

# JUHANG.CN

## PNEUMATIC ACTUATOR



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Taizhou Juhang Automation Equipment Technology Co.,Ltd

The pursuit of quality excellence,  
Filling the essence of the enterprise  
We are trying our best to create a safe world.



JUHANG.CN



"J"

Jaunty

"U"

Unexpected

"H"

Hanker

"A"

Amelioration

"N"

Natty

"G"

Genesis

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## Qualification and honor



## Company profile

Taizhou Juhang Automation Equipment Technology Co., Ltd is specialized in the valve pneumatic actuators, manual actuators and fluid control system research and development, manufacturing, marketing in the integration of high-tech enterprise.

The company has high-precision CNC machining equipment and sophisticated testing equipment, and set up an advanced product performance inspection and test center, relying on a sound quality management system and internal well-ordered detailed management, to assure the quality of JUHANG actuators. The company in strict accordance with the ISO9001: 2008 management system and ISO5211, NAMUR, DIN3337, and other international standards for production. And has been awarded the CE certification and explosion-proof ATEX certification which issued by the German TÜV Rheinland certification body , SIL 3 certification in line with IEC61508 standards, and there are a number of advanced technology obtained national patent. We are committed to building the boutique of industrial fluid pipeline valve control system. Juhang's actuators have been around the world and become the best partner of many international renowned enterprises.

Professional achievements quality, service to create value. We sincerely look forward to providing you with the best quality products and satisfactory service.



### Company Spirit

Value, Profession, Quality, Service, Innovation

### Corporate Value

Excellent enterprises are always in improving, do better, supply the best products and quality service.

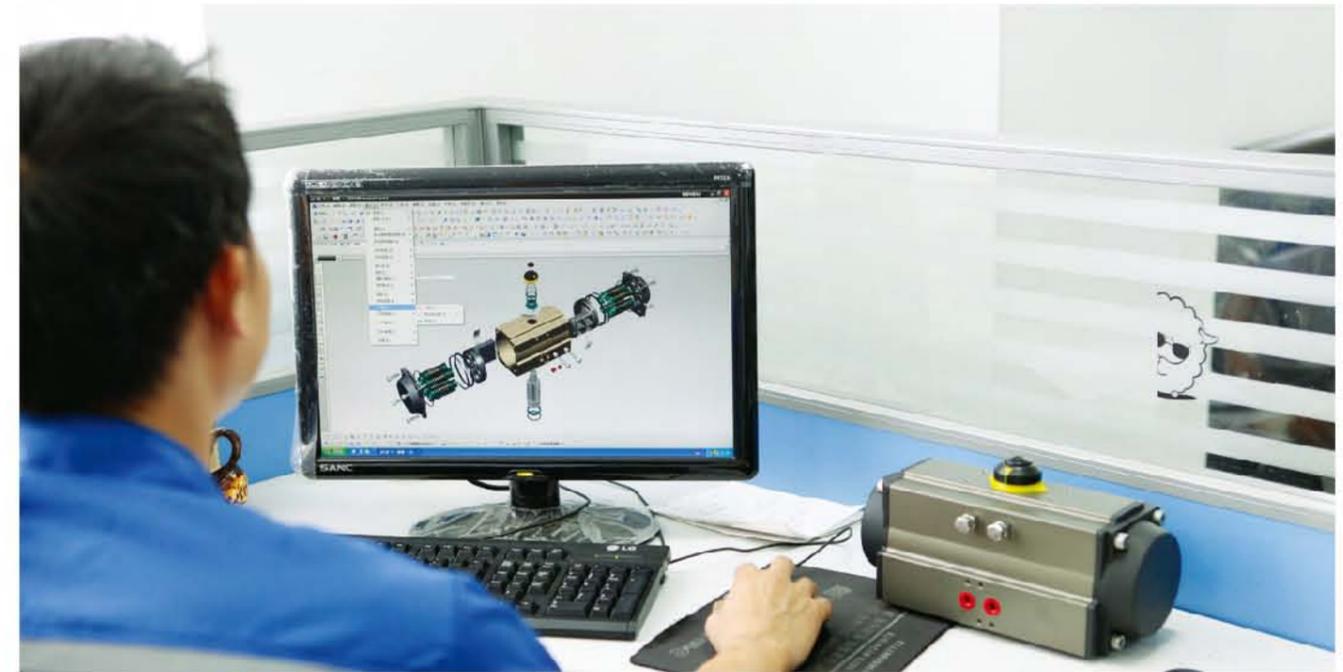
## Service to creat value

The maximum value is reflected in the customer's acceptance, excellent product ultimately vest user. In order to provide the highest quality service to customers around the world, JUHANG selected the the most outstanding employees to made up service center for 24-hour service, provide customers with pre-sales and after-sales service and so on.



## Product research and development

We are sure that that all products can exert their performance in the effective life by our perfect design, research and development and after-sales service ,using new managing concept and strong professional technology force to produce high quality products that conform with international standard.





## Advanced processing equipment

We have advanced processing equipment : high-precision CNC machine tools, four-axis machining center with advanced technology, the accuracy in a harsh products are guaranteed. Our company also has a laboratory of high-precision testing instruments. Sophisticated technology and strict quality management system, and gathered a professional team and technical elite and advanced level technology and make full use of new technologies, new processes, new materials to ensure product stability and reliability . Our product 's quality taken from the advanced manufacturing methods, quality consciousness comes from constant innovation.

## Product inspection

JUHANG does strict test to every product. Inspectors are highly responsible in each component, with the most advanced testing equipment and strict scientific management makes every product endure customers' picking. We promise every product that left our factory is up to the factory standard. It is also the recipe of salable for our products.



**Product**

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

**Indicator**  
Field visual standard indicator

**Pinion**  
The pinion is high-precision and integrative, made from nickelled-alloy steel, full conform to the latest standards of ISO5211, DIN3337, the dimensions can be customized and the stainless steel material is available.

**High performance springs**  
It has a strong corrosion resistance and service life by use high-quality imported materials, coating processing, pre-pressure assembly, which can be demounted single acting actuator safely and conveniently to satisfy different requirements of torque by changing quantity of springs.

**Actuator Body**  
The extruded cylinder body is made of high quality aluminum alloy with fine machined socket and hard anodized outer surface (anodisation would be provided at special occasion + teflon coat) to prolong the service life and lower the coefficient of friction.

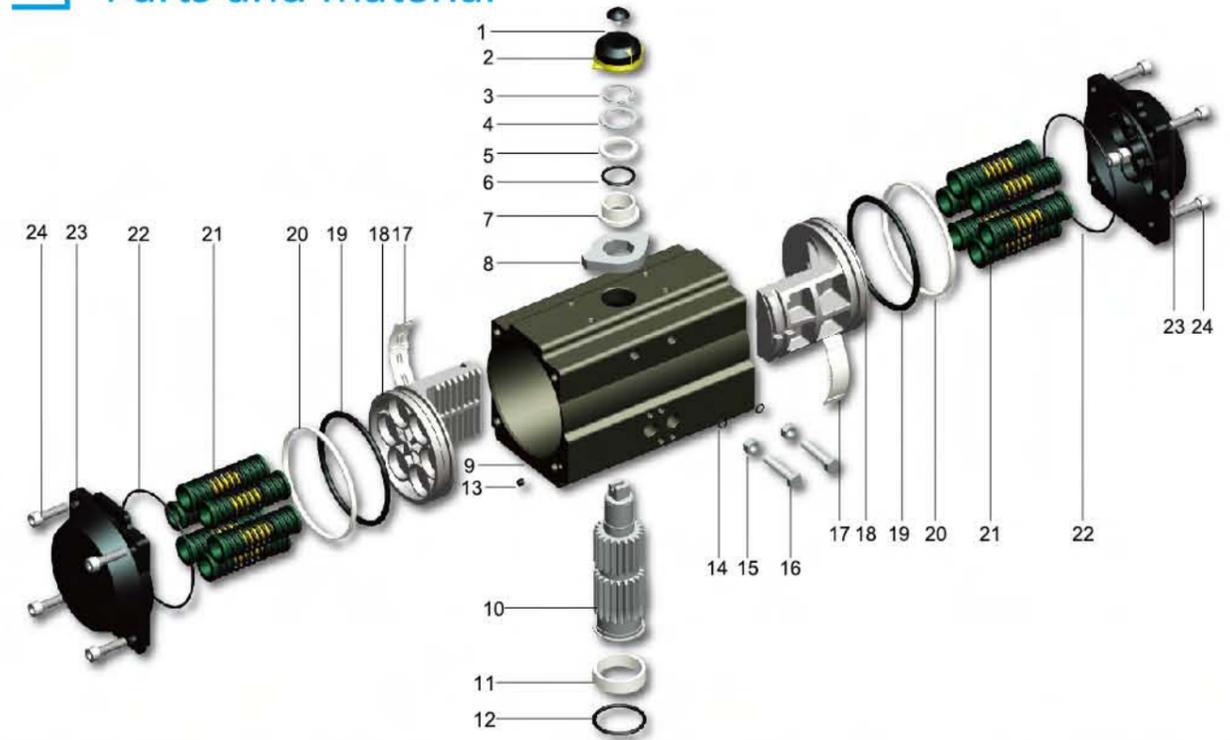
**End caps**  
Die-casting aluminum surface with metal powder painted in different colours, or sprayed in PTFE or nickel plated.

