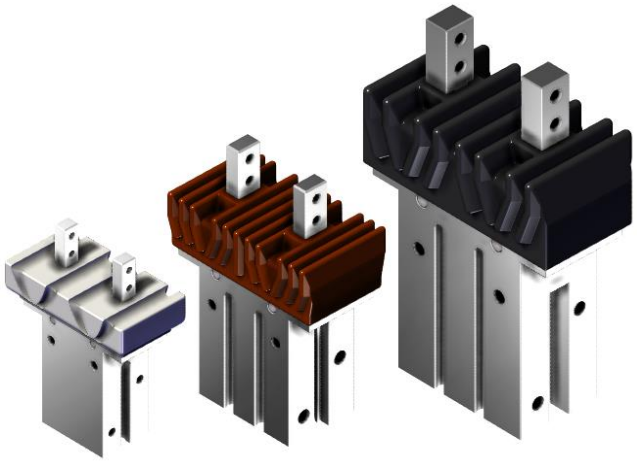
NFHLD2 Series

※ Copper (Cu), Zinc (Zn) limited

Paralled Opening Type Air Chuck / Long Stroke / With Dust Cover

Bore size : Ø10, Ø16, Ø20



- Options for secondary battery industries available
- Prevention of foreign substances with a dust cover
- 3 types of dust cover can be selected for each industry
- Various mounting options
- High rigidity and high precision
- Excellent durability by applying low dew point grease
- Auto switches can be mounted on 4 sides

3 types of dust cover material

- Chloroprene Rubber (Black)
  - Facilities in the electronic market, such as clean room, semiconductor and display related parts
- Fluorine Rubber (Brown)
  - Exposure to chemicals or cutting oil, processes requiring heat resistance
- Silicone Rubber (Milky White)
  - Food and medical industry

How to order

	NFHLD2	16	D	F	W9H	S
1	2	3	4	5	6	7

1 2B Series

Blank	Standard type
2B	Secondary Battery type

2 AIR CHUCK Series

New
Finger
Horizontal
Long stroke
Dust Cover
2 : Number of fingers

3 Bore Size(mm)

Size	I/D	Operating range
10	10	8
16	16	12
20	20	18

4 Action

D	Double Acting type

5 Material ofDust Cover

Blank	Chloroprene Rubber (Black)
F	Fluorine Rubber (Brown)
S	Silicone Rubber (Milky White)

6 AUTO SWITCH

Blank	Without AUTO SWITCH
W9H	Mini solid state (Horizontal)
W9V	Mini solid state (Vertical)
W20H	Mini solid state (Horizontal, 2 colors)
W10V	Mini solid state (Vertical)

7 AUTO SWITCH 수량

Blank	2 pcs
S	1 pcs
N	N pcs

⚠ **Even in the 2B series, the aluminum alloy material may contain a small amount of copper(Cu) or zinc(Zn), so please contact us for details.**

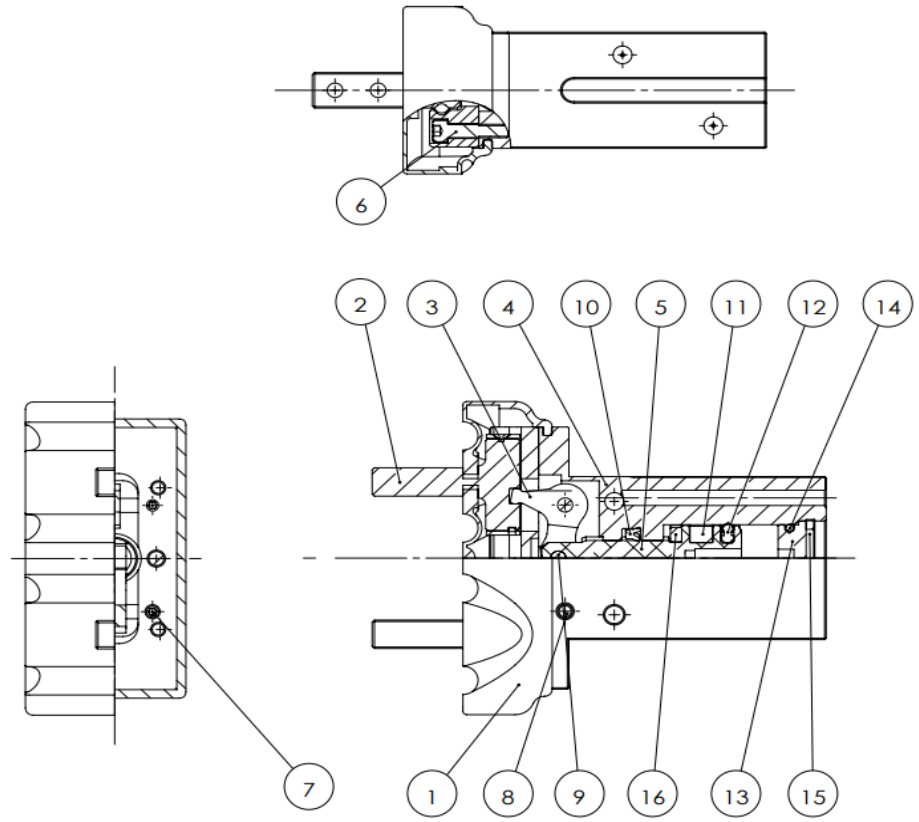
※ 2B series, specifications and external dimensions are the same as standard produsts.

