

ADRC Series

Compact dual rod cylinder

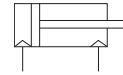
Bore size : Ø6, Ø10, Ø16, Ø20, Ø25, Ø32



- Built-in magnet
- Non-rotating by dual rod, and twice as output.
- Object can be mounted on 3 sides.
- Adjustable stroke (0 ~ -5mm)

Symbol

Double acting / Single rod



How to Order

ADRC M 10 P — 50 — W8H S

1 2 3 4 5 6 7

1 ADRC Series

- ※ Built-in magnet
- ※ Secondary battery type available

2 Bearing type

M : Slide bearing
L : Ball bearing

3 Bore size

06 : 6mm
10 : 10mm
16 : 16mm
20 : 20mm
25 : 25mm
32 : 32mm

4 Piping

Blank : Standard (Ø6 ~ Ø32)
P : Axial direction (Ø6 ,Ø10)

- ※ Axial type is not available with Ø16~32.

5 Stroke (mm)

Ø6 : 10, 20, 30, 40, 50
Ø10 : 10, 20, 30, 40, 50, 75 (80, 90, 100)
Ø16 : 10, 20, 30, 40, 50, 75, 100 (110, 120, 125, 150)
Ø20 : 10, 20, 30, 40, 50, 75, 100 (110, 120, 125, 150)
Ø25 : 10, 20, 30, 40, 50, 75, 100 (110, 120, 125, 150)
Ø32 : 10, 20, 30, 40, 50, 75, 100 (110, 120, 125, 150, 175)

- ※ Contact us for other strokes.

- ※ Strokes in parenthesis are long stroke types, and please contact us for availability.

6 Auto switch

Blank : None
W8H/V : Reed switch
(horizontal/vertical)
W9H/V : Solid state switch
(horizontal/vertical)
W9HN : Solid state(NPN,3wires)
W9VP : Solid state(PNP,3 wires)
W10V : Solid state (vertical)
W20H : Solid state (vertical, 2wires(2 color display))
※ Please add L for 3m lead wire ex) W8HL
※ Standard lead wire is 1m

7 Number of switches

Blank : 2 pcs
S : 1 pc
n : n pcs

■ Precautions for mounting

● **The cylinder must be mounted on flat surface with flatness 0.05 or less.**

- If it is not flat, it may cause malfunction or lack of accuracy when piston rod is operated. ● An object must be mounted on the cylinder when the piston rod is in the retracted(reverse) state. - If the sliding part of the piston rod is damaged or hit, the bearing and packing may be damaged, resulting in malfunction and air leakage.

■ Precautions for piping

● **The air inlet is located at the top of the cylinder, and if necessary, use an axial pipe (Ø6,10 only).**

- For axial piping type, a plug is attached to the upper port, and the location of the plug can be changed according to the usage situation. However, after changing, check if air leakage in the plug part. When a small amount of leakage remains, remove the plug and check the seat surface before reassembling.

- When changing position of a plug for the axial piping type, do not disassemble parts other than the plug. Disassembling the end plate on the head side may make it impossible to operate.

■ Precautions for adjusting stroke

● **After adjusting the stroke, tighten the hexagon nut well to prevent loosening**

- If the adjustment bolt is loosened by more than -5mm, the fixing part of the stroke adjustment bolt may be damaged.

● **Never remove the stroke adjustment bolt before use. Also, after removing only the nut, do not tighten the stroke adjustment bolt alone.**

- If the stroke adjustment bolt is removed, the cylinder touching the head cover of the piston may be damaged or the piston packing may go over the pipe and may not work.

- If the nut is removed, the stroke adjustment bolt cannot be fixed, so there is a risk that the bolt may come loose during operation.