**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.

**Pistons**  
The twin rack pistons are made from high quality die-casting aluminum treated with hard anodized, symmetrical mounting position, rapid operation, impact resistance, wear resistance, long cycle life, simply reverse the piston can change the rotation direction of pinion.

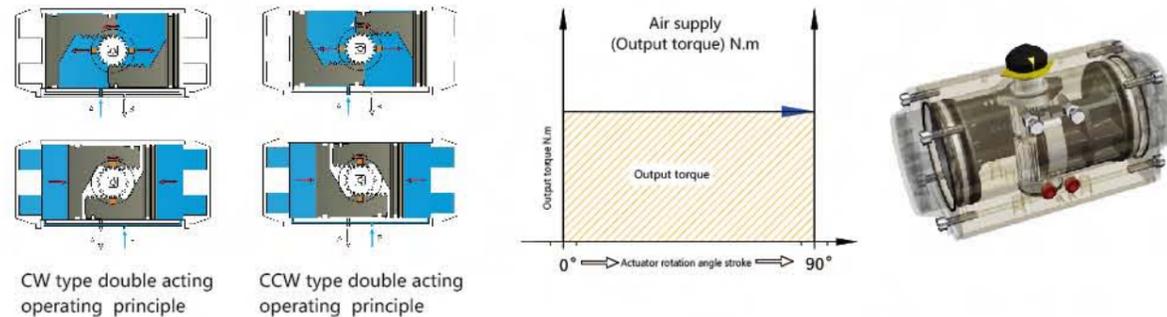
**Seals**  
NBR for standard temperature, for high and low temperature applications use Viton or Silicone.

**Parts and material**



No	Description	Qty	Standard Material	Surface Treatment		Optional Material
				Surface standard	Optional surface treatment	
1	Indicator Screw	1	Engineering Plastics			
2	Indicator	1	Engineering Plastics			
3	Circlip	1	Stainless Steel			
4	Thrust Washer	1	Stainless Steel			
5	Outside Washer	1	Engineering Plastics			
6	O-ring (pinion top)	1	NBR			Viton\Silicone
7	Inside Washer	1	Engineering Plastics			
8	Positioning cam	1	S45C	Nickel plated		
9	Body	1	6005-T5	Hard anodized	Hard anodized +Epoxy polyester or PTFE	Nickel plated
10	Pinion	1	S45C	Nickel plated		Stainless Steel
11	Bearing (pinion bottom)	1	Engineering Plastics			
12	O-ring (pinion bottom)	1	NBR			Viton\Silicone
13	Plug	2	NBR			Viton\Silicone
14	O-ring (Adjust screw)	2	NBR			Viton\Silicone
15	Nut (Adjust screw)	2	SUS304			
16	Adjust screw	2	SUS304			
17	Guide (piston)	2	Engineering Plastics			
18	Piston	2	Aluminum alloy		Anodized	
19	O-ring (piston)	2	NBR			Viton\Silicone
20	Bearing (piston)	2	Wear-resistant composite materials			
21	Spring	0-12	High quality spring steel	Dip coating		
22	O-ring (End cap)	2	NBR			
23	End cap	2	Aluminum alloy	Powder paint	PTFE	Nickel plated
24	Cap screw	8	SUS304			

## Operating principle of DA double acting type

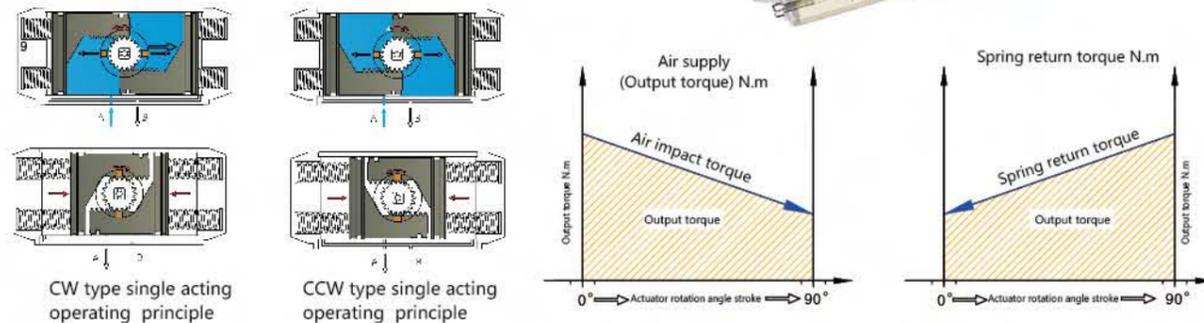


When the air source pressure comes into the cylinder body between the two pistons from air entrance(A) and pushes the pistons toward the ends of the cylinder body, the air between the pistons and the ends of the cylinder body is released from air entrance(B), meanwhile the piston drive the output shaft anticlockwise rotate ( 0°-90° ).

The same, when the air source pressure comes into the ends of the cylinder body from air entrance (B) and pushes the pistons toward each other with the air between two pistons released from air entrance(A), the output shaft(gear wheel) would be driven by the racks of the pistons simultaneously to rotate clockwise ( 90°-0° ).

(if the pistons are assembled in different directions from each other, the output shaft would turn out to rotate inverse direction, namely the double acting reverse "CCW" type).

## Operating principle of SR single acting type



When the air source pressure comes into the cylinder body between the two pistons from air entrance (A) and pushes the pistons toward the end of the cylinder body while the springs at each end inside the cylinder body is forced to shrink with the air between the pistons and the ends of the cylinder body released from air entrance(B), in the meantime, the racks of pistons drive the output shaft(gear wheel) simultaneously to rotate anticlockwise ( 0°-90° ).

When Actuator is in loss of air, the two pistons of cylinder moved to the middle direction by elasticity of the spring, then the air in the middle space outed from port ( A ) make the two pistons rack synchronized driving the two output shaft clockwise rotate ( 90°-0° ).

(If the pistons are assembled in different direction from each other, the output shaft would turn out to rotate inverse direction, namely the single acting reverse "CCW" type).

## Technology and characteristics

JHA series rack and pinion type pneumatic actuator with high quality, low friction, long use life, the open and close time can reach more than 1 million times, high stability.

JUHANG pneumatic actuator combines with numbers of advanced technology to face different harsh environmental challenges, the excellent reliability and safety can meet your strict requirements of automatic control.

- Output torque: 8Nm-10000Nm.
- Control air source: Through filtered compressed air, no need lubricate oil, the oil must suit for NBR when in lubricated condition.
- Air supply pressure: The minimum air supply pressure is 3 bar (40 psi), the maximum air supply pressure is 8 bar(120 psi).



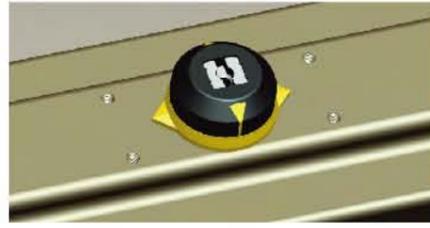
- Operating temperature:  
Standard: -20°C~+80°C  
Low temperature: -40°C~+80°C  
High temperature: -15°C~+150°C

- Rotate stroke: 90°, 120°, 135°, 180° double direction ±5 adjustment
- Mounting flange standard: DIN/ISO5211, DIN3337
- The max air supply pressure less than 10bar(145psi)
- Standard type: Aluminum shell hard anodized treatment, Nickel plated, Hard anodized +Epoxy polyester, Hard anodized +PTFE coating etc available according to the different environment
- The whole series in line with IEC61508, and passed safe level certification SIL 3.
- Passed ATEX, CE authentications which issued by Germany rheinland TÜV authentication body.

