

NFPU2 Series

NFPU2 (Angular Air Chuck)

Bore size : Ø10, Ø16, Ø20, Ø25

Excellent durability

Increased life span with fluorine based synthetic grease and optimal design of seals

Increased finger rigidity

Applied alloy steel with high yield stress

Improved repeatability

Improved finger clearance and repeatability with optimal design



Hard anodized body

Increased wear resistance with hard anodized body

HNBR packing

Ozone resistance HNBR packing allows to be used for battery industry

Single acting option available

Items of NFPU2 series

Type	
Standard (Double acting)	Single acting (Normally Open)
NFPU2-10D	NFPU2-10S
NFPU2-16D	NFPU2-16S
NFPU2-20D	NFPU2-20S
NFPU2-25D	NFPU2-25S

NFPU2 Series

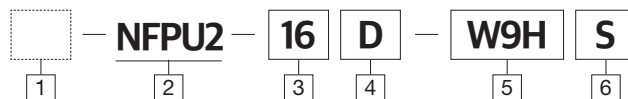
NFPU2 (Angular air chuck)

Bore size : Ø10, Ø16, Ø20, Ø25



- Compliance with battery industry
- Various mounting options available
- Single acting type available
- Increased life span with fluorine based synthetic grease

How to order



1 Battery industry compatibility

Blank	Standard
2B	For battery industry

2 Air chuck series

New
Finger
Pivot
Upgrade
2 : Number of fingers

3 Bore size(mm)

Symbol	Bore size
10	10
16	16
20	20
25	25

4 Acting

D	Double acting
S	Single acting (NO)

5 Auto switch

Blank	None
W9H	Solid state (horizontal)
W9V	Solid state (vertical)
W10V	Solid state (vertical)
W20H	Solid state (horizontal, 2 color display)
MZC1D	Solid state (2 wires)
MZC1N	Solid state (3 wires, NPN)
MZC1P	Solid state (3 wires, PNP)

