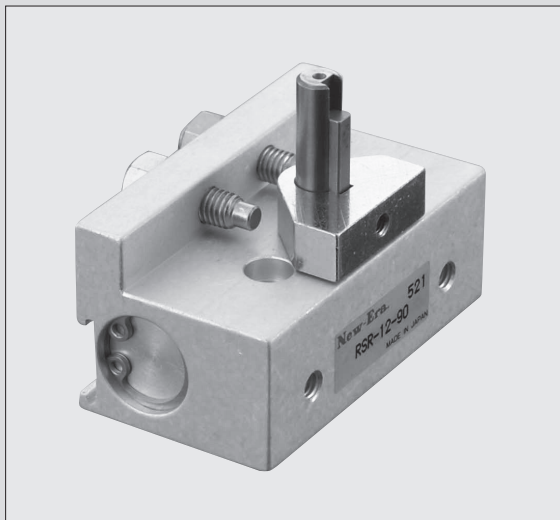


Rotary Actuator (R)SR Series



◆ Compact and Lightweight

Drastically downsized by the major use of aluminum alloy compared to the previous MR series.

◆ Zero Backlash

Backlash caused by the rack and pinion removed by the use of the external angle stopper.

Model Code No.

RSR W - 12 - 180 ※ ZC230 A 2

Type

SR : Basic Type
($\phi 12, \phi 20$)

RSR: Basic Type
with Switch

Shaft Type

No code: One side
W: Both sides

Bore Size

9: 9mm
12: 12mm
20: 20mm

Rocking Angle

90: 90°
180: 180°

Switch Type	Switch Lead Wire Length	Number of Switches
ZC230: 2 Wire System Solid State	A: 1m B: 3m	1:1 Switch 2:2 Switches
ZC253: 3 Wire System Solid State		
EC22: 2 Wire System Solid State		
EC23: 3 Wire System Solid State		
ZE135: 2 Wire System Solid State Straight Type	A: 1m B: 3m	1:1 Switch 2:2 Switches
ZE155: 3 Wire System Solid State Straight Type		
ZE235: 2 Wire System Solid State, L-shaped		
ZE255: 3 Wire System Solid State, L-shaped		
ES13: 2 Wire System Solid State Straight Type		
ES(P)15: 3 Wire System Solid State Straight Type		
ES23: 2 Wire System Solid State, L-shaped		
ES(P)25: 3 Wire System Solid State, L-shaped		
Switch Type	Number of Switches	Switch Lead Wire Length
No Code: No Switch	—	—
RCA: 2 Wire System Contact	1:1 Switch	No Code: 1.5m
RCB: 2 Wire System Contact	2:2 Switches	LA: 5m
RCM: 2 Wire System Solid State		

●(R) SR-12, 20 can not be installed ZE, the ES switch.

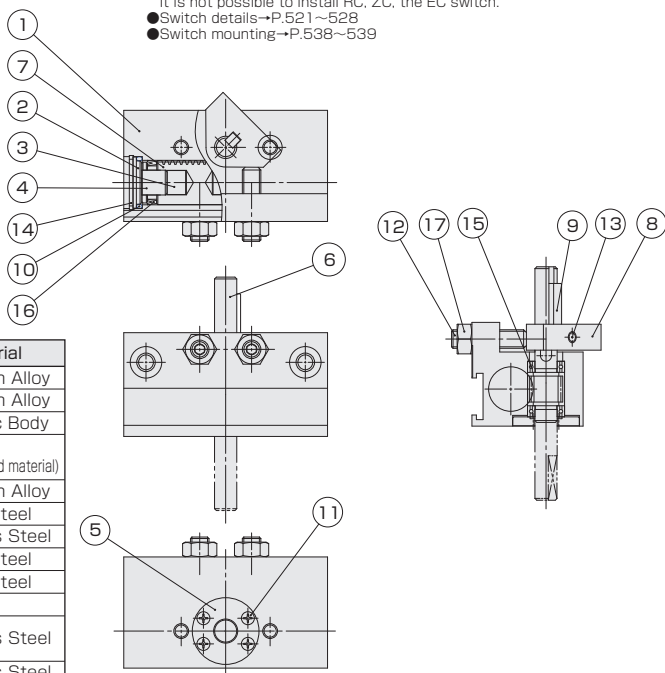
●RSR-9 can be installed ZE, only ES switch.

It is not possible to install RC, ZC, the EC switch.

●Switch details→P.521~528

●Switch mounting→P.538~539

Internal Structure Diagram



Parts List

NO	Name	Material
1	Main Body	Aluminum Alloy
2	Head Cover	Aluminum Alloy
3	Magnet	Magnetic Body
4	Pressure Cover	Brass (Cd restricted material)
5	Pressure Cover	Aluminum Alloy
6	Pinion Rod	Carbon Steel
7	Rack Piston	Stainless Steel
8	Stopper	Carbon Steel
9	Key	Carbon Steel
10	O Ring	NBR
11	Cross-recessed Countersunk Head Screws	Stainless Steel
12	Hexagon Socket Head Setscrew	Stainless Steel
13	Hexagon Socket Head Setscrew	Chrome Molybdenum Steel
14	Hole Locating Snap Ring	Carbon Tool Steel
15	Bearing	Bearing Steel
16	Packing	NBR
17	Hexagon Nut	Soft Steel

Note) For the SR(W) type (without magnet), the magnet (No. 3) and the pressure cover (No. 4) are not included.

