Pneumatic Multi-Spring Diaphragm Actuator

Overview

The ZP6100 series pneumatic actuator adopts a multi-spring diaphragm structure, making it a lightweight, compact, high-performance linear travel actuator with high output force. It is primarily composed of key components such as the diaphragm, compression spring, tray, push rod, bracket, bushing, and diaphragm cover.

Its working principle: The electrical or pneumatic signal from the regulating instrument is converted into air pressure by the positioner and input into the diaphragm air chamber. This causes the elastic diaphragm to transform the input pressure into thrust on the push rod, which in turn moves the valve spool accordingly, thereby changing the valve's opening. It typically accepts a standard pressure signal of 02×10° ~10×10 Pa and converts it into thrust. When the signal pressure is introduced into the diaphragm air chamber, this pressure multiplied by the effective area of the diaphragm produces thrust, moving the push rod and compressing the spring until the reaction force generated by the spring balances the thrust on the diaphragm. The greater the signal pressure, the greater the thrust, and the larger the displacement of the push rod, i.e., the compression of the spring. As the push rod moves from zero to full travel, the valve transitions from fully open (or fully closed) to fully closed (or fully open).

Main Parts & Material

Item	Material	Item	Material
Cover	Carbon steel, stainless steel	Sleeve	Wear-Resistant Nylon(MC)、2Cr13
Yoke	Carbon steel, stainless steel	Diaphragm	EPDM/Nylon、NBR/Nylon
Push Rod	1Cr18Ni9、2Cr13	Spring	60Si2MnA

Action Type

Direct-acting (D): When the signal pressure increases, the push rod moves downward.
Reverse-acting (R): When the signal pressure increases, the push rod moves upward.

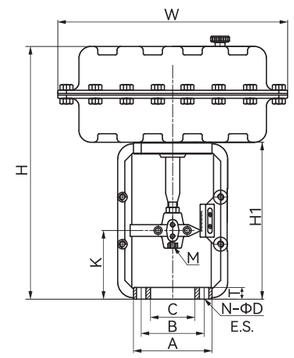
Performance（GB/T4213-2008）

Project	w.Positioner	w/o Positioner
Basic Error (%)	≤±1.5	±8%（Percentage of Stroke）
Hysteresis (%)	≤1.5	-
Dead Band (%)	≤0.6	6%（percentage of pressure span）
Rated Travel Deviation (%)	±2.5	±2.5
Start/End Dev. (%)	±2.5	±2.5
FC Start	±2.5	±2.5
FO Start	±2.5	±2.5
Cycle Life	100,000 Times	
Spring Range	20-100、40-200、80-240、140-300KPa	
Oper. Temp.	-30 ~ +70℃	
Air Port	NPT1/4”、3/8”	

Air Consumption

Model No.	Air Chamber Volume (Liters)	Air Consumption (Liters)
ZP6102	1.58	5.34
ZP6103	1.82	6.13
ZP6104	4.63	15.6
ZP6105	10.89	36.7
ZP6106	37.06	124.89

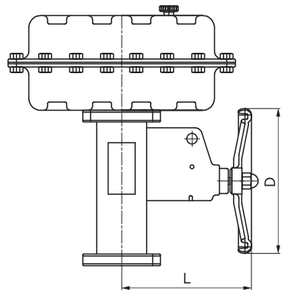
P.S.:The air consumption data is measured at an air supply pressure of 2.5 Bar and 1 cycle per minute.



Dimensions:

Unit:mm

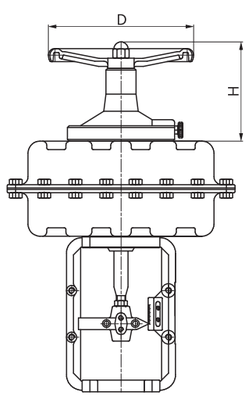
ACTUATOR		ZP6102D/R	ZP6103D/R	ZP6104D/R	ZP6105D/R	ZP6106D/R
Travel(mm)		16	25	40	60	100
K	FC(D)	115	120	175	195	270
	FO(R)	95	95	135	135	170
Area(cm^2)		350	350	600	900	1500
Thrust (N)	FC(D)	2500	2500	3900	6800	10000
	FO(R)					
W		290	290	365	475	580
H		307	333	404	514	690
H1		210	210	260	310	400
A		100	100	130	145	170
B		80	80	105	118	135
C		60	60	80	95	100
T		18	18	20	22	26
N-φD		4-φ11	4-φ11	4-φ13	4-φ15	4-φ17
M		M12x1.25	M12x1.25	M16x1.5	M20x1.5	M24x1.5



