

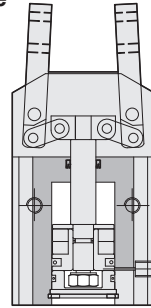
# HDM series - 180° Angular gripper

Operation specification and Ordering expression

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## Internal structure

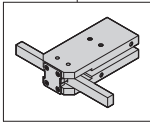
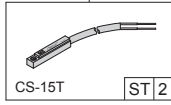
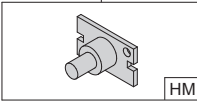
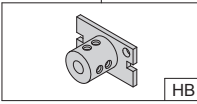


## Specification

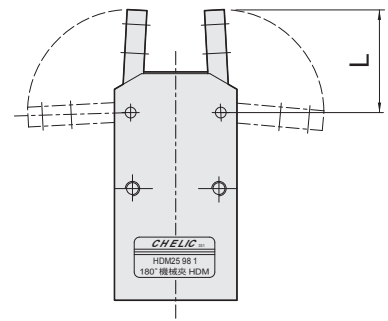
Item	Model	HDM - 12	HDM - 16	HDM - 20	HDM - 25	HDM - 32
Bore size		12	16	20	25	32
Type of operation		Double acting				
Fluid		Air				
Pressure range	kgf/cm <sup>2</sup>	1.5 ~ 7 ( 150 ~ 700 )				
Ambient and fluid temperature	°C	0 ~ 60				
Max. operation frequency	min	60				
Lubrication	Cylinder	Lubrication free				
	Lever section	Lubrication required				
Theoretical gripping force(M) <small>Note 1 Kgf-cm</small>	Closed side	0.2XP	0.8XP	1.7XP	3.4XP	6.1XP
	Opened side	0.5XP	1.1XP	2.3XP	4.3XP	8.1XP
Length of maximum gripping point (L)	mm	40	80	100	120	140
Effective gripping force (F) (Note 1)	Kgf	F = M / L X 0.9				
Lever open/ close angles	°C	-1° ~ + 180°				
Port size		M5 x 0.8				
Sensing device		With magnet				

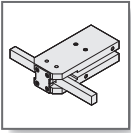
🔍 Note 1. F: Effective gripping force, L: Gripping point length= 30mm, M: Theoretical holding force, P: Pressure= 5 Kgf/cm<sup>2</sup>.

## How to order

<b>HDM</b>	<b>20</b>	<b>ST</b>	<b>2</b>	<b>HM</b>
Model	Bore size	Sensor switch		Mounting bracket
	12 - Ø12 mm 16 - Ø16 mm 20 - Ø20 mm 25 - Ø25 mm 32 - Ø32 mm			
<b>HDM :</b> 180° Angular gripper		None : without sensor switch [ST] : Sensor switch code (CS-15T) [SB] : Sensor switch code (CS-15B) [SG] : Sensor switch code (CS-5G) [SGN] : Sensor switch code (CS-5GN) [SGP] : Sensor switch code (CS-5GP)		None : Without Mounting bracket [HM] : HM type Mounting bracket (please refer P.6-12.24)
		[2] : Number of sensor switch 1 = 1 PCS 2 = 2 PCS		 None : Without Mounting bracket [HB] : HB type Mounting bracket (please refer to P.6-12.24)
				※ Note : Ø12 ~ Ø32 use

## Gripping point length

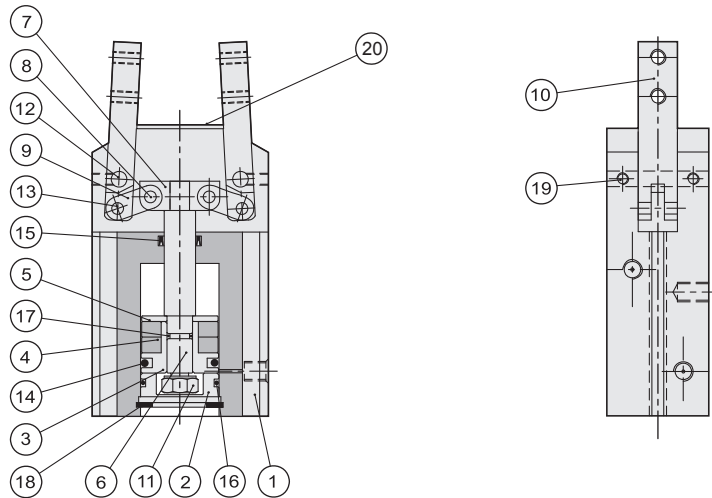




# HDM series - 180° Angular gripper

## Components and Material list

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### Components and Material list