Note) --- indicates the type with both shafts.

Note) For the type with a cylinder with a diameter of 9 mm, the pressure cover (No. 4) is made of aluminum alloy and the hexagon nut (No.17) is made of stainless steel.

Specifications

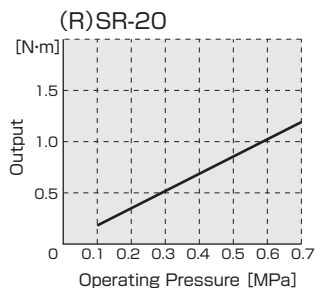
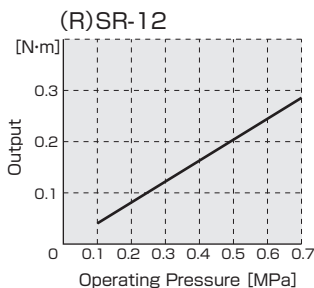
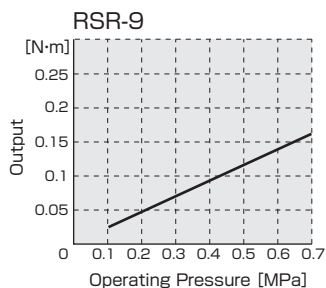
Model		RSR-9-90	RSR-9-180	(R)SR-12-90	(R)SR-12-180	(R)SR-20-90	(R)SR-20-180
Bore Size [mm]		9		12		20	
Rod Diameter [mm]		6				8	
Fluid		Air					
Operating Pressure [MPa]		0.1~0.7					
Proof Pressure [MPa]		1.05					
Operating Temperature [°C]		0~60 (No Freezing)					
Rocking Angle [°]		90	180	90	180	90	180
Angle Adjustment [°]	90° Specification	85~95					
	180° Specification	175~185					
Switch Detection Range [°]		0~90	0~180	0~90	0~180	0~90	0~180
Speed Adjustment		Use the speed controller					
*Allowable Kinetic Energy [J]		0.002		0.004		0.01	
Theoretical Torque [N·m]		0.2P		0.45P		1.88P	
Internal Volume of Cylinder (Reciprocation) [cc]		1	2	1.6	3.0	6.0	12.0
Main Body Mass [g]		60	75	110(128)	135(128)	250(250)	320(318)
Added Weight (Both Shafts) [g]		3		4		10	

*When the kinetic energy exceeds the allowable energy, absorb the energy using a shock absorber or the like.

*Theoretical torque P indicates the working pressure.

*SR type does not have a built-in magnet.

Effective Torque



Load to the Shaft

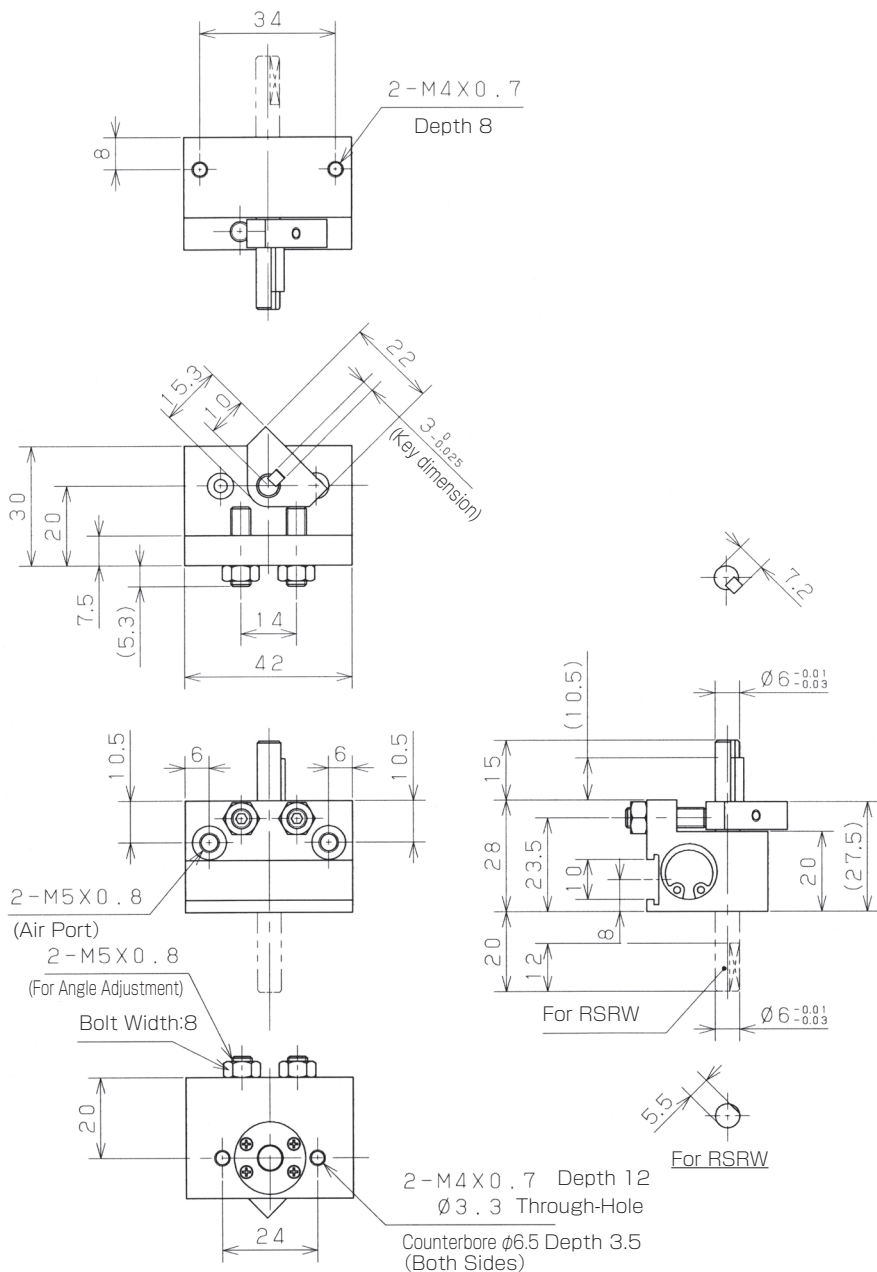
Use a thrust bearing or the like to avoid direct load to the shaft.