Specifications

Model		NFHLD2-10	NFHLD2-16	NFHLD2-20
Action		D		
Opening/Closing STROKE (mm)	Closing Width	11	15	16
	Opening Width	19	27	34
	STROKE	8	12	18
[1] Theoretical Gripping Force (N)	Closed	14	39	46
	Opened	21	54	73
Port Size		M3	M5	M5
Weight (gf)		70	170	350
Fluid		Air		
Operating Pressure (Mpa)		0.2 ~ 0.7		
Lubricant		Unnecessary		
Using Temperature (℃)		5~60		
Repeated opening/closing (mm)	Initial Value	±0.01	±0.01	±0.01
	After 1M times	±0.1	±0.05	±0.05
Critical Performance Times (C.P.M)		120		
Auto Switch for Checking		W9H, W9V, W10V, W20H		

1) Theoretical gripping force is the value at the center of stroke. (Based on 5 Mpa)

Structure

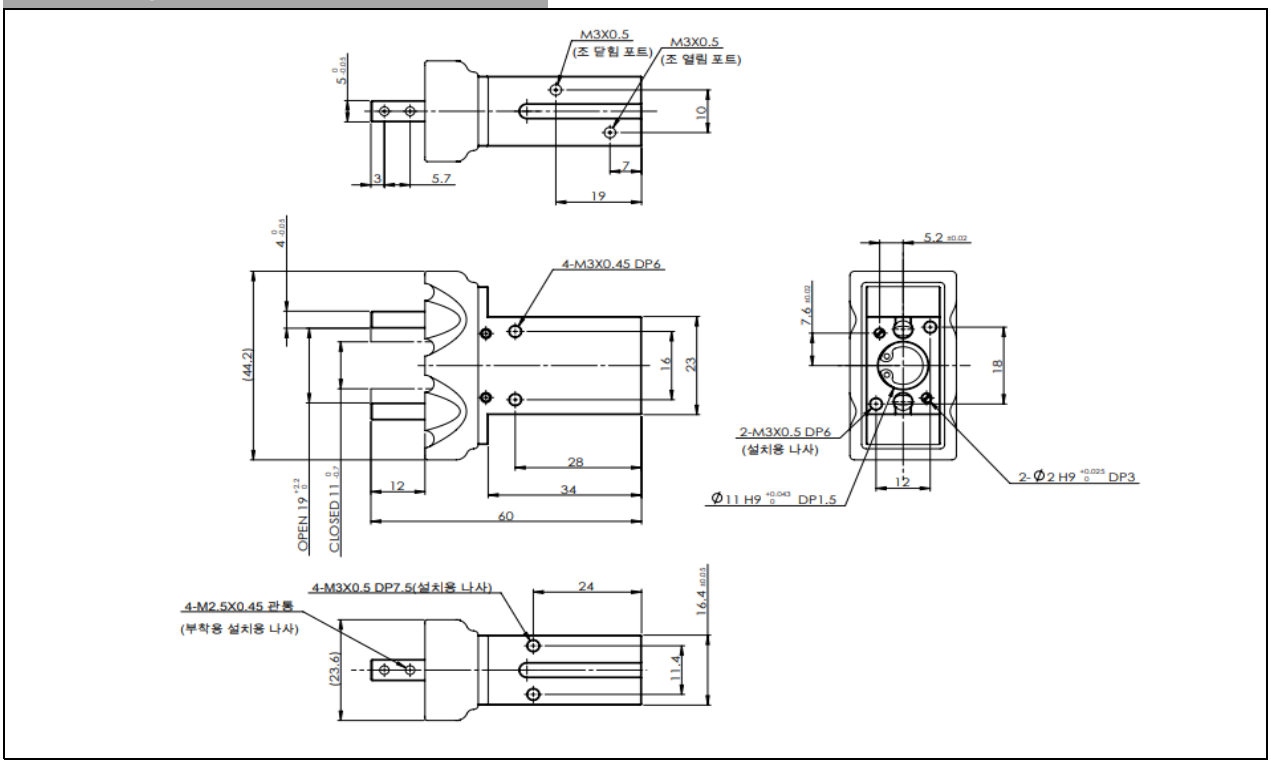


No	Description	Meterial	Note
