

SECTION 4**Page No.****Air-Hydraulic Cylinder**

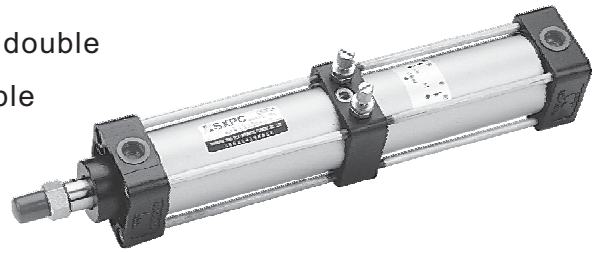
XQGAZN Series Air Hydraulic-Damping Cylinder ($\Phi 32 \sim \Phi 125$)	4.001
QHC40 Series Hydraulic Damping Cylinder ($\Phi 40$)	4.002
QCCT Series Air-Hydro Converter ($\Phi 40 \sim \Phi 100$)	4.006
QAP(X) Series Air-Hydraulic Booster	4.008
QOP Series Air-Hydraulic Boosting Presser	4.012

Air Hydraulic-Damping Cylinder XQGAZN Series (Φ32~Φ125)

The XQGAZN air hydraulic-damping cylinder is a double acting cylinder equipped with an internal adjustable hydraulic-damping. Its speeds of extending and returning can be regulated respectively.

The cylinder is characterized by smooth running

and reliable function. Can be mounted as the general double acting cylinder.



Specifications

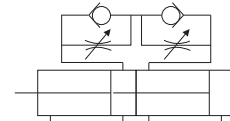
Fluid	Filtered compressed air		
Max. Operating pressure	1.0MPa		
Fluid temperature	-10~+60℃		
Ambient temperature	5~60℃		
Speed adjusting range	15~120mm/s		
Stroke allowance	0~250+1.0	251~1000+1.5	1001~2000+2.0(mm)

4

Standard Stroke

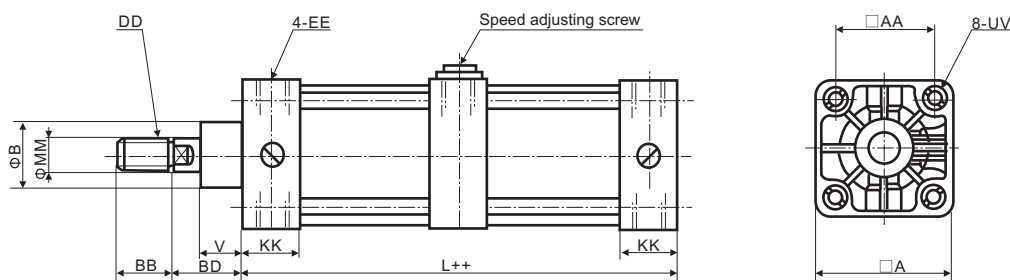
Bore size mm	Standard stroke mm	Max. Stroke mm
32	25、50、80、100、125、160、 200、250、320、400、500、600、 700、800、900、1000、1100、1200	500
40		600
50		1000
63		1200
80		
100		
125		

Symbol



Dimensions(mm)

SD Basic (XQGAZN Cylinder)



Bore size mm	A	AA	B	BB	BD	DD	EE	KK	L	MM	UV	V
32	40	30	24.5	22	20	M10×1.25	Rc1/8	26	168	12	M5	9
40	53	38	35.5	30	33	M14×1.5	Rc1/4	27	155	16	M6	12
50	62	46	40.5	35	37	M18×1.5	Rc3/8	27	175	20	M6	15
63	78	57	40.5	35	37	M18×1.5	Rc3/8	27	175	20	M8	15
80	94	73	46.5	40	47	M22×1.5	Rc1/2	34	208	25	M8	18
100	114	89	51.5	45	64	M27×1.5	Rc1/2	36	228	30	M10	20
125	140	110	60	54	65	M27×2	G1/2	46	274	32	M12	45

Hydraulic Damping Cylinder

QHC40 Series (Φ40)

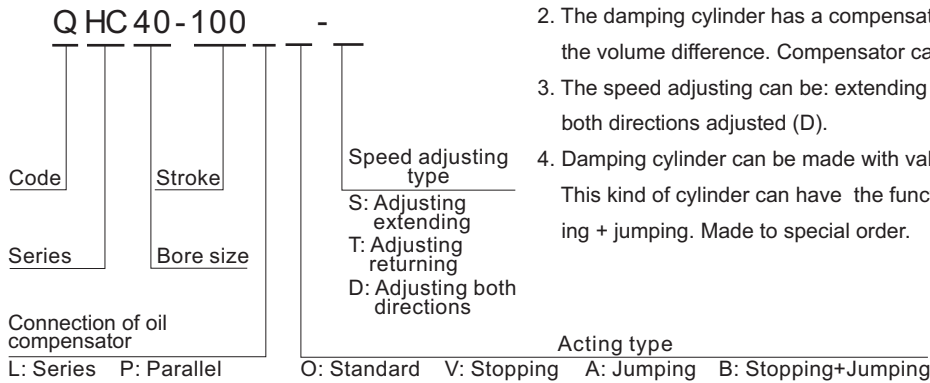


Bore size mm	40
Fluid	Hydraulic oil
Max. Load	6000 N
Ambient and fluid temperature	5~60°C
Adjusting speed range	60~10000 mm/min
Valve operating air pressure	0.4MPa
Acting type	Adjustable extending and returning speeds
Special design	Adjustable extending and returning speeds; And functions of stopping, jumping, stopping + jumping
Standard stroke	50 100 150 200 250 300 350 400 450 500

Notes:

1. QHC40 hydraulic damping cylinder working together with a normal air cylinder, an air-hydraulic damping cylinder is formed, making the air cylinder work very stably and smoothly.
2. The damping cylinder has a compensator and can automatically compensate the volume difference. Compensator can be connected in series or parallel.
3. The speed adjusting can be: extending adjusted (S), returning adjusted (T), both directions adjusted (D).
4. Damping cylinder can be made with valves to form a combination cylinder. This kind of cylinder can have the function of stopping, or jumping, or stopping + jumping. Made to special order.