※ 1m lead wire is standard, and for 3m lead wire, please add L at the end

6 Number of switches

Blank	2 pcs
S	1 pc
N	N pcs

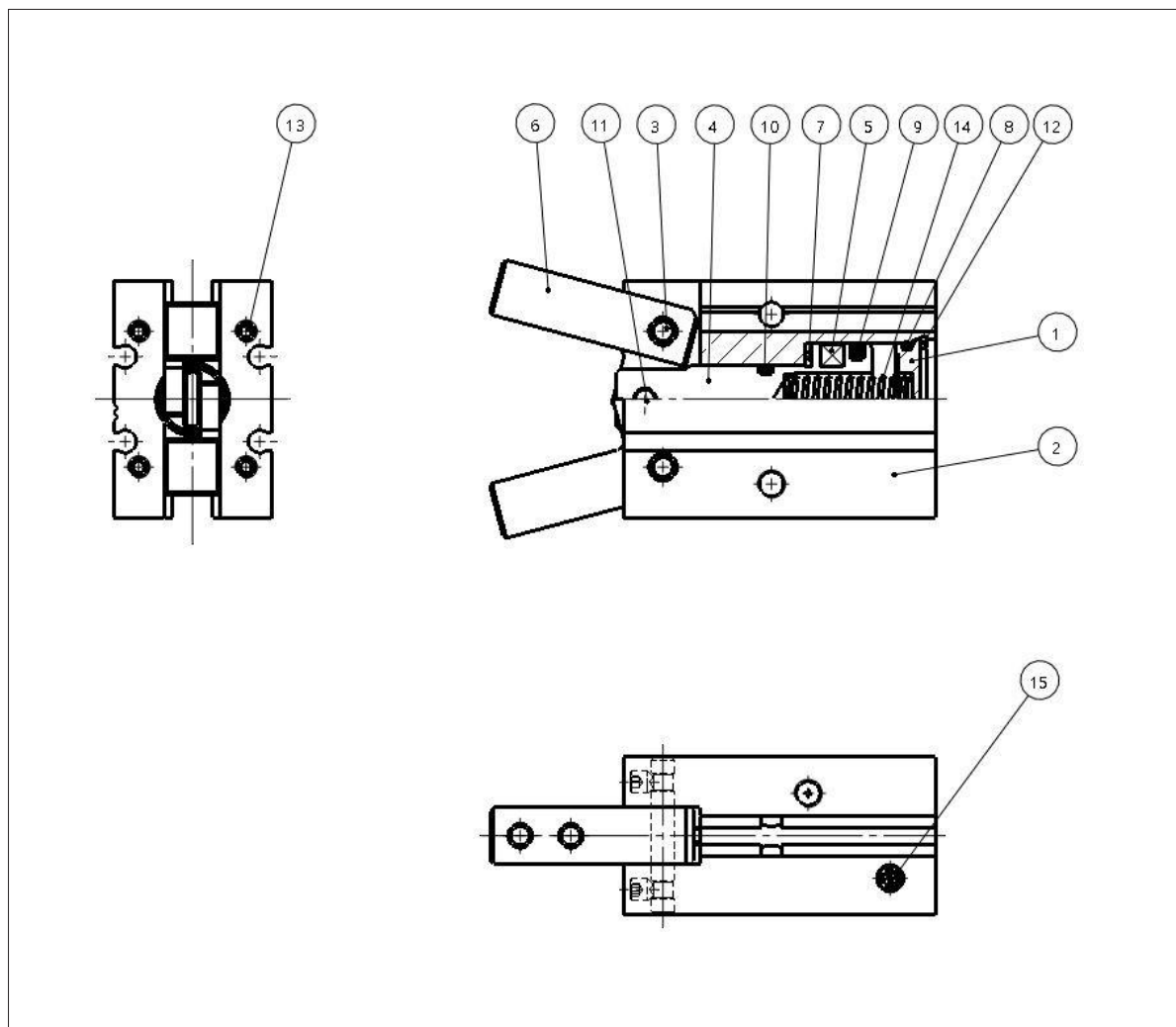
Specifications

Item		NFPU2-10□	NFPU2-16□	NFPU2-20□	NFPU2-25□
Bore size(mm)		10	16	20	25
Opening angle (°)		-10 ~ 30			
Gripping force (N) note)	Double acting	3.5	13	24	47
	Single acting	2.3	10.5	17.5	38
Port size		M3	M5	M5	M5
Weight (g)	Double acting	44	98	184	304
	Single acting	44	98	188	308
Fluid		Air			
Operating pressure (MPa)	Double acting	0.2 ~ 0.6MPa			
	Single acting	0.3 ~ 0.6MPa			
Lubrication		Not necessary			
Operating temperature (°C)		5 ~ 60°C			
Repeatability (mm)	Initial	±0.01	±0.01	±0.01	±0.01
	After 1 mil.	±0.1	±0.05	±0.05	±0.05
Max. operating frequency (C.P.M)		180			
Auto switch		W9H, W9V, W10V, W20H, MZC1D, MZC1N, MZC1P			