If direct load cannot be avoided, use the following loads.

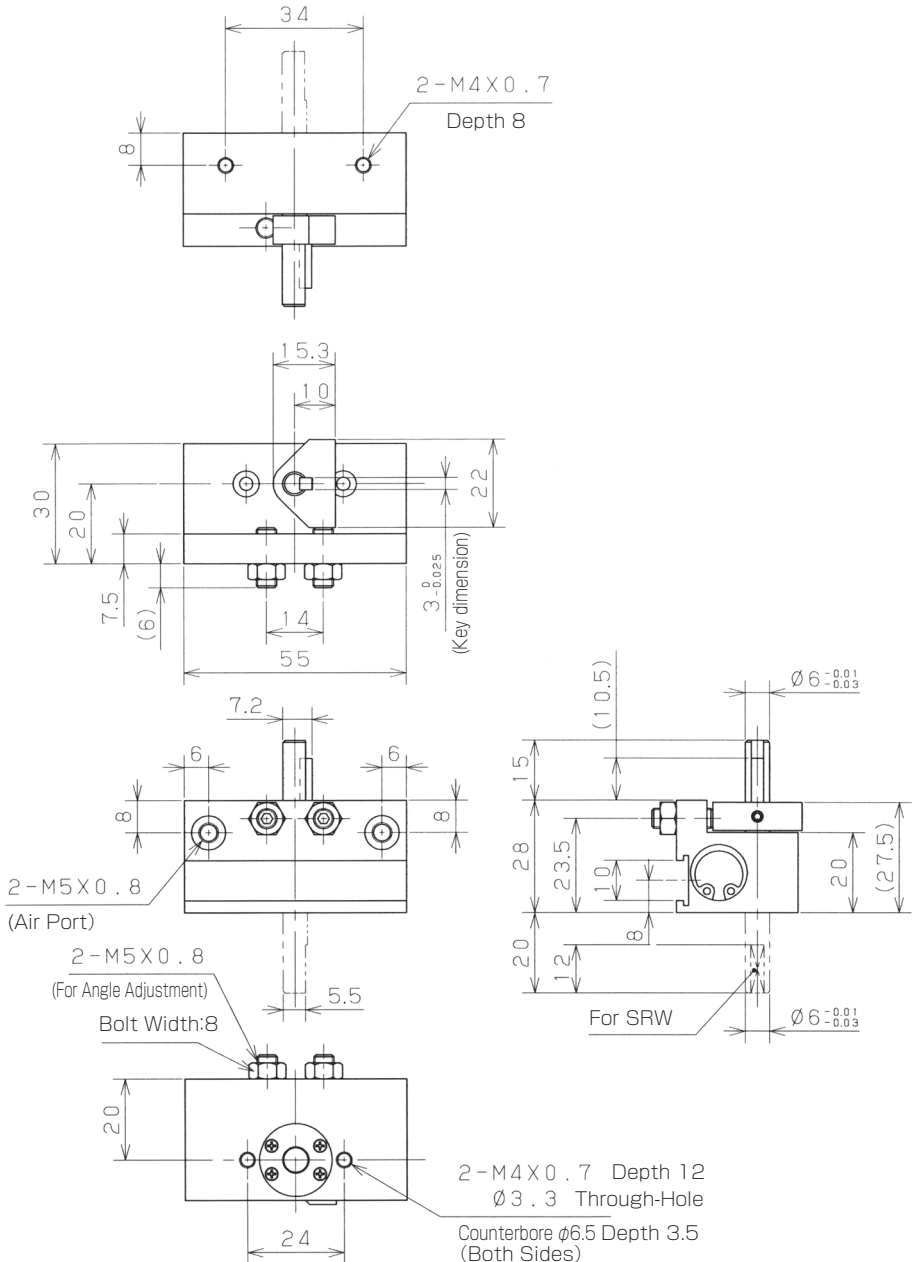
Model	Radial Load	Thrust Load
RSR-9	300g	150g
(R)SR-12	300g	150g
(R)SR-20	500g	200g

See "Technical Data" in the catalogue for the energy calculation method.