No.	Item	Material	No.	Item	Material
01	Body	Aluminum alloy	11	Nut	Alloy steel
02	Rear cover	Aluminum alloy	12	Finger pin	Bearing steel
03	Piston	Copper	13	Action lever pin	Bearing steel
04	Magnet	Rubber	14	Piston Packing	NBR
05	Magnet cover	Copper	15	Shaft packing	NBR
06	Shaft	Stainless steel	16	Rear cover O-ring	NBR
07	Shaft connector	Alloy steel	17	O-ring	NBR
08	Shaft pin	Bearing steel	18	Clip	Spring steel
09	Action lever	Alloy steel	19	Hexagon screw	Alloy steel
10	Finger	Alloy steel	20	Dust cover	Stainless steel

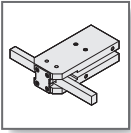
### Packing and O-Ring

Item	Piston packing	Shaft packing	Rear cover O-ring
Bore size mm	1	1	1
Ø12	COP-12	MYA-5	Ø10XØ1.0
Ø16	COP-16	DYR-8K	Ø13.2XØ1.5
Ø20	COP-20	DYR-10SK	Ø17.5XØ1.5
Ø25	COP-25	DYR-12	Ø22XØ1.5
Ø32	COP-32	DYR-16	Ø28.5XØ2.0

### Weight

Model	Weight <sub>kg</sub>
HDM - 12S	0.1
HDM - 16S	0.16
HDM - 20S	0.55
HDM - 25S	0.75
HDM - 32S	1.23

 Note: The piston packing and shaft packing are from MITSUBISHI, SAKAGAMI or the same good level of quality material.



# HDM series - 180° Angular gripper

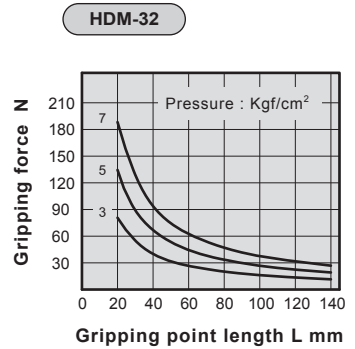
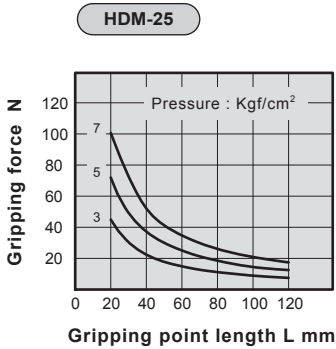
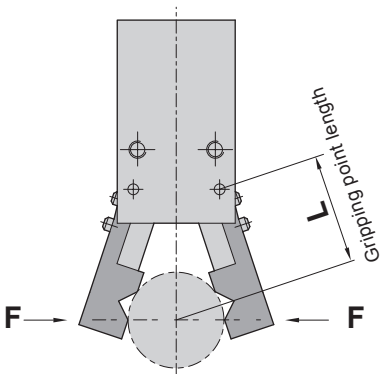
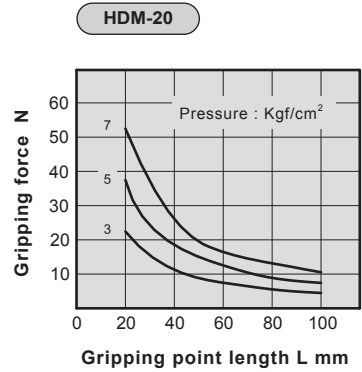
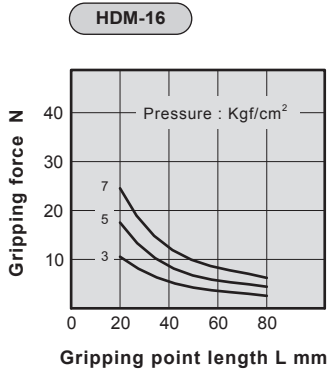
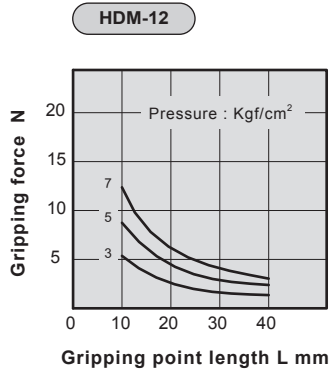
## Gripping force characteristic

