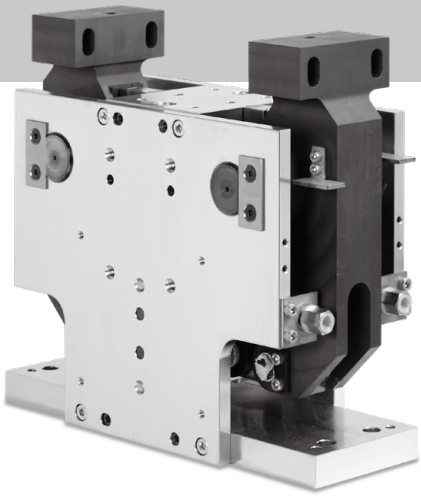
Frame Clamp Cylinder
WRF100



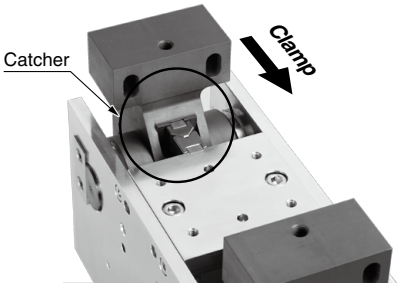
High output

Max. clamping force: **20,000 N** or more
(Operating pressure: At 0.5 MPa)

High clamping force makes it suitable for a broad range of applications

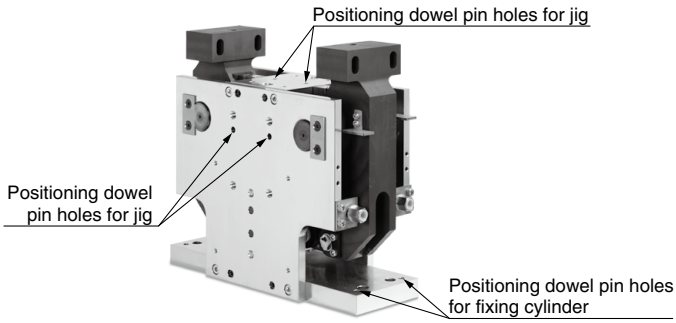
Stable repeatability

Catcher (detented positioning structure) is a standard feature for repeatable positioning.



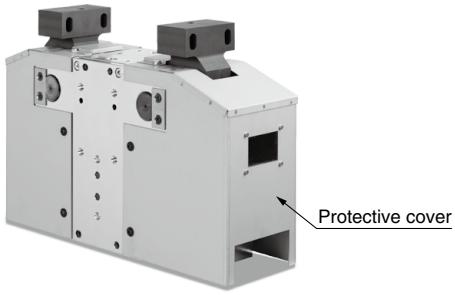
Dowel pin holes for repeatable positioning when reassembling

Allows for repeatable mount positioning in reassembly.



Optional spatter protective cover available

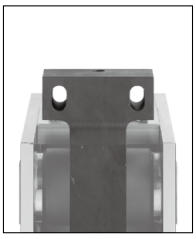
Modular structure allows easy assembly even after the cylinder is installed.



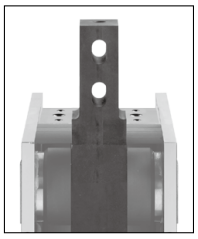
Standardized T-type arms and S-type arms

Shape selectable to meet specifications/application.