Note) At the pressure of 0.5MPa, gripping point of 30mm

NFPU2 Series

Structure / Part list

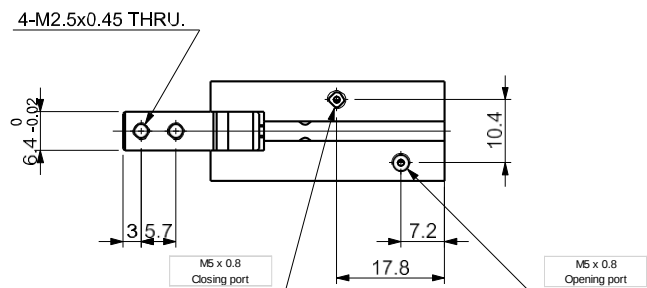
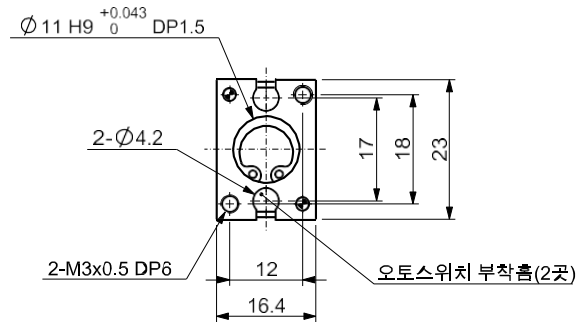
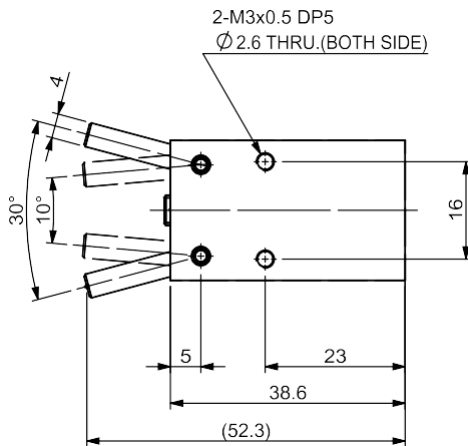
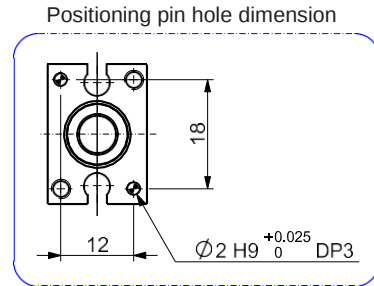
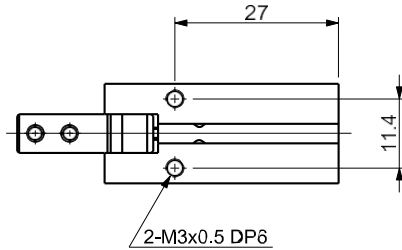


※ The structure may differ depending on the options

No	Part	Material	Note
1	Head cover	Aluminum alloy	
2	Body	Aluminum alloy	Hard anodizing
3	Link pin	Bearing steel	Heat treatment
4	Piston rod	Ø10, 16 : Stainless steel Ø20, 25 : Aluminum alloy	
5	Magnet	Synthetic rubber	
6	Finger	Alloy steel	Heat treatment
7	Bumper	Urethane rubber	
8	Gasket	NBR	
9	Piston packing	NBR	
10	Piston packing	Synthetic rubber	

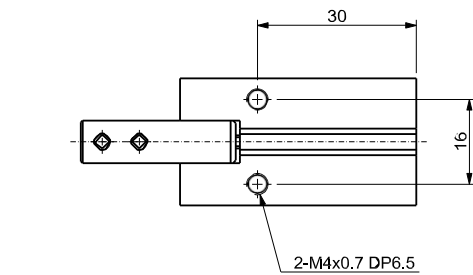
No	Part	Material	Note
11	Hinge pin	Bearing steel	Heat treatment
12	Snap ring	Carbon steel	
13	Set screw	Carbon steel	
14	Spring	Stainless steel	For single acting
15	Set screw	Carbon steel	For single acting

NFPU2-10□

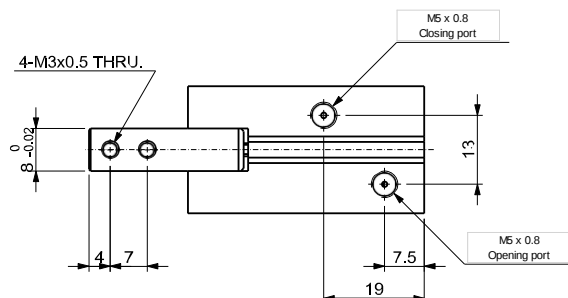
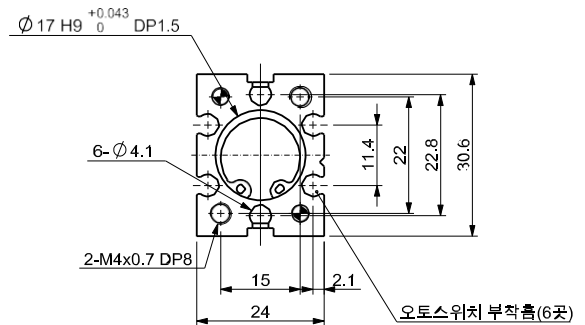
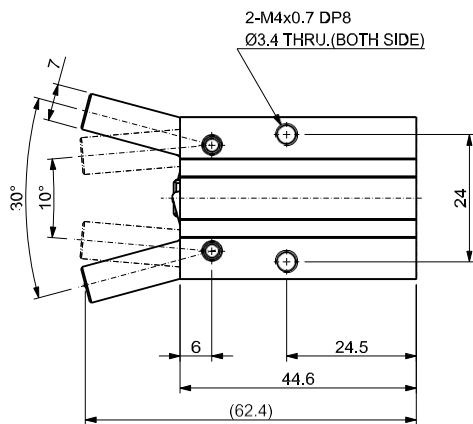
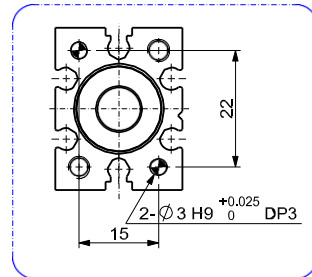