Side-mounted Manual Mechanism Overall Dimensions:

Unit:mm

ACTUATOR	TRAVEL(mm)	Dimensions		Force(N)
		D	L	
ZP6102D/R	16	220	210	190
ZP6103D/R	25	220	210	
ZP6104D/R	40	280	305	290
ZP6105D/R	60	400	450	460
ZP6106D/R	100	550	500	580



Top-mounted Manual Mechanism Overall Dimensions:

Unit:mm

ACTUATOR	TRAVEL(mm)	Dimensions		Force(N)
		D	L	
ZP6102D/R	16	90	125	190
ZP6103D/R	25	90	130	
ZP6104D/R	40	250	180	260
ZP6105D/R	60	300	225	410

Overview

The ZP6200 series pneumatic actuator adopts a single-pring (multi-pring) piston structure (made of full aluminum alloy), making it a lightweight, compact, high-erformance linear travel actuator with high output force. It is primarily composed of key components such as the piston, compression spring, push rod, bracket, shaft bushing, and cylinder cover.

Working Principle: Electrical or pneumatic signals from the control instrument are converted into air pressure by the positioner and fed into the cylinder air chamber. This pressure drives the piston to convert the input pressure into thrust on the push rod, which in turn moves the valve spool to achieve corresponding displacement, thereby adjusting the valve opening. The actuator typically accepts standard pressure signals ranging from 0.2×10^5 to 1.0×10^5Pa Pa and converts them into thrust. When the signal pressure enters the cylinder air chamber, the thrust is generated by multiplying the pressure by the effective area of the cylinder, causing the push rod to move and compress the spring until the reaction force of the spring balances the thrust on the piston. The higher the signal pressure, the greater the thrust, and the larger the displacement of the push rod (i.e., the compression of the spring). As the push rod moves from zero to full travel, the valve shifts from fully open (or fully closed) to fully closed (or fully open).

Action Type

Direct-acting (D): When the signal pressure increases, the push rod moves downward.
Reverse-acting (R): When the signal pressure increases, the push rod moves upward.

Performance（GB/T4213-2008）

Project	w/o Positioner
Basic Error (%)	±8%（Percentage of Stroke）
Dead Band (%)	6%（percentage of pressure span）
Rated Travel Deviation (%)	±2.5
Start/End Dev. (%)	±2.5
FC Start	±2.5
FO Start	±2.5
Cycle Life	>100,000 Times
Spring Range	20-100、40-200、80-240、140-300KPa
Oper. Temp.	-30 ~ +70℃
Air Port	NPT1/4”、3/8”

Parts & Material

Item	Material	Item	Material
Cover	Carbon steel, stainless steel	Push Rod	1Cr18Ni9、2Cr13
Body	Carbon steel, stainless steel	Sleeve	Wear-Resistant Nylon（MC）、2Cr13
Yoke	Carbon steel, stainless steel	Spring	60Si2MnA

Double-Acting Actuator Output Force Chart

Model No.	Air Supply Pressure（Bar）				
	4	4.5	5	5.5	6
ZP62/150	6929.8	7796.0	8662.2	9528.5	10394.7
ZP62/200	12321.4	13861.5	15401.7	16941.9	18482.0
ZP62/250	19251.1	21657.5	24063.9	26470.3	28876.7
ZP62/300	27723.1	31188.4	34653.8	38119.2	41584.6
ZP62/350	37847.0	42577.9	47308.7	52039.6	56770.5
ZP62/400	49285.4	55446.1	61606.8	67767.5	73928.2
ZP62/500	77008.5	86634.6	96260.6	105886.7	115512.8