- T-type arm width: 200, 240, 270 mm
- S-type arm width: 200, 240 mm



T-type arms



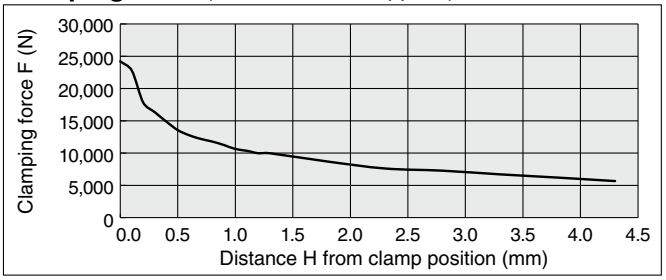
S-type arms

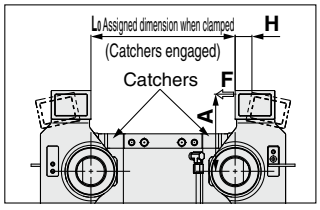
Clamping force characteristics

<Relationship between clamp position and clamping force>

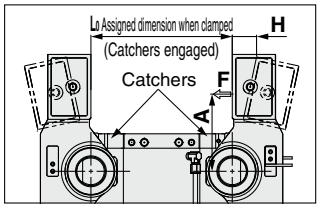
Refer to the following graph for the relationship between a distance H from a clamp position when the mutually acting catchers are engaged and a clamping force F.

Clamping force (when 0.5 MPa supplied)





T-type arms

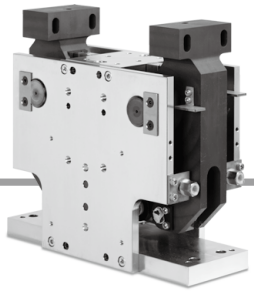


S-type arms

Generated position of clamping force F (mm)

Arm type	A
T200, T240, T270	107
S200, S240	

Frame Clamp Cylinder
WRF100



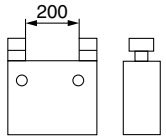
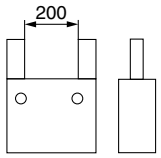
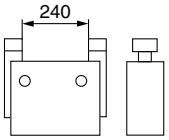
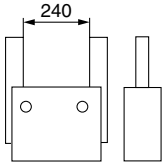
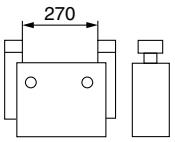
How to Order

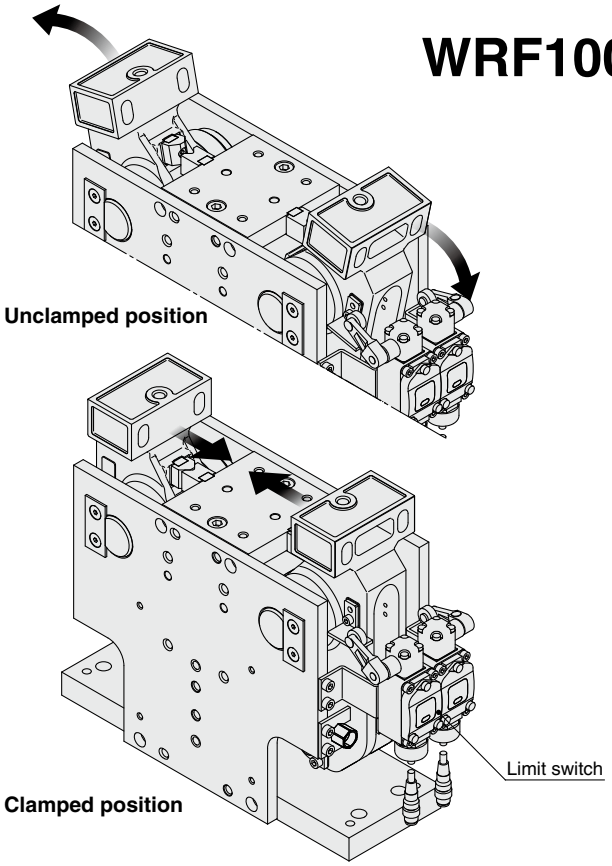
WRF100 – T200 C

Protective cover

Nil	Without cover
C	With cover

Clamp arm

Symbol	T-type arms	Symbol	S-type arms
T200		**S200**	
T240		**S240**	
T270		—	—



Note) This product does not include the limit switch.
(The limit switch should be prepared by the customer.)
Applicable limit switches have part numbers listed on the right.
For mounting the limit switch, order the switch mounting bracket (WRF-BK) separately.
For details, refer to page 86.

