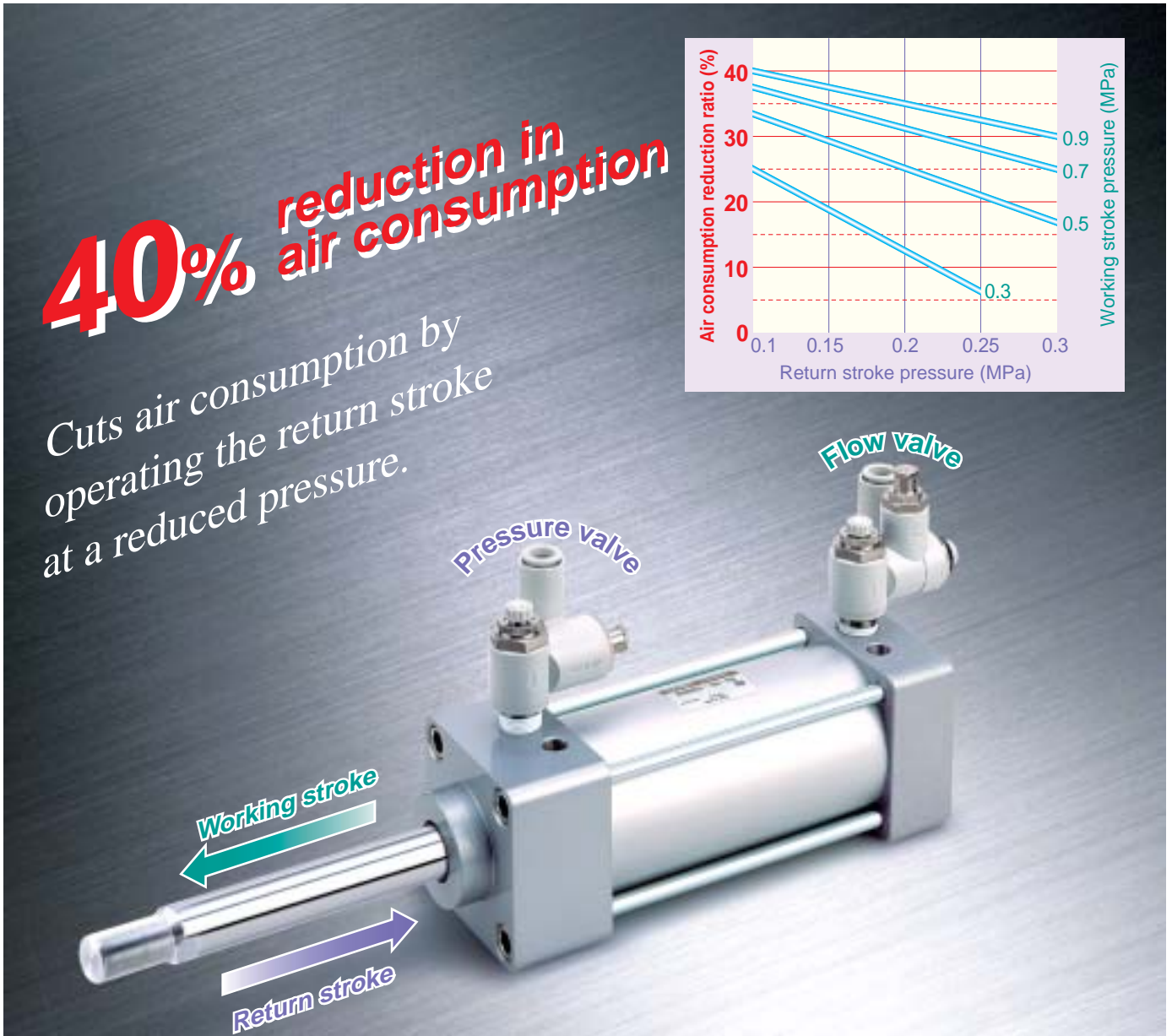
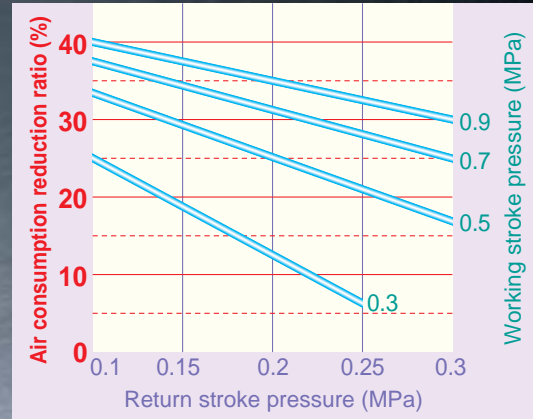


Air Saving Valve

40% reduction in air consumption

Cuts air consumption by operating the return stroke at a reduced pressure.



Pressure valve



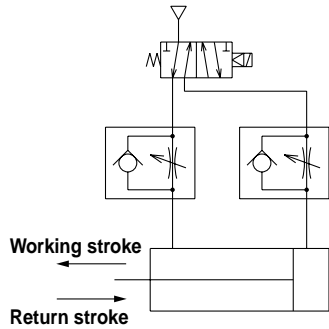
Flow valve

Pressure Valve Flow Valve
Series ASR / Series ASQ

Cuts air consumption by operating the return stroke at a reduced pressure.

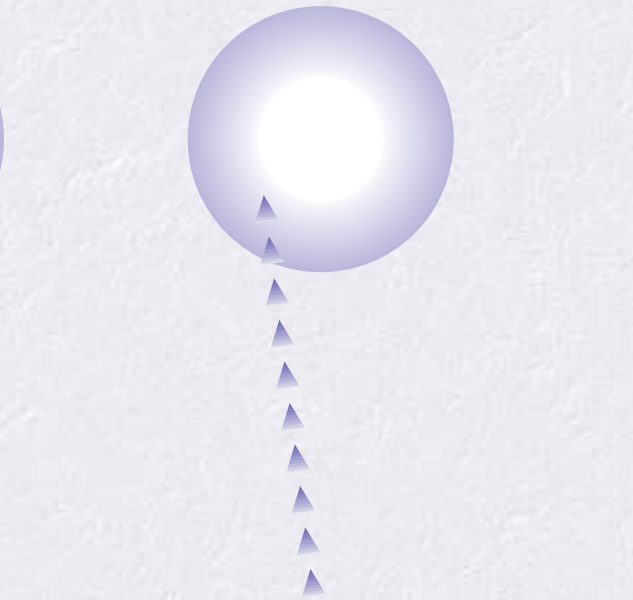
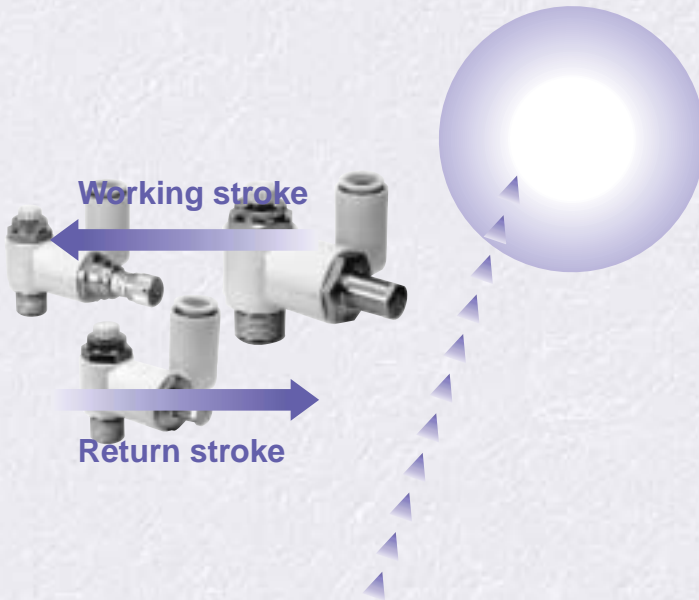
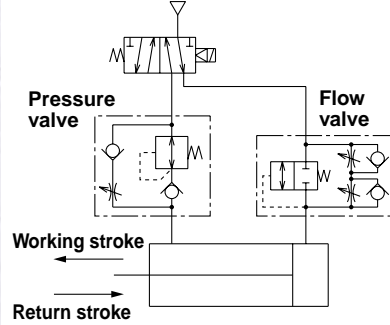
Conventional valve