Specifications

Bore(mm)	6	10	16	20	25	32
Type	Compressed air (Non-lube)					
Acting	Double acting, Single rod					
Fluid	Air					
Proof pressure	1.05MPa (10.7kg/cm ²)					
Max. operating pressure	0.7MPa					
Min. operating pressure	0.15MPa	0.10MPa	0.05MPa			
Ambiend and fluid temperature	Without auto switch : -10°C~60°C (No freezing)					
	With auto switch : -10°C~60°C (No freezing)					
Cushion	Rubber cushion at both side					
Mounting	Top(thread) /			Side (Through hole)		
	Side (Through hole)			Side (Through hole)		
Piston speed	30~400mm/s	30~400mm/s			30~600mm/s	
Allowable kinetic energy	0.016J	0.064J	0.095J	0.17J	0.27J	0.32J

Standard stroke

Bore (mm)	Standard stroke(mm)	Range of available stroke
Ø6	10, 20, 30, 40, 50	-
Ø10	10, 20, 30, 40, 50, 75	80, 90, 100
Ø16	10, 20, 30, 40, 50, 75, 100	110, 120, 125, 150
Ø20	10, 20, 30, 40, 50, 75, 100	110, 120, 125, 150
Ø25	10, 20, 30, 40, 50, 75, 100	110, 120, 125, 150
Ø32	10, 20, 30, 40, 50, 75, 100	110, 120, 125, 150, 175

(Note) Please contact us other than standard strokes.

(Note) Stroke 0~-5mm can be adjusted with front adjusting bolt.(+ adjustment is not available)

Theoretical force

Series	Type		Rod (mm)	Operation	Piston area (mm ²)	Pressure(MPa)								
	Bearing	Bore				0.05	0.1	0.15	0.2	0.3	0.4	0.5	0.6	0.7
ADRC	M	6	4	OUT	56.5	-	-	8.5	11.3	17.0	22.6	28.3	33.9	39.6
	L			IN	31.4	-	-	4.7	6.3	9.4	12.6	15.7	18.8	22.0
ADRC	M	10	6	OUT	157.1	-	-	23.6	31.4	47.1	62.8	78.5	94.2	110.0
	L			IN	100.5	-	-	15.1	20.1	30.2	40.2	50.3	60.3	70.4
ADRC	M	16	8	OUT	402.1	-	-	40.2	60.3	80.4	120.6	160.8	201.1	241.3
	L			IN	301.6	-	-	30.2	45.2	60.3	90.5	120.6	150.8	181.0
ADRC	M	20	10	OUT	628.3	31.4	62.8	94.2	125.7	188.5	251.3	314.2	377.0	439.8
	L			IN	471.2	23.6	47.1	70.7	94.2	141.4	188.5	235.6	282.7	329.9
ADRC	M	25	12	OUT	981.7	49.1	98.2	147.3	196.3	294.5	392.7	490.9	589.0	687.2
	L			IN	755.6	37.8	75.6	113.3	151.1	226.7	302.2	377.8	453.3	528.9
ADRC	M	32	16	OUT	1608.5	80.4	160.8	241.3	321.7	482.5	643.4	804.2	965.1	1125.9
	L			IN	1206.4	60.3	120.6	181.0	241.3	361.9	482.5	603.2	723.8	844.5

Weight (g)