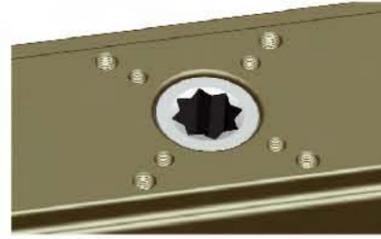
## Mounting standard



Air source connection is designed in accordance with NAMUR Standard to install solenoid valves simply.



The top mounting in line with VDI/VDE3845 standard, convenient for assembly of accessories such as positioner, limit switch and so on.



Bottom mounting face (valve connection face) is designed in accordance with ISO5211, DIN3337 standards for direct mounting with clutch type manual override or valve.

## Spring mounting standard for spring return actuators



The qty of spring return pneumatic actuator can choose economic qty according to the valve torque, the assembly position of different springs' qty according to the above table (red part is position for putting springs' )



## Output torque of double acting actuators

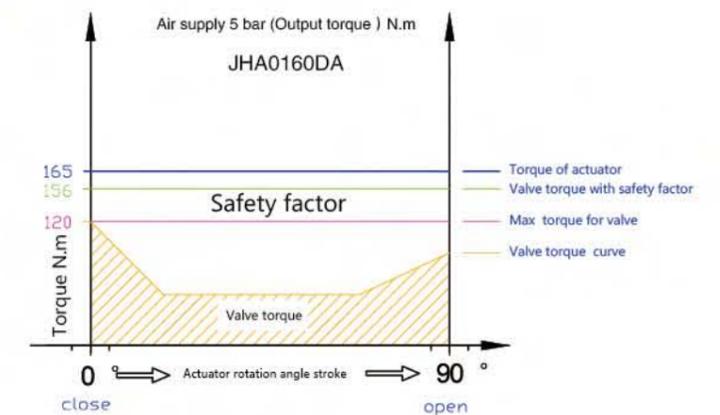
Model	Air Supply Pressure(Unit : bar)									
	2bar	2.5bar	3bar	4bar	4.5bar	5bar	5.5bar	6bar	7bar	8bar
JHA0012DA	5	6	7	10	11	12	13	14	17	19
JHA0020DA	8	10	12	16	18	20	22	24	28	32
JHA0035DA	14	18	22	29	32	36	40	43	50	57
JHA0050DA	20	25	31	41	46	51	56	61	71	81
JHA0075DA	31	39	47	62	70	78	86	94	109	125
JHA0110DA	46	57	69	92	103	115	126	138	161	184
JHA0160DA	67	83	100	133	150	166	183	200	233	266
JHA0255DA	101	126	151	201	226	251	276	302	352	402
JHA0435DA	172	215	258	344	387	430	473	516	602	688
JHA0665DA	268	334	401	535	602	669	736	803	937	1070
JHA1000DA	427	533	640	854	960	1067	1174	1280	1494	1707
JHA1200DA	532	665	798	1064	1198	1331	1464	1597	1863	2129
JHA1800DA	774	968	1161	1548	1742	1935	2129	2322	2709	3096
JHA2700DA	1176	1470	1763	2351	2645	2939	3233	3527	4115	4703
JHA3800DA	1545	1932	2318	3091	3477	3863	4250	4636	5409	6181
JHA5700DA	2314	2892	3471	4628	5206	5784	6363	6941	8098	9255
JHA8000DA	3297	4121	4945	6594	7418	8242	9066	9890	11539	13187

## Selection chart of double acting actuator

Under normal operating conditions, opening valve need to consider the safety torque of the valve, the safety factor is increased by 30% -50%.

Example:  
 Valve torque =120Nm  
 The safety torque of valve =120x  
 (1+30%)=156Nm  
 Air supply =5Bar

As figure, the minimum model for sizing double acting pneumatic actuator is JHA0160DA ,torque is 166Nm at 5 BAR.



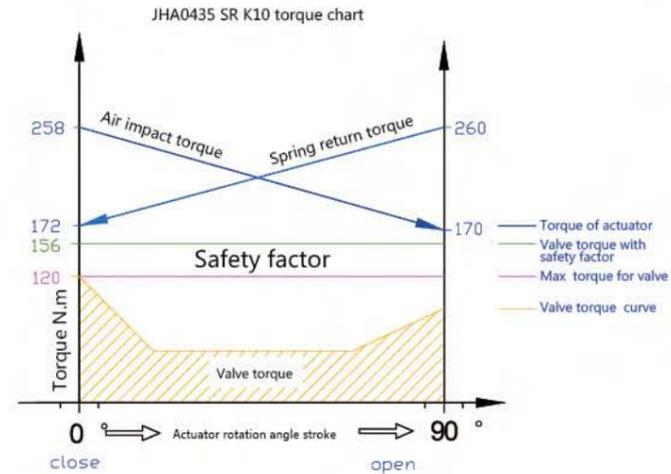
**Output torque of single acting actuator**

Model	Output torque																			
	Spring	2.5Bar		3Bar		4Bar		5Bar		5.5Bar		6Bar		7Bar		8Bar		Springs Output		
	Qty	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	
JHA0012 SR	2					4.6	2.5	6.9	4.9	8.1	6.1	9.3	7.3	11.7	9.7	14.1	12.1	7.0	5.0	
	5	5.8	3.8	7.9	5.9													6.2	4.2	
JHA0020 SR	6	5.0	2.6	7.0	4.6	11.1	8.7											7.5	5.1	
	7	4.1	1.3	6.2	3.4	10.2	7.4	14.2	11.4	16.3	13.5							8.7	5.9	
	8			5.3	2.1	9.4	6.2	13.4	10.2	15.4	12.2	17.4	14.2					10.0	6.8	
	9			4.5	0.9	8.5	4.9	12.5	8.9	14.6	11.0	16.6	13.0	20.6	17.0				11.2	7.6
	10			7.7	3.7	11.7	7.7	13.7	9.7	15.7	11.7	19.8	15.8						12.5	8.5
	11					6.8	2.4	10.8	6.4	12.9	8.5	14.9	10.5	18.9	14.5	23.0	18.6	13.7	9.3	
JHA0035 SR	12					10.0	5.2	12.0	7.2	14.0	9.2	18.1	13.3	22.1	17.3	15.0	10.2			
	5	10.9	7.2	14.5	10.7	21.6	17.9											10.6	6.9	
	6	9.6	5.1	13.1	8.6	20.2	15.7	27.3	22.8									12.7	8.2	
	7	8.2	3.0	11.7	6.5	18.9	13.6	26.0	20.7	29.5	24.3							14.8	9.6	
	8			10.4	4.4	17.5	11.5	24.6	18.6	28.2	22.2	31.7	25.7	38.8	32.8			16.9	11.0	
	9			9.0	2.3	16.1	9.4	23.2	16.5	26.8	20.0	30.3	23.6	37.5	30.7			19.1	12.3	
JHA0050 SR	10					14.7	7.3	21.9	14.4	25.4	17.9	29.0	21.5	36.1	28.6	43.2	35.7	21.2	13.7	
	11					13.4	5.1	20.5	12.3	24.0	15.8	27.6	19.4	34.7	26.5	41.8	33.6	23.3	15.1	
	12							19.1	10.1	22.7	13.7	26.2	17.3	33.3	24.4	40.5	31.5	25.4	16.4	
	5	14.6	10.6	19.7	15.6	29.8	25.7											14.6	10.5	
	6	12.5	7.6	17.6	12.7	27.7	22.8	37.7	32.8									17.6	12.7	
	7	10.4	4.7	15.5	9.7	25.5	19.8	35.6	29.9	40.7	34.9							20.5	14.8	
JHA0065 SR	8			13.4	6.8	23.4	16.9	33.5	27.0	38.6	32.0	43.6	37.1	53.7	47.1			23.4	16.9	
	9			11.2	3.9	21.3	14.0	31.4	24.1	36.4	29.1	41.5	34.1	51.6	44.2			26.3	19.0	
	10					19.2	11.0	29.3	21.1	34.3	26.2	39.4	31.2	49.5	41.3	59.5	51.4	29.3	21.2	
	11					17.1	8.1	27.2	18.2	32.2	23.2	37.3	28.3	47.3	38.4	57.4	48.4	32.2	23.2	
	12								25.1	15.3	30.1	20.3	35.2	25.4	45.2	35.4	55.3	45.5	35.1	25.3
	JHA0075 SR	5	22.8	15.3	30.5	23.0	45.9	38.4											23.3	15.8
6		19.6	10.6	27.3	18.3	42.8	33.8	58.2	49.2									28.0	19.0	
7		16.5	6.0	24.2	13.7	39.6	29.1	55.0	44.5	62.7	52.3							32.6	22.1	
8				21.0	9.0	36.4	24.4	51.9	39.9	59.6	47.6	67.3	55.3	82.7	70.7			37.3	25.3	
9				17.8	4.4	33.3	19.8	48.7	35.2	56.4	42.9	64.1	50.6	79.6	66.1			41.9	28.4	
10						30.1	15.1	45.5	30.6	53.3	38.3	61.0	46.0	76.4	61.4	91.8	76.8	46.6	31.6	
JHA0110 SR	11					27.0	10.5	42.4	25.9	50.1	33.6	57.8	41.3	73.2	56.8	88.7	72.2	51.2	34.8	
	12							39.2	21.2	46.9	29.0	54.7	36.7	70.1	52.1	85.5	67.5	55.9	37.9	
	5	33.5	22.1	44.9	33.5	67.7	56.2											34.8	23.3	
	6	28.9	15.1	40.2	26.5	63.0	49.3	85.7	72.0									41.7	28.0	
	7	24.2	8.2	35.6	19.6	58.3	42.3	81.1	65.1	92.4	76.4							48.7	32.7	
	8			30.9	12.6	53.6	35.4	76.4	58.1	87.8	69.5	99.1	80.9	121.9	103.6			55.6	37.4	
JHA0160 SR	9			26.2	5.7	49.0	28.4	71.7	51.2	83.1	62.5	94.5	73.9	117.2	96.7			62.6	42.0	
	10					44.3	21.5	67.1	44.2	78.4	55.6	89.8	67.0	112.6	89.7	135.3	112.5	69.5	46.7	
	11					39.6	14.5	62.4	37.3	73.8	48.6	85.1	60.0	107.9	82.8	130.6	105.5	76.5	51.4	
	12							57.7	30.3	69.1	41.7	80.5	53.0	103.2	75.8	126.0	98.5	83.4	56.0	
	5	51	33	67	49	100	82											50	32	
	6	44	23	61	39	94	72	127	105									60	38	
JHA0255 SR	7	38	13	54	29	87	62	120	95	137	111	153	128				70	44		
	8			48	19	81	52	114	85	130	101	147	118	180	151			80	51	
	9			42	9	75	42	108	75	124	91	141	108	173	141			90	57	
	10					68	32	101	65	118	81	134	98	167	131	200	164	100	63	
	11					62	22	95	55	111	72	128	88	161	121	194	154	110	70	
	12							89	45	105	62	122	78	155	111	187	144	120	76	
JHA0255 SR	5	75	48	101	74	152	125											80	52	
	6	63	30	88	55	138	106	188	156									95	63	
	7	52	14	77	39	128	90	178	140	203	165	228	190					111	73	
	8			67	24	117	74	167	124	192	149	218	174	268	225			127	84	
	9			56	8	107	58	157	108	182	133	207	158	257	209			143	94	
	10					96	42	146	92	171	117	197	143	247	193	297	243	159	105	
JHA0255 SR	11					86	26	136	76	161	101	186	127	236	177	287	227	175	115	
	12							125	60	150	86	176	111	226	161	276	211	191	126	

