

LOMAS

MADE IN ITALY

Pneumatic Actuator



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Through research development and design JYL series pneumatic actuators incorporate the latest technology materials and innovative idea .The product proudly boasts the following features.

Full conformance to the latest specifications:ISO5211,DIN3337 and VDINDE-3854,NAMUR.

The extruding high intensity aluminum body possesses a honed internal surface coated with hard anode oxygenation for long life.Low coefficient of friction and swift performance.

Excellent compact and modernized construction along with multi specifications makes the selection both economic and beneficial.

All acting surface adopt high quality bearing resulting in low friction,high cycle life, and no noise The two independent external stroke adjustment bolts can easily and precisely adjust $\pm 5^\circ$ at both open and close directions.

Same outline actuators have the functional modes of double acting and single acting (Spring-Return).The Spring-Return has the normally-open and normally-close styles.

Multi function indicator with NAMUR is convenient for mounting accessories.

Pre-compressed load spring is convenient for safe mounting and tear down procedures.

Die-casting aluminum pistons and end caps have high intensity and light weight.

Different O-rings materials are available for high and low temperature.

Solenoid valves are easily mounted without any connecting plank.

Technical features

Product introduction: JYL series pneumatic actuators is combinationed unique style,advanced technology,sophisticated processing and manufacturing,economical and practical,save space,module design,that can be directly installed other attachments,increase the efficiency and economy.

Conventional data:Maximum rated air pressure is 8 bar,the minimum air pressure is 2.5bar.

Temperature: Nomal temperature:-20°C(-4°F) to +80°C(+176°F)

High temperature:15°C(+5°F)to +150°C(+302°F)

Low temperature:-40°C(-104°F)to +80°C(+176°F)

Parts Introduction

1.Indicator: Position indicator with NAMUR is convenient for mounting accessories such as Limit Switch box,positioner and so on.

2.Pinion: The pinion is high-precision and integrative,make form nicklled-alloy steel,full conform to the latest standards of ISO5211,DIN3337,NAMUR.The dimensions can be customized and the stainless steel is available.

3. Actuator Body: According to the different requirements, the extruded aluminum alloy ASTM6005 Body can be treated with hard anodized, power polyester painted (different colours is available such as blue, orange, yellow etc.), PTFE or Nickel plated.

4. End caps: Die-casting aluminum powder polyester painted in different colours, PTFE or Nickel plated.

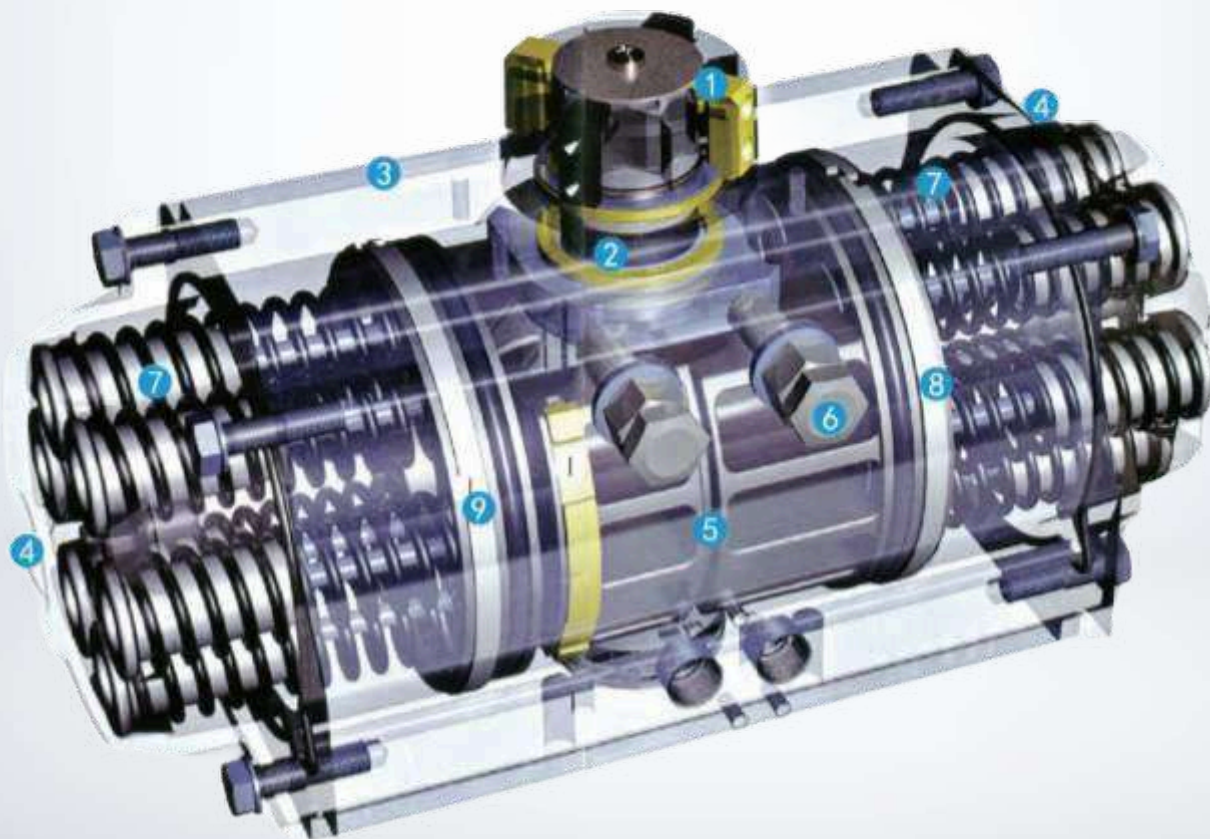
5. Pistons: The twin rack pistons are made from Die-casting aluminum treated with Hard anodized or made from Cast steel with galvanization. Symmetric mounting position, long cycle life and fast operation, reversing rotation by simply inverting the pistons.

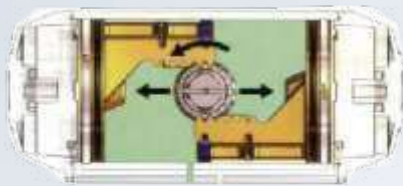
6. Travel adjustment: The two independent external travel stop adjustment bolts can adjust $\pm 5^\circ$ at both open and close directions easily and precisely.

7. High performance springs: Preloaded coating springs are made from the high quality material for resistant to corrosion and longer service life, which can be denounced safely and conveniently to satisfy different requirements of torque by changing quantity of springs.

8. Bearings & Guides: Made from low friction, long-life compound material, to avoid the direct contact between metals. The maintenance and replacement are easy and convenient.

9. O-rings: NBR rubber O-rings provide trouble-free operation at standard temperature ranges. For high and low temperature applications Viton or Silicone.



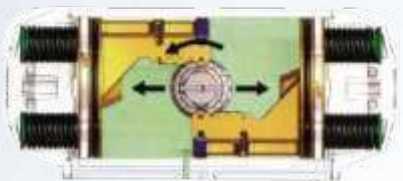


Operating Principle (Standard Rotation)

Standard direction of rotation is clockwise to close, counterclockwise to open.

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

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



Single action(planfrom):

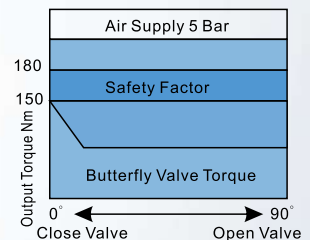
Air into Port A forces the pistons outwards, causing the springs to compress, the pinion turns counterclockwise while air is being exhausted from Port B.

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.

Sizing:double acting actuator

When choosing actuators, first make sure the valve torque, combined with the safety factor, factor or safety valve with different medium, temperature, pressure, friction between the valve core and valve seat and many other factors, affect the operating torque.

As known butterfly valve torque=120nm, using medium for water, normal temperature, the air pressure for 5 bar, according to the safety factor of 30% is calculated. Safety torque: $120(1+30\%)=156$ Nm. Contrast double-acting actuator torque check pressure for 5 bar in the table, along the column for equal or close to 156Nm, choose 162.9Nm, to the left to find models, selected JYL-AT105.



