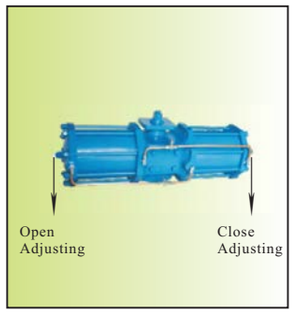
QW Series Quarter Turn Pneumatic Actuator

Features

1. Large output torque, stable and reliable action, suitable for all kinds of plug valve
2. Cylinder internal and piston rod chrome plated, outstanding durable abrasion
3. Air supply pressure: 3~8bar
4. Ambient temp: Normal type---NBR O Ring: -20~80 ℃(code: C)
   High temp---VITON O Ring: -20~180℃(code: G)
   Low temp---Silicone Rubber O Ring: -40～60℃ (code: D)
5. Manual operation device optional
6. Limit switch, travel switch, sensor switch, etc. can be installed on the top
7. Can realize ±5°fine tuning fully open/close by modulating bolt

(Shown as the diagram: left modulating bolt adjusts open, right modulating bolt adjusts close）



QWS-180

Open/Close Time

Unit: S

Air Tube Diameter mm	8	10	10	12	12	12	12	20	20	25	25
Double Acting Model	QWS-140	QWS-180	QWS-200	QWS-250	QWS-280	QWS-350	QWS-400	QWS-500	QWS-600	QWS-700	QWS-800
Open/Close Time	2	3	5	8	12	20	30	45	55	75	90
Single Acting Model	QWD-140	QWD-180	QWD-200	QWD-250	QWD-280	QWD-350	QWD-400	QWD-500	QWD-600	QWD-700	QWD-800
Pneumatic action Time	4	5	11	12	18	38	45	62	75	96	105
Spring Return Time	2	3	6	6	12	18	28	40	52	73	84

Note: The data above is 20℃, air supply pressure is 0.5Mpa with empty load, just for reference.

Cylinder Volume

Unit: L

Model	QWS-140	QWS-180	QWS-200	QWS-250	QWS-280	QWS-350	QWS-400	QWS-500	QWS-600	QWS-700	QWS-800
Cylinder Volume A+B	5.8	11.7	24.4	43.9	62	114	149	280	404	673	880
Model	QWD-140	QWD-180	QWD-200	QWD-250	QWD-280	QWD-350	QWD-400	QWD-500	QWD-600	QWD-700	QWD-800
Cylinder Volume B	3.0	5.8	12.2	21.9	31	56.9	74.6	140	202	336	440

Note: The data above is the result from ambient 20℃, and the calculation might exist deviance .

Cylinder Air Consumption Calculation

Double acting cylinder calculation formula $V=(A+B)\times\frac{P+101.3}{101.3}\times n$

Single acting cylinder calculation formula $V=B\times\frac{P+101.3}{101.3}\times n$

V:air consumption L/min

P:air source pressure KPa

n:open/close times/min

A、B：cylinder volume（see table above）

1MPa=1000KPa

QW Series Quarter Turn Pneumatic Actuator

QW Series Double Acting Actuator Type Selection Configuration Table
[the torque shadowed in the table above is for prior standard selection]

Data / Model	Air Supply Pressure and Output Torque (N·m)						Weight (Kg)	Soft Seal Ball Valve DN	Soft Seal Butterfly Valve DN	Hard Seal Ball Valve DN	Hard Seal Butterfly Valve DN
	3bar	4bar	5bar	6bar	7bar	8bar					
QWS-140	470	620	770	930	1080	1160	48	80～150	300～350	125	200～250
QWS-180	950	1270	1590	1750	2040	2230	87	200～250	400～450	150～200	300～400
QWS-200	1767	2356	2945	3534	4123	4712	152	250～350	500～600	250～300	450～500
QWS-250	3191	4255	5319	6383	7447	8511	237	400～450	600～700	350	500～600
QWS-280	4502	6003	7504	9005	10506	12007	341	450～500	700～800	400	600～700
QWS-350	8360	11147	13933	16720	19507	22294	587	600	900～1000	450～500	800～900
QWS-400	11011	14681	18351	22022	25692	29362	647	700	1000～1200	600	900～1000
QWS-500	20790	27720	34650	41580	48510	55440	1318	800	1300	700	1100～1200
QWS-600	30120	40160	50201	60241	70281	80321	1412	/	1400	800	1200～1300
QWS-700	50136	66848	83560	100272	116984	133696	2369	/	1500～1600	/	1400～1500
QWS-800	65686	87582	109478	131373	153269	175165	2520	/	1800～2000	/	1600～1700

