Rochu®

Give your robot a soft hand

Catalog **Version 2.6**

Suzhou Rochu Robotics Co.,Ltd.

WhatsAPP

Fast

Good

Fast delivery

Good quality

Module

Special

Online 3D-module

Customizable

Certification

Patents

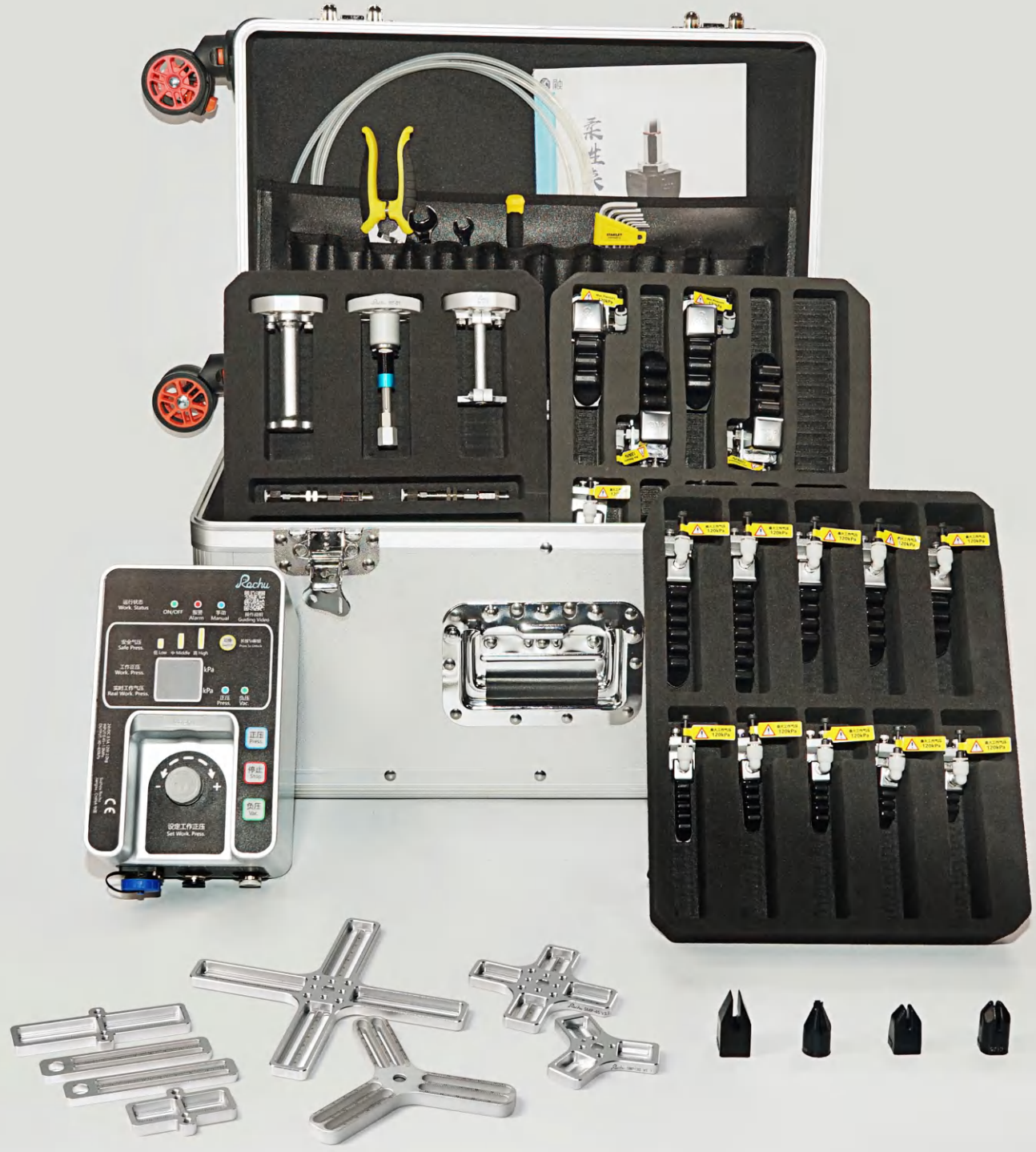
Product Advantage

scan to watch videos

- The Rochu soft gripper is made of pure **soft** material.
- Can pick and place flimsy and soft object **without any damage**.
- Can adapts the product with **very different shape and size** easily.
- With **300 times/min circle time, ±0.05mm precision, millions of lifetime, good chemical and temperature resistance.**
- A ideal robot gripper for flexible production lines.

- The material passed **FDA and EC1935 food-safe** testing.

- The **modular finger** makes the construction of Rochu gripper **quick and easily**.
- **All-in-one control unit** are applicable for **multiple working conditions**. Not only production line bus also mobile robot, desktop robot, AGV or school labs.



DK Rochu Development Kit

- **Very good for softgripper starter.**
- **Quick testing for any food, metal, plastic or soft fabrics.**
- **Easy assmbling. 5-min. ready for a test grapping.**
- **Full range of finger modules and beak modules.**
- **A standard plug-and-play control units included.**

Rochu Development Kit 2.0

Bom list

Finger Module ×22

Parts Kit ×1

Connection Modules ×6

Tools kit ×1

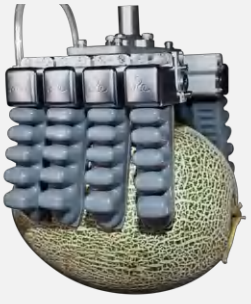
Slide Mounting Plate SMP×8

Beak ×4

Control Unit ×1

Trolley case ×1

Applications



Applications

scan to watch videos

Food

Food safe materials. FDA and EC-1935 certification. Used for pick and place of fruits, dough, candies, pastry and vegetables.

Electronics

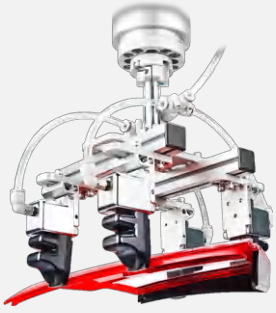
It is used for high-precision plug and pull of small electronic parts. Assembling, sorting, testing and packaging of ceramic and plastic parts in mobile phone, PCBs, silicon wafers, optic glasses.

Medical Supplies

It is used for pick and place of medical supplies such as glass tubes, breathing mask, bags and other plastic and rubber parts

Fabric

can be used to pick the soft breathable fabric layers. pick only the first layer from multi-layers.



Automobile

Used for sorting, handling, loading and unloading of automobile parts, like headlights, special-shaped parts, bearing, soft battery core, seat slide rails or seat headrest.

Smart picking

Smart picking / Bin picking with AI technology in the warehousing and logistics industry.

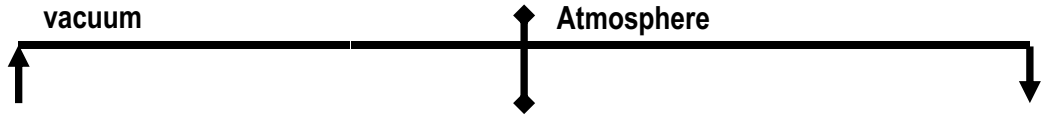
Working principle

scan to watch videos

Rochu soft robotic grippers is a pneumatic driving gripper. By positive pressure or vacuum air flow, the soft gripper open or grab.

By adjusting the air pressure to control the grabbing force(soft finger) or opening space(soft beak).

Rochu control unit



Finger

Open

Release

Grab

Beak

Grab

Release

Open

The working pressure must be kept within a safe range, overload may cause irreversible damage of the finger. It is recommended to use our "Rochu control unit" to ensure the life time of the soft finger and beak.

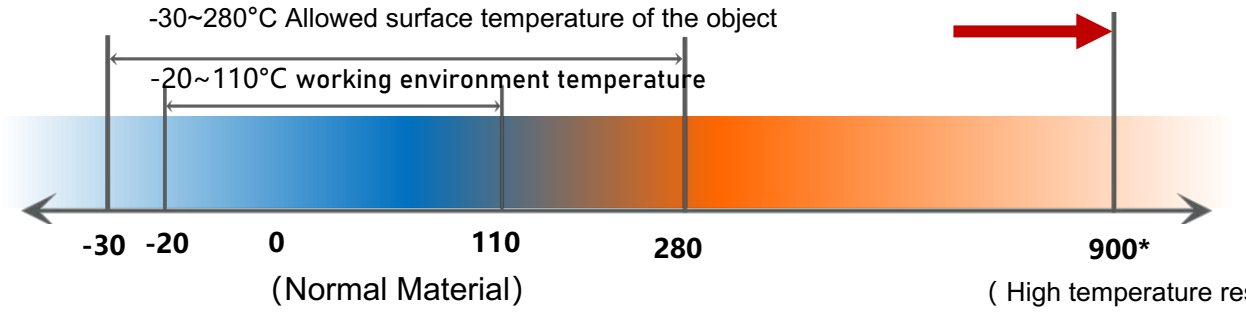
Finger material characteristics

scan to watch videos

Material safety performance

FDA 1935/2004/EC RoHS NPS

Heat resistance



* High temperature resistant material need to be customized, please contact us.

Chemical resistance

Classify	Actual Conditions	Performance
Weather Ability	General aging resistance	excellent
	UV-Resistance	good
	Ozone resistance	good
Oil Resistance	vegetable oil	excellent
	gasoline, light oil	Normal
Solvent Resistance	Alcohol and ethanol by 96%	good
	Organic solvents (benzene, toluene, acetone, ethyl acetate)	Normal
acid and alkali resistance	Strong acid (hydrochloric acid, sulfuric acid, nitric acid, etc.)	Normal
	Strong alkali (sodium hydroxide, potassium hydroxide, etc.)	Normal
	Weak acid pH: 6-7 (low concentration phosphoric acid, oxalic acid, etc.)	good
	Weak alkali pH: 7-8 (low concentration ammonia, etc.)	good
	Hydrofluoric acid and other highly corrosive substances	No good
The other	Resistance to the steam	excellent
	abrasive resistance	Normal

Antistatic materials (AS)

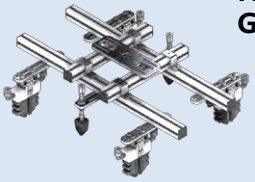
Project	Test specification	Material	
		Anti-Static Material (AS)	Normal Material
surface resistance[Ω]	IEC 61340-2-3:2016	10^6—10^9	>10^{10}

General Index

GC
Gripper Combination

Standard GC

page. 14



Non-standard GC

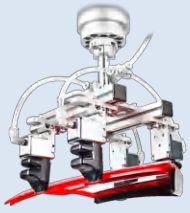
page. 17

Food packaging

page. 18

3C-electronics Parts

page. 20



Automobile parts

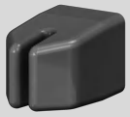
page. 22

Fabric

page. 23

BM / B
Beak Module/ Soft Beak

BM *page. 26*
Beak Module



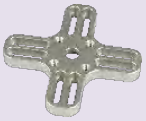
B *page. 26*
Soft Beak

FM / F
Finger Module / Finger

FM *page. 34*
Finger Module

F *page. 53*
Finger

CM
Connection module



SMP *page. 56*
Slide Mounting Plate

CM *page. 58*
Connection Module

FCM *page. 59*
Flange Connection Module

QCM *page. 62*
Quick changer Module

CU
Control Unit

PCU
Passive Control Unit

page. 65

iPCU 2
Integrated Passive Control Unit

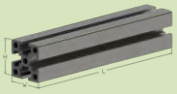
page.68

ACU
Active Control Unit

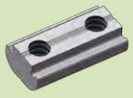
page. 71

Other parts

CP *page. 76*
connection part



P *page. 77*
Profile



TN *page. 77*
T-Nut

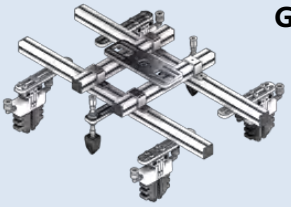
BR *page. 78*
Bracket

1

GC
Gripper Combination

Standard GC

page. 14



Non-standard GC

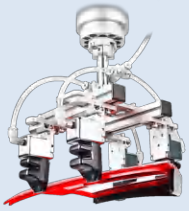
page. 17

Food packaging

page. 18

3C-electronics Parts

page. 20



Automobile parts

page. 22

Fabric

page. 23

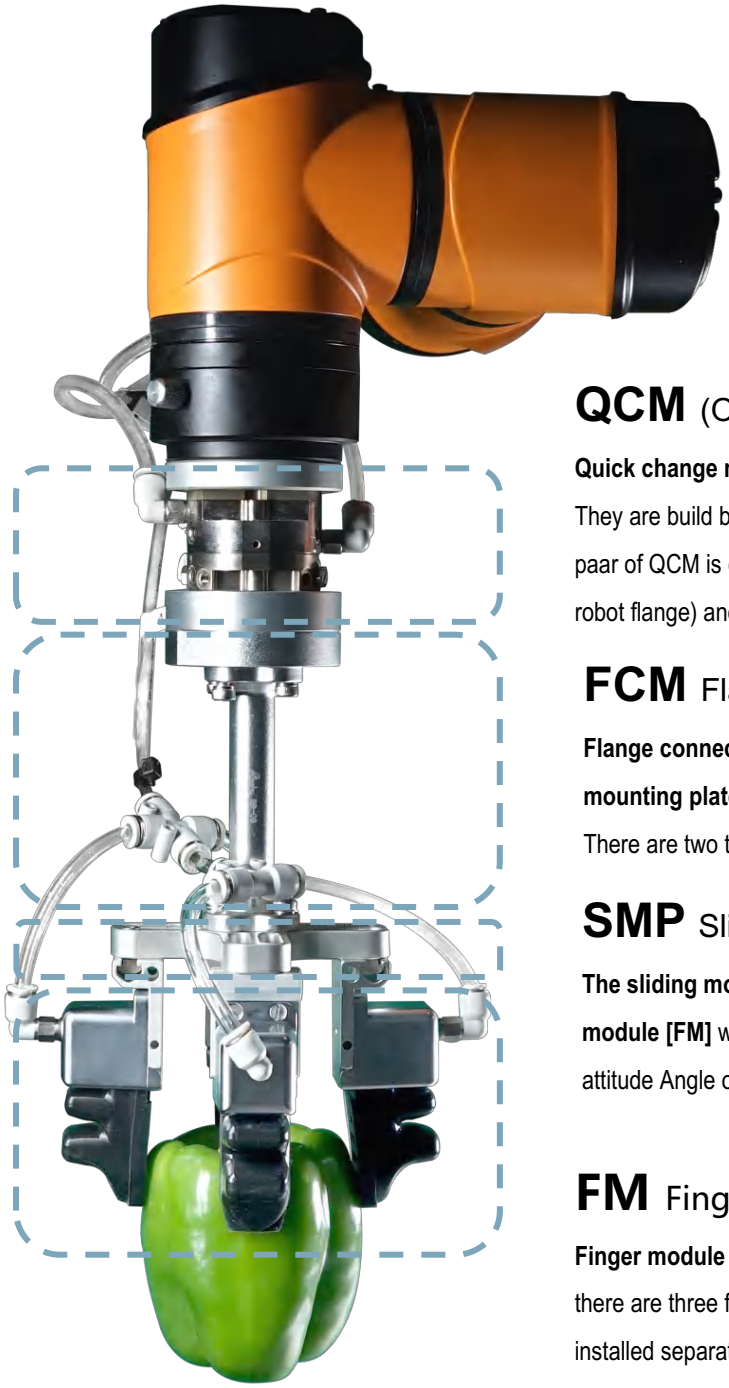
Gripper Combination

GC

Standard Finger Gripper Combination

scan to watch videos

A standard Rochu Soft finger Gripper Combination **[GC]** is build of different modules and named in a standard way . The building of modules can be in the following steps: 1. Finger module **[FM],** 2.Slide Mounting plate **[SMP],** 3.Flange Connection Module **[FCM],** 4.Quick changer Module **[QCM]** (Optional)**.**



page. 62

QCM (Optional) Quick changer module

Quick change module [QCM] is an optional module for quick changing of grippers. They are build between the **flange connection module [FCM]** and the robot flange. A paar of QCM is can be uncouple into two parts. The robot side (**R side**, fixed on the robot flange) and the gripper side (**G side**, fixed on the gripper).

page. 59

FCM Flange connection module

Flange connection module [FCM] is fixed between the robot flange and the **slip mounting plate [SMP].** It can also be connected with **quick change module [QCM],** There are two types of **[FCM],** the spring type **(S)** and rigid rod type **(R).**

page. 56

SMP Slide Mounting Plate

The sliding mounting plate [SMP] is the standard mounting plate for Rochu **finger module [FM]** with two standard sliding slot and scale line. The mounting position or attitude Angle of the **Finger module [FM]** in the slider can be adjusted freely.

page. 33

FM Finger Module

Finger module [FM] is the actuator of Rochu gripper. According to the finger size, there are three finger series, finger (A), finger (B) and finger (C). The FM can be installed separately and easy to replace.

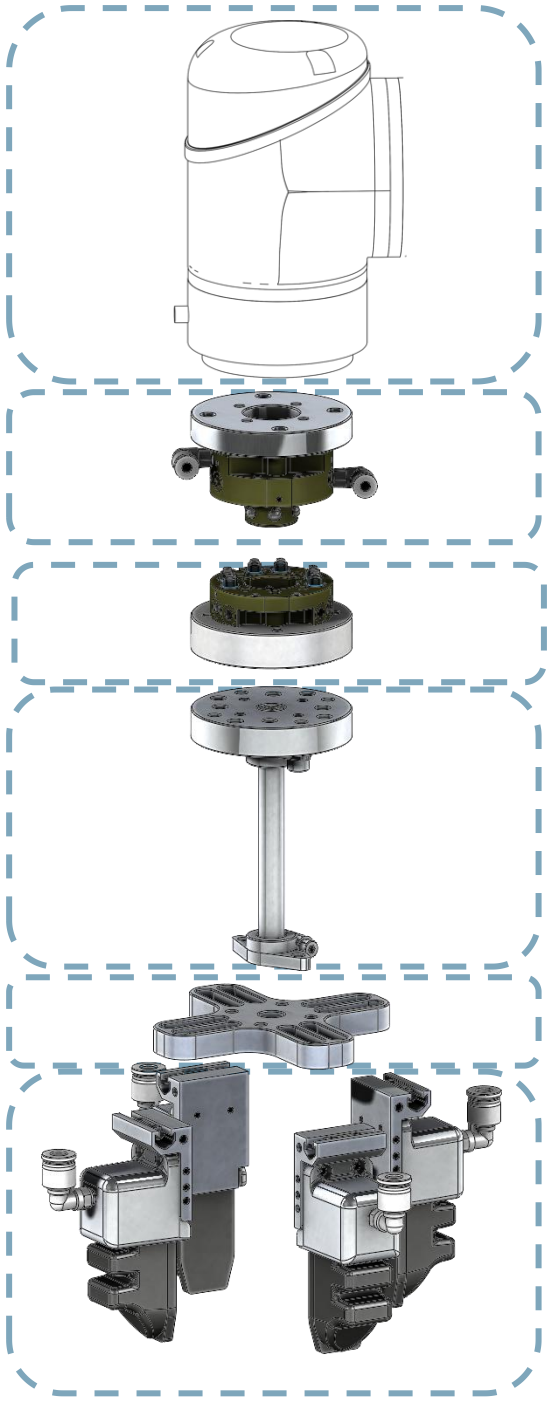
Gripper Combination

Encoding Method of standard Finger Gripper Combination

scan to watch videos

GC - 4 FMA3V5/ LS1 – SMP4S – FCMR04 - QCM02G - QCM02R

① ② ③ ④ ⑤



Cobot Arm

⑤ QCM-02R
page. 63

④ QCM-02G
page. 63

③ FCM-R04
page. 60

② SMP-4S
page. 57

① 4 x FM-A3V5/LS1
page. 49

Gripper Combination

scan to watch videos

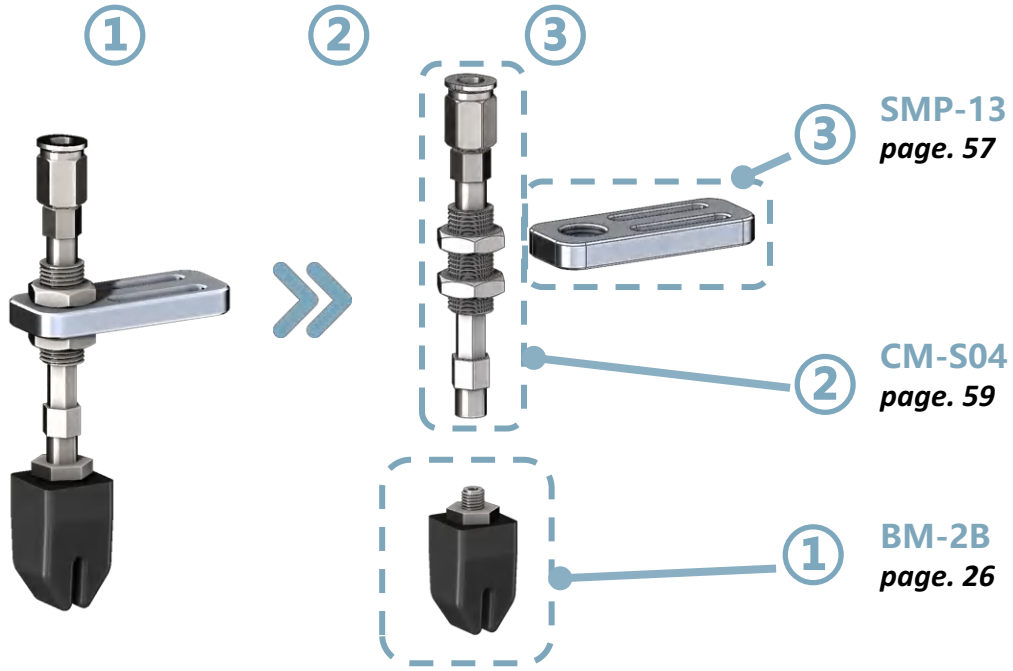
GC

Standard Beak Gripper Combination

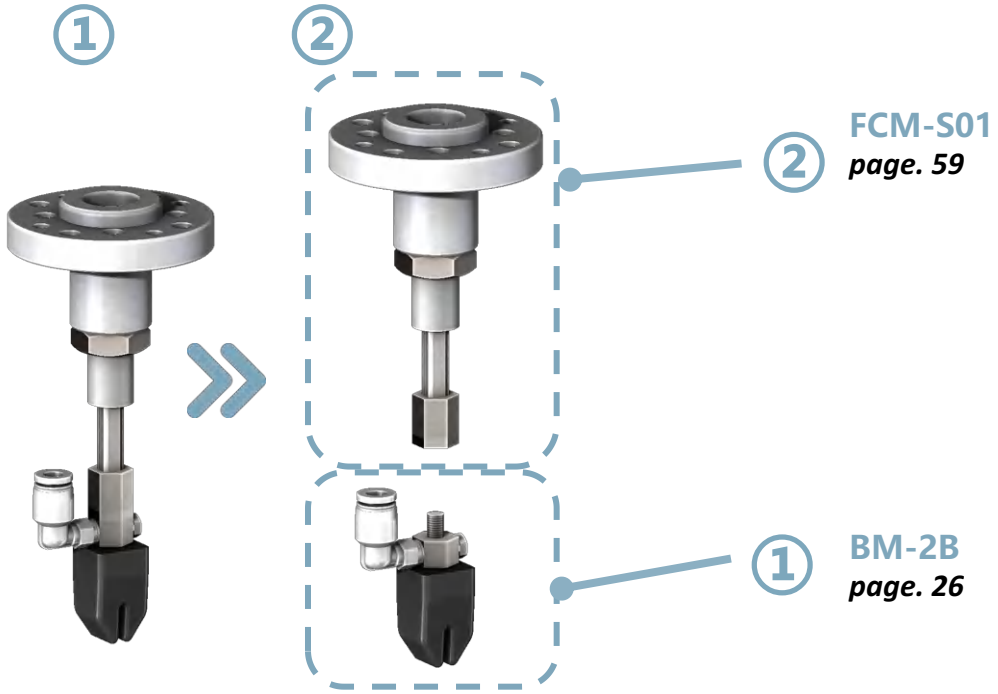
Standard beak gripper combination[GC] is build of different modules and named in following way :
1.Beak Module**[BM]**， 2. Connection module**[FCM] /[CM]** 3.Slide mounting plate**[SMP]**（optional）