**Output torque of single acting actuator**

Model	Output torque																			
	Spring	2.5Bar		3Bar		4Bar		5Bar		5.5Bar		6Bar		7Bar		8Bar		Springs Output		
	Qty	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	
JHA0435 SR	5	129	85	172	128	258	214											130	86	
	6	112	59	155	102	241	188	327	274									156	103	
	7	95	33	138	76	224	162	310	248	353	291	396	334					182	120	
	8			120	50	206	136	292	222	335	265	378	308	464	394			208	138	
	9			103	24	189	109	275	195	318	238	361	281	447	367			234	155	
	10					172	83	258	169	301	212	344	255	430	341	516	427	261	172	
	11					155	57	241	143	284	186	327	229	413	315	499	401	287	189	
	12							224	117	267	160	310	203	396	289	482	375	313	206	
	JHA0665 SR	5	193	121	260	188	393	321											211	139
		6	165	79	232	146	365	279	498	412									254	167
		7	137	37	204	103	337	236	470	369	537	436							296	195
		8			176	61	309	194	442	327	509	394	575	460	709	593			338	223
9				148	19	281	152	414	285	481	351	548	418	681	551			381	251	
10						253	109	387	243	453	309	520	376	653	509	786	642	423	279	
JHA1000 SR	11					226	67	359	200	425	267	492	333	625	466	758	600	465	307	
	12							331	158	397	225	464	291	597	424	730	557	508	335	
	5	333	221	440	328	654	541											312	200	
	6	293	159	400	265	614	479	827	692									375	240	
	7	253	96	360	203	574	416	787	630	894	736							437	280	
	8			320	140	534	354	747	567	854	674	960	781	1174	994			500	320	
JHA1200 SR	9			280	78	494	291	707	505	814	611	920	718	1134	931			562	360	
	10					454	229	667	442	774	549	880	656	1094	869	1307	1082	625	400	
	11					414	166	627	380	734	486	840	593	1054	806	1267	1020	687	440	
	12							587	317	694	424	800	531	1014	744	1227	957	750	480	
	5	390	281	523	414															

## Selection chart of single acting actuator



Under normal operating conditions, opening valve need to consider the safety torque of the valve, the safety factor is increased by 30% -50%.

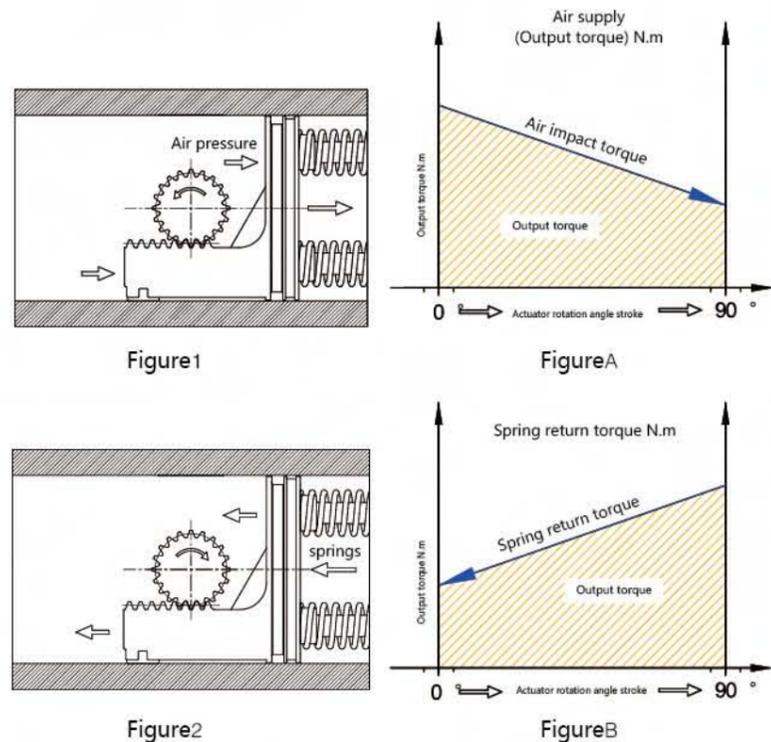
Example:

- ▲ Spring to close(fail close ,air to open=FC)
- ▲ Valve torque=120Nm
- ▲ The safety torque of valve =120x(1+30%)=156Nm
- ▲ Air supply =5Bar

According to the table of spring return actuators'output torque, the torque of JHA0435SR K10 as follows:  
 Output torque of Air stroke 0°=258Nm  
 Output torque of Air stroke 90°=170Nm  
 Output torque of Spring stroke 0°=172Nm  
 Output torque of Spring stroke 90°=260Nm

Attention:During the restoration,the spring return actuators'output torque will not be affected by the inputing air from the port B. On the contrary, it will help the restoration of springs.

## Output torque chart of single acting actuator



(As figure 1, figure A)Output torque of Air stroke: When the air comes into the cylinder body between the two pistons, the piston is urged against both sides to force the spring to compress, in this case, forces by the air supply pressure push the piston minus the reaction force by the spring compression, so the output torque gradually decreasing from 0° maximum value to 90° minimum value.

(As figure 2, figure B)Output torque of Spring stroke: When Actuator is in loss of air, the output torque by restoring force of both sides springs push the pistons.Because of the increase of springs, the output torque gradually decreasing from 0° maximum value to 90° minimum value.

