



## GENERAL KNOWLEDGE

### General Instruction for Pneumatic Actuator

For your own safety, please read the instruction below before you inquiring / using our products.

#### Precautions in piping / installment

- According to the required driving torque and select corresponding actuator specifications by the output torque standard data in the 4Bar air pressure when install the valve. Actuator's torque should be more than 25% of the valve's torque requirement.

- The correct installation is directly affect the integral performance. The central axis of actuator MUST BE coaxial with the valve pole. Please notice the valve and the actuator needs to turn off the connection, examine the valve, after fix by using the right screw, opening and closing should not be any phenomenon about suddenly fast, suddenly slow, or stop.

- When piping with the large pneumatic valve, because of the weight of the valve, please install the support frame to avoid deformation of pipeline and valve body.

- Please confirm there's enough space for maintenance or manual operation.

- Actuator contains fine adjustment screw to ensure the opening and closing positions correct.

- To keep its best situation, please arrange regular inspect and change parts by its usage frequency. The air source should be kept dry and clean, and also drainage and sewage regularly for air filter components at the front end.

- Actuator's switch can be controlled by Single-acting or Double-acting 5 ports 2 ways solenoid valve.

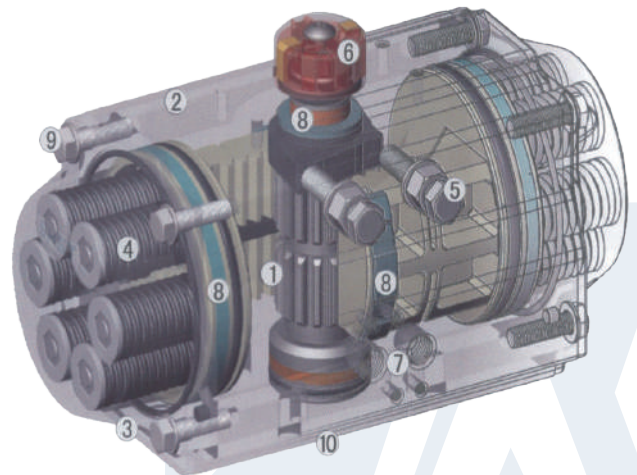
- Please double check the pipeline direction, any leak wire connection before using the valve.

#### Malfunction detection and elimination

Situation	Check item	Solution
Valve unable to move	Check the solenoid valve, coil, and the core are malfunction or not.	Exchange solenoid, coil, clean impurities.
	Examine the pneumatic acuator, check sealing parts and cylinder.	Exchange sealing parts and cylinder.
	Impurities stuck the piston inside the actuator.	Clean impurities, and replace broken parts.
	If there's extra manual mechanism, its handle in the manual position.	Switch the handle to pneumatic control.
Valve works slow, inching	Insufficient pneumatic pressure.	Increase pressure.
	Spool and other parts assembly uneven or too tight.	Increase actuator model spec.
	Actuator output torque too small.	Reassemble parts.
	Pneumatic pipeline block or flow too small.	Remove clog, replace filter.
Limit switch no signal feedback	Power circuit error or break.	Overhaul circuit.
	Cam incorrect position in the switch.	Adjust Cam to the correct position.
	Micro switch damaged.	Replace limit switch

#### Main parts & Material

No.	Part name	Material
1	Gear output shaft	Carbon steel
2	Valve body	Extrude aluminum alloy
3	Cover	Die-cast aluminum alloy
4	Spring component	Alloy steel
5	Fine adjustment screw	Stainless steel
6	Position indicator	PP
7	Piston	Die-cast aluminum alloy
8	Wear ring	NYLON 46
9	Cover screw	Stainless steel
10	O-ring	NBR

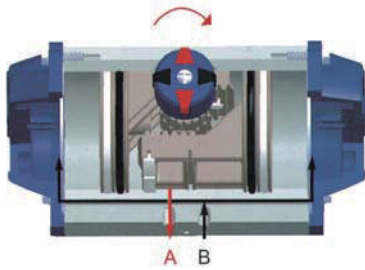




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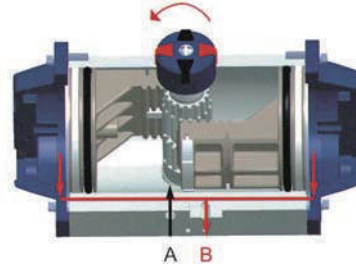
## Principle of operation for Double acting torque.