<Applicable limit switches for part number>
OMRON Corp.: WLG2-LDAS-DGJS03T
Azbil Corp.: 1LS74-JWC-P025

Specifications

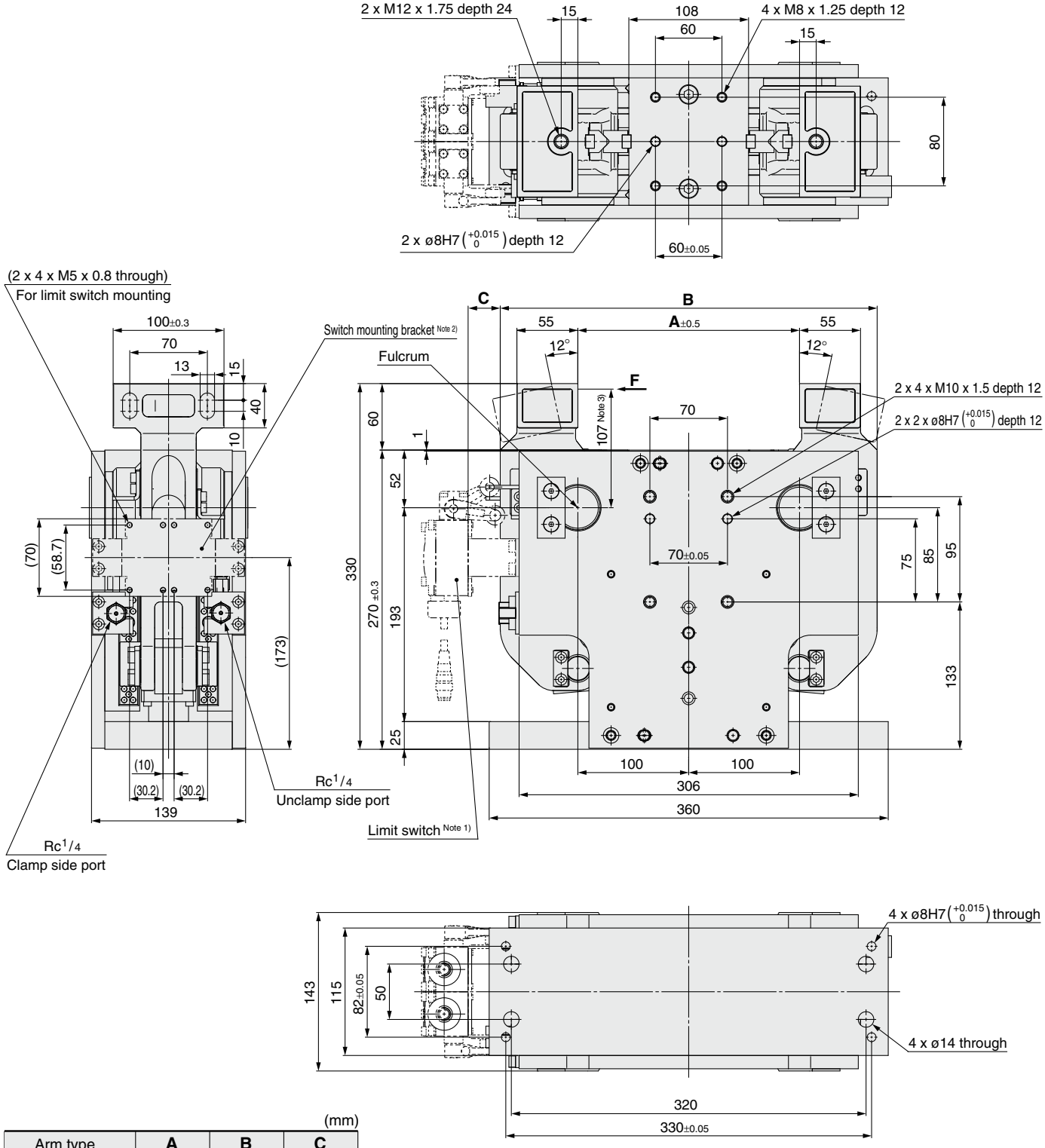
Bore size	100 mm
Stroke	48 mm
Fluid	Air
Proof pressure	0.8 MPa
Maximum operating pressure	0.5 MPa
Minimum operating pressure	0.2 MPa
Ambient and fluid temperature	–10 to 60°C (No freezing)
Cushion	Clamp side : None Unclamp side: Rubber bumper
Lubrication	Non-lube
Operating time	1.0 s or more (Both clamp and unclamp)
Arm opening angle	24° (12° each side)
Clamping force	20,000 N or more (At 0.5 MPa) Note)
Weight	47 kg (WRF100-T200)
	47 kg (WRF100-S200)