Working and return strokes operated at the same pressure



Air saving valve

Return stroke operated at a reduced pressure



Pressure valve

Regulator with check valve
+
Speed controller



Series **ASR**

Flow valve

Quick supply and exhaust valve
+
Speed controller
(Meter-in, Meter-out)



Series **ASQ**

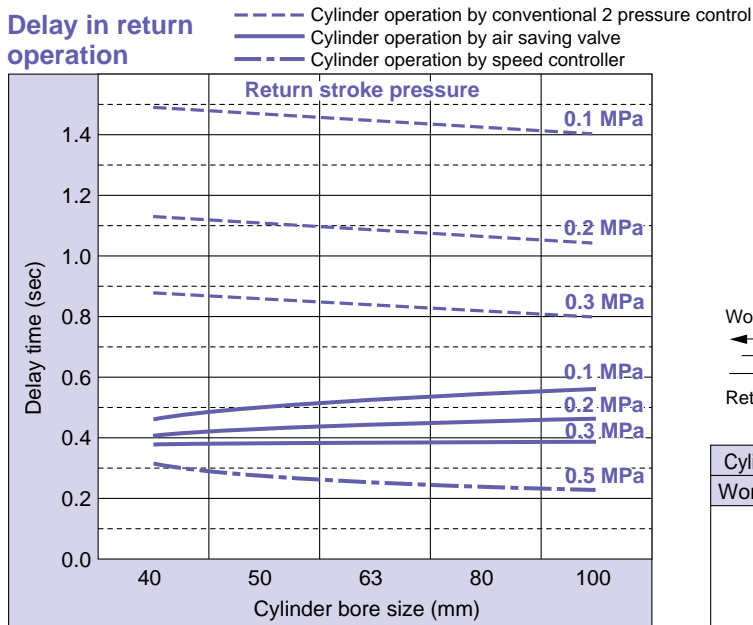
Smooth operation of working and return strokes possible.

Consistent speed control achieved by preventing jerky movement of working strokes.

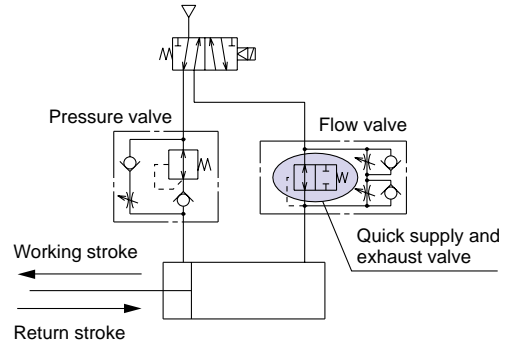
Improved response time

Operation delay in a return stroke is reduced by the use of a quick supply and exhaust valve.

Delay in return operation



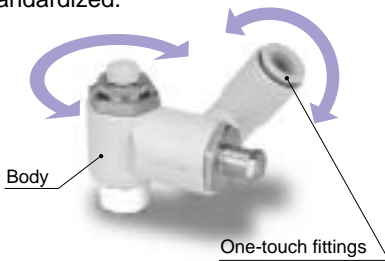
Cylinder speed: 200 mm/sec
Cylinder stroke: 200 mm



Cylinder operating pressure (MPa)	Air consumption reduction ratio (%)	
	Working stroke	Return stroke
0.5		0.5
		0.3
		0.2
		0.1

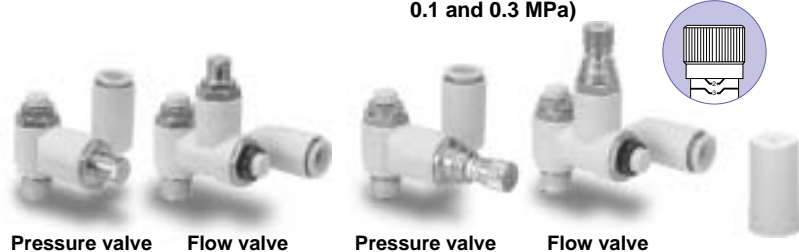
Easy piping

The body and one-touch fitting allow 360° rotation. The sealant on the male thread is standardized.



The set pressure can be either fixed or variable.

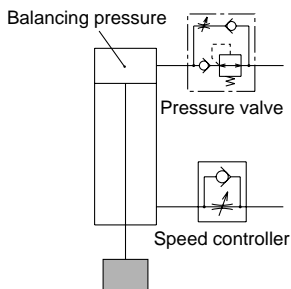
Fixed set pressure type (Fixed at 0.2 MPa) **Variable set pressure type** (Variable between 0.1 and 0.3 MPa)



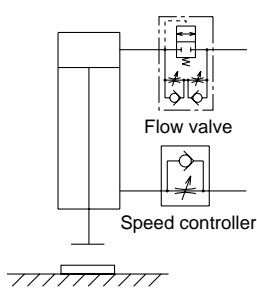
A knob cap is attached to the variable set pressure type.

