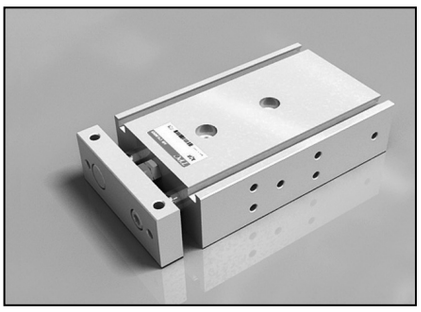
Double Rod Cylinder

Series ADR

Bore Size: Ø10, Ø16, Ø20, Ø25,Ø32



- High lateral load capability
- Adjustable stroke is available
- Auto switch available
- Non-lube service standard.

Action	Series	Bore Size (mm)	Port Size	Standard Stroke (mm)	Description	Operating Pressure kgf/cm²(psi)
Double Acting/Single Rod-Ball Bushing Bearing Type 	ADRL	Ø10	M5×0.8	10,15,20,25,30,40,50	Built-in Magnet Bumper Cushion	1~7.0(14~100)
		Ø16		10,15,20,25,30, 35,40,45, 50, 60, 70, 80, 90, 100		
		Ø20		10,15,20,25,30, 35,40,45, 50, 60, 70, 75, 80, 90, 100		
		Ø25				
		Ø32		10,15,20,25,30,35,40,45,50,60,70,75,80,90,100		
Double Acting/Single Rod-Sliding Bearing Type 	ADRM	Ø10	M5×0.8	10,15,20,25,30,40,50	Built-in Magnet Bumper Cushion	1~7.0(14~100)
		Ø16		10,15,20,25,30, 35,40,45, 50, 60, 70, 80, 90, 100		
		Ø20		10,15,20,25,30, 35,40,45, 50, 60, 70, 75, 80, 90, 100		
		Ø25				
		Ø32		10,15,20,25,30,35,40,45,50,60,70,75,80,90,100		

How to Order

ADR M 10 — 30 — W1□ ○ S

1 2 3 4 5 6

1 Type of Bearing
- M : Slide Bearing
- L : Ball Bushing Bearing

2 Bore Size
- 10 : Ø10mm
- 16 : Ø16mm
- 20 : Ø20mm
- 25 : Ø25mm
- 32 : Ø32mm

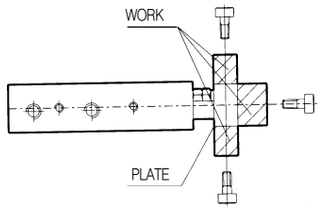
3 Stroke(mm)
- ※ Refer to the above table

4 Auto Switch
- Blank : None
- W1H : Solid State Switch (DC24V)
- W13 : Reed Switch (AC110V, DC24V)

5 Lead Wire Length
- Blank : 0.5m
- L : 3m

6 Number of Switches
- Blank : 2 pcs.
- S : 1 pc.
- N : N pcs.

Plate Can be Mounted From Three Faces



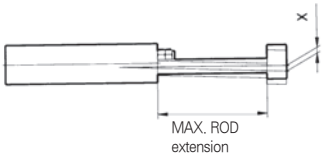
Standard Specifications

Action	Double Acting Double Rod
Fluid	Air
Max. Operating Pressure	10 kgf/cm²(142 psi)
Proof Pressure	7 kgf/cm²(100 psi)
Min. Operating Pressure	1 kgf/cm²(14 psi)
Ambient and Fluid Temperature	-10℃~+60℃ (14~140 °F)
Piston Speed	30~300 mm/s
Cushion	Rubber Cushion
Lubrication	Non-Lube
Stroke Adjustment Range	0~-5mm
Bearing	Slide bearing, Ball Bushing Bearing (Same Dimensions)

Operating Conditions

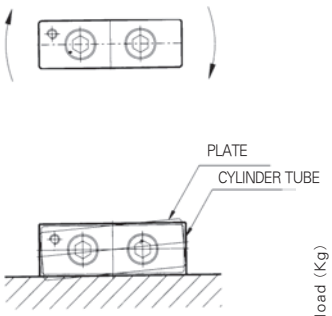
Inclination of plate end

The standard amount of inclination X of the plate end with no load applied is shown in the graph below.