## Selection reference data for pneumatic actuator

The purpose of this data is to help customers select JHA actuators properly before assembling actuators to valves, the following factors must be taking into account:

- Air supply rated pressure
- Actuator type double acting or single acting(spring return) and output torque under related air supply.
- The rotation of actuator and fail mode(fail close or fail open ).
- It is very important to choose the actuator correctly. If the actuator is too large, the stem may be overstressed and on the contrary the actuator is small and can not produce enough torque to open the valve. We believe that the torque required to operate the valve normally comes from the friction between the valve metal parts

(such as the core, the valve disk ) and the seal (seat) . According to the valve working occasion , operating temperature, operating frequency, management and pressure difference, the transmission medium (lubrication, drying, mud) and many other factors will affect the torque.

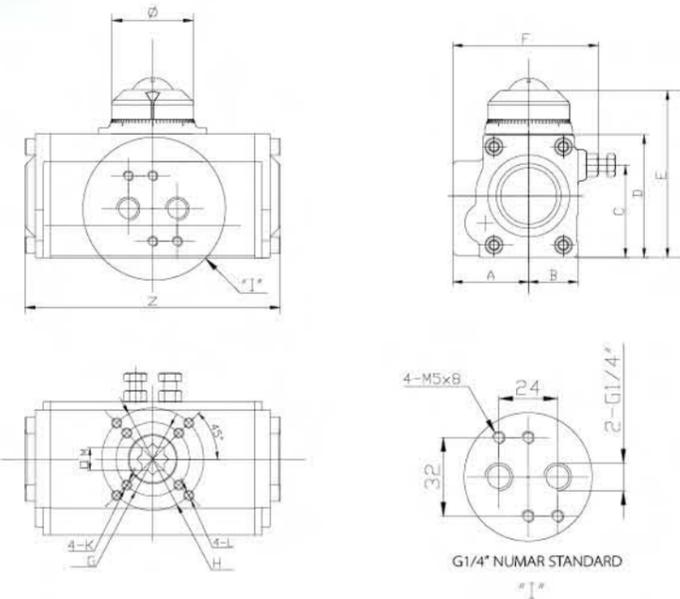


- Safety value should be added to the basis of valve torque when selecting the pneumatic actuator.

Cleaning low frictional lubricant medium	Add 20 % safety value
Vapor or non-lubricant liquor medium	Add 25 % safety value
Non-lubricant pasting liquor medium	Add 30 % safety value
Non-lubricant dry air medium	Add 40 % safety value
Non-lubricant particle medium delivered by air	Add more than 50 % safety value

Attention: The above safety value is recommend by our company 's theory , for reference only.

### Dimension for JHA0012



Model	A	B	C	D	E	F	ΦG	ΦH	K	L	M	Z	Φ	Air Connection
JHA0012DA	37	24	45	60	81.5	65.5	Φ36	Φ50	M5	M6	11	125	40	NAMUR G1/4"
JHA0012SR	37	24	45	60	81.5	65.5	Φ36	Φ50	M5	M6	11	150	40	NAMUR G1/4"

### Output torque of double acting actuator

Model	Air pressure (Unit: bar) Unit: N.m							
	2	3	4	5	5.5	6	7	8
JHA0012DA	5	7	10	12	13	14	17	19

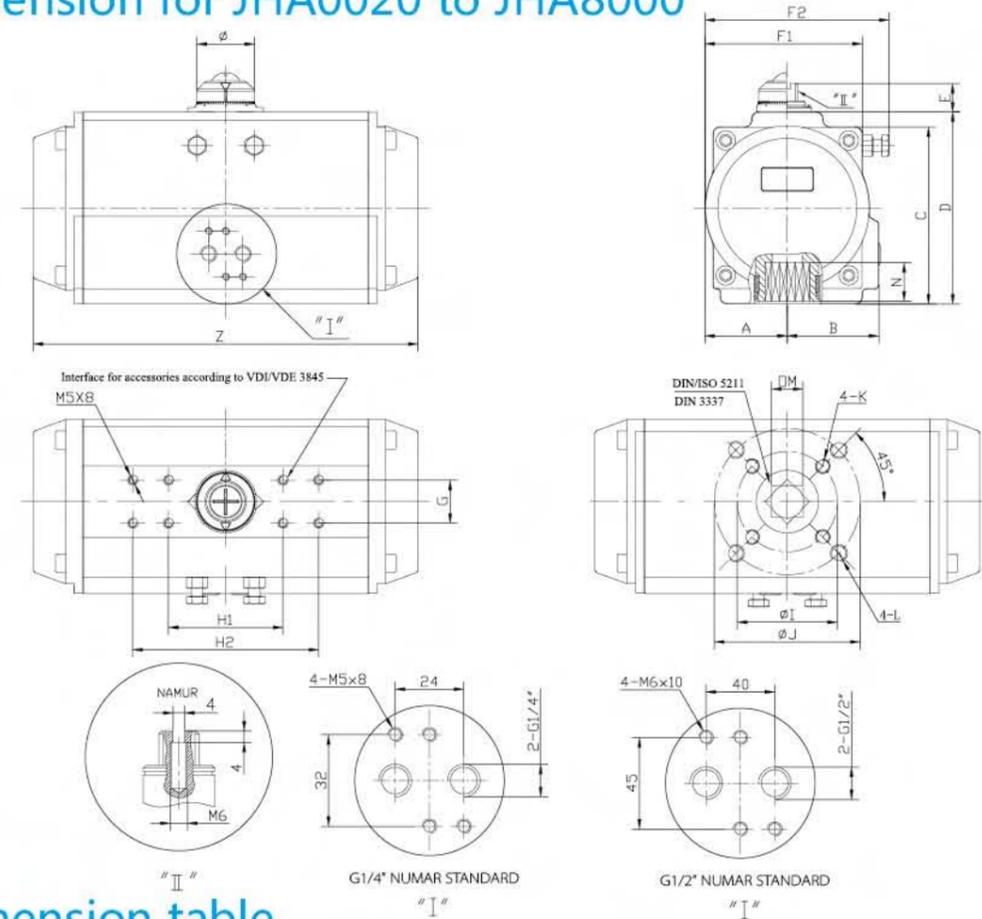
### Output torque of single acting actuator

Model	Air pressure (Unit: bar) Unit: N.m												Output torque of spring		
	4 Bar		5 Bar		5.5 Bar		6 Bar		7 Bar		8 Bar				
	Spring	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	90°	0°
JHA0012SR	K2	4.6	2.5	6.9	4.9	8.1	6.1	9.3	7.3	11.7	9.7	14.1	12.1	7.0	5.0

### Weight and air consumption

Model	Weight(kg)	Air volume opening(L)	Air volume closing(L)
JHA0012DA	1.0kg	0.072	0.078
JHA0012SR	1.1kg	0.072	0.072

### Dimension for JHA0020 to JHA8000



### Dimension table

Model	A	B	C	D	E	F1	F2	G	H1	H2	ΦI	ΦJ	K	L	M	N	Z	Φ	Air Connection
JHA0020	30.50	41.50	65.50	72.00	20	65.50	80.50	30	80		Φ36	Φ50	M5×8	M6×10	11□	14	150	Φ40	NAMUR G1/4"
JHA0035	36.00	47.00	81.00	88.00	20	72.50	88.20	30	80		Φ50	Φ70	M6×10	M8×13	14□	19	172	Φ40	NAMUR G1/4"
JHA0050	42.50	53.00	94.00	100.00	20	81.50	94.40	30	80		Φ50	Φ70	M6×10	M8×13	14□	19	188	Φ40	NAMUR G1/4"
JHA0075	46.00	57.00	98.50	109.00	20	92.00	116.70	30	80		Φ50	Φ70	M6×10	M8×13	17□	23	221	Φ40	NAMUR G1/4"
JHA0110	50.00	58.50	111.00	117.00	20	98.00	124.00	30	80		Φ50	Φ70	M6×10	M8×13	17□	23	268	Φ40	NAMUR G1/4"
JHA0160	58.00	64.00	123.50	134.50	20	110.00	131.00	30	80		Φ70	Φ102	M8×13	M10×16	22□	31	279	Φ40	NAMUR G1/4"
JHA0255	68.00	75.00	146.00	156.50	30	128.00	149.00	30	80	130	Φ70	Φ102	M8×13	M10×16	22□	31	322	Φ55	NAMUR G1/4"
JHA0435	76.00	77.00	161.50	173.50	30	138.50	163.50	30	80	130	Φ102	Φ125	M10×16	M12×20	27□	35	406	Φ55	NAMUR G1/4"
JHA0665	87.50	87.50	185.50	198.50	30	159.00	184.50	30	80	130	Φ102	Φ125	M10×16	M12×20	27□	35	475	Φ55	NAMUR G1/4"
JHA1000	103.50	103.50	216.50	231.00	30	189.50	223.50	30	130		Φ140		M16×25	36□	40	544	Φ80	NAMUR G1/4"	
JHA1200	113.50	113.50	236.00	256.00	30	211.00	245.00	30	130		Φ140		M16×25	36□	40	562	Φ80	NAMUR G1/4"	
JHA1800	130.50	130.50	266.50	292.00	30	246.50	288.00	30	130		Φ165		M20×25	46□	58	642	Φ80	NAMUR G1/4"	
JHA2700	147.50	147.50	302.00	331.00	30	274.00	315.50	30	130		Φ165		M20×25	46□	58	740	Φ80	NAMUR G1/2"	
JHA3800	162.00	173.00	329.00	352.00	30	312.00	361.00	30	130		Φ165		M20×25	46□	55	774	Φ80	NAMUR G1/2"	
JHA5700	190.00	195.00	382.00	408.00	30	362.00	426.00	30	130		Φ165	Φ254	M20×25	M16×25	46□	55	912	Φ80	NAMUR G1/2"
JHA8000	260.00	260.00	440.00	464.00	30	450.00	514.00	30	130		Φ165	Φ254	M20×25	M16×25	55□	60	945	Φ80	NAMUR G1/2"