1	DUST COVER	CR	Chloroprene rubber
		FKM	Fluorine rubber
		Si	Silicone rubber
2	FINGER ASS'Y	Carbon tool steel	Electroless nickel plating
3	LINK	Die steel	Electroless nickel plating
4	BODY	Aluminum alloy	Anodizing
5	PISTON ROD	Ø10 Stainless steel	Anodizing
		Ø16, 20 Aluminum alloy	
6	HEX. SOCKET BOLT	Carbon steel	Electroless nickel plating

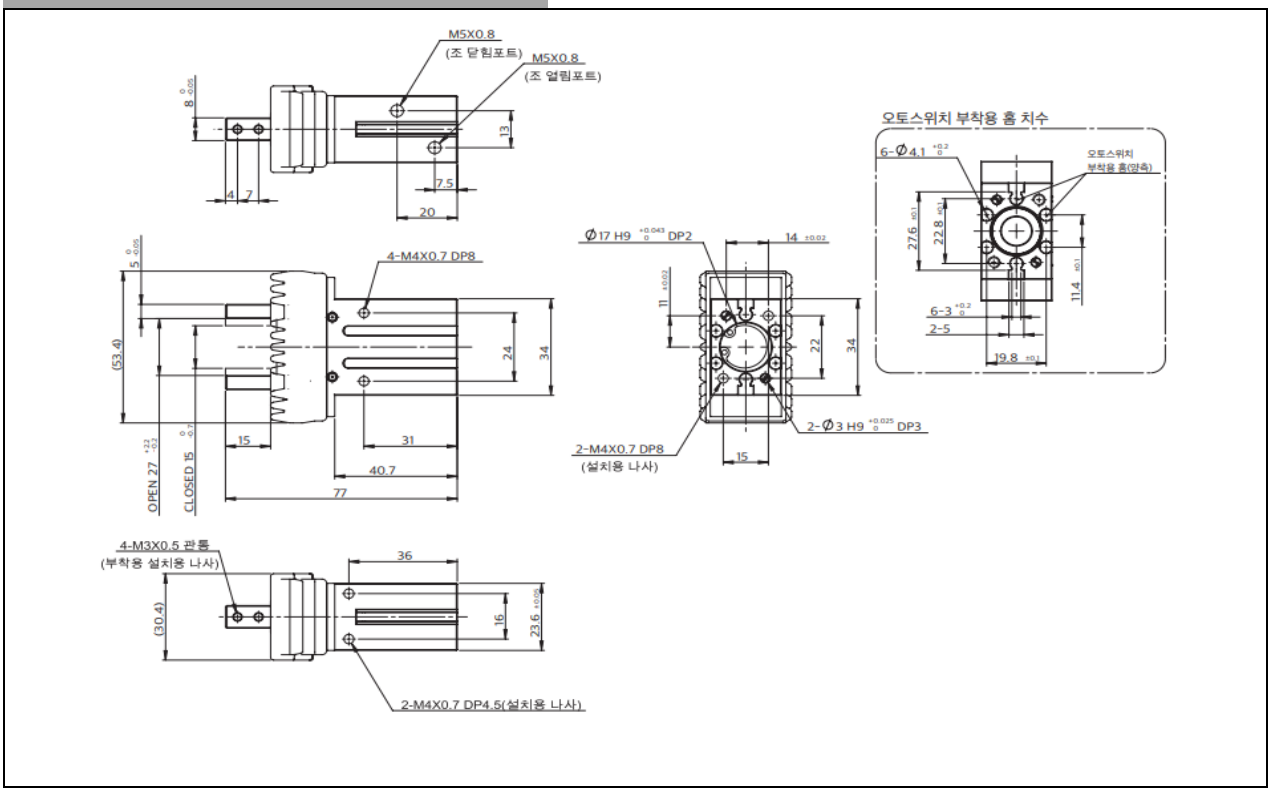
No	Description	Meterial	Note
7	SET SCREW	Aluminum alloy	Electroless nickel plating
8	LINK PIN	Bearing steel	Heat treatment
9	HINGE PIN	Bearing steel	Heat treatment
10	ROD PACKING	HNBR	
11	MAGNET	Magnetic	
12	PISTON PACKING	NBR	
13	HEAD COVER	Aluminum alloy	Anodizing
14	GASKET	NBR	
15	SNAP RING	Carbon steel	Electroless nickel plating
16	BUMPER	Urethane	

