

# HDZL series Long-stroke Linear Guide Parallel Type Air Gripper

Product features/ Code of order

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## Feature

- Piston and lever all-in-one
- Built-in magnet
- The roller type linear



## Specification

| Item                          | Bore size (mm)              | Ø10                 | Ø16                 | Ø20 | Ø25 |
|-------------------------------|-----------------------------|---------------------|---------------------|-----|-----|
| Action                        |                             | Double acting       |                     |     |     |
| Fluid                         |                             | Air                 |                     |     |     |
| Pressure range                | kgf / cm <sup>2</sup> (kPa) | 2 ~ 7 ( 200 ~ 700 ) | 1.5 ~ 7(150 ~ 700 ) |     |     |
| Ambient and fluid temperature | ° C                         | 0 ~ 60              |                     |     |     |
| Max. operation frequency      | time/min                    | 100                 |                     |     |     |
| Lubrication                   |                             | Not required        |                     |     |     |
| Finger open/ close accuracy   | mm                          | ± 0.01              |                     |     |     |
| Finger open/ close stroke     | mm                          | 8                   | 12                  | 18  | 22  |
| Sensing device                |                             | With magnet         |                     |     |     |

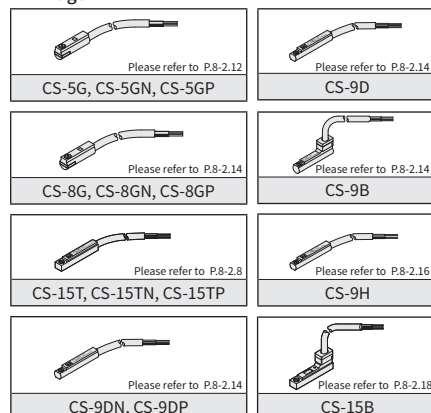
## Code of order **HDZL 16 - 15T 2**

1 2 3

| 1 | Mark | Bore size (mm) |
|---|------|----------------|
|   | 10   | Ø10            |
|   | 16   | Ø16            |
|   | 20   | Ø20            |
|   | 25   | Ø25            |

| 2 | Mark | Sensor switch         | Applicable Type  |
|---|------|-----------------------|------------------|
|   | None | Without sensor switch | —                |
|   | 5G   | CS-5G                 | 10, 16<br>20, 25 |
|   | 5GN  | CS-5GN                |                  |
|   | 5GP  | CS-5GP                |                  |
|   | 8G   | CS-8G                 | 16, 20, 25       |
|   | 8GN  | CS-8GN                |                  |
|   | 8GP  | CS-8GP                |                  |
|   | 9D   | CS-9D                 | 16, 20, 25       |
|   | 9B   | CS-9B                 |                  |
|   | 9H   | CS-9H                 |                  |
|   | 9DN  | CS-9DN                |                  |
|   | 9DP  | CS-9DP                |                  |
|   | 15T  | CS-15T                | 16, 20, 25       |
|   | 15B  | CS-15B                |                  |
|   | 15TN | CS-15TN               |                  |
|   | 15TP | CS-15TP               |                  |

## Image



| 3 | Mark | Sensor quantity        |
|---|------|------------------------|
|   | 1    | With 1 sensor switch   |
|   | 2    | With 2 sensor switches |

