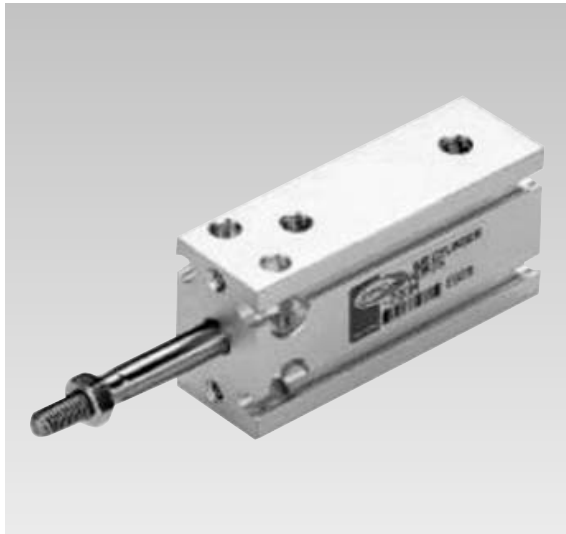


Series **NDM**

Direct Mount Cylinder/Standard Type : Double Acting

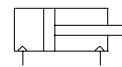
Bore size : $\phi 10$, $\phi 16$, $\phi 20$, $\phi 25$



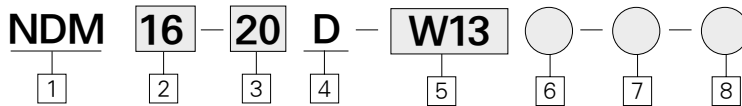
- COMPACT DESIGN SAVES SPACE.
- MULTIPLE MOUNTING OPTIONS
- AUTO SWITCH TYPE AVAILABLE.
- NON LUBRICATED SERVICE STANDARD

Symbol

Double acting



How to Order



1 Direct Mount Cylinder

※ Standard type
Built-in Magnet & Rubber Cushion

2 Bore size(mm)

10 : $\phi 10$
16 : $\phi 16$
20 : $\phi 20$
25 : $\phi 25$

3 Stroke(mm)

$\phi 10$, 16: 5, 10, 15, 20, 25, 25, 30
 $\phi 20$, 25: 5, 10, 15, 20, 25, 25, 30, 40, 50

4 Acting

D : Double acting

5 Auto Switch

Blank : Without Auto Switch
W13 : Reed Switch - 2 wire
(DC24V, AC110V)

W1H : Solid State Switch - 3 wire
(DC24V)

※ Standard Auto Switch lead wire length is 1m,
3m leads available on all models by
adding a "L" suffix to the part number.
Example)W1H → W1HL

6 Number of Auto Switch

Blank : 2pcs.
S : 1pc.

7 Order Made Option

Blank : Standard
XC16 : Copper - Free

8 Option

$\phi 10$ Side Mount : R2292
(TAP Cutting at opposite side of
cylinder Tube port hole)

Series NDM

Minimum Operating Pressure Mpa(psi)

Type \ Bore size(mm)	10	16	20	25
Double acting (Single rod)	0.06 (8.5psi)	0.06 (8.5psi)	0.05 (7.1psi)	0.5 (7.1psi)

Standard Specifications

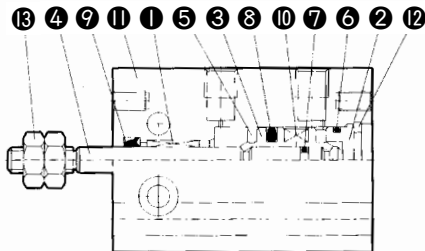
Fluid	Air
Proof pressure	1.05MPa(149psi)
Max. operating pressure	0.7Mpa(99psi)
Ambient and fluid temperature °C(°F)	5 ~ 60°C(41~140°F)
Lubrication	Not required
Cushion	Both sides RUBBER Cushion
Rod end thread	Male thread
Thread tolerance	KS 2 Class
Stroke allowance	+1.0 0
Mounting	Basic type

Standard Stroke (mm)

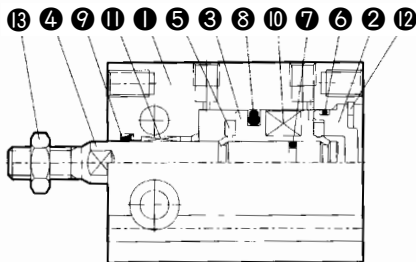
Bore size (mm)	Double acting							
	Stroke							
	5	10	15	20	25	30	40	50
10	○	○	○	○	○	○	-	-
16	○	○	○	○	○	○	-	-
20	○	○	○	○	○	○	○	○
25	○	○	○	○	○	○	○	○