Valve OFF



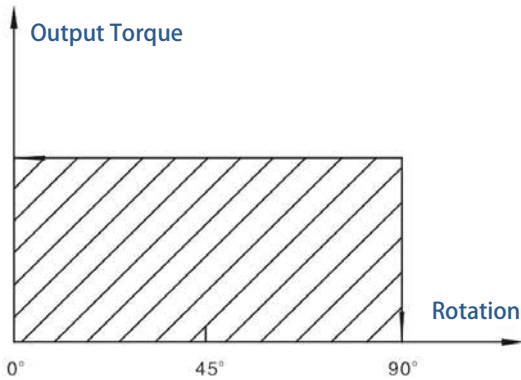
Compressed air input by **B Port**, make the piston and output shaft turn clockwise. Close the valve. Expel the air in the piston by **A port**.

Valve ON



Compressed air input by **A Port**, make the piston and output shaft turn counterclockwise. Open the valve. Expel the air in the piston by **B port**.

## Double acting torque reference

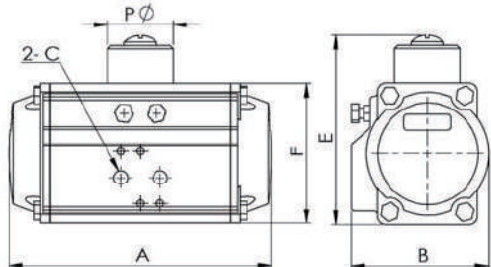
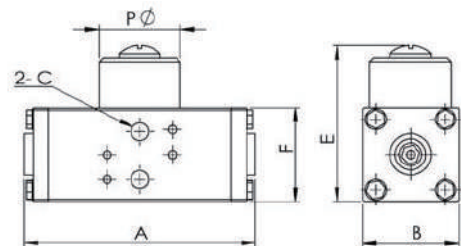
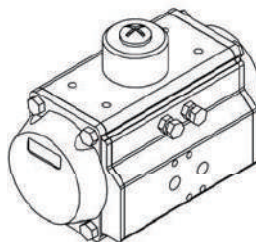
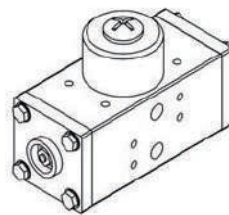


Model	Input pneumatic pressure ( Torqure unit : Nm )							
	3.5 Bar	4 Bar	4.5 Bar	5 Bar	5.5 Bar	6 Bar	7 Bar	8 Bar
AT32D	5	5.7	6.5	7.3	8	8.7	10	11.6
AT50D	11.7	13.5	15.1	16.7	18.4	20	23.4	26.7
AT63D	20.6	23.6	26.5	29.4	32.3	35.3	41.1	47
AT75D	40.8	46.6	52.5	58.3	64.1	69.9	81.5	93.2
AT88D	64.2	73.3	82.5	91.6	101.1	110.1	128.1	146.1
AT100D	93.4	106.3	120.3	133.3	146.3	160.3	186.3	213.3
AT115D	150	172	193	215	236	258	301	344
AT125D	195	223	250	278	303	333	389	444

## AT Series Overall Dimension ( mm )

Model	A	B	C	E	F	P
AT32D	118	45	1/8"	77	47	40

Model	A	B	C	E	F	P
AT50D	144	70.5	1/4"	99	69	40
AT63D	163	83.5	1/4"	115	85	40
AT75D	214	94	1/4"	132	102	40
AT88D	252	105	1/4"	145	115	40
AT100D	270	120	1/4"	157	127	40
AT115D	316	138	1/4"	185	145	62
AT125D	354	147	1/4"	197	157	62



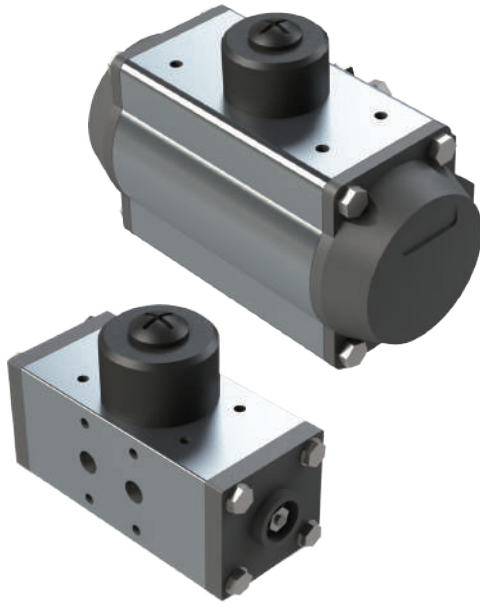


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## PRODUCT/ PNEUMATIC VALVE

### Pneumatic Valve Actuator



### Specifications Characteristics

Model	AT32	AT50	AT63	AT75	AT88	AT100	AT115	AT125
Power voltage	3 - 8 Bar							
Acting range	0 - 90° ± 5°							
Acting time	0.25 - 3 Sec.							
Internal structure	Rack drive							
3 Bar Air pressure torque ( Nm )	4.5	10.0	17.6	34.9	54.9	79.8	129	168
5 Bar Air pressure torque ( Nm )	7.5	16.6	29.3	58.2	91.5	133	215	277
7 Bar Air pressure torque ( Nm )	10.5	23.3	41.0	81.4	128	186	301	388
Environment	Temperature : -20 - 85°C ; Humidity : 10 - 90%RH							
Body Material	Aluminium							
Install direction	360 degrees omni-directional							