HDD

HDS

HDM

HDP

HDPM

HDZ

HDZL

HDZM

HDW

HDWM

HMW

HMG

HMY

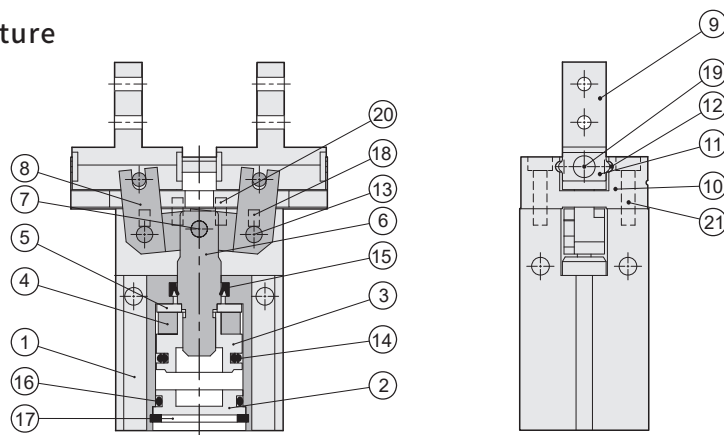
HDU

# HDZL series Long-stroke Linear Guide Parallel Type Air Gripper

## Product features

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### Internal structure



### Components and material list

| No. | Item            | Material                | No. | Item               | Material      |
|-----|-----------------|-------------------------|-----|--------------------|---------------|
| 01  | Body            | Aluminum alloy          | 12  | Ball bearing       | Bearing steel |
| 02  | Rear cover      | Aluminum alloy          | 13  | Action lever pin   | Bearing steel |
| 03  | Piston          | Copper alloy            | 14  | Piston packing     | NBR           |
| 04  | Magnet          | Magnet                  | 15  | Shaft packing      | NBR           |
| 05  | Magnet cap      | Copper alloy            | 16  | Rear cover O-ring  | NBR           |
| 06  | Shaft           | Stainless steel         | 17  | Clip               | Alloy steel   |
| 07  | Shaft pin       | Bearing steel           | 18  | Plug               | Alloy steel   |
| 08  | Action lever    | Stainless steel(SUS440) | 19  | Counter sunk screw | Alloy steel   |
| 09  | Gripper fingers | Stainless steel(SUS440) | 20  | Pin                | Bearing steel |
| 10  | Finger base     | Stainless steel(SUS440) | 21  | Screw              | Alloy steel   |
| 11  | Roller block    | Stainless steel         |     |                    |               |

### Packing and O-ring material list

Unit: mm

| Item             | Piston packing | Shaft packing | Rear cover O-ring |
|------------------|----------------|---------------|-------------------|
| Model \ Quantity | 1              | 1             | 1                 |
| HDZL Ø10         | Ø10 x Ø1       | COP - 10      | DYR - 6           |
| HDZL Ø16         | Ø13.2 x Ø1.5   | COP - 16      | DYR - 8K          |
| HDZL Ø20         | Ø17.5 x Ø1.5   | COP - 20      | DYR - 10          |
| HDZL Ø25         | Ø22.5 x Ø1.5   | COP - 25      | DYR - 12          |

### Product weight

| Model       | HDZL 10 | HDZL 16 | HDZL 20 | HDZ 25 |
|-------------|---------|---------|---------|--------|
| Weight (kg) | 0.06    | 0.14    | 0.27    | 0.49   |

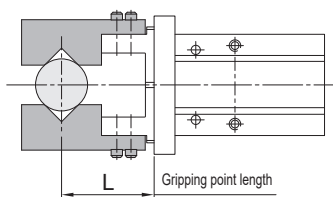
Note: All of above are theoretical data. Weight tolerance about  $\pm 5\%$