Other applications

Jerk prevention in vertical operation of the cylinder



Quick air charge at the end of stroke for press applications



Variation

Model		Port size	Applicable tubing O.D. (mm)			
Pressure valve	Flow valve		6	8	10	12
ASR430F-02	ASQ430F-02	R1/4	●	●	●	
ASR530F-02	ASQ530F-02	R1/4	●	●	●	●
ASR530F-03	ASQ530F-03	R3/8	●	●	●	●
ASR630F-03	ASQ630F-03	R3/8			●	●
ASR630F-04	ASQ630F-04	R1/2			●	●

Air Saving Valve

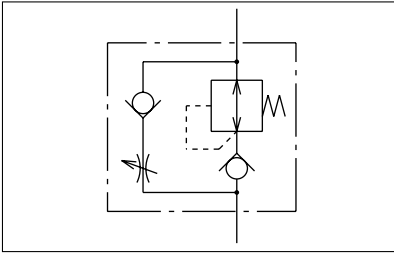
Pressure Valve Flow Valve

Series ASR / Series ASQ

Pressure valve / Series ASR



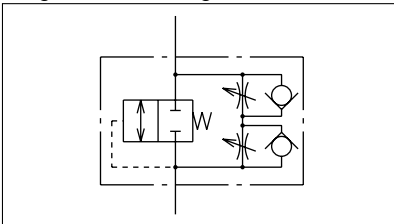
Regulator with check valve and flow control valve integrated into a single construction



Flow valve / Series ASQ



Pilot valve and two-way flow control valve integrated into a single construction



How to Order

ASR 4 3 0 F - 02 - 06 S - F20

- Model**
 - ASR Pressure valve
 - ASQ Flow valve
- Body size**
 - 4 1/4 standard
 - 5 3/8 standard
 - 6 1/2 standard
- Type**
 - 3 Universal
- With One-touch fitting**
- Option**
 - With sealant
- Applicable tubing O.D.**
 - 06 6 mm
 - 08 8 mm
 - 10 10 mm
 - 12 12 mm
- Port size**
 - 02 R1/4
 - 03 R3/8
 - 04 R1/2
- Pressure type**
 - Nil Variable set pressure type (0.1 to 0.3 MPa)
 - F20 Fixed set pressure type (0.2 MPa)

Models

Model		Port size	Applicable tubing O.D. (mm)			
Pressure valve	Flow valve		6	8	10	12
ASR430F-02	ASQ430F-02	R1/4	●	●	●	
ASR530F-02	ASQ530F-02	R1/4	●	●	●	●
ASR530F-03	ASQ530F-03	R3/8	●	●	●	●
ASR630F-03	ASQ630F-03	R3/8			●	●
ASR630F-04	ASQ630F-04	R1/2			●	●

Specifications

Proof pressure	1.5 MPa	
Maximum operating pressure	1.0 MPa	
Set pressure range	Variable	0.1 to 0.3 MPa
	Fixed (optional)	0.2 MPa
Ambient and fluid temperature	-5 to 60°C (with no freezing)	
Number of needle rotations	10 rotations	
Applicable tubing material	Nylon, Soft nylon, Polyurethane	

Effective Area

Pressure Valve / Series ASR

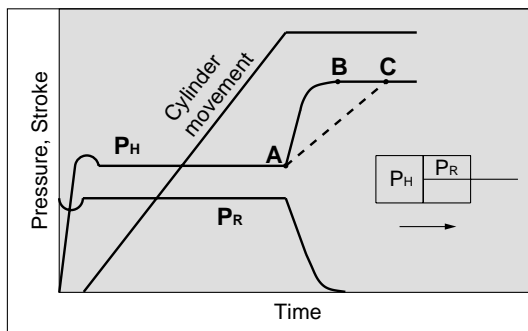
Type	Free flow mm ²	Controlled flow mm ²
ASR430F-02-06S(-F20)	5.4	5.9
ASR430F-02-08S(-F20)	5.9	6.7
ASR430F-02-10S(-F20)	5.9	6.7
ASR530F-02-06S(-F20)	7.3	8.1
ASR530F-02-08S(-F20)	8.9	11.8
ASR530F-02-10S(-F20)	9.2	13.3
ASR530F-02-12S(-F20)	9.5	13.7
ASR530F-03-06S(-F20)	7.3	8.1
ASR530F-03-08S(-F20)	8.9	11.8
ASR530F-03-10S(-F20)	9.2	13.3
ASR530F-03-12S(-F20)	9.5	13.7
ASR630F-03-10S(-F20)	15.3	17.8
ASR630F-03-12S(-F20)	16.0	19.1
ASR630F-04-10S(-F20)	15.3	17.8
ASR630F-04-12S(-F20)	16.0	19.1

Flow Valve / Series ASQ

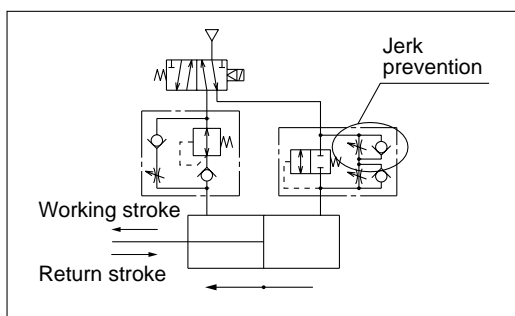
Type	Meter-out mm ²	Meter-in mm ²
ASQ430F-02-06S(-F20)	4.1	4.9
ASQ430F-02-08S(-F20)	4.6	5.5
ASQ430F-02-10S(-F20)	4.6	5.5
ASQ530F-02-06S(-F20)	6.6	7.8
ASQ530F-02-08S(-F20)	9.2	10.1
ASQ530F-02-10S(-F20)	9.8	10.8
ASQ530F-02-12S(-F20)	10.8	11.6
ASQ530F-03-06S(-F20)	6.6	7.8
ASQ530F-03-08S(-F20)	9.2	10.1
ASQ530F-03-10S(-F20)	9.8	10.8
ASQ530F-03-12S(-F20)	10.8	11.6
ASQ630F-03-10S(-F20)	15.3	17.1
ASQ630F-03-12S(-F20)	16.2	18.0
ASQ630F-04-10S(-F20)	15.3	17.1
ASQ630F-04-12S(-F20)	16.2	18.0

Operating principle

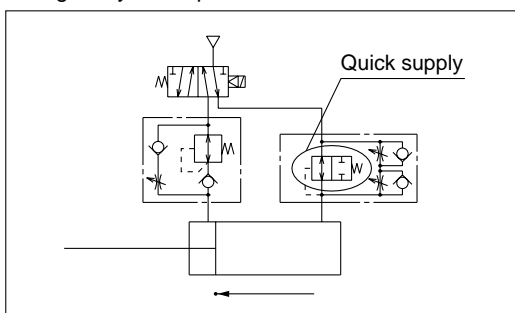
Working stroke



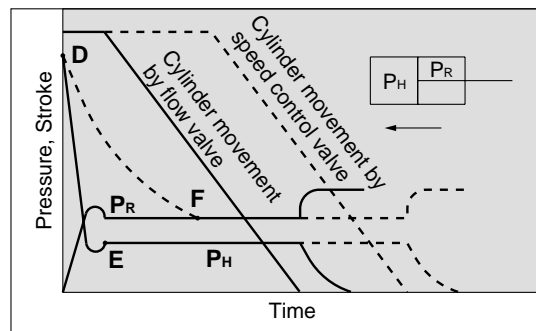
1. The cylinder starts smoothly because jerks are prevented by meter-in control.



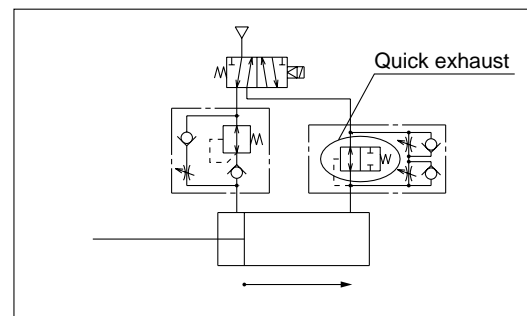
2. When the cylinder reaches the stroke end, the quick air charge by the flow valve rapidly increases the rear side pressure (PH) from A to B. If a speed controller is used instead of the flow valve, charging air will take more time as illustrated by line A-C, causing delay in the pressure rise.