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### APL Series Actuator Limit Switches



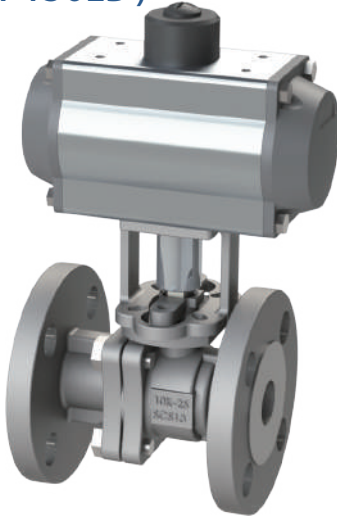
### Specifications Characteristics

Model	APL-210	APL-410
ON / OFF Checking	Full open : Yellow ; Full close : Red	
Protect level	IP67	
Explosive-proof grade		Exd II CT6
Terminals	8 points ( 0.8 - 2.5 m m <sup>2</sup> )	
Output signal	Switch * 2	
Electriad connection	2 * 1/2" NPT	
Body material	Aluminium die-casting	



# PRODUCT/ PNEUMATIC VALVE

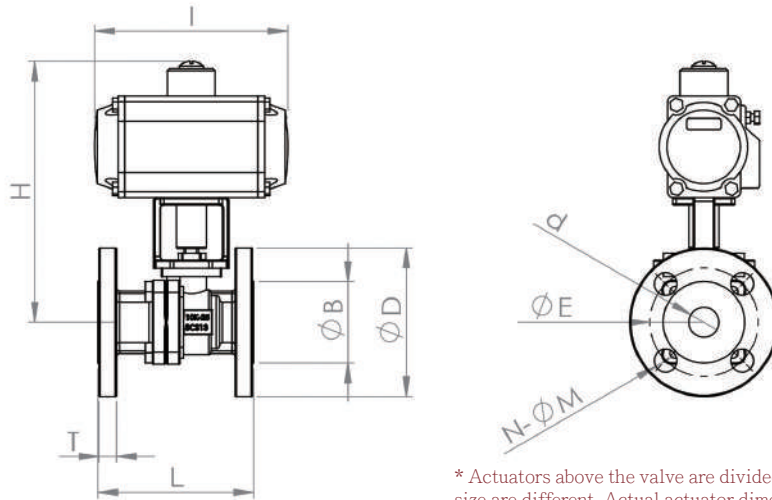
## Pneumatic Flange Ball Valve ( ANSI-150LB )



## Specifications Characteristics

Model	1F Series ( 150LB )
Medium Temp.	-20°C - 150°C
ENV Temp.	-20°C - 60°C
Pressure	0 - 10 Kgf/cm2
Actuator Mat.	Aluminium alloy ( Double / Single-acting )
Actuator Pressure	0.3 - 0.8 Mpa
Valve body Mat.	Stainless steel SUS304 ; 316
Valve seat Mat.	PTFE
Valve stem Mat.	Stainless steel SUS304 ; 316
Flange Spec.	ANSI B16.5

## Dimensions ( mm )



\* Actuators above the valve are divided into High torque and Low torque, size are different. Actual actuator dimension based on the real product.

Body Dimension	d	B	D	E	L	H	I	M	N	T	Actuator Suggest
1/2"	15	35	89	60.5	108	189	144	16	4 Holes	12.1	AT50
3/4"	20	43	98	70	117	213	163	16	4 Holes	12.1	AT63
1"	25	51	108	79.5	127	210.5	163	16	4 Holes	12.1	AT63
1-1/4"	32	64	117	89.5	140	215	163	16	4 Holes	12.7	AT63
1-1/2"	40	73	127	98.5	165	257.5	214	16	4 Holes	14.3	AT75
2"	50	92	152	120.5	178	267.5	214	19	4 Holes	15.9	AT75
2-1/2"	65	105	178	139.5	190	318.5	252	19	4 Holes	17.5	AT88
3"	80	127	190	152.5	203	341.5	270	19	4 Holes	19.1	AT100
4"	100	157	229	190.5	229	391.5	316	19	8 Holes	23.9	AT115
5"	125	186	254	216	356	446	354	22	8 Holes	25.4	AT125
6"	150	216	279	241.5	394	487.5	418	22	8 Holes	28.6	AT145