Note) A port for opening fingers can't be used for single acting type.

NFPU2-16 ☐

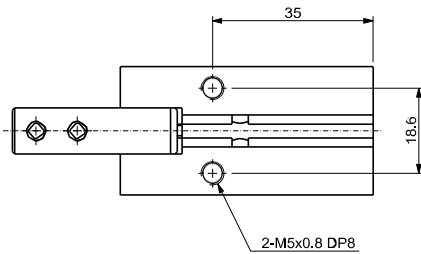


Positioning pin hole dimension

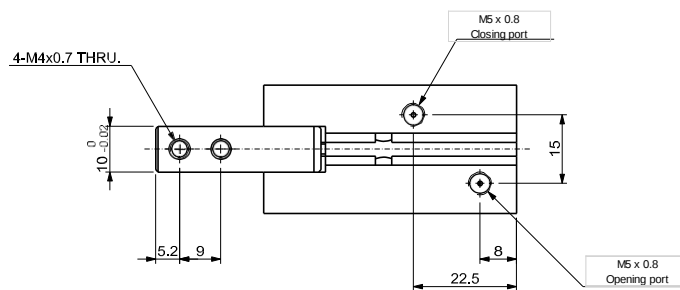
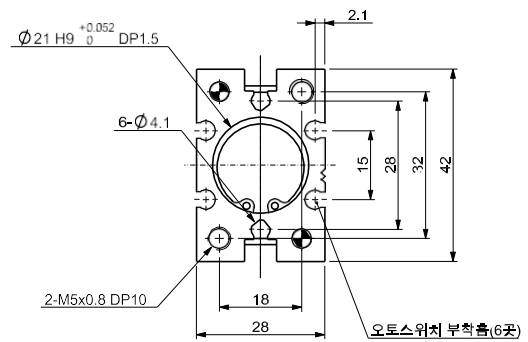
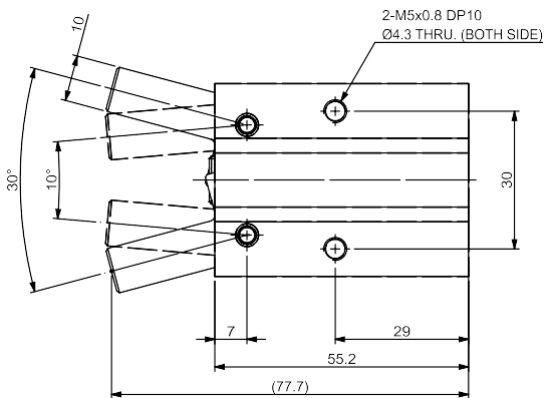
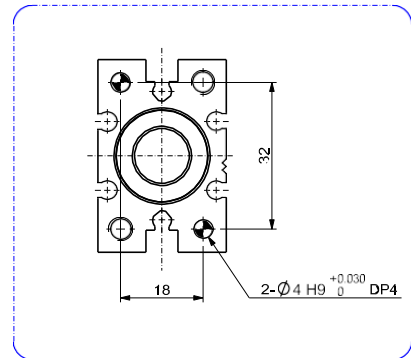


Note) A port for opening fingers can't be used for single acting type.