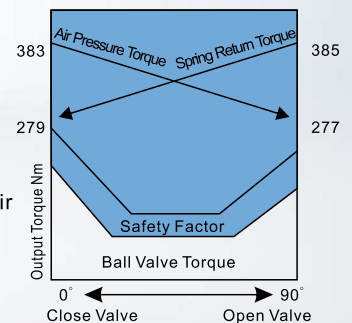
Sizing:single acting actuator

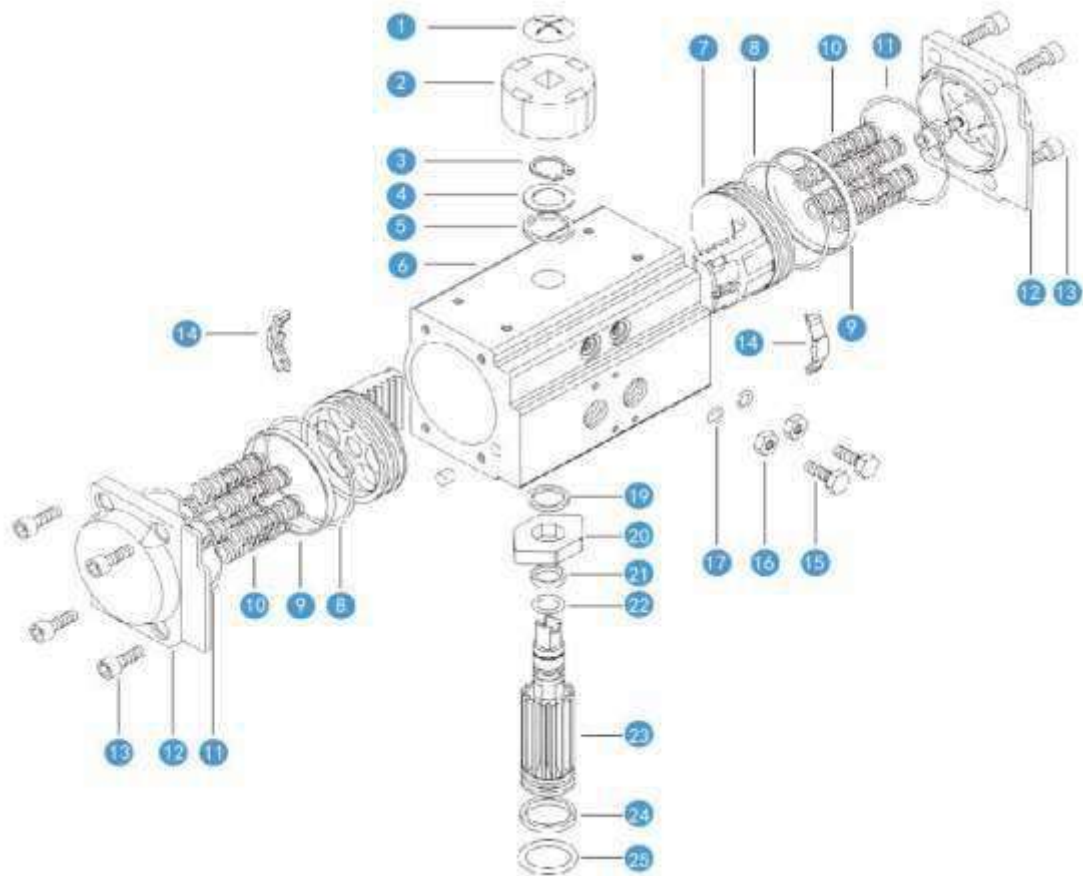
First consideration in the selection of torque at air pressure and torque under the action of the spring elongation.

As known butterfly valve torque=200nm, using medium for steam, temperature 160°C, the air pressure is 5.5 bar, according to the safety factor of 30% calculated. Safety moment: $200(1+30\%)=260$ nm. Contrast single-acting actuator torque check pressure for 5 bar column in the table, along the column (start and end) finds the moment, then check the beginning and end of a spring trip to the right moment. Search results for JYL-AT160 , springs is K10, as following data:

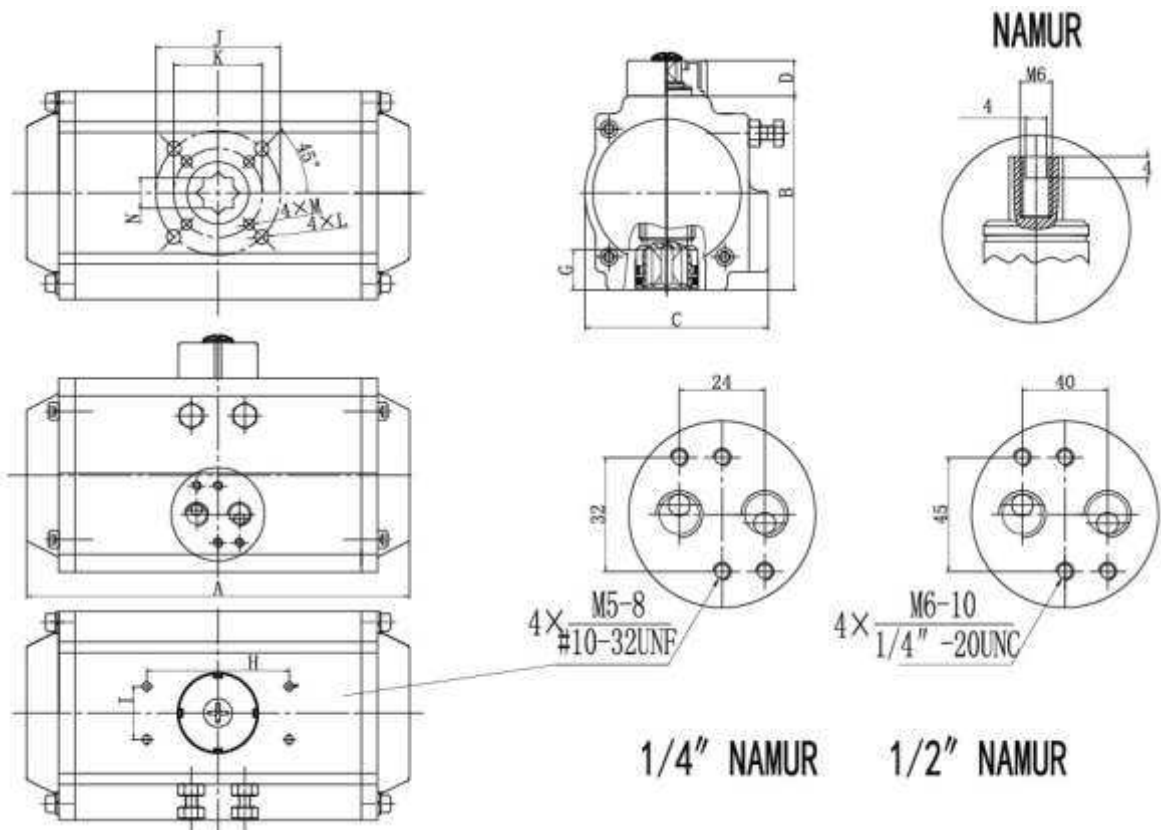
pneumatic torque under the air pressure is $0^\circ=383$ Nm $90^\circ=277$ Nm Spring $0^\circ=279$ Nm
spring $90^\circ=385$ Nm

Note: check the selected torque, torque should be equal or close to safety!



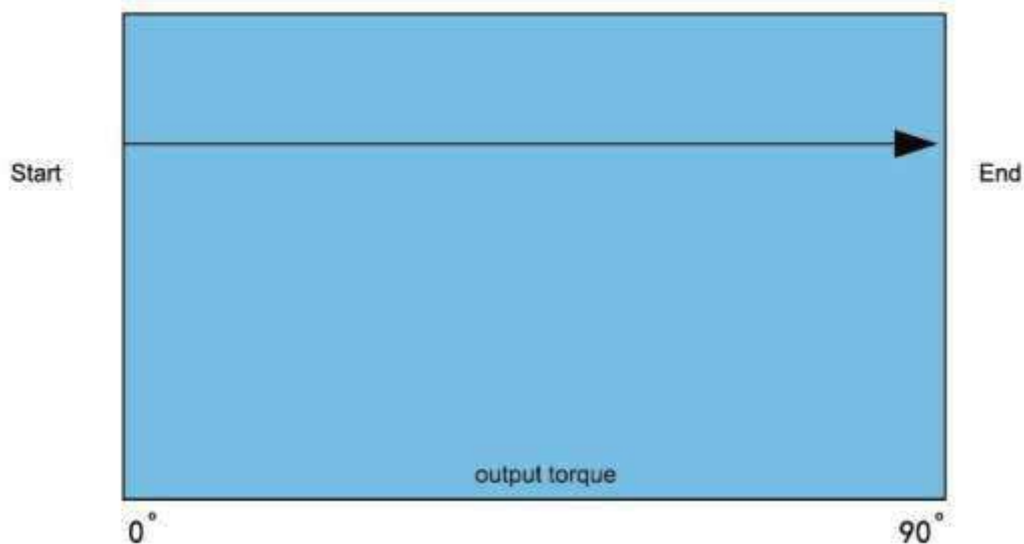


No	Description	Qty	Standard Material	Anti-corrode treatment	Optional Material
1	Indicator screw	1	Plastic		
2	Indicator	1	Plastic		
3	The circlip	1	Stainless Steel		
4	Washer	1	Stainless Steel		
5	The outer gasket	1	PTFE		
6	Cylinder block	1	Extruded aluminum alloy	Oxidation	
7	Piston	2	Extruded aluminum alloy	Hard anodic oxidation	Stainless steel
8	O piston ring	2	NBR		Fluorine rubber,silicone rubber
9	Piston bearing	2	Engineering plastics		
10	Spring assembly	0-12	Spring Steel	Dipping paint	
11	The end cap O ring	2	NBR		Fluorine rubber,silicone rubber
12	The end cover	2	Aluminum Alloy	Spraying powder	
13	End cover bolt	8	Stainless Steel		
14	Piston guide	2	Engineering plastics		
15	Adjusting bolt	2	Stainless Steel		
16	The adjusting nut	2	Stainless Steel		
17	Adjusting screw gasket	2	Stainless Steel		
18	The adjusting O ring	2	NBR		Fluorine rubber,silicone rubber
19	The inner pad	1	Engineering plastics		
20	Cam	1	Alloy steel		Stainless steel
21	The upper shaft bearing	1	Engineering plastics		Fluorine rubber,silicone rubber
22	The upper shaft O ring	1	NBR		
23	Gear shaft	1	Alloy steel	Nickel/Chrome	Stainless steel
24	The lower shaft bearing	1	Engineering plastics		Fluorine rubber,silicone rubber
25	The lower shaft O ring	1	NBR		