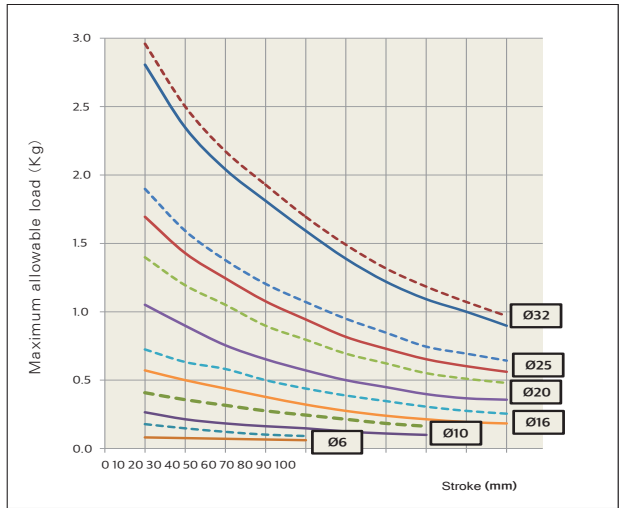
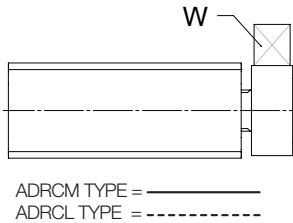
Series	Item	Bearing	Bore (Ø)	Stroke (mm)							Additional 10st
				10	20	30	40	50	75	100	
ADRC	M	06	58	68	78	88	98	-	-	10g	
				59	69	79	89	99	-		-
ADRC	M	10	103	118	133	148	163	200	-	15g	
				97	112	127	142	157	194		-
ADRC	M	16	206	227	247	268	289	341	393	21g	
				187	208	228	249	270	322		374
ADRC	M	20	352	383	413	444	475	552	629	31g	
				333	364	394	425	456	523		600
ADRC	M	25	544	586	628	670	712	817	922	42g	
				533	575	617	659	701	806		911
ADRC	M	32	1171	1225	1280	1334	1389	1526	1662	55g	
				1160	1214	1269	1323	1378	1515		1651

ADRC Series

Operation condition

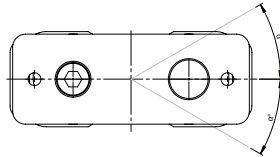
Maximum allowable load

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

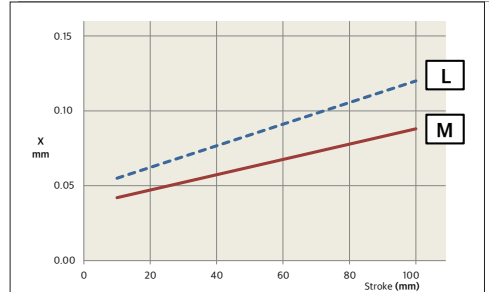
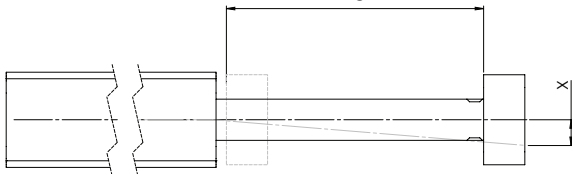
Standards of non-rotating accuracy θ° are values lower than those shown in the table below.



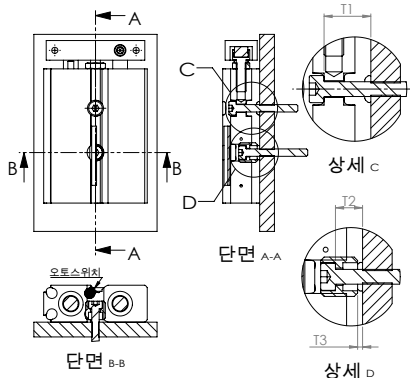
Accuracy(PLATE)						
Bore (Ø)	6	10	16	20	25	32
ADRCM	±0.1° or less					
ADRCL						

Inclination of plate end

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



How to use bold holer (Ø6,10 - Side mounting)

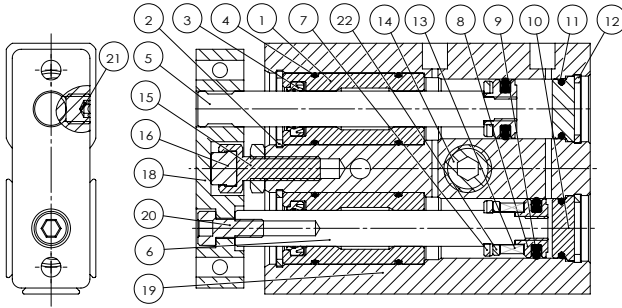


- For Ø6 and Ø10, a bolt holder structure with variable bolt fixing is applied to prevent auto switch interference during side installation, and pay attention to the following