Encoding Method of standard Beak Gripper Combination

GC – BM2B – CMS04 – SMP13



GC – BM2B – FCMS01



Gripper Combination

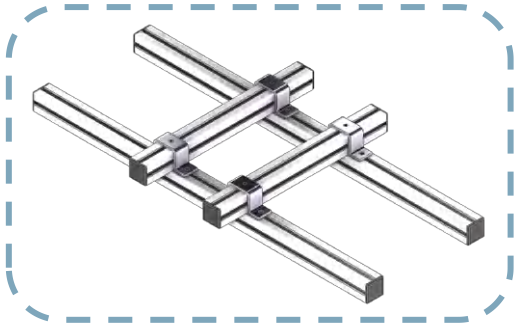
Non-standard Gripper Combination

scan to watch videos

Features

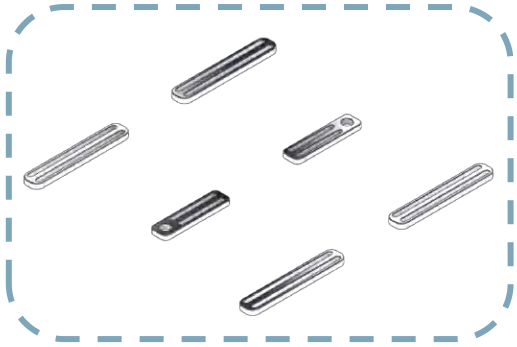
- Suitable for large size or irregular shape products.
- The standard gripper combination [GC] or finger module [FM] are fixed on the on aluminum profiles[P] or connection parts[CP].
- It can also add suction cups, sensors or cylinders or other components.
- The gripper plan is listed with BOM (build of Material).

connection part *page. 76*
CP-95

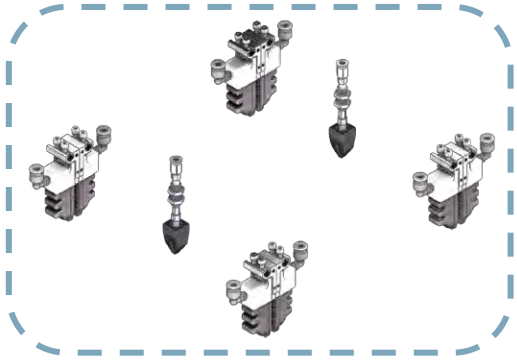


connection part *page. 76*
4 x **CP-01**

Profile *page. 77*
2 x **P-20200**
2 x **P-20400**



Slide mounting plate
4 x **SMP-03** *page. 56*
2 x **SMP-14**



Finger Module *page. 49*
8 x **FM-B4V5/LS1**

Gripper combination
2 x **GC-BM2B-CMS04**
page. 20

BOM List

Product Name	Product code	Quantity
connection part	CP-95	1
connection part	CP-01	4
Profile	P-20200	2
Profile	P-20400	2
Slide mounting plate	SMP-03	4
Slide mounting plate	SMP-14	2
Finger Module	FM-B4V5/LS1	8
Standard Gripper combination	GC –BM2B-CMS04	2

Gripper Combination

GC

scan to watch videos

Food packaging Applications:

- Surround gripper, suitable for ball or square candy, pastry or fruit

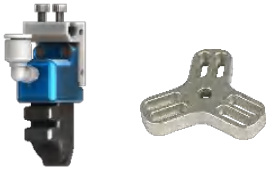
PCU-HMN *page. 65*
Passive Control Unit –**High speed model***

*: For more Control Units on page. 64

GC – 4FMA3V5/LS1 - SMP4S - FCMR02

According to the shape, volume, weight and material of different objects, Finger Module or Slide mounting plate should be replaced to get a better grasping ability. More FM s. page. 36. More Slide mounting plate [SMP] s. page. 56

Grippers



Finger Module: FM-B3V5/LS1
Slide mounting plate: SMP-3S

GC-3FMB3V5/LS1–SMP3S

Finger Module: FM-A5V5/LS1

GC-4FMA5V5/LS1-SMP4S

Finger Module: FM-A5V5/LS1
Slide mounting plate: SMP-4L

GC-4FMA5V5/LS1-SMP4L

Gripper Combination

scan to watch videos

GC

Food packaging Applications:

- Line-finger gripper, suitable for strip, olive fruit, food

GC-6FMA3V4/LS1-CP04-FCMR02

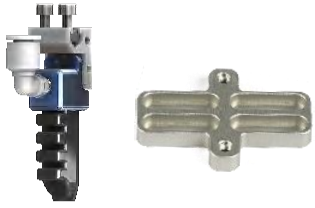
iPCU 2-HMN *page. 68*

Integrated Passive Control Unit -- **High speed model***

*: For more Control Units on page. 64

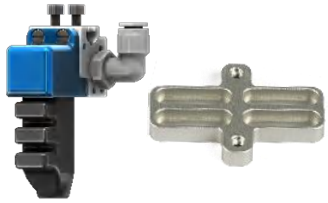
According to the shape, volume, weight and material of different objects, Finger Module or Slide mounting plate should be replaced to get a better grasping ability. More FM s. page. 36. More Slide mounting plate [SMP] s. page. 56

Grippers



Finger Module: FM-C5V5/LS1
Slide mounting plate: SMP-2S

GC-2FMC5V5/LS1-SMP2S



Finger Module: FM-B4V4/LS1
Slide mounting plate: SMP-2S

GC-4FMB4V4/LS1-SMP2S

Finger Module: FM-A6V4/LS1

GC-8FMA6V4/LS1-CP04

Gripper Combination

GC

scan to watch videos

3C-Electronics Applications:

- Soft beak for micro - small parts

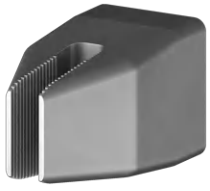
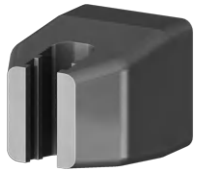
GC – BM20006 – CMS04

iPCU 2-SMN *page. 68*

Integrated Passive Control Unit -- **Compact model***

*: For more Control Units on page. 64

According to the shape, volume, material of the clamping object and working space to choose Beaks.
More soft beaks see page. 26.

Flat piece	Hole	Vertical cylinder	Vertical piece	Horizontal piece
				
Beak: B-20005V	**Beak: B-3B18**	**Beak: B-4B**	**Beak: B-2B**	**Beak: B-20006**

Gripper Combination

scan to watch videos

3C-Electronics Applications:

- Gripper combination for flat object

GC – 2FMA3V5/LS1– SMP2L

iPCU 2-SMN

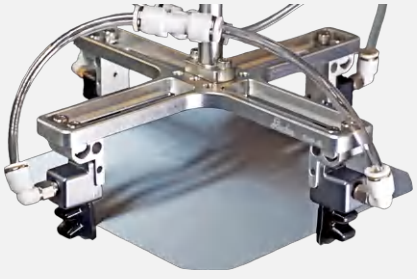
page. 68

Integrated Passive Control Unit -- **Compact model***

*: For more Control Units on page. 64

Grippers

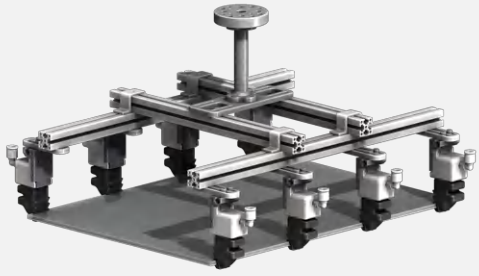
Finger Module: FM-C3V5/LS1
Slide mounting plate:SMP-4L



GC-4FMC3V5/LS1-SMP4L

Finger Module: FM-A4V5/LS1
Slide mounting plate:SMP-3L

GC-3FMA4V5/LS1-SMP3L



BOM List

Product Name	Product code	Quantity
Finger Module	FM-A3V5/LS8 [AS]	8
Profile	P-20400	2
Profile	P-20300	2
connection part	CP-01	4
connection part	CP-04	1
Flange connection module	FCM-R08	1

PCB

Silicon wafers

Lens

Coating glass

Gripper Combination

GC

scan to watch videos

Automobile parts Applications:

- Gripper combination handling car lighting parts, seat slide rails, bearings, soft battery core, etc

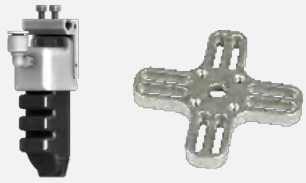
BOM List		
Product Name	**Product code**	**Quantity**
Finger Module	FM-A3V5/LS8 [AS]	4
Slide mounting plate	SMP-02	4
Profile	P-20300	2
connection part	CP-04	1
Flange connection module	FCM-R06	1

iPCU 2-SMN *page. 68*

Passive Control Unit – **Standard model ***

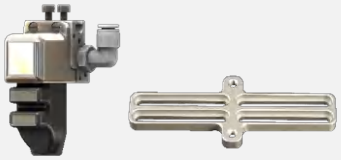
*: For more Control Units on page. 64

Grippers

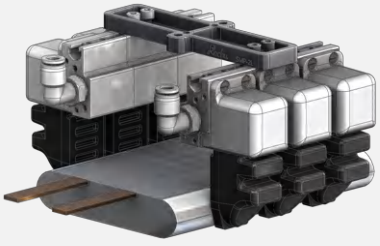


Finger Module: FM-A4V5/FS3
Slide mounting plate:SMP-4S

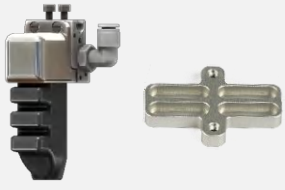
GC-4FMA4V5/FS3-SMP4S



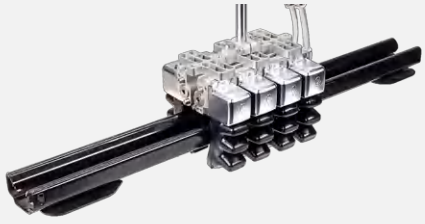
Finger Module: FM-A3V4/LS1
Slide mounting plate:SMP-2L



GC-6FMA3V4/LS1-SMP2L



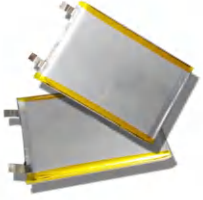
Finger Module: FM-A4V4/LS1
Slide mounting plate:SMP-2S



GC-8FMA4V4/LS1-3SMP2S

Car lighting parts

Bearing



Soft battery core

seat slide rails

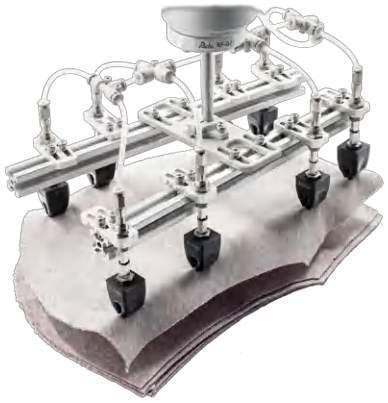
Seat headrest

Gripper Combination

scan to watch videos

Fabric Picking Applications:

- Beak gripper combinations, can be used to pick the soft breathable thin fabric layers. Pick only the first layer from multi-layers.



BOM List

Product Name	Product code	Quantity
Gripper combination	GC –BM20006-CMS04-SMP13	8
Profile	P-20400	2
connection part	CP-04	1
Flange connection module	FCM-R04	1

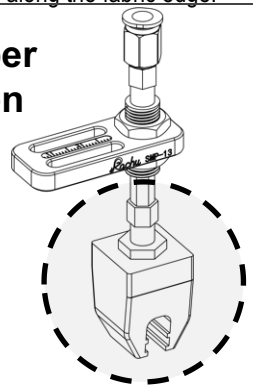
Note: For large fabric (e.g. t-shirts, sweatshirts, etc.). Multiple separate beak grippers should be installed along the fabric edge.

BOM List

Product Name	Product code	Quantity
Gripper combination	GC –BM20006-CMS04-SMP13	6
Profile	P-20200	1
Flange connection module	FCM-R08	1

Note: For hard material (e. g., denim, etc.). Multiple Beak grippers should be installed tightly in a line.

Beak Gripper combination



GC –BM20006-CMS04-SMP13

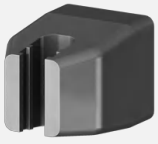
Control Unit

iPCU 2-SMN *page. 68*

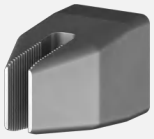
Passive Control Unit – **Standard model ***

*: For more Control Units on page. 64

More Beaks **



B-20006



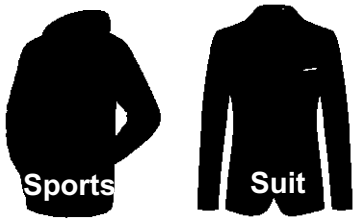
B-20005V

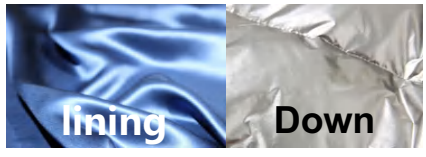
B-2B

B-3B18

******: A stable pick and place of different fabrics (gram weight, thickness and hardness) are related on Beak and working pressure.

Apply to the fabric





Gripper Combination

GC

scan to watch videos

Fabric Picking Applications：

- The two-fingers gripper can grasp thicker and harder fabrics, like wool, towel, blanket, etc.

Customized gripper combination

BOM List		
Product Name	Product code	Quantity
Gripper combination	GC –2FMB4V5/FS3-SMP2S	2
Profile	P-20200	1
Flange connection module	FCM-R04	1

Gripper Combination

GC –2FMB4V5/FS3-SMP2S

Control Unit

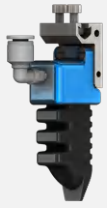
iPCU 2-SMN *page. 68*

Passive Control Unit – **Standard model ***

*: For more Control Units on page. 64

More Finger Modules **

FM-A4V5/FS3



FM-B4V5/FS3

FM-C5V5/FS3

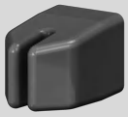
**: A stable pick and place of different fabrics (gram weight, thickness and hardness) are related on finger Module and fingertip distance Dn (page. 42)

Fabrics

2

BM / B
Beak Module/ Soft Beak

BM *page. 26*
Beak Module



B *page. 26*
Soft Beak

FM / F
Finger Module / Finger

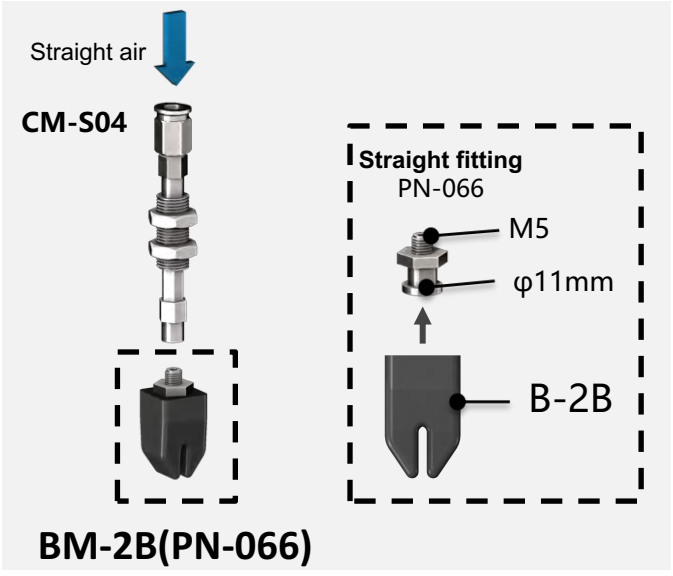
FM *page. 34*
Finger Module

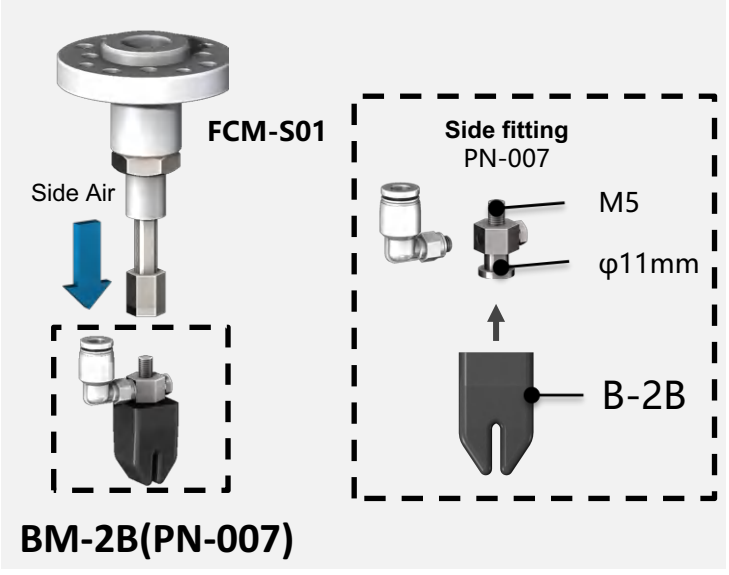
F *page. 53*
Finger

Beak Module [BM]
BM-2B

scan to watch videos

Features
- Mounting on connection module [CM] or flange connection module [FCM]
- Beak module [BM] contains Beak[B] and matching fittings
- There are two fittings, the straight fitting (PN-066) or the side fitting (PN-007).
- The soft beak[B] can be replaced

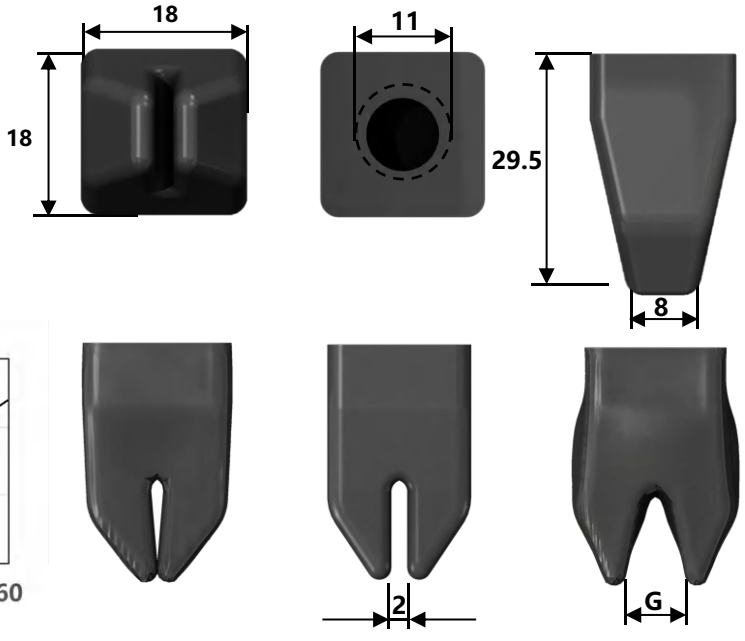


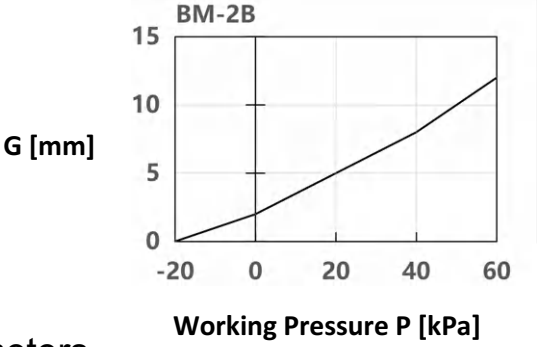


BM

Soft Beak [B]
B-2B

- Replaceable small soft gripper





Parameters

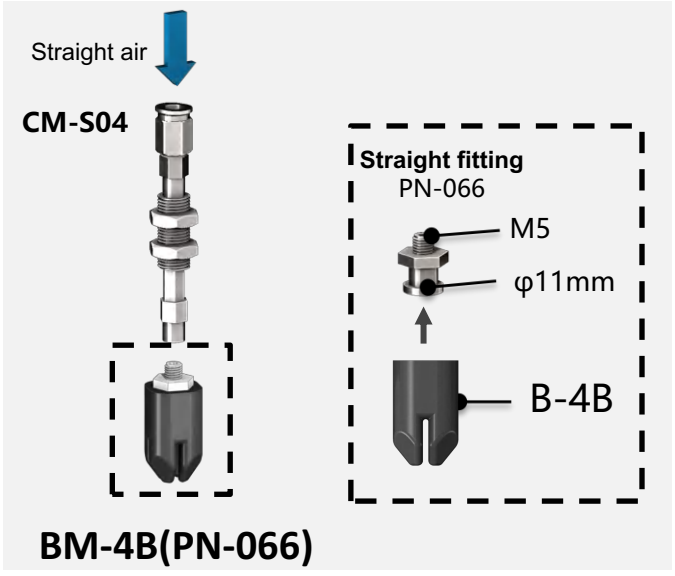
Name:	B-2B	Fitting diameter:	11mm	Weight	6.1g	Max Load:	15g
Max cycle time:	300 times/min	Precision:	0.05mm	Safe pressure:	-100~60 kpa	Life time:	0.5-1 million times*

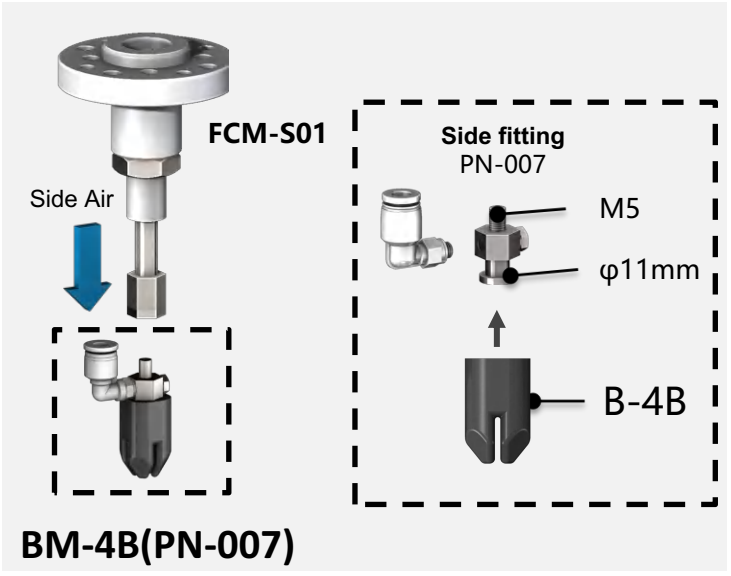
* : The life time is closely related to the working pressure P. Pls. always use Rochu controll Unit. The working pressure shall not exceed the safe working pressure range.