Construction Parts List / Double Acting Single Rod

φ 10, 16



φ 20, φ 25

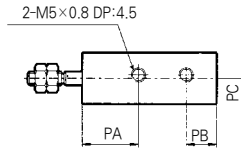


Parts List

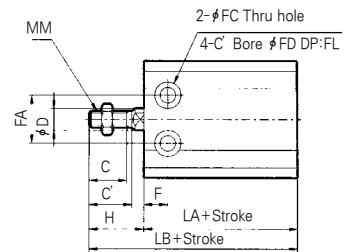
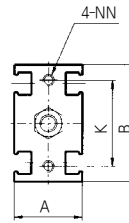
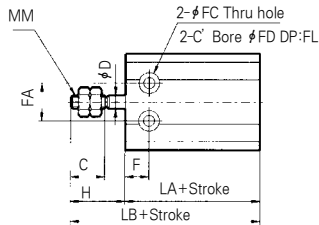
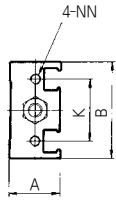
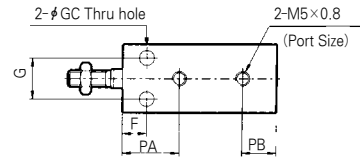
No.	Description	Material	Note
①	Cylinder Tube	Aluminum alloy	Hard alumite
②	Head cover	Aluminum alloy	Hard alumite
③	Piston	Brass	
		Aluminum alloy	
④	Piston rod	Stainless steel	
⑤	Bumper	Urethane	
⑥	Head Cover Gasket	NBR	
⑦	Piston Gasket	NBR	
⑧	Piston Packing	NBR	
⑨	Rod Packing	NBR	
⑩	Magnet	-	
⑪	Bush	Sintered oil bearing alloy	
⑫	Snap ring	Spring steel	Nickel plating
⑬	Rod End Nut	Carbon steel	

Dimensions Double Acting/Single Rod

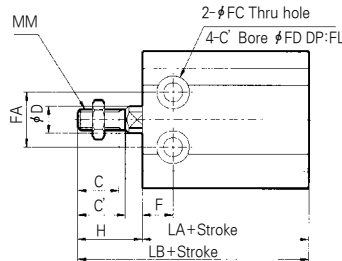
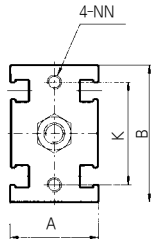
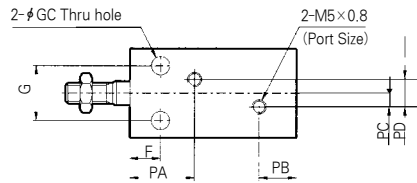
φ 10



φ 16



φ 20, φ 25



(Unit: mm)

Bore size	A	B	C	C'	D	F	FA	FC	FD	FL	H	K	G	GC	MM	NN	PA	PB	PC	PD	LA	LB
φ 10	15	28	10	-	4	7	11	3.2	6	5	16	18	-	-	M4×0.7	M3×0.5 DP:5	16.5	9	1	-	35	51
φ 16	20	34	11	12.5	6	7	14	4.3	7.6	6.5	16	25	12	4.3	M5×0.8	M4×0.7 DP:6	16.5	10	-	-	40	56
φ 20	26	40	12	14	8	9	16	5.3	9.3	8	19	30	16	5.3	M6×1.0	M5×0.8 DP:8	19	11	4	8	44	63
φ 25	32	50	15.5	18	10	10	20	5.3	9.3	9	23	38	20	5.3	M8×1.25	M5×0.8 DP:8	21.5	13	4.5	9	48	71

Series **NDMW**

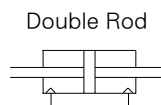
Direct Mount Cylinder/Double Acting Double Rod

Bore Size : $\phi 10$, $\phi 16$, $\phi 20$, $\phi 25$

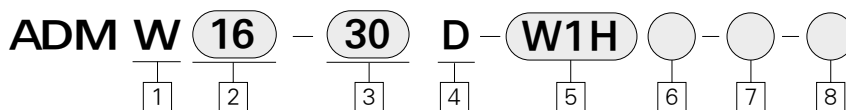


- SPACE SAVING COMPACT DESIGN
- MULTIPLE MOUNTINGS
- NON-ROTATING ROD TYPE AVAILABLE
- NON LUBRICATED SERVICE STANDARD

Symbol



How to Order



1 Double Rod Type

2 Bore Size(mm)

10 : $\phi 10$
 16 : $\phi 16$
 20 : $\phi 20$
 25 : $\phi 25$

3 Cylinder Stroke(mm)

$\phi 10, 16$: 5, 10, 15, 20, 25, 30
 $\phi 20, 25$: 5, 10, 15, 20, 25, 30, 40, 50

4 Acting

D : Double Acting

5 Auto Switch Available

Blank : Without Auto Switch

W1H : Solid State Switch
 (DC 24V)- 3wire

W13 : Reed Switch
 (DC 24V, DC 100V)

* Standard Auto Switch lead wire length is 1m.
 3m leads available on all models by
 adding a "L" suffix to the part number.
 Example)W1H→W1HL

6 Number of Auto Switch

Blank : 2pcs.