How to Order

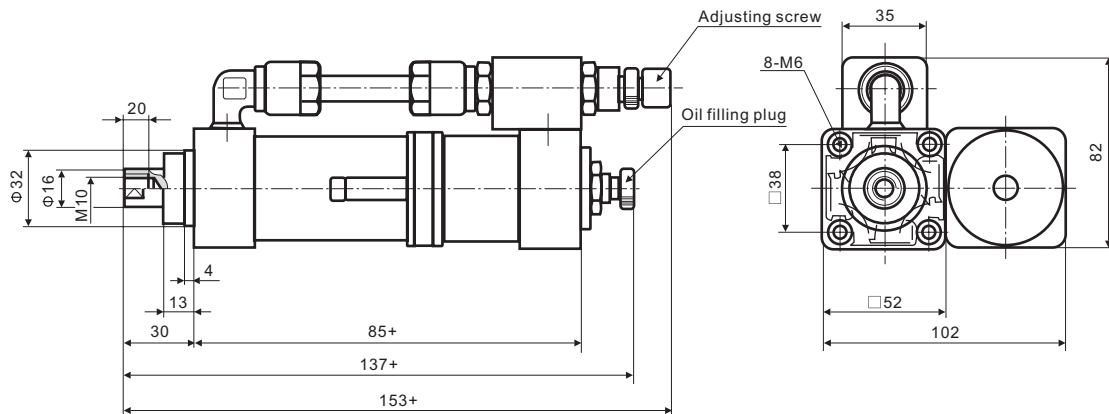
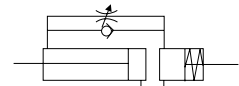


Dimensions (mm)

Parallel, Standard, Adjustable extending speed

QHC40-□□PO-S

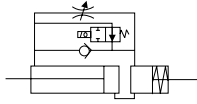
Symbol



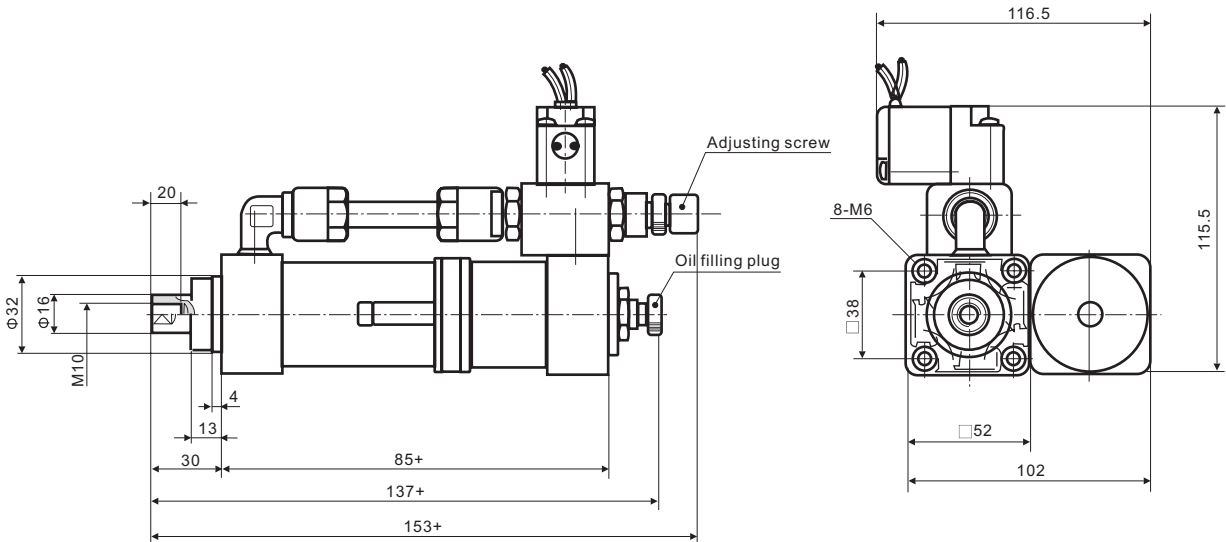
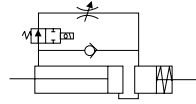
**Parallel, Jumping,
Adjustable Extending Speed**
QHC40-□□PA-S

**Parallel, Stopping,
Adjustable Extending Speed**
QHC40-□□PV-S

Symbol



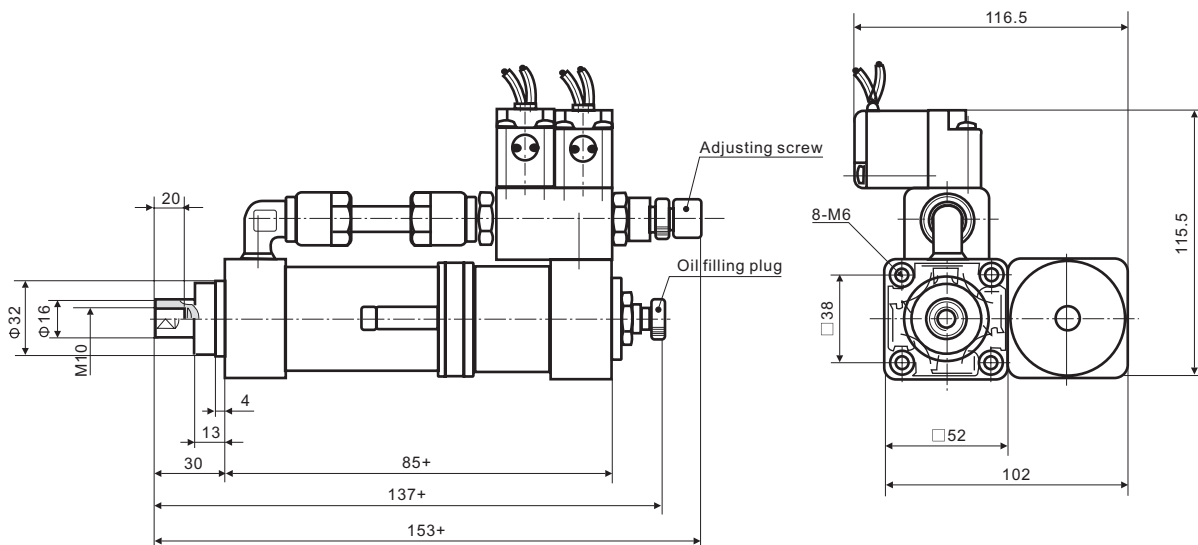
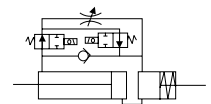
Symbol