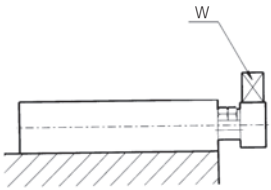
Non-rotating accuracy

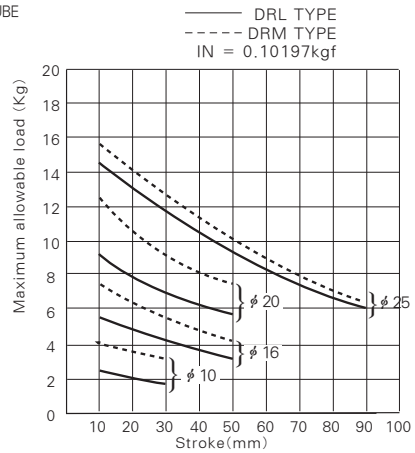
Standards of non-rotating accuracy θ° are values lower than those shown in the table below.



Maximum allowable load

The maximum allowable load will be lower than the values shown in the graph below when the cylinder is mounted as shown below.





Non-Rotating Accuracy

Cylinder Bore Size(mm)	ADRM (Slide bearing)	ADRL (Ball bush bearing)
φ 10	±0.15°	±0.15°
φ 16, φ 20	±0.15°	±0.15°
φ 25	±0.15°	±0.15°

Precautions

Mounting

① The Double rod cylinder can be mounted on three sides. However, the mating surface must be flat(Flatness : 0.05 (reference value) max.).
Otherwise desired piston rod operation and a malfunction may result.

② Mount the cylinder while the piston is retracted, Pay attention not to scratch or dent the slide part of the piston rod treatment Air leaks due to damaged packings may result in faulty operation.

③ Cylinder mounting face has hard alumite treatment but care should still be taken to avoid damaging it as this would result in loss of durability and faulty operation.

Piping

① The Double rod cylinder is provided with two supply ports in respective directions of operation. Change the plug position according changed, be sure to check that no air leaks from the plug. When a little amount of air still leaks, remove the plug and check the seat before reassembly.

② At the time of pipe-laying, thoroughly flush pipes and joints with air and then connect them.

③ Provide an air filter to supply sufficiently purified compressed air.

④ Cylinder tube can be used without oiling, but if you oil it, use turbine oil class-1(ISO VG32).
(Do not use machine oil or spindle oil.)

Adjustment of stroke

① The Double rod cylinder is provided with a bolt to adjust the stroke within the range of 0 to -5mm on the piston rod return side(IN).
Loosen the hexagon head bolt for adjustment.
After adjustment, completely tighten the hexagon head bolt and apply a stopper to it.

② Never use the cylinder without a damper bolt.

Ambient atmosphere

① Use the cylinder as little as possible in ambient atmospheres where the cylinder is exposed to water (hot water) or coolant.
When it is inevitable to use it in such atmospheres, protect the cylinder with a cover.

② Some atmospheres or fluids are harmful to the main body of the cylinder or packing.
Please contact us when special use is desired.

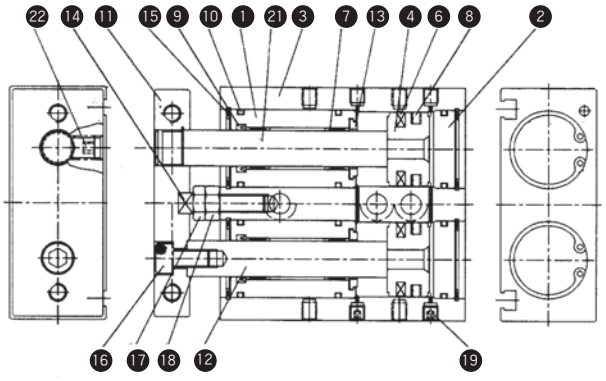
Disassembly and maintenance

① Remove the plate at the end for disassembling.
Disassembling is permitted only for replacement of packing or other necessary operations to prevent malfunction.