# HDZL series Long-stroke Linear Guide Parallel Type Air Gripper

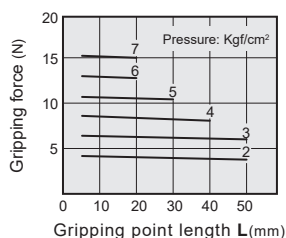
## Characteristics graph

CHELIC

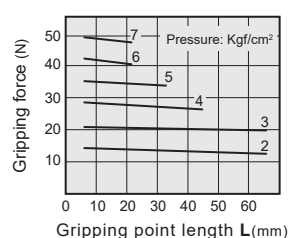
### External grip force characteristic



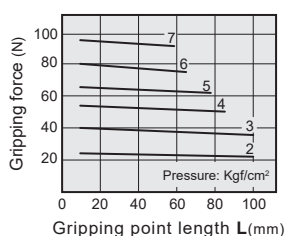
HDZL 10



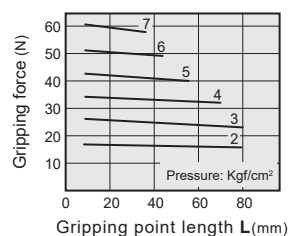
HDZL 16



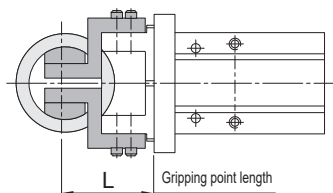
HDZL 25



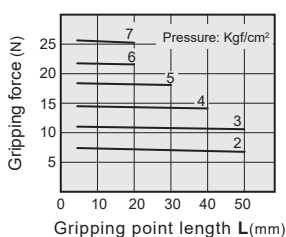
HDZL 20



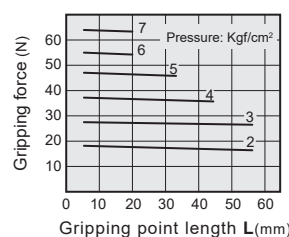
### Internal grip force characteristic



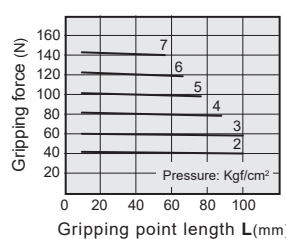
HDZL 10



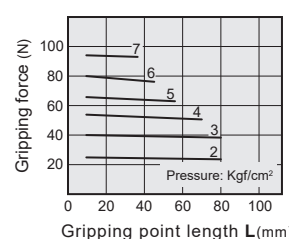
HDZL 16



HDZL 25



HDZL 20



HDD

HDS

HDM

HDP

HDPM

HDZ

HDZL

HDZM

HDW

HDWM

HMW

HMG

HMY

HDU

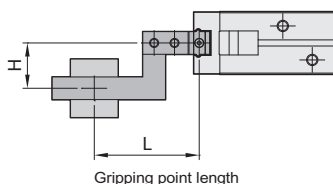
# HDZL series Long-stroke Linear Guide Parallel Type Air Gripper

## Characteristics graph

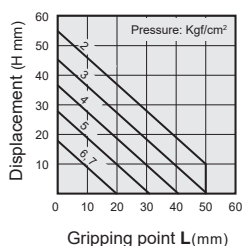
CHELIC

### Gripper maximum allowable displacement - External gripping force

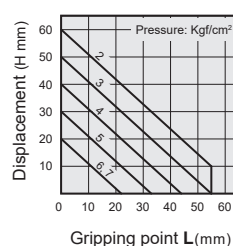
The working piece shall be used within the requirement. If the workingpiece exceed below offset, it will shorter gripper lifespan.



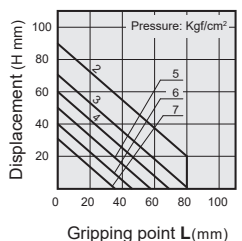
HDZL 10



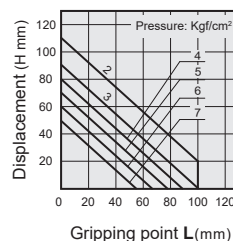
HDZL 16



HDZL 20

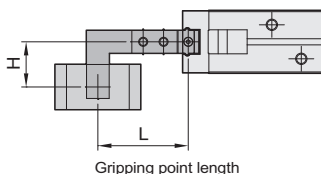


HDZL 25

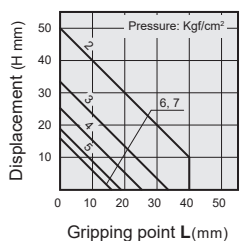


### Gripper maximum allowable displacement - Internal gripping force

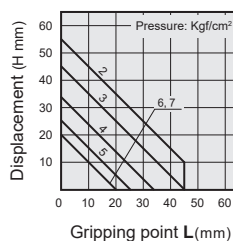
The working piece shall be used within the requirement. If the workingpiece exceed below offset, it will shorter gripper lifespan.