4

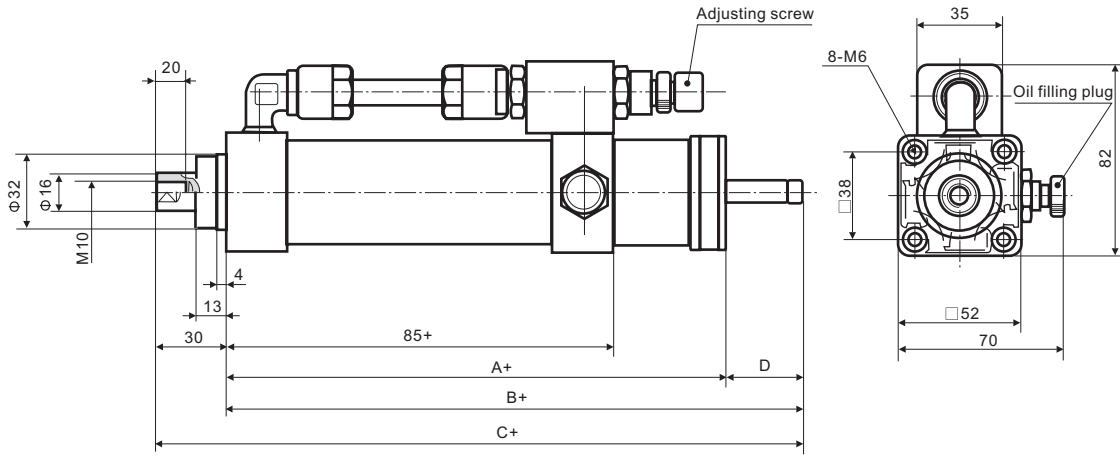
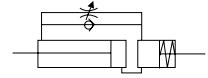
Parallel, Jumping+Stopping, Adjustable Extending Speed
QHC40-□□PB-S

Symbol



Series, Standard, Adjustable Extending Speed
QHC40-□□LO-S

Symbol



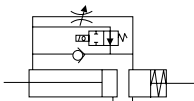
Stroke mm	A	B	C	D
50~100	170	198	228	28
150~200	190	233	263	43

4

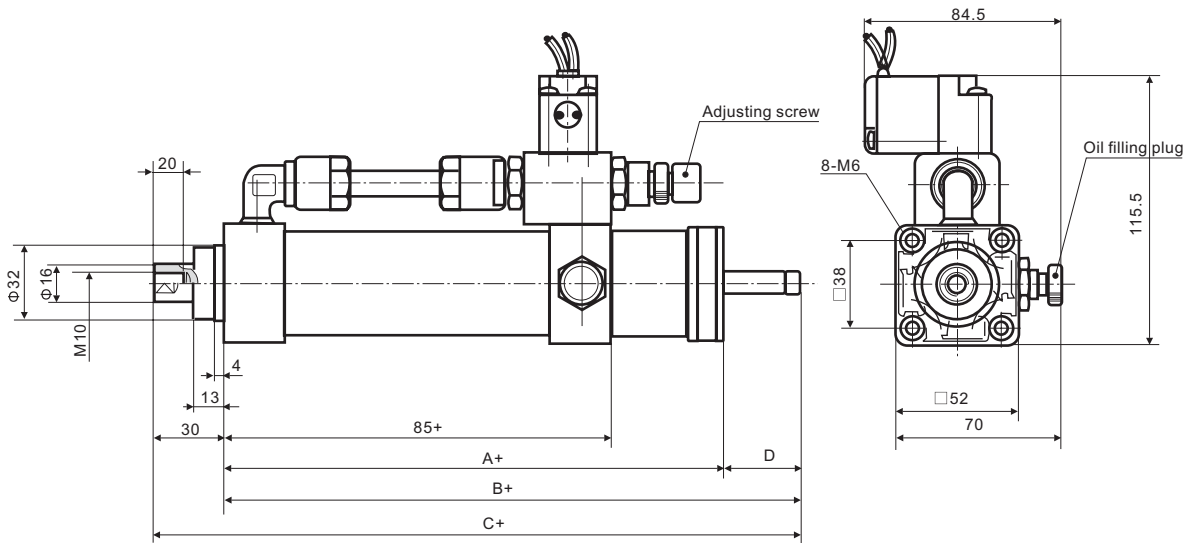
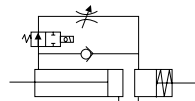
Series, Jumping, Adjustable Extending Speed
QHC40-□□LA-S

