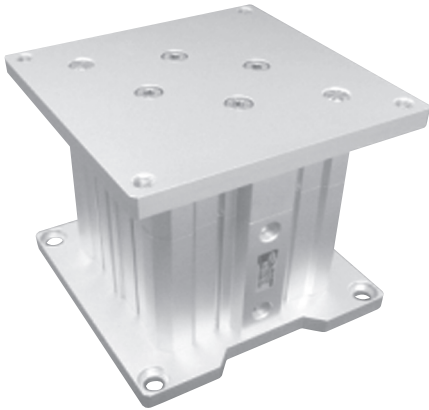


Series **ARM CYLINDER**



- OWING TO DRAMATICALLY BIGGER PISTON ROD DIAMETER THAN OTHER COMMON CYLINDERS, SHOWING STRONG ROD-SIDE TRANSVERSE LOADING RESISTANCE FOR FORWARD MOTION AND POSSIBLE FOR FORWARD MOTION WITHOUT PISTON PACKING
- LESS BACKWARD MOTION-SIDE VOLUME, CONTRIBUTING TO REDUCE AIR CONSUMPTION
- NO NEED OF ADDITIONAL GUIDE INSTALLATION, INSTALLATION COST SAVING
- MAINLY APPLIED FOR LIFT

SB

NF

NR

ASL

LOW SPEED
CYLINDERCHANGE OF
ROD END SHAPETPC-1000
TPC-1200

SAH

NBU

ACU

SE

ARM

How to Order

ARM (K) 125 — 50 S — W8* S

1
2
3
4
5
6
7

1 Actuator Ram Cylinder

2 Piston Rod Rotation

Blank : None (Without non-rotation function standard type)

K : Non-rotation type

3 Cylinder Internal Diameter

Ø63 : 63mm
Ø80 : 80mm
Ø100 : 100mm
Ø125 : 125mm

4 Stroke

30 : 30mm
50 : 50mm
75 : 75mm
100 : 100mm

* Spacer installed in every 5mm, possible to produce middle stroke beside standard stroke. Please contact for other stroke cases.

5 Action

Blank : Double action (standard type)

S : Single action forward motion
(Spring not installed)

6 Auto Switch

Blank : None (Built in magnet)

B : Without magnet

Reed Switch

W4 : Reed switch

W8H(V) : Micro auto switch, horizontal (vertical) type, 2 wire

Solid State Switch

W9H(V) : Micro auto switch, horizontal (vertical) type, 2 wire

W9H(V)N : Micro auto switch, horizontal (vertical) type, 3 wire

W2P : Built in magnet auto switch (solid state switch)