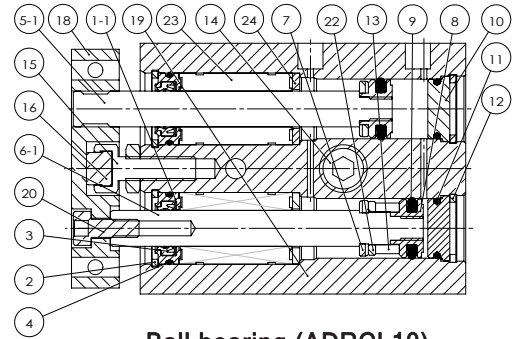
- Please adjust the bolt holder with a 3.5mm side hexagon wrench (opposite screw) so that the bolt holder enters less than about 0.5 from the installation surface.
- If the bolt holder interferes with the auto switch rail after mounting, adjust the bolt holder position to prevent interference.
- When using the upper tap for mounting cylinder, remove the bolt holder and store it separately or prevent loosening. There is a possibility that the bolt holder may come off during operation.

Bore (Ø)	T1	T2	T3	Installation bolt
ADRC□06	8.4	5.0	0.5 or less	M3
ADRC□10	9.5	5.5	1.0 or less	M3

Structure / Parts list [Ø6, 10 standard piping]



Slide bearing (ADRCM10)



Ball bearing (ADRCL10)

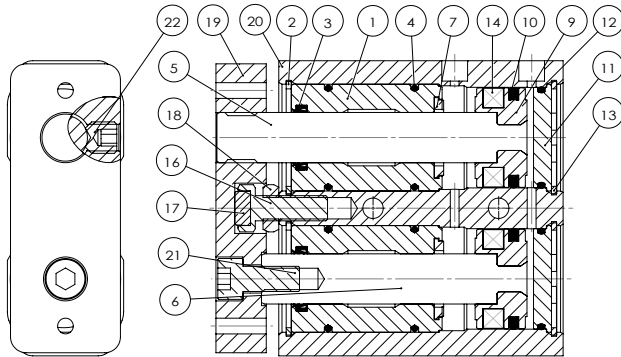
NO.	Item	Material	Remark
1	ROD COVER	Aluminum alloy	
1-1			
2	SNAP RING	Carbon steel	
3	ROD PACKING	Urethane	
4	O-ring	NBR	
5	PISTON ROD-A (Slide)	Stainless steel	
6	PISTON ROD-B (Slide)		
5-1	PISTON ROD-A (Ball)	Bearing steel	
6-1	PISTON ROD-B (Ball)		
7	BUMPER	Urethane	
8	PISTON	Aluminum alloy*	
9	PISTON PACKING	NBR	
10	HEAD COVER	Aluminum alloy	
11	GASKET	NBR	

NO.	Item	Material	Remark
12	SNAP RING	Carbon steel	
13	MAGNET	-	
14	BOLT HOLDER	Stainless steel	
15	BUMPER HOLDER	Carbon steel	
16	HOLDER BUMPER	Urethane	
17	Hexagonal nut	Carbon steel	
18	PLATE	Aluminum alloy	
19	CYLINDER TUBE	Aluminum alloy	
20	Hex wrench bolt	Carbon steel	
21	Flat headed bolt	Carbon steel	
22	Magnet seat	Aluminum alloy*	
23	Ball bushing	-	
24	Bearing retainer	Aluminum alloy	

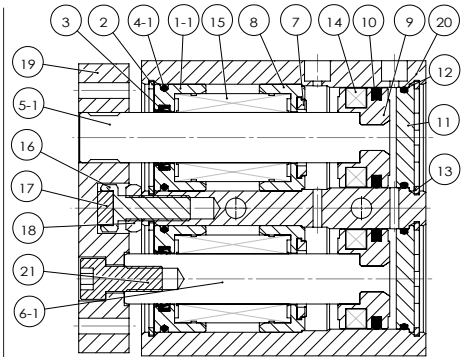
*) Stainless steel for Ø6

ADRC Series

Structure / Parts list [Ø16,20,25,32 standard piping]