Series, Stopping, Adjustable extending speed
QHC40-□□LV-S

Symbol



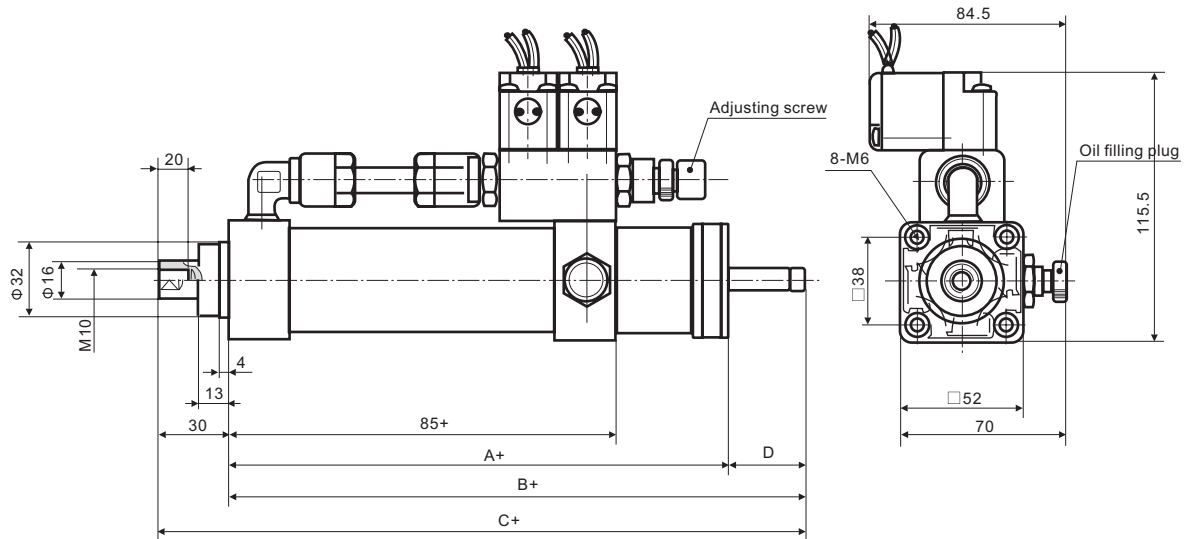
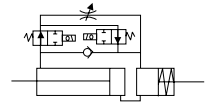
Symbol



Stroke mm	A	B	C	D
50~100	170	198	228	28
150~200	190	233	263	43

Series, Jumping+Stopping, Adjustable extending speed
 QHC40-□□LA-S

Symbol



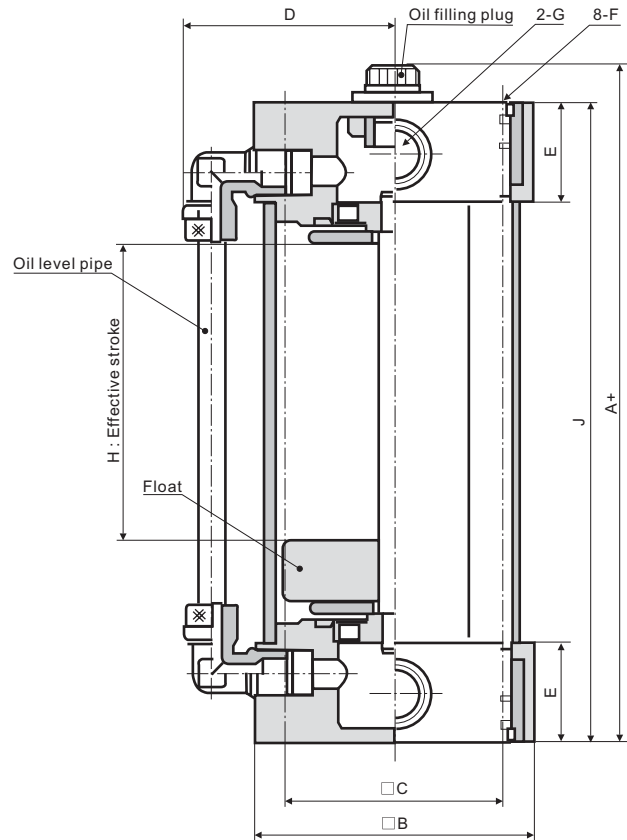
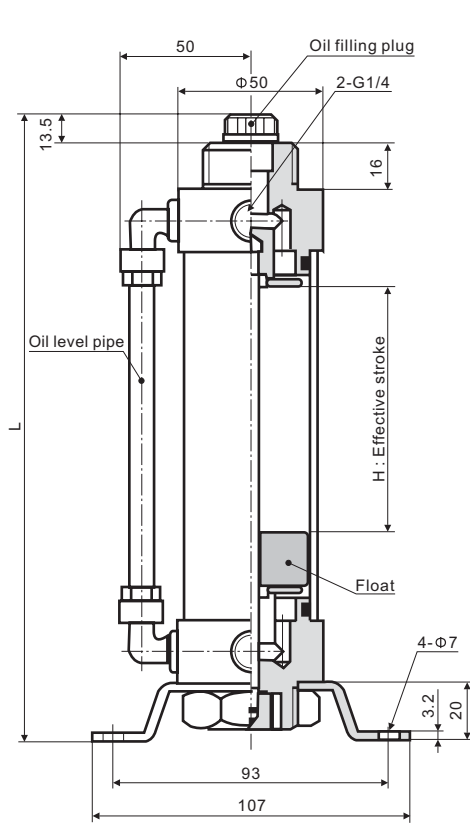
Stroke mm	A	B	C	D
50~100	170	198	228	28
150~200	190	233	263	43

Note: Dimensions of QHC40-□□P0-D, QHC40-□□L0-D parallel, adjustable both directions speeds are respectively the same of QHC40-□□P0-S, QHC40-□□L0-S basic type damping cylinders.

Dimension (mm)

QCCT40-S

QCCT50 T QCCT63 T
QCCT80 T QCCT100 T



4

Model	H (Effective oil level stroke) mm	50	100	150	200	300	400
QCCT-40S	L mm	213.5	263.5	313.5	363.5	463.5	563.5

Model	A	B	C	D	E	F	G	J
QCCT50 T	113.5	62	46	54.5	27	M6	G3/8	100
QCCT63 T	121.5	78	57	62.5	27	M8	G3/8	108
QCCT80 T	130.5	94	73	70.5	34	M8	G1/2	117
QCCT100 T	138.5	114	89	80.5	36	M10	G1/2	125