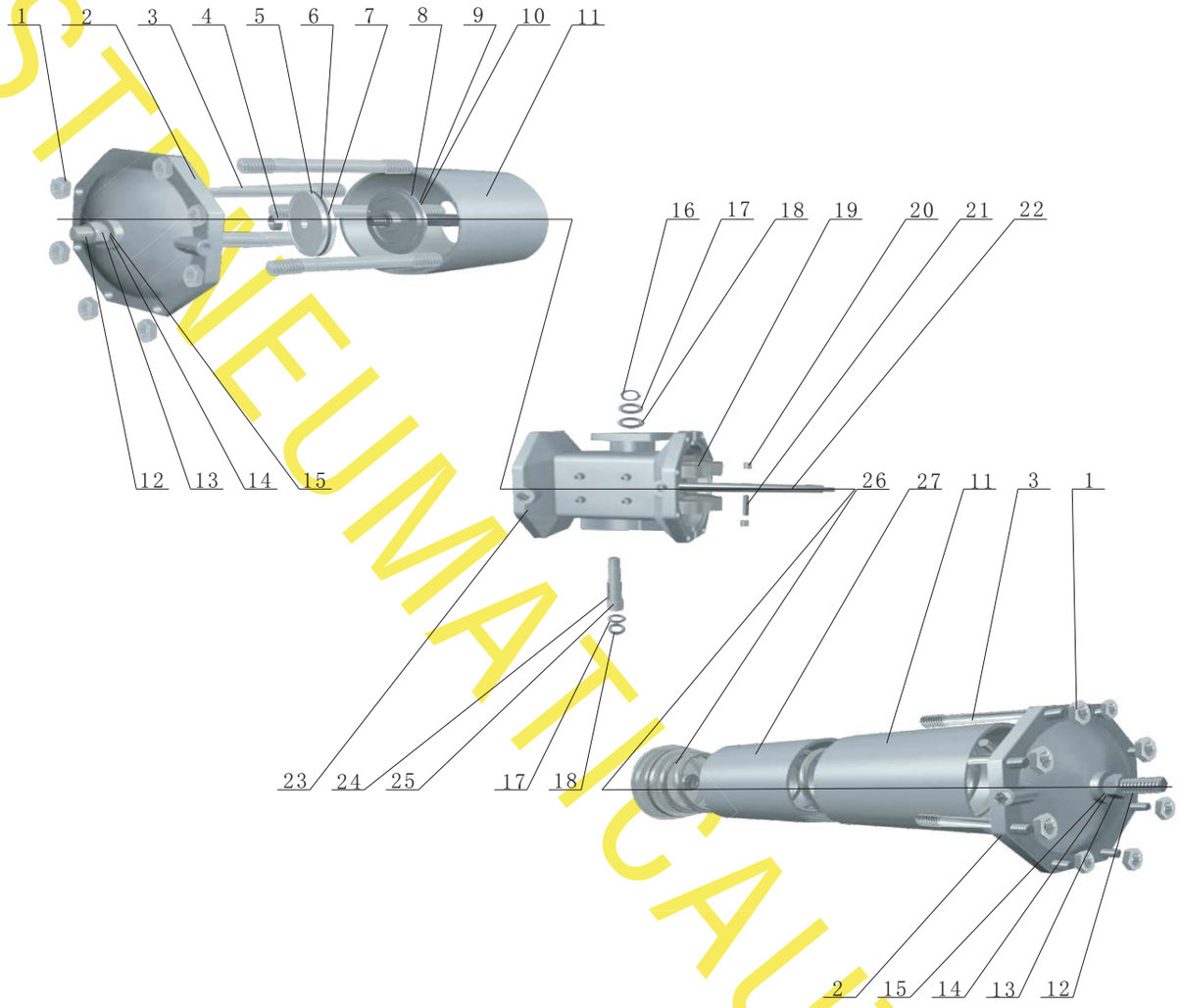
QW Series Single Acting Actuator Type Selection Table
[the torque shadowed in the table above is for prior standard selection]