S : 1pc.

7 Order Made Option

Blank : Standard

XC16 : Copper-Free

8 Option

$\phi 10$ Side Mount : R2292

(TAP Cutting at opposite side of
 cylinder Tube port hole.)

Minimum Operating Pressure (kgf/cm²(psi))

Bore size	φ10	φ16	φ20	φ25
Min. operating pressure	1.0 (14.2psi)	1.0 (14.2psi)	0.8 (11.4psi)	0.8 (11.4psi)

Standard Specifications

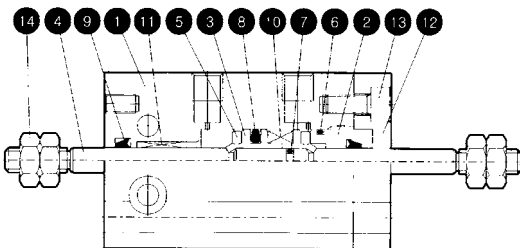
Fluid	Air
Proof pressure	1.05MPa (149psi)
Max. operating pressure	0.7MPa (99psi)
Ambient and fluid temperature	5~60℃
Lubrication	Not required
Cushion	Both Sides RUBBER Cushion
Rod end thread	Male thread
Thread tolerance	KS 2 Class
Stroke allowance	+1.0 0
Mounting	Basic type

Theoretical Force

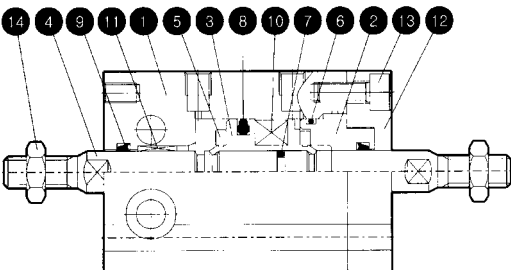
Bore size (mm)	Rod diameter (mm)	hydraulic area (mm ²)	Operating pressure (Mpa)		
			0.3	0.5	0.7
φ10	4	66.0	19.8	33.0	46.2
φ16	6	172	51.6	86.0	121
φ20	8	264	79.2	132	185
φ25	10	412	124	206	288

Construction/Parts List

ADMW φ10, φ16



ADMW φ20, φ25



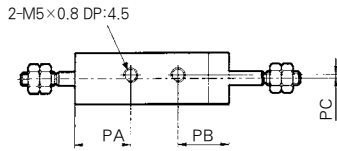
Parts List

No.	Description	Material	Note
1	Cylinder Tube	Aluminum alloy	Hard alumite
2	Rod Cover	Aluminum alloy	Hard alumite
3	Piston	Brass	φ10
		Aluminum alloy	φ16~φ25 Cromate
4	Piston Rod	Stainless steel	
5	Bumper	Urethane	
6	Head Cover Gasket	NBR	
7	Piston Gasket	NBR	
8	Piston Packing	NBR	
9	Rod Packing	NBR	
10	Magnet	-	
11	Bush	Sintered oil bearing alloy	
12	Retainer	Aluminum alloy	Hard Allumite
13	Hexagonal Head Cap Screw	Carbon steel	Nickel plated
14	Rod End Nut	Carbon steel	

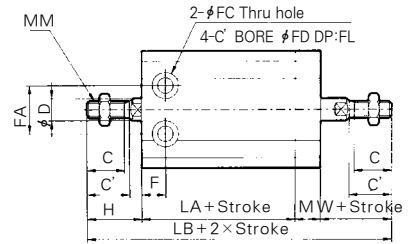
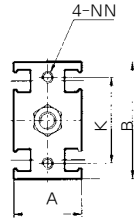
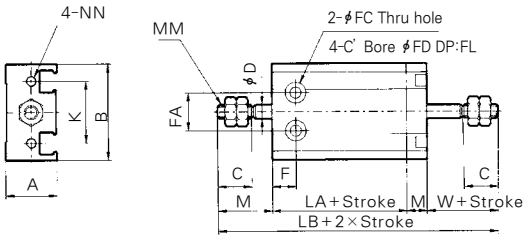
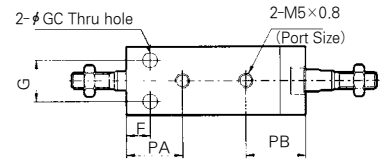
Series NDMW

Double Acting/Double Rod Type(NDMW)