Slide bearing



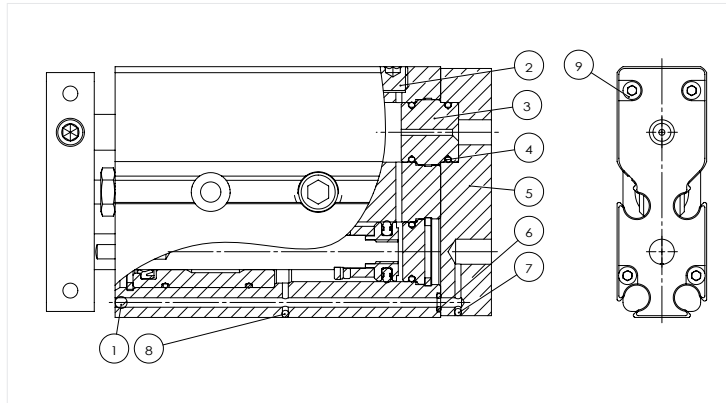
Ball bush

NO.	Item	Material	Remark
1	ROD COVER (Slide)	Aluminum alloy	
1-1	ROD COVER (Ball)	Aluminum alloy	
2	SNAP RING	Carbon steel	
3	ROD PACKING	Urethane	
4	TUBE GASKET	NBR	
5	PISTON ROD-A (Slide)	Stainless steel*	
6	PISTON ROD-B (Slide)	Stainless steel*	
5-1	PISTON ROD-A (Ball)	Bearing steel	
6-1	PISTON ROD-B (Ball)	Bearing steel	
7	BUMPER A	Urethane	
8	BEARING STOPPER	Aluminum alloy	
9	PISTON	Aluminum alloy	
10	PISTON PACKING	NBR	

NO.	Item	Material	Remark
11	HEAD COVER	Aluminum alloy	
12	TUBE GASKET	NBR	
13	SNAP RING	Carbon steel	
14	MAGNET	-	
15	Ball bush	-	
16	BUMPER HOLDER	Carbon steel	
17	BUMPER	Urethane	
18	Hexagonal nut(2 types)	Carbon steel	
19	PLATE	Aluminum alloy	
20	CYLINDER TUBE	Aluminum alloy	
21	Hexagonal bolt(fixed to rod)	Carbon steel	
22	Flat headed bolt	Stainless steel	

*Carbon steel for Ø32

Structure / Parts list [Ø6, 10 axial piping]



NO.	Item	Material	Remark
1	Steel Ball	Stainless steel	
2	Port plug	Carbon steel	
3	HEAD COVER	Aluminum alloy	
4	TUBE GASKET	NBR	
5	END PLATE	Aluminum alloy	
6	O-ring	NBR	
7	Steel Ball	Stainless steel	
8	Steel Ball	Stainless steel	