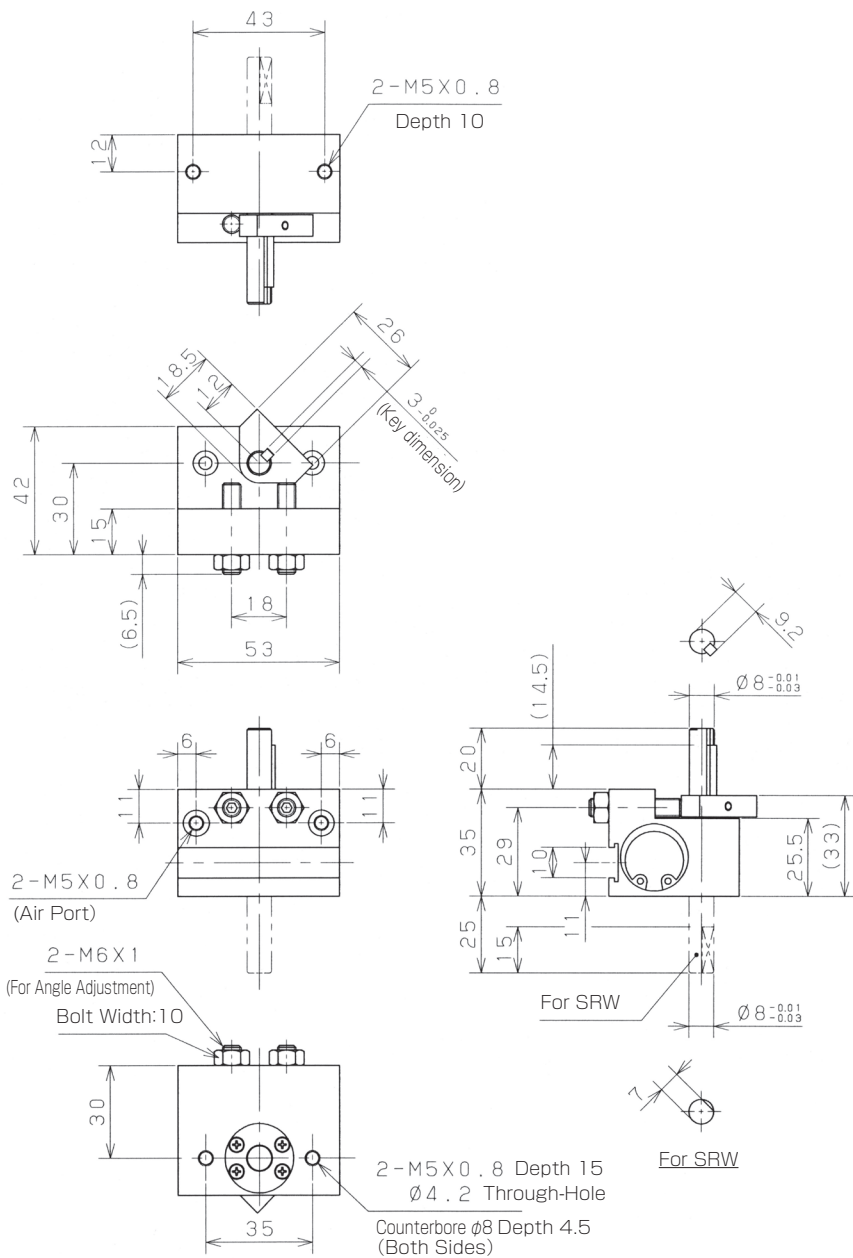
Dimensions **SR□-12-90**



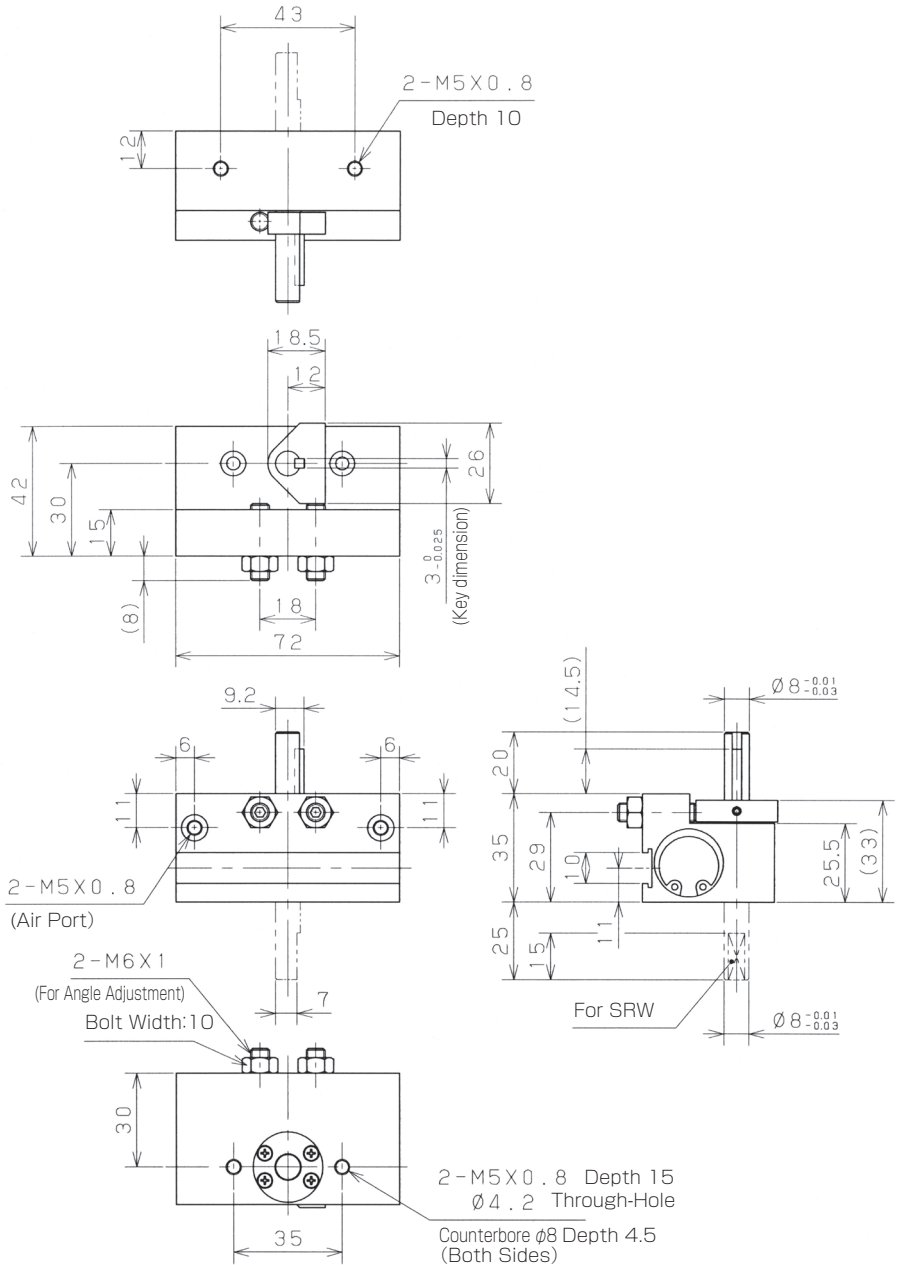