Air-Hydraulic Booster QAP, QAX Series

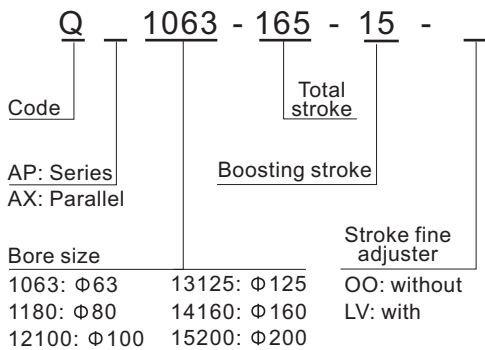


Model	QAP		QAX		
Fluid	Filtered compressed air, hydraulic oil				
Operating air pressure range	0.6~1.0MPa				
Hydraulic pressure range	0.2~0.6MPa				
Ambient temperature range	5~60°C				
Total stroke mm	30	60	115	165	215
Boosting stroke mm	5	10	15	20	25
Total output force N	14500~225500				

Notes:

1. QAP and QAX series have a built-in compact and light hydraulic boosting system, obtaining big out put force from compressed air, getting together the advantages of pneumatics and hydraulics.
2. QAP and QAX series can be used for such operation as marking, shearing, punching, forming, bending, straightening, riveting, welding, blanking and so on, instead of the traditional heavy complicated big machines and reduce energy consumption, too.
3. By their fast pneumatic strokes, boosting hydraulic strokes and fast retreating strokes, they can give fast prepressing and boosting final pressure to the working pieces so that the quality is improved, the service life of moulds is lengthened.
4. QAP and QAX have the option of QLV stroke fine adjuster to meet the requirement of fine stroke adjustment.
5. QAP and QAX are controlled by pneumatic system. They are easy for automation and maintenance.
6. QAP and QAX can be equipped with QOP base to form an air-hydraulic presser.

How to Order



Output Force (N)

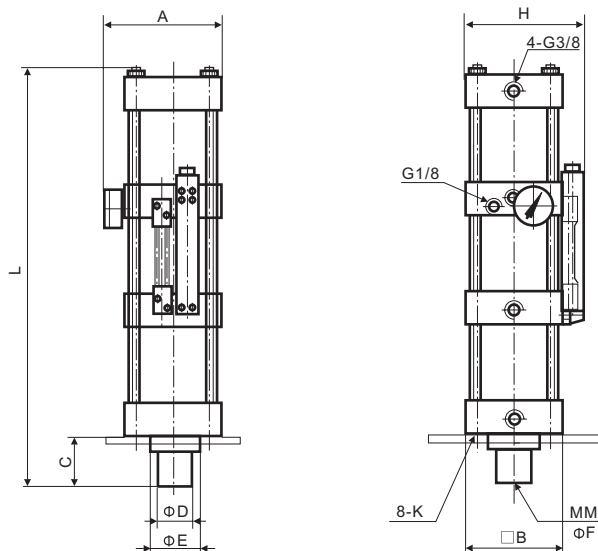
Model	QAP1063	QAP1180	QAP12100	QAP13125	QAP14160	QAP15200
Output force N	20000	30000	52500	81700	134000	209500

Model	QAX1063	QAX1180	QAX12100	QAX13125	QAX14160	QAX15200
Output force N	15000	29500	35000	81700	134000	209500

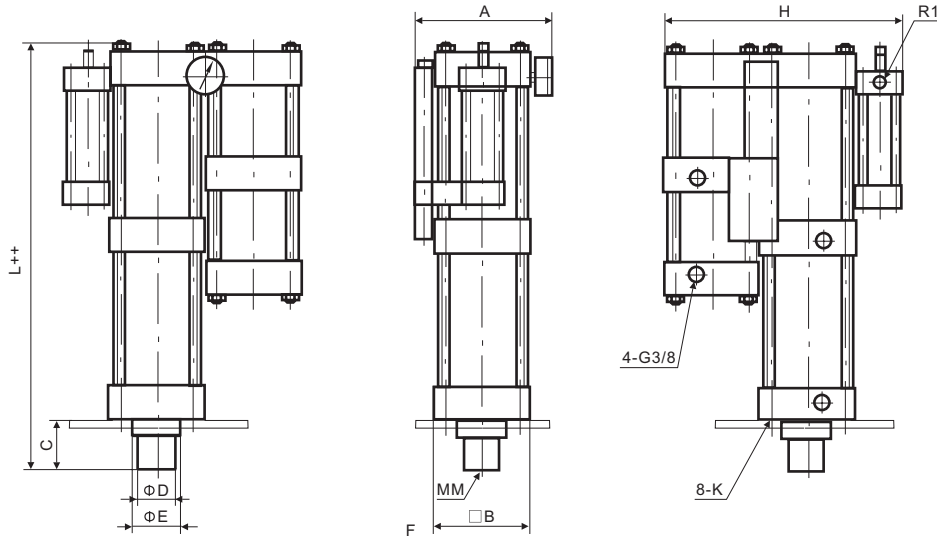
Note: In the condition of operating pressure being 0.6Mpa

Dimensions (mm)