How to order 2B Series

2B — **ADRC** **M** **10** **P** — **50** — **W8H** **(S)**
1 2 3 4 5 6 7 8

1 2B series
 2B : Secondary battery
 Industry type

2 ADRC Series

3 Bearing

4 Bore size

5 Piping

6 Stroke(mm)

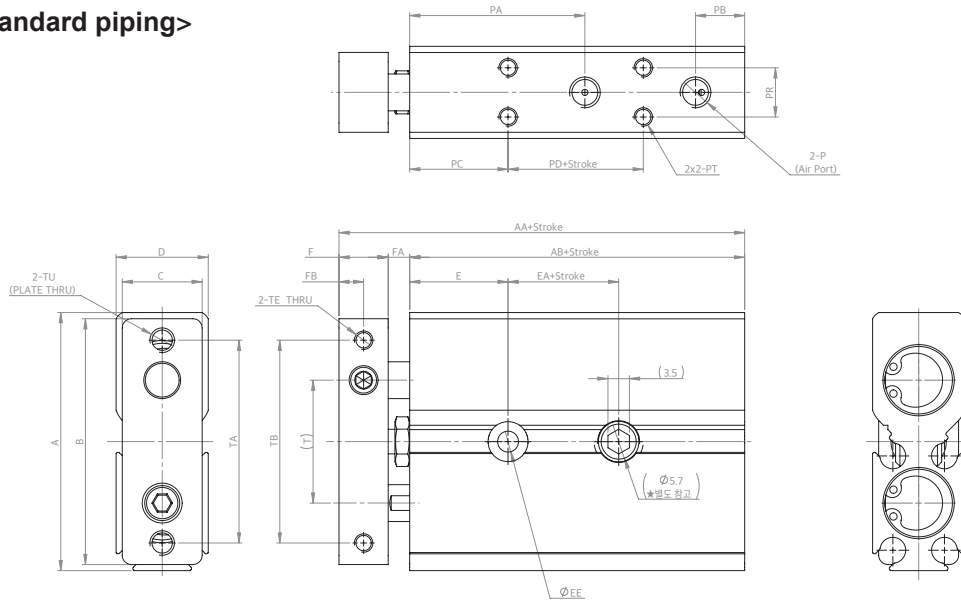
7 Auto switch

8 Number of switches

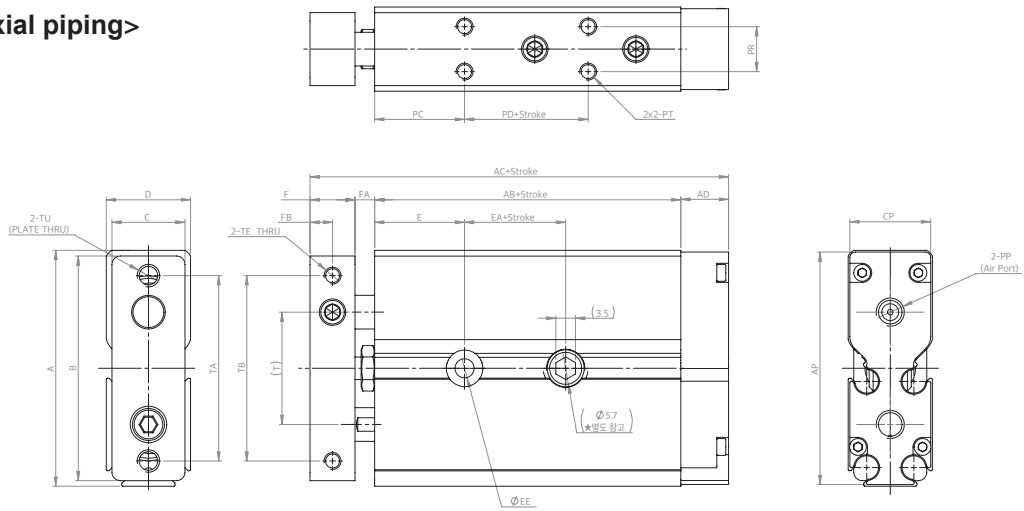
ADRC Series

Dimensions / (Ø6~Ø10) standard / axial piping

<Standard piping>



<Axial piping>

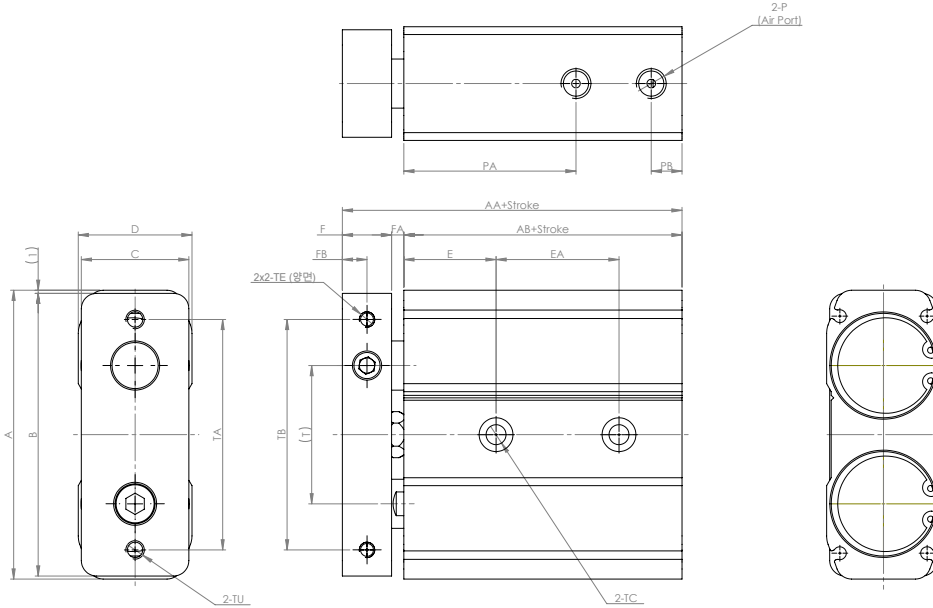


	A	B	C	D	TA	TU	AA	AB	F	FA	FB	E	EA	TE
Ø6	32	31	11	13.4	25	M3x0.5	42	32	5.5	4.5	2.75	12	5	M3x0.5
Ø10	42	40	13	15	33	M4x0.7	56	44.5	8	3.5	4	16	8	M3x0.5
	PA	PB	PC	PD	PT	PR	P		EE					
Ø6	20.5	5.5	10	9	M3x0.5 DP3.5	8	M3x0.5 DP3		Ø3.4 THRU / 2-C/B Ø6.5 DP5 (양면)					
Ø10	28.5	8	16	12	M3x0.5 DP4.5	8	M5x0.8 DP4		Ø3.4 THRU / 2-C/B Ø6.5 DP5.5 (양면)					

