



Z Series Pneumatic Cylinder Actuator

Summary

Z series Linear actuator is a pneumatic piston type Linear actuator which is used for the valve of linear switch, such as knife gate valve, gate valve, globe valve, globe control valve, etc... according to the condition of air source failure, ZSL double acting actuator shall be selected to keep the air source failure in place, and ZDL single acting actuator shall be selected to reset the air source failure. The product integrates the international advanced design technology and material technology, and has the advantages of reliable operation, long service life, large output thrust, wide adjustable range, high protection level and economic benefits.

Design Features

1、Cylinder Head

The material of cylinder head $\leq \phi 250$ is made of high-strength aluminum alloy die-casting and the material of cylinder head $\geq \phi 300$ is made of nodular cast iron.

2、Cylinder

The cylinder is made of high-strength aluminum alloy (cylinder diameter $\leq \phi 300$) and the inner wall of the cylinder is coated with Teflon by mirror polishing. The friction coefficient is small without oil lubrication and it has super wear-resistance and corrosion-resistance. The cylinder diameter $> \phi 300$, the material is Q235-A, the inner wall of the cylinder is plated with hard chromium, the friction coefficient is small without oil lubrication and it has super wear-resistance and corrosion-resistance.

3、Piston

The piston $< \phi 300$ is made of high-strength aluminum alloy and the piston $> \phi 300$ is made of nodular cast iron with high strength. The outer circle of the piston is located by the PTFE guide belt and sealed by two O-rings. It has good sealing performance and long service life.

4、Bearing

All drive bearing parts in the actuator are equipped with imported boundary bearings. Special engineering plastics are sintered on the drive part of the bearing, completely eliminating the phenomenon of shaft undercutting. The transmission efficiency and service life are improved.

5.Regulating Travel

There is a standard adjusting bolt at the end of the cylinder head of Z series actuator, which can adjust the switch stroke conveniently.

6、High level of Protection

Z series actuator adopts IP67 design, dust and water proof.

Major Performance Parameters

1. Medium: compressed air, non corrosive gas
2. Acting Type: Double Acting and Single Acting
3. Air Supply: Double Acting 4~7bar, Single Acting 5~7bar
4. Working Temperature: $-20^{\circ}\text{C} \sim +80^{\circ}\text{C}$
5. Stroke adjustment: the switch stroke can be adjusted by adjusting the bolt
6. Lubrication: under normal working conditions, no lubricant needs to be added
7. Installation: suitable for indoor or outdoor installation
8. Single acting output thrust can be customized according to customer requirements
9. Double acting output thrust at 0.5MPa air source



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Cylinder Diameter	Ø100	Ø125	Ø160	Ø200	Ø250	Ø300	Ø350	Ø400	Ø500	Ø600
Output Thrust (N)	3100	4900	8000	12500	19600	28000	38400	50000	78500	113000

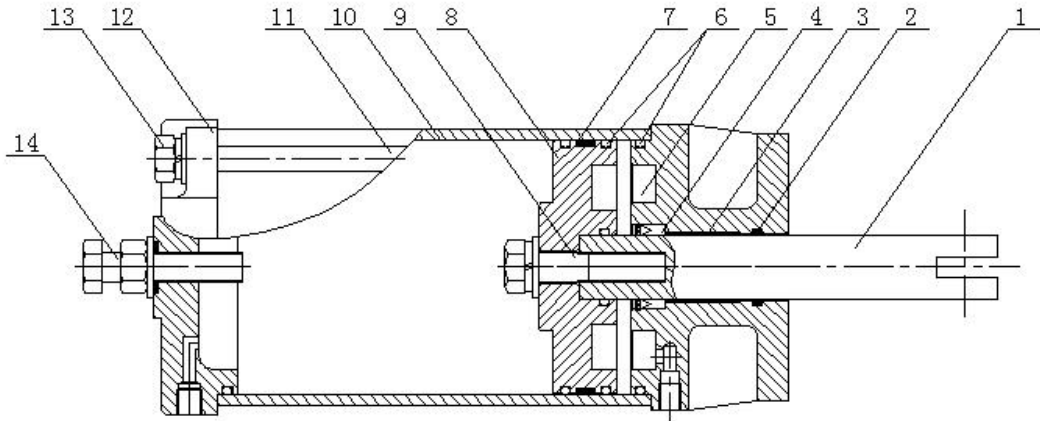
Selection procedure of double acting actuator

1. Determine the thrust required for the valve;
2. The thrust required by the valve multiplied by the safety factor of (1.3-1.5);
3. According to the air source pressure and the thrust obtained in step 2, check the thrust table to get the corresponding thrust, and confirm the actuator model;



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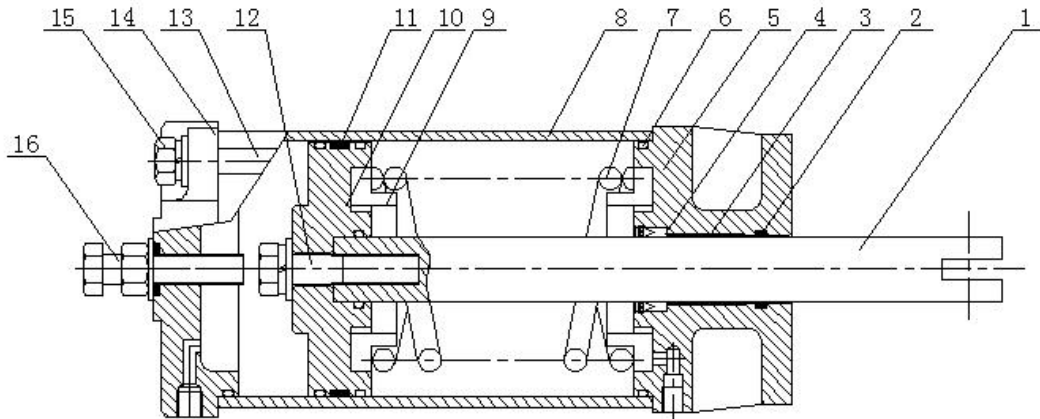
Major Parts Material (ZSL Double Acting)



