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Delan 德兰调节阀
DELAN GD SERIES

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Delan

GD SERIES
Pneumatic Piston Actuator

Energy Fluid Technology Solution

DELAN ENERGY SCIENCE&TECHNOLOGY CORPORATION

Pneumatic Piston Actuator

INTRODUCTION

This series is a pneumatic piston type actuator with high output and performance, used in combination with straight stroke control valves, including globe valves, cage valves, gate valves, etc. The design of this series of actuators enables reliable switching or adjustment control of the control valve.

This series of actuators is divided into two types: single action and double action. The single action actuator is divided into two types: direct action (GD-Z) and negative action (GD-F), and is a spring loaded cylinder type actuator; The double action (GD-D) actuator is a cylinder type actuator without spring loading and controlled by air pressure, which positions the valve core based on the constantly changing pneumatic loading pressure on the cylinder.

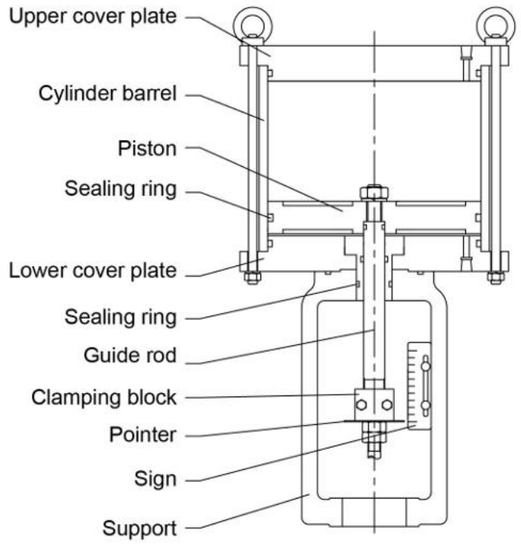
Delan®
德兰调节阀

STANDARD SPECIFICATION

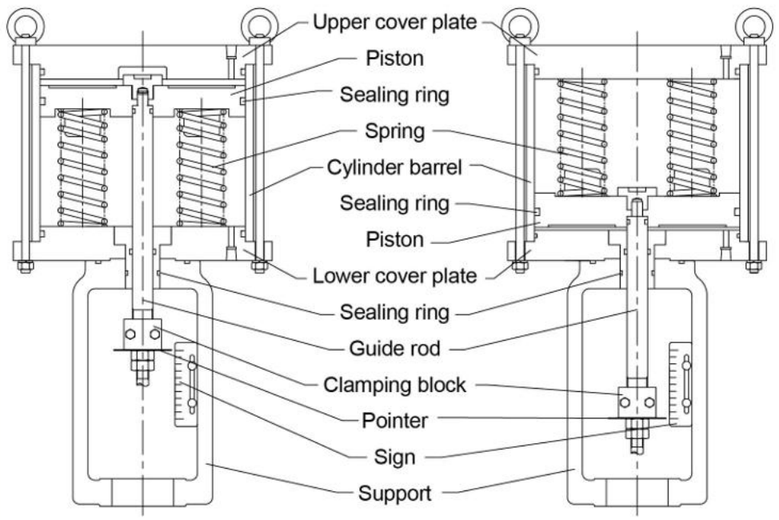
Series		GD
Specification		20 / 30 / 31 / 40 / 41 / 42 / 43 / 50
Output Mode		Straight stroke
Action		Double action - GD-D Single action - GD-Z(Direct action) / GD-F(Reverse action)
Maximum Output Thrust		See table 1
Stroke		See table 1
Air Supply Pressure		600Kpa
Piping interface		See pages 7-9
Environment Temperature		Standard type: -40°C~82°C Special type (optional): -18°C~149°C, -54°C~149°C
Spring Range		
Material of Main Parts	Standard type	Upper and lower cover plates: Steel Sealing ring: fluorine rubber O-ring: nitrile rubber Piston: Steel Stroke sign: stainless steel Pointer: Stainless steel Actuator spring: spring steel Column: Steel Guide rod of actuator: Steel Clamping block: galvanized steel surface Support: cast iron Cylinder: Steel Hand wheel: ductile iron Guide rod of actuator: galvanized steel surface
	Special type	Seal ring, O-ring: fluorine rubber (-18°C~149°C), silicone synthetic rubber (-54°C~149°C) Upper and lower cover: stainless steel Column: stainless steel Piston: stainless steel Cylinder: stainless steel
Coating Color		Orange
Attachments		Positioner, air filter regulator, limit switch, solenoid valve, blocking valve, amplifier, etc
Optional Devices		Manual operation mechanism, special air piping and special gas joint, high temperature environment use, low temperature environment use, salt corrosion prevention type, designated coating color, etc