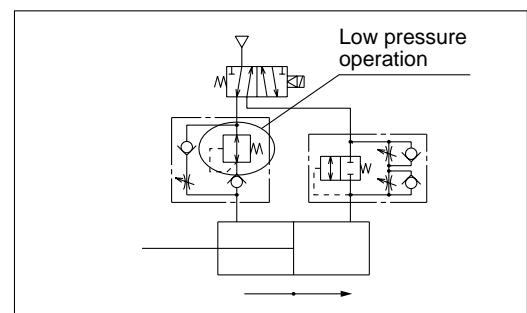
Return stroke



3. To prevent delay due to the pressure gap, air is rapidly exhausted to decrease the pressure from D to E, after which the piston moves at a constant speed. If a speed controller is used instead of the flow valve, exhausting air will take more time as illustrated by line D-F, resulting in longer stop time of the cylinder and a consequent time loss.



4. The cylinder operates at a low pressure required for a return.



Series ASR / Series ASQ

Selection and Adjustment

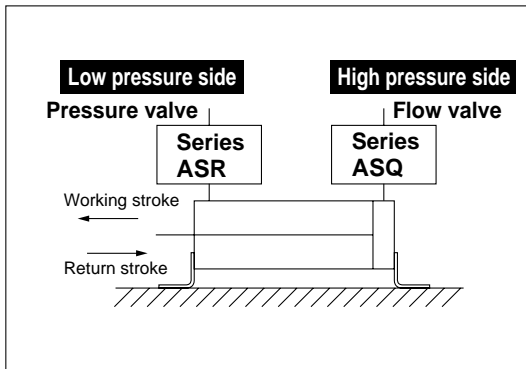
Install a flow valve on the working side which requires the cylinder output and a pressure valve on the return side. The product cannot be used in cases where the same pressure is necessary for both working and return strokes.

In such cases use a speed controller.

Horizontal mounting

Low pressure side: Pressure valve

High pressure side: Flow valve



Refer to

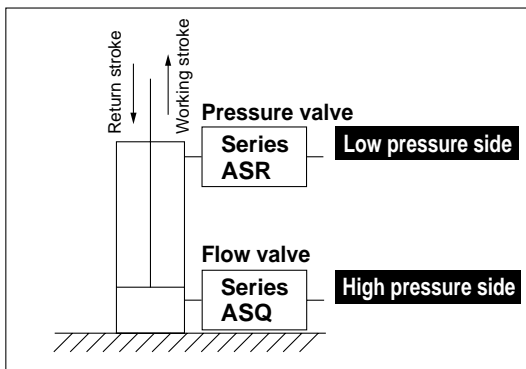
Adjustment Procedure 1

for pressure and speed adjustment.

Vertical mounting

Low pressure side: Pressure valve

High pressure side: Flow valve



In case the load ratio is 50% or lower at the set pressure of the flow valve:

Refer to

Adjustment Procedure 1

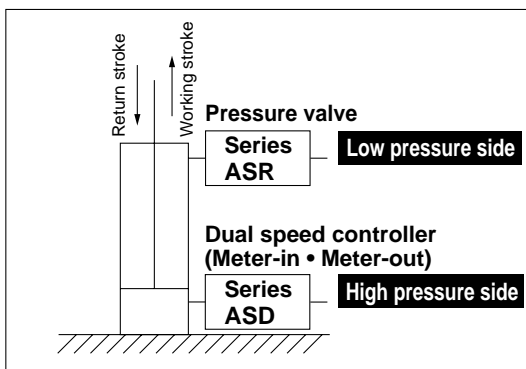
for pressure and speed adjustment.



If the load ratio at the set pressure of the flow valve exceeds 50%, install a dual speed controller (meter-in and meter-out control) on the high pressure side.

Low pressure side: Pressure valve

High pressure side: Dual speed controller



Refer to

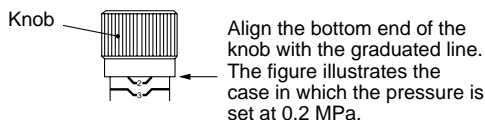
Adjustment Procedure 2

for pressure and speed adjustment.

Adjustment Procedure 1

Pressure adjustment

1. The fixed set pressure type (-F20) does not require adjustment because the pressure is fixed at 0.2 MPa for both the pressure valve and the flow valve.
2. The set pressures of the variable set pressure type pressure valve and flow valve are adjusted with knob (A) and knob (B) respectively. Turn the knob clockwise to increase the pressure and counterclockwise to decrease the pressure.
3. The graduations 1, 2 and 3 correspond to 0.1, 0.2 and 0.3 MPa respectively. Align the bottom end of the knob with the graduated line for adjustment.



4. Set the same pressure for the pressure valve and the flow valve (0.2 MPa as the recommended value).
5. The inlet side should be supplied with a pressure which is higher than the set pressure by 0.1 MPa or more.
6. Cap the valve after adjustment.

Pressure Valve / Series ASR



Adjustment Procedure 2

Pressure adjustment

1. The fixed set pressure type (-F20) does not require adjustment because the pressure is fixed at 0.2 MPa.
2. The pressure at the low pressure side (return stroke side) is adjusted by the pressure valve.
3. The set pressure is adjusted with knob (A). Turn the knob clockwise to increase the pressure and counterclockwise to decrease the pressure.
4. The graduations 1, 2 and 3 correspond to 0.1, 0.2 and 0.3 MPa respectively. Align the bottom end of the knob with the graduated line for adjustment.
5. Keep the set pressure as low as possible in order to achieve good air saving effect.
6. Cap the valve after adjustment.

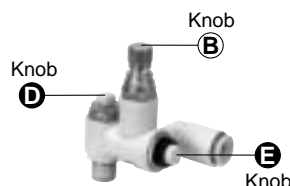
Pressure Valve / Series ASR



Speed control

1. The cylinder speed is adjusted with knobs (C), (D) and (E). First have all the knobs fully closed and then open them gradually for adjustment. Turn the knob clockwise to close (decrease the speed of the piston rod) and counterclockwise to open (increase the speed of the piston rod).
2. Speed adjustment for the working stroke
The speed is adjusted with the pressure valve and the flow valve.
Open knobs (C) and (E) gradually until the required speed is achieved. Make sure that knobs (C) and (E) are opened by the same number of rotations.
Note 1) If the piston rod jerks, close knob (E) until the smooth operation is achieved.
3. Speed adjustment for return stroke
The speed is adjusted with the flow valve.
Open knob (D) gradually until the required speed is achieved.
4. Be sure to tighten the lock nut after adjustment.