Note) For the position where the clamping force is generated, refer to the dimensions on pages 82 to 84.

Dimensions

WRF-T□/T-type clamp arms (Without cover)

WRF100-T200/T240/T270



(mm)

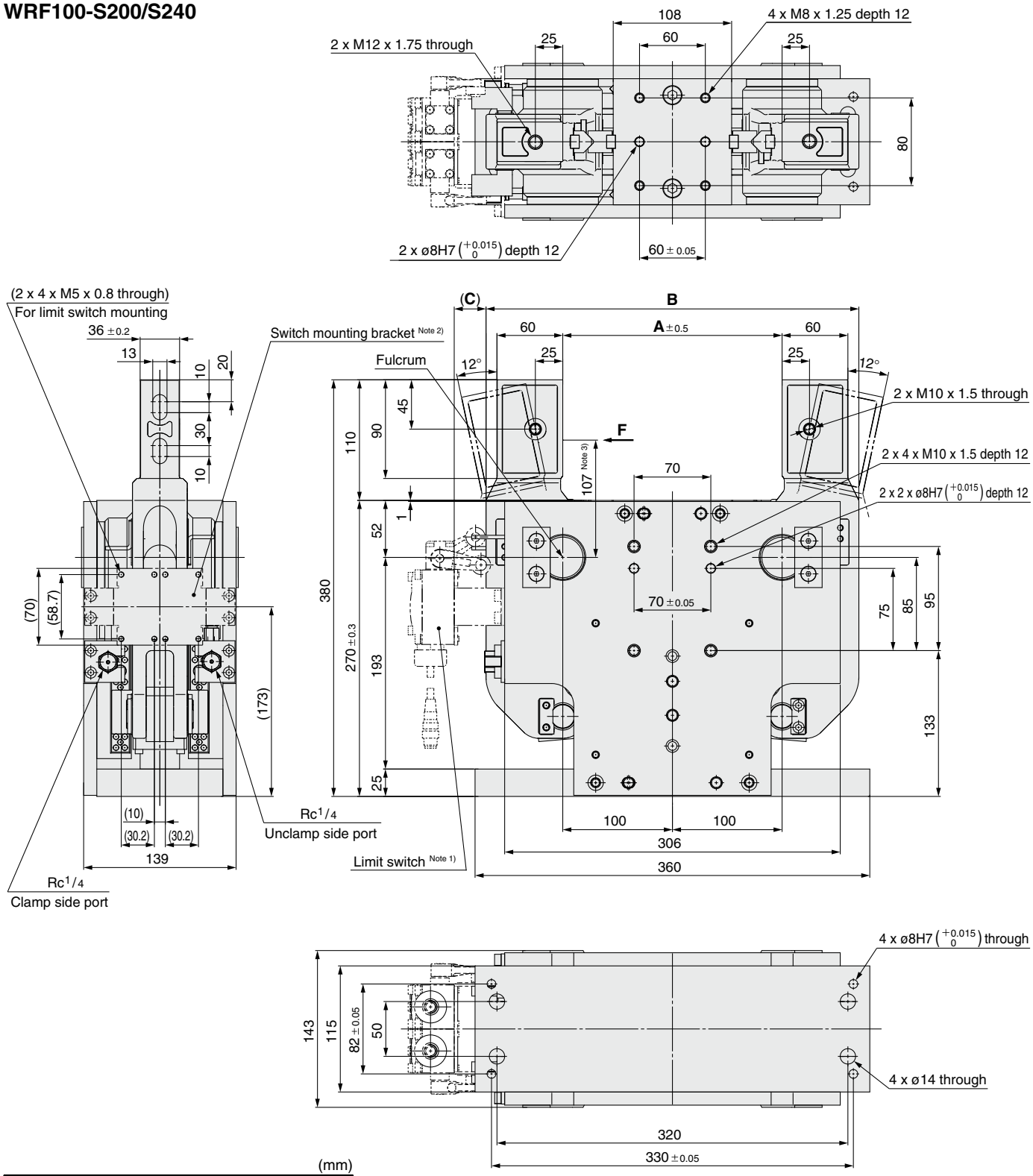
Arm type	A	B	C
T200	200	340	29
T240	240	360	19
T270	270	380	9