Pneumatic actuator size and connection size diagram

Model	A	B	C	D	Hx1	G	N	J	K	L	M	M
JYL-AT32	110	45	45	20	50 X 25	12	9	Ø36		M5 X 7.5		
JYL-AT40	122	60	65	20	80 X 30	14	11	Ø50	Ø36	M6 X 10	M5 X 7.5	M5 X 7.5
JYL-AT52	147	72	72	20	80 X 30	14	11	Ø50	Ø36	M6 X 10	M5 X 7.5	M5 X 7.5
JYL-AT63	172	88	83	20	80 X 30	18	14	Ø70	Ø50	M8 X 13	M6 X 10	M6 X 10
JYL-AT75	184	100	95	20	80 X 30	20	14	Ø70	Ø50	M8 X 13	M6 X 10	M6 X 10
JYL-AT83	204	109	103	20	80 X 30	21	17	Ø70	Ø50	M8 X 13	M6 X 10	M6 X 10
JYL-AT92	262	117	109	20	80 X 30	22	17	Ø70	Ø50	M8 X 13	M6 X 10	M6 X 10
JYL-AT105	268	133	121	20	80 X 30	26	22	Ø102	Ø70	M10 X 16	M8 X 13	M8 X 13
JYL-AT125	301	155	143	20	80 X 30	27	22	Ø102	Ø70	M10 X 16	M8 X 13	M8 X 13
JYL-AT140	394	173	152	20	80 X 30	32	27	Ø125	Ø102	M12 X 20	M10 X 16	M10 X 16
JYL-AT160	458	198	174	20	80 X 30	34	27	Ø125	Ø102	M12 X 20	M10 X 16	M10 X 16
JYL-AT190	528	232	206	30	130 X 30	40	36	Ø140		M16 X 24		
JYL-AT210	532	257	226	30	130 X 30	40	36	Ø140		M16 X 24		
JYL-AT240	660	291	260	30	130 X 30	50	46	Ø165		M20 X 25		
JYL-AT270	740	330	294	30	130 X 30	50	46	Ø165		M20 X 25		
JYL-AT300	798	354	336	30	130 X 30	60	46	Ø165		M20 X 25		
JYL-AT350	880	408	385	30	130 X 30	60	46	Ø165		M20 X 25		
JYL-AT400	950	464	516	30	130 X 30	60	55	Ø254	Ø165	8-M16 X 25	M20 X 25	M20 X 25



JYL double acting actuator output torque

Model	Input air pressure (Bar)					
	3.0	4.0	5.0	6.0	7.0	8.0
Output torque(Nm)						
JYL-AT32	4.6	6.1	7.6	9.2	10.7	12.2
JYL-AT40	7.2	9.6	12.0	14.4	16.8	19.2
JYL-AT52	12.0	16.0	20.0	24.0	28.0	32.0
JYL-AT63	21.7	28.9	36.0	43.4	50.6	57.8
JYL-AT75	30.0	40.0	50.0	60.0	70.0	80.0
JYL-AT83	46.8	62.4	78.0	93.6	109.2	124.8
JYL-AT92	67.6	90.1	112.6	135.2	157.7	180.2
JYL-AT105	97.7	130.3	162.9	195.5	228.0	260.6
JYL-AT125	150.5	200.6	250.8	301.0	351.1	401.3
JYL-AT140	260.7	347.6	433.8	521.4	608.3	695.2
JYL-AT160	397.2	529.6	662.0	794.4	926.8	1059.2
JYL-AT190	640.2	853.6	1067.0	1280.4	1493.8	1707.2
JYL-AT210	798.0	1064.0	1330.0	1596.0	1862.0	2128.0
JYL-AT240	1154.3	1539.0	1923.8	2308.5	2693.3	3078.0
JYL-AT270	1755.0	2340.0	2924.0	3510.0	4095.0	4680.0
JYL-AT300	2291.4	3055.2	3919.0	4582.8	5346.6	6110.4
JYL-AT350	3426.0	4568.0	5710.0	6852.0	7994.0	9136.0
JYL-AT400	4872.0	6496.0	8120.0	9744.0	11368.0	12992.0

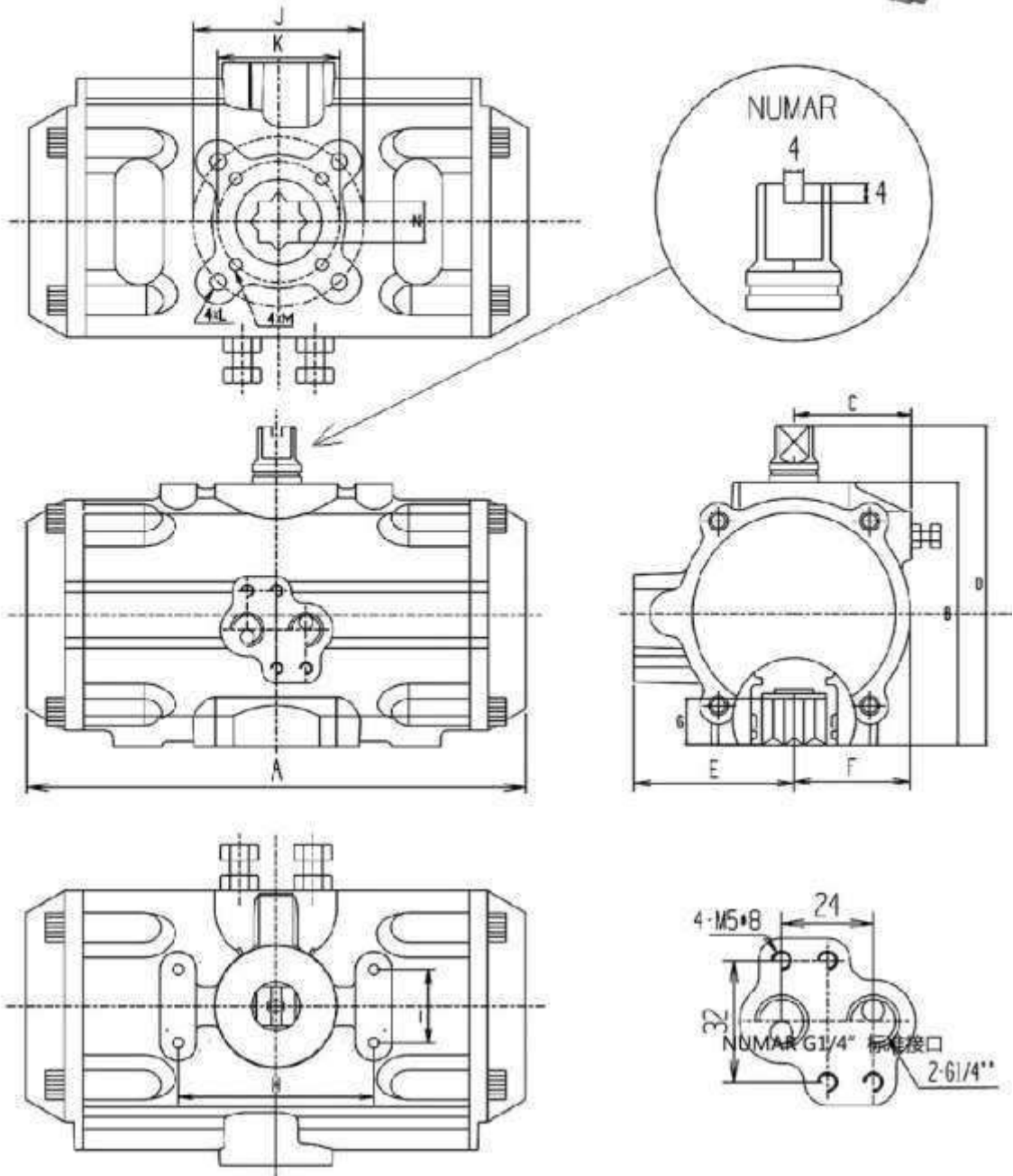
JYL Single acting actuator output torque

Model	Spring Qty	Spring output torque(Nm)		Input air pressure(bar)									
				3.0		4.0		5.0		6.0		7.0	
		0°	90°	Output torque(Nm)									
		0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°
JYL-AT52	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
JYL-AT63	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
JYL-AT75	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
JYL-AT83	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
JYL-AT105	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
JYL-AT125	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
JYL-AT140	5	50.0	78.0	100	72	150	122						
	6	60.0	93.6	90	56	140	106						
	7	70.0	109.2			130	91	181	142				
	8	80.0	124.8			120	75	171	126				
	9	90.0	140.4			110	60	161	110	211	161		
	10	100.0	156.0			100	44	151	95	201	145	251	195
	11	110.0	171.6					141	79	191	129	241	179
	12	120.0	187.2					131	64	181	114	231	164
	5	86.0	129.0	174	131	261	218						
	6	103.2	154.8	157	105	244	192						
	7	120.4	180.6			227	166	314	253				
	8	137.6	206.4			209	141	296	228				
	9	154.8	232.2			192	115	279	202	366	289		
	10	172.0	258.0			175	89	262	176	349	263	436	350
	11	189.2	283.8					245	150	332	237	585	324
	12	206.4	309.6					228	124	315	211	402	298

JYL Single acting actuator output torque

Model	Spring Qty	Spring output torque(Nm)		Input air pressure(bar)									
				3.0		4.0		5.0		6.0		7.0	
		0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°
JYL-AT160	5	139.5	192.5	258	205	390	337						
	6	167.4	231.0	230	166	362	298						
	7	195.3	269.5			334	260	467	393				
	8	223.2	308.0			306	221	439	354				
	9	251.1	346.5			278	183	411	316	543	448		
	10	279.0	385.0			250	144	383	277	515	409	647	541
	11	306.9	423.5					355	239	487	371	619	503
12	334.8	462.0					327	200	459	332	591	464	
JYL-AT190	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	
JYL-AT210	5	261	440	619	439	912	732						
	6	313	528	566	351	859	644						
	7	365	616			807	556	1101	850				
	8	417	704			755	468	1049	762				
	9	469	792			703	380	997	674	1290	967		
	10	521	880			651	292	945	586	1238	879	1531	1172
	11	573	968					893	498	1186	791	1479	1084
12	625	1056					841	410	1134	703	1427	996	
JYL-AT240	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	
JYL-AT270	5	505	960	1434	949	2080	1625						
	6	606	1152	1333	787	1979	1433						
	7	707	1344			1878	1241	2523	1886				
	8	808	1536			1777	1049	2422	1694				
	9	909	1728			1676	857	2321	1502	2967	2148		
	10	1010	1920			1575	665	2220	1310	2866	1956	3513	2603
	11	1111	2112					2119	1118	2765	1764	3412	2411
12	1212	2304					2018	926	2664	1572	3311	2219	
JYL-AT300	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	
JYL-AT350	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	3062			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	
JYL-AT400	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