Output Force of Direct-Acting (Air-to-Close), Single-Acting Linear Cylinder

Unit: N

Model No.	Matched Valve Size	Max. Travel	Spring Range (KPa)	Spr. Res. @ Closed (N)	Air Supply Pressure（Bar）				
					4	4.5	5	5.5	6
ZP62/150	DN15 ~ DN25	16	40-200	3465.4	3464.4	4330.6	5196.8	6063.1	6929.3
ZP62/200	DN32 ~ DN50	25	40-200	6160.7	6160.7	7700.8	9241.0	10781.2	12321.3
ZP62/250	DN65 ~ DN100	40	40-200	9626.1	9625.0	12031.4	14437.8	16844.2	19250.6
ZP62/300	DN125 ~ DN200	60	40-200	13861.5	13861.5	17326.9	20792.3	24257.7	27723.1
ZP62/350	DN125 ~ DN200	60	40-200	18867.0	18866.2	23582.8	28299.5	33016.1	37732.8
ZP62/400	DN250 ~ DN350	100	40-200	24642.7	24642.7	30803.4	36964.1	43124.8	49285.4
ZP62/500	DN250 ~ DN350	100	40-200	38504.0	38504.5	48130.6	57756.6	67382.7	77008.8

Output Force of Reverse-Acting (Air-to-Open), Single-Acting Linear Cylinder

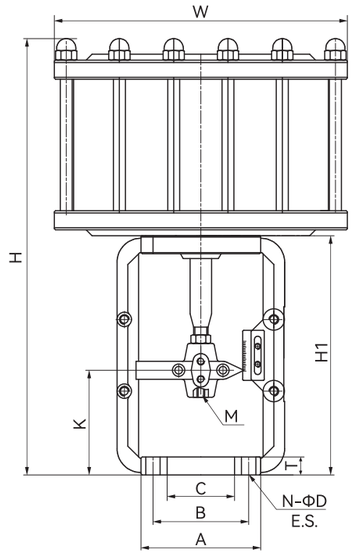
Unit: N

Model No.	Matched Valve Size	Max. Travel	Sealing Type	Spring Range (KPa)	Spr. Cl Force (N)	Spr. Res. @ Opened (N)	Min. P_open (Bar)	Output Force @ Air Supply (N)
ZP62/150R	DN15 ~ DN25	16	Soft	40-200	1039.6	3465.4	4	6929.8
			Metal	150-350	3465.4	6064.4		
ZP62/200R	DN32 ~ DN50	25	Soft	40-200	1848.2	6160.7	4	12321.4
			Metal	150-350	6160.7	10781.2		
ZP62/250R	DN65 ~ DN100	40	Soft	40-200	2887.8	9626.1	4	19251.1
			Metal	150-350	9626.1	16845.6		
ZP62/300R	DN125 ~ DN200	60	Soft	40-200	4158.5	13861.5	4	27723.1
			Metal	150-350	13861.5	24257.7		
ZP62/350R Large Delta P (△P)	DN125 ~ DN200	60	Soft	40-200	4716.8	14150.3	4	37733.2
			Metal	150-350	18867.8	28300.6		
ZP62/400R	DN250 ~ DN350	100	Soft	40-200	7392.8	24642.7	4	49285.4
			Metal	150-350	24642.7	43124.8		
ZP62/500R Large Delta P (△P)	DN250 ~ DN350	100	Soft	40-200	9626.1	28878.2	4	77008.5
			Metal	150-350	38504.3	57756.4		

Air Consumption:

Model No.	Open Side Volume (Liters)	Close Side Volume (Liters)	Model No.	Open Side Volume (Liters)	Close Side Volume (Liters)
ZP62/150	0.371	1.22	ZP62/350	6.25	27.8
ZP62/200	0.942	2.91	ZP62/400	13.19	34.1
ZP62/250	2.21	6.51	ZP62/450	16.7	48.9
ZP62/300	4.59	12.88	ZP62/500	20.62	67.8

P.S.: Air consumption depends on supply pressure, stroke, volume, and cycle frequency, and is calculated as follows:
L/min = (Open Vol. + Close Vol.) x [(P + 1.013) / 1.013] x CPM