Dimensions

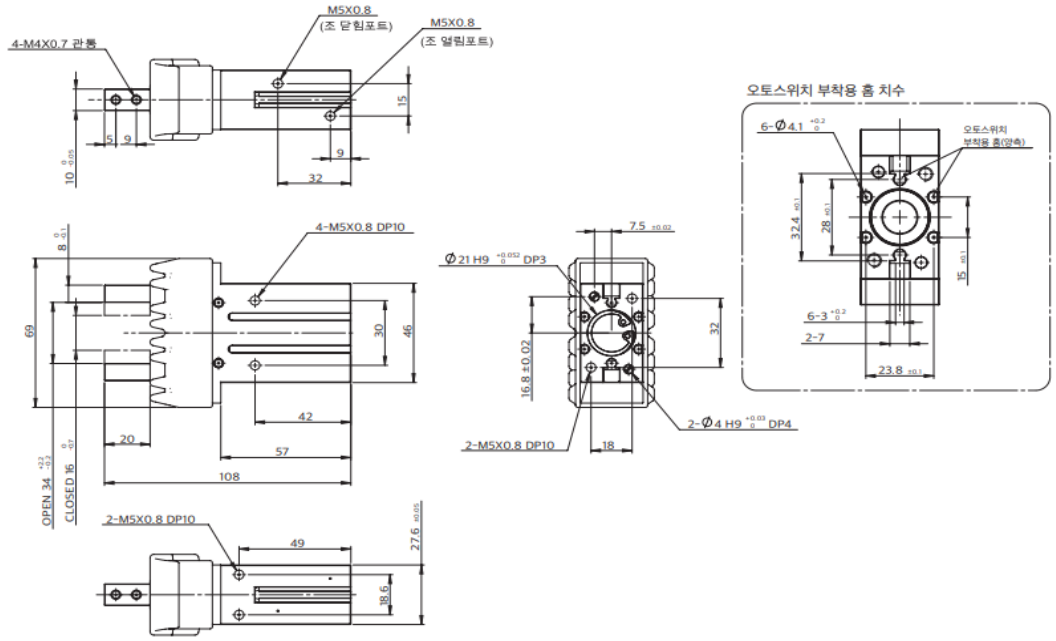
NFHLD2 - 10D



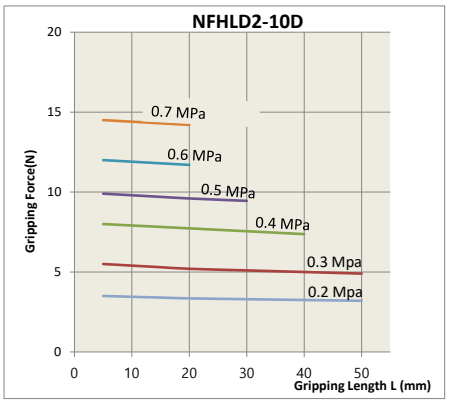
NFHLD2 - 16D

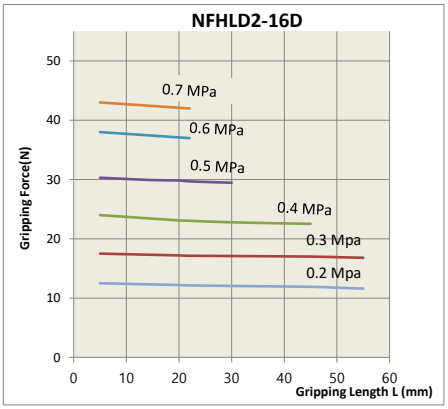


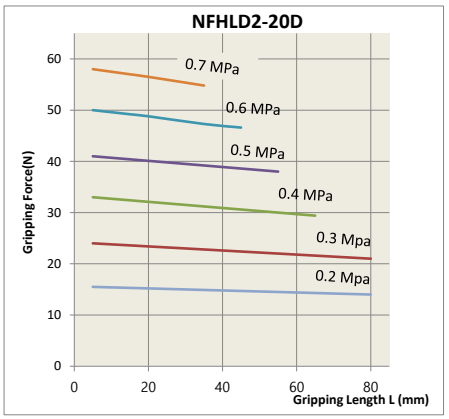
NFHLD2 - 20D


M5X0.8
(조 닫힘포트)
M5X0.8
(조 열림포트)
4-M4X0.7 관통
오토스위치 부착용 홈 치수
6-Ø4.1
오토스위치
부착용 홈(양측)
4-M5X0.8 DP10
Ø21 H9 DP3
7.5
2-M5X0.8 DP10