7 Number of Auto Switches

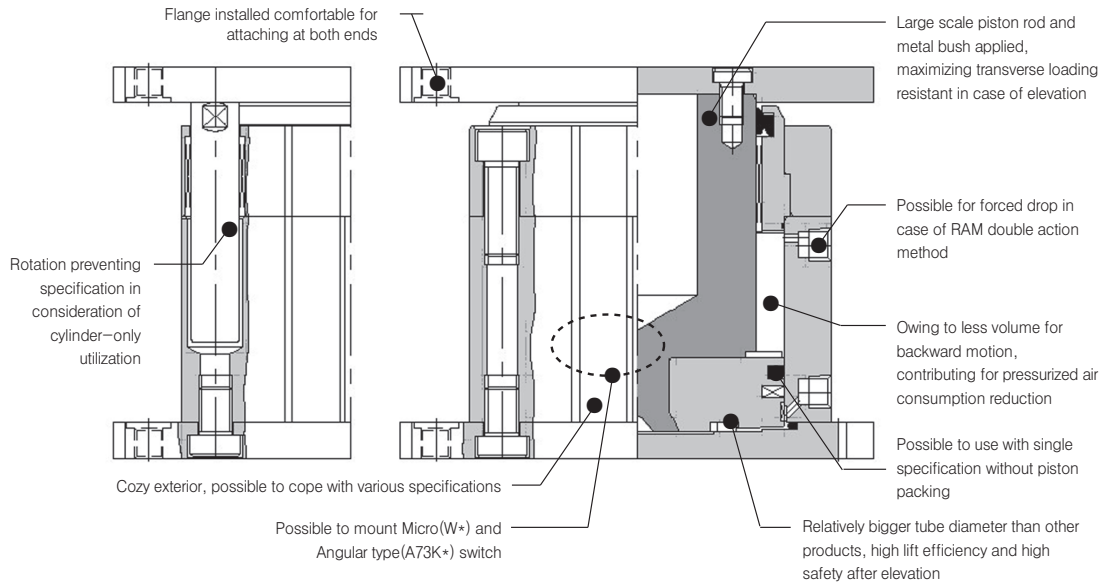
Blank : 2 pcs

S : 1 pc

N : N pcs

Series ARM

Product Features



Product Specifications

Item	Type (Tube Internal Diameter)			
	Ø63	Ø80	Ø100	Ø125
Fluid	Air			
Tube Internal Diameter/Rod External Diameter	Ø63 / Ø50	Ø80 / Ø60	Ø100 / Ø80	Ø125 / Ø100
Cylinder Standard Stroke	30, 50, 75, 100mm (possible to cope with 5mm unit spacer mount in case of middle stroke)			
Stroke Length Tolerance	0 ~ +1.0mm			
Proof Pressure	12.8 Kgf/cm ²			
Maximum Operating Pressure	8.5 Kgf/cm ²			
Minimum Operating Pressure	0.5 Kgf/cm ²			
Action	Double Action (Standard), Single Action (Lift and Forward Motion Only)			
Piston Speed Applied	20~200mm/sec			
Cushion	Rubber (End of Elevation and Drop) Cushion			
Vicinity and Applied Fluid Temperature	-5~60°C			
Refueling	No refuel			
Port Size	Rc (PT)1/8		Rc (PT)1/4	
Auto Switch	W8*, W9*, D-A73K*, W2P (Refer to type indicating method for details)			
Attaching Method	Bolt Penetration Hole of Rod & Head Side Flange or Tap Attached			

Series ARM

Theoretical Output Sheet

Bore Size (mm)	Rod external Diameter (mm)	Operation Category	Hydraulic Pressure Area (cm ²)	Operating Pressure (Kgf/cm ²)								
				1	2	3	4	5	6	7	8	8.5
Ø63	Ø50	For Forward Motion	31	31	62	93	124	155	186	217	248	264
		For Backward Motion	11.5	12	23	35	46	58	69	81	92	98
Ø80	Ø60	For Forward Motion	50	50	100	150	200	250	300	350	400	425
		For Backward Motion	22	22	44	66	88	110	132	154	176	187
Ø100	Ø80	For Forward Motion	78.5	79	157	236	314	393	471	550	628	667
		For Backward Motion	28.2	28	56	85	113	141	169	197	226	240
Ø125	Ø100	For Forward Motion	122.5	123	245	368	490	613	735	858	980	1,041
		For Backward Motion	44	44	88	132	176	220	264	308	352	374

In case of single acting for lifting, output of forwarding and output of backwarding are same.
During backwarding, it can be dropped because of weight.

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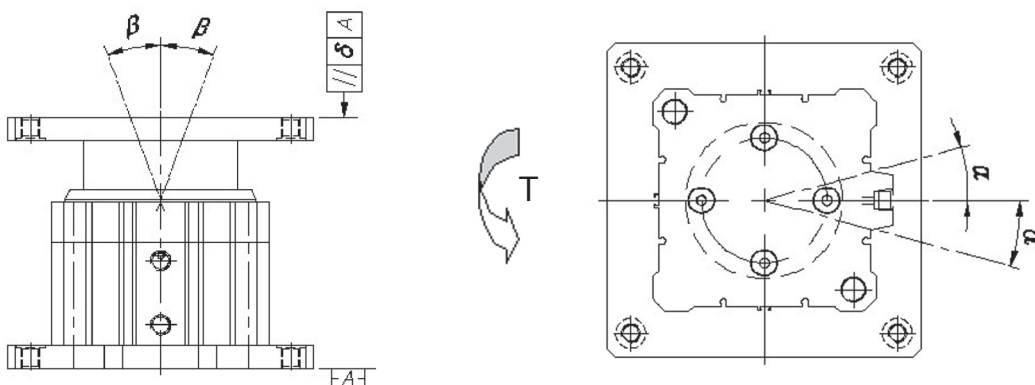
Product Weight List

(Unit : kgf)

Bore Size(mm)	Type	Standard Stroke (mm)			
		30	50	75	100
Ø63	Standard Type	2.1	2.7	3.2	3.7
	Rotation Preventing Type	2.2	2.8	3.3	3.8
Ø80	Standard Type	3.7	4.6	5.3	6.0
	Rotation Preventing Type	3.8	4.7	5.4	6.1
Ø100	Standard Type	7.3	8.5	9.5	10.5
	Rotation Preventing Type	7.7	9.0	10.1	11.2
Ø125	Standard Type	12.2	14.0	15.5	17.0
	Rotation Preventing Type	13.2	15.3	17.0	18.7