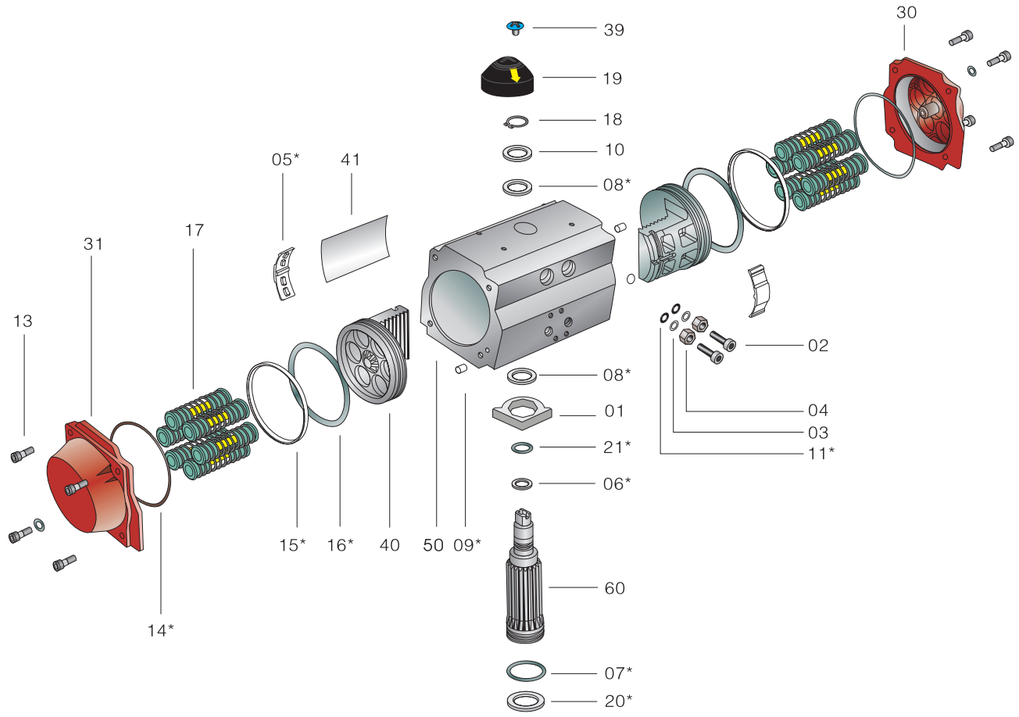


Dimensions:

Unit: mm

ACTUATOR		ZP62/150	ZP62/200	ZP62/250	ZP62/300	ZP62/350	ZP62/400
Travel mm		16	25	40	60	60	100
K	FC(D)	115	120	175	195	195	270
	FO(R)	95	95	135	1 35	135	170
Piston Area cm^2		176	314	490	706	960	1250
Thrust(Double-Acting) N		8660	15400	24000	34650	47300	61600
Thrust Single-Acting (N)	FC(D)	5196	9240	14430	20790	28290	49280
	FO(R)	3465	6160	9626	13860	18860	24640
W		190	250	310	375	430	480
H		350	378	480	590	630	768
H1		210	210	260	310	310	400
A		100	100	130	145	145	170
B		80	80	105	118	118	135
C		60	60	80	95	95	100
7		18	18	20	22	22	26
N-φD		4-φ11	4-φ11	4-φ13	4-φ15	4-φ15	4-φ17
M		M12x1.25	M12x1.25	M16x1.5	M20x1.5	M20x1.5	M24x1.5

Pneumatic Rack and Pinion Actuator (0-90° Rotary Adjustable)



Main Parts & Material

No.	Parts Name	Material	No.	Parts Name	Material
01	Left Side Cover	DC Aluminum	15	Bearing(Shaft-Bottom)	PA 46
02	Right Side Cover	DC Aluminum	16	Bearing(Piston Sealing)	PA 46
03	Body	Aluminum Extrusion	17	Push Bearing(Output Shaft)	PA 46
04	Piston	DC Aluminum	18	Shim(Output Shaft)	Stainless steel
05	Output Shaft	Carbon steel	19	Circlip	Stainless steel
06	Adjusting Cam	Stainless steel	20	Spring Cover Plate	Stainless steel
07	O-ring(Pistion)	NBR	21	Spring Washer	Stainless steel
08	O-ring(Pistion)	NBR	22	Shim	Stainless steel
09	O-ring(Shaft-top)	NBR	23	Screw	Stainless steel
10	O-ring(Adjusting Bolt)	NBR	24	Adjusting Bolt	Stainless steel
11	Cover Head(for compression)	NBR	25	Guide Block	PA 66 + 30%GF
12	Bearing(Piston)	FKM Composite	26	Spring Assembly	Alloy Spring Steel
13	Bearing(Shaft-top)	PA 46	27	Position Indicator	PP+30%GF
14	Bearing(Shaft-Bottom)	PA 46	28	Screw	Stainless steel