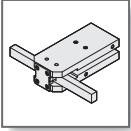
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### ► Gripping force characteristic



#### ● HDM External gripping force






# HDM series - 180° Angular gripper

Operating type, Data, and Mounting type

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## Operating type and data

Operating type	Model	Bore size (mm)	The smallest operating pressure (Mpa)	Thread port (mm)	Effective gripping force Kgf(N)	
Double acting	HDM - 12	12	0.22	4-M3x0.5	Open	0.75 (7.3)
					Close	0.3 (2.9)
	HDM - 16	16	0.1	4-M3x0.5	Open	1.6 (16.1)
					Close	1.2 (11.7)
	HDM - 20	20	0.1	4-M4x0.7	Open	3.4 (33.8)
					Close	2.5 (24.9)
	HDM - 25	25	0.1	4-M5x0.8	Open	6.4 (63.2)
					Close	5.1 (49.9)
	HDM - 32	32	0.1	4-M6x1.0	Open	12.1 (119)
					Close	9.1 (89.6)

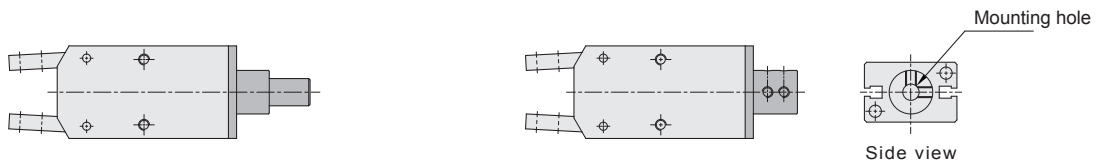
 Note: The gripping force is the force of open and close gripper which in the length of gripping point is 30mm and acting pressure is 0.5Mpa.