Flow Valve / Series ASQ



Speed control

1. The cylinder speed is adjusted with knobs (C), (F) and (G). First have all the knobs fully closed and then open them gradually for adjustment. Turn the knob clockwise to close (decrease the speed of the piston rod) and counterclockwise to open (increase the speed of the piston rod).
2. Speed adjustment for the working stroke
The speed is adjusted with the pressure valve and the dual speed controller.
Open knobs (C) and (G) gradually until the required speed is achieved. Make sure that knobs (C) and (G) are opened by the same number of rotations.
Note 1) If the piston rod jerks, close knob (G) until the smooth operation is achieved.
3. Speed adjustment for return stroke
The speed is adjusted with the dual speed controller.
Open knob (F) gradually until the required speed is achieved.
4. Be sure to tighten the lock nut after adjustment.

Dual Speed Controller / Series ASD

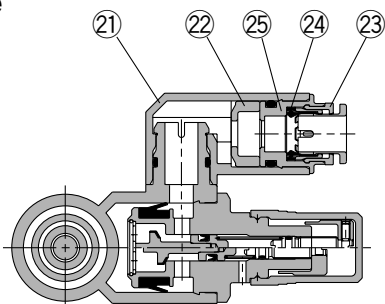


Series ASR / Series ASQ

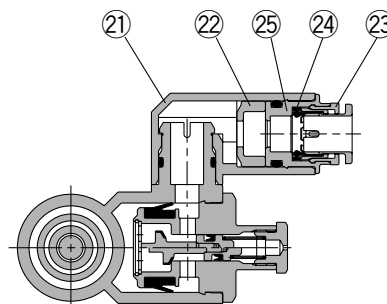
Construction

Pressure Valve / Series ASR

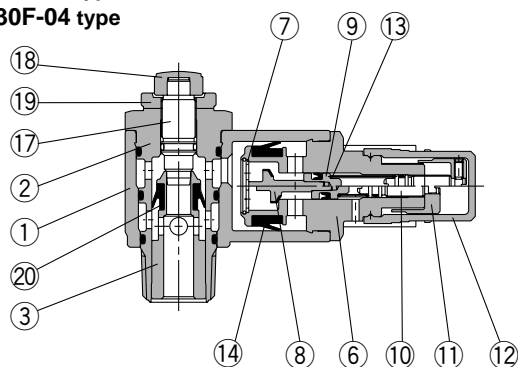
Variable type



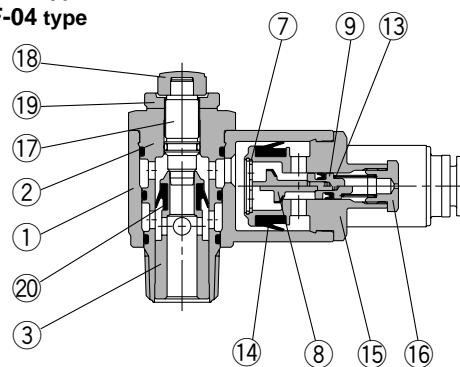
Fixed type



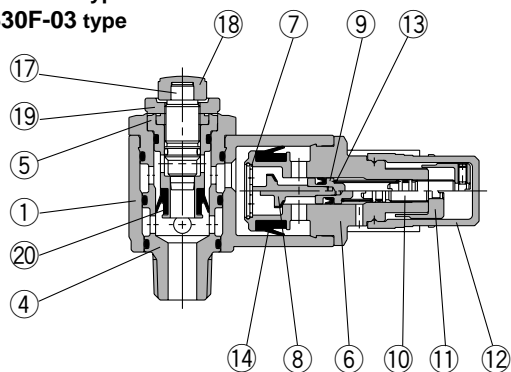
ASR430F-02 type ASR530F-03 type ASR630F-04 type



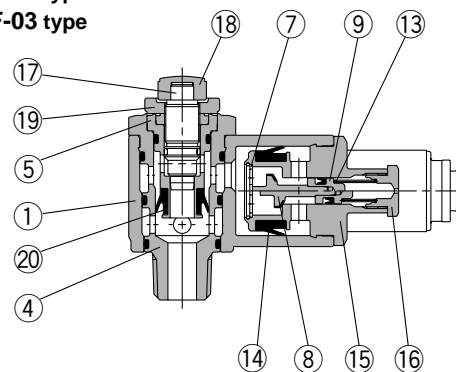
ASR430F-02 type ASR530F-03 type ASR630F-04 type



ASR530F-02 type ASR630F-03 type



ASR530F-02 type ASR630F-03 type



Parts list

No.	Description	Material	Note
1	Body A	PBT	
2	Body B	Brass	Electroless nickel plated
3	Seat ring	Brass	Electroless nickel plated
4	Body B1	Brass	Electroless nickel plated
5	Body B2	Brass	Electroless nickel plated
6	Body C	Brass	Electroless nickel plated
7	Stopper	Stainless steel	
8	Valve	HNBR • Brass	
9	Piston	Brass	
10	Adjustment screw	Brass	Electroless nickel plated
11	Knob	Brass	Electroless nickel plated
12	Cap	Polypropylene	
13	Adjustment spring	Steel wire	Zinc chromated

No.	Description	Material	Note
14	U seal	HNBR	
15	Body C	Brass	Electroless nickel plated
16	Adjustment plug	Brass	Electroless nickel plated
17	Needle	Brass	Electroless nickel plated
18	Knob	PBT	
19	Lock nut ^{Note 1)}	Steel	Electroless nickel plated
20	U seal	HNBR	
21	Elbow body	PBT	
22	Spacer ^{Note 2)}	PBT	
23	Cassette	Stainless steel • POM	
24	Seal	NBR	
25	Drive body ^{Note 3)}	Brass	Electroless nickel plated

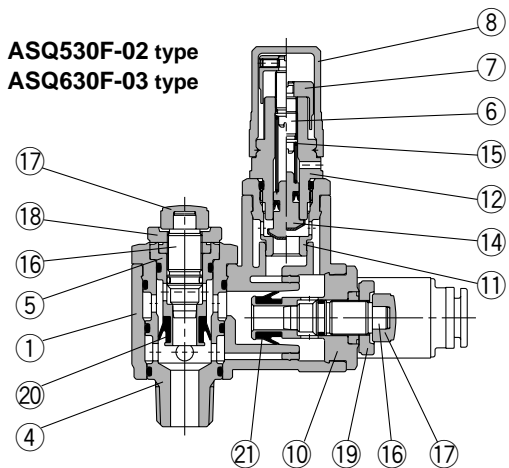
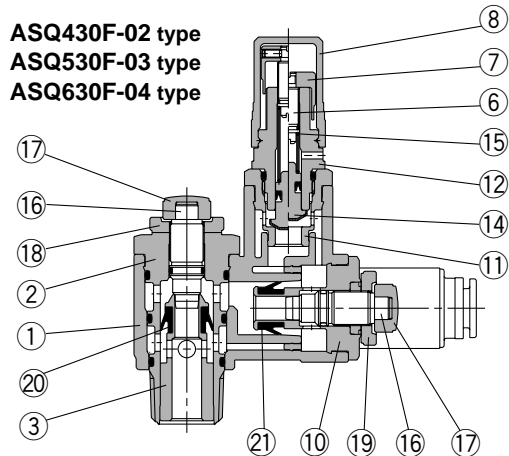
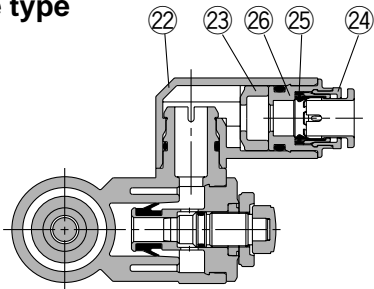
Note 1) Brass is used for the material ASR530F and ASR630F.