Mounting Connection And Dimension
JYL Series Actuator Dimension Table



Model	A	B	C	D	E	F	G	H	I	N	J	K	L	M	Air Connection
JYL-AT52	146	72	30	92	47	32	14	80	30	11	Φ50	Φ36	M6*10 (1/4" -20UNC)	M5*7.5 (#10 -24UNF)	G1/4"
JYL-AT63	173	88	36	108	54	38	18	80	30	14	Φ70	Φ50	M8*13 (5/16" -18UNC)	M6*10 (1/4" -20UNC)	G1/4"
JYL-AT83	204	108	48	128	65.5	48	21	80	30	17	Φ70	Φ50	M8*13 (5/16" -18UNC)	M6*10 (1/4" -20UNC)	G1/4"
JYL-AT105	270	133	50	153	77	60	26	80	30	22	Φ102	Φ70	M10*16 (3/8" -16UNC)	M8*13 (5/16" -18UNC)	G1/4"
JYL-AT125	302	155	58	175	87	69.5	27.5	130	30	22	Φ102	Φ70	M10*16 (3/8" -16UNC)	M8*13 (5/16" -18UNC)	G1/4"
JYL-AT140	394	172	69	192	95.5	77	32	130	30	27	Φ125	Φ102	M12*20 (1/2" -12UNC)	M10*16 (3/8" -16UNC)	G1/4"
JYL-AT160	456	198	75	218	106	87	34	130	30	27	Φ125	Φ102	M12*20 (1/2" -12UNC)	M10*16 (3/8" -16UNC)	G1/4"
JYL-AT210	568	257	90	287	133	113	40	130	30	36	Φ140		M16*24 (5/8" -11UNC)		G1/4"

Mounting Standard



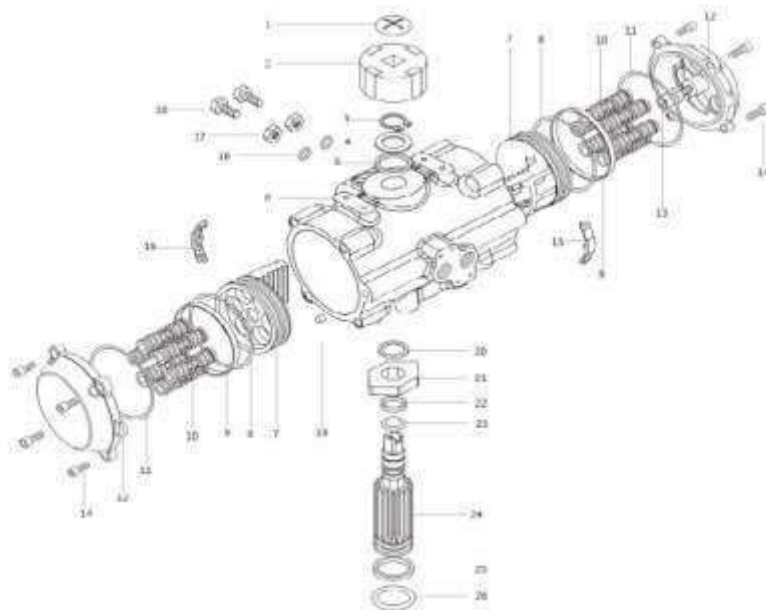
Air supply connection is designed in accordance with NAMUR standard to install solenoid valves.



The NAMUR drive pinion and the NAMUR top mounting connection permit direct installation of accessories such as limit switch box and positioner.

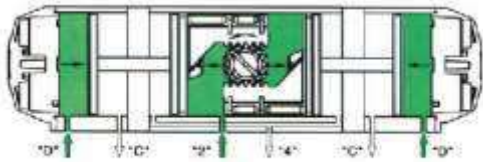


Bottom mounting connection is designed in accordance with ISO5211 and DIN3337 standards for direct mounting with valve gear boxes or mounting brackets.



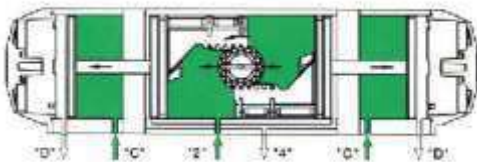
NO.	Description	Qty	Standards Material
1	Indicator Screw	1	Plastic
2	Indicator	1	Plastic
3	Snap Ring	1	Stainless Steel
4	Washer	1	Stainless Steel
5	Outside Washer	1	Engineering Plastics
6	Body	1	Stainless Steel
7	Piston	1	Stainless Steel
8	Piston O-ring	2	Viton/NBR
9	Piston Bearing	2	Engineering Plastics
10	Spring	0-12	Spring Steel
	Spring Retaineer(L,R)		Nylon 66
	Retainer Connector		Brass
11	End-Cap O-ring	2	Viton/NBR
12	End-Cap	2	Stainless Steel
13	Stop Screw	2	Stainless Steel
14	End-Cap Stop Screw	8	Stainless Steel
15	Guide Piston	2	Nylon 66
16	O-ring(Adjust Screw)	2	NBR
17	Nut(Adjust Screw)	2	Stainless Steel
18	Adjust Screw	2	Stainless Steel
19	Plug	2	NBR
20	Inside Washer	1	Engineering Plastics
21	Cam	1	Stainless Steel
22	Bearing Top	1	Engineering Plastics
23	O-ring(Top)	1	Viton/NBR
24	Pinion	1	Stainless Steel
25	Bearing Bottom	1	Engineering Plastics
26	O-ring Bottom	1	Viton/NBR

JYL Three position pneumatic actuator provides an operation of $0^\circ, 45^\circ, 90^\circ$ or $0^\circ, 90^\circ, 180^\circ$. The midway position is achieved by a mechanical stoppage of movement on the two auxiliary pistons. This auxiliary pistons. (Midway stop position is adjustable). Example 90° actuator can provide $20^\circ, 30^\circ, 40^\circ, 50^\circ, 70^\circ$ etc.



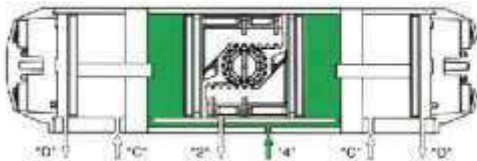
Position 1 (Middle Position)

For this position is in the air at the same time into the 2 and D, air out of the 4 port and C port discharge, in fact when gas source for the D port force auxiliary pistons inwards, the push rod as a mechanical limit stop in the position of internal piston in setting.



Position 2 (Full Open Position)

For this position is in the air at the same time into the 2 port and C port (C port is not ventilation), air out of the 4 port, in this case, the gas source to 2 port continuous output inside the piston to the full open position.



Position 3 (Seated Position)

This position is for air into 4 port respectively, from 2 port to expel the air.



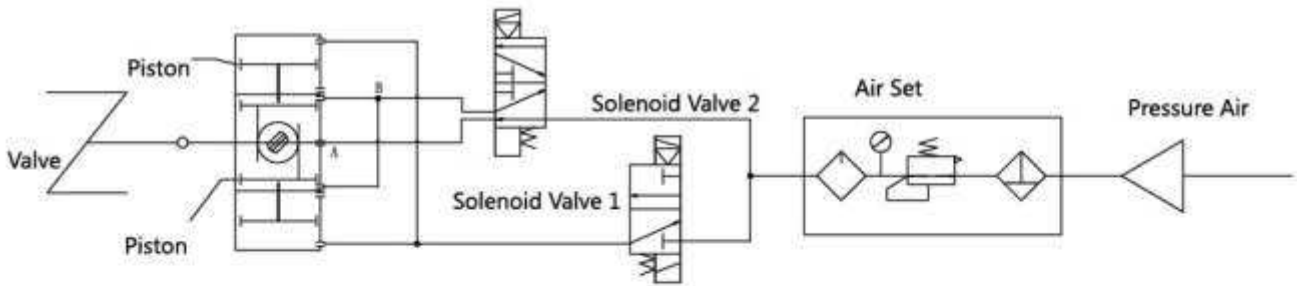
Position Limit Adjust

Full open and close position control, close position and open position through the two adjustment bolts, can accurately control actuators from -5° to $+5^\circ$ to $(0^\circ, 90^\circ)$ adjusted stroke position, as long as the left-handed or right-handed adjustment bolts, and at the right position lock nut.