Series ARM

Degree of Table Horizontal Level & Shaking



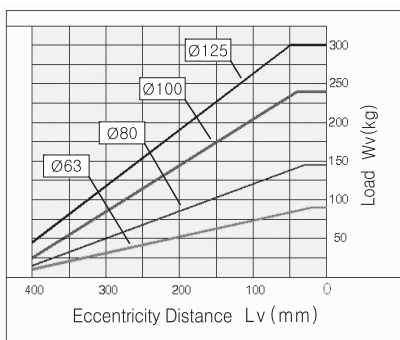
Type	Degree of Upper/Lower Table horizontal Level(δ)	Degree of Shaking During Elevation(β)	Degree of Table Rotating Prevention(α)	Table Rotating Torque Allowance(T, N · m)			
				30 Stroke	50 Stroke	75 Stroke	100 Stroke
Ø63	Less than ± 0.2	0.15° or Less	0.08° or Less	2	1.6	1.5	1
Ø80				3.1	2.7	2.2	1.8
Ø100		0.1° or Less	0.05° or Less	6.7	5.8	4.6	3.5
Ø125				11.7	10.4	9	7.6

Note1) Mean value during forward/backward motion at 5kgf/cm² pressure applied

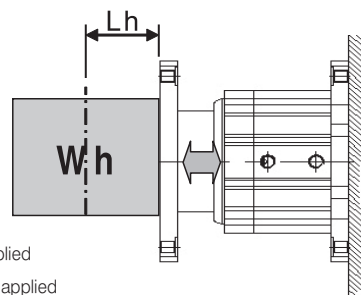
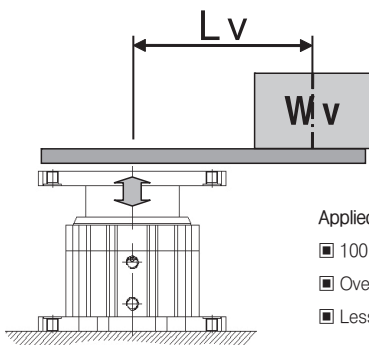
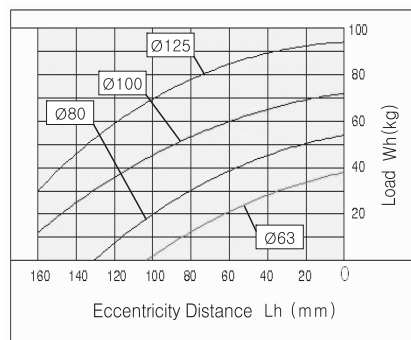
Note2) Degree of table rotating prevention and torque allowable is data for the case of rotation preventing specification.

Allowable Bending and Loading Sheet

▽ VERTICAL



▽ HORIZONTAL

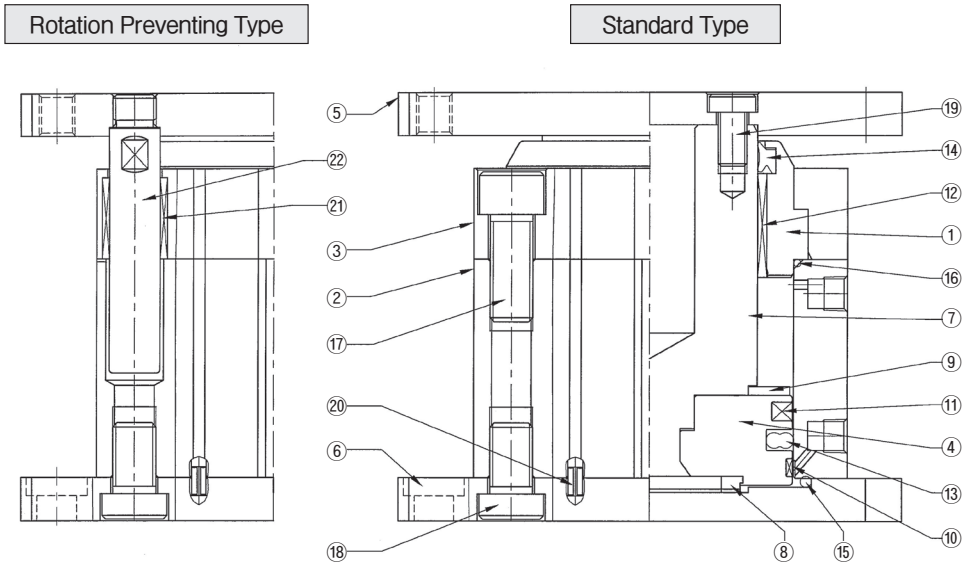


Applied condition

- 100 stroke base
- Over 5kgf/cm² for pressure applied
- Less than 200mm/s for speed applied