## Weight table

Model	Cylinder size	Double acting (DA)	Single acting (SR)	Model	Cylinder size	Double acting (DA)	Single acting (SR)
		Weight	Weight			Weight	Weight
JHA0020	φ52	1.35	1.45	JHA0665	φ160	20.25	23.50
JHA0035	φ63	2.15	2.30	JHA1000	φ190	31.35	36.00
JHA0050	φ75	2.60	2.80	JHA1200	φ210	45.70	53.65
JHA0075	φ83	3.40	3.70	JHA1800	φ240	54.50	65.60
JHA0110	φ92	4.55	5.15	JHA2700	φ270	79.00	98.40
JHA0160	φ105	5.90	6.60	JHA3800	φ300	99.00	122.00
JHA0255	φ125	9.20	10.35	JHA5700	φ350	156.00	197.00
JHA0435	φ140	12.00	14.10	JHA8000	φ400	212.00	255.00

## Volume

NO	Model	Double acting (DA)		Single acting (SR)	
		Air volume opening (L)	Air volume closing (L)	Air volume opening (L)	Air volume closing (L)
1	JHA0012	0.07	0.08	0.07	0.07
2	JHA0020	0.12	0.17	0.12	0.14
3	JHA0035	0.21	0.29	0.21	0.24
4	JHA0050	0.29	0.43	0.29	0.37
5	JHA0075	0.42	0.65	0.42	0.55
6	JHA0110	0.68	0.97	0.68	0.81
7	JHA0160	0.92	1.35	0.92	1.14
8	JHA0255	1.47	2.13	1.47	1.84
9	JHA0435	2.37	3.57	2.37	2.83
10	JHA0665	3.77	5.42	3.77	4.49
11	JHA1000	5.90	8.36	5.90	7.47
12	JHA1200	7.26	11.52	7.26	10.56
13	JHA1800	10.70	17.44	10.70	16.07
14	JHA2700	15.90	25.60	15.90	23.86
15	JHA3800	23.50	28.00	23.50	26.50
16	JHA5700	34.50	45.20	34.50	42.40
17	JHA8000	52.20	56.00	52.20	54.00

Air consumption rest with air Supply. open and close stroke ,air volume and action cycle times,expressions:  

$$L/Min=Air\ volume(Air\ volume\ Opening+Air\ volume\ closing) \times \left[ \frac{Air\ supply\ (Kpa)+101.3}{101.3} \times Action\ cycle \right] \times times /min$$

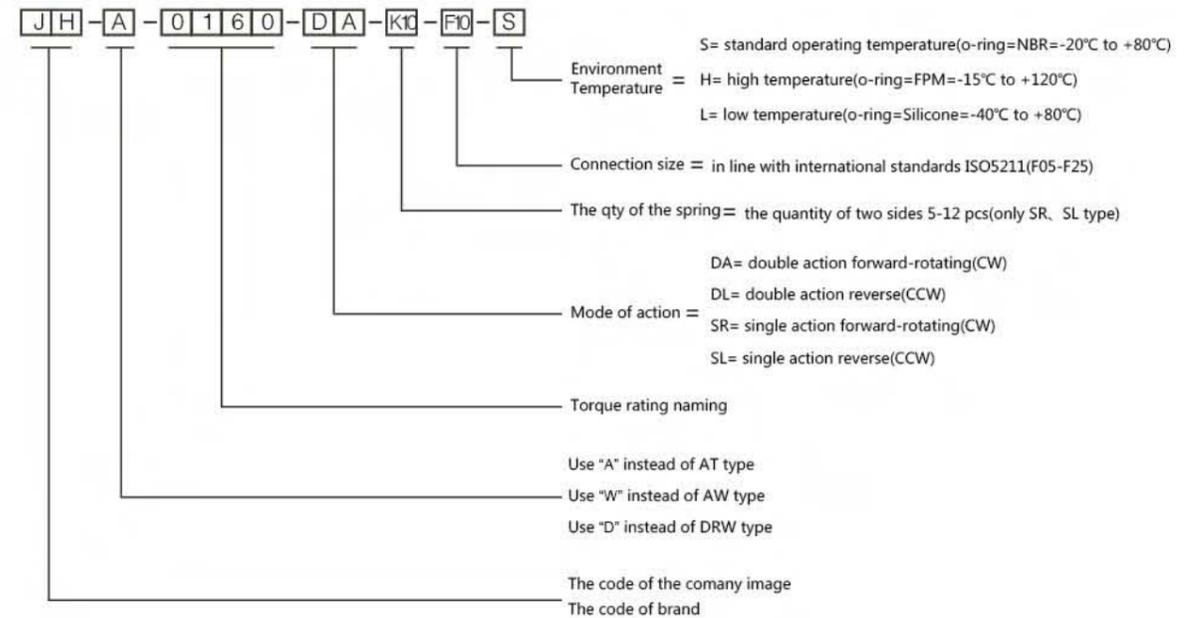
## Note for order

- Pneumatic actuators: Double action or spring return(fail close ,fail open)
- Valve working environment: The operating temperature ,Standard (-20 ° C to +80 ° C), Low temperature (-40 ° C to +80 ° C) High temperature (-15 ° C to +150 ° C)
- Valve operating torque: Medium and the required torque for opening and closing.
- Solenoid valve: Dual control or single control,operating voltage, exploding or not.
- Signal feedback: Mechanical or approachable switch, operating voltage, current-output and exploding or not.
- Positioner: Pneumatic positioner or electric positioner, current signal, voltage signal, electric-pneumaticity switch, exploding or not.
- FRL Combination(air Filter+pressure regulator+lubricator).
- Clutch type manual valve actuator.
- Special customization.
- The accessories should be advised domestic or import.

Model	JHA0012	JHA0020	JHA0035	JHA0050	JHA0075	JHA0110	JHA0160	JHA0255	JHA0435
Cylinder size	φ40	φ52	φ63	φ75	φ83	φ92	φ105	φ125	φ140

Model	JHA0665	JHA1000	JHA1200	JHA1800	JHA2700	JHA3800	JHA5700	JHA8000
Cylinder size	φ160	φ190	φ210	φ240	φ270	φ300	φ350	φ400

## Model formation



120°, 135°, 180° double acting actuator

JUHANG can customized different stroke pneumatic actuator such as 120°, 135°, 180°, all in ±5° adjustment .

Attention:The output torque please refer to the pneumatic actuator torque table (same as 90° degree actuator) .



**PROFESSIONAL ACHIEVEMENTS JUHANG  
TECHNOLOGY IS CREATING THE FUTURE**



**BUILD QUALITY LEVEE  
FACE CENTURY CHALLENGE**

## JHM series clutch type valve worm gear box

Our company's JHM series part rotary clutch type manual override are widely used for pneumatic ball valve which is rotated 90°, butterfly valve and plug valve in the system installation, commissioning and when the system loss of gas and power, it will be converted into a manual operation device. The JHM series manual clutch worm gear box also has a security control function of the total gas source, and the valve control can be operated much safer. This is the indispensable part of the pneumatic valve control system, it's designed and manufactured according to the ISO5211 standard, with a reasonable structure and reliable performance.