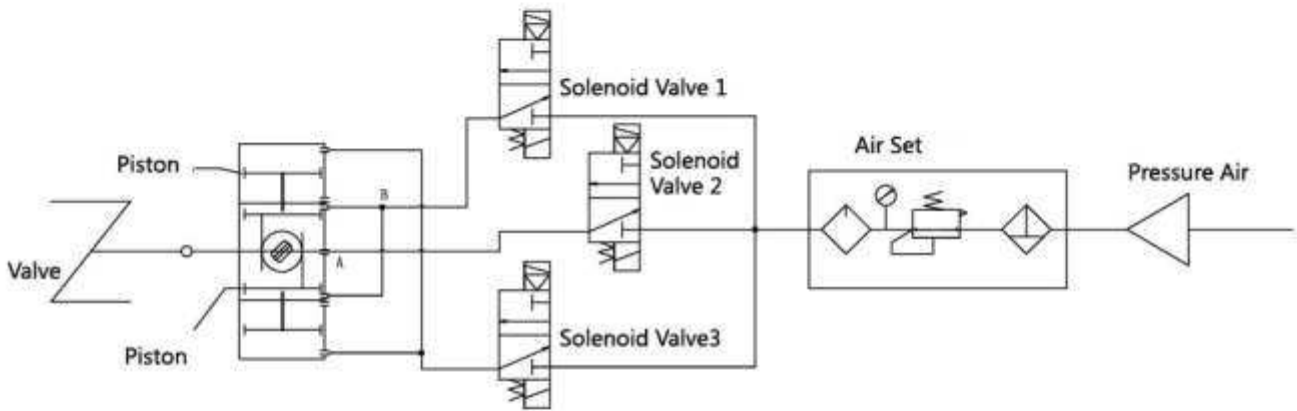
Full Stroke Position Adjustment

JYL Series pneumatic actuators in a specially designed 0° to $90^\circ, 0^\circ$ to 120° , within the scope of 0° and 180° can adjust and angle, set by end cover and the special bolt.

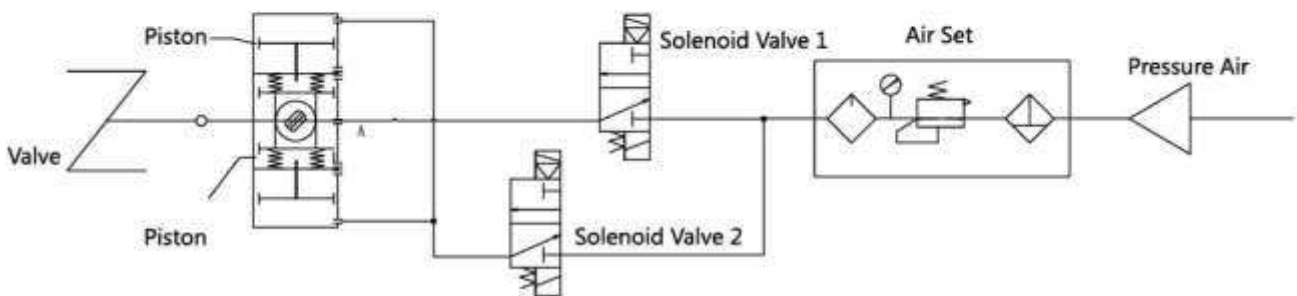
Three Position Pneumatic Actuator Schematic Diagram



	0°	90°	45°	0°
Solenoid Valve 1	OFF	ON	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°	45°	0°
Solenoid Valve 1	OFF	ON	ON	ON	OFF
Solenoid Valve 2	OFF	ON	OFF	ON	OFF

Aluminum Alloy Cylinder Switch Time, Gas Consumption, Weight Table

Model	Spring Return Opening Closing Time		Double Acting Opening Closing Time		Air Volume Opening Closing		Weight Of Pneumatic Actuator	
	Open Time (S)	Close Time (S)	Open Time (S)	Close Time (S)	Open Volume (L)	Close Volume (L)	Double Acting (KG)	Spring Return (KG)
JYL-AT32							0.5	
JYL-AT52	0.5	0.3	<1	<1	0.12	0.16	1.2	1.3
JYL-AT63	0.5	0.3	<1	<1	0.21	0.23	2	2.2
JYL-AT75	0.5	0.3	<1	<1	0.3	0.34	2.6	3
JYL-AT83	0.8	0.5	<1	<1	0.43	0.47	3.2	3.6
JYL-AT92	1	0.5	<1	<1	0.64	0.73	5	6
JYL-AT105	2	1	<1	<1	0.95	0.88	6	7
JYL-AT125	3	1.5	<1	<1	1.6	1.4	10	12
JYL-AT140	3.9	1.8	<1	<1	2.5	2.3	14	16
JYL-AT160	4	2	<1.5	<1.5	3.8	3.4	21	24
JYL-AT190	5	2.5	<1.5	<1.5	6.1	5.6	32	38
JYL-AT210	5.5	3	<2	<2	7.8	7.8	45	53
JYL-AT240	9	7	<3	<3	11.3	9.5	56	68
JYL-AT270	10	5	<5	<5	17.5	14.8	81	99
JYL-AT300	13	6	<6	<6	23.8	29.7	112	144
JYL-AT350	16	8	<8	<8	35.1	46.3	141	191
JYL-AT400	18	9	<9	<9	52.6	56	222	6.4*13

Air consumption rest with air supply. Open and close stroke, Air volume and action cycle times, expressions: $L/Min = \text{Air Volume (Air Volume Opening + Air Volume closing)} \times [\text{Air Supply (Kpa) + 101.3}] / 101.3 \times \text{Action cycle times/min}$

Accessories Installation

Solenoid valve installation:with NAMUR standard directly installed on the actuator through the adapter plate,two three links can be transferred to two five-way,electromagnetic valve installed correctly to ensure that the actuators in the closed position before the pneumatic actuator3 with splenoid valve 4,on the air interface,install the o-rings,with bolts,easy to use and beautiful,if change the solenoid valve open from electricity to electricity shut type,as long as the loose bolts,rotating electromagnetic valve is 180°

Limit switch box installation:signal switch box is send the valve and actuator position signal,passed to the control system,pneumatic actuator 3 with bracket and limit switch box 1 ,using four screw fastening can ,as along as the VDI/VDE3845 standard can be installed,excellent versatility,and convenient.

E/P valve positioner installation:this series is specially designed for external regulation,applied to the double acting or single-acting actuator,input,output 4-20ma signal,pneumatic actuator 3 with E/P valve positioner 2 and stents, through tooth axis NAMUR linkage feedback pole,with four bolts ,connect air line ,adjusting control can be realized.



Installation Instruction

Before installation of pneumatic actuator to the valve, please read the instructions, the related technical parameters, connection size, output torque, limit adjustment, gas consumption, operation time, the direction of rotation, weight, action, etc.

Pneumatic actuators connected to the air supply pipe before, it is necessary to purge the lines of the stolen goods. Such as welding slag, iron and other debris into the cylinder so as not to affect life span.

Pneumatic actuators installed at any angle and nondestructive performance.

Double acting actuators in before installation of valve, must confirm the identity of the switch actuator and valve position.

Single acting pneumatic valve actuator to determine required air failure in open or closed position, to determine the role of the executor form (gas open or gas close)

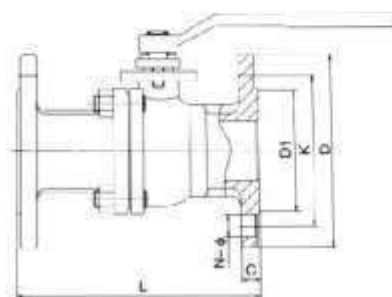
Generally pneumatic actuator and valve assembly as 2 types

A through the bracket and connection set of assembly, and also can be directly inserted into the shaft hole with longer stem

B installed directly, without support, directly through the corresponding with ISO5211 flange connected to meet international standards, the valve stem directly inserted into the shaft hole.

Used to connect all parts with high precision requirement, otherwise it will affect the switch angle, produce the valve leak amount, parts fit tolerance according to GB/T12223-2005 part of the valve actuation device with connection standard.





The Performance Specification

Norminal Pressure	PN	1.6,2.5,4.0,6.4	Mpa
Test Pressure	PT	2.4,3.8,6.0,9.6	
Low Pressure		0.6	
Seal Test Pressure		1.8,2.8,4.4,7.1	
Applymedium	Q41F-(16-64)C	Q41F-(16-64)P	Q41F-(16-64)R
	Water,Oil,Gas	Nitric Acid	Acetic Acid
Temperature		-40~180℃	

The Major Parts Material

Name Of The Parts	Q41F-(16-64)C	Q41F-(16-64)P	Q41F-(16-64)R
Valve Body	WCB	ZG1Cr18Ni9Ti CF8	ZG1Cr18Ni12Mo2Ti CF8M
Valve Coverball	WCB	ZG1Cr18Ni9Ti CF8	ZG1Cr18Ni12Mo2Ti CF8M
Valve	1Cr18Ni9Ti 304	1Cr18Ni9Ti 304	1Cr18Ni12MoTi 316
Valve Stem	1Cr18Ni9Ti 304	1Cr18Ni9Ti 304	1Cr18Ni12MoTi 316
Seal		Teflon	
Packing		Teflon	

Three Type Ball Valve

Size	Valve Body	Materialvalve Material	Valve Seatconnection	Type
1/4"-4"	304	316	PTFE	NPT
1/4"-4"	304	316	PTFE	NPT

Installed

- 1.Pneumatic actuator/Electric actuator
- 2.Tsolenoid Valve
- 3.Limit switch box
- 4.Positioner

Product Characteristics

Size: 1/4"~4" (DN8~DN80)