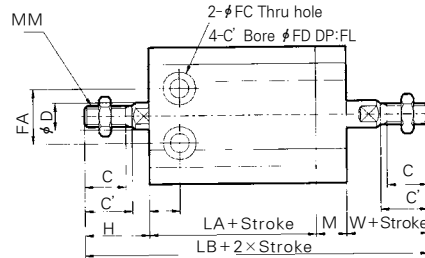
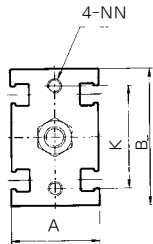
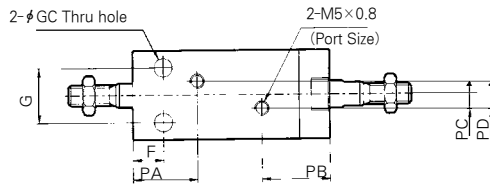
NDMW10



NDMW16



NDMW20
NDMW25



(Unit: mm)

Bore size	A	B	C	C'	D	F	FA	FC	FD	FL	H	K	M	G	GC	MM	NN	PA	PB	PC	PD	W	LA	LB
φ10	15	28	10	-	4	7	11	3.2	6	5	16	18	6	-	-	M4×0.7	M3×0.5 DP:5	16.5	15	1	-	16	35	73
φ16	20	34	11	12.5	6	7	14	4.3	7.6	6.5	16	25	7.5	12	4.3	M5×0.8	M4×0.7 DP:6	16.5	17.5	-	-	16	40	79.5
φ20	26	40	12	14	8	9	16	5.3	9.3	8	19	30	9	16	5.3	M6×1.0	M5×0.8 DP:8	19	20	4	8	19	44	91
φ25	32	50	15.5	18	10	10	20	5.3	9.3	9	23	38	9	20	5.3	M8×1.25	M5×0.8 DP:8	21.5	22	4.5	9	23	48	103

Series **NDMK**

Direct Mount Cylinder/Double Acting/Non-Rotating Rod/Single Rod

Bore Size : $\phi 10$ $\phi 16$, $\phi 20$, $\phi 25$



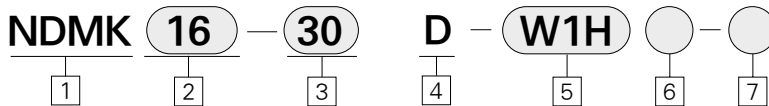
- SPACE SAVING COMPACT DESIGN
- MULTIPLE MOUNTINGS
- NON-ROTATING ROD TYPE AVAILABLE
- NON LUBRICATED SERVICE STANDARD

Symbol

Non-Rotating Rod/Single Rod



How To Order



1 Non-Rotating Rod/
Single Rod Type

2 Bore Size(mm)

$\phi 10$: $\phi 10$
 $\phi 16$: $\phi 16$
 $\phi 20$: $\phi 20$
 $\phi 25$: $\phi 25$

3 Cylinder Stroke

$\phi 10$: 5, 10, 15, 20, 25, 30
 $\phi 16$: 5, 10, 15, 20, 25, 30
 $\phi 20$: 5, 10, 15, 20, 25, 30, 40, 50
 $\phi 25$: 5, 10, 15, 20, 25, 30, 40, 50

4 Acting

D : Double acting

5 Auto Switch Available

Blank : Without Auto Switch
W1H : Solid State Switch
(DC24V)-3wire
W13 : Reed switch
(DC24V, AC100V)

* Standard Auto Switch lead wire length is
0.5m 3m leads available on all models by
adding a "L" suffix to the part number.
Example)W1H → W1HL

6 Number of Auto Switch

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

7 Order Made Option

Blank : Standard
XC16 : Copper - free

Series NDMK

Non-Rotating Piston Rod Accuracy/Specification

Bore size	φ 10, φ 16	φ 20, φ 25
Non-rotating accuracy	±0.8°	±0.5°

Minimum Operating Pressure

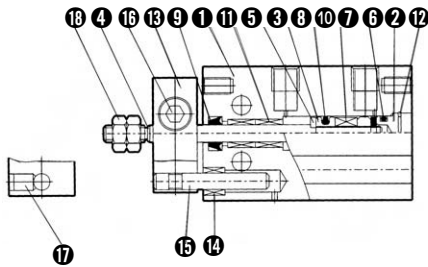
Bore size	φ 10	φ 16	φ 20	φ 25
Min. operating pressure	1.0		0.8	