Data / Model	Air Supply Pressure and Output Torque (N·m)						Weight (Kg)	Soft Seal Ball Valve DN	Soft Seal Butterfly Valve DN	Hard Seal Ball Valve DN	Hard Seal Butterfly Valve DN
	Spring Torque	4bar	5bar	6bar	7bar	8bar					
QWD-140	230	160	310	410	470	584	62	125	150～200	100	125～150
QWD-180	670	276	440	560	860	1152	116	150～200	250～300	125	200～250
QWD-200	1607	330	469	1058	1647	2236	202	200～250	350～450	150～200	300～350
QWD-250	2489	610	982	2046	3310	4174	329	250～300	450～500	200～250	400～450
QWD-280	2698	1190	1756	3257	4758	6259	440	300～350	500～600	250～300	450～500
QWD-350	5314	1670	3476	6262	9049	11836	737	400～500	700～800	350～400	600～700
QWD-400	7091	2203	5873	9544	13214	16885	812	500	900	450	800
QWD-500	14188	2256	9186	16116	23046	29976	1667	600	1000	500	900
QWD-600	20102	3610	13650	23691	33731	43771	1782	700	1100～1200	600～700	1000～1100
QWD-700	35200	3048	19760	36472	53184	69896	2815	800	1300～1400	700	1200
QWD-800	34333	8817	30713	52608	74504	96400	2990	/	1500	800	1300～1400

Note: The data above is the result from configuration of cylinder air supply pressure 5 bar, valve nominal pressure is 1.6Mpa, just for your reference.

QW Series Quarter Turn Pneumatic Actuator

Main Components and Material Table(Single Acting)

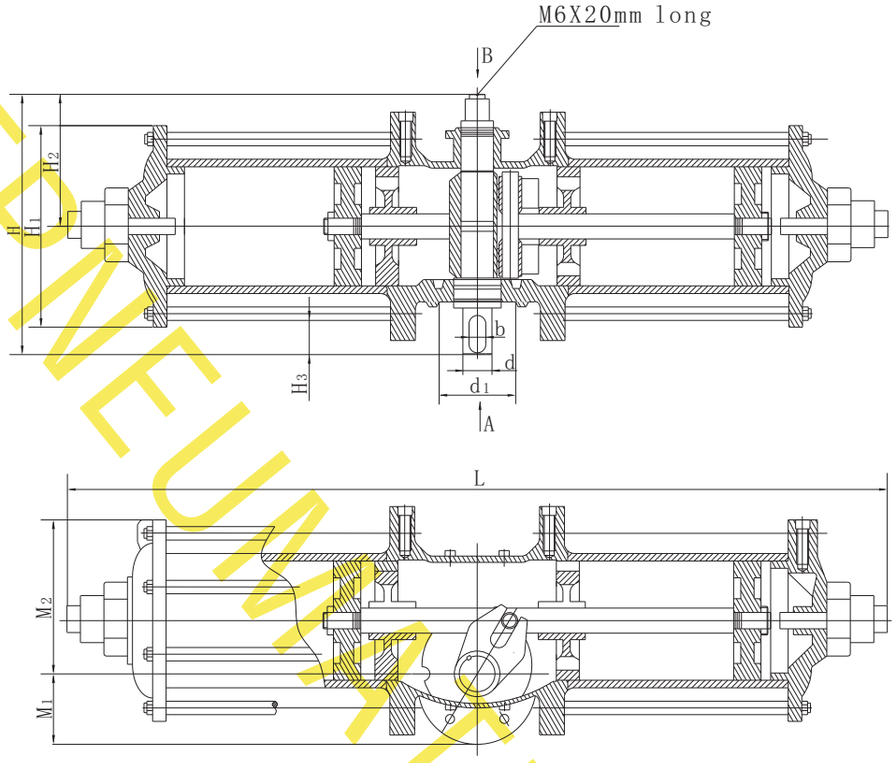


No.	Name	Material	Qnty	No.	Name	Material	Qnty	No.	Name	Material	Qnty
1	Nut	35#	8	10	Locating Pin	45#	2	19	Shifting Fork	45#	1
2	Cylinder Cap	QT450-10	2	11	Cylinder	QT450-10	2	20	Roll Sleeve	Tin Bronze	2
3	Double Head Nut	25#	8	12	Adjusting Bolt	25#	2	21	Pin Shaft	4140	1
4	Locknut	35#	2	13	Locknut	35#	2	22	Piston Rod	45#	1
5	Piston	Q-235A	2	14	Gasket	20#	2	23	Case	QT450-10	1
6	O-Ring	NBR	2	15	O-Ring	NBR	2	24	Flat Key	45#	1
7	Guide Ring	PTFE	2	16	Spring Collar	65Mn	2	25	Shaft	45#	1
8	Baffle	Q-235A	2	17	Antifriction Gasket	Nylon	2	26	Spring	60Si2Mn	2/4
9	O-Ring	NBR	2	18	O-Ring	NBR	2	27	Spring Cylinder	HT200	1

Note: QWD single acting actuator, normally 2 springs.