Series ARM

Product Structure Map



- SB
- NF
- NR
- ASL
- LOW SPEED CYLINDER
- CHANGE OF ROD END SHAPE
- TPC-1000
TPC-1200
- SAH
- NBU
- ACU
- SE
- ARM**

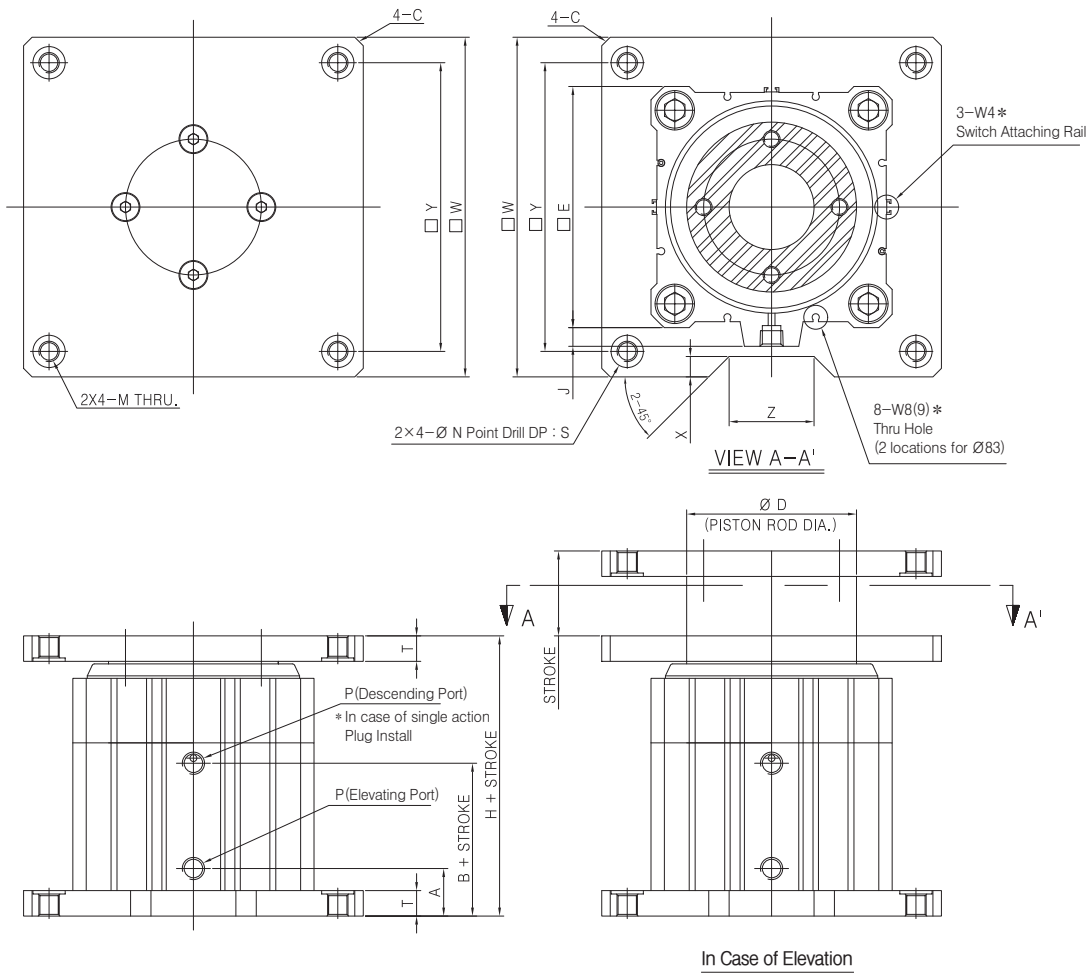
No.	Item Number	Quantity	Material	Remark
1	Rod Cover	1	Aluminum Alloy	
2	Cylinder Tube A	1	Aluminum Alloy	
3	Cylinder Tube B	1	Aluminum Alloy	
4	Piston	1	Aluminum Alloy	
5	Flange A	1	Aluminum Alloy	
6	Flange B	1	Aluminum Alloy	
7	Piston Rod	1	Carbon Steel	
8	Bumper A	1	Urethane	
9	Bumper B	1	Urethane	
10	Wear Ring	1	Resin	
11	Magnet Ring	1	Magnet	