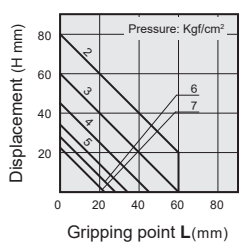
HDZL 10



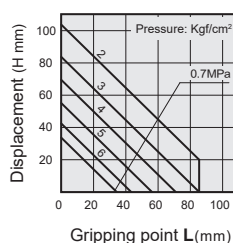
HDZL 16



HDZL 20



HDZL 25



# HDZL series Long-stroke Linear Guide Parallel Type Air Gripper

Operating type and data, Mounting type

**CHELIC**

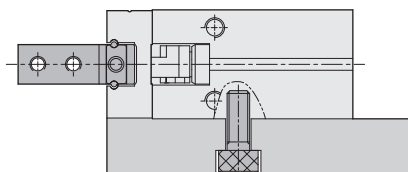
## Operating type and data

| Action        | Model   | Bore size (mm) | The smallest operating pressure (kgf/cm <sup>2</sup> ) | Thread port (mm) | Effective gripping force (N) |     |
|---------------|---------|----------------|--------------------------------------------------------|------------------|------------------------------|-----|
| Double acting | HDZL 10 | 10             | 2.2                                                    | 4 - M3 x 0.5P    | Open                         | 17  |
|               |         |                |                                                        |                  | Close                        | 11  |
|               | HDZL 16 | 16             | 1.5                                                    | 4 - M3 x 0.5P    | Open                         | 45  |
|               |         |                |                                                        |                  | Close                        | 34  |
|               | HDZL 20 | 20             | 1.5                                                    | 4 - M4 x 0.7P    | Open                         | 66  |
|               |         |                |                                                        |                  | Close                        | 42  |
|               | HDZL 25 | 25             | 1.5                                                    | 4 - M5 x 0.8P    | Open                         | 104 |
|               |         |                |                                                        |                  | Close                        | 65  |

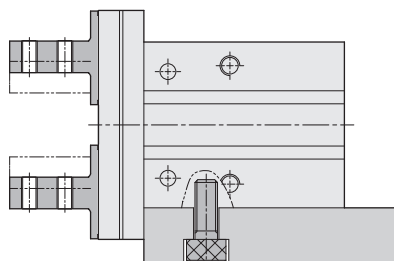
Note: The gripping force is the force of open and close gripper which in the length of gripping point is 30mm and acting pressure is 5kgf/cm<sup>2</sup>.

## Mounting type

### 1. Thread in the bottom



### 2. Thread in the side of body



**HDD**

**HDS**

**HDM**

**HDP**

**HDPM**

**HDZ**

**HDZL**

**HDZM**

**HDW**

**HDWM**

**HMW**

**HMG**

**HMY**

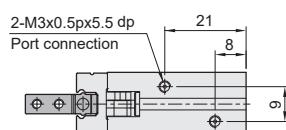
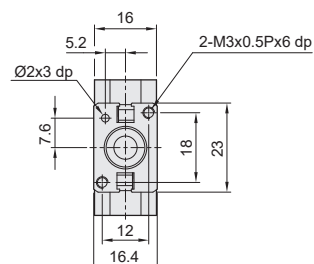
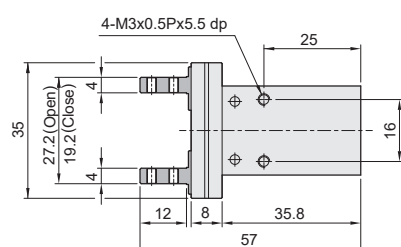
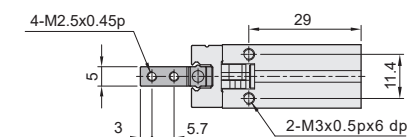
**HDU**