Note 1) This product does not include the limit switch.
Note 2) For mounting the limit switch, order the switch mounting bracket (WRF-BK) separately. For details, refer to page 86.
Note 3) The symbol F in the dimensions indicates the position where the clamping force is generated defined by the product specifications.

Dimensions

WRF-S□/S-type clamp arms (Without cover)

WRF100-S200/S240



(mm)

Arm type	A	B	C
S200	200	340	29
S240	240	360	19

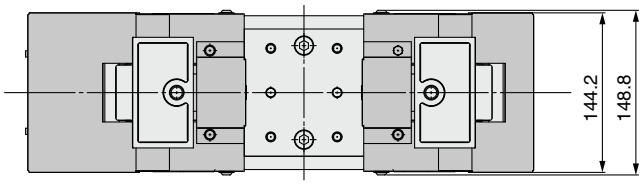
Note 1) This product does not include the limit switch.
Note 2) For mounting the limit switch, order the switch mounting bracket (WRF-BK) separately. For details, refer to page 86.
Note 3) The symbol F in the dimensions indicates the position where the clamping force is generated defined by the product specifications.

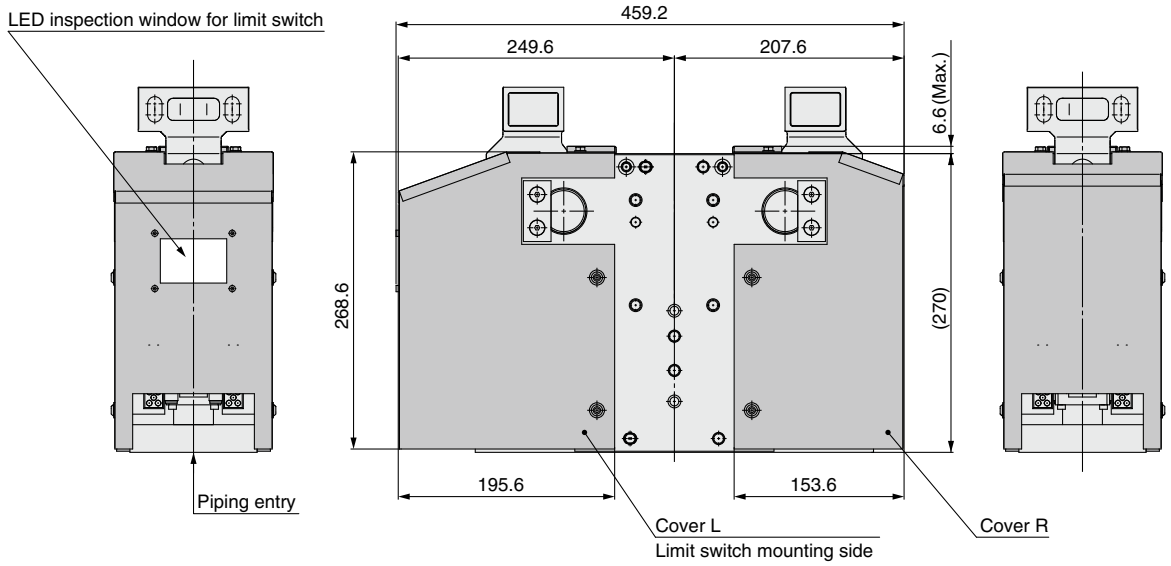
Dimensions

WRF-$^{T}_{S}$□C/With protective cover

WRF100-T200C

Note) Protective cover dimensions shown in the figures are the same even if arm types are different.