Beak Module [BM]
BM-4B

scan to watch videos

Features
- Mounting on connection module [CM] or flange connection module [FCM]
- Beak module [BM] contains Beak[B] and matching fittings
- There are two fittings, the straight fitting (PN-066) or the side fitting (PN-007).
- The soft beak[B] can be replaced

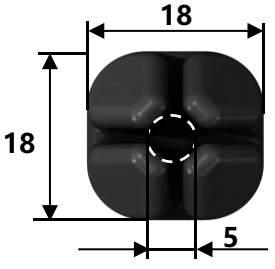


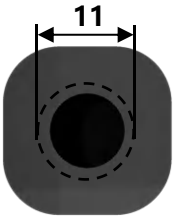


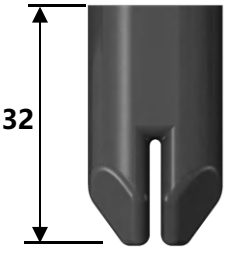
BM

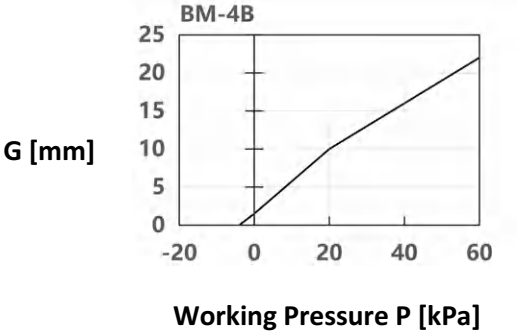
Soft Beak [B]
B-4B

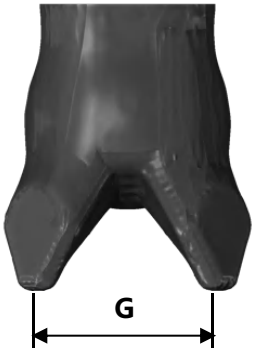
- Replaceable small soft gripper











Parameters

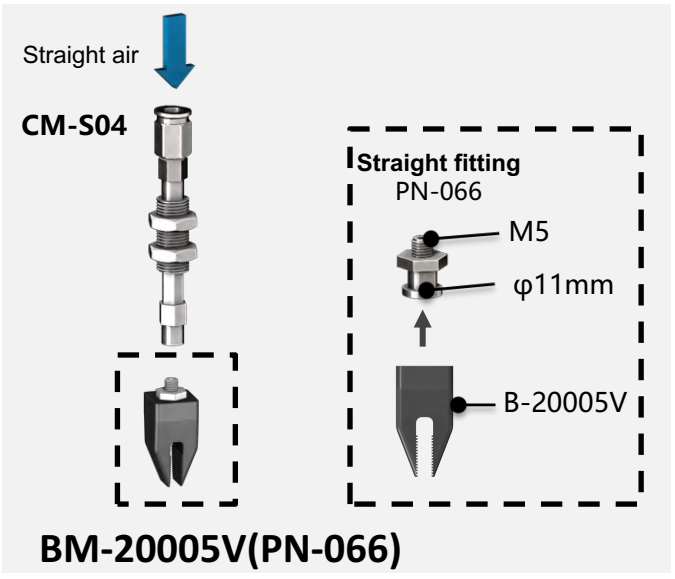
Name:	B-4B	Fitting diameter:	11mm	Weight	6.4g	Max Load:	30g
Max cycle time:	300 times/min	Precision:	0.05mm	Safe pressure:	-100~60 kpa	Life time:	0.5-1 million times*

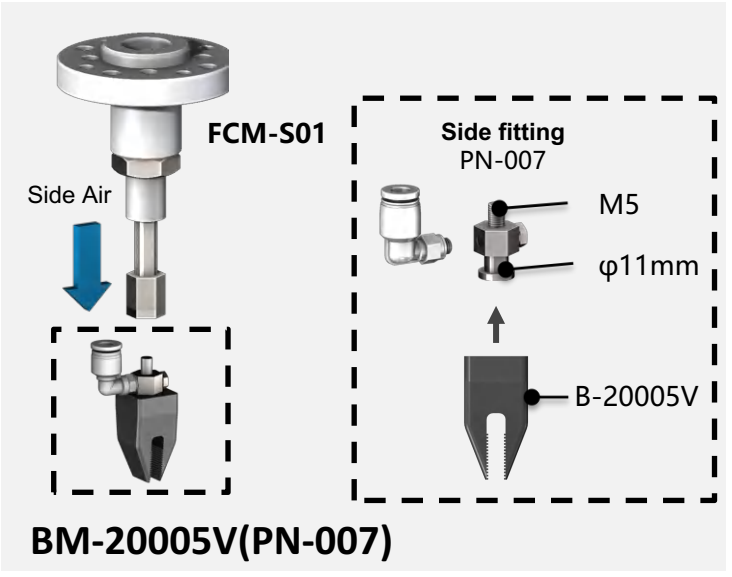
* : The life time is closely related to the working pressure P. Pls. always use Rochu controll Unit. The working pressure shall not exceed the safe working pressure range.

Beak Module [BM]
BM-20005V

scan to watch videos

Features
- Mounting on connection module [CM] or flange connection module [FCM]
- Beak module [BM] contains Beak[B] and matching fittings
- There are two fittings, the straight fitting (PN-066) or the side fitting (PN-007).
- The soft beak[B] can be replaced

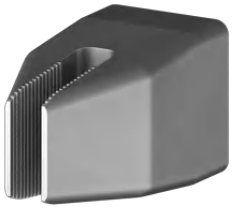


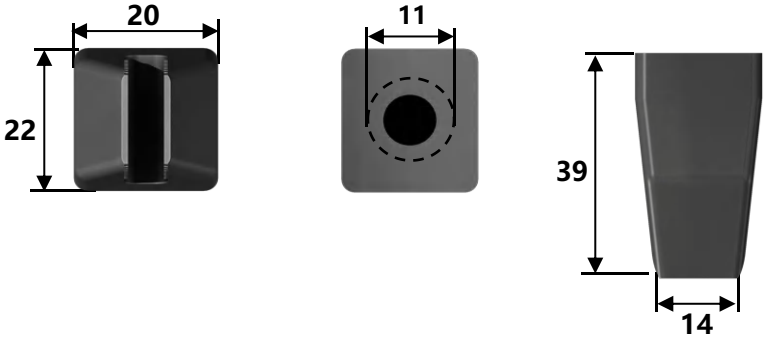


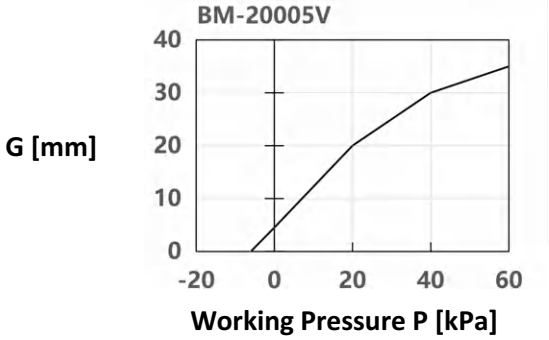
BM

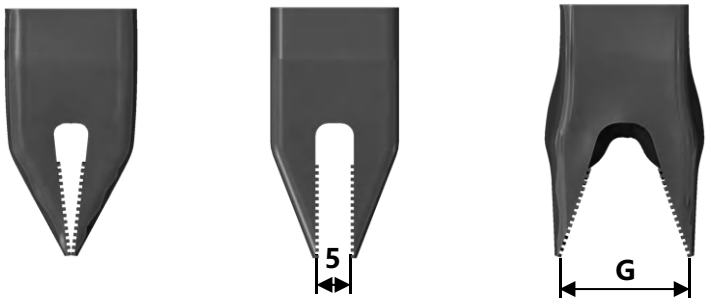
Soft Beak [B]
B-20005V

- Replaceable small soft gripper









Parameters

Name:	B-20005V	Fitting diameter:	11mm	Weight	10g	Max Load:	30g
Max cycle time:	300 times/min	Precision:	0.05mm	Safe pressure:	-100~50 kpa	Life time:	0.5-1 million times*

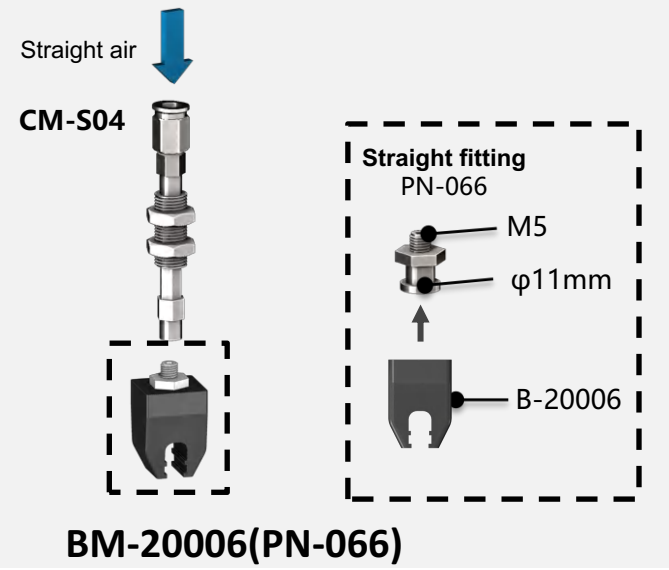
* : The life time is closely related to the working pressure P. Pls. always use Rochu controll Unit. The working pressure shall not exceed the safe working pressure range.

Beak Module [BM]
BM-20006

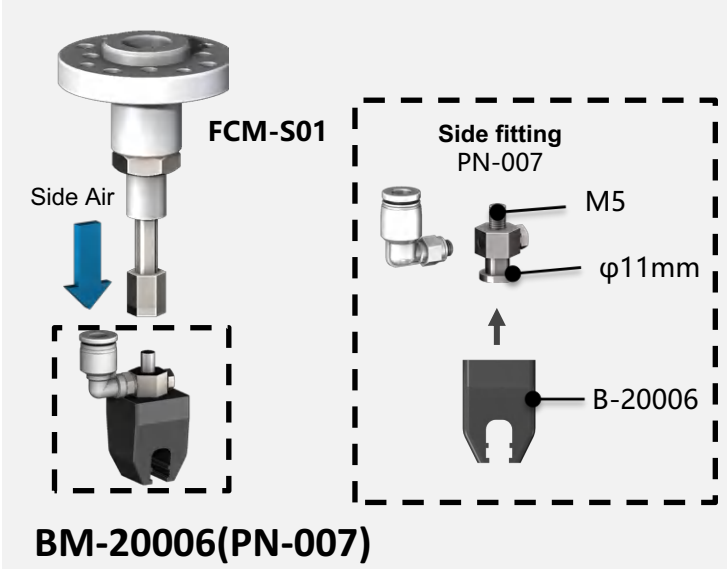
scan to watch videos

Features

- Mounting on connection module [CM] or flange connection module [FCM]
- Beak module [BM] contains Beak[B] and matching fittings
- There are two fittings, the straight fitting (PN-066) or the side fitting (PN-007).
- The soft beak[B] can be replaced



BM-20006(PN-066)

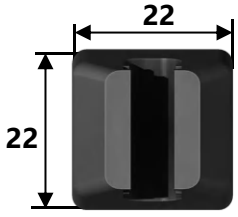


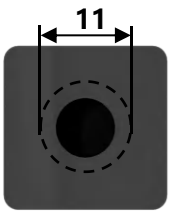
BM-20006(PN-007)

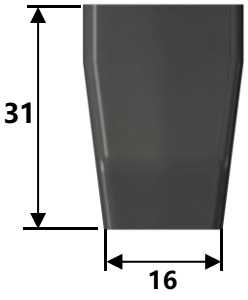
BM

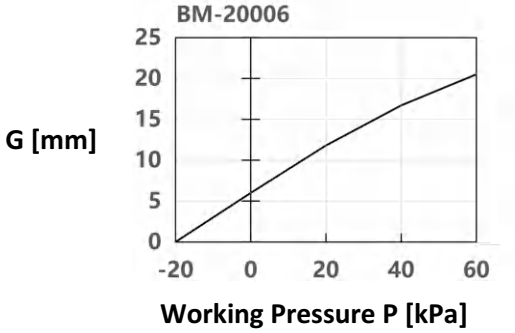
Soft Beak [B]
B-20006

- Replaceable small soft gripper









Parameters

Name:	B-20006	Fitting diameter:	11mm	Weight	9.8g	Max Load:	30g
Max cycle time:	300 times/min	Precision:	0.05mm	Safe pressure:	-100~45 kpa	Life time:	0.5-1 million times*

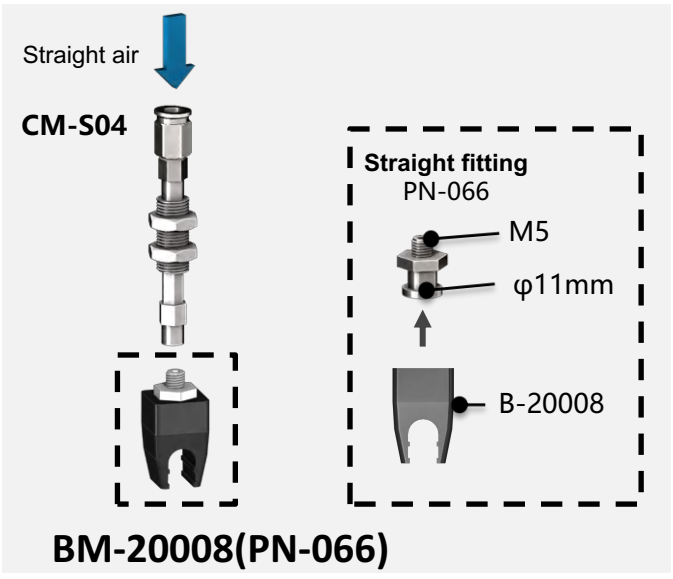
* : The life time is closely related to the working pressure P. Pls. always use Rochu controll Unit. The working pressure shall not exceed the safe working pressure range.

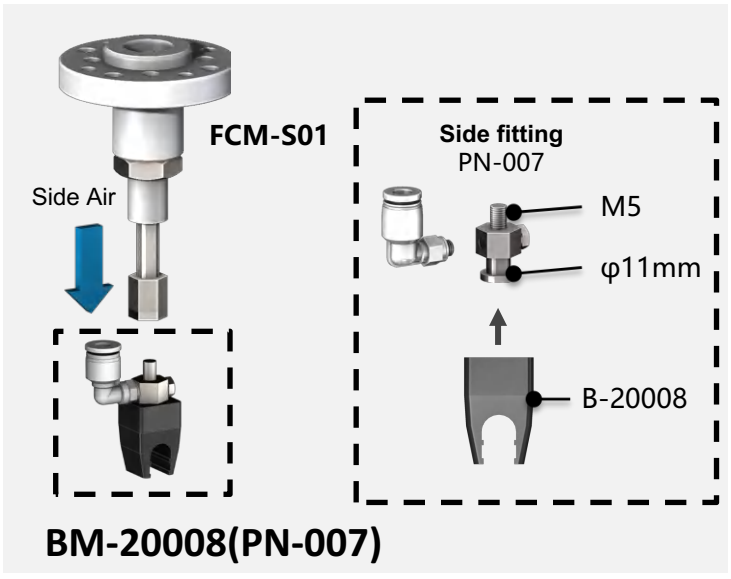
Beak Module [BM]
BM-20008

scan to watch videos

Features

- Mounting on connection module [CM] or flange connection module [FCM]
- Beak module [BM] contains Beak[B] and matching fittings
- There are two fittings, the straight fitting (PN-066) or the side fitting (PN-007).
- The soft beak[B] can be replaced

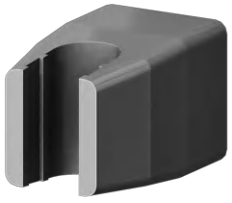


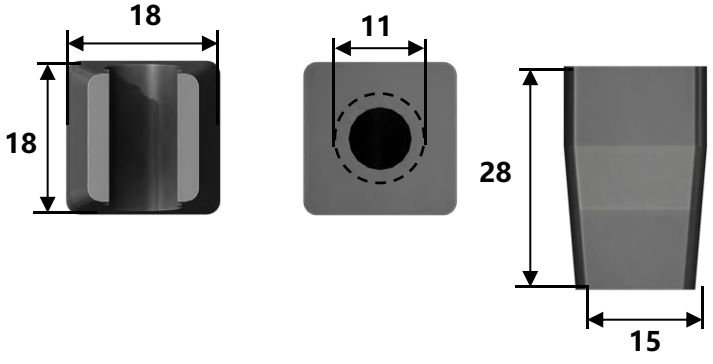


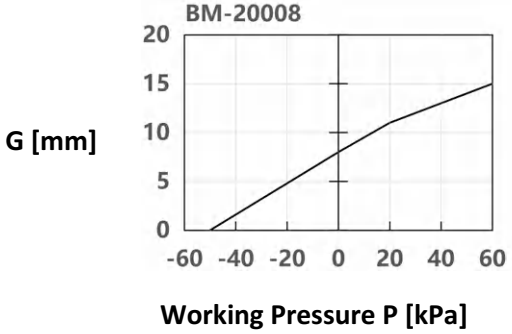
BM

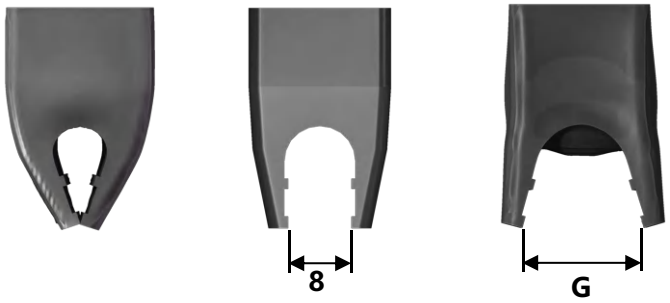
Soft Beak [B]
B-20008

- Replaceable small soft gripper









Parameters

Name:	B-20008	Fitting diameter:	11mm	Weight	6.5g	Max Load:	10g
Max cycle time:	300 times/min	Precision:	0.05mm	Safe pressure:	-100~50 kpa	Life time:	0.5-1 million times*

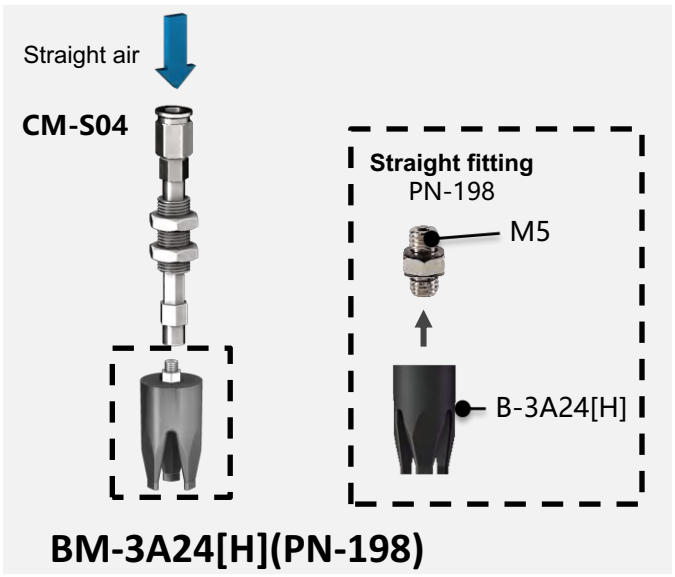
* : The life time is closely related to the working pressure P. Pls. always use Rochu controll Unit. The working pressure shall not exceed the safe working pressure range.