Dimensions SR□-12-180



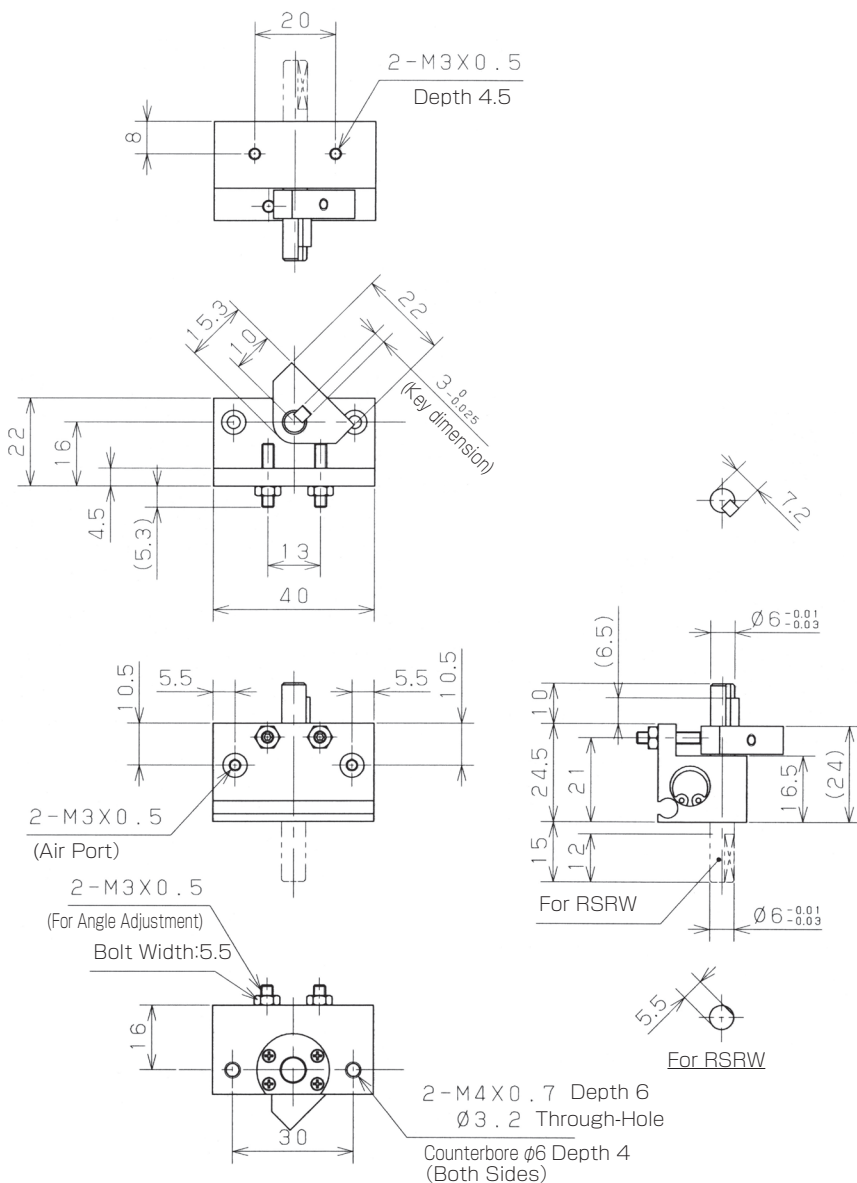
Dimensions **SR□-20-90**