<Axial piping>

	AC	AD	AP	CP	PP
Ø6	49	7	31.4	12.8	M3x0.5 DP3
Ø10	64.5	8.5	41.4	14.4	M5x0.8 DP4

Dimensions / (Ø16~Ø32) standard piping



	A	B	C	D	TA	TU	AA	AB	F	FA	FB	E	TE
Ø16	54	52	17	19	42	M5x0.8 관통	70	57.5	10	2.5	5	20	M4x0.7 DP6
Ø20	62	60	22	24	50	M5x0.8 관통	84	67.5	12	4.5	6	25	M4x0.7 DP6
Ø25	73	71	27	29	60	M6x1.0 관통	87	70.5	12	4.5	6	30	M5x0.8 DP7.5
Ø32	94	92	35	37	75	M6x1.0 관통	100.5	80.5	16	4	8	30	M5x0.8 DP7.5

	TC	PA	PB	P
Ø16	Ø4.3 Thru, 2x2-Ø8 C/B DP4.3 (양면)	38	9	M5x0.8 DP5
Ø20	Ø5.5 Thru, 2x2-Ø9.5 C/B DP5.4 (양면)	45	9	M5x0.8 DP5
Ø25	Ø6.5 Thru, 2x2-Ø11 C/B DP6.3 (양면)	46	9	M5x0.8 DP5
Ø32	Ø6.5 Thru, 2x2-Ø11 C/B DP6.3 (양면)	56	10	RT(Rc) 1/8 DP6.5

Bore	Stroke	EA					
		10	20	30	40	50	100
Ø16		25		35		45	55
Ø20		30		40		60	
Ø25		30		40		60	
Ø32		40		50		70	