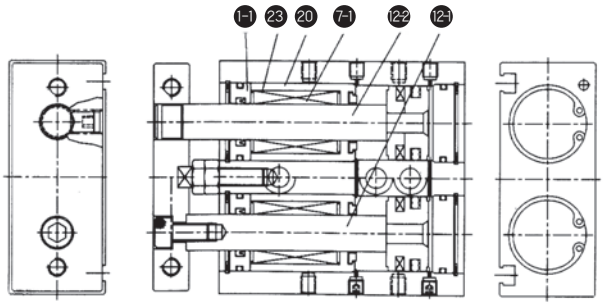
②. Please contact us for the method of dissembly or reassembly, or refer to the manual for disassembly.

Construction/Parts List, Packing List

ADRM(Slide Bearing)



ADRL(Ball Bush Bearing)



Slide Bush Type

No.	Description	Material	Note
❶	Rod Cover	Aluminum Alloy	Allumite
❷	Head Cover	〃	〃
❸	Cylinder Tube	〃	〃
❹	Piston	〃	Chromate
❻	Magnet	Ba-Ferrite+NBR	
❼	Slide Bush	Aluminum Alloy	White Allumite
❽	Piston Packing	NBR	
❾	Rod Packing	NBR	
❿	Tube Gasket	NBR	
⓫	Plate	Aluminum Alloy	White Allumite

No.	Description	Material	Note
⓬	Piston Rod	Stainless Steel	Hard Chrome Plated
⓭	Bumper-A	Urethane	
⓮	Bumper-B	Urethane	DRM010-34B1760
⓯	Snap Ring	Carbon Tool Steel	Nickel Plated
⓰	Plate Bolt	Chrome Steel	〃
⓱	Stroke Control Bolt	Carbon Steel	〃
⓲	Stroke Control Nut	〃	
⓳	Plug	〃	
㉑	Piston Rod-A	Bearing Steel	
㉒	Detent Screw	〃	

