop the internal pistons at a certain angle position(set as request). (Standard Assembling Illustration. It can be customized according to actual need.)





Air supply enter into Port 2 and C separately(Port C can be non-ventilated), and air is discharged from Port 4.
Under this condition, air of Port 2 continue to force internal pistons to full open position. (Standard Assembling Illustration. It can be customized according to actual need.)



Air supply enter into Port 4, and air is discharged from Port 2.
(Standard Assembling Illustration. It can be customized according to actual need.)

Angle Limit Adjustment

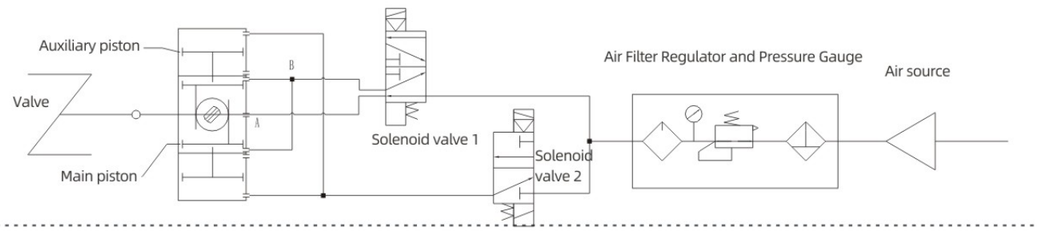
Full Open and Full Close position adjustment.
When in closed or open position, the two adjustable bolts can adjust the actuator from extra -5° to +5° accurately at 0° or 90°. Screw the adjustable bolts at clockwise or counterclockwise direction, and lock nut in the right position.

Full Angle Range Adjustment

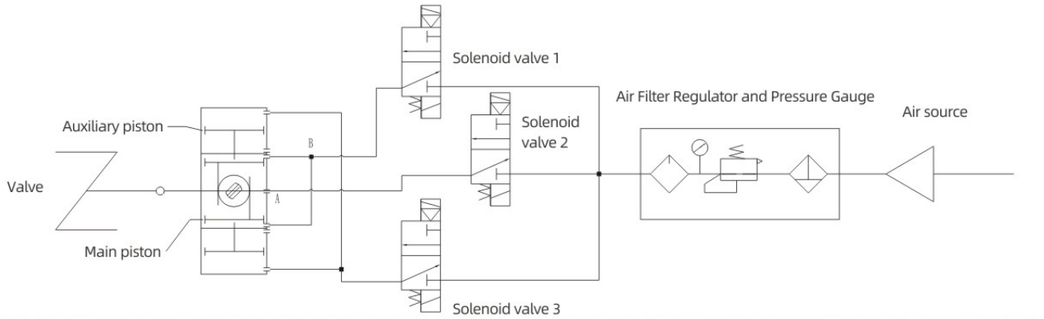
Special XM Pneumatic Actuator are designed for special work condition.
Any angle in 0°- 90°, 0°-120°, or 0°-180° can be set by end caps and special bolts.

WORKING PRINCIPLE

	0°	90°	45°	0°
Solenoid valve 1	OFF	ON	OFF (Delay solenoid valve 2 off)	OFF
Solenoid valve 2	OFF	OFF	ON	OFF



	0°	45°	90°	45°	0°
Solenoid valve 1	OFF	OFF	ON	OFF	OFF
Solenoid valve 2	ON	OFF	OFF	ON	ON
Solenoid valve 3	OFF	ON	ON	ON	OFF



	0°	45°	90°	0°
Solenoid valve 1	OFF	ON	ON	OFF
Solenoid valve 2	OFF	ON first	OFF	OFF