NFPU2-20□



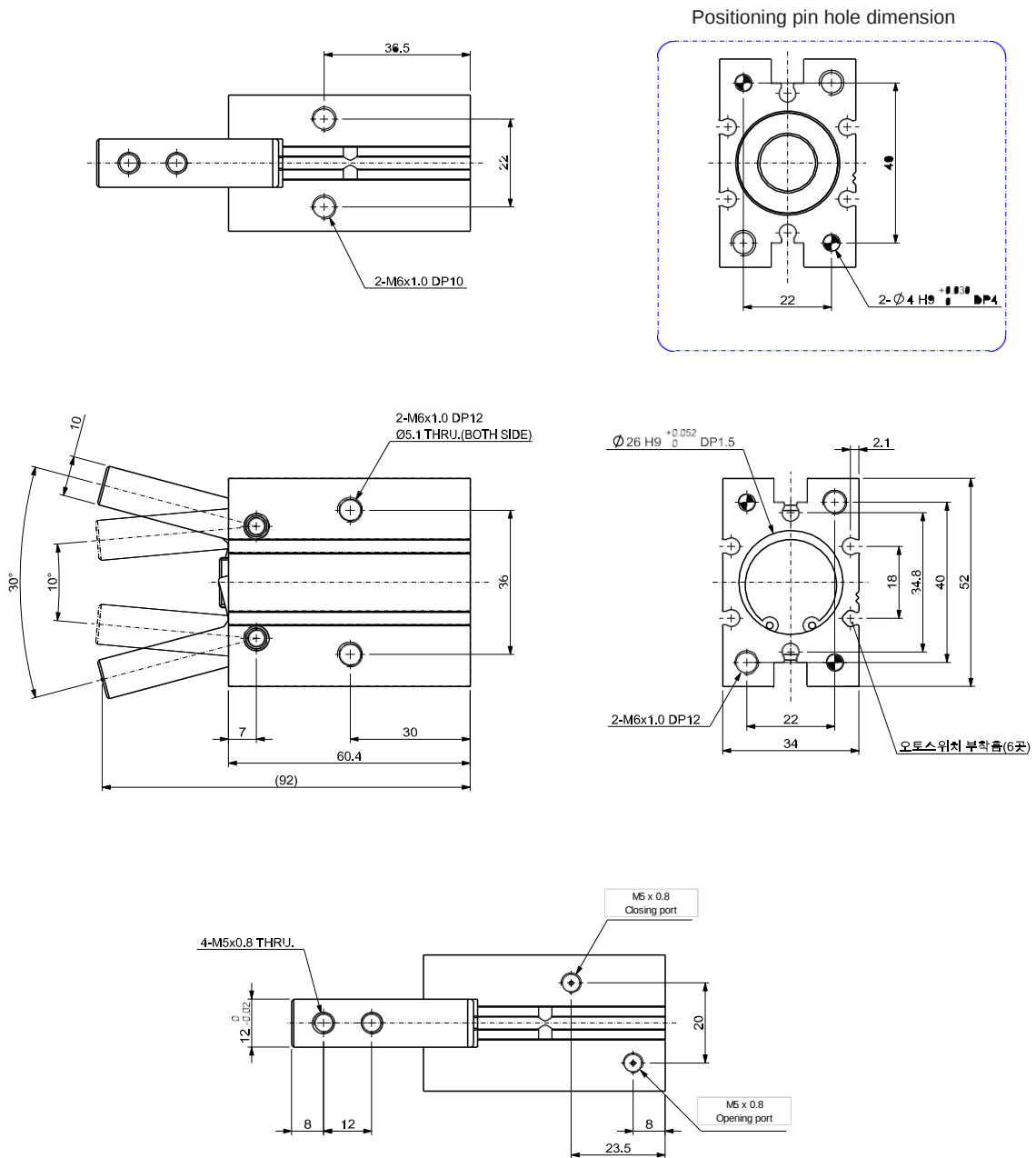
Positioning pin hole dimension



Note) A port for opening fingers can't be used for single acting type.