Standard Specifications

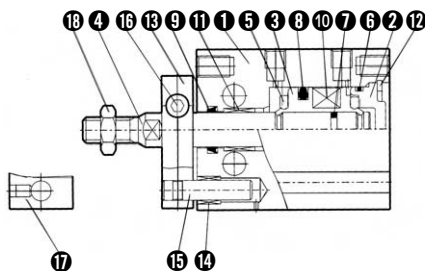
Acting	Double acting single rod
Fluid	Air
Proof pressure	1.05MPa(149psi)
Max. operating pressure	0.7MPa(99psi)
Ambient and fluid temperature	5 ~ 60°C (41°F~140°F)
Lubrication	Not required
Piston Speed	50 ~ 500 mm/sec
Cushion	Both Side RUBBER Cushion
Rod end thread	Male thread
Thread tolerance	KS 2 class
Stroke allowance	+1.0 0
Mounting	Basic type

Construction/Parts List/Non-Rotating Piston Single Rod Type

NDMK10
NDMK16



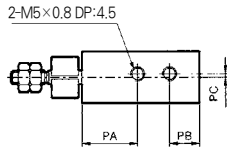
NDMK20
NDMK25



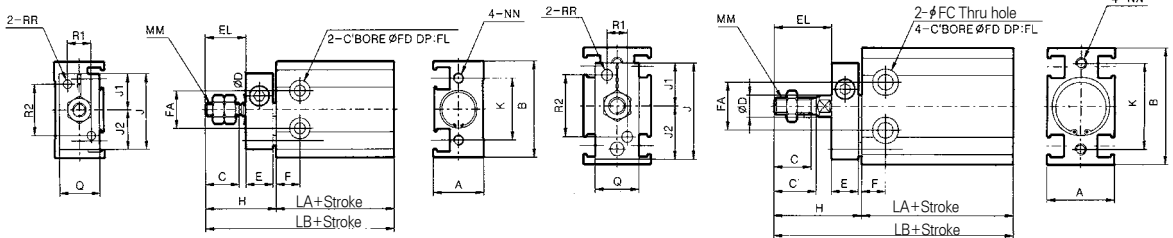
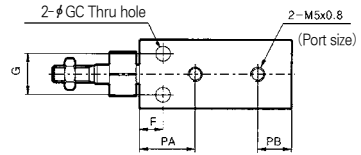
No.	Description	Material	Note
①	Cylinder Tube	Alluminum Alloy	Hard Alumite
②	Head Cover	Alluminum Alloy	Alumite
③	Piston	Brass	φ 6, φ 10
		Alluminum Alloy	φ 16~φ 32Chromate
④	Piston Rod	Stainless Steel	
⑤	Bumper	Urethane Rubber	
⑥	Head Cover Gasket	NBR	
⑦	Piston Gasket	NBR	
⑧	Piston Packing	NBR	
⑨	Rod Packing	NBR	
⑩	Magnet	-	
⑪	Bush	Sintered Oil Bearing Alloy	
⑫	Snap Ring	Spring Steel	Nickel Plating
⑬	Anti-rotating Plate	Alluminum Alloy	Hard Alumite
⑭	Guide Bush	Sintered Oil Bearing Alloy	
⑮	Guide Rod	Stainless Steel	
⑯	Hexagonal Head Cap Screw	Carbon Steel	
⑰	Hexagon Socket	Carbon Steel	
⑱	Rod End Nut	Carbon Steel	Nickel Plating

Double Acting/Non-Rotating Single Rod

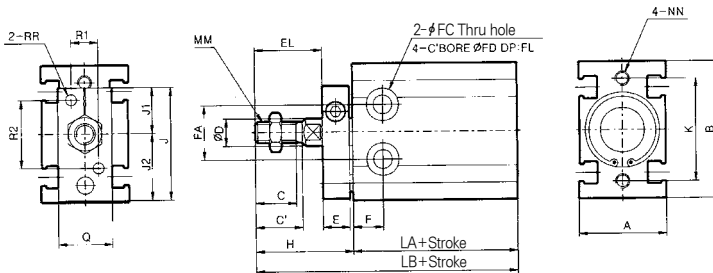
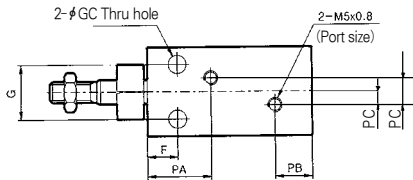
NDMK 10



NDMK 16



NDMK 20
NDMK 25



(Unit: mm)

Bore size	E	EL	J	J1	J2	Q	R1	R2	RR
φ 10	8	12	22	10.5	11.5	12	7	15	M3×0.5
φ 16	8	17	28	12.5	15.5	13	6	18	M4×0.7
φ 20	8	20	33	13.5	19.5	16	8	20	M4×0.7
φ 25	10	22	43.5	19	24.5	20	10	28	M5×0.8