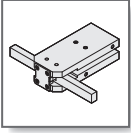
## Mounting type

1. Apply the screw from bottom thread hole.
2. Apply the screw from side thread hole.



3. Apply HM mounting bracket in the bottom.
4. Apply HB mounting bracket in the bottom.



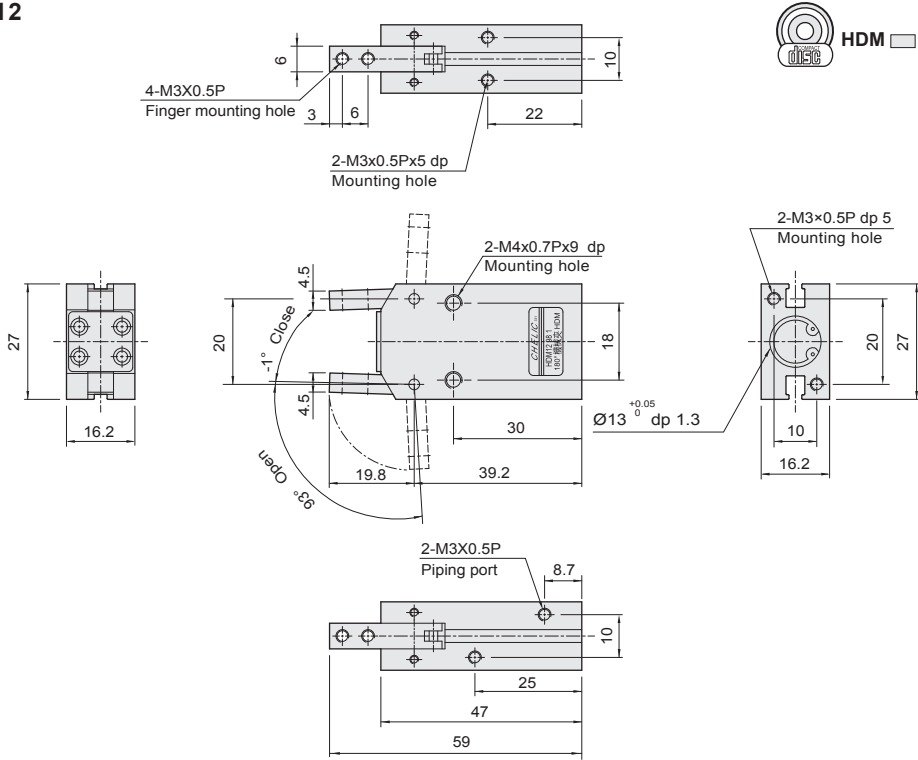


# HDM series - 180° Angular gripper

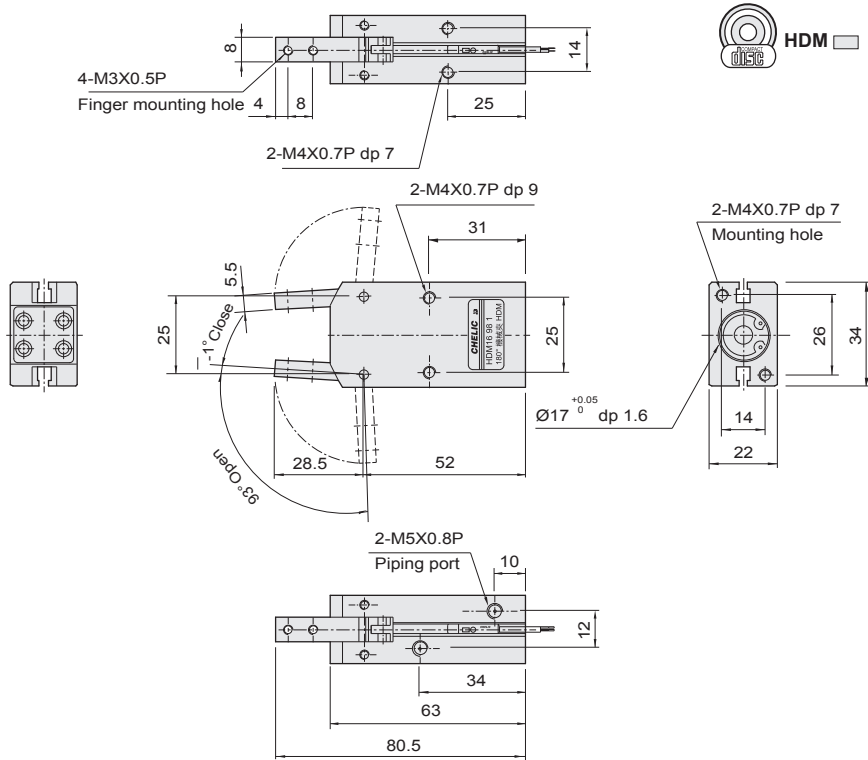
## External dimension

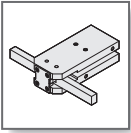
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### HDM - 12