Pneumatic Rack and Pinion Actuator (0-90° Rotary Adjustable)

Overview

The ZP7100 Series Pneumatic Rack and Pinion Actuator is an execution device that utilizes air supply pressure to drive the opening, closing, or adjustment of valves, commonly referred to as an "air head." Its working principle involves using compressed air to propel the piston for linear motion, which is then converted into rotary motion via a rack and pinion transmission mechanism, thereby actuating the valve's open and close operations. The actuator is primarily constructed from key components such as the cylinder

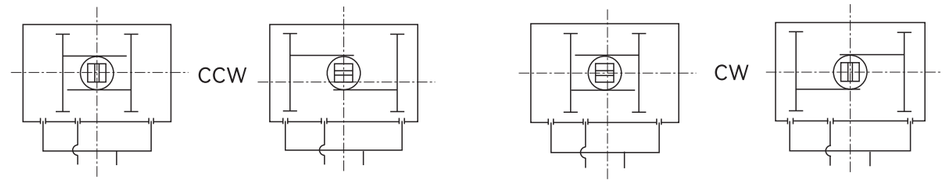
Structural Principle

Compressed air enters the cylinder and drives the piston, converting the pressure energy of the compressed air into mechanical energy through the piston's movement. When mechanical action is required, the intake valve opens, allowing compressed air to enter the cylinder and propel the piston. Once the piston reaches a specific position, the exhaust valve opens to discharge the spent air from the cylinder. The motion of the piston is transmitted through mechanisms such as connecting rods and gears to the mechanical equipment, completing various actions. In rack and pinion actuators, the linear motion of the piston is converted into

Working Principle

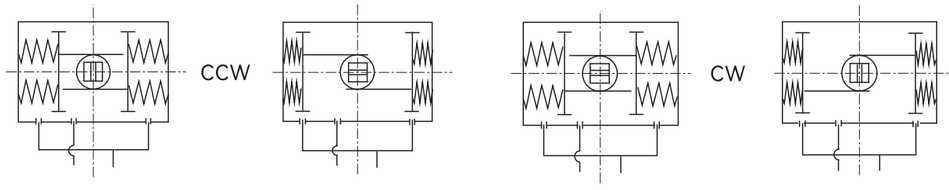
Double-Acting Type (DA)

- Port A supply, Port B exhaust: Compressed air pushes the piston outward, causing the actuator output shaft to rotate counterclockwise (0° → 90°).
- Port B supply, Port A exhaust: Compressed air pushes the piston inward, causing the actuatoroutput shaft to rotate clockwise (90° → 0°).
- Port A supply, Port B exhaust: Compressed air pushes the piston outward, causing the actuator output shaft to rotate clockwise (90° → 0°).
- Port B supply, Port A exhaust: Compressed air pushes the piston inward, causing the actuator output shaft to rotate counterclockwise (0° → 90°).



Single-Acting (SR)

- Port A supply, Port B exhaust: Compressed air overcomes the spring force, pushing the piston outward and causing the actuator output shaft to rotate counterclockwise (0° → 90°), Upon air supply loss, the spring force pushes the piston inward, causing the output shaft to rotate clockwise (90° → 0°) with exhaust through Port A.
- Port A supply, Port B exhaust: Compressed air overcomes the spring force, pushing the piston outward and causing the actuator output shaft to rotate clockwise (90° → 0°). Upon air supply loss, the spring force pushes the piston inward, causing the output shaft to rotate counterclockwise (0° → 90°) with exhaust through Port A.