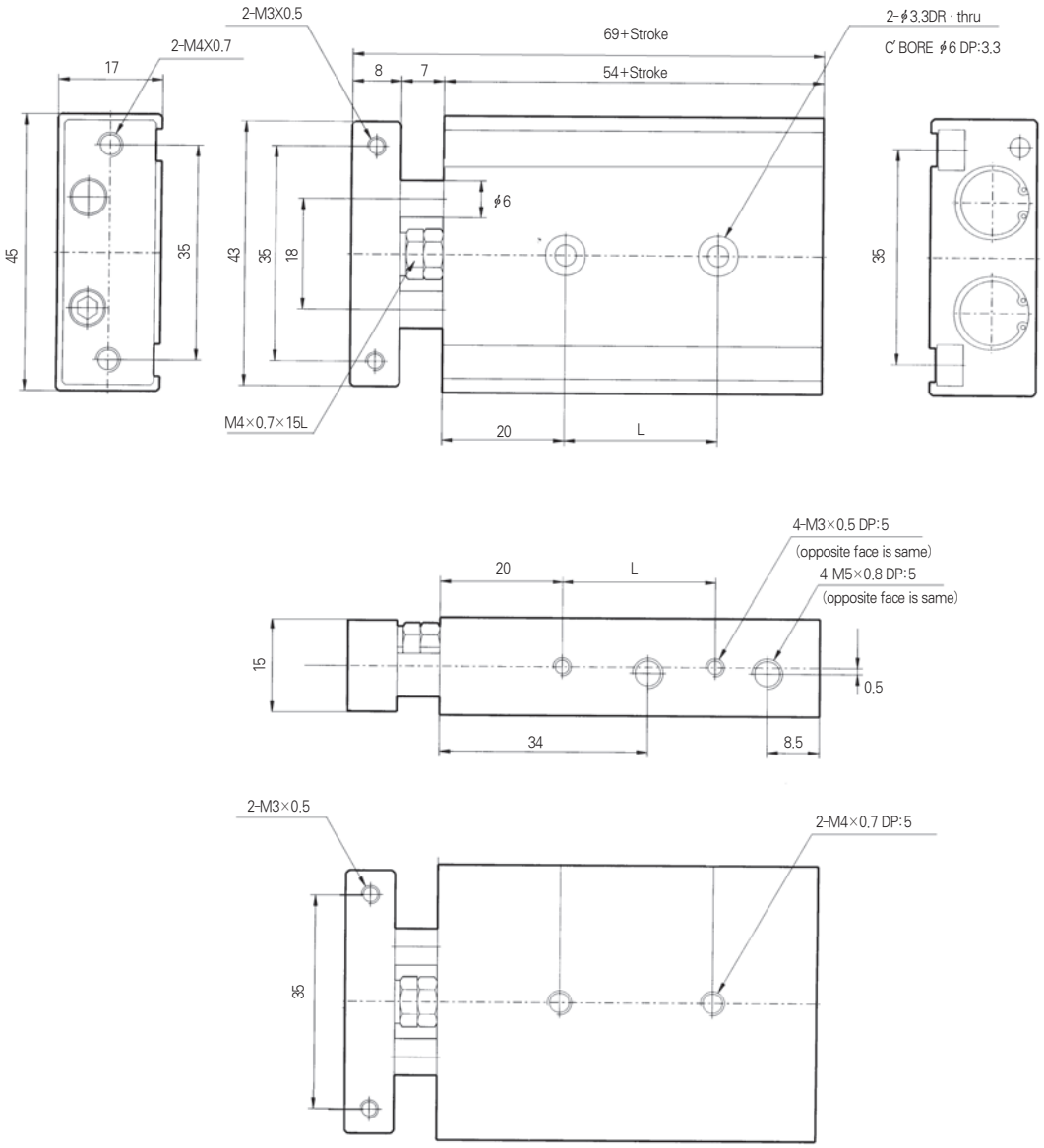
Ball Bush Type

No.	Description	Material
❶-❶	Rod Cover	Aluminum
❼-❶	Ball Bearing	–
⓬-❶	Piston Rod	SUJ2

No.	Description	Material
⓬-❷	Piston Rod-A	SUJ2
⓴	Bearing Stopper	Aluminum
㉓	Gasket	NBR