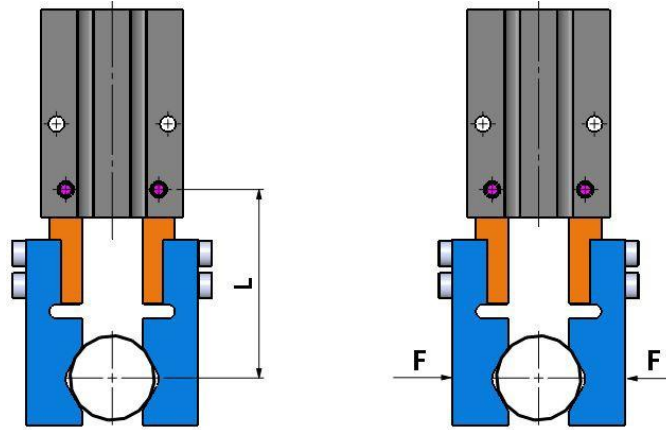
NFPU2 Series

NFPU2-25□

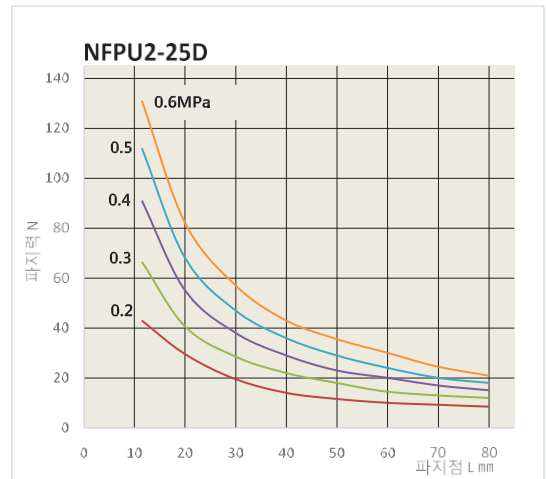
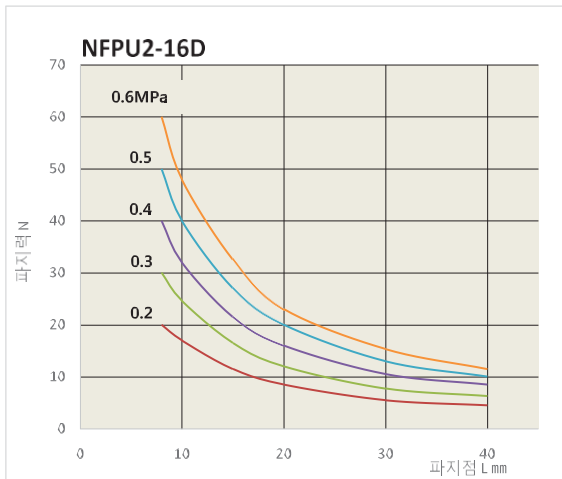
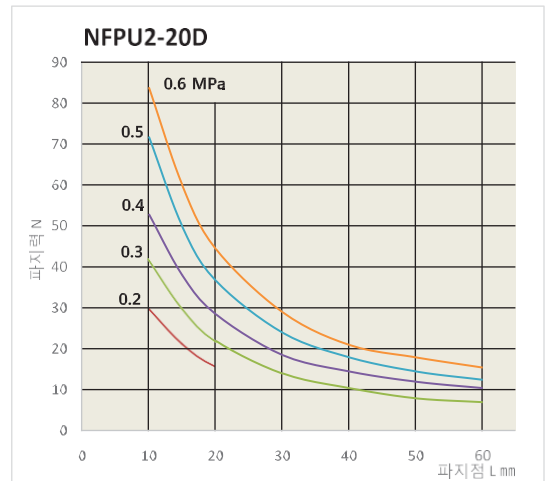
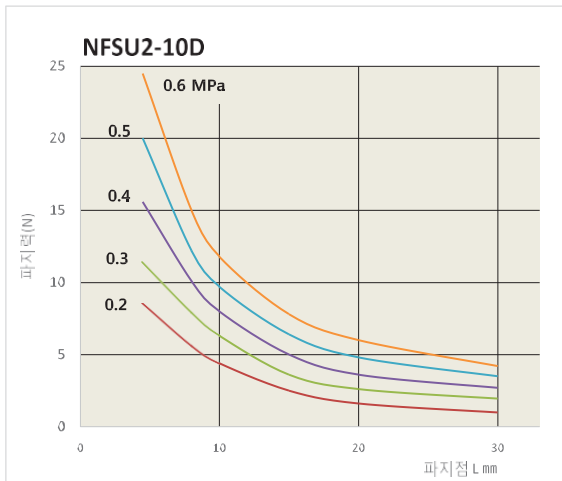


Note) A port for opening fingers can't be used for single acting type.