Bore size	A	B	C	C'	D	F	FA	FC	FD	FL	G	GC	H	K	MM	NN	PA	PB	PC	PD	LA	LB
φ 10	15	28	10	-	4	7	11	3.2	6	5	-	-	21	18	M4×0.7	M3×0.5 DP:5	16.5	9	1	-	35	56
φ 16	20	34	11	12.5	6	7	14	4.3	7.6	6.5	12	4.3	26	25	M5×0.8	M4×0.7 DP:6	16.5	10	-	-	40	66
φ 20	26	40	12	14	8	9	16	5.3	9.3	8	16	5.3	29	30	M6×1.0	M5×0.8 DP:8	19	11	4	8	44	73
φ 25	32	50	15.5	18	10	10	20	5.3	9.3	9	20	5.3	33	38	M8×1.25	M5×0.8 DP:8	21.5	13	4.5	9	48	81

- ACP
- UACP
- APM
- AX
- AS
- AM2
- AM
- AL ALX
- ARD
- AQ
- AQ2
- AJ
- AG
- AGX GX
- NDM**
- ADR
- AMR
- NST
- AST
- NLCD
- NLCS
- NF
- NR
- ASL

Series **NDMKW**

Direct Mount Cylinder/Double Acting/Non-Rotating Piston Double Rod

Bore Size : $\phi 10$, $\phi 16$, $\phi 20$, $\phi 25$



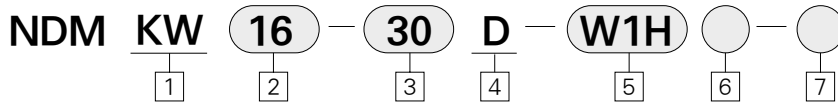
- COMPACT DESIGN SAVES SPACE.
- PRECISE AND DIRECT MOUNTING.
- HIGH NON-ROTATING ACCURACY

Symbol

Non-Rotating Rod/Double Rod



How to Order



1 Non-Rotating Rod/
Double Rod Type

2 Bore Size(mm)

10 : $\phi 10$

16 : $\phi 16$

20 : $\phi 20$

25 : $\phi 25$

3 Cylinder Stroke

$\phi 10, 16$: 5, 10, 15, 20, 25, 30

$\phi 20, 25$: 5, 10, 15, 20, 25, 30, 40, 50

4 Acting

D: Double acting

5 Auto Switch Available

Blank : Without Auto Switch

W1H : Reed Switch type
(DC24V)

W13 : Solid State Switch type
(DC24V, AC100V)

※ Standard Auto Switch lead wire
length is 1m. 3m leads available on
all models by adding a "L" suffix to
the part number.

Example) W1H → W1HL

6 Number of Auto Switch

Blank : 2 pcs.

S : 1 pc.

n : n pcs.

7 Order Made Option

Blank : Standard

XC16 : Copper-Free

Standard Specification

Operating Type	Double acting Single Rod
Fluid	Air
Roof Pressure	10.5MPa(149psi)
Max. Operating Pressure	0.7MPa(99psi)
Ambient omol Fluid Temperature	5 ~ 60℃(41° F~140° F)
Lubricant	None(None-Lube)
Pistou Speed	50 ~ 500mm/sec
Cushion	Rubber Cushion
Pod end thread	Male thread
Thread Tolence	KS class 2
Stroke Tolerance	+1.0 0
Mounting	Basic

Non-Rotating Rod Accuracy

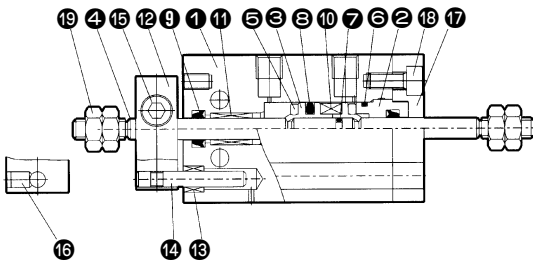
Bore Size	φ 10, φ 16	φ 20, φ 25
Non-Rotating Rod Accuracy	±0.8°	±0.5°

Min. Operating Pressure (kgf/cm²(psi))

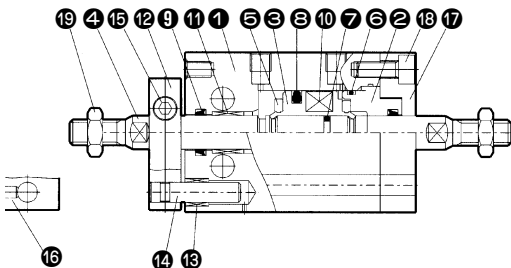
Bore Size	φ 10	φ 16	φ 20	φ 25
Min. Operating Pressure	1.3(18.5)	1.3(18.5)	1.1(15.6)	1.1(15.6)