Note 2) Not used for ø6 and ø8.

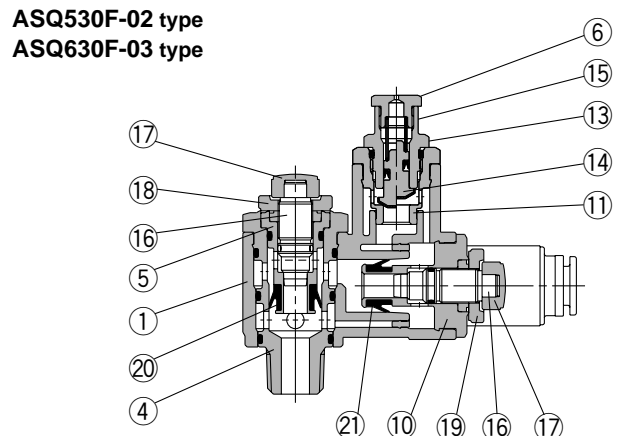
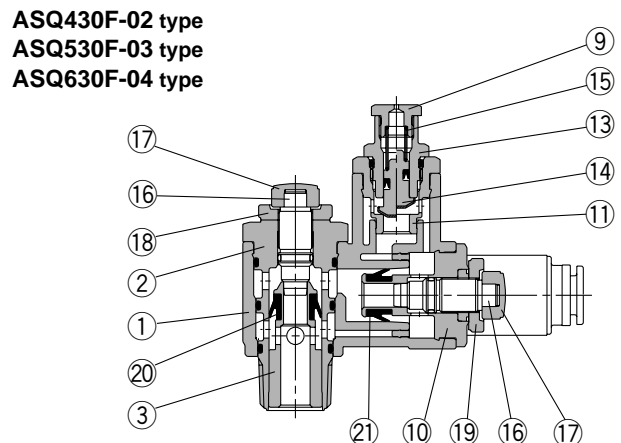
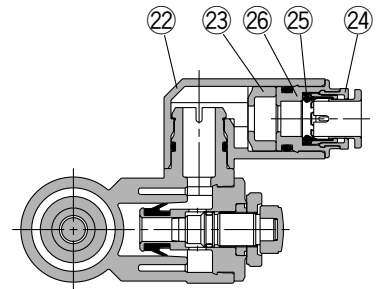
Note 3) Not used for ø10 and ø12.

Flow Valve / Series ASQ

Variable type



Fixed type



Parts list

No.	Description	Material	Note
1	Body A	PBT	
2	Body B	Brass	Electroless nickel plated
3	Seat ring	Brass	Electroless nickel plated
4	Body B1	Brass	Electroless nickel plated
5	Body B2	Brass	Electroless nickel plated
6	Adjustment screw	Brass	Electroless nickel plated
7	Knob	Brass	Electroless nickel plated
8	Cap	Polypropylene	
9	Adjustment plug	Brass	Electroless nickel plated
10	Body C	Brass	Electroless nickel plated
11	Body D1	Brass	Electroless nickel plated
12	Body D2	Brass	Electroless nickel plated
13	Body D3	Brass	Electroless nickel plated

No.	Description	Material	Note
14	Piston valve	HNBR • Brass	
15	Adjustment spring	Steel wire	Zinc chromated
16	Needle	Brass	Electroless nickel plated
17	Knob	PBT	
18	Lock nut ^{Note 1)}	Steel	Electroless nickel plated
19	Lock nut ^{Note 1)}	Steel	Black zinc chromated
20	U seal	HNBR	
21	U seal	HNBR	
22	Elbow body	PBT	
23	Spacer ^{Note 2)}	PBT	
24	Cassette	Stainless steel • POM	
25	Seal	NBR	
26	Drive body ^{Note 3)}	Brass	Electroless nickel plated

Note 1) Brass is used for the material ASQ530F and ASQ630F.

Note 2) Not used for ø6 and ø8.

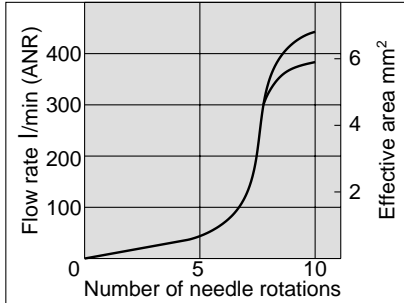
Note 3) Not used for ø10 and ø12.

Series ASR / Series ASQ

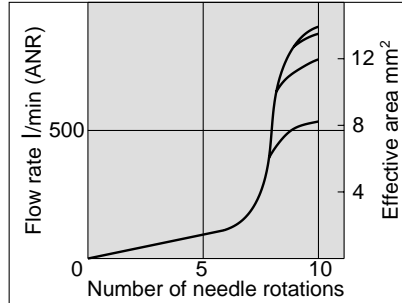
Flow Characteristics

Pressure Valve / Series ASR (Inlet pressure: 0.5 MPa)

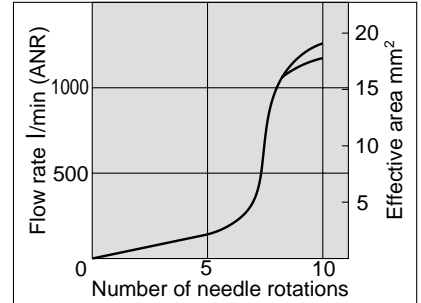
ASR430F



ASR530F



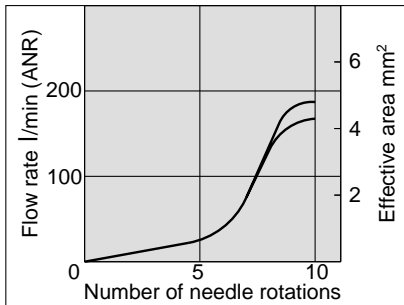
ASR630F



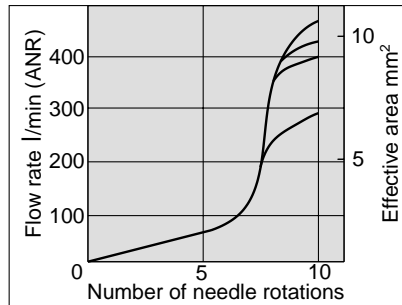
Flow Valve / Series ASQ

Meter-out type (Inlet pressure: 0.3 MPa)