STRUCTURE

Double action



Single action



GD-Z
(Direct action-air close type)

GD-F
(Reverse action-air open type)

TABLE1 OUTPUT THRUST, STROKE AND WEIGHT

Actuator Series			Rated travel	Effective cylinder area	Cylinder diameter	Close thrust	Spring pressure	Air pressure	Approximate weight Kg		
Type	Series	Specification	mm	cm^2	mm	Kgf	Kpa	Kpa	Without handweel	Top handweel	Side handweel
GD-Z	22	20	38	380	220	1520	20～100	600	32	45	65
	33	30	51	706	300	2824			56	64	72
		31	76						61	69	77
	44	40	76	1385	420	5540			92	105	123
		41	102						98	111	129
		42	127						103	116	134
		43	200						112	125	143
	55	50	200	2289	550	9156			123	142	156
GD-Z-T	22	20	38	380	220	1216	80～200	600	33	46	66
	33	30	51	706	300	2259			57	65	73
		31	76						62	69	78
	44	40	76	1385	420	4432			93	106	124
		41	102						99	112	130
		42	127						105	118	136
		43	200						114	127	145
	55	50	200	2289	550	7325			125	144	158
GD-F	22	20	38	380	220	760	200～300	600	33	46	67
	33	30	51	706	300	1412			58	65	73
		31	76						64	71	79
	44	40	76	1385	420	1939	140～260		93	107	125
		41	102						99	113	131
		42	127						106	120	138
		43	200						117	131	149
	55	50	200	2289	550	3204			125	144	159
GD-D	22	20	38	380	220	1900	Without spring	600	30	43	63
	33	30	51	706	300	3530			54	65	70
		31	76						57	68	73
	44	40	76	1385	420	6925			90	103	121
		41	102						94	107	125
		42	127						97	110	128
		43	200						104	117	135
	55	50	200	2289	550	11445			115	137	148

TOP/
SIDE MOUNTED HANDWHEELS

The top mounted handwheel on the GD type actuator can be used to set the travel limit in the upward direction.
The handwheel of the GD-Z type actuator rotates clockwise to cause the actuator push rod to move downward and compress the spring; When the handwheel rotates counterclockwise, the action of the spring pushes the push rod back. For GD-F actuators, counterclockwise rotation will move the push rod upwards; When rotating clockwise, the action of the spring pushes the push rod back down.
The side-mounted handwheel on the GD actuator is positioned on one side of the support. Through worm gear transmission,handwheel drive can also be used as a travel limiter.

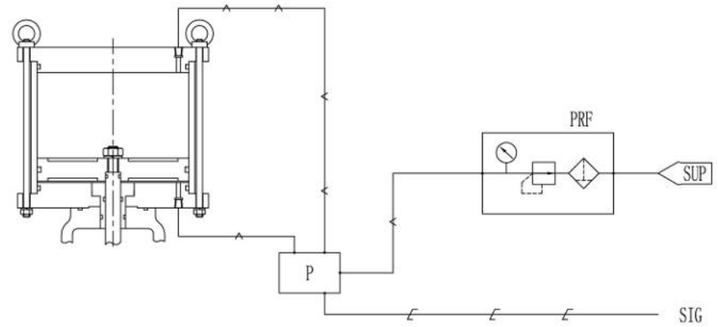
TYPE SPECIFICATION

Actuator mechanism form	GD	Mode of action Piston type
Actuator specification	GD	20、30、31、40、41、42、43、50
Actuator code	Z	Direct action
	F	Reverse action
	D	Double action
Handle mechanism	S	Top handwheel
	C	Side handwheel
	无	Without handwheel
Spring pressure range	Standard type	20~100kpa(Direct)
		140~260kpa(Reverse)
		200~300kpa(Reverse)
	Special type	80~200kpa(Direct)