Products characteristics:

- Totally-sealed box, internal is based on the grease filling to make the use life of worm gear box longer.
- Protected steel input shaft (stainless steel is for your option)
- There are ductile iron, WCB, stainless steel shell for option, durable structure
- Stroke: 0-90° mechanical limit.
- Convenient conversion, lift the limit pin, rotating eccentric device 100°, limit pin limit automatically to achieve pneumatic; On the contrary, to manual.
- It can be installed with total gas safe control function and cut off air source and exhaust automatically, and passed national patent.



Working environment instructions:

Shell protection ordinary type: IP67 seal, applicable to the standard environment.

special environment can be customized to IP68.

Temperature Standard: -20°C ~ +80°C

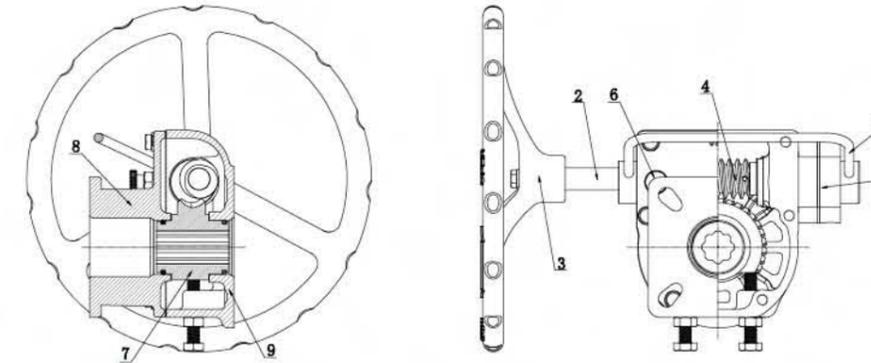
Low temperature: -40°C ~ +80°C

High temperature: -20°C ~ +120°C

Surface: Special coating (for option) suitable in extreme working environment and marine environment.



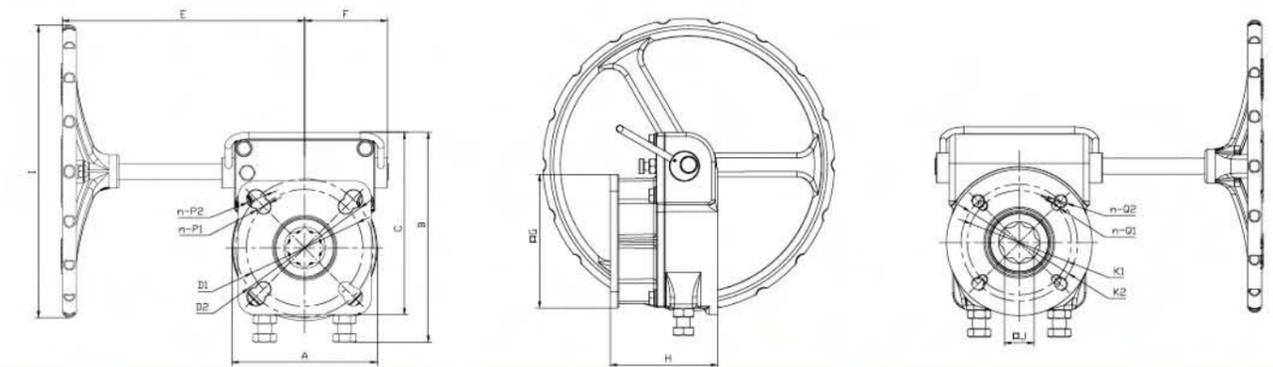
## JHM structural drawing



## Structure and material

NO.	Name	Qty	Material
1	Handle	1	Stainless steel
2	Worm shaft	1	Carbon steel 45 S45C/AISI 1045 or SS
3	Hand wheel	1	Ductile iron FCD45/ASTM 65-45-12
4	Worm	1	Carbon steel 45 S45C/AISI 1045
5	Air source valve	1	High quality aluminum alloy
6	Limiting screw	2	Stainless steel
7	Worm gear	1	Ductile iron FCD70/GGG701 ASTM D100-70-03
8	Cap	1	Ductile iron FCD45/ASTM 65-45-12 or WCB or SS
9	Body	1	Ductile iron FCD45/ASTM 65-45-12 or WCB or SS

## Dimension

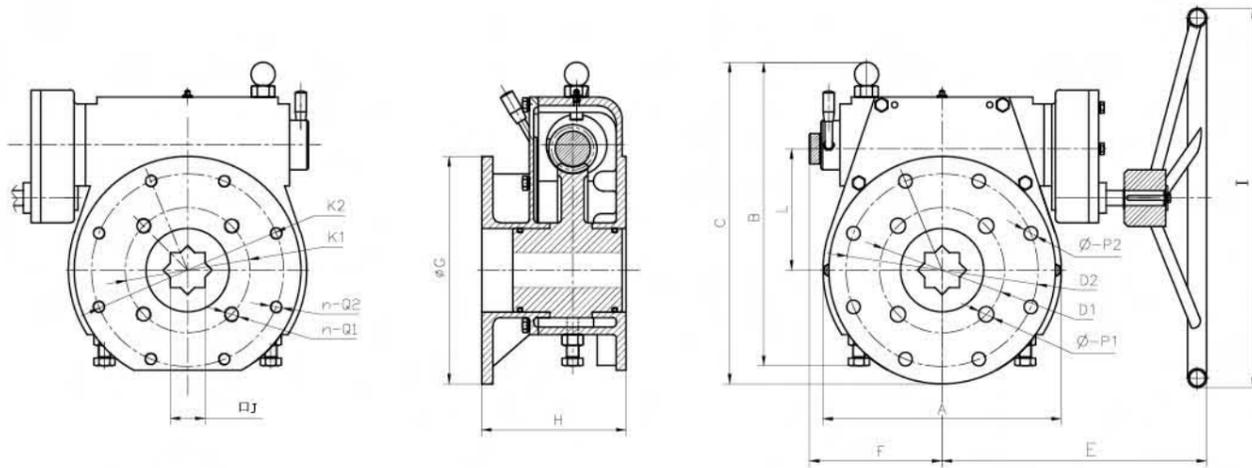


Model	Flange connection data								
	□J	K1	K2	n-Q1	n-Q2	D1	D2	n-P1	n-P2
JHM40	17	φ50	φ70	4-M6	4-M8	φ50	φ70	4-φ7	4-φ9
JHM28	22	φ70		4-M8		φ70	φ102	4-φ9	4-φ11
JHM32	22	φ70	φ102	4-M8	4-M10	φ102	φ125	4-φ11	4-φ14
JHM50	27	φ102	φ125	4-M10	4-M12	φ102	φ125	4-φ11	4-φ14
JHM62	36	φ125	φ140	4-M12	4-M16	φ140	φ165	4-φ18	4-φ22
JHM70	46	φ165		4-M20		φ140	φ165	4-φ18	4-φ22
JHM78	46	φ165		4-M20		φ165		4-φ22	

Model	Dimension						
	A	B	C	E	F	□G	H
JHM40	85	129	116	146	54.5	70	98
JHM28	112	170	146	187	77	100	114.5
JHM32	138	183.5	160	193.5	85.5	120	125
JHM50	150	212.5	185	235	90	120	133
JHM62	175	251.5	218.5	291	99.5	160	134
JHM70	246.5	320.5	285.5	324	111	160	189
JHM78	276	371	344	323	138	156	121

Model	Speed ratio	Torque Nm		Handwheel φ	Valve connection	Actuator connection
		Input	Output			
JHM40	40:1	25	255	φ150	F05/F07	F05/F07
JHM28	28:1	50	350	φ200	F07	F07/F10
JHM32	32:1	80	550	φ200	F07/F10	F10/F12
JHM50	50:1	95	1200	φ300	F10/F12	F10/F12
JHM62	62:1	130	2100	φ350	F14	F14/F16
JHM70	70:1	150	2800	φ400	F16	F14/F16
JHM78	78:1	160	3200	φ600	F16	F16