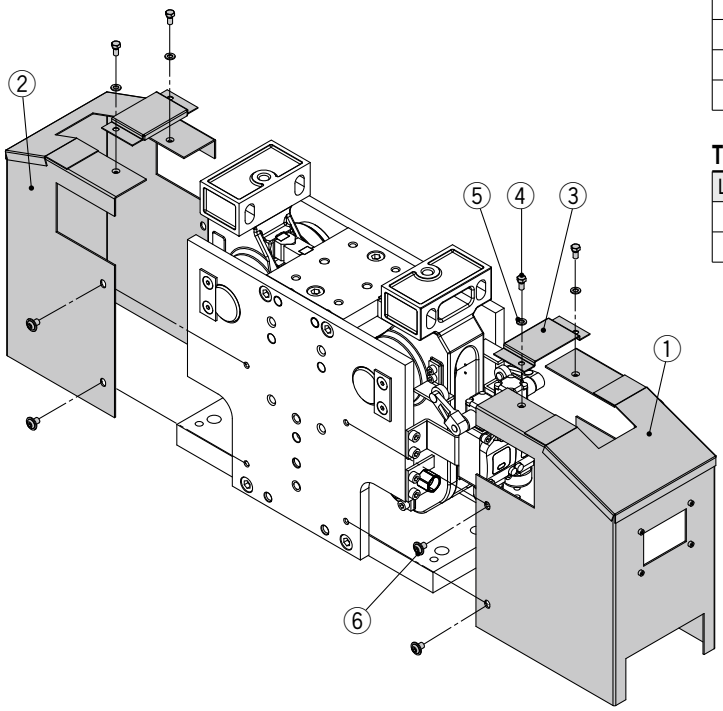




Protective Cover Kit (Option)

A protective cover can be retrofitted.

Fixing method for protective covers



Applicable product	Kit no.	Contents
WRF100-T200	WRF-C200	① Cover L (1 pc.) ② Cover R (1 pc.) ③ Top covers (2 pcs.) ④ Hexagon head bolts (4 pcs.) ⑤ Flat washers (4 pcs.) ⑥ Cover mounting bolts (8 pcs.)
WRF100-S200		
WRF100-T240	WRF-C240	
WRF100-S240		
WRF100-T270	WRF-C270	

Tightening torque for cover mounting bolts

Location	Tightening torque (N·m)
④	3.0 to 4.0
⑥	5.0 to 7.0

<Mounting procedure>

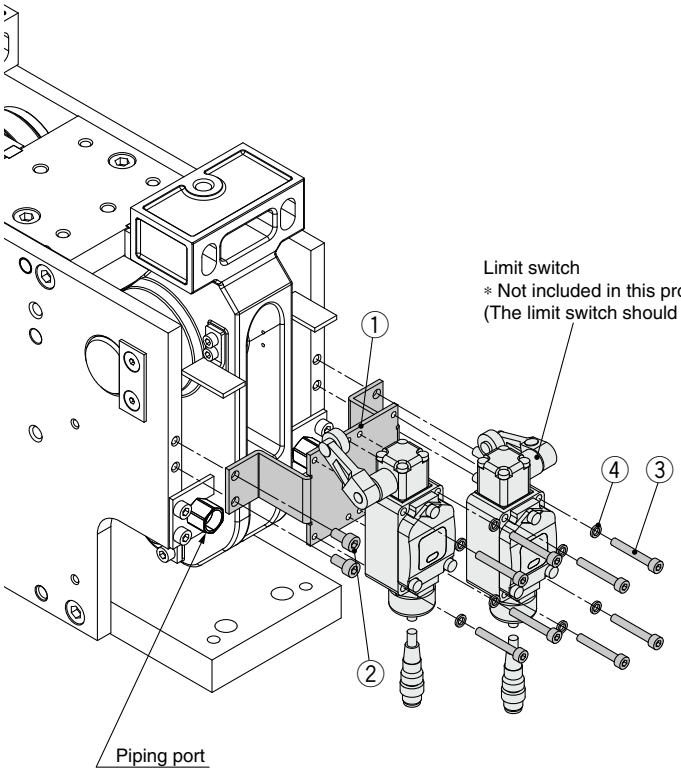
1. Mount the cover L (①) and cover R (②) on the cylinder body.
   Mount the cover L (①) on the side where a limit switch is mounted.
2. Mount the top covers (③) to the cover L (①) and cover R (②).