Dimensions

ADR ϕ10

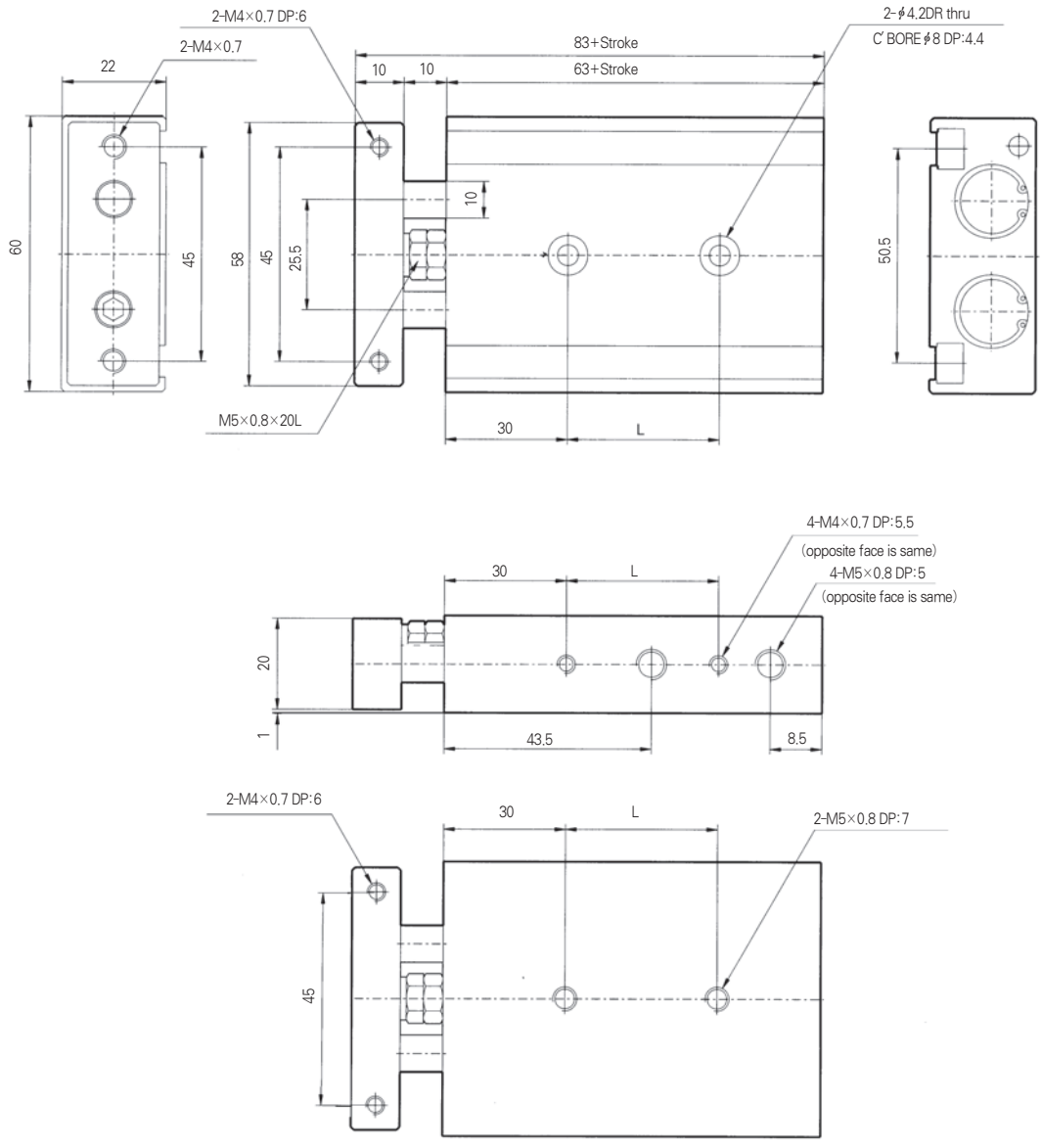


(mm)

Stroke (mm)	10	15	20	25	30	35	40	45	50	55	60	65	70	75
L	25	30	30	30	40	40	40	40	40	60	60	60	60	60

Dimensions

ADR ϕ16

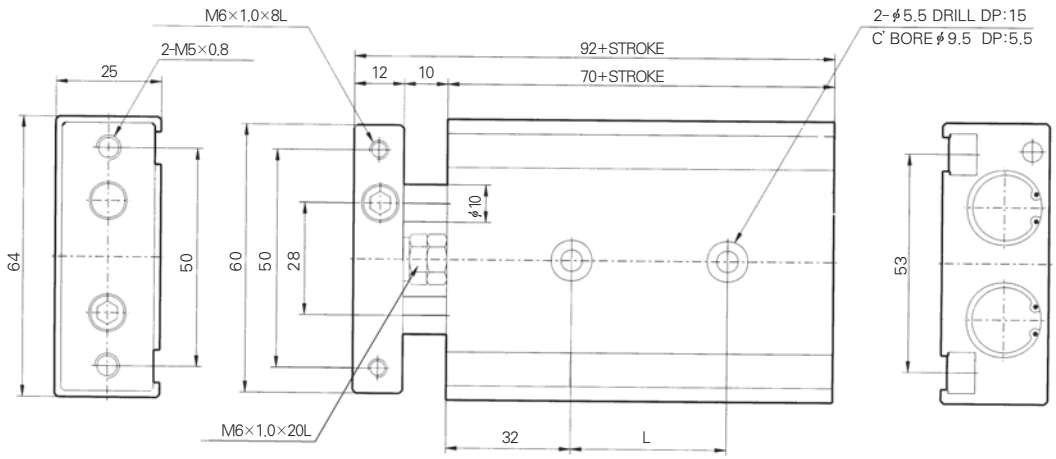


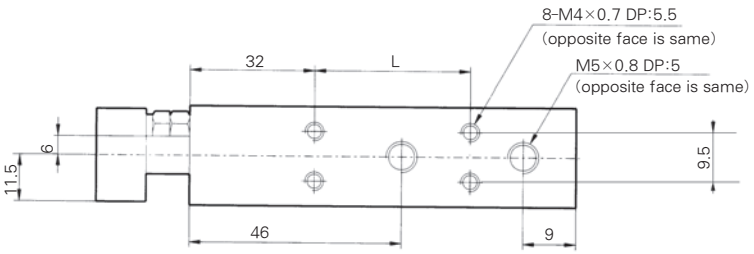
(mm)