# HDZL series Long-stroke Linear Guide Parallel Type Air Gripper

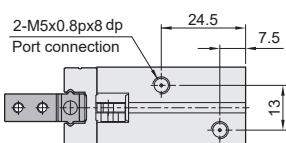
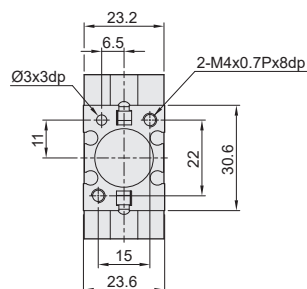
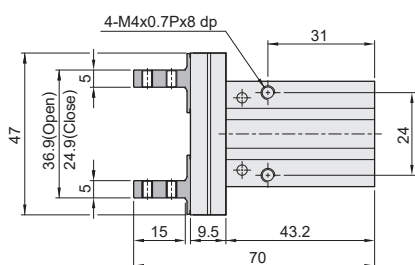
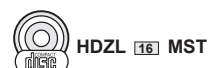
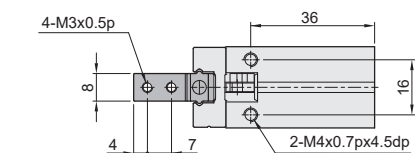
## Dimensions

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### HDZL 10



### HDZL 16

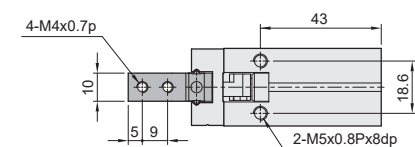


# HDZL series Long-stroke Linear Guide Parallel Type Air Gripper

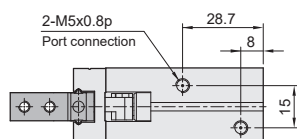
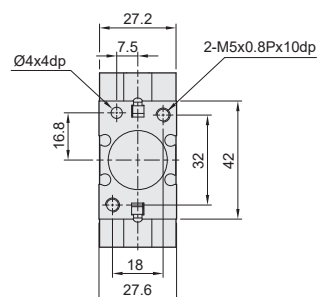
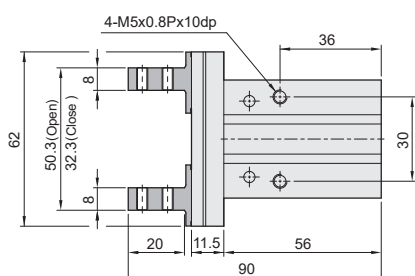
## Dimensions

**CHELIC**

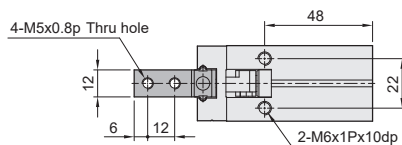
### HDZL 20



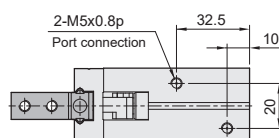
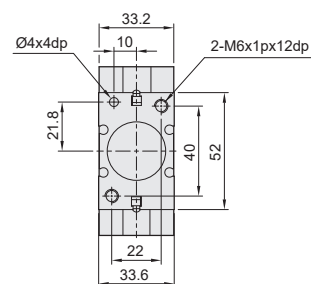
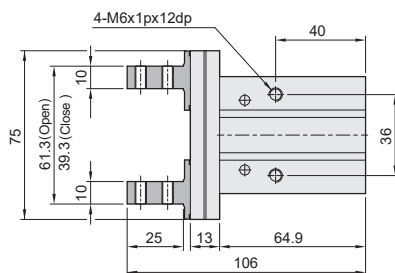
HDZL 20 MST