Explosion-proof axial, anti-static settings

Shell thickness: ANSI B16.34 Class300

Valve Body: CF8/CF8M

Ball: SS316

Stem: SS316

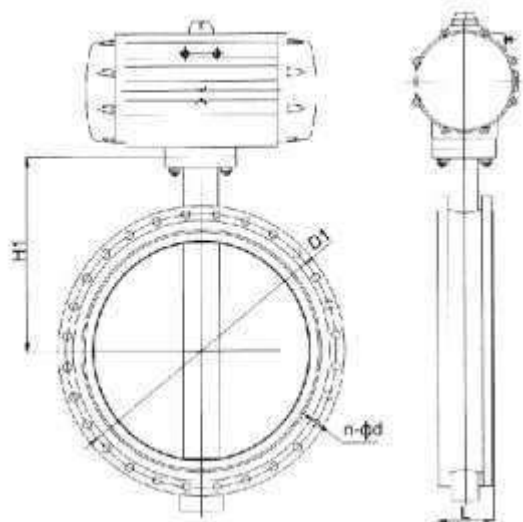
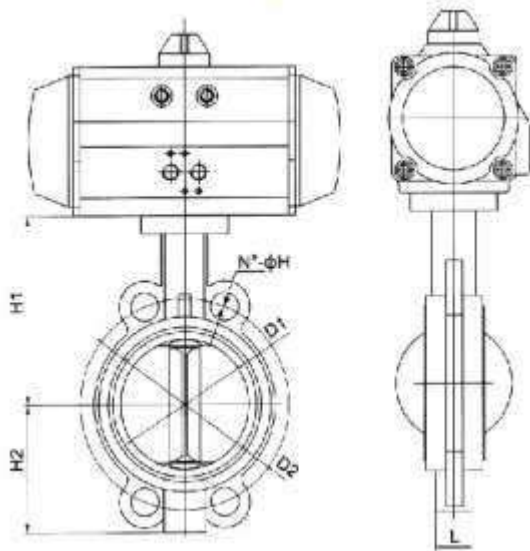
Sealing Ring: PTFE

Working Pressure: 1/4"~2" 1000 psi

2"~1/2" to 3" 800 psi

Temperature Range: -20 to 450°C





Size	Valve Body Material	Valve Seat	Material	Connection
2"-48"	Ductile Iron	D-Iron Coated Nylon	EPDM/NBR	Wafer
2"-48"	Ductile Iron	SS	EPDM/NBR	Wafer
2"-48"	Ductile Iron	Ductile Iron	EPDM/NBR	Wafer
2"-48"	Ductile Iron	Ductile Iron	EPDM/NBR	Wafer
2"-48"	Ductile Iron	D-Iron Coated Nylon	PTFE	Wafer
2"-48"	Ductile Iron	SS	PTFE	Flanged
2"-48"	Ductile Iron	Ductile Iron	PTFE	Flanged
2"-48"	Ductile Iron	Ductile Iron	PTFE	Flanged
2"-48"	Aluminum Alloy	SS	EPDM/NBR	Flanged

Product Features:

Size DN50-1200

Pressure PN10-PN16-ANSI CLASS125/150

Suitable for flange PN10-PN16-ANSI CLASS12/150

Connection mode:the clip,porous,flange,flange single,double flange to the clamp

The valve body material:Aluminum alloy,ductile iron,stainless steel

Valve plate material:nylon coating of ductile iron,ductile iron plating,stainless steel,aluminum bronze

Structure length:ISO5752 EN558-1 API609 GB12221-89

Valve design:GB12238 Standards

According to the ISO5208 valve test

(1) The tightness:1.1 X PN

(2) The body impact resistance:1.5 X PN

Sealing material and working temperature

EPDM :-35~+135℃

NBR:25+90℃

PTFE teflon:-40~+200℃

Fluorine rubber(FPM):-29~+205℃)

Suitable for flange:PN6 10/16/m,ANSI CLASS125/150,JIS5/10/16K

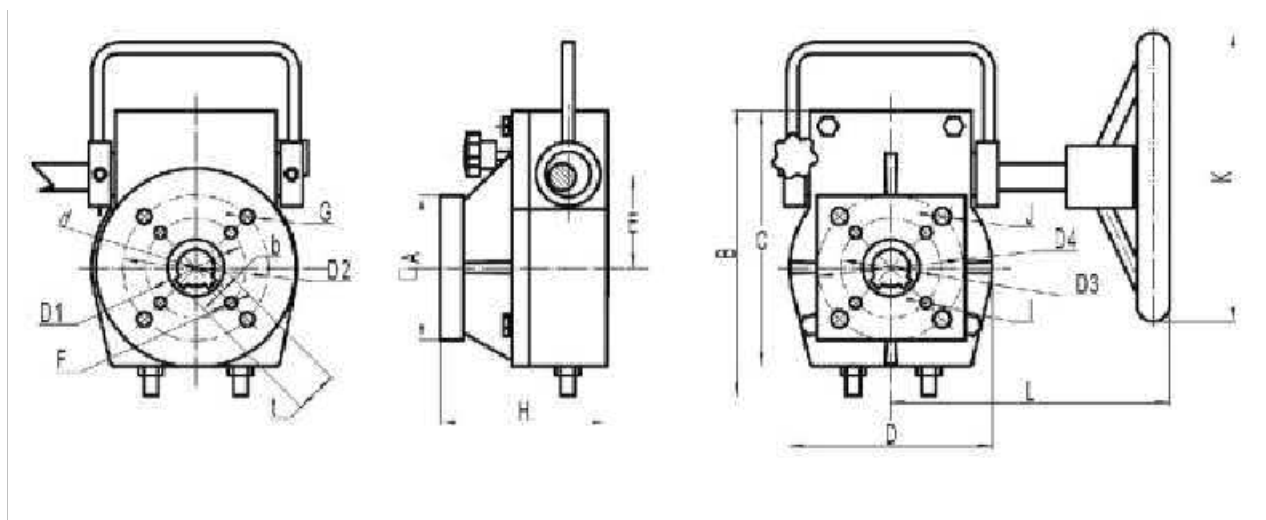
Job stress:2" to 12"

ANSI CLASS125/150,14"-48"

ANSI CLASS125 DN50-DN2300 PN16

Basic structure length:ISO5752/EN558-1 Series 20(wafer short),API609,GB1221-89

Valve design:GB12238 Standards



The hand wheel connection dimension

Model	d	b	t	D1	F	D2	G	A	H	E	D3	I	D4	J	K	L	B	C	D
XLHJ26:1	22	6	24.8			70	M8	70	99	50.5			70	Φ9	Φ180	155	160	145	110
XLHJ38:1	26	8	29.3	70	M8			100	117	65	70	Φ9			Φ200	195	195	175	140
	38	10	41.3			102	M10	110					102	Φ12					
XLHJ54:1	38	10	41.3	125	M12			130	118	85	125	Φ14			Φ280	205	235	215	180
	48	14	51.8			140	M16						140	Φ18					
XLHJ80:1	48	14	51.8	140	M16			156	148	124	140	Φ18			Φ380	245	320	298	250
	60	18	64.4			165	M20						165	Φ22					
XLHJ78:1	60	18	64.4	165	M20			220	150	142	165	Φ22			Φ500	265	360	340	285
	80	22	85.6																
XLHJ98:1	80	22	85.6	165	M20			230	195	229	165	Φ22			Φ800	410	550	530	460
XLHJ100:1	100	28	106.6	254	M16			300	195	258	254	Φ18			Φ800	430	605	585	520
XLHJ118:1	120	32	129.3	356	M30			445	250	391	356	Φ32			Φ1000	550	900	870	800

The hand wheel input/output torque

No.	Model	Speed Input	Torque(Nm)	Output Torque(Nm)	(KG)
1	XLHJ26	26:1	70	300	5 (鋁)
2	XLHJ38	38:1	60	550	7 (鋁)
3	XLHJ54	54:1	120	1200	9 (鋁)
4	XLHJ80	80:1	140	2000	35
5	XLHJ78	78:1	200	3600	48.2
6	XLHJ98	98:1	300	9000	156
7	XLHJ100	100:1	400	13000	190
8	XLHJ118	118:1	900	22100	540



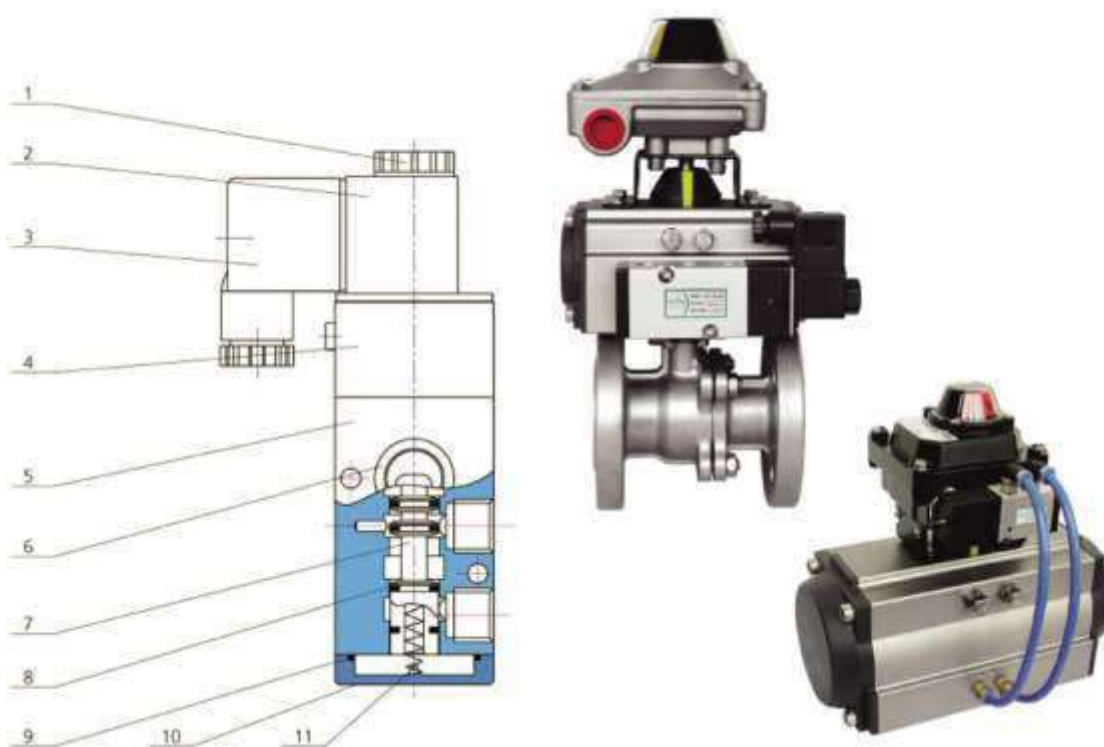
Pneumatic actuator in hand wheel mechanism proportioning table