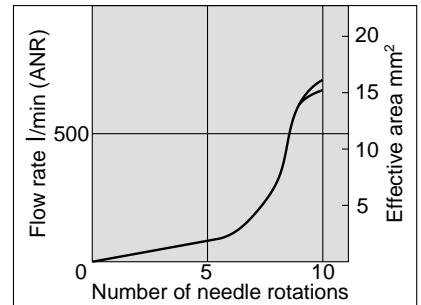
ASQ430F



ASQ530F

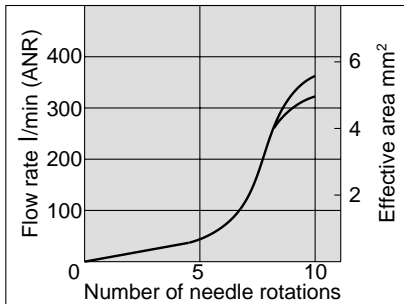


ASQ630F

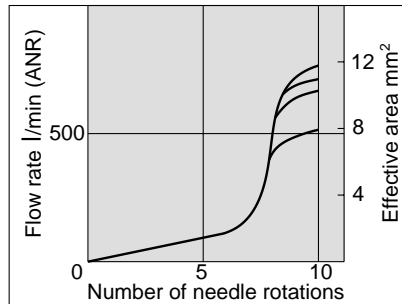


Meter-in type (Inlet pressure: 0.5 MPa)

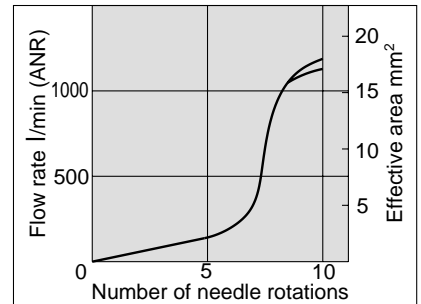
ASQ430F



ASQ530F

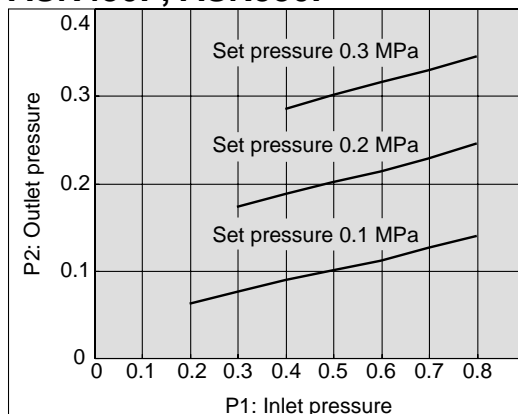


ASQ630F

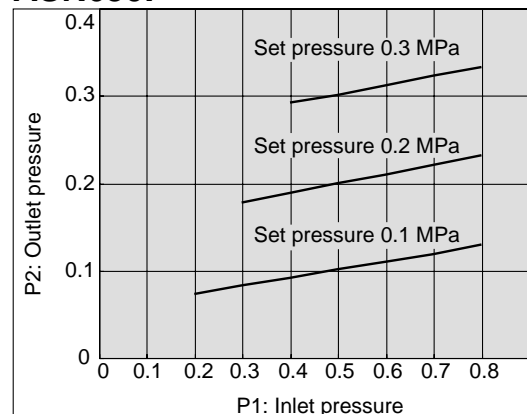


Pressure Characteristics (ASR)

ASR430F, ASR530F



ASR630F

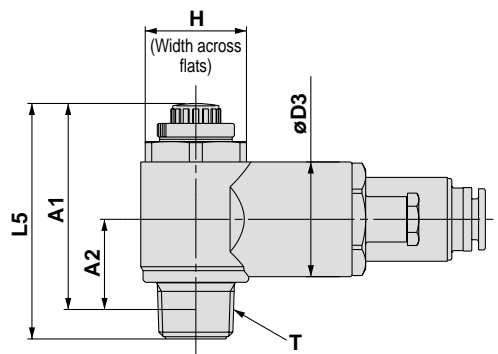
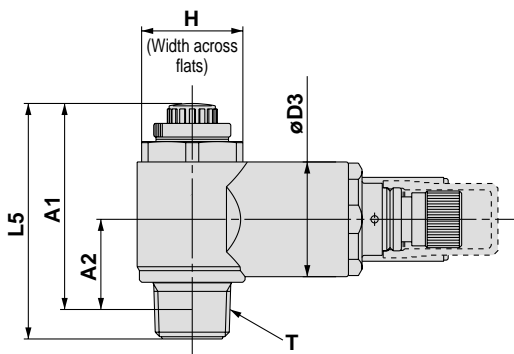
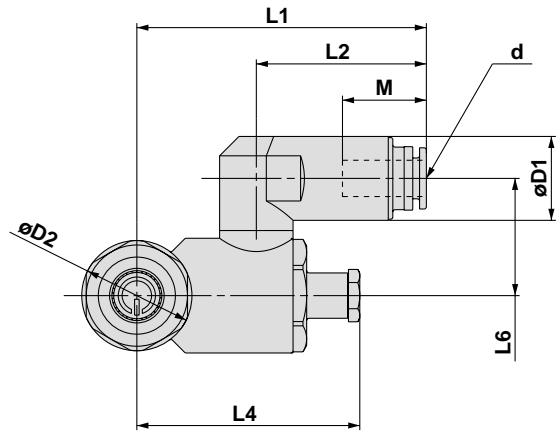
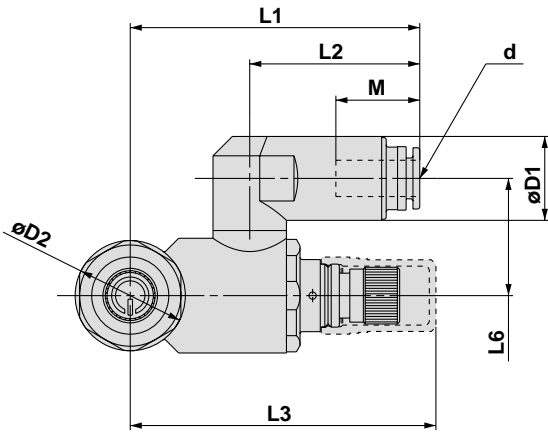


Dimensions

Pressure Valve / Series ASR

Variable set pressure type

Fixed set pressure type (-F20)