Effective gripping force(N) per gripping distance(L)

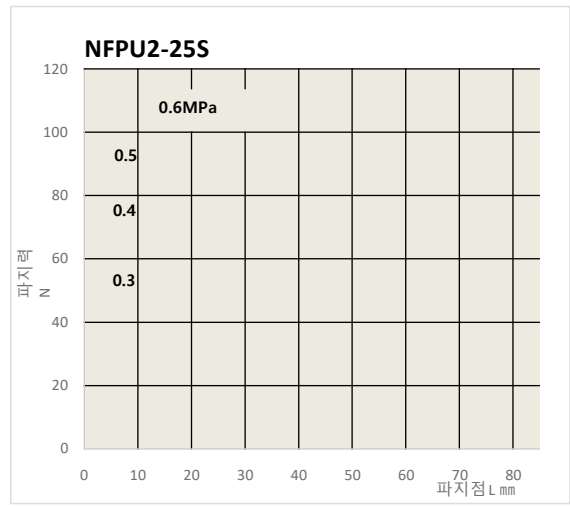
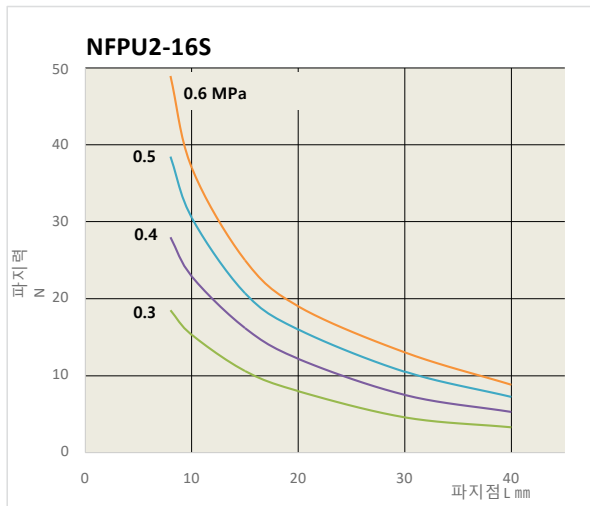
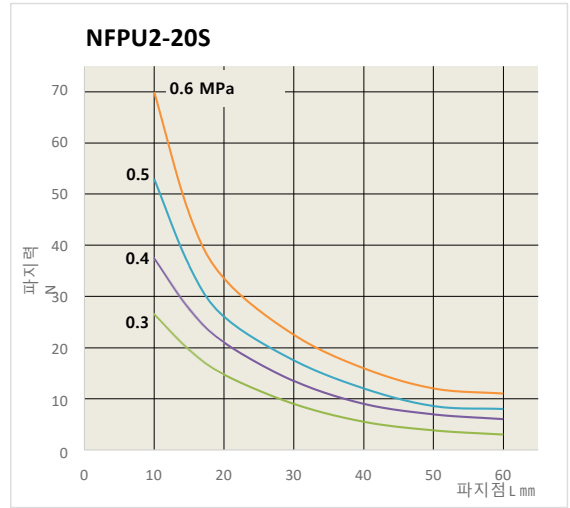
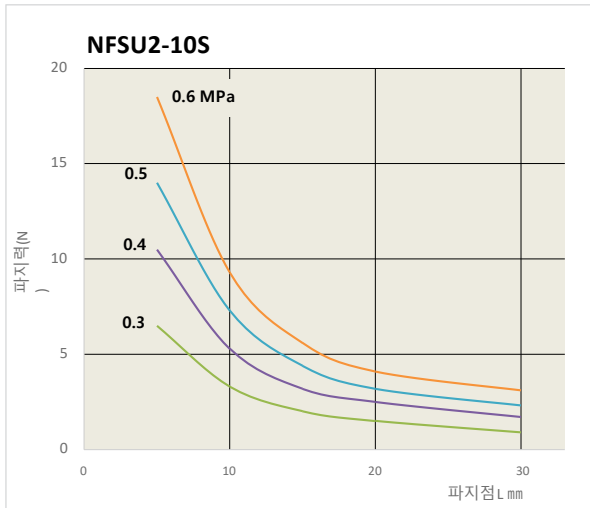


- Graph 1 shows effective gripping force(N) per 1 finger.
- Please use it in compliance with the maximum gripping distance for each inner diameter.
- Depending on the coefficient of friction, please select a gripping force that is 10 to 20 times of the load.