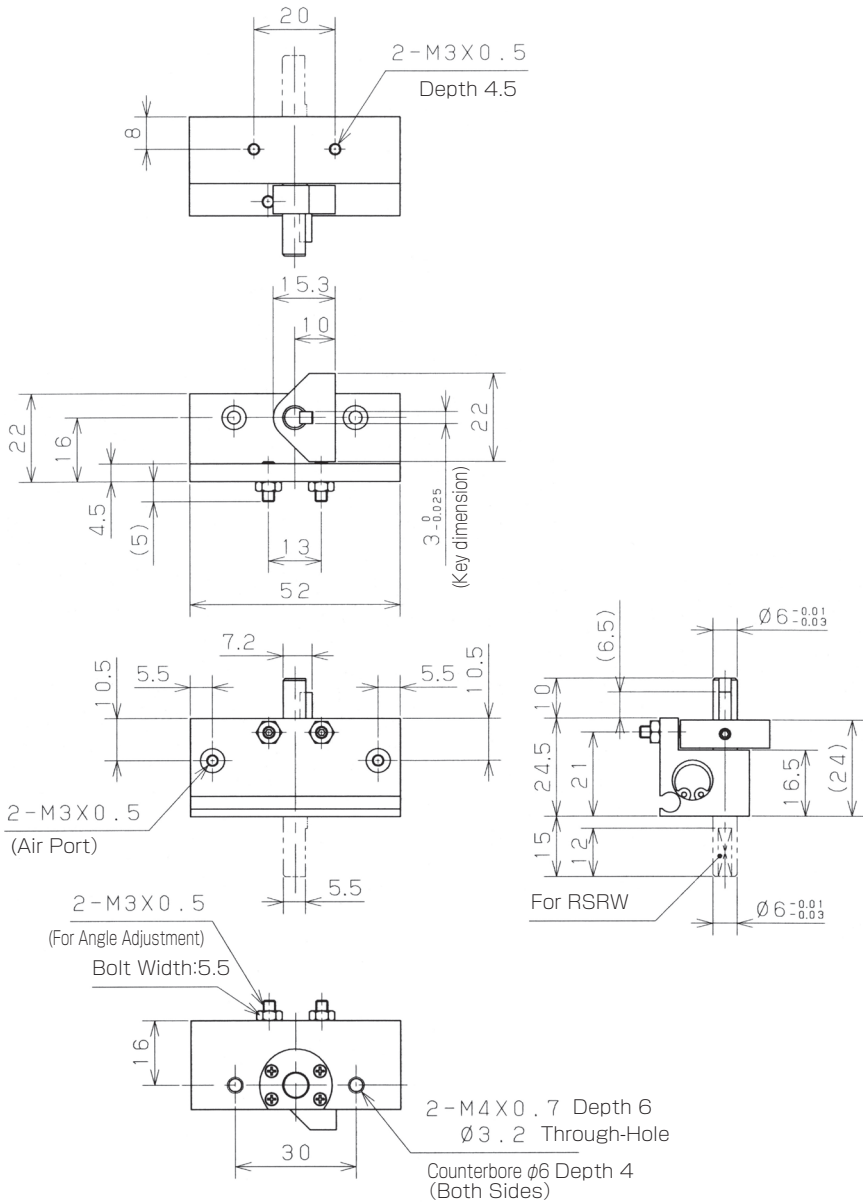
Dimensions **SR□-20-180**



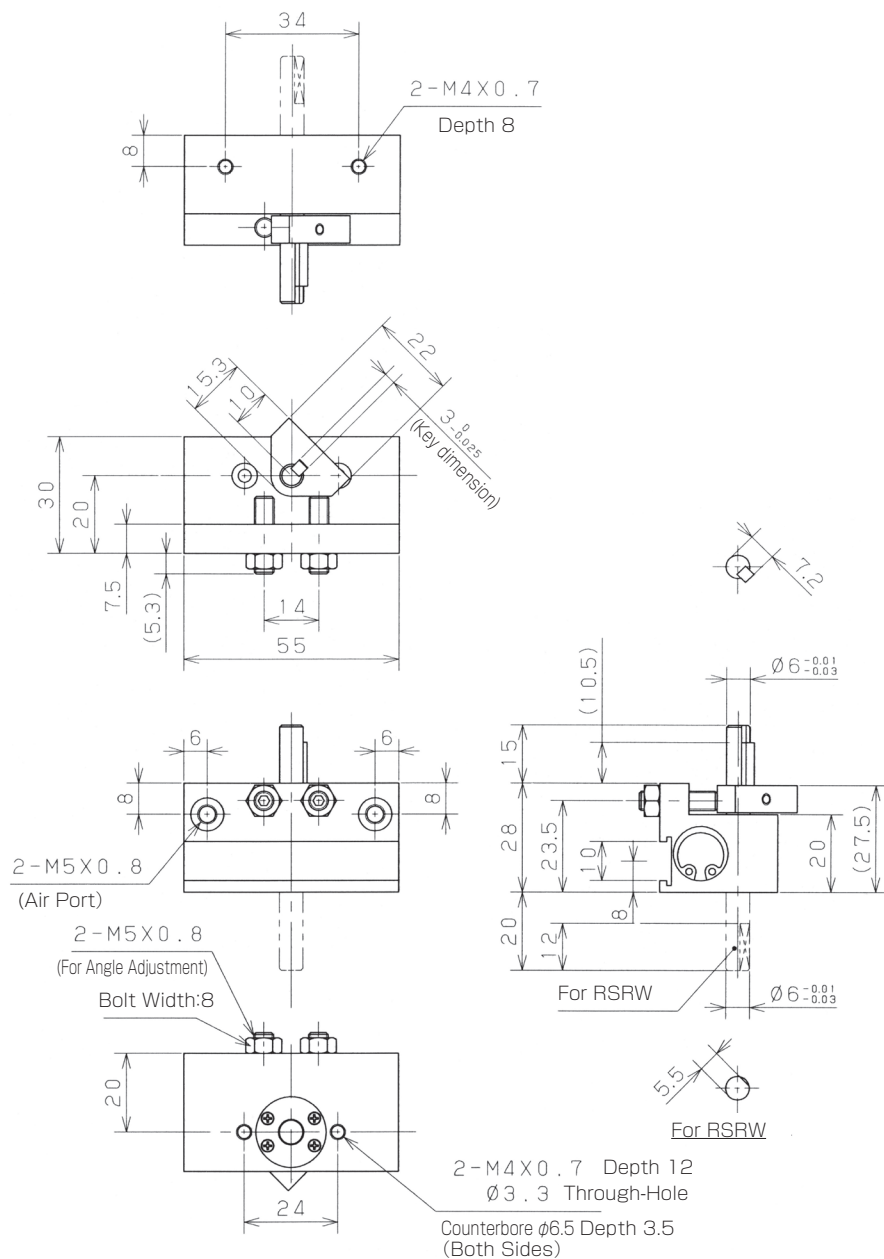
Dimensions RSR□-9-90