No	Name	Amount	Material
1	Cylinder Shaft	1	45+HCr
2	O-ring	2	NBR
3	Bearing	1	304+PTFE
4	Y-ring	1	Nylon Rubber
5	Lower Cylinder Housing	1	Aluminium Alloy/Ductile Iron
6	O-ring	4	NBR
7	Guide Belt	1	Carbon PTFE
8	Piston	1	Aluminium Alloy/Ductile Iron
9	Hexagon bolt	1	45+Cr
10	Cylinder	1	Aluminium Alloy/Q235-A
11	Two-start Worm	4	Q235-A+Zn
12	Upper Cylinder Housing	1	Aluminium Alloy/Ductile Iron
13	Hexagon nut	4	304
14	Regulating Bolt	1	304



**Major Parts Material
(ZDL Single Acting)**

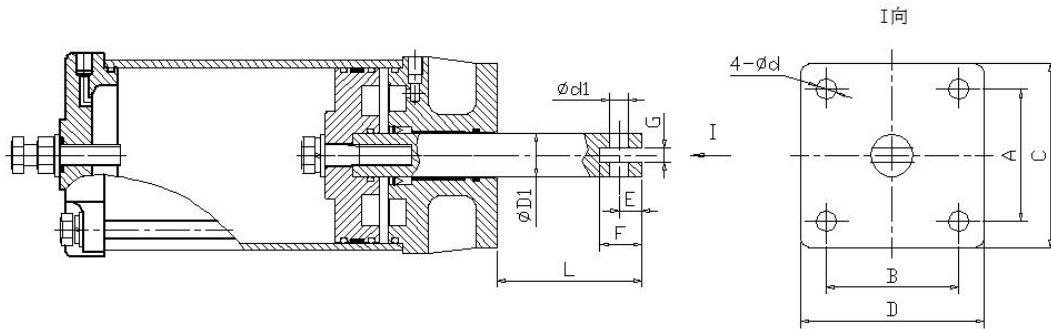


No	Name	Amount	Material
1	Cylinder Shaft	1	45+Cr
2	O-ring	2	NBR
3	Bearing	1	304+PTFE
4	Y-ring	1	Nylon Rubber
5	Lower Cylinder Housing	1	Aluminium Alloy/Ductile Iron
6	O-ring	4	NBR
7	Spring	1	60Si2MnA
8	Cylinder	1	Aluminium Alloy/Q235-A
9	Spring Washer	1	Q235-A+Zn
10	Piston	1	Aluminium Alloy/Ductile Iron
11	Guide Belt	1	Carbon PTFE
12	Hexagon bolt	1	45+Cr
13	Two-start Worm	4	Q235-A+Zn
14	Upper Cylinder Housing	1	Aluminium Alloy/Ductile Iron
15	Hexagon nut	4	304
16	Regulating Bolt	1	304



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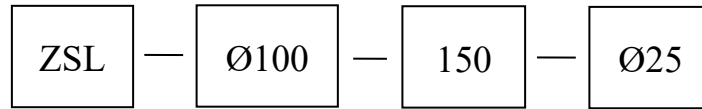
Installation Connection Size



型号	A	B	C	D	E	F	G	Ød	Ød1	ØD1	L
ZSLØ100	65	75	105	105	15	32	10	Ø12	Ø10	Ø25	50
ZSLØ125	75	75	125	125	15	32	10	Ø14	Ø12	Ø30	50
ZSLØ160	100	100	135	135	18	37	12	Ø18	Ø12	Ø35	110
ZSLØ200	100	100	135	135	20	42	14	Ø18	Ø14	Ø40	120
ZSLØ250	145	108	200	170	20	42	14	Ø22	Ø14	Ø40	120
ZSLØ300	140	140	190	190	22	45	16	Ø24	Ø16	Ø45	170
ZSLØ350	170	145	230	210	27	55	20	Ø24	Ø20	Ø60	200
ZSLØ400	165	155	220	210	27	55	20	Ø30	Ø20	Ø60	200
ZSLØ500	180	152	230	210	27	55	22	Ø30	Ø20	Ø70	200
ZSLØ600	180	180	250	250	30	63	22	Ø33	Ø25	Ø70	220



Actuator Model Decoding



First Actuator Type

Code	ZSL	ZDLK	ZDLB
Meaning	Pneumatic Double Acting	Pneumatic Single Acting(FC)	Pneumatic Single Acting(FO)

Second Cylinder Diameter

Code	Ø100	Ø125	Ø160	Ø200	Ø250	Ø300	Ø350	Ø400	Ø500	Ø600
Meaning	Ø100	Ø125	Ø160	Ø200	Ø250	Ø300	Ø350	Ø400	Ø500	Ø600

Third Cylinder Length

Code	100~800
Meaning	Cylinder Length (customized design)

Fourth Cylinder Shaft Diameter

Code	Ø25	Ø30	Ø35	Ø40	Ø45	Ø60	Ø70
Meaning	Ø25	Ø30	Ø35	Ø40	Ø45	Ø60	Ø70



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