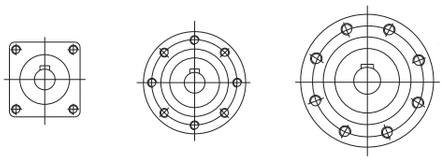
QW Series Quarter Turn Pneumatic Actuator

QW Series Double Acting Actuator Dimension

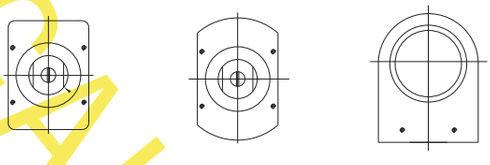


Direction A（see details on next page）

Direction B（see details on next page）



QW-140 QW-180 QW-200～600



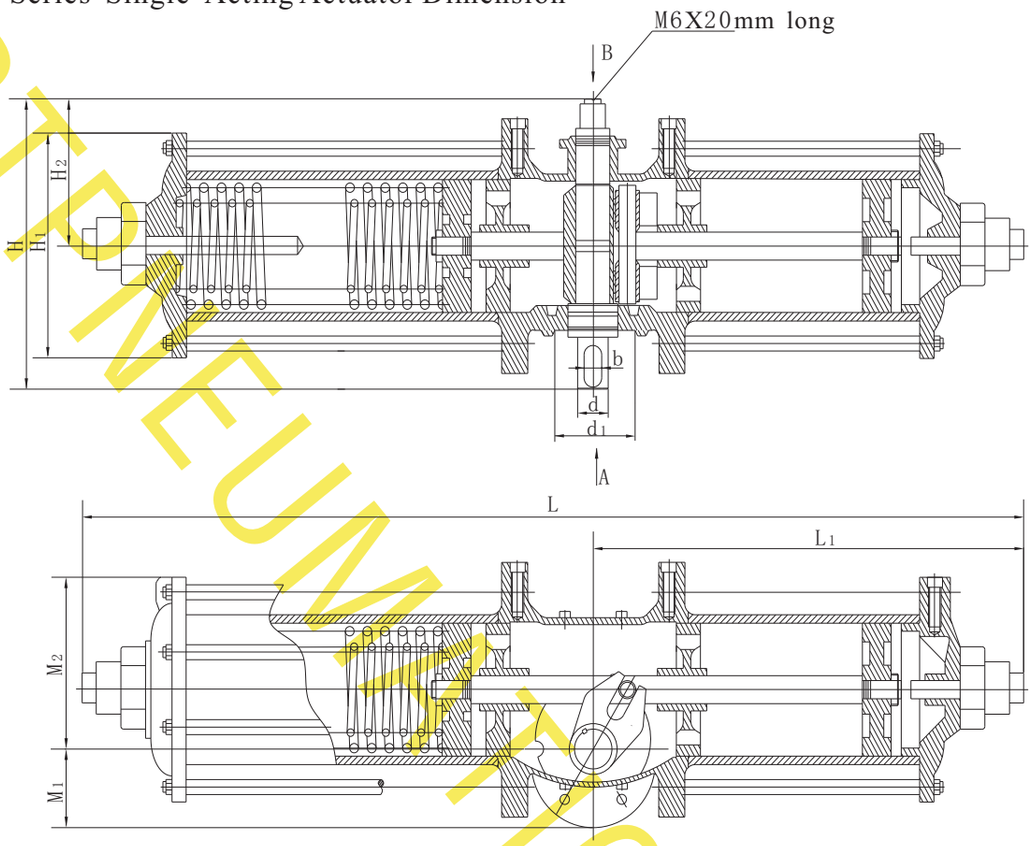
QW-140～250 QW-280 QW-350～600

Unit: mm

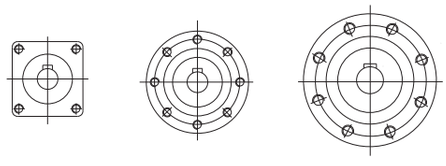
Model	L	H	H1	H2	H3	M1	M2	b	d	d1	Air Source Port
QWS-140	640	266	168	138	37	66	134	12	42	80	G1/4″
QWS-180	827	348	230	177	60	95	175	14	50	120	G3/8″
QWS-200	1162	425	270	212	74	116	233	18	64	140	G3/8″
QWS-250	1330	425	320	212	74	116	258	18	64	140	G3/8″
QWS-280	1380	527	360	252	100	159	300	25	85	220	G1/2″
QWS-350	1860	615	440	335	136	175	370	28	105	220	G1/2″
QWS-400	1860	615	490	335	136	175	370	28	105	220	G1/2″
QWS-500	2650	720	600	471	164	200	480	32	120	280	G1/2″
QWS-600	2800	836	700	583	192	250	570	36	140	360	G1/2″