Construction / Non-Rotating Piston / Double Rod Type

φ 10, φ 16



φ 20, φ 25



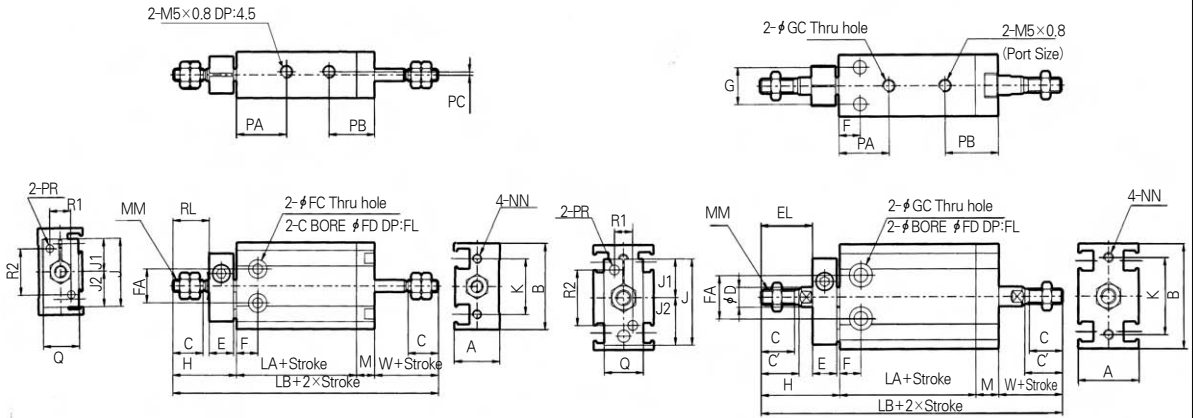
No.	Description	Material	Note
1	Cylinder Tube	Alluminum Alloy	Hard Alumite
2	Head Cover	Alluminum Alloy	Alumite
3	Piston	Brass	φ 6, φ 10
		Alluminum Alloy	φ 16~φ 32Chromate
4	Piston Rod	Stainless Steel	
5	Bumper	Urethane Rubber	
6	Head Cover Gasket	NBR	
7	Piston Gasket	NBR	
8	Piston Packing	NBR	
9	Rod Packing	NBR	
10	Magnet	-	
11	Bush	Sintered Oil Bearing Alloy	
12	Anti-rotating Plate	Alluminum Alloy	Hard Alumite
13	Guide Bush	Sintered Oil Bearing Alloy	
14	Guide Rod	Stainless Stee	
15	Haxagonal Head Cap Screw	Carbon Steel	
16	Hexagon Socket	Carbon Steel	
17	Retainer	Aluminum allog	Hard Alumite
18	Haxagonal Head Cap Screw	Carbon Steel	
19	Rod End Nut	Carbon Steel	Nickel Plating

Series NDMKW

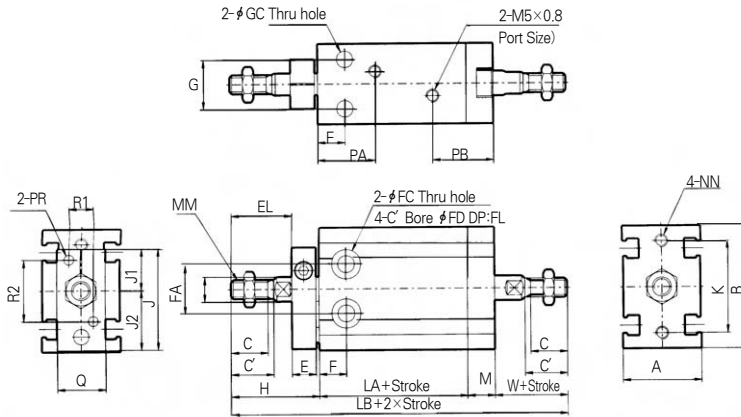
Double Acting/Non-Rotating Piston Double Rod

NDMKW10

NDMKW16



NDMKW20
NDMKW25



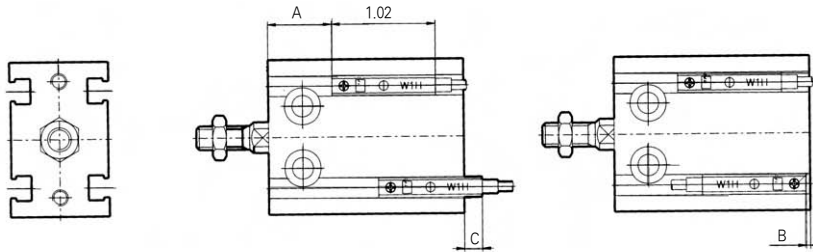
(Unit:mm)

Bore Size	E	EL	J	J1	J2	Q	R1	R2	RR
φ 10	8	12	22	10.5	11.5	12	7	15	M3×0.5
φ 16	8	17	28	12.5	15.5	13	6	18	M4×0.7
φ 20	8	20	33	13.5	19.5	16	8	20	M4×0.7
φ 25	10	22	43.5	19	24.5	20	10	28	M5×0.8