QAP Type



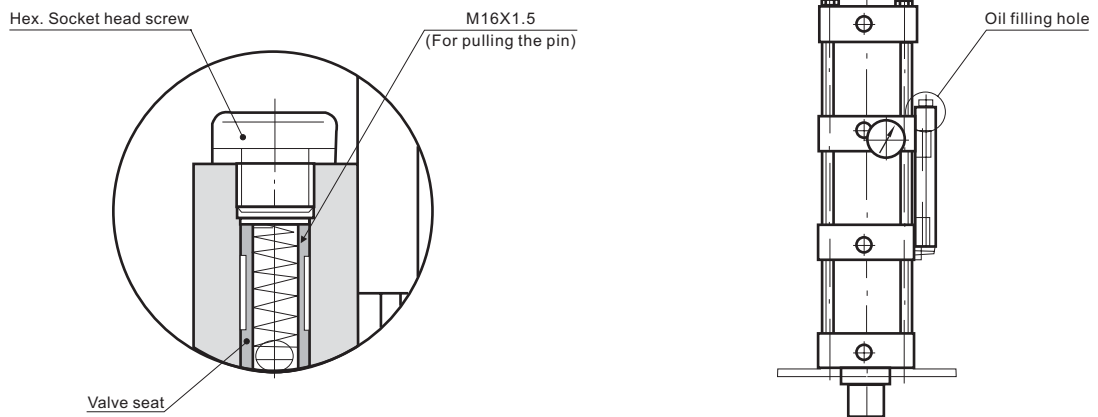
QAX Type



Model	A	B	C	D _(F8)	E	F _(H8)	H	L	MM	K
QAP1063	106	80	40	30	50	16	93	492	M12×1.5	M8
QAP1180	126	100	57	40	70	20	113	566	M16×1.5	M10
QAP12100	170	130	60	60	90	25	145	487	M20×1.5	M16
QAP13125	190	150	60	80	110	25	165	524	M20×1.5	M20
QAP14160	270	185	95	100	130	30	200	575	M27×2	M24
QAP15200	310	220	95	100	130	30	235	615	M27×2	M24
QAX1063	152	80	40	30	50	16	178	300	M12×1.5	M8
QAX1180	172	100	50(86.7)	40	70	20	218	310	M16×1.5	M10
QAX12100	228	130	60	60	90	25	280	405	M20×1.5	M16
QAX13125	248	150	60	80	110	25	320	435	M20×1.5	M20
QAX14160	283	185	95	100	130	30	370	485	M27×2	M24
QAX15200	318	220	95	100	130	30	445	510	M27×2	M24

Installation and operation:

1. QAP and QAX should generally be installed vertically. If non-vertical installation is needed, stable support must be used. Piston rod should avoid big radial load.
2. Calibration should firstly be made in no-load, checking if the piston rod runs smoothly.
3. Add #8 hydraulic oil timely. When filling oil, remove the hex. Socket head screw of the filling hole and loosen the air bleeding screw, piston rod should be fully extended, boosting pressure should be released, fill oil up to the highest oil level mark. Finally tighten the hex. Screw and air bleeding screw.

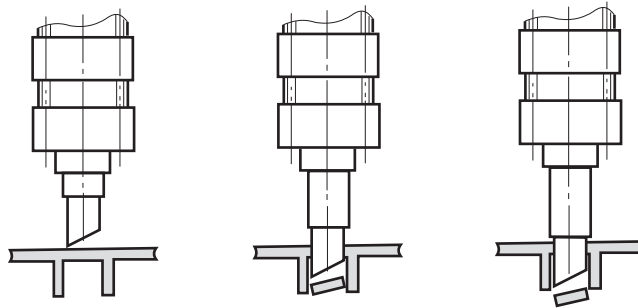


Operating Examples

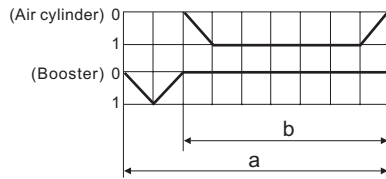
1. Blanking:

(picture 1)

Picture 1-1



Operating procedure:



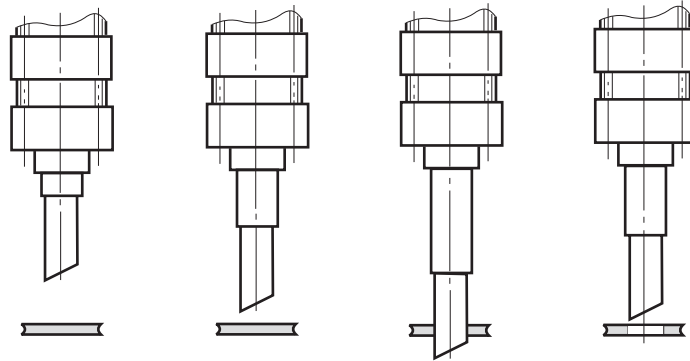
1. Booster: Pressing, releasing (Punching course)
2. Air cylinder: Pressing (Ejecting course)
3. Air cylinder: Releasing (Returning course)

Notes:

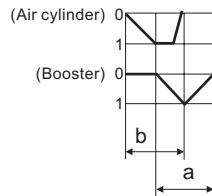
- a: Booster operating stroke
b: Air cylinder operating stroke

0: (Air pressure) Off
1: (Air pressure) On

Picture 1-2



Operating procedure:

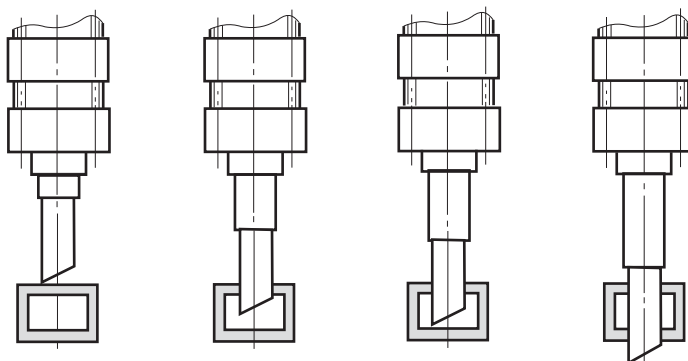


1. Air cylinder: Pressing (Approaching course)
2. Booster: Pressing (Punching course 1)
Air cylinder: Releasing (Punching course 2)
3. Booster: Releasing (Returning course)

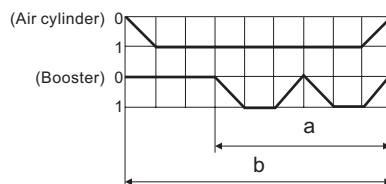
Notes:

- A: Booster operating stroke 0: (Air pressure) Off
B: Air cylinder operating stroke 1: (Air pressure) On

Picture 1-3



Operating procedure:

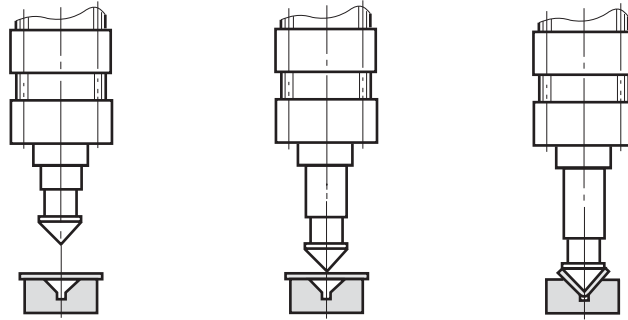


1. Air cylinder: Pressing (Approaching course)
2. Booster: Pressing, releasing (Punching course 1)
3. Booster: Pressing, releasing (Punching course 2)
4. Air cylinder, Releasing at the (Returning course)
booster: same time

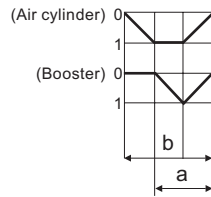
Notes:

- a: Booster operating stroke 0: (Air pressure) Off
b: Air cylinder operating stroke 1: (Air pressure) On

2. Bending:
(Picture 2)



Operating procedure:



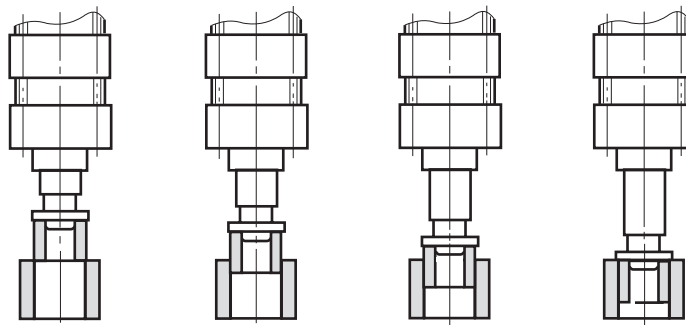
1. Air cylinder: Pressing (Approaching course)
2. Booster: Pressing (Bending course)
3. Air cylinder Releasing at and booster: the same time (Returning course)

Notes:

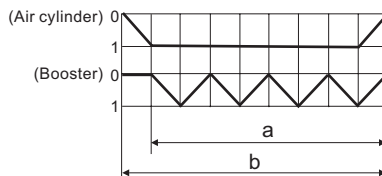
- a: Booster operating stroke
 - b: Air cylinder operating stroke
- 0: (Air pressure) Off
1: (Air pressure) On

3. Pressing-in
(Picture 3)

4



Operating procedure

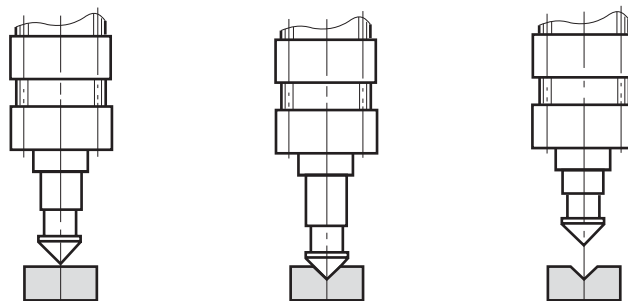


1. Air cylinder: Pressing (Approaching course)
2. Booster: Pressing repeatedly (Gradually pressing-in course)
3. Air cylinder Releasing at and booster: the same time (Returning course)

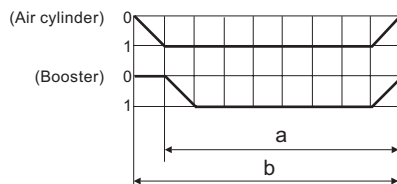
Notes:

- a: Booster operating stroke
 - b: Air cylinder operating stroke
- 0: (Air pressure) Off
1: (Air pressure) On

4.Extruding:
(Picture 4)



Operating procedure:



1. Air cylinder: Pressing (Approaching course)
2. Booster: Pressing (Extruding course)
3. Air cylinder Releasing at and booster: the same time (Returning course)

Notes:

- a: Booster operating stroke
 - b: Air cylinder operating stroke
- 0: (Air pressure) Off
1: (Air pressure) On

Air-Hydraulic Boosting Presser

QOP Series



Model	QOP-01	QOP-03	QOP-05	QOP-08	QOP-13	QOP-21
Fluid	Filtered compressed air, hydraulic oil					
Operating air pressure range	0.6~1.0MPa					
Hydraulic pressure range	0.2~0.6MPa					
Ambient temperature range	5~60°C					
Total stroke mm		30	60	115	165	215
Boosting stroke mm		5	10	15	20	25
*Output force N	20000	30000	35000	81700	134000	209500

*At operating pressure 0.6 MPa

Notes:

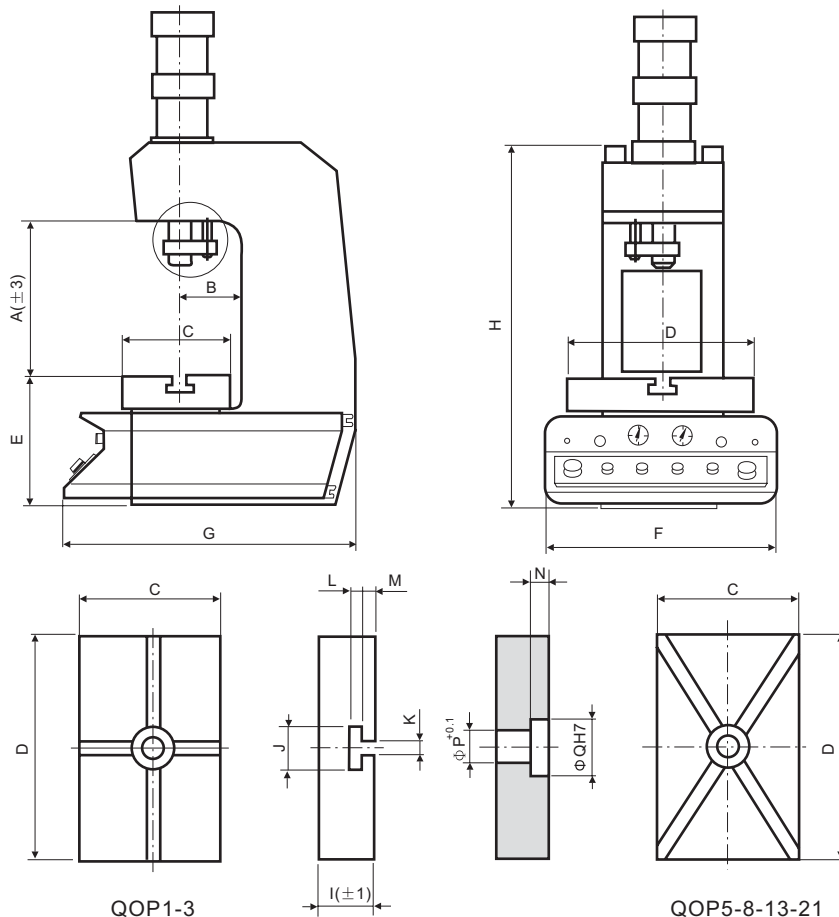
QOP air-hydraulic boosting presser uses air-hydraulic booster as its power unit, obtains strong output force from relatively low operating pressure of compressed air. It does not need any hydraulic station system.