Beak Module [BM]
BM-3A24[H]

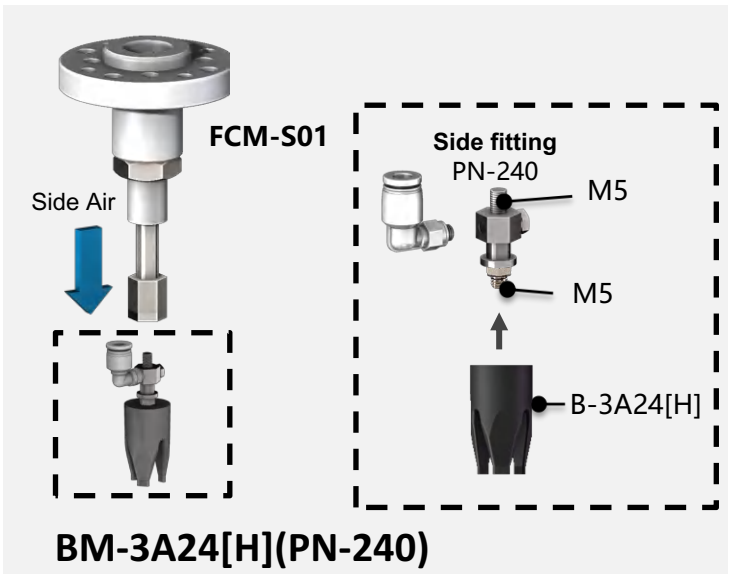
scan to watch videos

Features

- Mounting on connection module [CM] or flange connection module [FCM]
- Beak module [BM] contains Beak[B] and matching fittings
- There are two fittings, the straight fitting (PN-198) or the side fitting (PN-240).
- The soft beak[B] can be replaced



BM-3A24[H](PN-198)

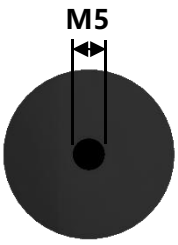


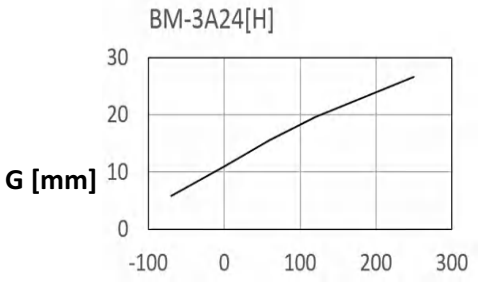
BM-3A24[H](PN-240)

BM

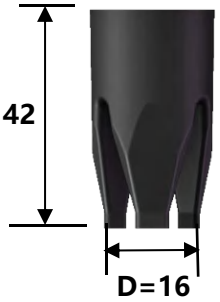
Soft Beak [B]
B-3A24[H]

- Replaceable small soft gripper





Working Pressure P [kPa]



Parameters

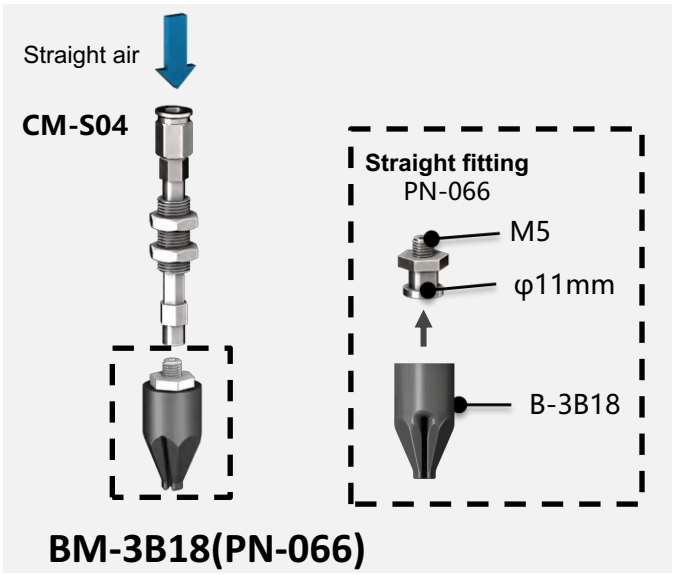
Name:	B-3A24[H]	Fitting diameter:	M5	Weight	6.4g	Max Load:	30g
Max cycle time:	300 times/min	Precision:	0.05mm	Safe pressure:	-100~250 kpa	Life time:	3 million times*

* : The life time is closely related to the working pressure P. Pls. always use Rochu controll Unit. The working pressure shall not exceed the safe working pressure range.

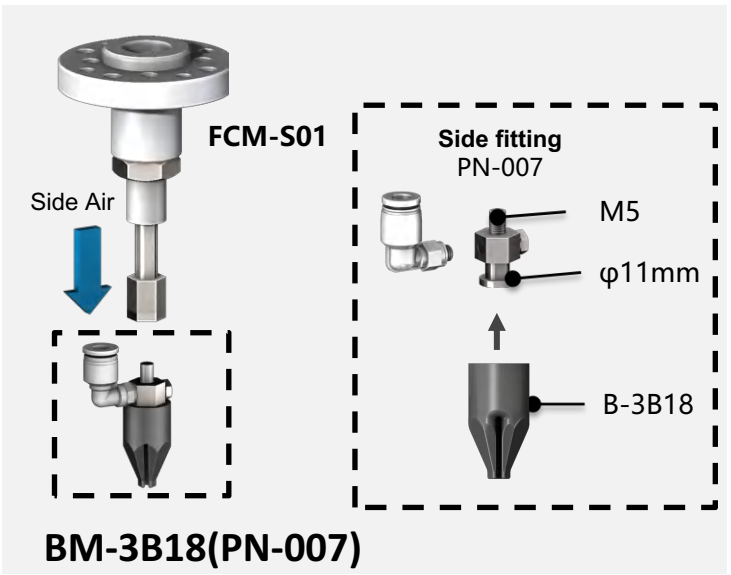
Beak Module [BM]
BM-3B18

scan to watch videos

Features
- Mounting on connection module [CM] or flange connection module [FCM]
- Beak module [BM] contains Beak[B] and matching fittings
- There are two fittings, the straight fitting (PN-066) or the side fitting (PN-007).
- The soft beak[B] can be replaced



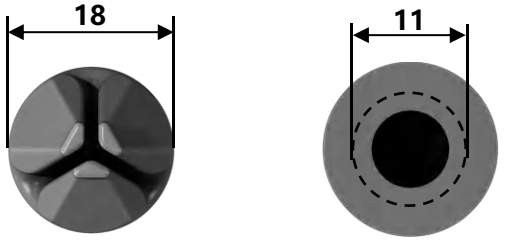
BM-3B18(PN-066)

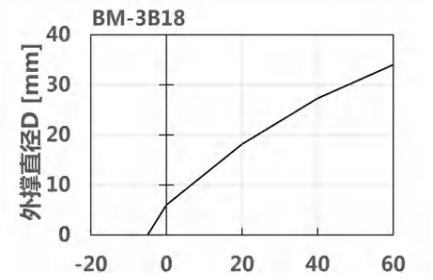


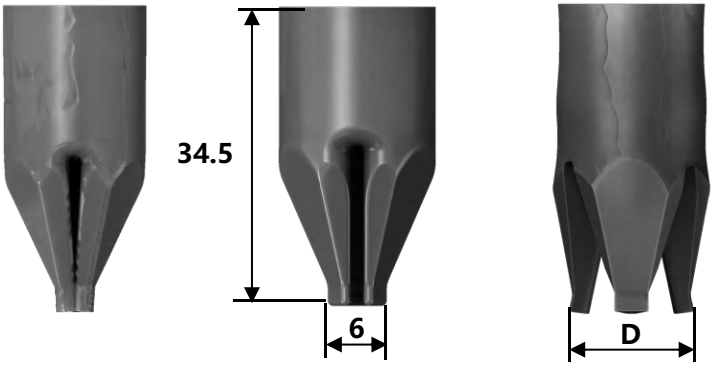
BM-3B18(PN-007)

Soft Beak [B]
B-3B18

- Replaceable small soft gripper







Parameters

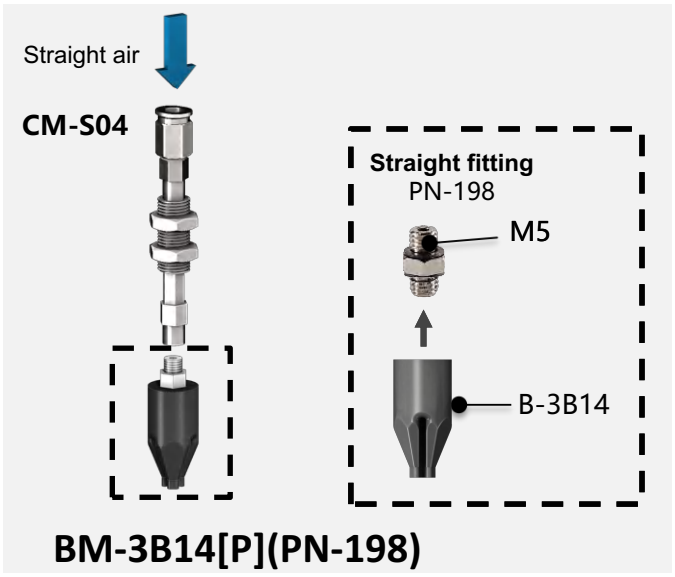
Name:	B-3B18	Fitting diameter:	11mm	Weight	6.4g	Max Load:	15g
Max cycle time:	300 times/min	Precision:	0.05mm	Safe pressure:	-100~50 kpa	Life time:	0.5-1 million times*

* : The life time is closely related to the working pressure P. Pls. always use Rochu controll Unit. The working pressure shall not exceed the safe working pressure range.

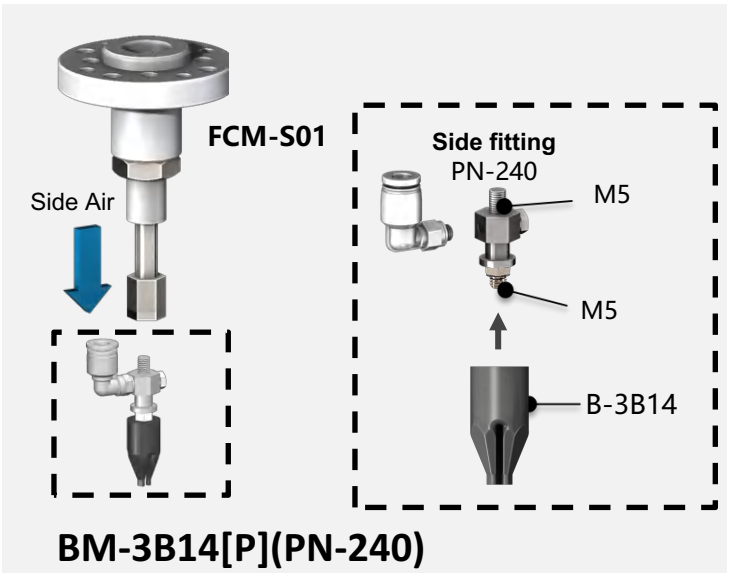
Beak Module [BM]
BM-3B14[P]

scan to watch videos

Features
- Mounting on connection module [CM] or flange connection module [FCM]
- Beak module [BM] contains Beak[B] and matching fittings
- There are two fittings, the straight fitting (PN-198) or the side fitting (PN-240).
- The soft beak[B] can be replaced



BM-3B14[P](PN-198)

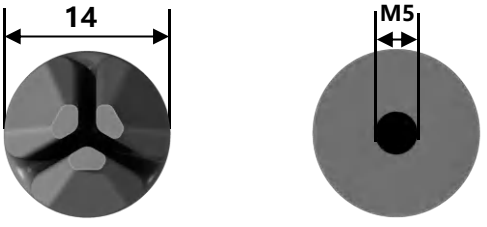


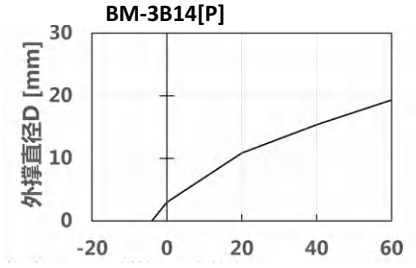
BM-3B14[P](PN-240)

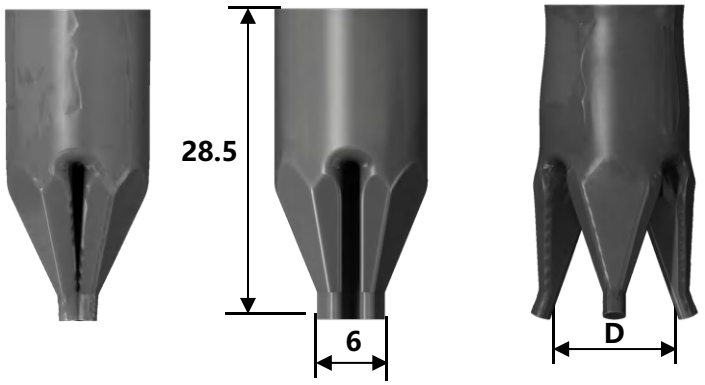
BM

Soft Beak [B]
B-3B14[P]

- Replaceable small soft gripper







Parameters

Name:	B-3B14	Fitting diameter:	M5	Weight	6.1g	Max Load:	10g
Max cycle time:	300 times/min	Precision:	0.05mm	Safe pressure:	-100~45 kpa	Life time:	0.5-1 million times*

* : The life time is closely related to the working pressure P. Pls. always use Rochu controll Unit. The working pressure shall not exceed the safe working pressure range.

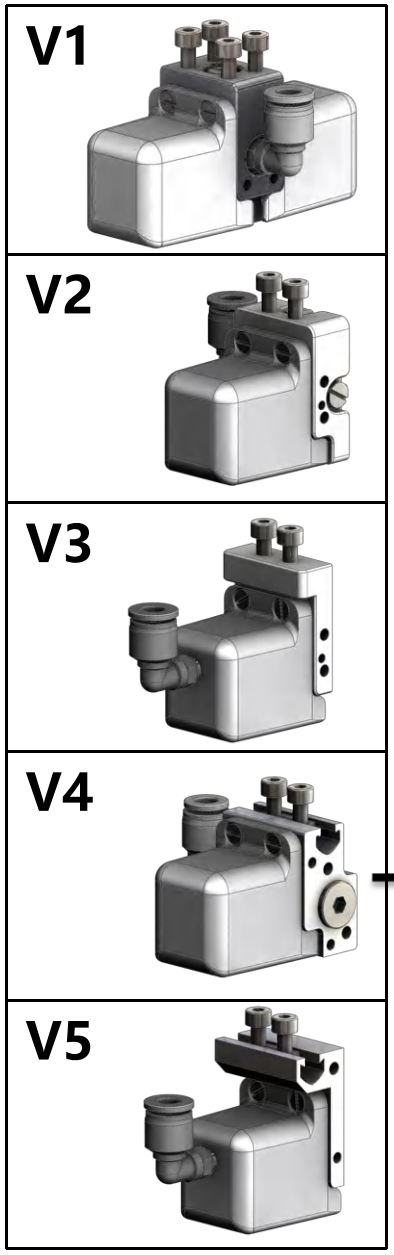
Finger Module

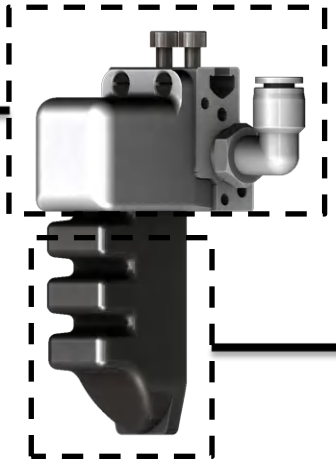
scan to watch videos

Structure of Finger Module [FM]

- Finger Module [FM] is the actuator of Rochu gripper, which is assembled of Finger [F] and Assembly module.
- There are five Assembly modules with different air intake, installation position, combination mode.
- There are 18 size of Fingers [F] with different with different lengths and widths.
- According to the weight and size of the object , choose the right gripping force.
- The gripping force is depends on the finger size, material, working pressure and finger distance. Calculation way see page 53.

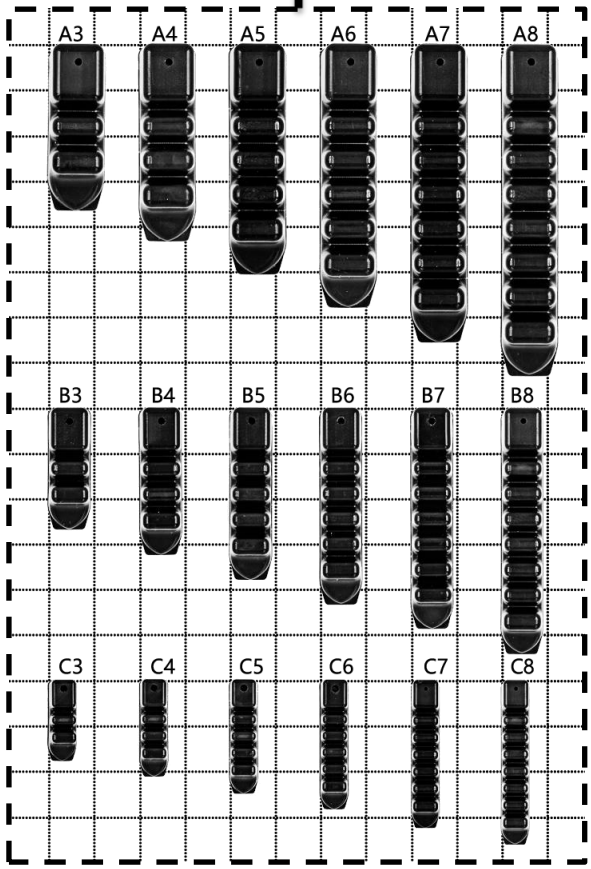
• Assembly module





FM–A4V4/LS1[AS]

• Soft Fingers [F]



FM

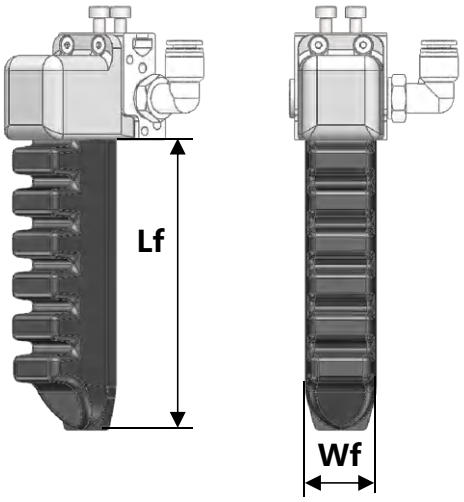
Finger Module

Size of finger module

- According to finger Size,
  A3，A4，A5，A6，A7，A8;
  B3，B4，B5，B6，B7，B8;
  C3，C4，C5，C6，C7，C8,

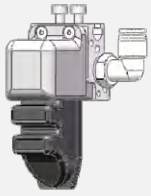
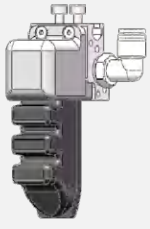
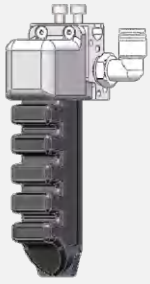
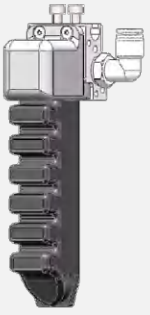
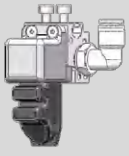
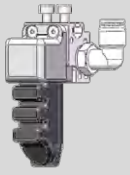
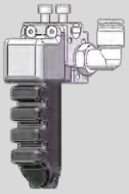
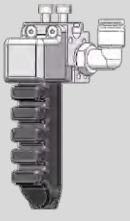
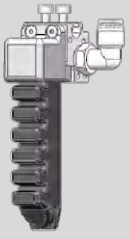
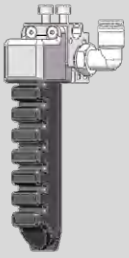
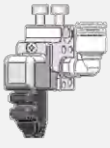
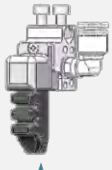
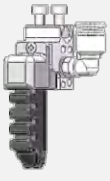
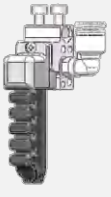
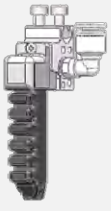
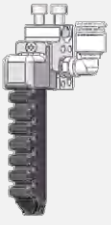
There are also total 18 sizes of finger module.*

- Life time of finger module: 2 to 4 million times **



*: For customized finger, please contact our customer service

**:The finger life time is closely depended on working pressure and surface roughness of the object.. Pls. always use Rochu controll Unit. The working pressure shall not exceed the safe working pressure range.

	3 Segments	4 Segments	5 Segments	6 Segments	7 Segments	8 Segments	Wf [mm]
Finger Size	A3	A4	A5	A6	A7	A8	
Lf[mm]	41	55	69	83	97	111	
A		 ★	★				24
Model	B3	B4	B5	B6	B7	B8	
Lf[mm]	31	41.5	52	62.5	73	83.5	
B			 ★				18
Model	C3	C4	C5	C6	C7	C8	
Lf[mm]	21	28	35	42	49	56	
C		 ★					12

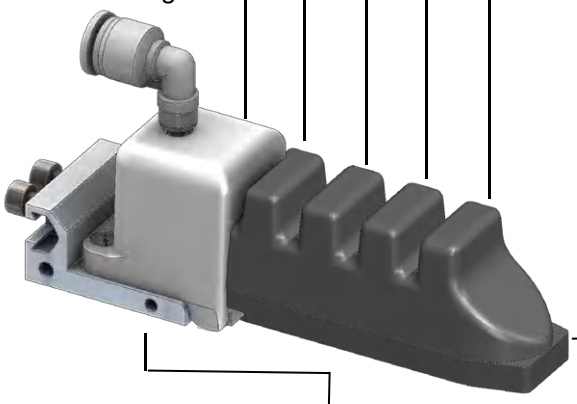
★ : **Major model**

FM

Finger Module

Encoding Method

scan to watch videos



FM - A 5 V5 / LS1 [H]

Finger material

Finger-width

A	Width A
B	Width B
C	Width C
AD	Width AD

Finger length

3	3 Segment
4	4 Segment
…	…
8	8 Segment

Assembly modules

V1	V1
V2	V2
V3	V3
V4	V4
V5	V5

Fingertip

	Normal ★
H	Strong
AS	Anti-static
HAS	Strong Anti-static

	Fingertip & Bottom print	Description	Feature	Pictures		
Standard	**LS1**	**Line contact stripe 1**	Good versatility, wear resistance, suitable for food, metal, plastic and other rough object surface			
Special*	**LF1**	**Line contact Flat 1**	Suitable for dry and smooth surface, soft food. Liquid on the object surface will cause slip			
	FS3	**Flat contact stripe 3**	Suitable for fabrics			
	LS8	**Line contact stripe 8**	wave structure, suitable for sheet metal parts, flat glass, PCB, auto headlights.			
	Pls. ask the customer service for more specials					

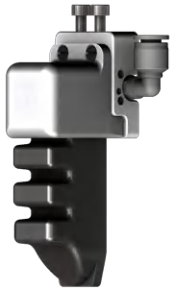
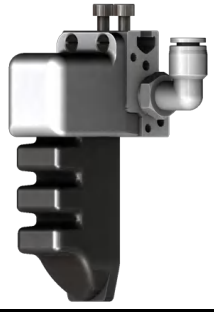
FM

Finger Module

scan to watch videos

Assembly modules

- There are five Assembly modules with different air intake, installation position, combination mode.