Actuator Model	Hand Wheel	Shaft Hole Diameter	Key	Upper Joint		Lower connection hole		Height	Hand wheel diameter
				D3/D4	Ø1/Ø2	D1/D2	M1/M2		
DA/SR	XLHJ	d	b	D3/D4	Ø1/Ø2	D1/D2	M1/M2	H	Ø
DA45\SR45 DA52\SR52	26:1	Ø22	6	Ø70	4-Ø9	Ø70	M8	99	Ø180
DA63\SR63 DA75\SR75	26:1	Ø22	6	Ø70	4-Ø9	Ø70	M8	99	Ø180
DA83\SR83 DA92\SR92	38:1	Ø26	8	Ø70	4-Ø9	Ø70	M8	117	Ø200
DA105\SR105 DA125\SR125	38:1	Ø38	10	Ø102	4-Ø12	Ø102	M10	117	Ø200
DA140\SR140 DA160\SR160	54:1	Ø38	10	Ø125	4-Ø14	Ø125	M12	118	Ø280
DA190\DA210	54:1	Ø48	14	Ø140	4-Ø18	Ø140	M16	118	Ø280
SR190\SR210	80:1	Ø48	14	Ø140	4-Ø18	Ø140	M16	148	Ø400
DA240\DA270	80:1	Ø60	18	Ø165	4-Ø22	Ø165	M20	148	Ø400
SR240\SR270 DA300	78:1	Ø60	18	Ø165	4-Ø22	Ø165	M20	150	Ø500
SR300\DA350	78:1	Ø80	22	Ø165	4-Ø22	Ø165	M20	150	Ø500
DA350\SR350 DA400	98:1	Ø80	22	Ø165	4-Ø22	Ø165	M20	195	Ø800
SR400	100:1	Ø100	28	Ø254	8-18	Ø254	M16	195	Ø800
DA500\SR500	118:1	Ø120	32	Ø356	8-Ø32	Ø356	M30	250	Ø1000

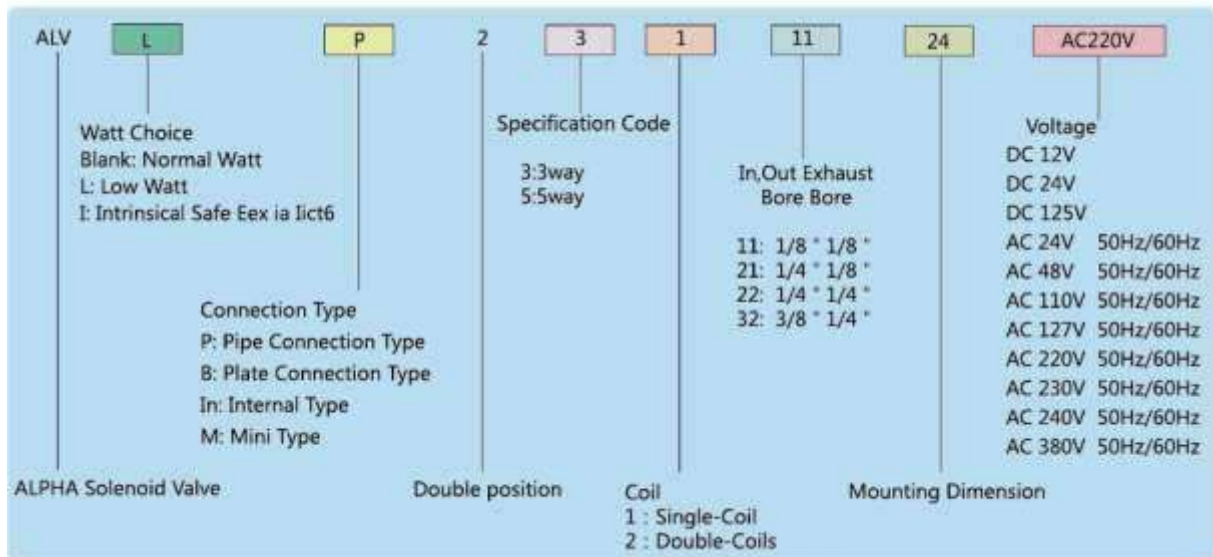
Performance Data

Working Medium	Motion Pattern	Working Pressure	Max. Pressure Resistance
40 Micron Filtered Air	Inner Guide Type	0.15~0.8Mpa	1.2Mpa
Operating Temperature			
Standard 5~50°C	Optional -40°C ~50°C	Highest Action Frequency 5 Cycle/Sec	Shortest Excitation Time 0.05 Second

Parts And Materials



No.	Item	Material	Qty
1	Nut	Plastic	1
2	Coil		1
3	Junction Box	Plastic	1
4	Plunger		1
5	Valve Body	All.Alloy	1
6	O-Ring	NBR	2
7	Spool	All.Alloy	1
8	Flat Ring	NBR	6
9	Rhomeus Ring	NBR	1
10	Cover	All.Alloy	1
11	Return Spring	SS	1



Coil Specification

Type	Normal Watt				Low Watt		Intrinsically Safe	
	Voltage	Watt	Voltage	Watt	Voltage	Watt	Voltage	Watt
Spec.	DC12V	4.0W	DC12V	2.5W	DC12V	1.2W	DC12V	1.2W
	DC24V	4.8W	DC24V	2.8W	DC24V	1.2W	DC24V	1.2W
	DC125V	4.8W	DC125V	2.8W	DC125V	1.6W	DC125V	1.6W
	AV24V(50Hz/60Hz)	4.8VA	AV24V(50Hz/60Hz)	4.0VA	-	-	-	-
	AV110V(50Hz/60Hz)	4.8VA	AV110V(50Hz/60Hz)	4.0VA	AC110V	1.6VA	-	-
	AV127V(50Hz/60Hz)	5.5VA	AV127V(50Hz/60Hz)	4.0VA	-	-	-	-
	AV220V(50Hz/60Hz)	5.5VA	AV220V(50Hz/60Hz)	4.0VA	AC220V	1.6VA	-	-
	AV230V(50Hz/60Hz)	5.5VA	AV230V(50Hz/60Hz)	4.0VA	-	-	-	-
	AV240V(50Hz/60Hz)	6.0VA	AV240V(50Hz/60Hz)	4.0VA	-	-	-	-
	AV380V(50Hz/60Hz)	6.0VA	-	-	-	-	-	-
Insulation Protection	IEC60317-H Class		JISC3202-B Class		JISC3202-B Class		JISC3202-B Class	
Max Temperature	180°C		130°C		130°C		130°C	
Insulated Voltage	1000V		1000V		1000V		1000V	
Applicantion	ALVP And ALVB Solenoid Valve		ALVP And ALVB Solenoid Valve		ALVLP,ALVLB And ALVLIN Splenoid Valve		ALVIP And ALVIB Solenoid Valve	

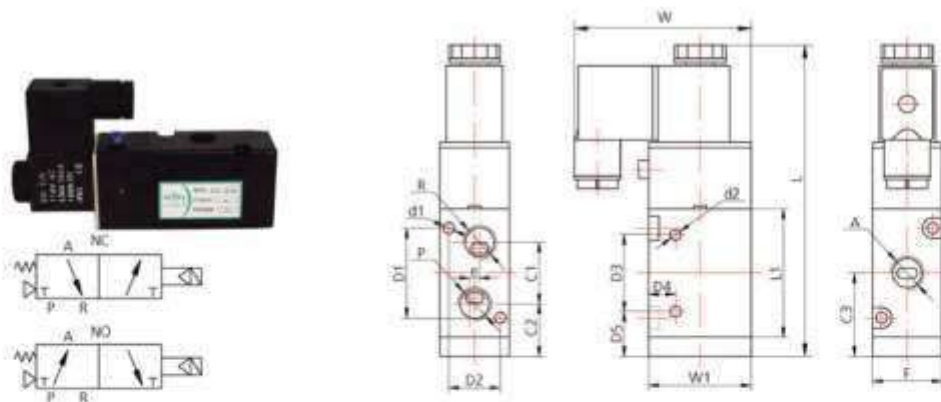
Specification for ALV series Solenoid Valve

Model		Joint Pipe Bore	Coil Number	Effective Section	Type
P231-11-17	P251-11-17	Inlet=outlet=G1/8"/NPT	Single	14mm ²	Pipe 
P232-11-17	P252-11-17	Exhaust=G1/8"/NPT	Double	(CV=0.78)	
P231-22-17	P251-22-17	Inlet=outlet=G1/4"/NPT	Single	16mm ²	
P232-22-17	P252-22-17	Exhaust=G1/8"/NPT	Double	(CV=0.89)	
P231-22-20	P251-22-20	Inlet=outlet=G1/4"/NPT	Single	25mm ²	
P232-22-20	P252-22-20	Exhaust=G1/4"/NPT	Double	(CV=1.40)	
P231-33-20	P251-33-20	Inlet=outlet=G3/8"/NPT	Single	30mm ²	
P232-33-20	P252-33-20	Exhaust=G1/4"/NPT	Double	(CV=1.68)	
P231-44-27	P251-44-27	Inlet=outlet=G1/2"/NPT	Single	50mm ²	
P231-44-27	P251-44-27	Exhaust=G1/2"/NPT	Double	(CV=2.79)	
B231-11-20	B251-11-20	Inlet=outlet=G1/8"/NPT	Single	14mm ²	Plate 
B232-11-20	B252-11-20	Exhaust=G1/8"/NPT	Double	(CV=0.78)	
B231-21-20	B251-21-20	Inlet=outlet=G1/4"/NPT	Single	16mm ²	
B232-21-20	B252-21-20	Exhaust=G1/8"/NPT	Double	(CV=0.89)	
B231-22-24	B251-22-24	Inlet=outlet=G1/4"/NPT	Single	25mm ²	
B232-22-24	B252-22-24	Exhaust=G1/4"/NPT	Double	(CV=1.40)	
B231-32-24	B251-32-24	Inlet=outlet=G3/8"/NPT	Single	30mm ²	
B232-32-24	B252-32-24	Exhaust=G1/4"/NPT	Double	(CV=1.68)	
B231-44-40	B251-44-40	Inlet=outlet=G1/2"/NPT	Single	50mm ²	
B232-44-40	B252-44-40	Exhaust=G1/2"/NPT	Double	(CV=2.79)	
In231-22-1/2	In251-22-1/2	Inlet=outlet=G1/4"/NPT Exhaust=G1/4"/NPT	Single	25mm ² (CV=1.40)	Internal 
In231-22-3/4	In251-22-3/4				