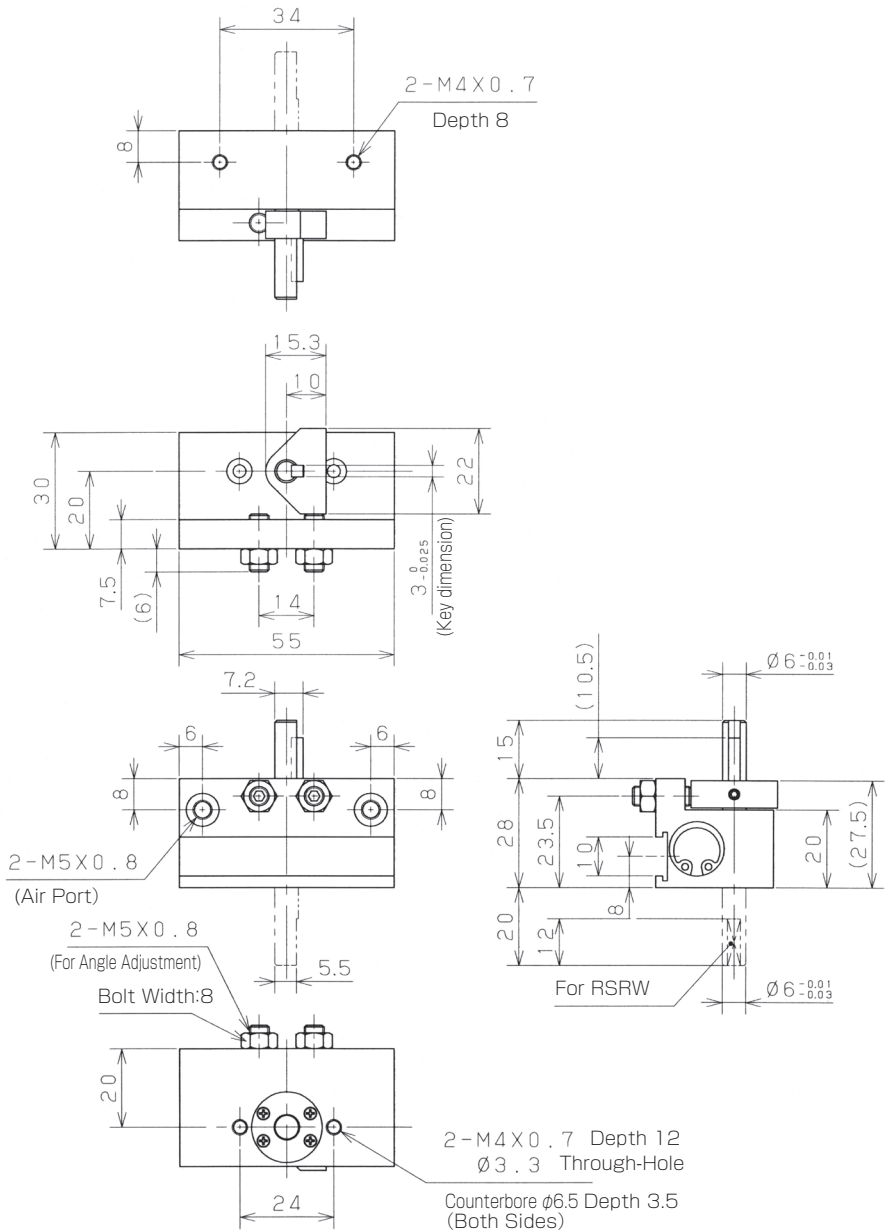
Dimensions RSR□-9-180



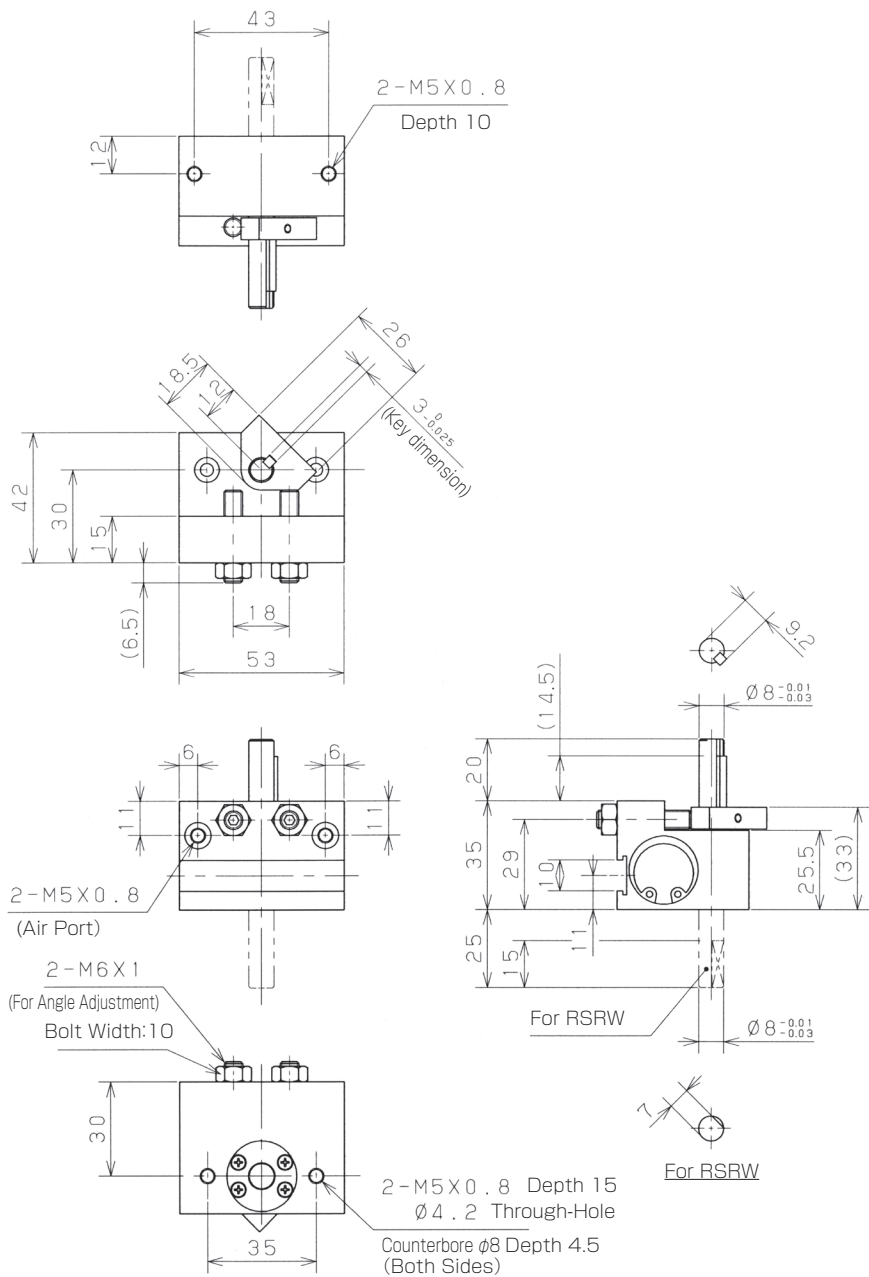
Dimensions RSR□-12-90



Dimensions RSR□-12-180



Dimensions RSR□-20-90



Dimensions RSR□-20-180