Pneumatic Rack and Pinion Actuator (0-90° Rotary Adjustable)

Selection Guide:

- **A safety factor of 20- 30% shall be considered for double-acting actuators.**
- **A safety factor of 30- 50% shall be considered for single-acting actuators. When configuring the actuator, the output force at 0°(spring force) andthe output force at 90° (with 5 bar air supply) shall be used as the reference.**

Operating Conditions

- Medium: Compressed air, non-corrosive gases, and oil;
- Operating Temperature: Standard Type (NBR O-Rings): -20℃ to +80℃
  Low-Temperature Type (Low-Temperature NBR O-Rings): -35℃ to +80℃
  High-Temperature Type (FKM O-Rings): -15℃ to +150℃
- Stroke Adjustment: The piston has an adjustable range of + 4° at both end positions.
- Lubrication: Under normal operating conditions, no lubricant needs to be added.
- Maximum Operating Pressure: The input air pressure shall not exceed 10 bar.

Main Parts & Material

Parts Name	Material	Parts Name	Material
Body	DC Aluminum, Stainless steel	Adjusting Cam	Stainless steel
Side Cover	DC Aluminum, Stainless steel	O-ring	NBR
Piston	DC Aluminum	Spring Assembly	60Si2MnA

Air Consumption:

Model No.	Open Side Volume (Liters)	Close Side Volume (Liters)	Model No.	Open Side Volume (Liters)	Close Side Volume (Liters)
ZP71/AT52DA	0.11	0.14	ZP71/AT160DA	3.65	5.03
ZP71/AT63DA	0.2	0.23	ZP71/AT190DA	5.9	7.9
ZP71/AT75DA	0.29	0.38	ZP71/AT210DA	7.4	9.7
ZP71/AT83DA	0.41	0.55	ZP71/AT240DA	10.7	14.3
ZP71/AT92DA	0.94	1.18	ZP71/AT270DA	16.9	22.5
ZP71/AT105DA	0.94	1.18	ZP71/AT300DA	23.8	29.7
ZP71/AT125DA	1.47	1.85	ZP71/AT350DA	35.1	46.3
ZP71/AT140DA	2.43	3.2	ZP71/AT400DA	52.6	56

P.S.: Air consumption depends on supply pressure, stroke, volume, and cycle frequency, and is calculated as follows:
L/min = (Open Vol. + Close Vol.) × [(P + 1.013) / 1.013] × CPM

Pneumatic Rack and Pinion Actuator (0-90° Rotary Adjustable)

Opening/Closing Time

Double-Acting Actuator (Air Supply Pressure: 5 Bar)

Size	52	63	75	83	92	105	125	140	160	190	210	240	270	300	350	400
0 ~ 90	0.6	0.7	0.8	0.9	1	1.5	2	2.5	4	5	5	6	8	12	14	15
90~0	0.6	0.7	0.7	0.8	1	1.5	2	2.5	3	4	4	6	8	12	14	15

Single-Acting Actuator (Air Supply Pressure: 5 Bar)

Size	52	63	75	83	92	105	125	140	160	190	210	240	270	300	350	400
0 ~ 90	2	2	2	2.5	3	3	4	4	4	5	6	12	15	18	20	25
90 ~ 0	0.5	1	1	1	1	1	1	1	1.5	3	2	4	6	8	10	12

Double-Acting Actuator Torque Chart

Model No.	Air Supply Pressure (Bar)				
	4	4.5	5	5.5	6
ZP71/AT52DA	16.1	18.1	20.2	22.2	24.2
ZP71/AT63DA	28.4	32	35.5	39.1	42.6
ZP71/AT75DA	40.3	45.3	50.3	55.4	60.4
ZP71/AT83DA	61.6	69.4	77.1	84.8	92.5
ZP71/AT92DA	90.9	102.3	113.6	125	136.3
ZP71/AT105DA	131.6	148	164.4	180.9	197.3
ZP71/AT125DA	205	231	256	282	308
ZP71/AT140DA	351	395	439	482	526
ZP71/AT160DA	535	601	668	735	802
ZP71/AT190DA	861	969	1077	1185	1292
ZP71/AT210DA	1052	1184	1316	1447	1578
ZP71/AT240DA	1546	1740	1933	2126	2320
ZP71/AT270DA	2349	2642	2936	3239	3523
ZP71/AT300DA	3052	3434	3815	4197	4578
ZP71/AT350DA	4570	5141	5712	6283	6854
ZP71/AT400DA	6511	7325	8139	8953	9767