### HDM - 16



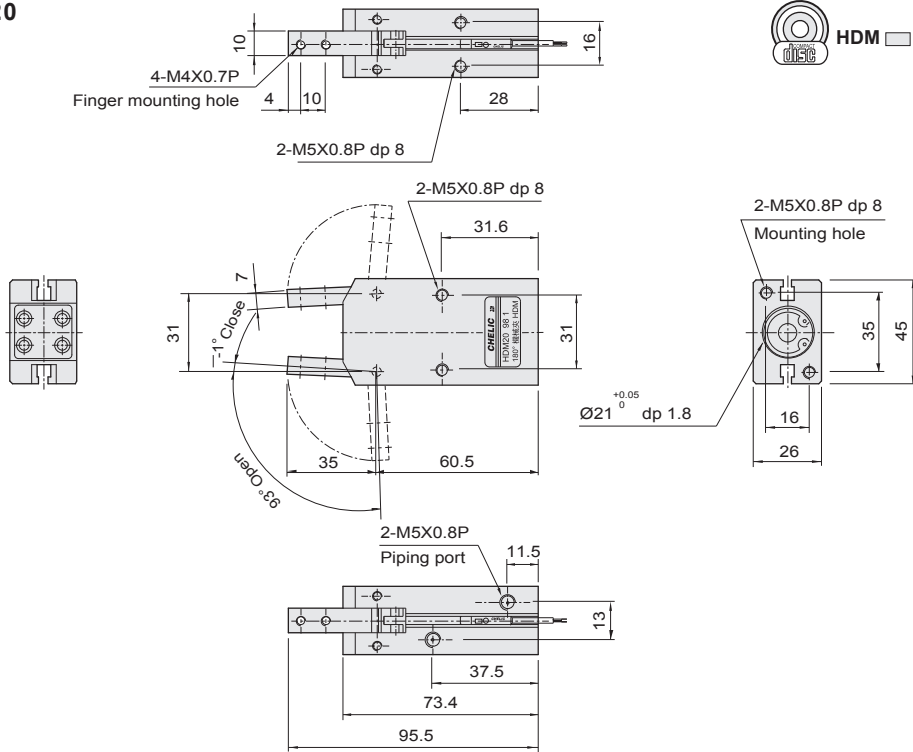


# HDM series - 180° Angular gripper

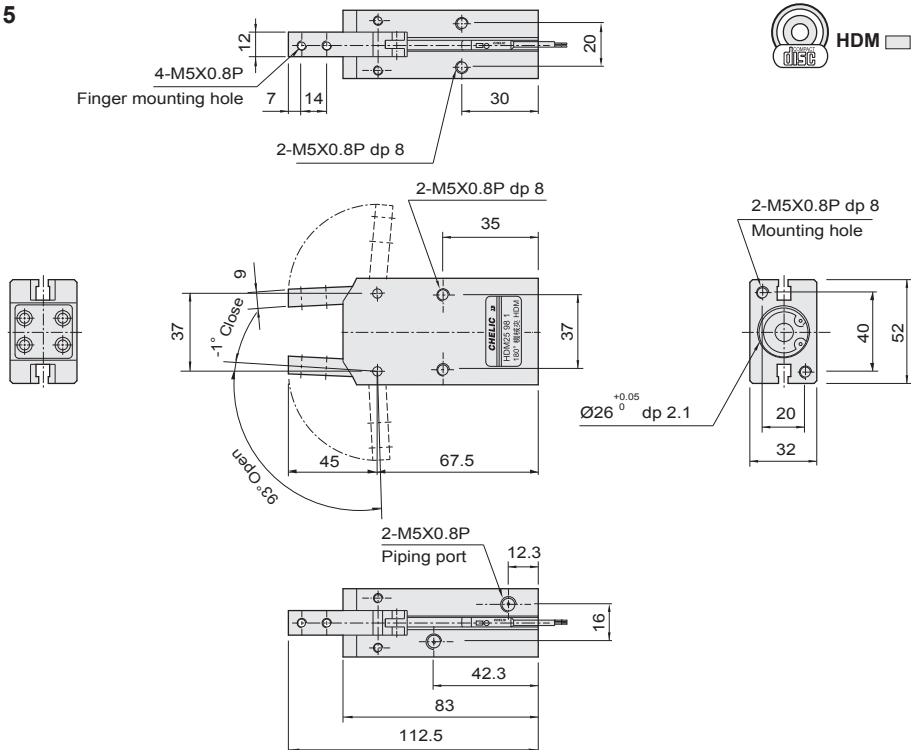
## External dimension

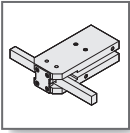
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### HDM - 20