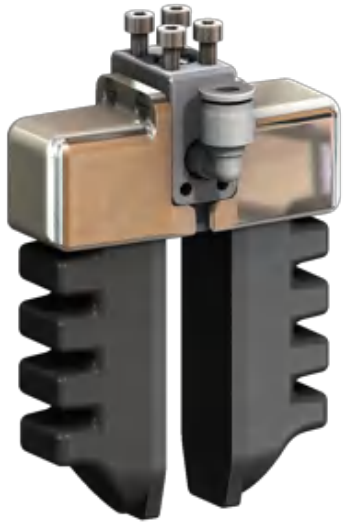
Assembly modules	Picture	Features
V1 Compact two-fingers module		• Features: two fingers combination, compact structure. Finger spacing and mounting Angle are unadjustable, be good at clamping small, light and thin object. • Installation: can be screwed on three sides (optional). • Air intake: Air intake on three sides (optional). • Additional Sensor module is possible
V2 Single-finger Module		• Features : single finger module, compatible with Slide mounting plate [SMP] (page.56), adjustable spacing and Angle. • Installation: can be screwed on four sides (optional). • Air intake: Air intake on three sides (optional). • Additional Sensor module is possible
V3 Single-finger Module		• Features: single finger module, compatible with Slide mounting plate [SMP] (page.56), adjustable spacing and Angle. • Installation: can be screwed on three sides (optional). • Air intake: Air intake on one side (back of finger). • Additional Sensor module is possible.
V4 Series-finger Module		• Features: Series-finger Module, can be used alone or in series . • Only one air intake when more finger module build in series. More fingers in series are good at large and heavy object. • Compatible with Slide mounting plate [SMP] (page.56). The finger module position is adjustable in three dimensions.8 • Air intake: Air intake on left or right sides (optional).
V5 Series-finger Module		• Features: Series-finger Module, can be used alone or in series . • mindest finger distance is only 10mm. Be good at thin and large object. • Compatible with Slide mounting plate [SMP] (page.56). The finger module position is adjustable in three dimensions. • Air intake: single air intake on finger back side.

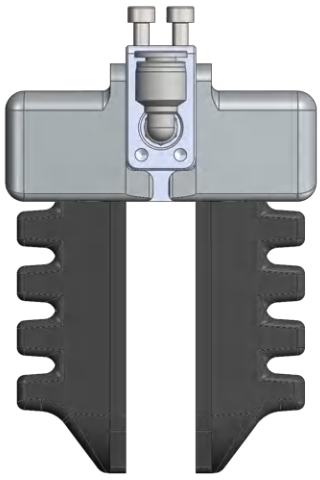
FM

scan to watch videos

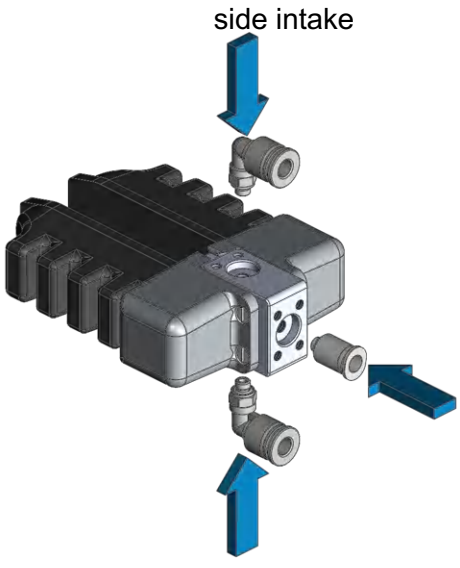
V1 Assembly module: Compact two-fingers module

- Features: two fingers combination, compact structure. Finger spacing and mounting Angle are unadjustable, be good at clamping small, light and thin object.
- Installation: can be screwed on three sides (optional).
- Air intake: Air intake on three sides (optional).
- Additional Sensor module is possible

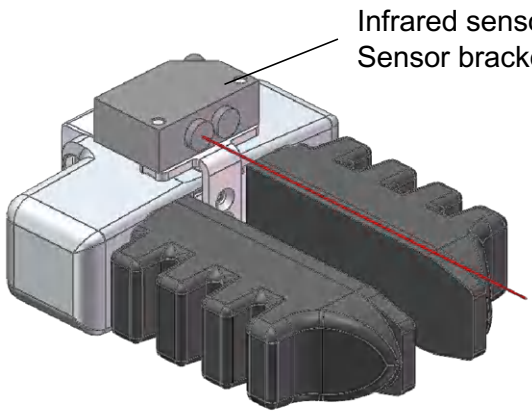




- Air intake on three sides (optional)



- Additional Sensor module

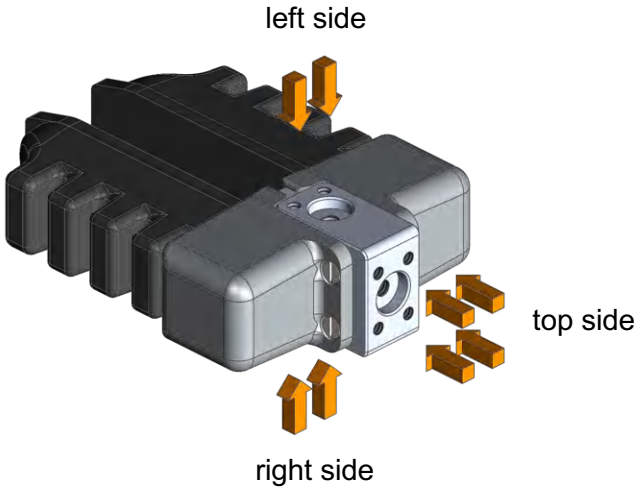


scan to watch videos

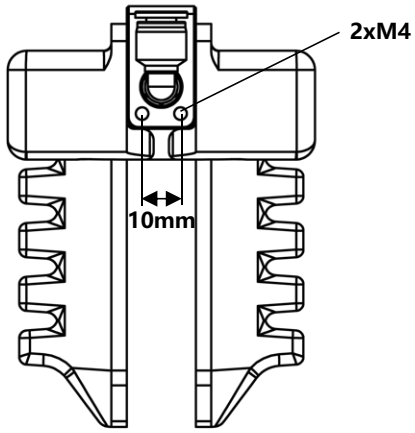
V1 Assembly module: Compact two-fingers module

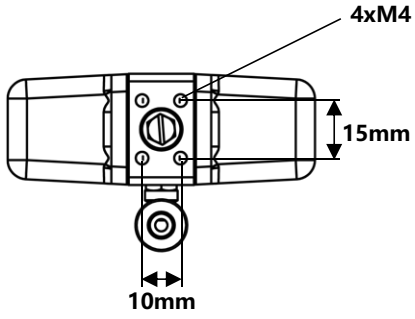
Installation

- can be screwed on three sides (optional).



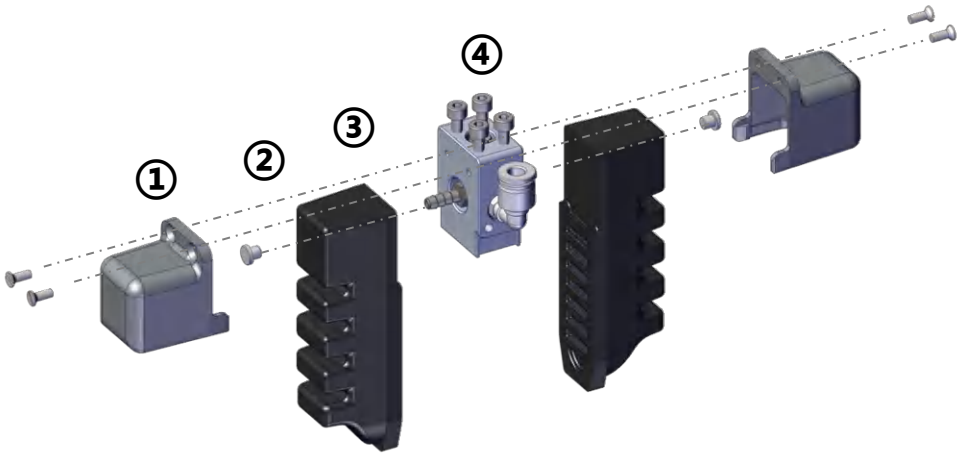
- Drawing





FM

Assembing



Spare part :

① S-AV4

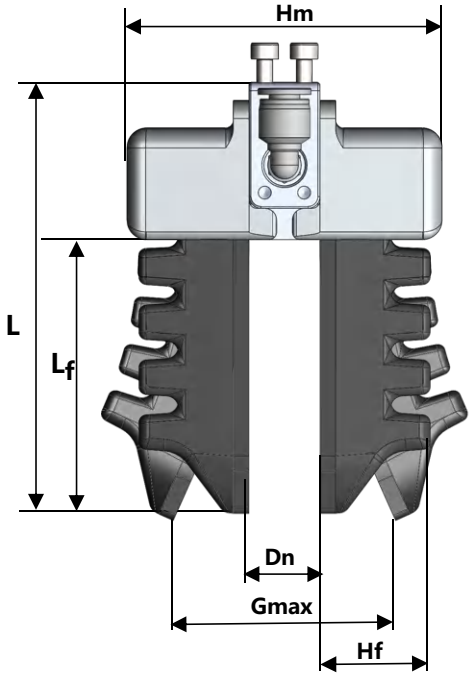
② PN-166

③ F-A5T/LF1

④ MB-AV1

Finger Module

V1 Assembly module: Compact two-fingers module



FM

Finger size	Finger Module	Dn [mm]	* Gmax [mm]		Hm [mm]	Hf [mm]	Lm [mm]	Lf [mm]	Wm [mm]	Wf [mm]	weight [g]	Safe Pressure [kPa]	
			Finger	Hard Finger								Finger	Hard Finger
A3	FM-A3V1	18	34	32	80	28	81	41	29	24	153	120	300
A4	FM-A4V1	18	38	42	80	28	95	55	29	24	167	120	300
A5	FM-A5V1	18	56	50	80	28	109	69	29	24	181	120	300
A6	FM-A6V1	18	84	62	80	28	123	83	29	24	195	120	300
A7	FM-A7V1	18	96	72	80	28	137	97	29	24	210	120	300
A8	FM-A8V1	18	108	82	80	28	151	111	29	24	224	120	300
B3	FM-B3V1	18	38	30	65	21	64	31	23	18	77	120	260
B4	FM-B4V1	18	44	38	65	21	74.5	41.5	23	18	85	120	260
B5	FM-B5V1	18	50	46	65	21	85	52	23	18	94	120	260
B6	FM-B6V1	18	64	52	65	21	95.5	62.5	23	18	102	120	260
B7	FM-B7V1	18	78	60	65	21	106	73	23	18	110	120	260
B8	FM-B8V1	18	92	68	65	21	116.5	83.5	23	18	118	120	260
C3	FM-C3V1	15	25	17	47	14	46	21	21.5	12	42	120	220
C4	FM-C4V1	15	33	21	47	14	53	28	21.5	12	44	120	220
C5	FM-C5V1	15	39	31	47	14	60	35	21.5	12	45	120	220
C6	FM-C6V1	15	55	35	47	14	67	42	21.5	12	47	120	220
C7	FM-C7V1	15	73	41	47	14	74	49	21.5	12	48	120	220
C8	FM-C8V1	15	91	47	47	14	81	56	21.5	12	50	120	220

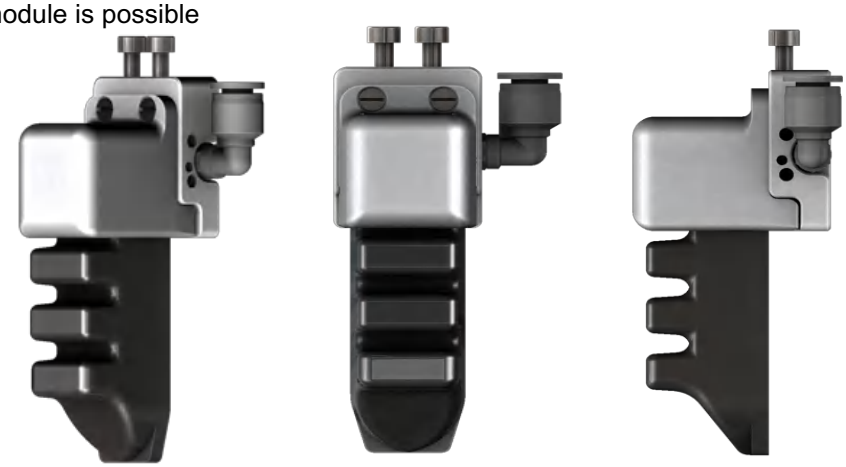
*: G_{max} measured when real working pressure P= -80kPa (vacuum)

Finger Module

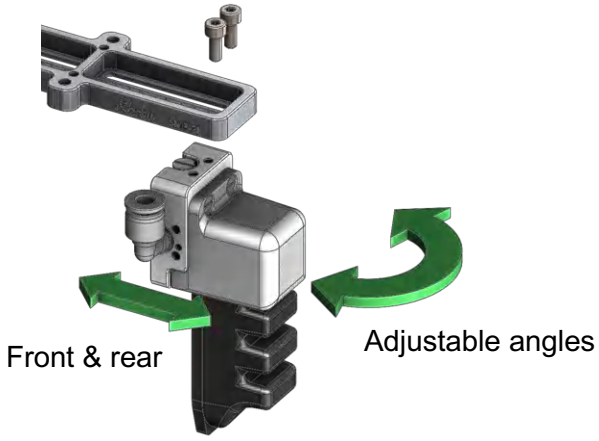
V2 Assembly module--- Single-finger Module

scan to watch videos

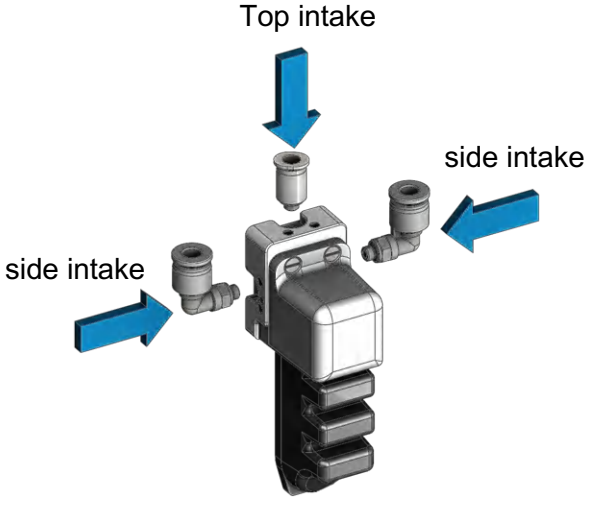
- Features : single finger module, compatible with Slide mounting plate [SMP] (page.56), adjustable spacing and Angle.
- Installation: can be screwed on four sides (optional).
- Air intake: Air intake on three sides (optional).
- Additional Sensor module is possible



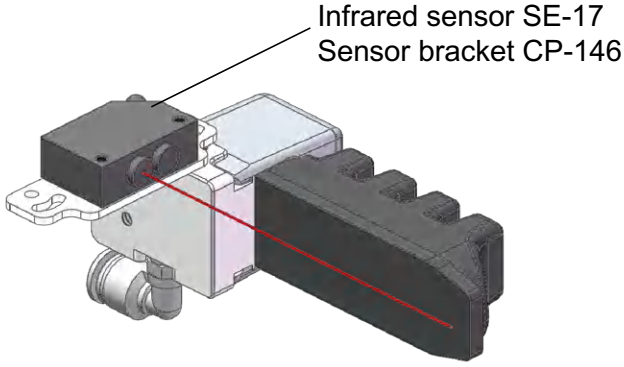
- When mounting with the Slide mounting plate, the front and rear positions and mounting angles are adjustable



- Air intake on three sides (optional).



- Additional Sensor module



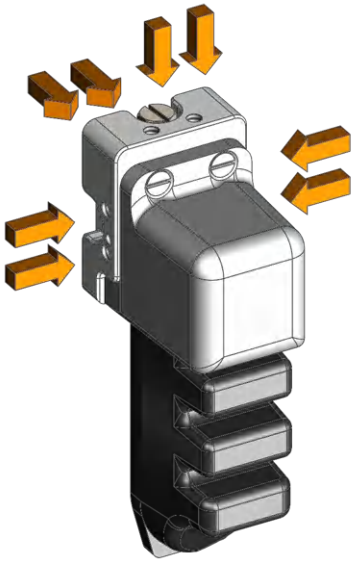
FM

scan to watch videos

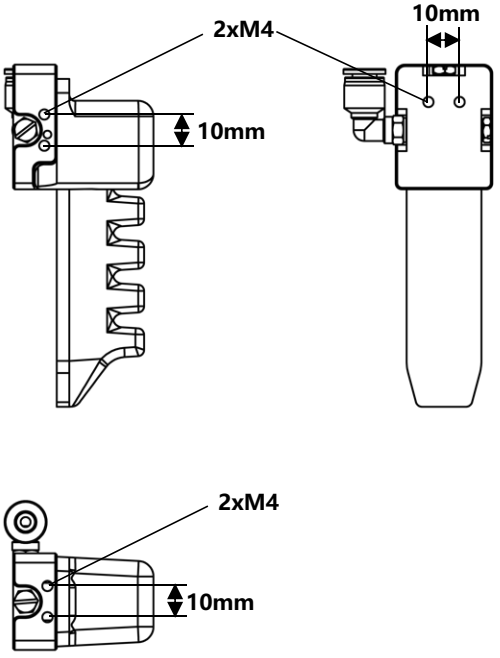
V2 Assembly module--- Single-finger Module

Installation

- can be screwed on four sides (optional).

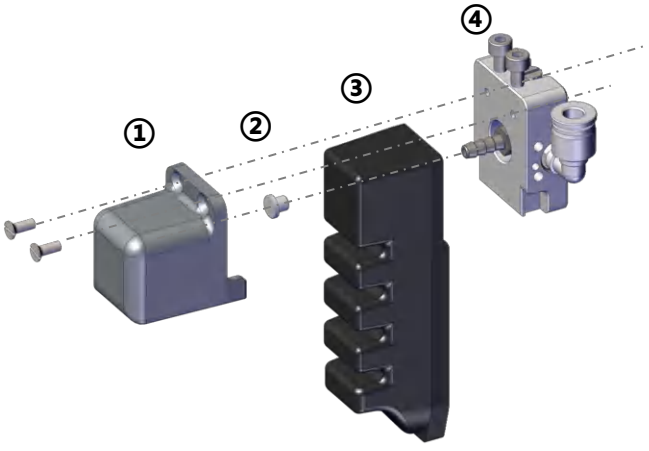


- Drawing



FM

Assembing



Spare Part :

① S-AV4

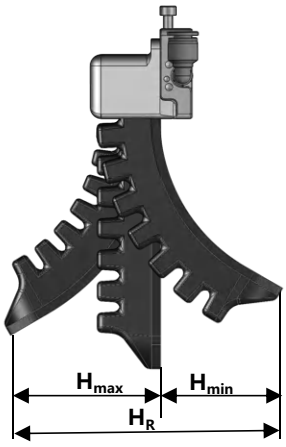
② PN-166

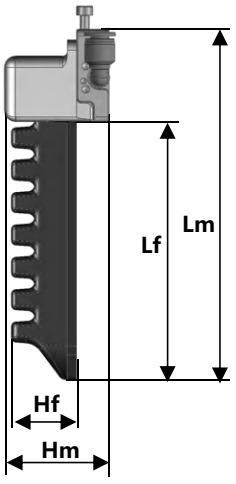
③ F-A5T/LS1

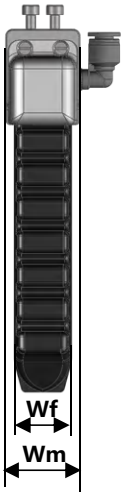
④ MB-AV2

Finger Module

V2 Assembly module--- Single-finger Module







Finger size	Finger Module	HR [mm]	* Hmax [mm]		**Hmin [mm]	Hm [mm]	Hf [mm]	Lm [mm]	Lf [mm]	Wm [mm]	Wf [mm]	weight [g]	Safe Pressure [kPa]	
			Finger	Hard Finger									Finger	Hard Finger
A3	FM-A3V2	16.5	8	7	8.5	45	28	82	41	31	24	92	120	300
A4	FM-A4V2	27	10	12	17	45	28	96	55	31	24	99	120	300
A5	FM-A5V2	43.5	19	16	24.5	45	28	110	69	31	24	106	120	300
A6	FM-A6V2	72	33	22	39	45	28	124	83	31	24	113	120	300
A7	FM-A7V2	90	39	27	51	45	28	138	97	31	24	120	120	300
A8	FM-A8V2	109	45	32	64	45	28	152	111	31	24	127	120	300
B3	FM-B3V2	19	10	6	9	37.5	21	65	31	25	18	52	120	260
B4	FM-B4V2	29	13	10	16	37.5	21	76	41.5	25	18	56	120	260
B5	FM-B5V2	40	16	14	24	37.5	21	86	52	25	18	60	120	260
B6	FM-B6V2	53	23	17	30	37.5	21	97	62.5	25	18	64	120	260
B7	FM-B7V2	75	30	21	45	37.5	21	107	73	25	18	68	120	260
B8	FM-B8V2	98	37	25	61	37.5	21	118	83.5	25	18	72	120	260
C3	FM-C3V2	10.5	5	1	5.5	30	14	44	21	18	12	27	120	220
C4	FM-C4V2	20	9	3	11	30	14	51	28	18	12	27	120	220
C5	FM-C5V2	27	12	8	15	30	14	58	35	18	12	28	120	220
C6	FM-C6V2	42	20	10	22	30	14	65	42	18	12	29	120	220
C7	FM-C7V2	63	29	13	34	30	14	72	49	18	12	30	120	220
C8	FM-C8V2	80	38	16	42	30	14	79	56	18	12	31	120	220

* : H_{max} measured when real working pressure P= -80kPa (vacuum).