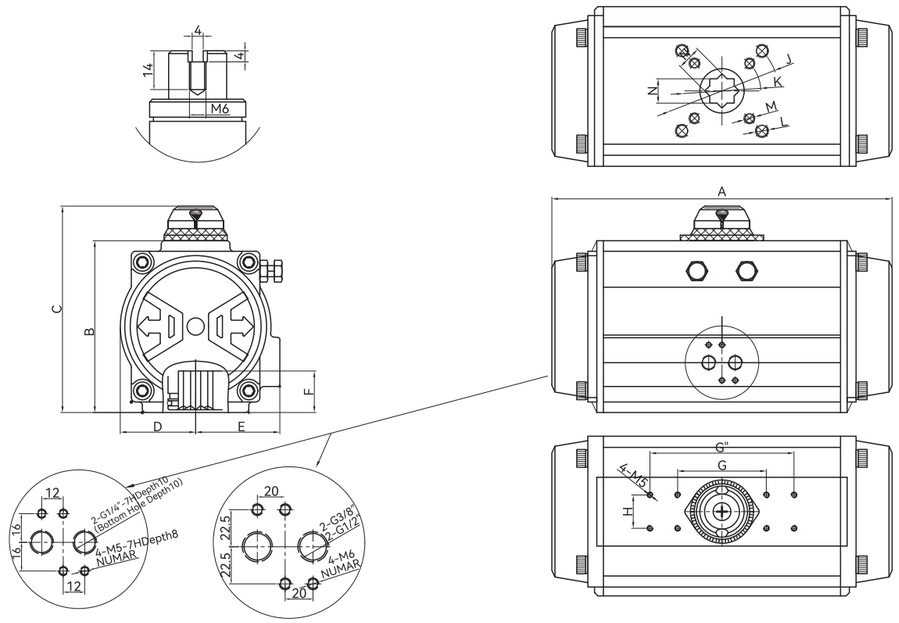
Pneumatic Rack and Pinion Actuator (0-90° Rotary Adjustable)

Single-Acting Actuator Torque Chart

Model No.	Quantity of Spring	Spring Output Force		Air Supply Pressure(Bar)					
				4		5		6	
		90	0	0	90	0	90	0	90
ZP71/AT52SR	K9	11.2	7.1	8.9	4.8	12.9	8.8	16.9	12.8
	K10	12.4	7.9	8.1	3.6	12.1	7.6	16.1	11.6
ZP71/AT63SR	K9	18.9	12.3	16.6	10.0	23.8	17.2	31.1	24.5
	K10	20.9	13.7	15.2	8.0	22.4	15.2	29.7	22.5
ZP71/AT75SR	K9	27	18	22	13	32	23	42	33
	K10	30	20	20	10	30	20	40	30
ZP71/AT83SR	K9	41.4	27.9	34.1	20.6	50.1	36.6	65.1	51.6
	K10	46	31	31	16	47	32	62	47
ZP71/AT92SR	K9	59.3	41.4	48.7	30.8	71.2	53.3	93.8	75.9
	K10	65.9	46	44.1	24.2	66.6	46.7	89.2	69.3
ZP71/AT105SR	K9	88.7	57.2	73.2	41.6	105.8	74.2	138.4	106.8
	K10	98.6	63.5	66.8	31.7	99.4	64.3	132	96.9
ZP71/AT125SR	K9	140	90	110	59.6	160.8	110.4	211	160.6
	K10	156	100	100	44	150.8	94.8	201	145
ZP71/AT140SR	K9	232	155	192.2	114.87	279.2	201.8	366.2	288.8
	K10	258	172	175	89	262	176	349	263
ZP71/AT160SR	K9	347	251	27.9	182.5	410.9	315.5	542.9	447.5
	K10	385	279	250	144	383	277	515	409
ZP71/AT190SR	K9	576	341	511.9	277	725.9	491	938.9	704
	K10	640	379	474	213	688	427	901	640
ZP71/AT210SR	K9	720	469	595.1	344	861.1	610	1127.1	876
	K10	800	521	543	264	809	530	1075	796
ZP71/AT240SR	K9	1053	700	838.8	486	1223.8	871	1608.8	1256
	K10	1170	778	761	369	1146	754	1531	1189
ZP71/AT270SR	K9	1638	909	1431	702	2015	1286	2601	1872
	K10	1820	1010	1330	520	1914	1104	2500	1690
ZP71/AT300SR	K9	2061	1305	1750	994	2514	1758	3277	2521
	K10	290	1450	1605	765	2369	1529	3132	2292
ZP71/AT350SR	K9	3065	2111	2456.6	1503.5	3598.6	2645.5	4740.6	3787.5
	K10	3405	2346	2222	1163	3364	2305	4506	3447
ZP71/AT400SR	K9	3704	2362	4134	2793	5758	4417	7382	6041
	K10	4115	2624	3872	2381	5496	4005	7120	5629