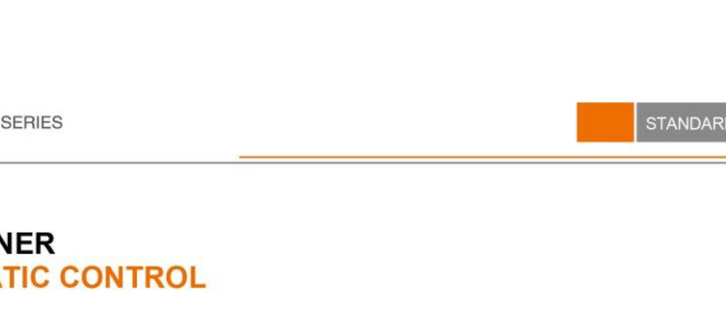
Example: tpye: GD43-Z-S
Direct acting actuator, 43 cylinder, with top handwheel,spring pressure range 20~100Kpa.

POSITIONER
AUTOMATIC CONTROL

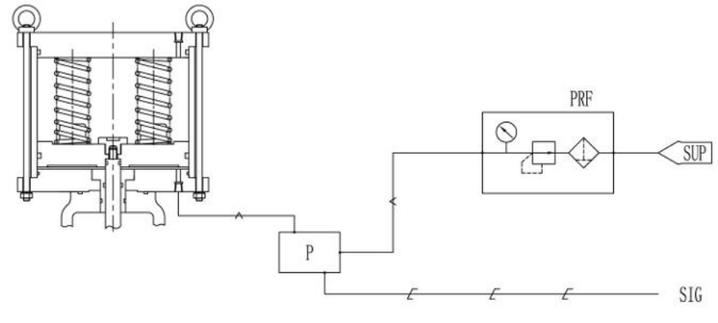
Double action



Single action - Direct action

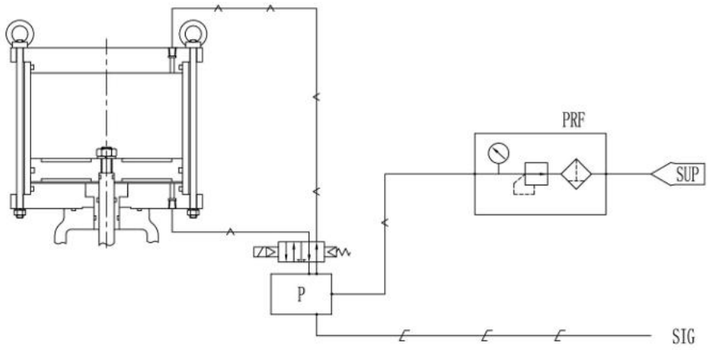


Single action - Reverse action



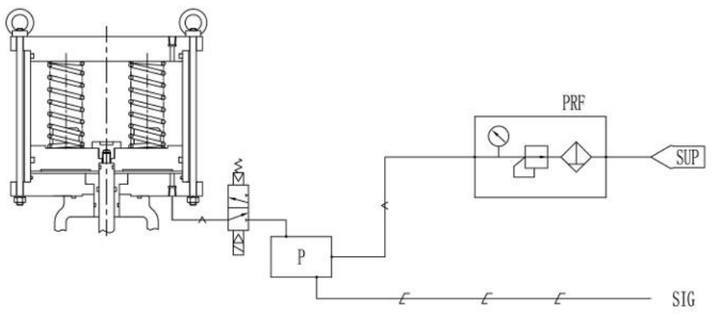
POSITIONER SOLENOID VALVE
AUTOMATIC CONTROL

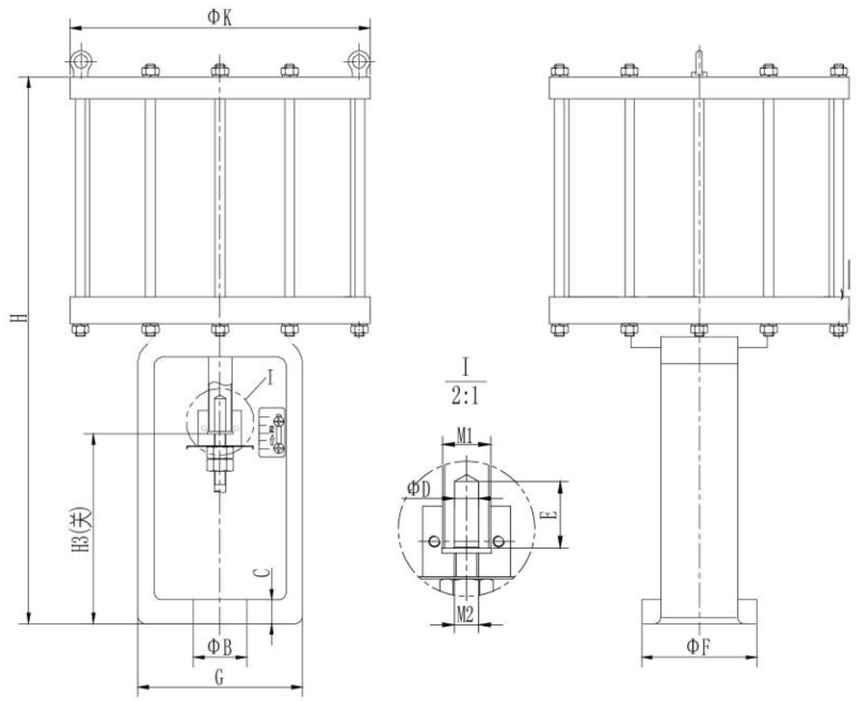
Double action



Single action - Direct action

Single action - Reverse action



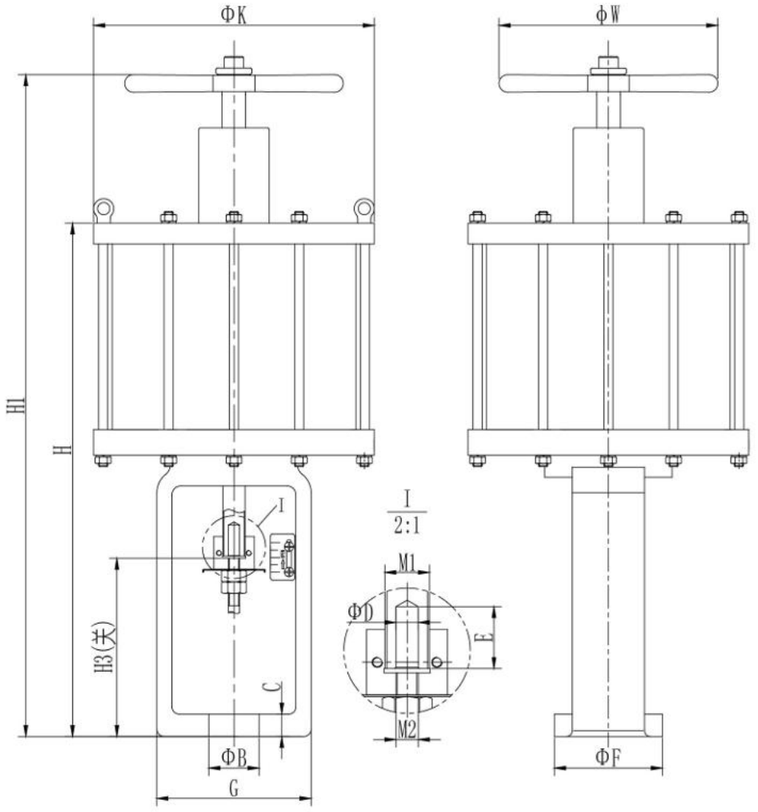


GD type without handwheel

Dimension Unit:mm

Series	Specification	Rated Stroke	φB	C	φD	E	φF	G	H	H3 (close)	φK	Tracheal interface
22	20	38	71	24	13.5	15	138	170	429	123	275	1/4"NPT
33	30	51	90	35	20	15	160	204	630	172	370	1/2"NPT
	31	76	90	35	20	15	160	204	889	172	370	1/2"NPT
44	40	76	90	35	20	15	150	246	688	186	500	3/4"NPT
	41	102	90	35	20	15	160	246	893	186	500	3/4"NPT
	42	127	90	35	20	15	160	246	903	186	500	3/4"NPT
55	50	127	90	35	20	15	160	260	1400	186	660	3/4"NPT

Note: 1.M1 thread size: GD22 series is 3/4"-16UNF; GD33, GD44, GD55 series are 1-1/8"-12UNF;
2.M2 thread size: GD22 series is 1/2"-20UNF; GD33, GD44, GD55 series are 3/4"-16UNF.