Model	Note 1) d	T	H	D1	D2	D3	L1	L2	Note 2) L3	Note 3) L4	L5		L6	A1		A2	M	Weight (g) Note 5)	
											MAX.	MIN.		MAX.	MIN.			*1	*2
ASR430F-02-06S,-F20	6						57.7	34.9									17	111	89
ASR430F-02-08S,-F20	8	R1/4	17	18.5	20	21.5	58.7	35.9	63.7	45.6	50.6	45.6	23	44.6	39.6	16.8	17	114	93
ASR430F-02-10S,-F20	10						53.8	31									21	105	82
ASR530F-02-06S,-F20	6						62.9	36.5									17	150	127
ASR530F-02-08S,-F20	8	R1/4	21	18.5	24.3	25.3	63.9	37.5	67.3	49.2	55.8	50.8	25.9	49.8	44.8	18.8	18.5	153	130
ASR530F-02-10S,-F20	10						59	32.6									21	143	120
ASR530F-02-12S,-F20	12			20.9			60.8	34.4									22	146	122
ASR530F-03-06S,-F20	6						62.9	36.5									17	160	137
ASR530F-03-08S,-F20	8						63.9	37.5	67.3	49.2	57.4	52.4	25.9	51	46	20	18.5	163	140
ASR530F-03-10S,-F20	10	R3/8	21	18.5	24.3	25.3	59	32.6									21	153	130
ASR530F-03-12S,-F20	12			20.9			60.8	34.4									22	156	133
ASR630F-03-10S,-F20	10						62.8	32.6	86.3	65.5	67.6	60.1	27.7	61.2	53.7	20.6	21	237	219
ASR630F-03-12S,-F20	12	R3/8	25	18.5	29.7	30	64.6	34.4									22	239	221
ASR630F-04-10S,-F20	10						62.8	32.6	86.3	65.5	71.1	63.6	27.7	62.9	55.4	24.1	21	257	239
ASR630F-04-12S,-F20	12	R1/2	25	18.5	29.7	30	64.6	34.4									22	259	239

Note 1) "d" indicates the applicable tubing O.D.

Note 2) L3 is the dimension for the variable set pressure type.

Note 3) L4 is the dimension for the fixed set pressure type.

Note 4) A1 and A2 are reference dimensions after installation.

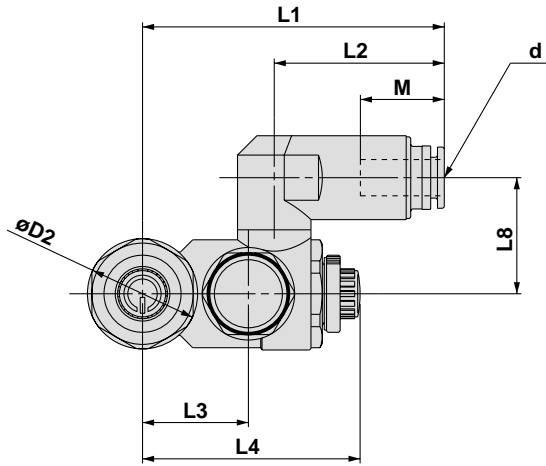
Note 5) *1 is the weight for the variable set pressure type and *2 is that for the fixed set pressure type.

Series ASR / Series ASQ

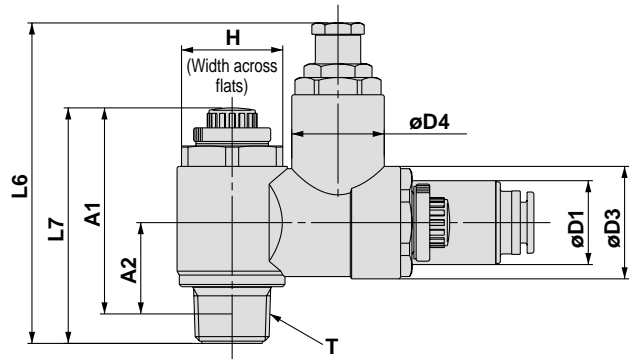
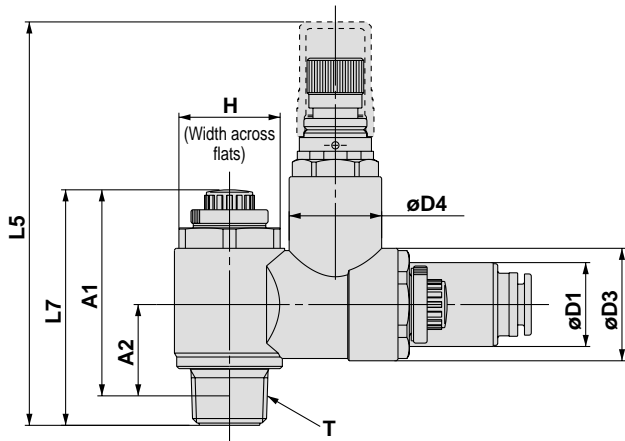
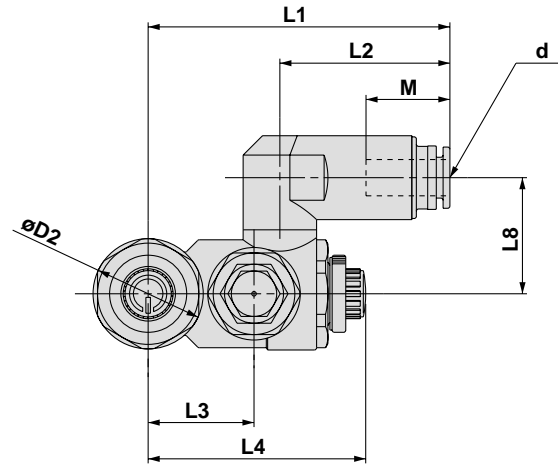
Dimensions

Flow Valve / Series ASQ

Variable set pressure type



Fixed set pressure type



Model	Note 1) d	T	H	D1	D2	D3	D4	L1	L2	L3	L4		Note 2) L5	Note 3) L6	L7		L8	A1 Note 4)		Note 4) A2	M	Weight (g) Note 5)	
											MAX.	MIN.			MAX.	MIN.		MAX.	MIN.			*1	*2
ASQ430F-02-06S,-F20	6							61.6	34.9												17	136	114
ASQ430F-02-08S,-F20	8	R1/4	17	18.5	20	21.5	19.5	62.6	35.9												18.5	139	117
ASQ430F-02-10S,-F20	10							57.7	31												21	130	108
ASQ530F-02-06S,-F20	6							65.6	36.5												17	178	155
ASQ530F-02-08S,-F20	8	R1/4	21	18.5	24.3	24.8	20.4	66.6	37.5												18.5	181	158
ASQ530F-02-10S,-F20	10							61.7	32.6	23.4	53.5	48.5	92.2	72	55.8	50.8	25.6	49.8	44.8	19	21	172	149
ASQ530F-02-12S,-F20	12							63.5	34.4												22	174	151
ASQ530F-03-06S,-F20	6							65.6	36.5												17	188	165
ASQ530F-03-08S,-F20	8							66.6	37.5												18.5	191	168
ASQ530F-03-10S,-F20	10	R3/8	21	18.5	24.3	24.8	20.4	61.7	32.6												21	182	159
ASQ530F-03-12S,-F20	12							63.5	34.4												22	184	161
ASQ630F-03-10S,-F20	10							74.8	32.6												21	310	292
ASQ630F-03-12S,-F20	12	R3/8	25	18.5	29.7	30.7	30	76.6	34.4												22	312	294
ASQ630F-04-10S,-F20	10							74.8	32.6												21	330	312
ASQ630F-04-12S,-F20	12	R1/2	25	18.5	29.7	30.7	30	76.6	34.4												22	332	314

Note 1) "d" indicates the applicable tubing O.D..

Note 2) L5 is the dimension for the variable set pressure type.

Note 3) L6 is the dimension for the fixed set pressure type.

Note 4) A1 and A2 are reference dimensions after installation.

Note 5) *1 is the weight for the variable set pressure type and *2 is that for the fixed set pressure type.