∗ When mounting the protective cover, confirm that all air has been exhausted from inside the cylinder.

Limit Switch Mounting Bracket (Option)

Bracket for attaching a limit switch

Fixing method for switch mounting brackets



Applicable product	Kit no.	Contents
Applicable to all types	WRF-BK	① Switch mounting bracket (1 pc.) ② Bracket mounting bolts (4 pcs.) ③ Switch mounting bolts (8 pcs.) ④ Flat washers (8 pcs.)

Tightening torque for mounting bolts of switch mounting bracket

Location	Tightening torque (N·m)
②	5.0 to 7.0
③	3.0 to 4.0

Note) This product does not include the limit switch. (The limit switch should be prepared by the customer.)
Applicable limit switches have part numbers listed below.
For mounting the limit switch, order the switch mounting bracket (WRF-BK) separately.

<Applicable limit switches for part number>
OMRON Corp.: WLG2-LDAS-DGJS03T
Azbil Corp.: 1LS74-JWC-P025

∗1 When mounting accessories, confirm that all air has been exhausted from inside the cylinder.
∗2 A limit switch can also be mounted on the side opposite to that with the piping port.

WRF100
Specific Product Precautions

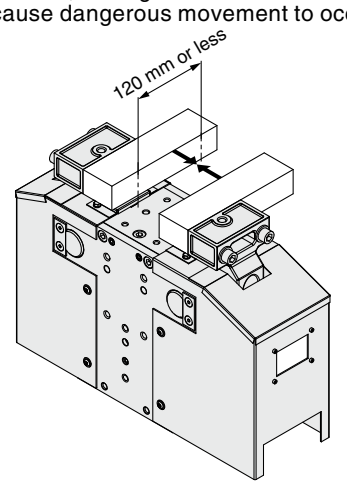
Be sure to read this before handling. Refer to page 134 for Safety Instructions. For Actuator Precautions, refer to "Handling Precautions for SMC Products" and the Operation Manual on SMC website, http://www.smcworld.com

Design

⚠Warning

1. When clamping with the clamping position offset horizontally, ensure that the offset is 120 mm or less from the center of cylinder.

With a large offset, twisting forces will be applied to the cylinder. This twisting force can potentially accelerate wear and breakage of parts with the abrasion of sliding parts. In addition, changes in the force on the cylinder parts may cause dangerous movement to occur with forceful impact.



2. Affix a protective cover in places where there is a danger of personal injury.

A large gripping force is generated during clamping. If there is a possible pinching hazard, design the structure to avoid contact with the human body.

3. Securely tighten all stationary parts and connected parts so that they will not become loose. Take special care when the cylinder is installed where there is a lot of vibration, ensure that all parts remain secure.

4. Consider a possible loss of power.

Measures should be taken to protect against bodily injury and equipment damage in the event that there is a loss of power to equipment controlled by pneumatics, electricity, or hydraulics.

5. Consider emergency stops.

Design so that human injury and/or damage to machinery and equipment will not be caused when machinery is stopped by a safety device under abnormal conditions, a power outage or a manual emergency stop.

6. Consider the action when operation is restarted after an emergency stop or abnormal stop.

Design the machinery so that human injury or equipment damage will not occur upon restart of operation. When the cylinder has to be reset at the starting position, install manual safety equipment.

7. No self-locking mechanism

At air shutoff, there is no force generated to hold the workpiece. External forces will cause the workpiece to move out of place in the event that air is lost. Measures should be taken to protect against bodily injury with the hazard.