### HDZL 25



HDZL 25 MST



HDD

HDS

HDM

HDP

HDPM

HDZ

HDZL

HDZM

HDW

HDWM

HMW

HMG

HMY

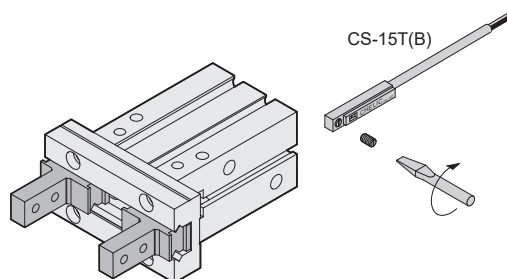
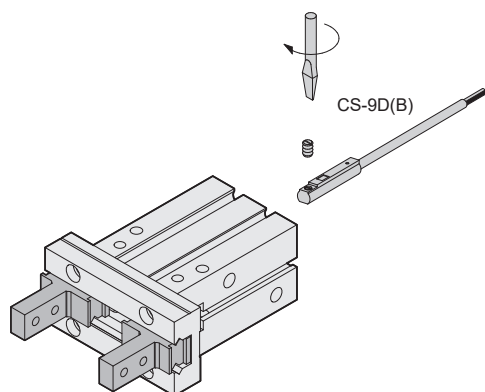
HDU

# HDZL series Long-stroke Linear Guide Parallel Type Air Gripper

## Mounting type and operation of sensor switch

**CHELIC**

### ■ Sensor switch installation



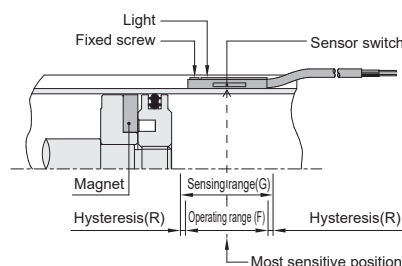
### ■ Sensing range

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)

### ■ Sensor switch setting and operating range



### ■ Sensor switch introduction

Unit: mm

| Model     | CS-9D(B)            |               |
|-----------|---------------------|---------------|
| Bore size | Operating range (F) | Hysteresis(R) |
| 10        | —                   | —             |
| 16        | 5                   | 1             |
| 20        | 8                   | 1             |
| 25        | 8                   | 1             |

※ CS 9D (B) shall be inserted on the front slot (the wide side of gripper)

Unit: mm

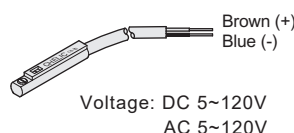
| Model     | CS-15T(B)           |               |
|-----------|---------------------|---------------|
| Bore size | Operating range (F) | Hysteresis(R) |
| 16        | 11.5                | 1             |
| 20        | 10                  | 1             |
| 25        | 12                  | 1             |

※ CS 15T (B) shall be inserted on the side slot (the short side of gripper)

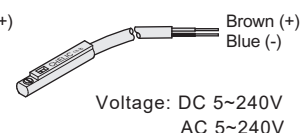
Unit: mm

| Model     | CS-5G               |               |
|-----------|---------------------|---------------|
| Bore size | Operating range (F) | Hysteresis(R) |
| 10        | 3.5                 | 0.5           |

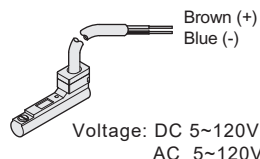
#### CS-9D



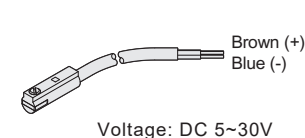
#### CS-9H



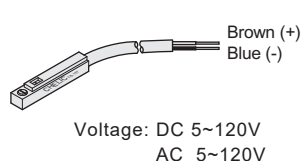
#### CS-9B



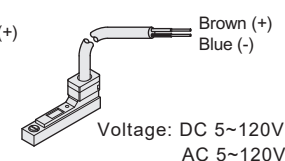
#### CS-8G/ CS-5G



#### CS-15T



#### CS-15B





# MEMO

**CHELIC.**This image shows a full page of blank graph paper. The grid consists of small, equal-sized squares formed by thin gray lines. There are 20 columns and 20 rows of squares, creating a total area of 400 small squares. The grid covers the entire page except for a narrow white margin around the edges.**HDD****HDS****HDM****HDP**

## HDPM

**HDZ****HDZL****HDZM****HDW****HDWM**

## HMW

**HMG**

HMY

**HDU**