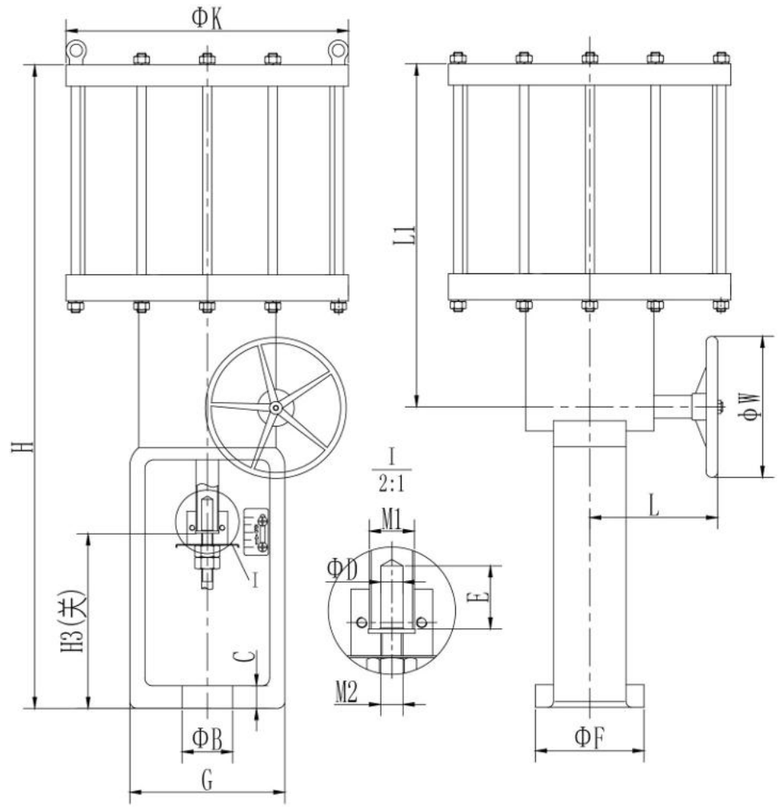


GD type with top handwheel

Dimension Unit:mm

Series	Specification	Rated Stroke	φB	C	φD	E	φF	G	H	H1	H3 (close)	φK	φW	Tracheal interface
22	20	38	71	24	13.5	15	138	170	429	612	123	275	250	1/4"NPT
33	30	51	90	35	20	15	160	204	630	840	172	370	280	1/2"NPT
	31	76	90	35	20	15	160	204	889	1090	172	370	280	1/2"NPT
44	40	76	90	35	20	15	150	246	688	985	186	500	400	3/4"NPT
	41	102	90	35	20	15	160	246	893	1250	186	500	400	3/4"NPT
	42	127	90	35	20	15	160	246	903	1355	186	500	400	3/4"NPT
55	50	127	90	35	20	15	160	260	1400	1960	186	660	500	3/4"NPT

Note: 1.M1 thread size: GD22 series is 3/4"-16UNF; GD33, GD44, GD55 series are 1-1/8"-12UNF;
2.M2 thread size: GD22 series is 1/2"-20UNF; GD33, GD44, GD55 series are 3/4"-16UNF.



GD type with side handwheel

Dimension Unit:mm

Series	Specification	Rated Stroke	φB	C	φD	E	φF	G	H	H3 (close)	φK	L	L1	φW	Tracheal interface
22	20	38	71	24	13.5	15	138	170	635	123	275	323	200	200	1/4"NPT
33	30	51	90	35	20	15	160	204	906	172	370	442	220	200	1/2"NPT
	31	76	90	35	20	15	160	204	1165	172	370	701	220	200	1/2"NPT
44	40	76	90	35	20	15	150	246	1028	186	500	593	250	300	3/4"NPT
	41	102	90	35	20	15	160	246	1223	186	500	798	250	300	3/4"NPT
	42	127	90	35	20	15	160	246	1233	186	500	995	280	300	3/4"NPT
55	50	127	90	35	20	15	160	260	1606	186	660	744	280	300	3/4"NPT

Note: 1. M1 thread size: GD22 series is 3/4 "-16UNF; GD33, GD44, GD55 series are 1-1/8" -12UNF;
2. M2 thread size: GD22 series is 1/2 "-20UNF; GD33, GD44, GD55 series are 3/4" -16UNF;
3. Air supply piping interface size: GD22 series is 1/4NPT , GD33 series is 1/2NPT, GD44 and GD55 series are 3/4NPT.