No.	Item Number	Quantity	Material	Remark
12	Bush	1	Mile bronze casting	
13	Piston Packing	1	NBR	
14	Rod Packing	1	NBR	
15	Tube gasket A	1	NBR	
16	Tube gasket B	1	NBR	
17	Wrench Bolt	4(2)	Chrome Molybdenum Steel	
18	Wrench Bolt	4	Chrome Molybdenum Steel	
19	Wrench Bolt	4	Chrome Molybdenum Steel	
20	Spring Pin	2	Carbon tool steel	
21	Guide Bush	(2)	Resin	
22	Guide Rod	(2)	Stainless steel	

Note1) Quantity in () in item number 17, 21 and 22 is for rotation preventing specification case.

Series ARM

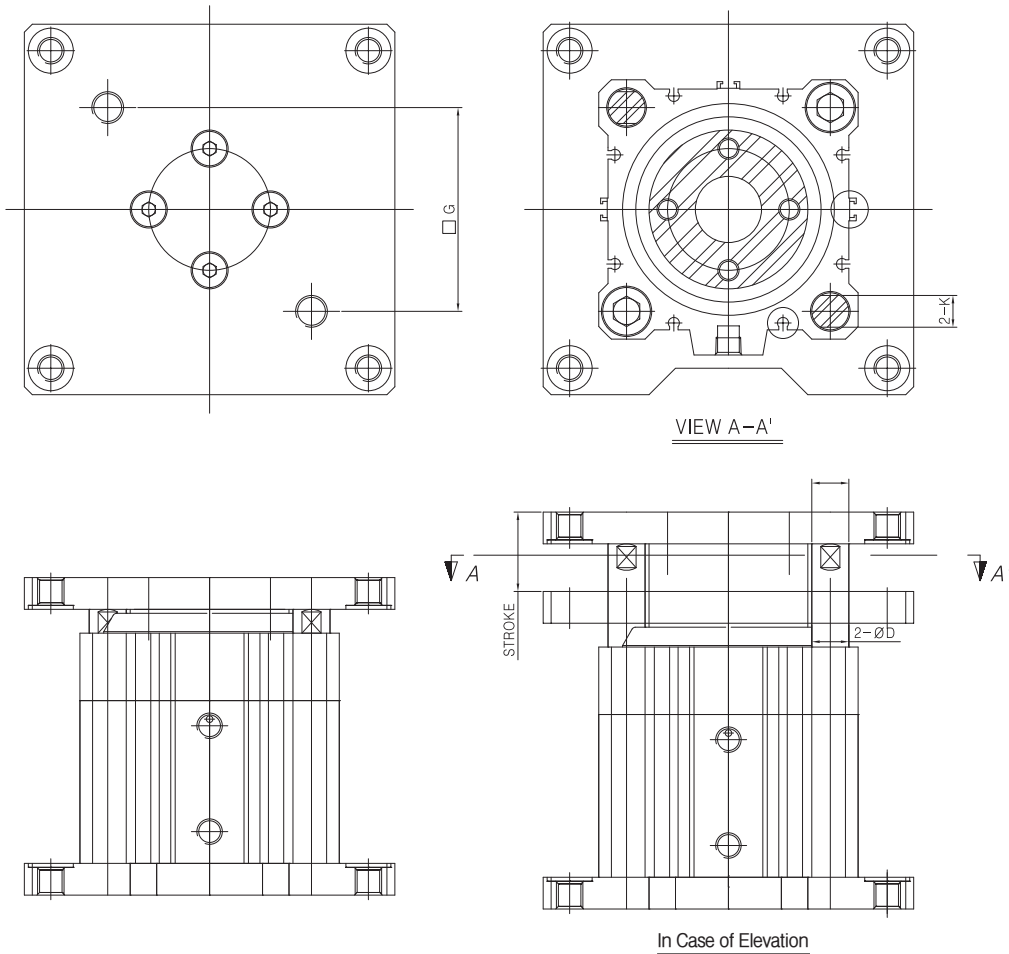
Dimension Drawing - Standard Type Ø63, 80, 100, 125