NFPU2 Series

Effective gripping force(N) per gripping distance(L)



Caution

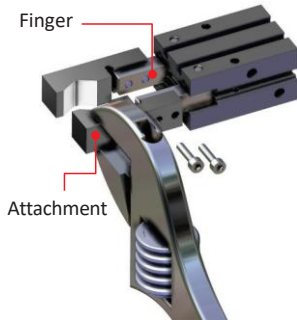
Be sure to read this before using the product

Precautions

Warning

- Effective gripping force at least 10 to 20 times the load.

1. How to assemble attachment to the finger



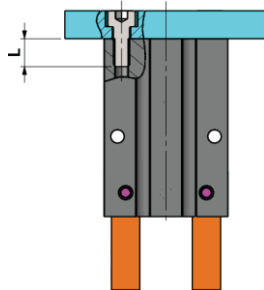
Item	Bolt	Max. tightening torque N.m
NFPU2-10□	M2.5×0.45	0.31
NFPU2-16□	M3×0.5	0.59
NFPU2-20□	M4×0.7	1.4
NFPU2-25□	M5×0.8	2.8

Precautions for mounting

Warning

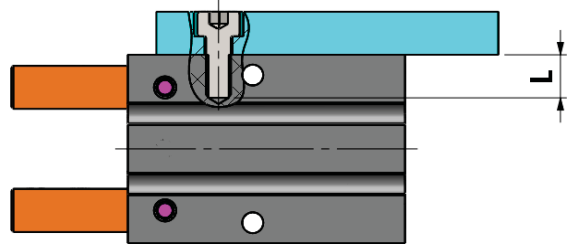
- Do not impact to the surface where a finger or body is attached. This may cause finger shaking or malfunction.
- Be careful not to touch the body when operating.
- Support and install the attachment to the finger with a spanner.
- When mounting the air chuck, please use appropriate screw. Fastening with higher torque value can cause malfunction, and lower torque may cause misalignment or fall.

2. Axial mounting



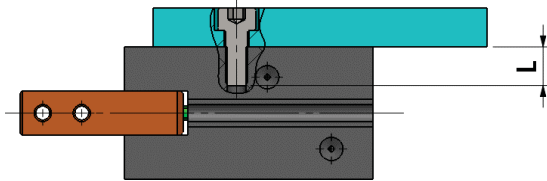
Item	Bolt	Max. tightening torque N.m	Max. screw-in depth (L mm)
NFPU2-10□	M3x0.5	0.88	6
NFPU2-16□	M4x0.7	2.1	8
NFPU2-20□	M5x0.8	4.3	10
NFPU2-25□	M6x1	7.3	12

3. Vertical mounting (body tapped)



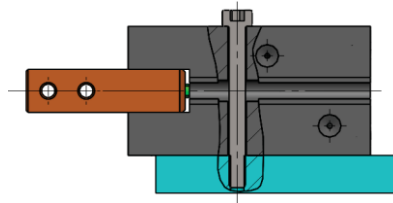
Item	Bolt	Max. tightening torque N.m	Max. screw-in depth (L mm)
NFPU2-10□	M3x0.5	0.59	6
NFPU2-16□	M4x0.7	1.3	6.5
NFPU2-20□	M5x0.8	3.3	8
NFPU2-25□	M6x1	5.9	10

4. Lateral mounting (body tapped)



Item	Bolt	Max. tightening torque N.m	Max. screw-in depth (L mm)
NFPU2-10□	M3x0.5	0.88	5
NFPU2-16□	M4x0.7	2.1	8
NFPU2-20□	M5x0.8	4.3	10
NFPU2-25□	M6x1	7.3	12

5. Lateral mounting (body through-hole)



Item	Bolt	Max. tightening torque N.m
NFPU2-10□	M2.5×0.45	0.49
NFPU2-16□	M3×0.5	0.88
NFPU2-20□	M4×0.7	2.1
NFPU2-25□	M5×0.8	4.3