Dimension and Mounting

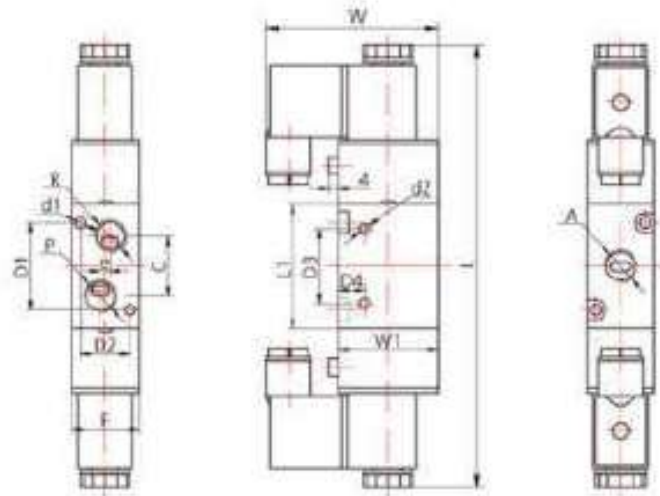
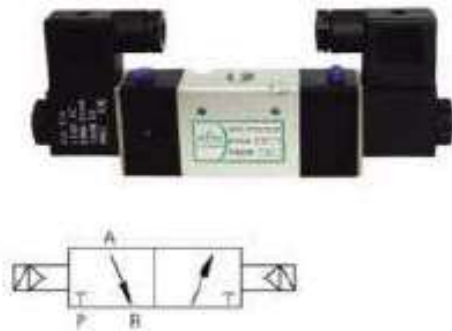
ALVP Type Solenoid Valve

Drawing of P231



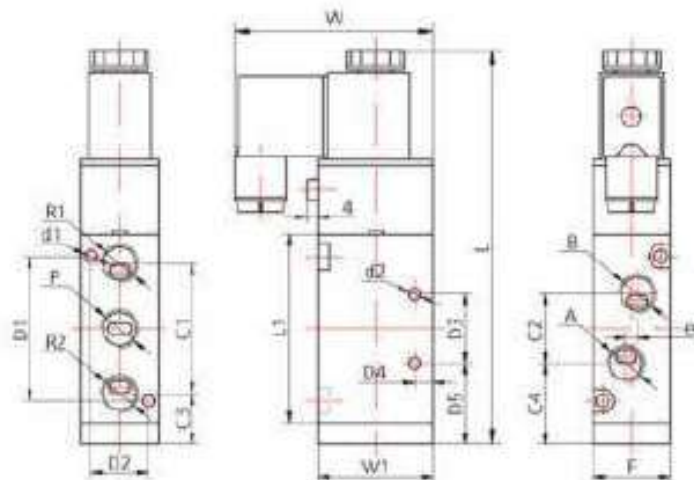
Model	P/A	R	C1	C2	C3	D1	D2	e	d1	D3	D4	D5	d2	L	L1	W	W1	F
P231-11-17	G1/8"	G1/8"	18	21	31	33	17	0	Φ3.2	25	8	15	Φ3.3	110.5	42	66.5	35	22
P231-22-17	G1/4"	G1/4"	18	21	31	33	17	3	Φ3.2	25	8	15	Φ3.3	110.5	42	66.5	35	22
P231-22-20	G1/4"	G1/4"	24	20.5	32.5	35	20	0	Φ4.3	30	10.5	17.5	Φ4.3	121.4	50	69	40	27
P231-33-20	G3/8"	G3/8"	24	20.5	32.5	35	20	0	Φ4.3	30	10.5	17.5	Φ4.3	121.4	50	69	40	27
P231-44-27	G1/2"	G1/2"	31.5	25.5	41.5	48	27	0	Φ4.3	51	13.5	15.5	Φ4.3	143.2	70	74	50	34

Drawing of P232



Model	P/A	R	C	F	D1	D2	d1	D3	D4	d2	L	L1	W	W1	F
P232-11-17	G1/8"	G1/8"	18	0	33	17	Φ3.2	25	8	Φ3.3	167	42	66.5	35	22
P232-22-17	G1/4"	G1/4"	18	3	33	17	Φ3.2	25	8	Φ3.3	167	42	66.5	35	22
P232-22-20	G1/4"	G1/4"	24	0	35	20	Φ4.3	30	10.5	Φ4.3	177.8	50	69	40	27
P232-32-20	G3/8"	G3/8"	24	0	35	20	Φ4.3	30	10.5	Φ4.3	177.8	50	69	40	27
P232-44-27	G1/2"	G1/2"	31.5	0	48	27	Φ4.3	51	13.5	Φ4.3	199.4	70	74	50	34

Drawing of P251



Model	P/A/B	R1	R2	C1	C2	C3	C4	e	D1	D2	d1	D3	D4	D5	d2	L	L1	W	W1	F
P251-11-17	G1/8"	G1/8"	G1/8"	36	18	13.5	22.5	0	38	17	Φ3.2	20	7	21.5	Φ4.3	118.5	50	66.5	35	22
P251-22-17	G1/4"	G1/8"	G1/8"	36	21	13.5	21	3	38	17	Φ3.2	20	7	21.5	Φ4.3	118.5	50	66.5	35	22
P251-22-20	G1/4"	G1/4"	G1/4"	45	22	17.5	29	0	50	20	Φ4.3	24	6.5	28	Φ4.3	136.5	65	69	40	27
P251-33-20	G3/8"	G1/4"	G1/4"	45	24	17.5	28	4	50	20	Φ4.3	24	6.5	28	Φ4.3	136.5	65	69	40	27
P251-44-27	G1/2"	G1/2"	G1/2"	63	36	25.5	39	4	72	27	Φ4.3	28	7.5	43	Φ5.5	167.7	94	74	50	34

Product features

1. Die casting aluminum alloy shell, powder coating, beautiful appearance, reliable quality.
2. Switch position indicator can be clear identification.
3. Setting a shan speed CAM, by spline shaft and the spring installation, convenient adjustment without tools.
4. Multijunction terminal row, 8 standard contacts, safe and convenient wiring.
5. Interface standard of wire.
6. Easy installation, stainless steel connection and mounting brackets are in accordance with NAMUR standard.



Model	APL2N Series Standard	ITS100 Series Options
Shell	Ip67	
Temperature	-25~+85°C	
Connection Port	2x1/2NPT	PT1/2,PFI/2,M20,PGI3.5
Connection Terminals	8	9~24
	Meet Standard XXXXXX	
Position Indicator	0~90°	0~180°
	Open-Yellow;Close-Red	
Micro Switch	Mechanical,Induction	

Model Specification					Note
APL					Protection Type IP67
Shell	2	10			Mechanical 2-10 SPDT
Micro Switch		20			Induction P&F.NJ2-V3-N
			N		Indicator fro the bolt
Indicator Shell				A	30x80xHH=20
Mounting Bracket				B	30x80xHH=30
				C	30x130xHH=30

Note:(1) H refers to the height of the pneumatic actuator device upper shaft.
 (2)Special specifications can be custom-made.

1000L/R Series E/P Positioner

1. Brief Description

1000 Series Positioner, mounted on a pneumatic actuator, moves the actuator by receiving DC 4~20mA signals from a controller. Also, the function of detecting and returning the actuator displacement provides accurate positioning in response to DC4~20mA signals. The 1000 can be used with both spring return and double acting actuators.

Technical Data



Type	Item	1000L(Linear)	1000R(Rotary)
		Single Action / Double Action	
Input Signal Impedance		4~20mA.DC	250Ω±15Ω
Supply Pressure		1.4~7kgf/cm ² (20~100psi)	
Stroke		10~105mm	0~90°
Air Connection Gauge Connection	G1/2	PT(NPT)1/4	PT(NPT)1/8
Explosion Proof		Exd II BT6	Exia II CT6
Protection		Exd II CT6	IP66
Ambient Temp		-20℃~70℃ Repeatability ±0.5%	
Linearity		±1%F.S ±2%F.S ±2%F.S	
Hysteresis		±1%F.S Sensitivity ±0.2%F.S ±0.5%F.S	
Air Consumption		3LPM(sup=1.4kgf/cm ² ,20psi)	
Flow Capacity		80LPM(sup=1.4kgf/cm ² ,20psi)	
Material		Sensitivity	
Weight		2.7KG~2.8KG	

Model	1000L/R
Type	Linear Rotary
Function Type	Single Acting Double Acting
Explosion Proof form	Exd II CT6 ,Explosion proof I,Exia II CT6,Intrinsic,Normal
Feedback Pole	R1,M6x40L;R2,M8x40L;R,NAMUR;1,10~40MM;2,40~70MM
Orifice	90,90~180,180
Interface Type	PT,NPT
Options	0,+PTM,+L/S