Bore Size	DEMENTIONS															
	H	W	Y	P	A	B	C	D	E	J	M	N	S	T	X	Z
Ø63	80	120	100	Rc(PT) 1/8	24	30	3	50	77	7	M8×1.25	14	1.3	10	10	40
Ø80	90	140	120		24	34	3	60	98	6		17	1.5	12	10	40
Ø100	100	160	140	Rc(PT) 1/4	26	37	3	80	117	6.5	M10×1.25	17	1.5	12	10	50
Ø125	115	200	170		28	40	5	100	142	11		M12×1.75	19	2	15	12

Series ARM

Dimension Drawing – Rotation Preventing type $\varnothing 63, 80, 100, 125$



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- ARM**

Bore Size	DEMENTIONS		
	G	D	K
$\varnothing 63$	60	12	10
$\varnothing 80$	77	14	12
$\varnothing 100$	94	16	14
$\varnothing 125$	114	20	18

Note) Dimensions without indication are identical to standard type.

Series ARM

Product Manual

- In case of single installation and utilization of cylinder, please use with selecting rotation preventing option if additional rotation preventing option does not exist.
- In case center distance of applied load is over 400mm or rotating torque is over the regulation, use more than 2 standard cylinders as it is shown in Figure 1.
 - But, there should be no deflection and shaking at connecting bracket to installed cylinder, and return speed should be adjusted to the same.
- Please apply loading of cylinder within the range of allowable transverse loading.
 - In case of using for vertical lift purpose, operation performance is better as margin rate of output against allowable transverse load is bigger, and safety is enhanced.
- As RAM type cylinder, it is possible to install 1 air pipe for lift (Single spec without spring).
 - But, elevation output becomes identical to piston rod (hydraulic section X pressure), however, forcible descending is not available for non-loading condition owing to descending caused by gravity although speed control is comfortable owing to increased cylinder internal volume. It is applied for safety problem free area or rod for descending with light loading, or if head-side pipe interference or installation is unavailable. (Refer to double action for spring controller instruction. Use double solenoid valve for safety matters)
- In case of using double action type RAM cylinder with heavy loading for lift, please carry out piping as it is shown in Figure 3 for safety.
 - Combine/install meter in and meter out speed controller at forward motion (head-side) side, and use after adjustment of speed. Speed control of backward side is not easy owing to insufficient volume.
 - Use after installation of pilot check valve or descending preventing valve at pipe line to prevent accident. The closer to the cylinder, the better.
 - Use double solenoid option for elevation/descending operation switching valve of cylinder. Single solenoid valve may cause accident owing to sudden movement in case of power OFF.
- Please contact manufacturer for other inquiries or additional production specification.

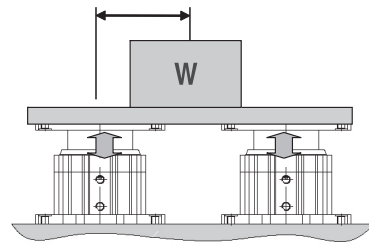


Fig. 1 Cylinder Connection Installation Figure

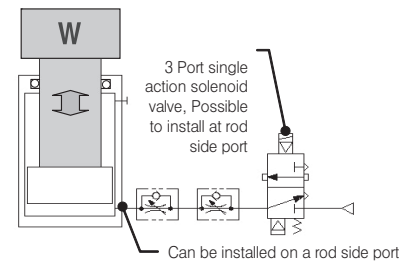


Fig. 2 Single Action Piping

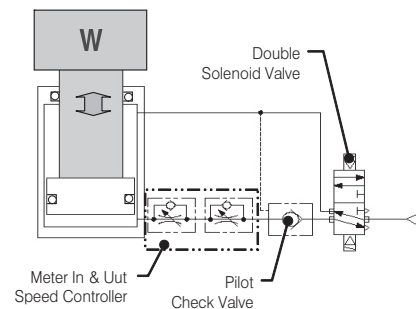


Fig. 3 Double Action Piping

Notice for Use

Notice

- Do not approach fingers to lower side of table during cylinder operation, it possibly gets between flange and cylinder tube. Please install safety cover if it is installed near workers.
- The heavier installation load, the slower operation speed, and high speed exhaust valve should not be utilized. It may cause accident owing to acceleration of descending speed.
- If height adjustment is carried out by installation of spacer as it is shown in right figure, do not make any space under cylinder center part. If cylinder is moved backward, loading is concentrated to the center, which causes deflection of flange.
- Cylinder pipe contact screw and orifice diameter are adjusted to cylinder speed. Arbitrary extension processing may cause acceleration of speed.
- Please comply safety notice, and hope this machine will help your business.