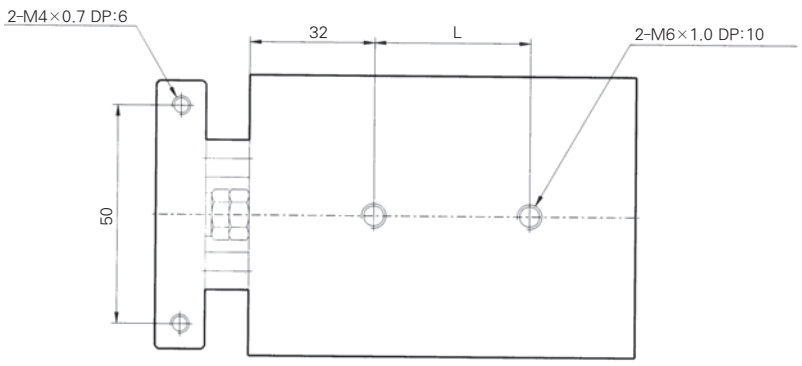
Stroke (mm)	10	15	20	25	30	35	40	45	50	60	70	80	90	100
L	25	25	25	25	40	40	40	40	40	60	60	80	80	80

Dimensions

ADR ϕ20





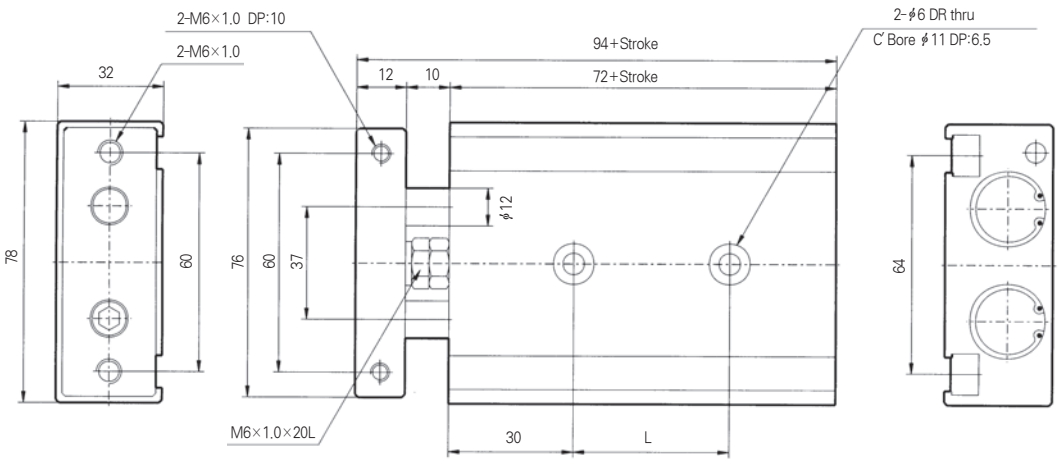


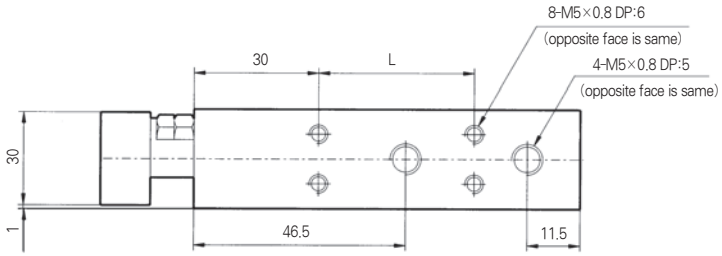
(mm)

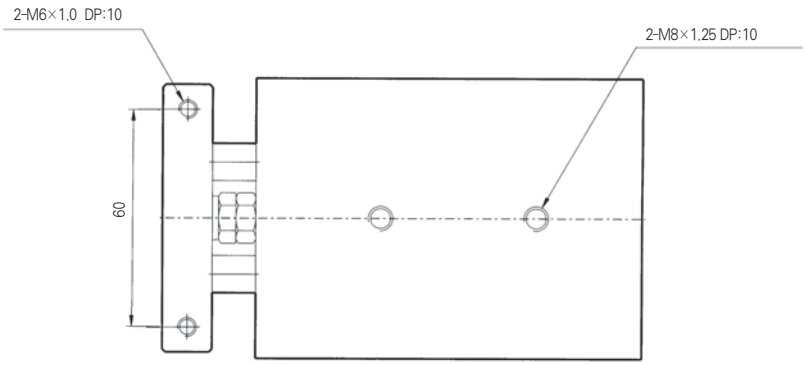
Stroke	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
L	30	30	30	30	40	40	40	40	40	60	60	60	60	60	80	80	80	80	80