2-Ø4 H9 DP4
2-M5X0.8 DP10
OPEN 34
CLOSED 16
108
57
42
20
49
23.8
6-3
2-7

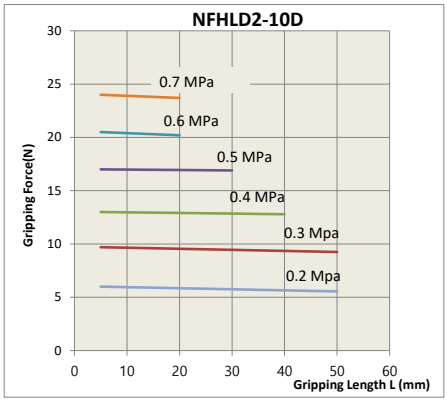
Gripping force of double-acting outer diameter

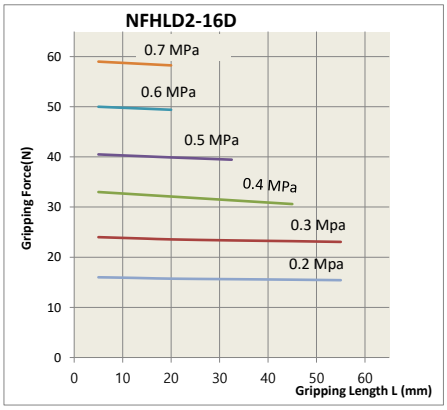


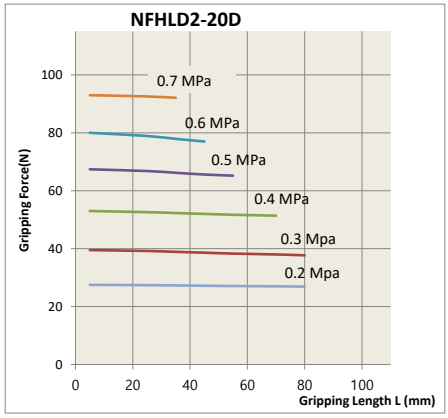




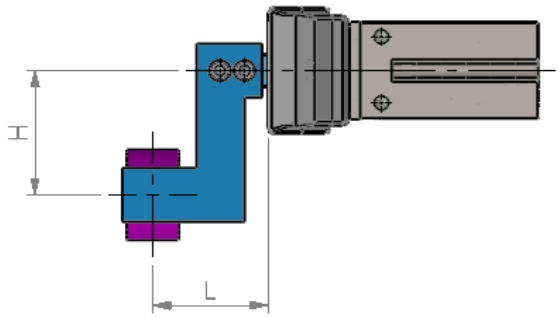
Gripping force of double-acting inner diameter