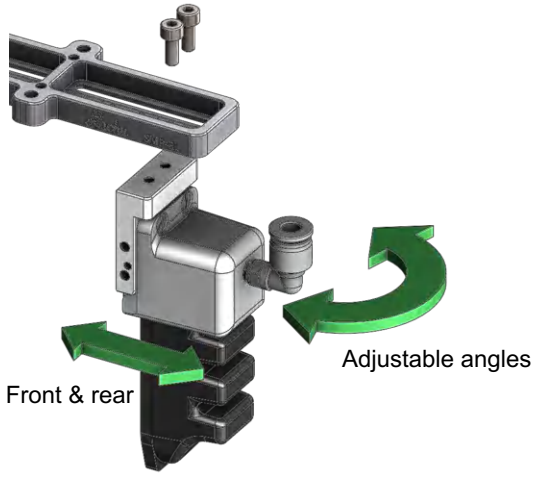
** : finger material = Normal , H_{min} measured when real working pressure P= 100kPa;finger material = hard finger,H_{min} measured when real working pressure P= 250kPa.

scan to watch videos

V3 Assembly module--- Single-finger Module

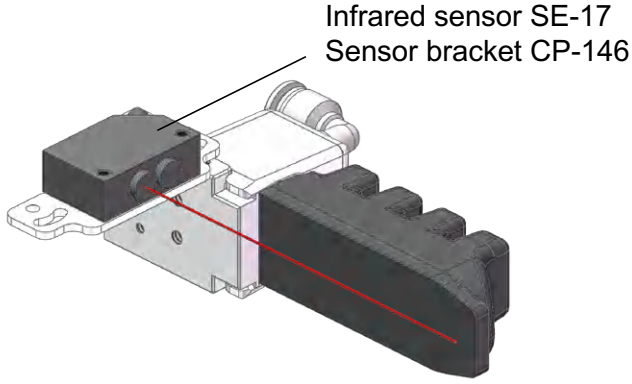
- Features: single finger module, compatible with Slide mounting plate [SMP] (page.56), adjustable spacing and Angle.
- Installation: can be screwed on three sides (optional).
- Air intake: Air intake on one side (back of finger).
- Additional Sensor module is possible.

- When mounting with the Slide mounting plate, the front and rear positions and mounting angles are adjustable



- Air intake on one side (back of finger).

- Additional Sensor module

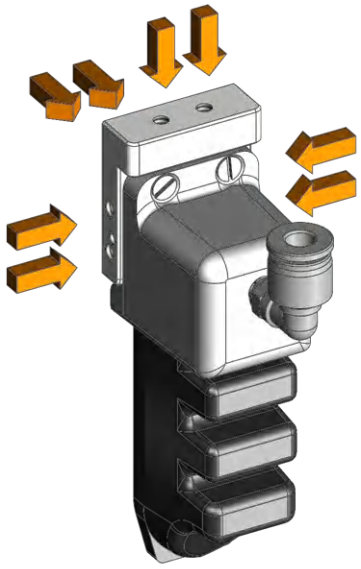


scan to watch videos

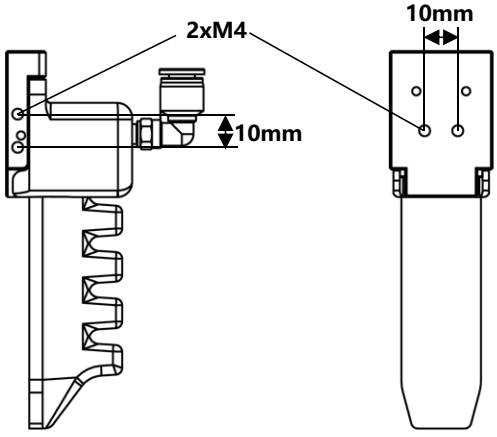
V3 Assembly module--- Single-finger Module

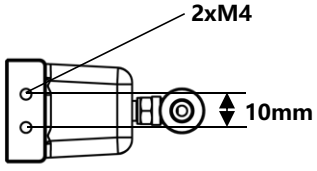
Installation

- can be screwed on four sides (optional).



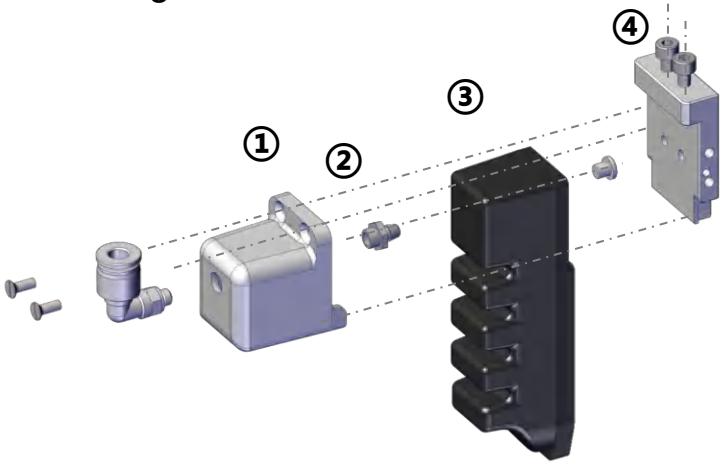
- Drawing





FM

Assembing



Spare Part :

① S-AV5

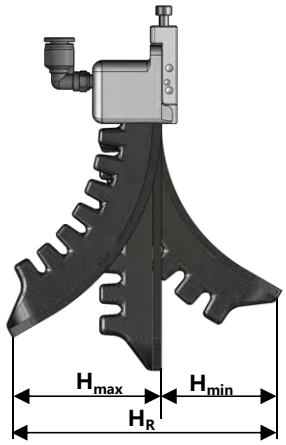
② PN-166

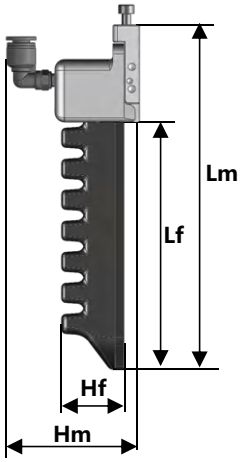
③ F-A5T/LS1

④ MB-AV3

Finger Module

V3 Assembly module--- Single-finger Module





FM

Finger size	Finger Module	HR [mm]	* Hmax [mm]		**Hmin [mm]	Hm [mm]	Hf [mm]	Lm [mm]	Lf [mm]	Wm [mm]	Wf [mm]	weight [g]	Safe Pressure [kPa]	
			Finger	Hard Finger									Finger	Hard Finger
A3	FM-A3V3	16.5	8	7	8.5	60	28	85.5	41	31	24	77	120	300
A4	FM-A4V3	27	10	12	17	60	28	99.5	55	31	24	84	120	300
A5	FM-A5V3	43.5	19	16	24.5	60	28	113.5	69	31	24	91	120	300
A6	FM-A6V3	72	33	22	39	60	28	127.5	83	31	24	98	120	300
A7	FM-A7V3	90	39	27	51	60	28	141.5	97	31	24	105	120	300
A8	FM-A8V3	109	45	32	64	60	28	155.5	111	31	24	112	120	300
B3	FM-B3V3	19	10	6	9	53	21	68.5	31	25	18	43	120	260
B4	FM-B4V3	29	13	10	16	53	21	79.5	41.5	25	18	47	120	260
B5	FM-B5V3	40	16	14	24	53	21	89.5	52	25	18	51	120	260
B6	FM-B6V3	53	23	17	30	53	21	100.5	62.5	25	18	55	120	260
B7	FM-B7V3	75	30	21	45	53	21	110.5	73	25	18	59	120	260
B8	FM-B8V3	98	37	25	61	53	21	121.5	83.5	25	18	63	120	260
C3	FM-C3V3	10.5	5	1	5.5	46	14	51	21	18	12	24	120	220
C4	FM-C4V3	20	9	3	11	46	14	58	28	18	12	25	120	220
C5	FM-C5V3	27	12	8	15	46	14	65	35	18	12	26	120	220
C6	FM-C6V3	42	20	10	22	46	14	72	42	18	12	26	120	220
C7	FM-C7V3	63	29	13	34	46	14	79	49	18	12	27	120	220
C8	FM-C8V3	80	38	16	42	46	14	86	56	18	12	28	120	220

* : H_{max} measured when real working pressure P= -80kPa (vacuum).

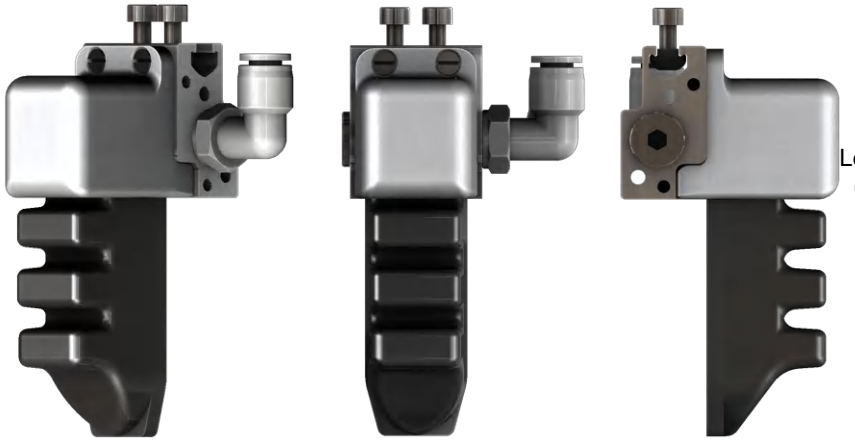
** : finger material = Normal , H_{min} measured when real working pressure P= 100kPa;finger material = hard finger,H_{min} measured when real working pressure P= 250kPa.

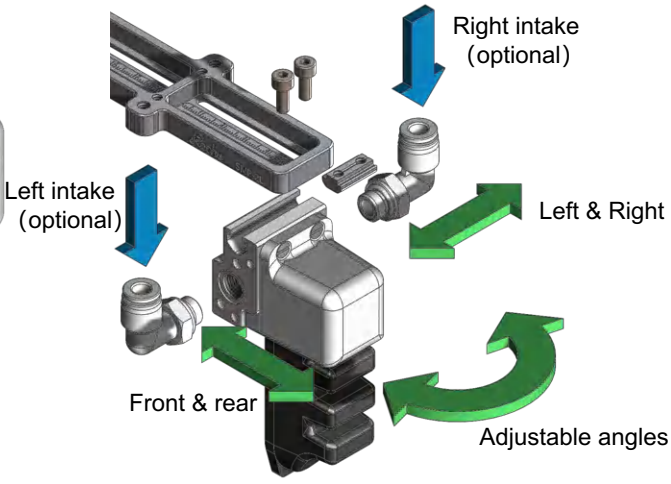
Finger Module

scan to watch videos

V4 Assembly module-- Series-finger Module

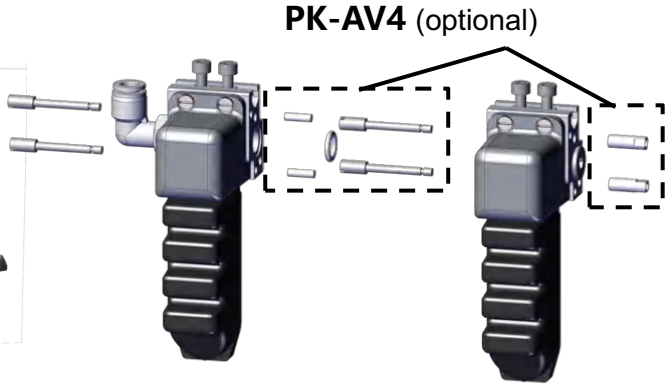
- Features: Series-finger Module, can be used alone or in series .
- Only one air intake when more finger module build in series. More fingers in series are good at large and heavy object.
- Compatible with Slide mounting plate [SMP] (page.56). The finger module position is adjustable in three dimensions
- Air intake: Air intake on left or right sides (optional).

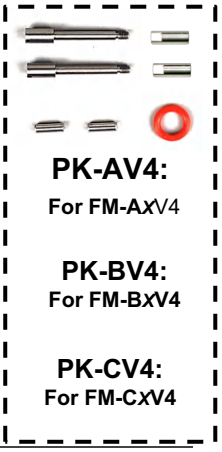




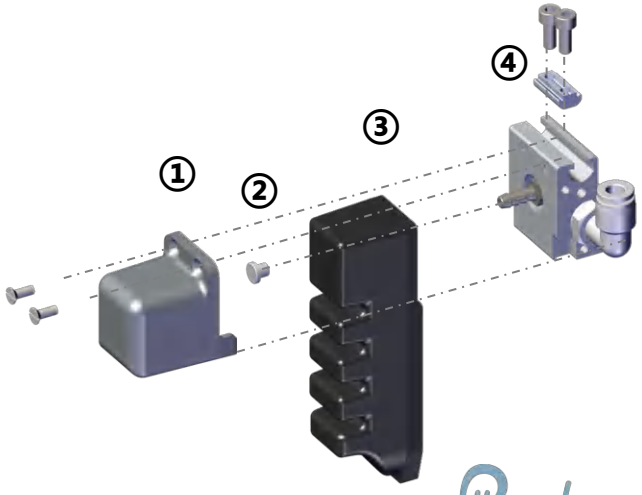
Series combination:

- More finger modules are combined in series to increase the Gripping force
- Only one air intake needed for confluence of all finger modules in series.
- Robust splicing with screw bolt in finger modules.
- Note: Two parts-kit [PK] are needed to screw two finger module together, which contains screw bolts, nuts, sealing gaskets and pins. The [PK] needs to be ordered separately.





Assembing



Spare Parts:

① **S-AV4**

② **PN-166**

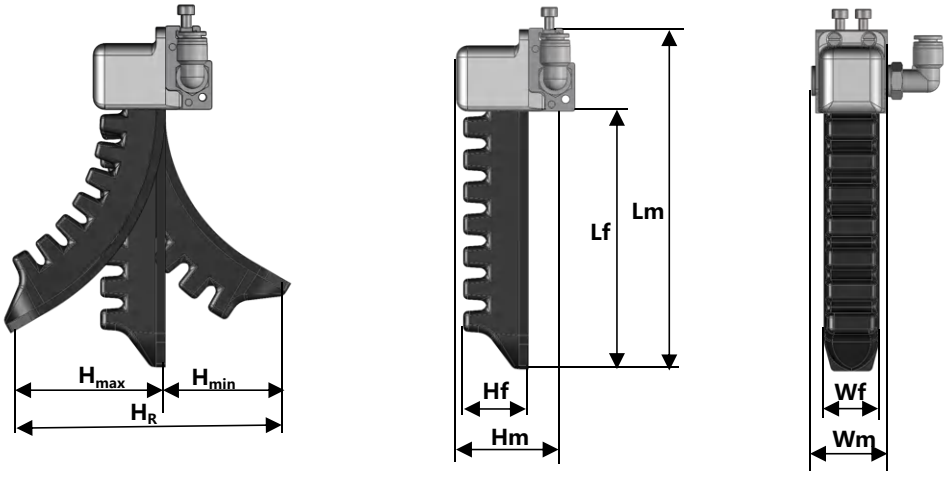
③ **F-A5T/LS1**

④ **TN-03**

FM

Finger Module

V4 Assembly module-- Series-finger Module



FM

Finger size	Finger Module	HR [mm]	* Hmax [mm]		**Hmin [mm]	Hm [mm]	Hf [mm]	Lm [mm]	Lf [mm]	Wm [mm]	Wf [mm]	weight [g]	Safe Pressure [kPa]	
			Finger	Hard Finger									Finger	Hard Finger
A3	FM-A3V4	16.5	8	7	8.5	51	28	78	41	31	24	97	120	300
A4	FM-A4V4	27	10	12	17	51	28	92	55	31	24	104	120	300
A5	FM-A5V4	43.5	19	16	24.5	51	28	106	69	31	24	111	120	300
A6	FM-A6V4	72	33	22	39	51	28	120	83	31	24	119	120	300
A7	FM-A7V4	90	39	27	51	51	28	134	97	31	24	126	120	300
A8	FM-A8V4	109	45	32	64	51	28	148	111	31	24	133	120	300
B3	FM-B3V4	19	10	6	9	45	21	61	31	25	18	61	120	260
B4	FM-B4V4	29	13	10	16	45	21	72	41.5	25	18	65	120	260
B5	FM-B5V4	40	16	14	24	45	21	82	52	25	18	69	120	260
B6	FM-B6V4	53	23	17	30	45	21	93	62.5	25	18	73	120	260
B7	FM-B7V4	75	30	21	45	45	21	103	73	25	18	77	120	260
B8	FM-B8V4	98	37	25	61	45	21	114	83.5	25	18	81	120	260
C3	FM-C3V4	10.5	5	1	5.5	35	14	50	21	18	12	35	120	220
C4	FM-C4V4	20	9	3	11	35	14	57	28	18	12	36	120	220
C5	FM-C5V4	27	12	8	15	35	14	64	35	18	12	37	120	220
C6	FM-C6V4	42	20	10	22	35	14	71	42	18	12	38	120	220
C7	FM-C7V4	63	29	13	34	35	14	78	49	18	12	38	120	220
C8	FM-C8V4	80	38	16	42	35	14	85	56	18	12	39	120	220

* : H_{max} measured when real working pressure P= -80kPa (vacuum).

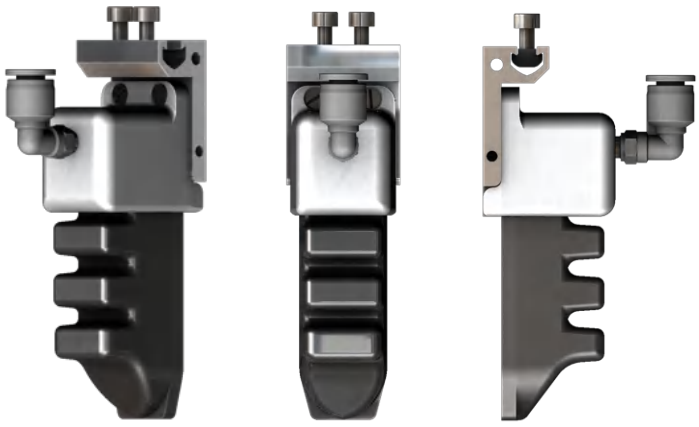
** : finger material = Normal , H_{min} measured when real working pressure P= 100kPa;finger material = hard finger,H_{min} measured when real working pressure P= 250kPa.

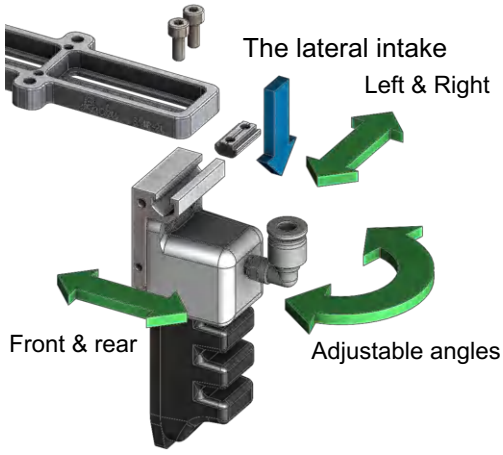
Finger Module

V5 Assembly module-- Series-finger Module

scan to watch videos

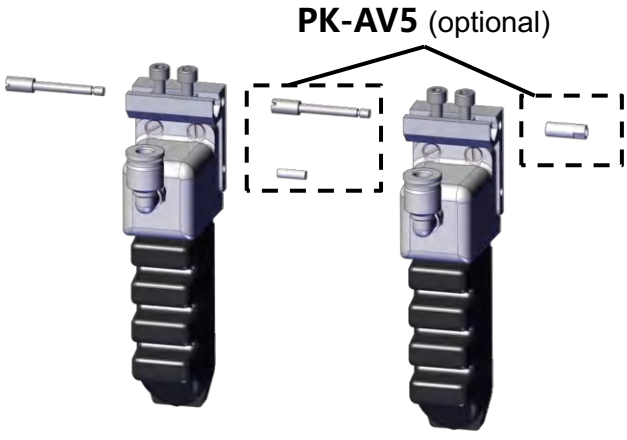
- Features: Series-finger Module, can be used alone or in series .
- mindest finger distance is only 10mm. Be good at thin and large object.
- Compatible with Slide mounting plate [SMP] (page.56). The finger module position is adjustable in three dimensions.
- Air intake: single air intake on finger back side.





Series combination:

- More finger modules are combined in series to increase the Gripping force
- Robust splicing with screw bolt in finger modules.
- Note: Two parts-kit [PK] are needed to screw two finger module together, which contains screw bolts, nuts, sealing gaskets and pins. The [PK] needs to be ordered separately.

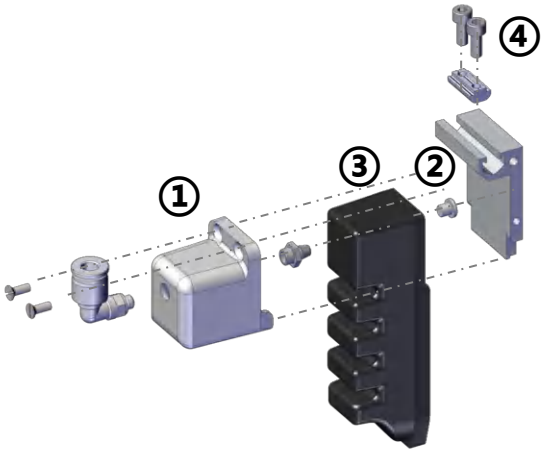


PK-AV5:
For FM-A*x*V5

PK-BV5:
For FM-B*x*V5

PK-CV5:
For FM-C*x*V5

Assembing



Spare Part:

① S-AV5

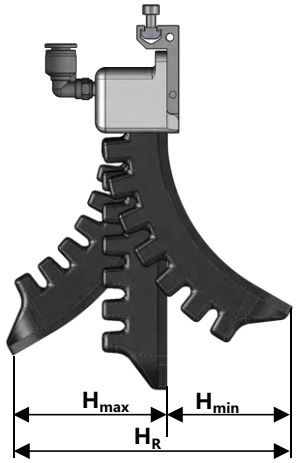
② PN-166

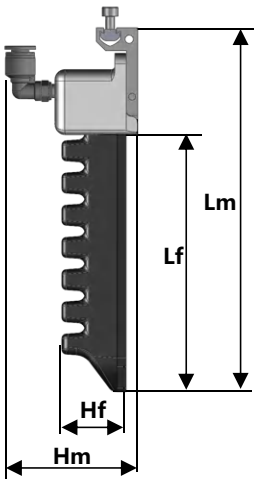
③ F-A5T/LF1

④ TN-03

Finger Module

V5 Assembly module-- Series-finger Module





FM

Finger size	Finger Module	HR [mm]	* Hmax [mm]		**Hmin [mm]	Hm [mm]	Hf [mm]	Lm [mm]	Lf [mm]	Wm [mm]	Wf [mm]	weight [g]	Safe Pressure [kPa]	
			Finger	Hard Finger									Finger	Hard Finger
A3	FM-A3V5	16.5	8	7	8.5	58	28	88	41	31	24	76	120	300
A4	FM-A4V5	27	10	12	17	58	28	102	55	31	24	83	120	300
A5	FM-A5V5	43.5	19	16	24.5	58	28	116	69	31	24	90	120	300
A6	FM-A6V5	72	33	22	39	58	28	130	83	31	24	97	120	300
A7	FM-A7V5	90	39	27	51	58	28	144	97	31	24	104	120	300
A8	FM-A8V5	109	45	32	64	58	28	158	111	31	24	111	120	300
B3	FM-B3V5	19	10	6	9	51	21	71	31	25	18	44	120	260
B4	FM-B4V5	29	13	10	16	51	21	82	41.5	25	18	48	120	260
B5	FM-B5V5	40	16	14	24	51	21	92	52	25	18	52	120	260
B6	FM-B6V5	53	23	17	30	51	21	103	62.5	25	18	56	120	260
B7	FM-B7V5	75	30	21	45	51	21	113	73	25	18	60	120	260
B8	FM-B8V5	98	37	25	61	51	21	124	83.5	25	18	64	120	260
C3	FM-C3V5	10.5	5	1	5.5	44	14	53	21	18	12	28	120	220
C4	FM-C4V5	20	9	3	11	44	14	60	28	18	12	28	120	220
C5	FM-C5V5	27	12	8	15	44	14	67	35	18	12	29	120	220
C6	FM-C6V5	42	20	10	22	44	14	74	42	18	12	30	120	220
C7	FM-C7V5	63	29	13	34	44	14	81	49	18	12	31	120	220
C8	FM-C8V5	80	38	16	42	44	14	88	56	18	12	32	120	220

* : H_{max} measured when real working pressure P= -80kPa (vacuum).