Dimensions

ADR ϕ25





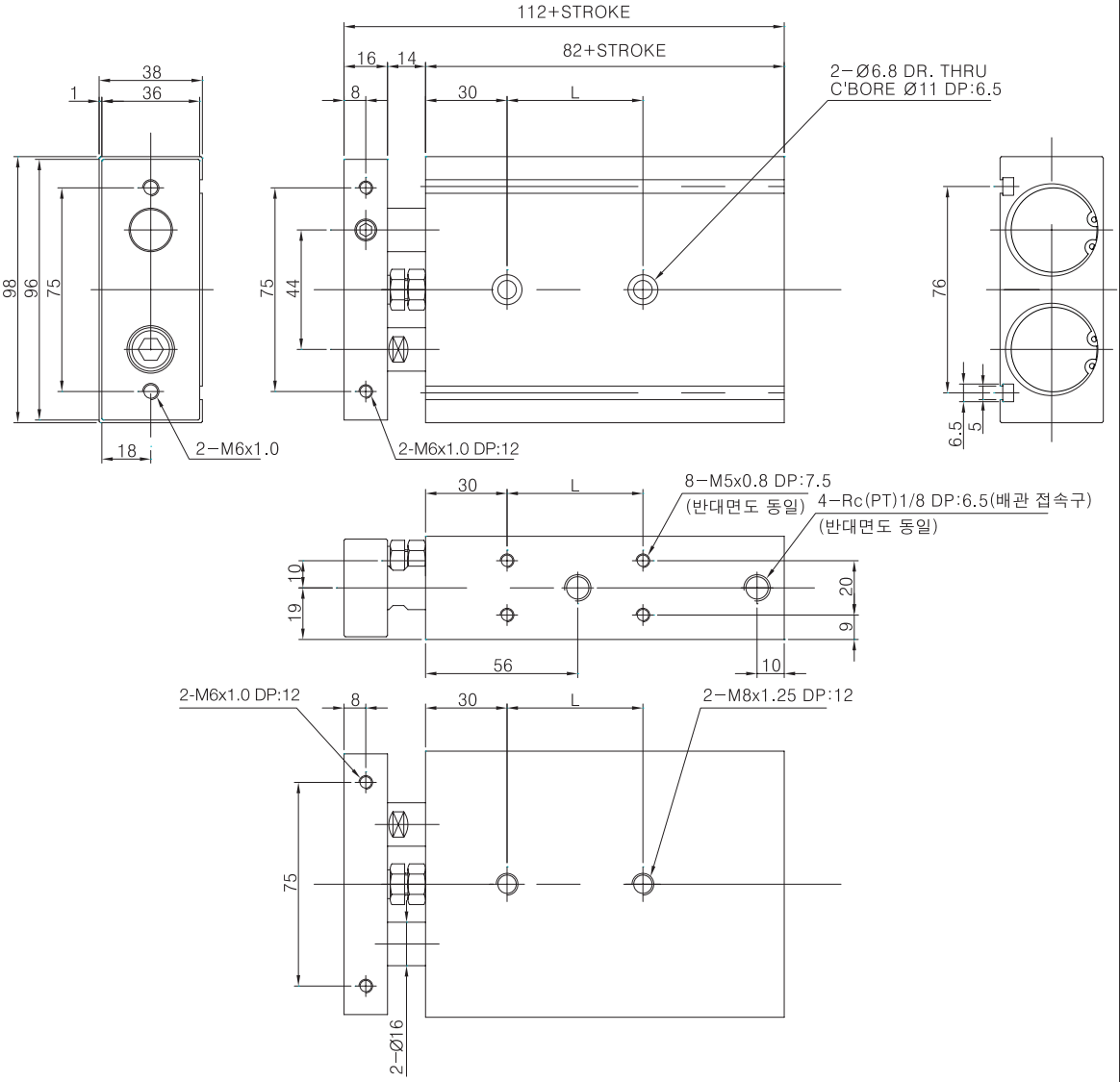


(mm)