### HDM - 25



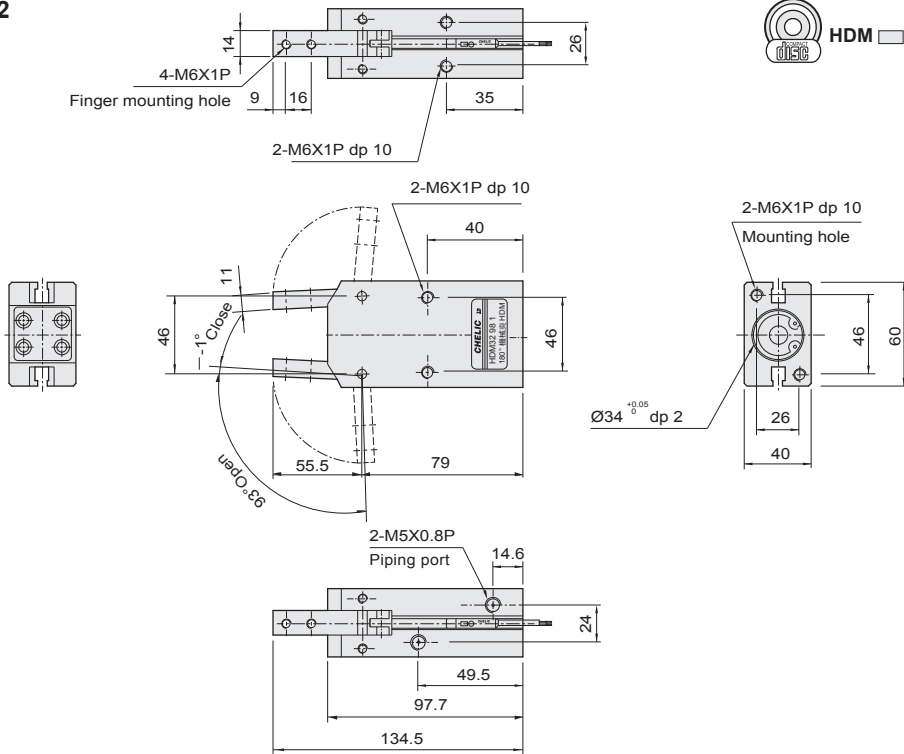


# HDM series - 180° Angular gripper

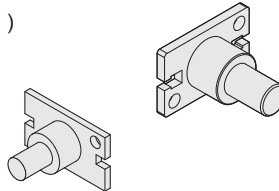
External dimensions and mounting bracket

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## HDM - 32

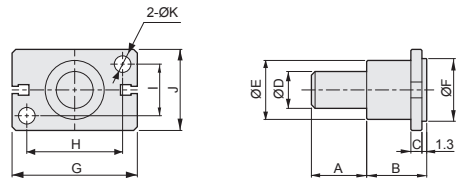


## Mounting bracket (Applicable to HDM series)



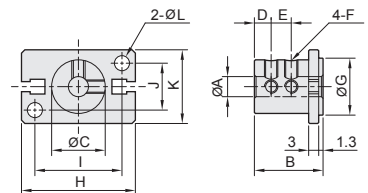
## HM type mounting bracket (Available to internal mounting)

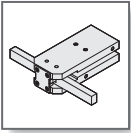
Mark Type	A	B	C	D	E	F	G	H	I	J	K
HM12	10	10	2	8	12	13	27	20	10	16	3.5
HM16	15	15	3	10	16	17	34	26	14	22	4.5
HM20	15	15	3	10	18	21	45	35	16	26	5.5
HM25	25	17	5	14	26	26	52	40	20	32	6.6
HM32	25	20	6	16	30	34	60	46	26	40	6.6