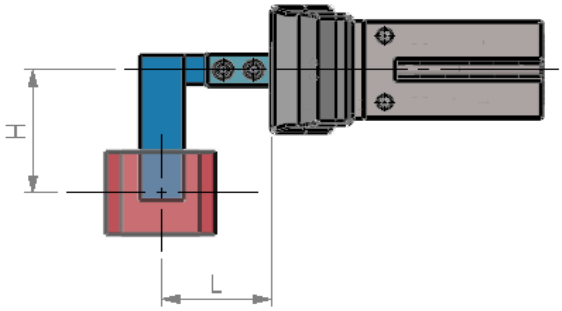






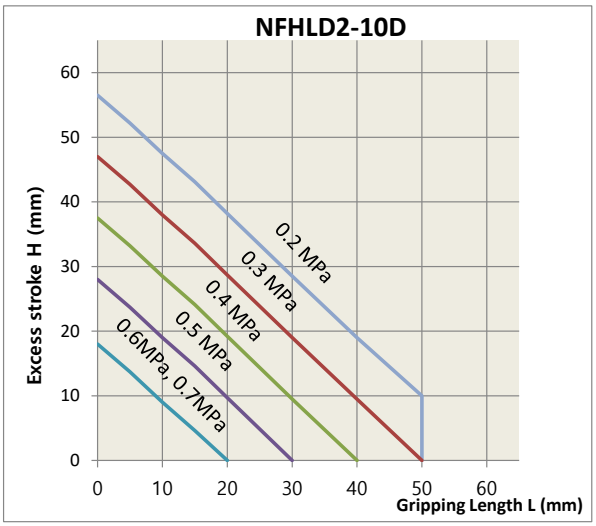
Limiting range of gripping length

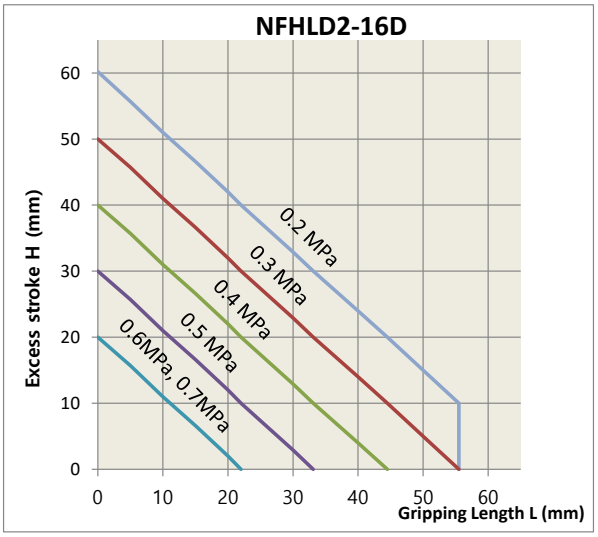




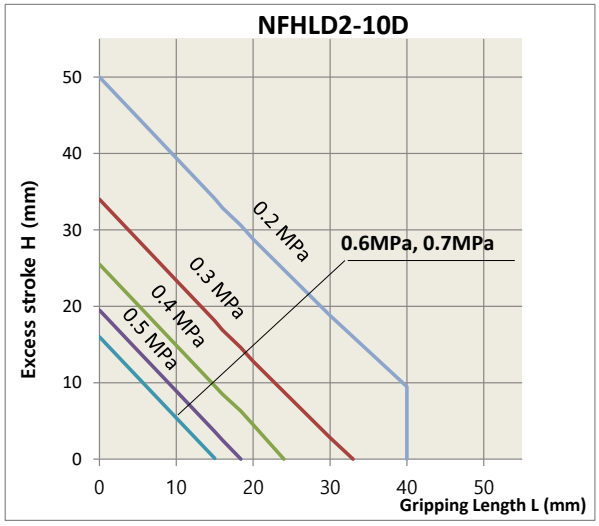
▶ The sum of the length of the gripping point and the amount of overhang should be used within the limit as shown in the graph.
▶ If used beyond the limited range, it may adversely affect the service life time