**Dimension**

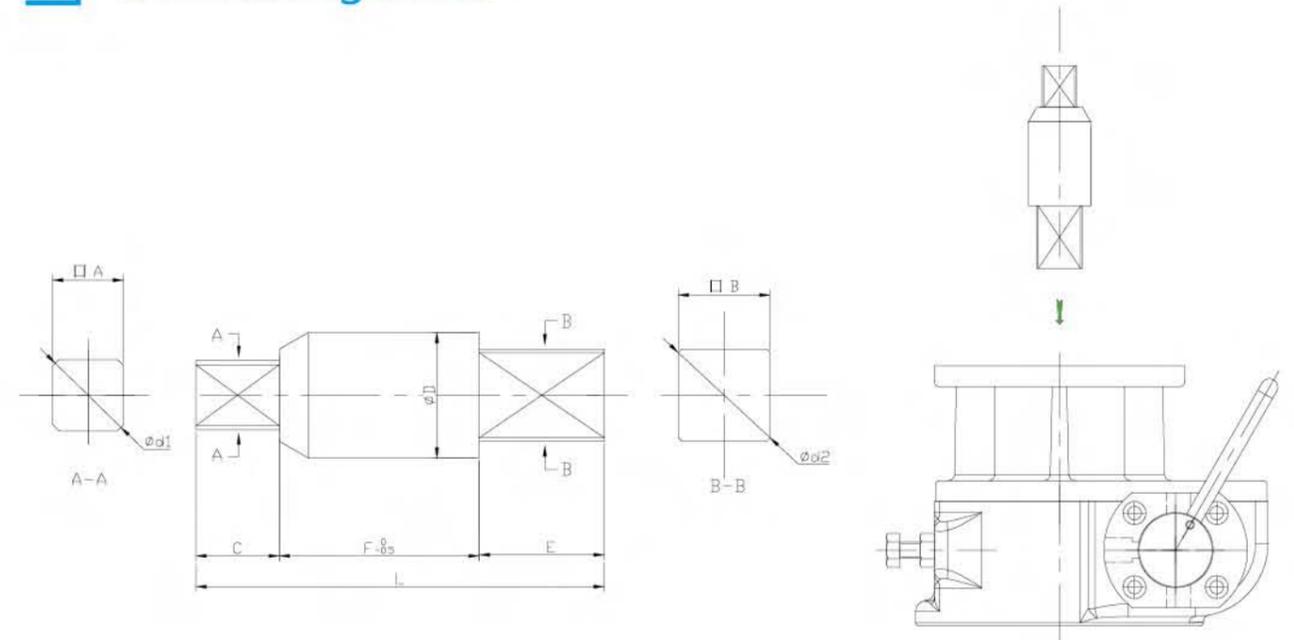


Model	Flange connection data								
	J	K1	K2	n-Q1	n-Q2	D1	D2	n-P1	n-P2
JHM270	46	φ165	φ254	4-M20	4-M16	φ165	φ254	4-φ20	8-φ18
JHM320	55	φ254		8-M16		φ254		8-φ18	
JHM520	75	φ298		8-M20		φ254		8-φ18	

Model	Dimension								
	A	B	C	E	F	G	H	I	L
JHM270	315	400	424	350	175.5	φ300	191	φ500	160
JHM320	300	447.5	426	464	155	φ300	244	φ500	152
JHM520	430	544.5	515	542	222	φ300	393	φ700	215

Model	Speed ratio	Torque		Valve connection	Actuator connection
		Input	Output		
JHM270	270:1	90	5600	F16/F25	F16/F25
JHM320	320:1	100	7000	F25	F25
JHM520	520:1	160	22000	F30	F25

**Connecting shaft**

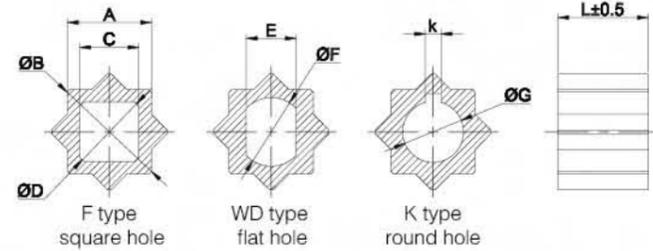


Connecting shaft data sheet for JHM clutch type manual override											
NO	Model	Match pneumatic actuator model	□A	□B	φD	φd1	φd2	C	E	F	L
1	JHM40	JHA0020	11	17	24.5	14.5	22	12	22	48	82
2		JHA0035/JHA0050	14	17	24.5	19	22	15	22	48	85
3		JHA0075/JHA0110	17	17	24.5	22	22	20	22	48	90
4	JHM28	JHA0035/JHA0050	14	22	34	19	29	15	30	48	93
5		JHA0075/JHA0110	17	22	34	22	29	20	30	48	98
6		JHA0160	22	22	34	29	29	27	30	48	105
7	JHM32	JHA0160/JHA0255	22	22	39	29	29	27	30	57	115
8		JHA0435	27	22	39	35	29	30	30	57	117
9	JHM50	JHA0435/JHA0665	27	27	44	35	35	30	30	62	122
10	JHM62	JHA1000/JHA1200	36	36	49	47	47	38	38	54	130
11	JHM70	JHA1000/JHA1200	36	46	64.5	47	60	38	45	90	173
12		JHA1800	46	46	64.5	60	60	45	45	90	180

## Internal adaptor

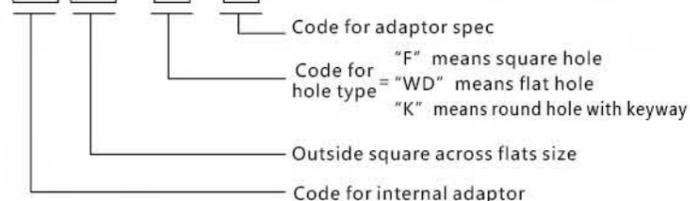
### Product features:

- High strength cold forging steel , Super impact resistance
- Many kinds of hole type
- Special sizes can be customized



		F type square hole				WD type flat hole		K type round hole		L
		A	φB	C	φD	E	φF	K	φG	
		mm	mm	mm	mm	mm	mm	mm	mm	mm
JT14	1	14	18.2	9	12.5					16
	2	14	18.2	11	15.2					16
JT17	1	17	22.2	11	15.2					19
	2	17	22.2	14	19.2					19
	3	17	22.2			10.00	14.10			19
	4	17	22.2			11.00	16.10			19
JT19	1	19	25.2	11	15.2					21
	2	19	25.2	14	19.2					21
	3	19	25.2	17	23.2					21
	4	19	25.2			11.00	16.10			21
	5	19	25.2					3	12.80	21
JT22	1	22	28.2	14	19.2					24
	2	22	28.2	17	23.2					24
	3	22	28.2	19	26.2					24
	4	22	28.2			11.00	16.10			24
	5	22	28.2			13.00	19.10			24
	6	22	28.2					5	15.90	24
	7	22	28.2					5	19.05	24
JT27	1	27	36.2	17	23.2					29
	2	27	36.2	19	26.2					29
	3	27	36.2	22	29.2					29
	4	27	36.2			13.00	19.10			29
	5	27	36.2			16.00	22.10			29
	6	27	36.2					5	19.05	29
	7	27	36.2					5	22.20	29
JT36	1	36	48.2	19	26.2					38
	2	36	48.2	22	29.2					38
	3	36	48.2	27	37.2					38
	4	36	48.2			16.00	22.10			38
	5	36	48.2			22.00	30.10			38
	6	36	48.2					8	28.70	38
	7	36	48.2					8	31.80	38
JT46	1	46	60.2	27	37.2					48
	2	46	60.2	36	49.2					48
	3	46	60.2					8	31.80	48
	4	46	60.2					10	33.30	48
	5	46	60.2					10	38.10	48
	6	46	60.2					12	41.40	48

Standard Ordering Guide: JT 22 - F - 2



For example: JT22-F-2 means internal adaptor-Outside square hole-17 across flats 22 across flats-internal square hole-17 across flats

## The function and usage of the actuator and the parts

- Double acting actuator: Control valve opening and closing.
- Single acting actuator (Spring return ): When air or power is cut-off or Broken, the actuator will close or open the valve automatically .
- Double control solenoid valve: When a coil is energized, the valve Opens and the other coil turns off the valve when power is applied. With memory function (can be used for explosion-proof)..
- Limit switch box (MONITORING SWITCH): Remotely passes the signal of The valve@s opened and closed status (available for explosion-proof).
- Mechanical positioner: According to the air pressure to control the Valve medium flux (available for explosion-proof).
- Intelligent positioner: Through the system set the valve position Signal , after the calculation process of the control software,thus Control the intake and exhaust of pneumatic actuator , drive valve Position to the set point.
- Clutch type manual valve actuator: Able to use manual operation for Opening and closing valve in the event of loss of air or power.



Protection type valve position indicator



Protection type valve position indicator



Solenoid valve



Mechanical type valve positioner



Explosion-proof type valve position indicator