** : finger material = Normal , H_{min} measured when real working pressure P= 100kPa;finger material = hard finger,H_{min} measured when real working pressure P= 250kPa.

Finger Module

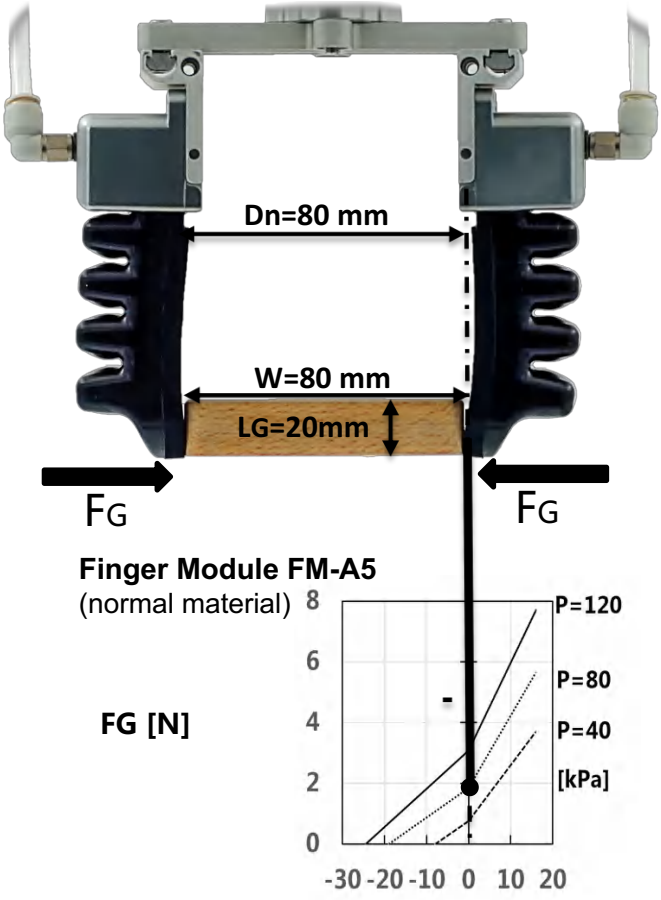
scan to watch videos

How to calculate the gripping force of Finger Module?

When the soft finger be pressured , it bends inward and create a horizontal Gripping force **FG** on the object. The Gripping force is related to the object shape, finger size, contact area, finger distance **Dn** (page.57) and working pressure **P**.

Example: Two FM-A5V5 finger modules(normal material) grasp the square object. The width of the object W=80mm, and the covering length of the fingertip LG=20mm:

Working condition 1:
Dn=80 [mm]
P=80 [kPa]



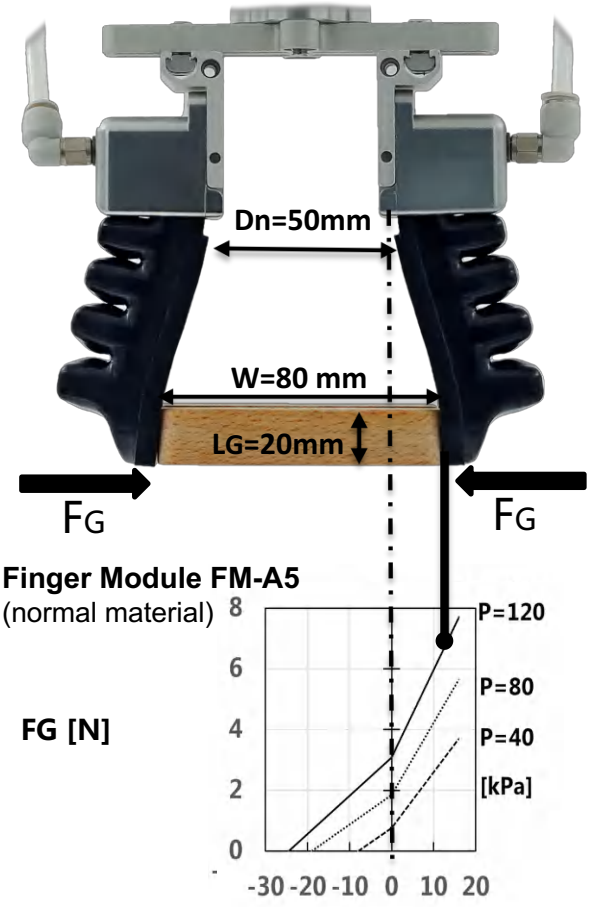
Finger Module FM-A5
(normal material)

Elastic deformation T [mm]

T= (W-Dn) /2=0 [mm]

FG=1.85 [N]

Working condition 2:
Dn= 50[mm]
P=120 [kPa]



Finger Module FM-A5
(normal material)

Elastic deformation T [mm]

By W>Dn,
T= (W-Dn) /2=15 [mm]

FG=7.3 [N]

1. Higher working pressure P, higher Gripping force FG.
2. Shorter finger distance Dn, higher Gripping force FG.
3. Bigger finger size, higher Gripping force FG.
4. The strong material finger can hold higher air pressure and has a stronger force than the normal material finger.
5. Exceed the safe working pressure will cause irreversible damage to the soft finger and shorter life time, while shorter Dn may increase abrasion of the finger bottom.
6. More fingers in series (Page. 37,39) can also improve the overall Gripping force.
7. Beside the Gripping force FG, the real handling load of the gripper is also related to the shape of the object, friction coefficient, finger bottom print and machine speed, etc.

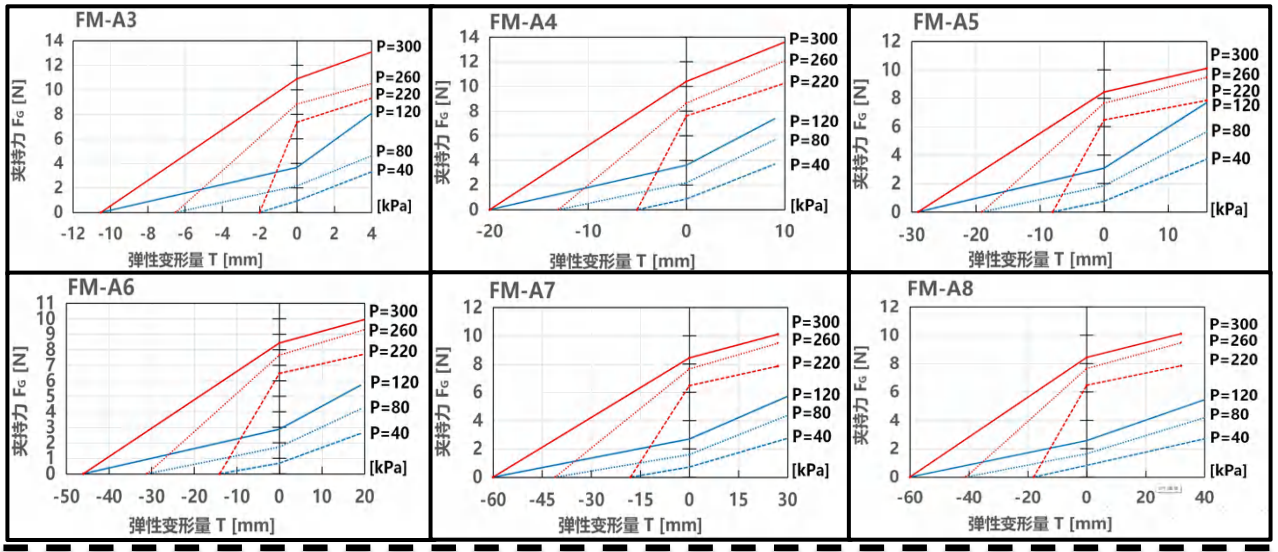
Finger Module

Finger Module Gripping force diagram (Hard material)

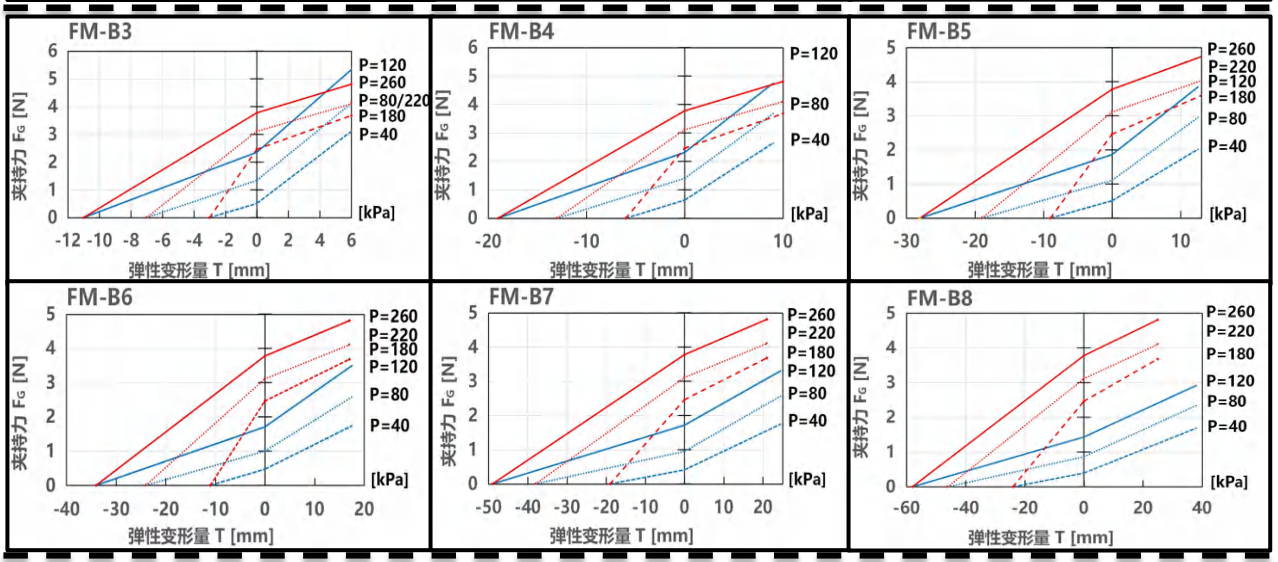
The values in the diagram are determined under the following conditions:

- Finger material: Hard, fingertip & bottom print： LS1 (page.51)
- Square object
- Only the fingertips touch the object. By finger size A, the fingertip touch length is LG=20mm, by finger size B LG=15mm , and by finger size C LG=10mm.
- The following data are for reference only, and the values will vary under other working conditions

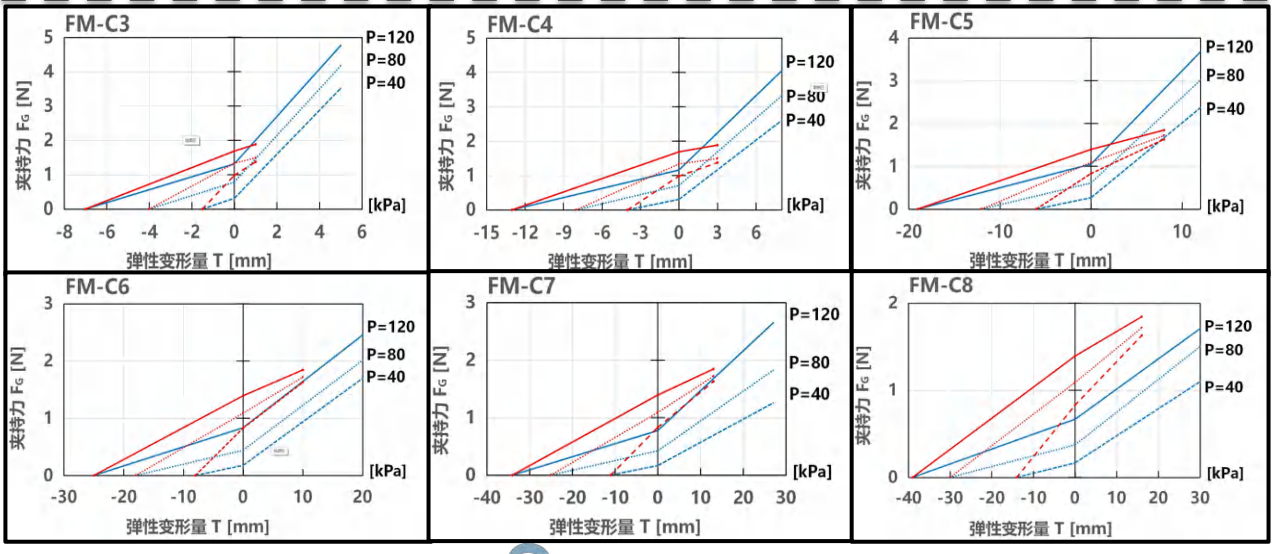
Hard Finger A3- A8



Hard Finger B3- B8



Hard Finger C3- C8



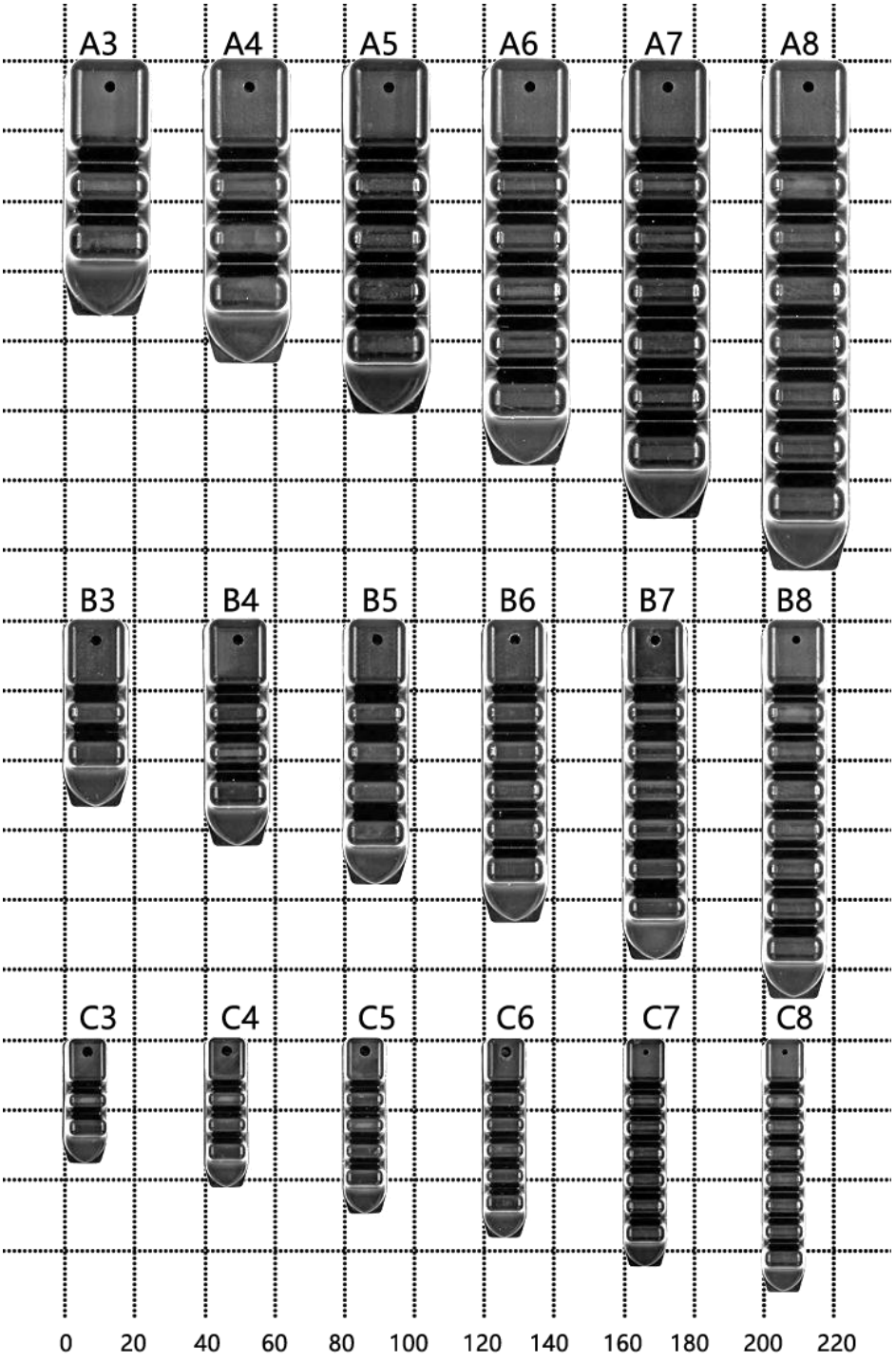
FM

Rochu Soft Finger

scan to watch videos

- **Rochu Finger [F]** is a finger module that can be replaced independently.
- There are also total 18 sizes of finger (A3，A4，A5，A6，A7，A8; B3，B4，B5，B6，B7，B8; C3，C4，C5，C6，C7，C8).
- With the same working pressure, the wider fingers have higher gripping force, and the shorter fingers have better positioning accuracy and stability.
- For customized finger size, please contact our customer service

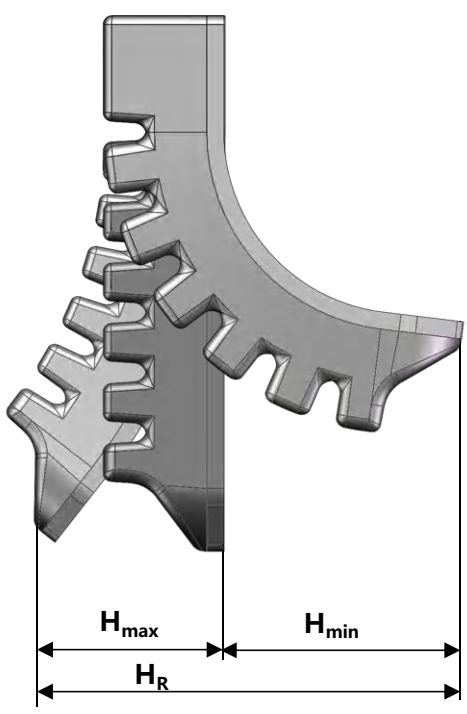
Finger sizes

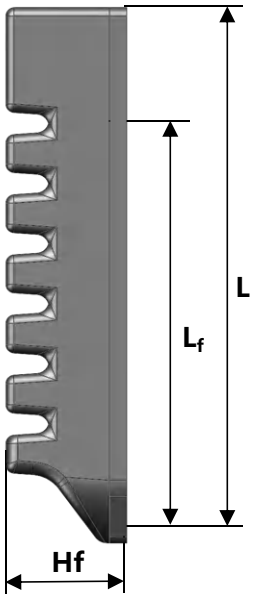


F

Rochu Soft Finger

Parameter





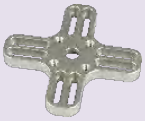
Finger size	HR	*Hmax [mm]		**Hmin	Hf	Lf	L	Wf	weight [g]	Safe Pressure[kPa]	
	[mm]	Finger	Hard Finger	[mm]	[mm]	[mm]	[mm]	[mm]		Finger	Hard Finger
F-A3	16.5	8	7	8.5	28	41	69	24	33	120	300
F-A4	27	10	12	17	28	55	83	24	40	120	300
F-A5	43.5	19	16	24.5	28	69	97	24	47	120	300
F-A6	72	33	22	39	28	83	111	24	55	120	300
F-A7	90	39	27	51	28	97	125	24	62	120	300
F-A8	109	45	32	64	28	111	139	24	69	120	300
F-B3	19	10	6	9	21	31	52	18	11	120	260
F-B4	29	13	10	16	21	42	62	18	16	120	260
F-B5	40	16	14	24	21	52	73	18	20	120	260
F-B6	53	23	17	30	21	63	83	18	24	120	260
F-B7	75	30	21	45	21	73	94	18	28	120	260
F-B8	98	37	25	61	21	84	104	18	32	120	260
F-C3	10.5	5	1	5.5	14	21	34	12	4	120	220
F-C4	20	9	3	11	14	28	41	12	5	120	220
F-C5	27	12	8	15	14	35	48	12	6	120	220
F-C6	42	20	10	22	14	42	55	12	7	120	220
F-C7	63	29	13	34	14	49	62	12	7	120	220
F-C8	80	38	16	42	14	56	69	12	8	120	220

* : H_{max} measured when real working pressure P= -80kPa (vacuum).

** : finger material = Normal , H_{min} measured when real working pressure P= 100kPa;finger material = hard finger,H_{min} measured when real working pressure P= 250kPa.