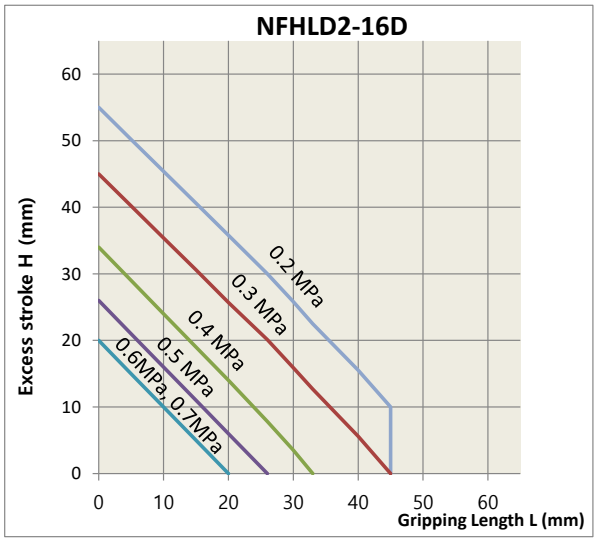
Gripping of outer diameter



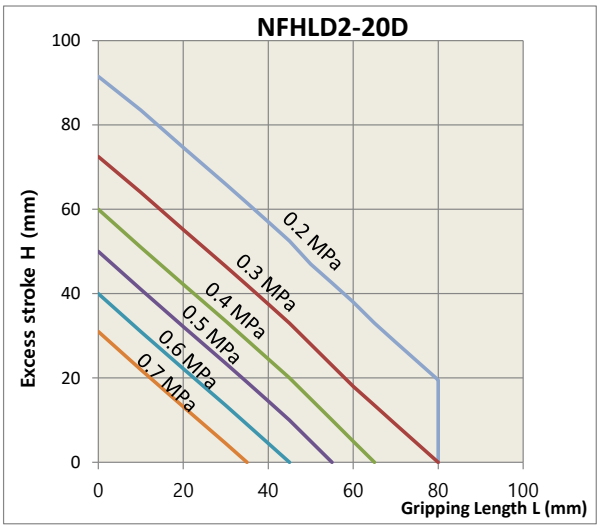


Gripping of inner diameter

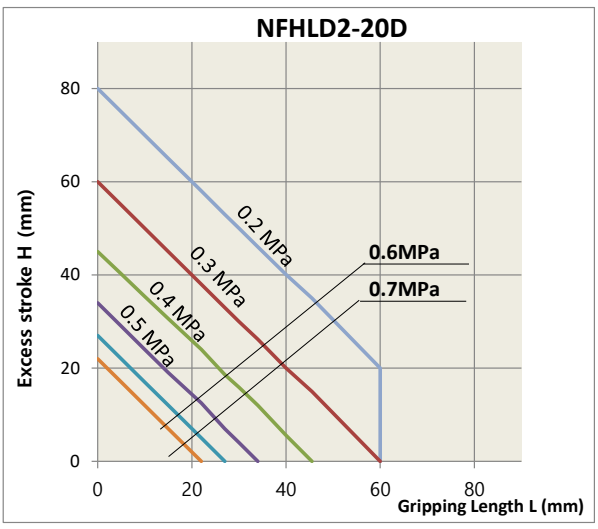




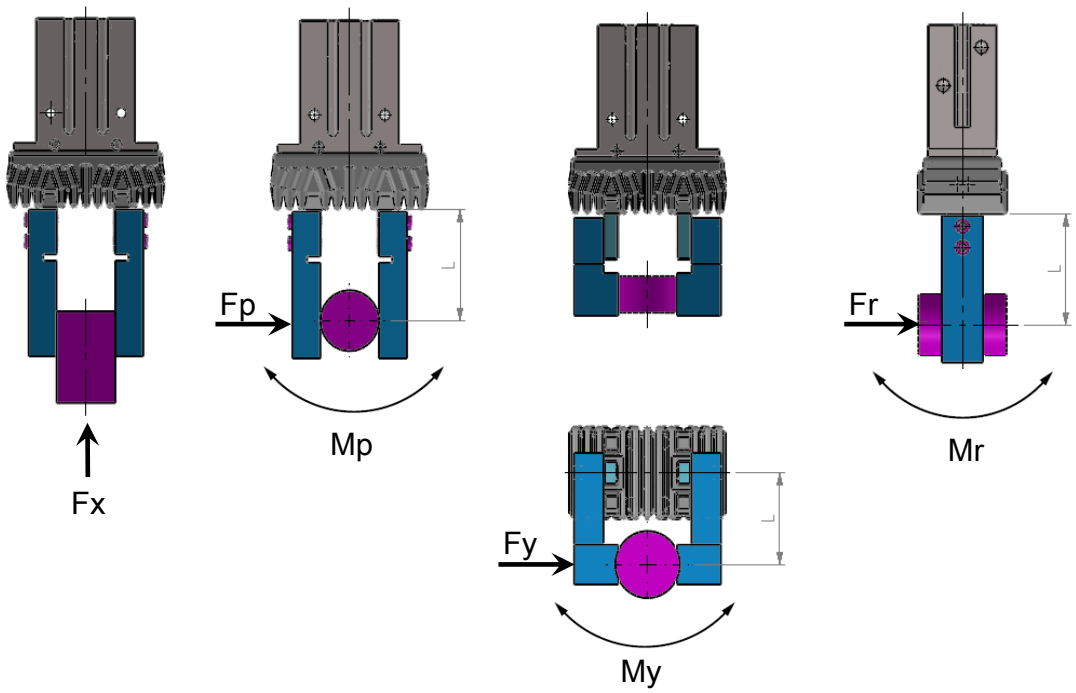
Gripping of outer diameter



Gripping of inner diameter



Permissible load and permissible moment



L* = Center point distance at which load is applied

Model	Permissible load in vertical direction Fx(N)	Maximum permissible moment (N·m)		
		Pitch moment Mp	Yawing moment My	Rolling moment Mr
NFHLD2-10D		0.28	0.28	0.56
NFHLD2-16D	114	0.79	0.79	1.58
NFHLD2-20D	151	1.35	1.35	2.71