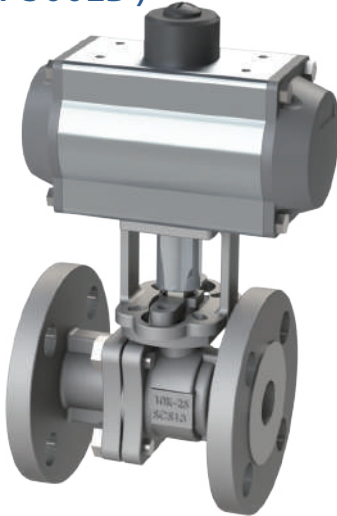


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# PRODUCT/ PNEUMATIC VALVE

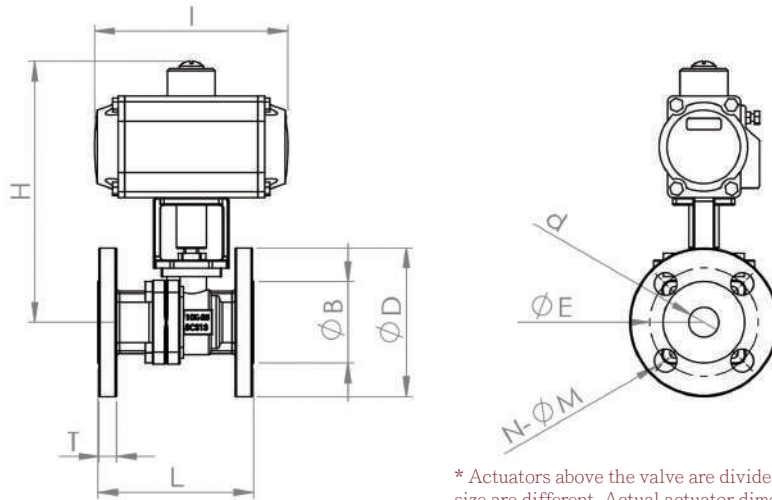
## Pneumatic Flange Ball Valve ( ANSI-300LB )



## Specifications Characteristics

Model	1F Series ( 300LB )
Medium Temp.	-20°C - 150°C
ENV Temp.	-20°C - 60°C
Pressure	0 - 20 Kgf/cm2
Actuator Mat.	Aluminium alloy ( Double / Single-acting )
Actuator Pressure	0.3 - 0.8 Mpa
Valve body Mat.	Stainless steel SUS304 ; 316
Valve seat Mat.	PTFE
Valve stem Mat.	Stainless steel SUS304 ; 316
Flange Spec.	ANSI B16.5

## Dimensions ( mm )



\* Actuators above the valve are divided into High torque and Low torque, size are different. Actual actuator dimension based on the real product.

Body Dimension	d	B	D	E	L	H	I	M	N	T	Actuator Suggest
1/2"	15	35	95	66.5	140	192	144	16	4 Holes	14.3	AT50
3/4"	20	43	117	82.5	152	222.5	163	19	4 Holes	15.9	AT63
1"	25	51	124	89	165	218.5	163	19	4 Holes	17.5	AT63
1-1/2"	40	73	156	114.5	190	272	214	22	4 Holes	20.7	AT75
2"	50	92	165	127	216	274	214	19	8 Holes	22.3	AT75
2-1/2"	65	105	190	149	241	324.5	252	22	8 Holes	25.4	AT88
3"	80	127	210	168	283	352	270	22	8 Holes	28.6	AT100
4"	100	157	254	200	305	404.5	316	22	8 Holes	31.8	AT115
5"	125	186	279	235	381	458.5	354	22	8 Holes	35	AT125
6"	150	216	318	270	403	507.5	418	22	12 Holes	36.6	AT145

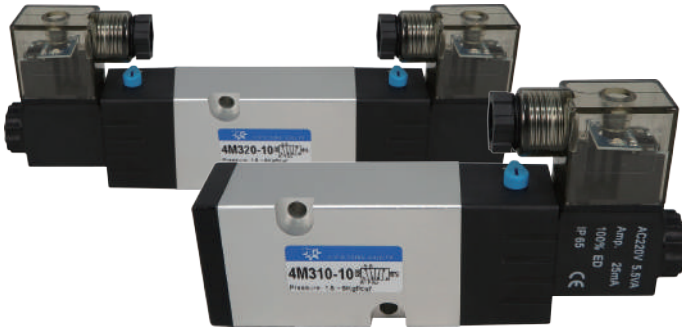


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## PRODUCT/ PNEUMATIC VALVE

Accessories for selection



- NAMUR Solenoid Valve -

Single Coil / Twin Coil  
AC110V / 220V ; DC24V

- Hand Wheel -

Body material : Die-casting steel  
Wheel material : Aluminium alloy  
Rotation angle : 180°