## HM type mounting bracket (Available to external mounting)

Mark Type	A	B	C	D	E	F	G	H	I	J	K	L
HB12	4	15	12	5	-	M3x0.5p	13	27	20	10	16	3.5
HB16	6	20.5	16	5	6	M4x0.7p	17	34	26	14	22	4.5
HB20	8	20.5	20	7	7	M4x0.7p	21	45	35	16	26	5.5
HB25	10	30.5	25	8	10	M4x0.7p	26	52	40	20	32	6.5
HB32	12	40.5	32	10	15	M4x0.7p	34	60	46	26	40	6.5





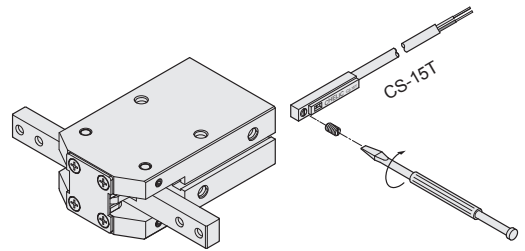
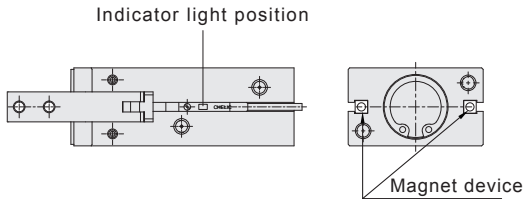
# HDM series - 180° Angular gripper

## How to use and Sensor switch installation

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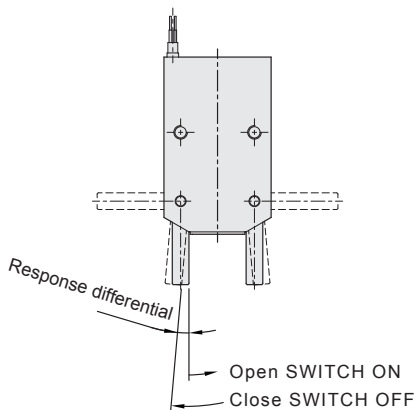
### ▶ HDM sensor switch installation

- Sensor switch installation and position

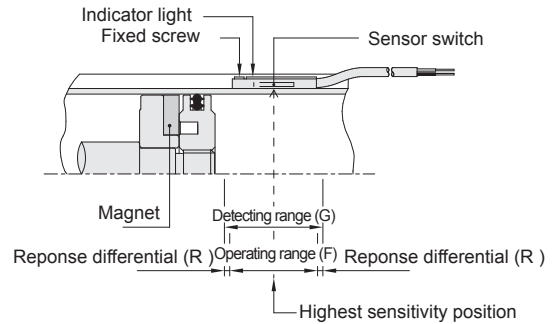


**CS-15T**  
 (Please refer to P.7-2.20 sensor switch information)

### Response differential and position adjustment



### ● Response differential and position adjustment



### ▶ Sensing range

Sensor switch is fixed on the cylinder body. The magnetic piston head will activate the sensor switch when it enters the operating range. It has 0.5mm differential.

### ▶ Operating range

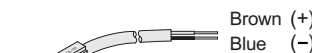
When piston head moves the switch setting and adjustment will be based on the responding range generated by the magnetic field and the switch. (Please refer to the below table)

Unit : mm

Model	CS-15T(B)	
Bore size	Operating range (F)	Response differential(R)
12	5	1
16	5	1
20	8.5	1
25	10	1.8
32	10	2

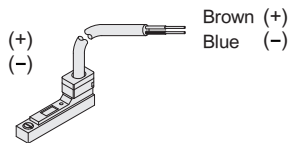
### ▶ Sensor switch introduction

**CS-15T**



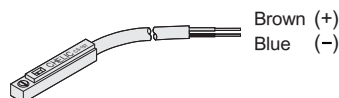
Rated voltage: DC 5~120V  
AC 5~120V

**CS-15B**



Rated voltage: DC 5~120V  
AC 5~120V

**CS-5G**



Rated voltage: DC 10~28V