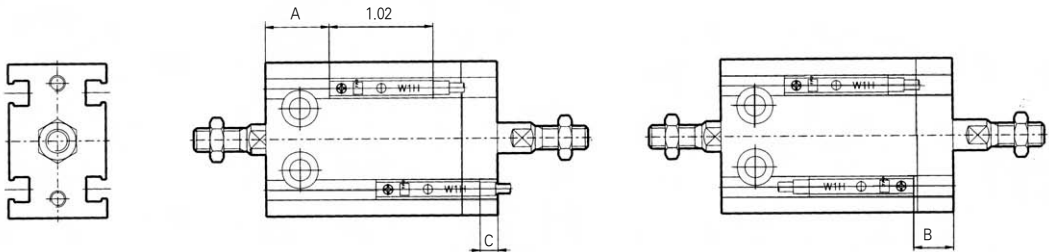
Bore Size	A	B	C	C'	D	F	FA	FC	FD	FL	G	GC	H	K	M	MM	NN	PA	PB	PC	PD	W	LA	LB
φ 10	15	28	10	-	4	7	11	3.2	6	5	-	-	21	18	6	M4×0.7	M3×0.5 DP:5	16.5	15	1	-	16	35	78
φ 16	20	34	11	12.5	6	7	14	4.3	7.6	6.5	12	4.3	26	25	7.5	M5×0.8	M4×0.7 DP:6	16.5	17.5	-	-	10	40	89.5
φ 20	26	40	12	14	8	9	16	5.3	9.3	8	16	5.3	29	30	9	M6×1.0	M5×0.8 DP:8	19	20	4	8	19	44	101
φ 25	32	50	15.5	18	10	10	20	5.3	9.3	9	20	5.3	33	38	9	M8×1.25	M5×0.8 DP:8	21.5	22	4.5	9	23	48	113

Auto Switch Setting Position(W1□ Type)

Double Acting Single Rod



Double Acting Double Rod



(Unit:mm)

Bore size	Double Acting Single Rod			Double Acting Double Rod		
	A	B	C	A	B	C
φ 10	13	-1	-7	13	5	-1
φ 16	13	0.5	-6	13	8	1.5
φ 20	16	1	-4.5	16	10	4.5
φ 25	19.5	3	-3	19.5	12	6

Auto Switch Specifications



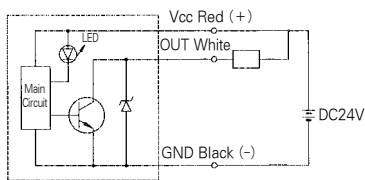
Auto Switch No.	W1H□	W13□
Type	Solid State Switch	Reed Switch
Application	Relay, Sequence Control	
Wiring Method	3 Wire System	2 Wire System
Power Source	DC10~28V	—
Load Voltage	DC28V Less	DC24V, AC110V
Current Consumption	100mA Less	DC24V : 5~40mA AC110V : 5~20mA
Internal Voltage Drop	100mA~0.5A Less	40mA~2.4A Less
Leakage Current	DC24V~10μA Less	
Load Current	OFF: 5mA or Less ON : 35mA or Less	—

- Operating Time : Max. 1ms
- Lead Wire : Oil resistant vinyl cord. ϕ 0.13, 0.2mm², 3 cores(red white, black), cores(red, black), 0.5m long
- Shock Resistance : 1000m/S² (102G)
- Insulation Resistance : 50M Ω or more under the test voltage 500V DC between case and cable.
- Withstand Voltage : 1000VAC for 1min.(between lead wire and the case)
- Ambient Temperature : (-10~60℃)
- Protection Structure : IEC Standard, water-tight and oil resistant structure

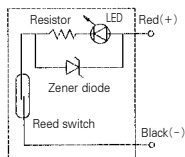
※ "L" is added to the end when the lead is 3m long.
(ex) W1□L

Auto Switch Internal Circuit

W1H□

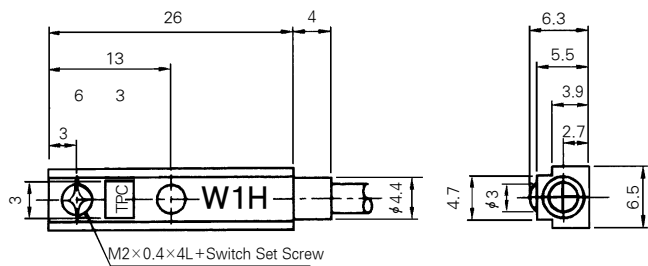


W13□



Auto Switch Dimensions

(mm)



	(mm)	
Stations	W1H□	W13□
L	10	15
Operating Range	4~10	4~10