QW Series Quarter Turn Pneumatic Actuator

QW Series Single Acting Actuator Dimension



Direction A (see details on next page)



QW-140 QW-180 QW-200～500

Direction B (see details on next page)

QW-140～250 QW-280 QW-350～500

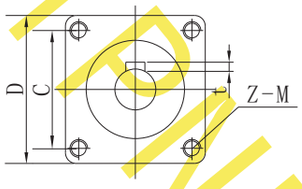
Unit: mm

Model	L	L1	H	H1	H2	M1	M2	b	d	d1	Air Source Port
QWD-140	858	320	266	168	138	66	134	12	42	80	G1/4
QWD-180	1090	413	348	230	177	95	175	14	50	120	G3/8
QWD-200	1430	581	425	270	212	116	233	18	64	140	G3/8
QWD-250	1620	581	425	320	212	116	258	18	64	140	G3/8
QWD-280	1845	690	527	360	252	159	300	25	85	220	G1/2
QWD-350	2500	930	615	440	335	175	370	28	105	220	G1/2
QWD-400	2500	930	615	490	335	175	370	28	105	220	G1/2
QWD-500	3280	1340	720	600	471	200	480	32	120	280	G1/2

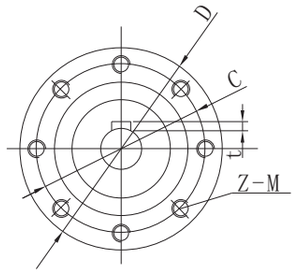
QW Series Quarter Turn Pneumatic Actuator

QW Pneumatic Actuator Connecition（single/double acting）

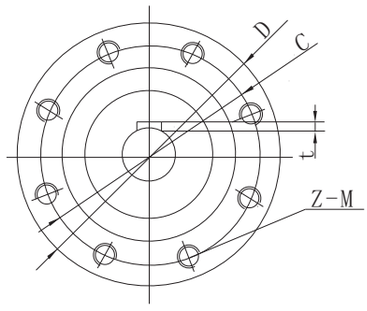
Dirction A



QW-140

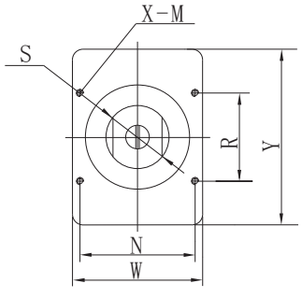


QW-180

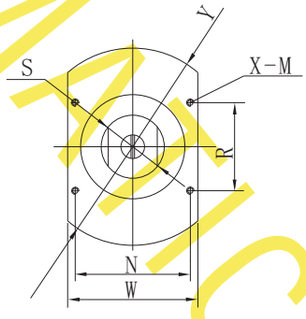


QW-200～600

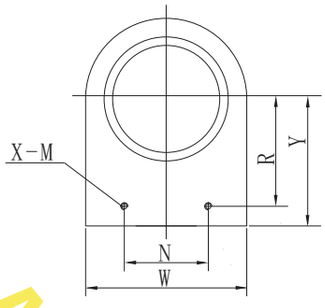
Direction B



QW-140～250



QW-280



QW-350～600

Unit: mm

Model	C	D	t	Z-M	S	Y	W	N	R	X-M	Air Soruce Port
QW-140	100	132	3	4-M16	45	95	85	70	35	4-M6	G1/4
QW-180	160	190	3.5	8-M16	55	143	112	100	50	4-M6	G3/8
QW-200	200	232	4	8-M16	70	157	137	120	50	4-M6	G3/8
QW-250	200	235	4	8-M16	70	157	137	180	50	4-M6	G3/8
QW-280	280	318	5	8-M20	90	255	227	60	60	2-M8	G1/2
QW-350	300	350	6.4	8-M24	/	150	203	60	130	2-M8	G1/2
QW-400	300	350	6.4	8-M24	/	150	203	60	130	2-M8	G1/2
QW-500	350	400	7.4	12-M24	/	180	230	60	160	2-M8	G1/2
QW-600	450	500	8.5	12-M24	/	220	256	60	160	2-M8	G1/2

Note: 1. Bottom connection dimension in compliance with JB2920 standard, also can make according to ISO5211 standard.
2.Top connection dimension in compliance with VID/VDE3845 NAMUR standard, limit switch and positionor, etc. accessory also can be installed.
3. Air supply connection, normally, G thread, also can custom ZG,NPT thread.