Stroke (mm)	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	90	100
L	30	30	30	30	40	40	40	40	40	60	60	60	60	60	80	80	80

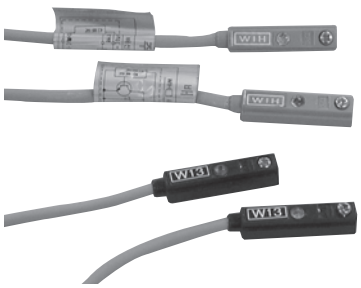
외형치수도

ADR Ø32



※ 본 도면치수는 당사 사정에 의해 약간의 변경이 있을수 있음.

STROKE	10	15	20	25	30	35	40	45	50	60	70	75	80	90	100
L	40	40	40	40	50	50	50	50	50	70	70	70	70	70	70



How to Order

W1 ✻ ✻ ✻

1 2 3 4

1 TPC Auto Switch Model

2 3 : Reed 2 wire AUTO S/W
H : Solid State 3 wire AUTO S/W

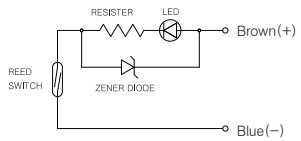
3 N : 3 wire(NPN)
P : 3 wire(PNP)

4 Blank : LEAD WIRE(0.5m)
M : LEAD WIRE(1m)
L : LEAD WIRE(3m)

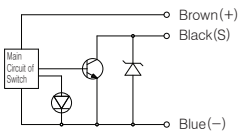
Specifications

Part No.	W13		W1HN(P)
Contact wiring	Reed Switch 2 wire		Solid State 3 wire
Application	Relay, Sequence Control		
Voltage	DC24V	AC100V	DC24V
Current	5~40mA	5~20mA	≦40mA
Contact Protection Circuit	None		Built-in
Internal Voltage Drop	Under 2.4V		≦1.5V
Indicator Lamp	ON : When Red LED		
Output	–		NPN(PNP)
Current Consumption	–		≦5mA
Current Leakage	None		≦100㎂
Operation Time	≦1ms		≦2ms
Lead Wire	Oil Resistant Vinyl Code		
Shock Resistance	30G 100G		
Insulation Resistance	100MΩ or more (500DVC Mega) between lead wire and case		
Voltage Resistance	For 1 min.(in AC1500V/between a lead wire case)		
Temperature	−10 ~ 60℃		
Protection Structure	IEC Standard IP67, Water Proof, and(JISC0920),Oil Structure		

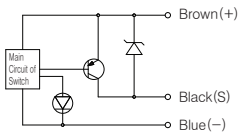
Internal Circuit



2 wire reed circuit

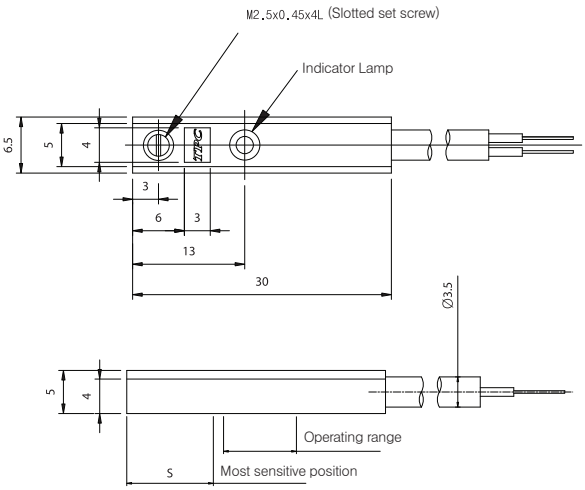


3 wire NPN solid state circuit



3 wire NPN solid state circuit

Protection Structure



■ Caution

Plase read and understand the instructions before use. Refer to the auto switch precautions before using auto switches.

Operating Range

Section	W13	W1HN(P)
Most sensitive position(S)	10mm	1 ~ 2mm
Operation range(L)	6 ~ 12mm	4 ~ 10mm