Permissible load calculation (when moment load is applied)

$$\text{Permissible load F(N)} = \frac{\text{My(N·m)}}{\text{L} \times 10^{-3}}$$

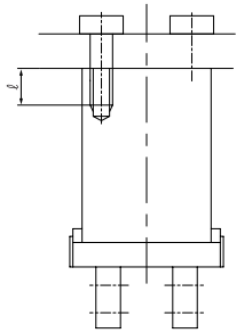
EX)

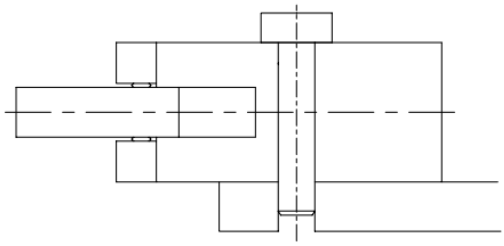
NFHLD2-16D Spec. At the point of length L = 60mm
A load that applies a yawing moment When a static load of 20N is applied

$$\text{Permissible load F(N)} = \frac{1.35}{60 \times 10^{-3}}$$

$$= 22.5\text{N / Available.}$$

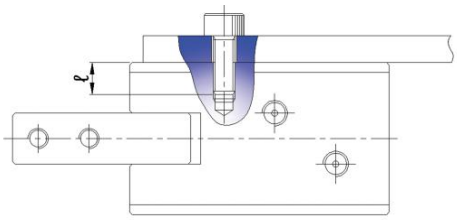
How to attach the air chuck

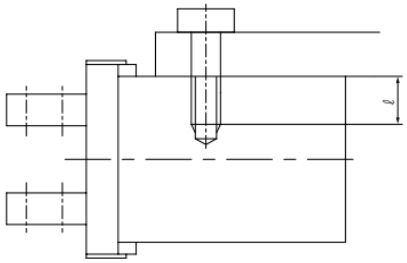




Model	Bolts to use	Max. tightening Torque N*m (kgf*cm)	Max. screwing depth ℓ
NFHLD2-10	M3X0.5	0.88(9)	6
NFHLD2-16	M4X0.7	2.1(21)	8
NFHLD2-20	M5X0.8	4.3(44)	10

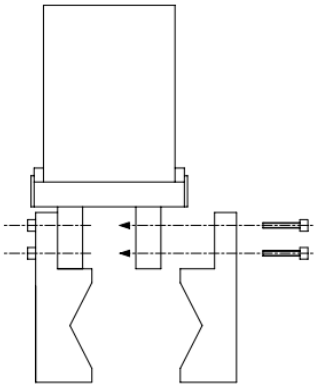
Model	Bolts to use	Max. tightening Torque N*m (kgf*cm)
NFHLD2-10	M2.5X0.45	0.49(5)
NFHLD2-16	M3X0.5	0.88(9)
NFHLD2-20	M4X0.7	2.1(21)





Model	Bolts to use	Max. tightening Torque N*m (kgf*cm)	Max. screwing depth ℓ
NFHLD2-10	M3X0.5	0.88(9)	5
NFHLD2-16	M4X0.7	2.1(21)	8
NFHLD2-20	M5X0.8	4.3(44(=)	10

Model	Bolts to use	Max. tightening Torque N*m (kgf*cm)	Max. screwing depth ℓ
NFHLD2-10	M3X0.5	0.9(9)	6
NFHLD2-16	M4X0.7	2.1(21)	4.5
NFHLD2-20	M5X0.8	4.3(44)	8



Model	Bolts to use	Max. tightening Torque N*m (kgf*cm)
NFHLD2-10	M2.5X0.45	0.31(3.2)
NFHLD2-16	M3X0.5	0.59(6)
NFHLD2-20	M4X0.7	1.4(14)