- Limit Switch -

8-Points terminal  
Body material : Die-cast aluminum  
C/W Active bracket  
Protect level : IP-67



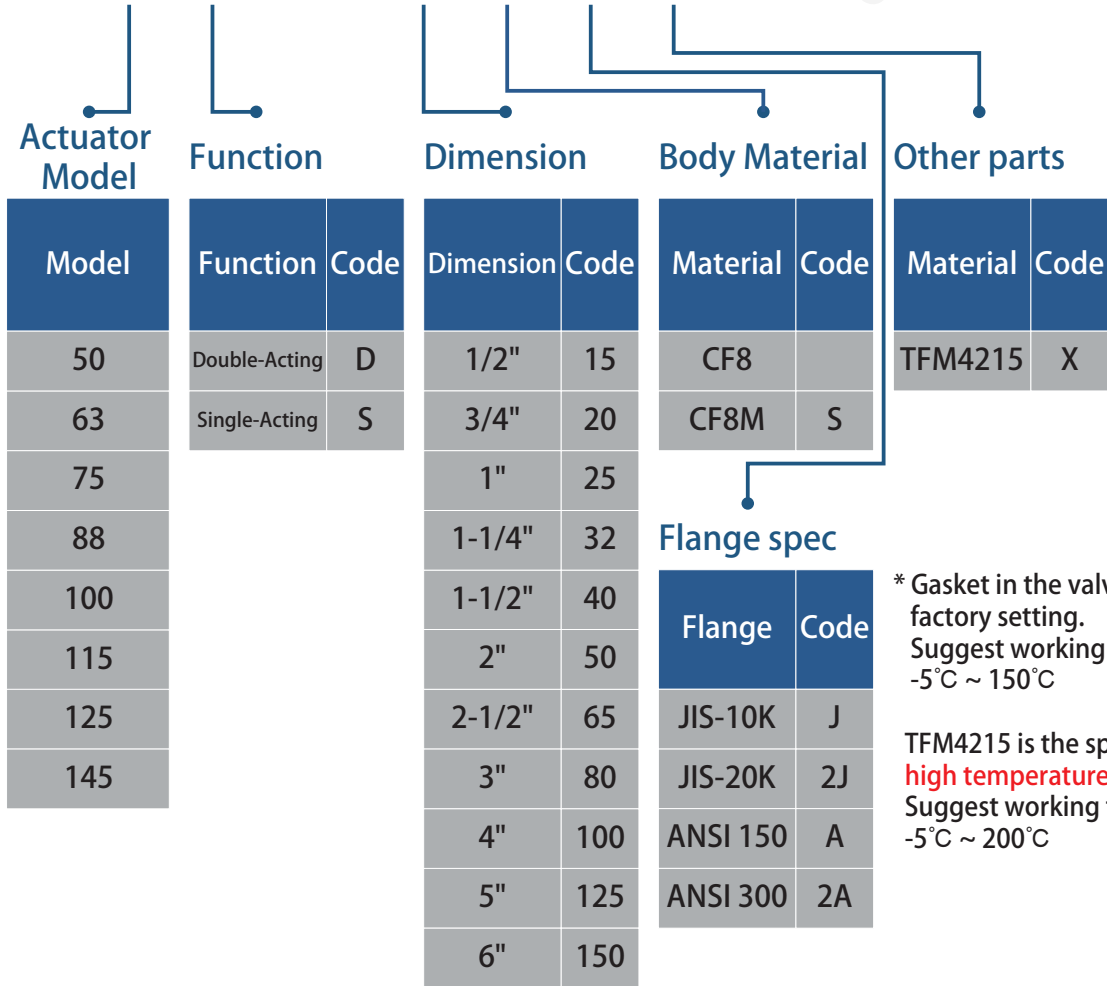
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# PRODUCT/ PNEUMATIC VALVE

## How to select model

AT 100 D - 1F 80 S 2J X



\* Gasket in the valve is **PTFE** in the factory setting.  
Suggest working temperature: -5°C ~ 150°C

TFM4215 is the special PTFE for **high temperature**.  
Suggest working temperature: -5°C ~ 200°C