By its fast pneumatic strokes, boosting hydraulic strokes and quick retreating strokes, it gives the work pieces fast prepressing and boosting final pressure and then it returns quickly. It can be used high efficiently for marking, steaming, riveting, blanking, forming, bending, straightening, welding, pressing and so on. Its operation does not make noise, impact and vibration. And the quality of products can be improve, the service life of moulds is lengthened and the environment is protected.

The air-hydraulic boosting presser can be equipped with an QLV stroke fine adjuster to meet the requirement of fine adjusting for quantitatively pressing-in, extruding and so on.

Dimensions (mm)

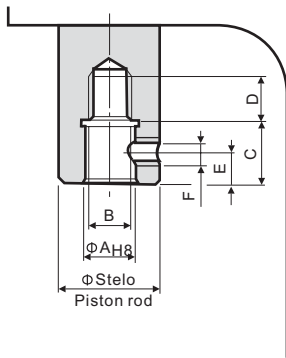
QOP Type



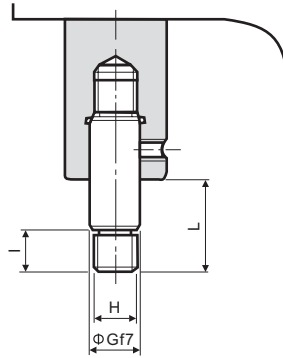
Presser Model	Model of booster		A	B	C	D	E	F	G	H	I	J	K	L	M	N	P	Q
QOP-01	QAP1063	QAX1063	285	120	200	300	200	410	500	620	31	18	10	8	7	16	45	60
QOP-03	QAP1180	QAX1180	380	150	250	350	260	480	670	855	36	21	12	9	8	18	50	70
QOP-05	QAP12100	QAX12100	420	160	280	400	270	520	720	910	46	21	12	9	8	18	50	70
QOP-08	QAP13125	QAX13125	440	180	300	450	315	590	770	1000	56	21	12	9	8	18	60	90
QOP-13	QAP14160	QAX14160	470	200	350	500	385	650	860	1150	75	28	16	12	10	25	70	110
QOP-21	QAP15200	QAX15200	470	200	350	500	385	700	860	1150	75	28	16	12	10	25	70	110

Connection Dimension (mm)

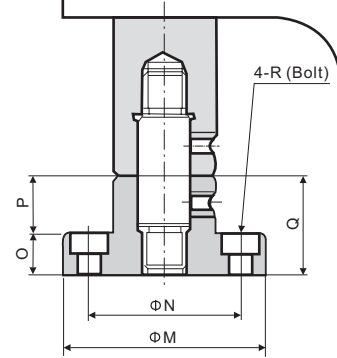
Thread Hole Connection



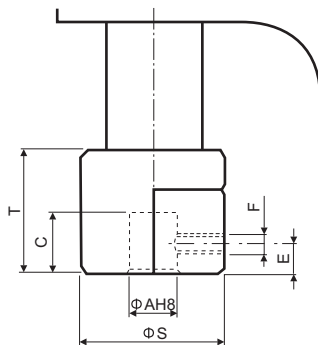
Stud Connection



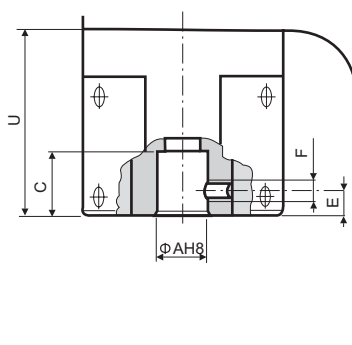
Flange Connection



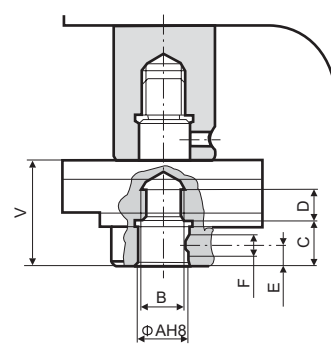
Fastening-block Connection



Pressing-block Connection



Combination Connection



Presser model	A	B	C	D	E	F	G	H	I	L	M	N	O	P	Q	R	S	T	U	V
QOP-01	16	M12x1.5	18	12	8	M6	16	M12x1.5	12	23	59	46	12	13	25	M6	50	35	145	70
QOP-03	20	M16x1.5	22	16	10	M8	20	M16x1.5	16	33	78	60	15	20	35	M8	50	35	170	75
QOP-05	25	M20x1.5	28	20	12	M8	25	M20x1.5	20	38	98	78	20	20	40	M8	60	50	170	85
QOP-08	25	M20x1.5	28	20	12	M8	25	M20x1.5	20	38	118	98	20	20	40	M8	80	50	170	85
QOP-13	30	M27x2	35	27	15	M8	30	M27x2	27	52	158	130	25	30	55	M12	100	80	200	110
QOP-21	30	M27x2	35	27	15	M8	30	M27x2	27	52	158	130	25	30	55	M12	100	80	200	110