No: The output force values in the table correspond to the actuator's output force at the specified air supply pressure (bar). When configuring the actuator, the actuator output shall be determined by multiplying the valve torque by a factor of 1.3 (based on the minimum value between the spring torque at 0° and the air torque at 5 bar and 90°).

Pneumatic Rack and Pinion Actuator (0-90° Rotary Adjustable)



Outline and Mounting Dimensions

Unit: mm

Model No.	A	B	C	D	E	F	G"	G	H	J	K	L	M	N	Air Port
ZP71/AT42SR	122	55	75	24	33	9		50	25	F05 Φ50	F03 Φ36	M6×9	M5×8	9×9	G 1/4″
ZP71/AT52SR	150	72	92	30	36.5	12		80	30	F05 Φ50	F03 Φ36	M6×9	M5×8	11×11	G 1/4″
ZP71/AT63SR	171	86.5	106.5	35.5	47.5	14		80	30	F07 Φ70	F05 Φ50	M8×13	M6×10	14×14	G 1/4″
ZP71/AT75SR	183	98	118	42	53.5	18		80	30	F07 Φ70	F05 Φ50	M8×13	M6×10	14×14	G 1/4″
ZP71/AT83SR	218	108	128	46.5	57.5	18		80	30	F07 Φ70	F05 Φ50	M8×13	M6×10	17×17	G 1/4″
ZP71/AT92SR	253	117	137	51	59.5	21		80	30	F07 Φ70	F05 Φ50	M8×13	M6×10	17×17	G 1/4″
ZP71/AT105SR	278	133	153	57.5	67	25		80	30	F10 Φ102	F07 Φ70	M10×16	M8×13	22×22	G 1/4″
ZP71/AT125SR	308	155	185	63	76	27	130	80	30	F10 Φ102	F07 Φ70	M10×16	M8×13	22×22	G 1/4″
ZP71/AT140SR	402	173	203	75.5	81	34	130	80	30	F12 Φ125	F10 Φ102	M12×19	M10×16	27×27	G 1/4″
ZP71/AT160SR	460	195	225	87	88	34	130	80	30	F12 Φ125	F10 Φ102	M12×19	M10×16	27×27	G 1/4″
ZP71/AT190SR	513	230	260	103	108	40	130		30	F14 Φ140	F10 Φ102	M16×23	M10×19	36×36	G 1/4″
ZP71/AT210SR	561	254	284	114	120	40	130		30	F14 Φ140		M16×23		36×36	G 1/4″
ZP71/AT240SR	685	289	319	130	130	55	130		30	F16 Φ165		M20×25		46×46	G 3/8″
ZP71/AT270SR	718	304	356	147	147	55	130		30	F16 Φ165		M20×25		46×46	G 3/8″
ZP71/AT300SR	777	354	384	103	108	60	130		30	F16 Φ165		M20×25		46×46	G 1/2″
ZP71/AT350SR	916	410	440	190	195	60	130		30	F25 Φ254	F16 Φ165	M20×25	M16×24	46×46	G 1/2″
ZP71/AT400SR	930	466	508	260	260	60	130		30	F25 Φ254	F16 Φ165	M20×25	M16×24	55×55	G 1/2″