3

CM
Connection module



SMP *page. 56*
Slide Mounting Plate

CM *page. 58*
Connection Module

FCM *page. 59*
Flange Connection Module

QCM *page. 62*
Quick changer Module

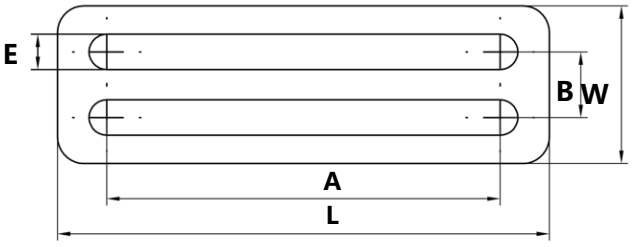
Slide Mounting Plate

scan to watch videos

SMP

Features

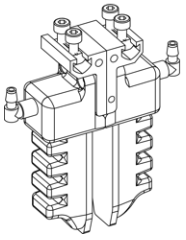
- Length SMP-01 / SMP-02 / SMP-03
- Assembling finger module **[FM]** and aluminum profile **[P]**
- Accessory package (PK-SMP01) included



Accessory package
PK-SMP01

2 x SF-081 (M4)

2 x SF-076 (M4x14)

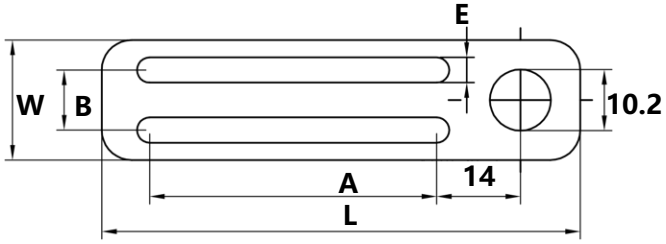


Model	A [mm]	B [mm]	E [mm]	L [mm]	W [mm]	Thickness [mm]	Weight [g]
SMP-01	50	10	4.2	65	20	6	10.8
SMP-02	75	10	4.2	90	20	6	16.1
SMP-03	100	10	4.2	115	20	6	18.5

SMP

Features

- Length SMP-13/ SMP-14 / SMP-15/ SMP-16
- Assembling **Connection module [CM]** and aluminum profile **[P]**
- Accessory package (PK-SMP01) included



Accessory package
PK-SMP01

2 x SF-081 (M4)

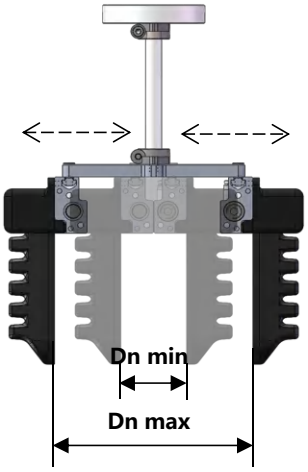
2 x SF-076 (M4x14)

Model	A [mm]	B [mm]	E [mm]	L [mm]	W [mm]	Thickness [mm]	Weight [g]
SMP-13	20	10	4.2	50	20	6	10.7
SMP-14	48	10	4.2	80	20	6	16.2
SMP-15	80	10	4.2	110	20	6	21.6
SMP-16	110	10	4.2	140	20	6	27.1

Slide Mounting Plate

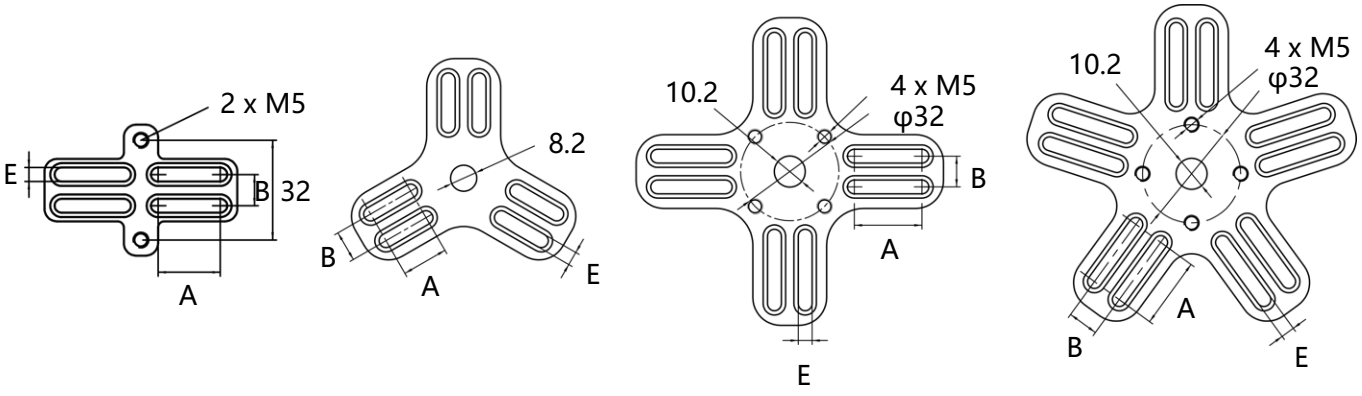
SMP- Multidirection

scan to watch videos



Features

- Different styles according to shape and slot length
- Assembling finger module [FM] and flange connection module [FCM]



SMP-2S

SMP-3S

SMP-4S

SMP-5S

SMP-2L

SMP-3L

SMP-4L

SMP-5L

Model	Slot Length A [mm]	Slot space B [mm]	Slot width E [mm]	Thickness [mm]	AP fingertip distance Dn [mm] Dnmin~Dnmax		**Weight [g]**
					FM V2,V4	FM V3,V5	
SMP-2S	20	10	4.2	8	40~69	10~37	18.9
SMP-2L	45	10	4.2	8	40~119	10~87	25.4
SMP-3S	15	10	4.2	10	58~82	28~50	42.4
SMP-3L	50	10	4.2	10	58~152	28~120	73.9
SMP-4S	22	10	4.2	10	72~104	41~72	52.3
SMP-4L	67	10	4.2	10	72~194	41~162	86.2
SMP-5S	23	10	4.2	10	91~112	53~80	94.8
SMP-5L	78	10	4.2	10	91~222	53~109	179.7

*: Maximum clamping range of gripper combination Gmax=Dnmax+2Hmax, Hmax Please refer to the finger module parameters page.

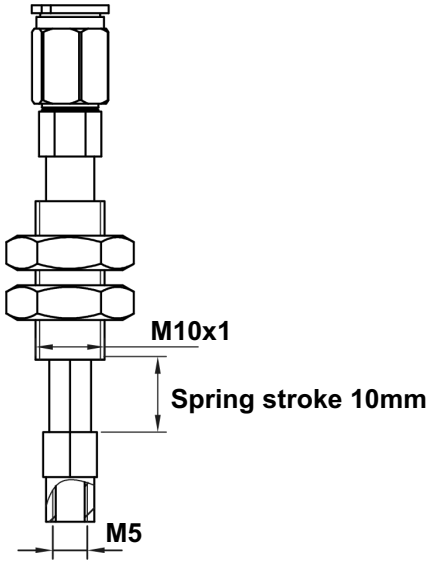
CM

CM - spring connection module of beak module

Features

- The Rochu beak **modules [BM]** can be build on
- It can be installed on the sliding mounting plate **[SMP]**

CM-S04



Weight 28g Elastic force 0~4N

型号	行程[S]
CMS04	10
CMS05	20
CMS06	30
CMS07	40

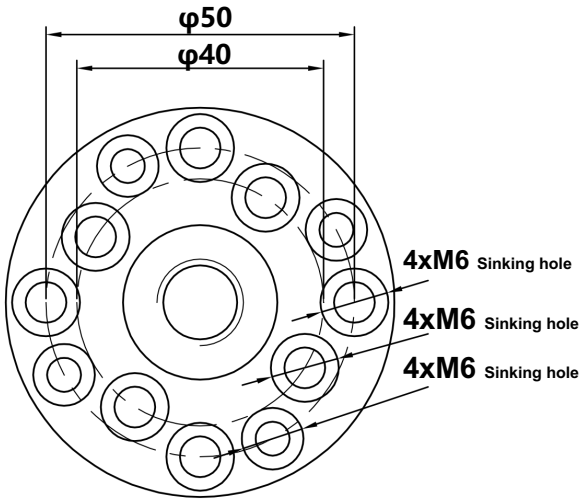
Flange connection Module

- **Flange connection module [FCM]** is fixed between the robot flange and the **slip mounting plate [SMP].** It can also be connected with **quick change module [QCM**], There are two kinds of **[FCM],** the spring rod type **(S)** and rigid rod type **(R)**.

FCM-S01 Sping rod flange connection module

Features

- Meet ISO 9409-1:2004 robot flange standard
- Robot connection with the soft beak module [BM], or light soft grippers. The max. loading is 500g.
- Better adaptability in gripping of very different size object .
- For better positioning, pls. use the [FCM] with rigid rod.
- Accessory package (PK-FCMS01) included



Weight 125g Elastic force 0~8N

Accessory package PK-FCMS01

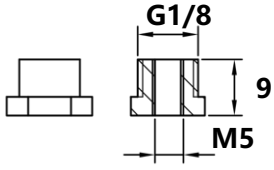
1 x CP-006

1 x CP-007

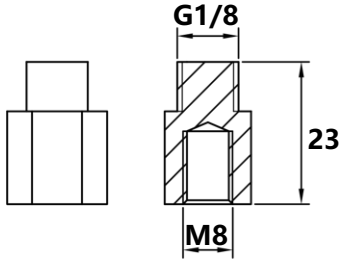
1 x SF-083 (M8x10)

4 x SF-011 (M6x10)

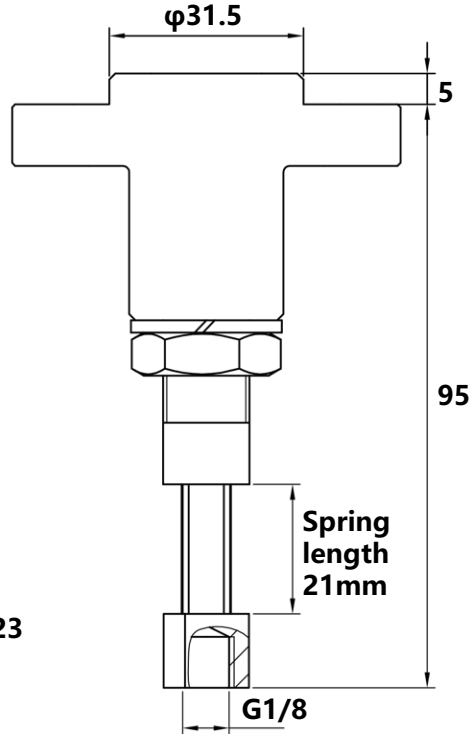
4 x SF-007 (M5x12)



CP-006



CP-007

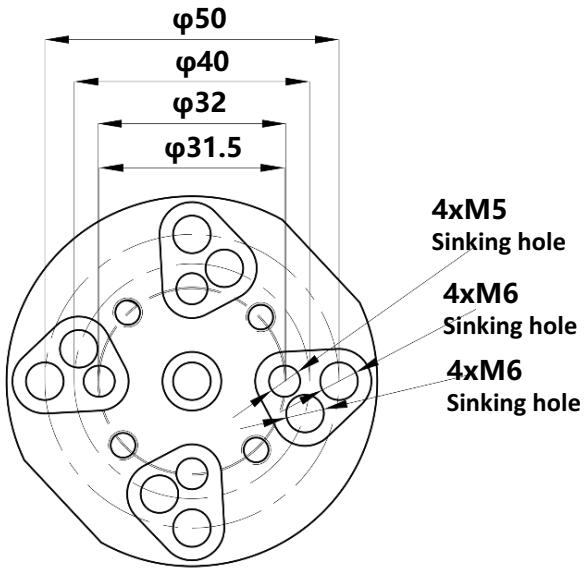


Flange connection Module

FCM-R (01-05) Rigid rod flange connection module (Light)

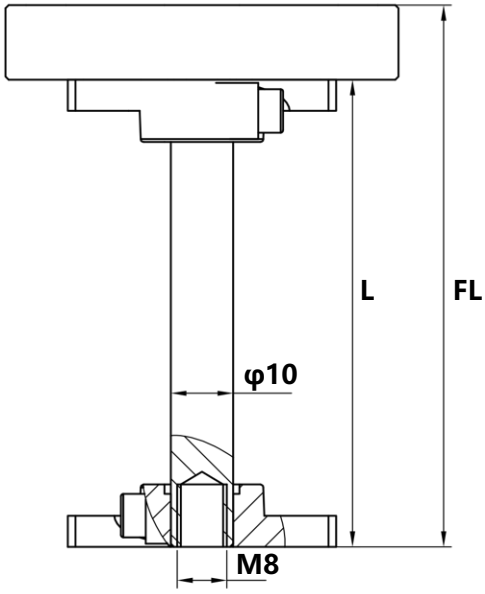
Features

- Meet ISO 9409-1:2004 robot flange standard .
- Light, suitable for light and small robot, max. loading 5kg
- It can be used in high-precision pick, place and assembling.
- Accessory package (PK-FCMR01) included



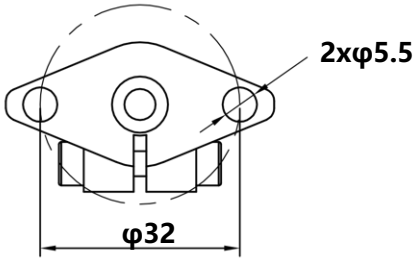
Accessory package
PK-FCMR01

- 1 x SF-83 (M8x10)
- 4 x SF-011 (M6x10)
- 6 x SF-007 (M5x12)
- 2 x SF-075 (M4x12)
- 2 x SF-081 (M4)



Rigid rod FCM (Light)

Model	L [mm]	FL [mm]	weight[g]
FCM-R01	35	42	135
FCM-R02	55	62	147
FCM-R03	75	82	159
FCM-R04	95	102	170
FCM-R05	115	122	182

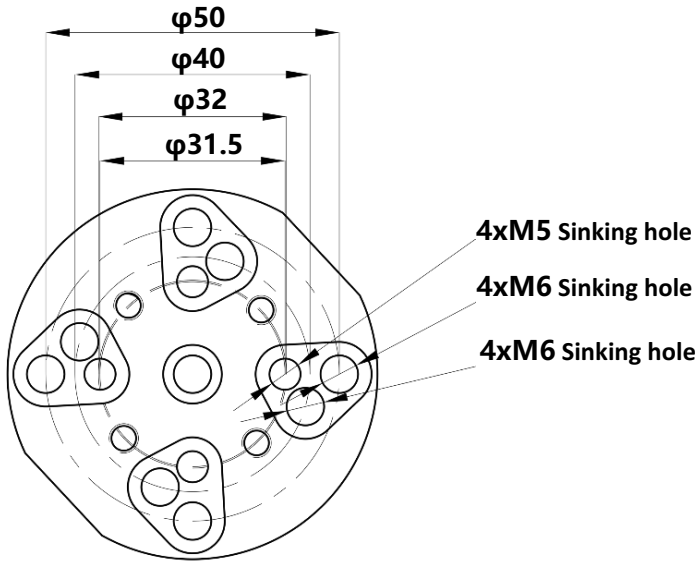


Flange connection Module

FCM-R08 Rigid rod flange connection module

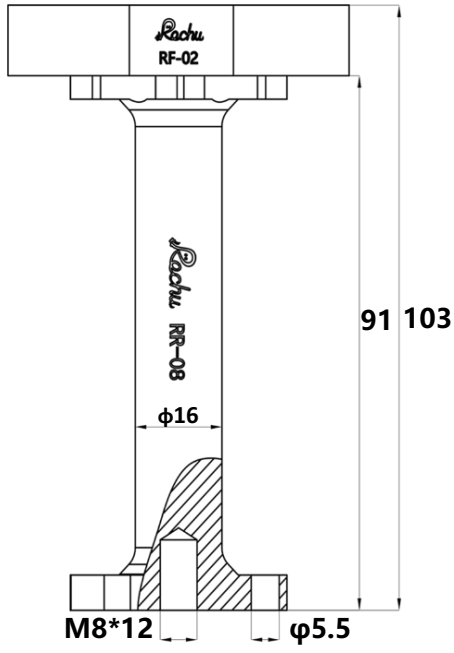
Features

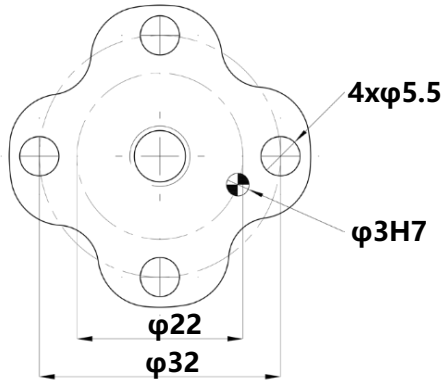
- Meet ISO 9409-1:2004 robot flange standard .
- Robuster, suitable max. loading 20kg
- It can be used in high-precision pick, place and assembling.
- Accessory package (PK-FCMR08) included



Accessory package
PK-FCMR08

- 1 x SF-83 (M8x10)
- 4 x SF-011 (M6x10)
- 8 x SF-007 (M5x12)
- 2 x SF-076 (M4x14)
- 2 x SF-081 (M4)
- 1 x PIN-01 (φ3x10)





FCM

Quick changer Module

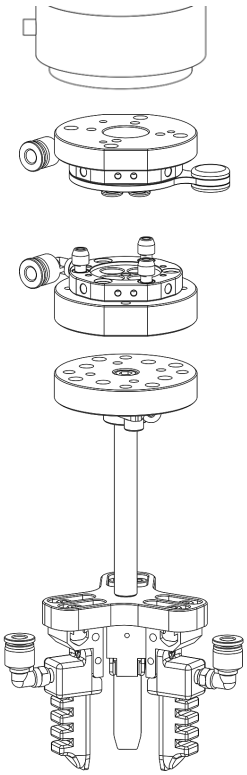
Quick change module **[QCM]** is used for quick replacement of gripper.Quick change module **[QCM]** is installed between the flange connection module **[FCM]** and robot flange, which is uncoupled into the robot side (**R side**) and the gripper side (**G side**).

scan to watch videos

QCM-01 (Manual quick change module)

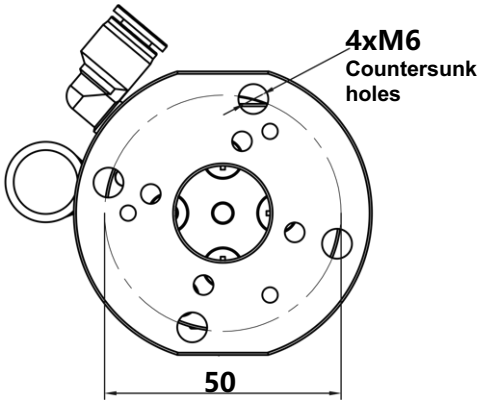
Features

- Conform to ISO 9409-1:2004 (i.e. GB / T 14468.1:2006)
- Manual locking/unlocking



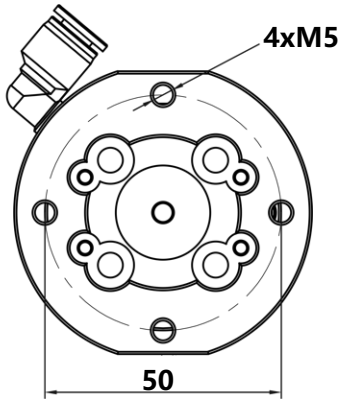
QCM-01R

(R-side, robot flange)

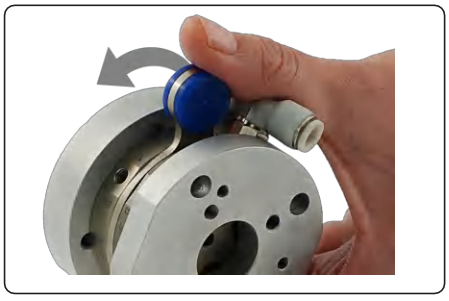


QCM-01G

(G-side, gripper)



Lock Max 2Nm



QCM-01R Weight [g]	146	QCM-01G Weight [g]	135
Vertical Force **F**	150[N]	Pneumatic ports	4
Rotational torque **Mt**	20[Nm]	Recommended load	5[kg]
Flip torque **Mb**	10[Nm]		

Quick Changer Module

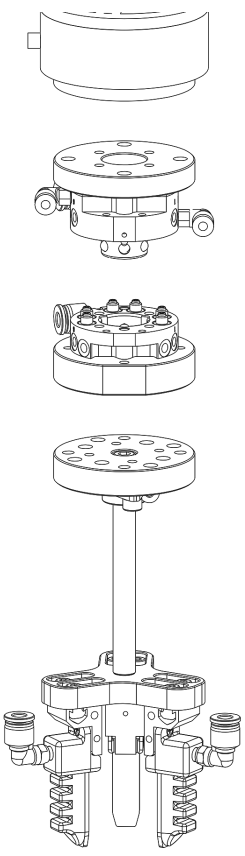
scan to watch videos

Quick change module **[QCM]** is used for quick replacement of gripper.Quick change module **[QCM]** is installed between the flange connection module **[FCM]** and robot flange, which is uncoupled into the robot side (**R side**) and the gripper side (**G side**).

QCM-02 (Pneumatic quick change module)

Features

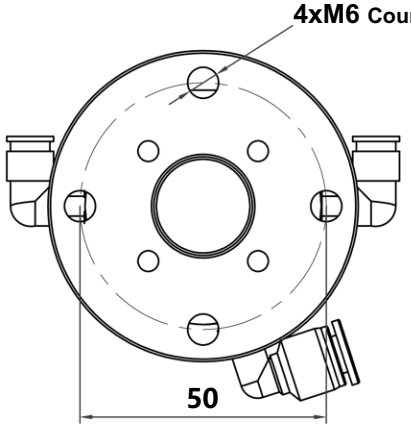
- Conform to ISO 9409-1:2004 (i.e. GB / T 14468.1:2006)
- Pneumatic control, self-locking when air cut off.
- Recommended load 5kg



QCM-02R

（ R-side, robot flange ）

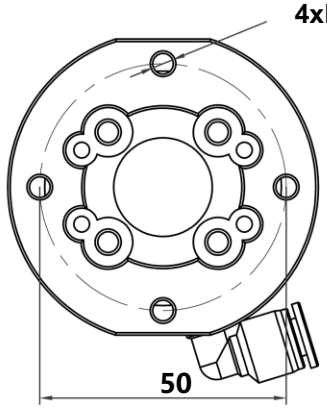
Weight 320g



QCM-02G

(G-side, gripper）

Weight 200g

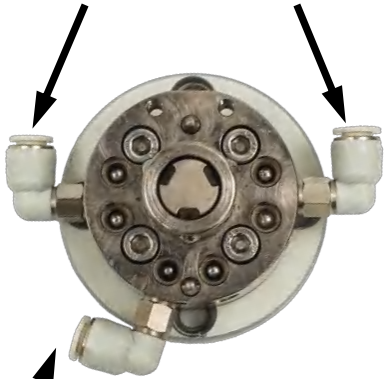


QCM

Installation / control mode

- Quick change is controlled pneumaticly.
- R side air intake connected with Rochu control Unit
- G side air intake connected with Gripper
- For installation pls. watch the video

Quick changer lock/unlock air-control intake, M5+φ6 Air Pipe



QCM-02R

QCM-02G

Controll unit air intake, M5+φ6 air pipe

Gripper air intake, M5+φ6 air pipe

4

CU
Control Unit

PCU
Passive Control Unit

page. 65

iPCU 2
Integrated Passive Control Unit

page. 68

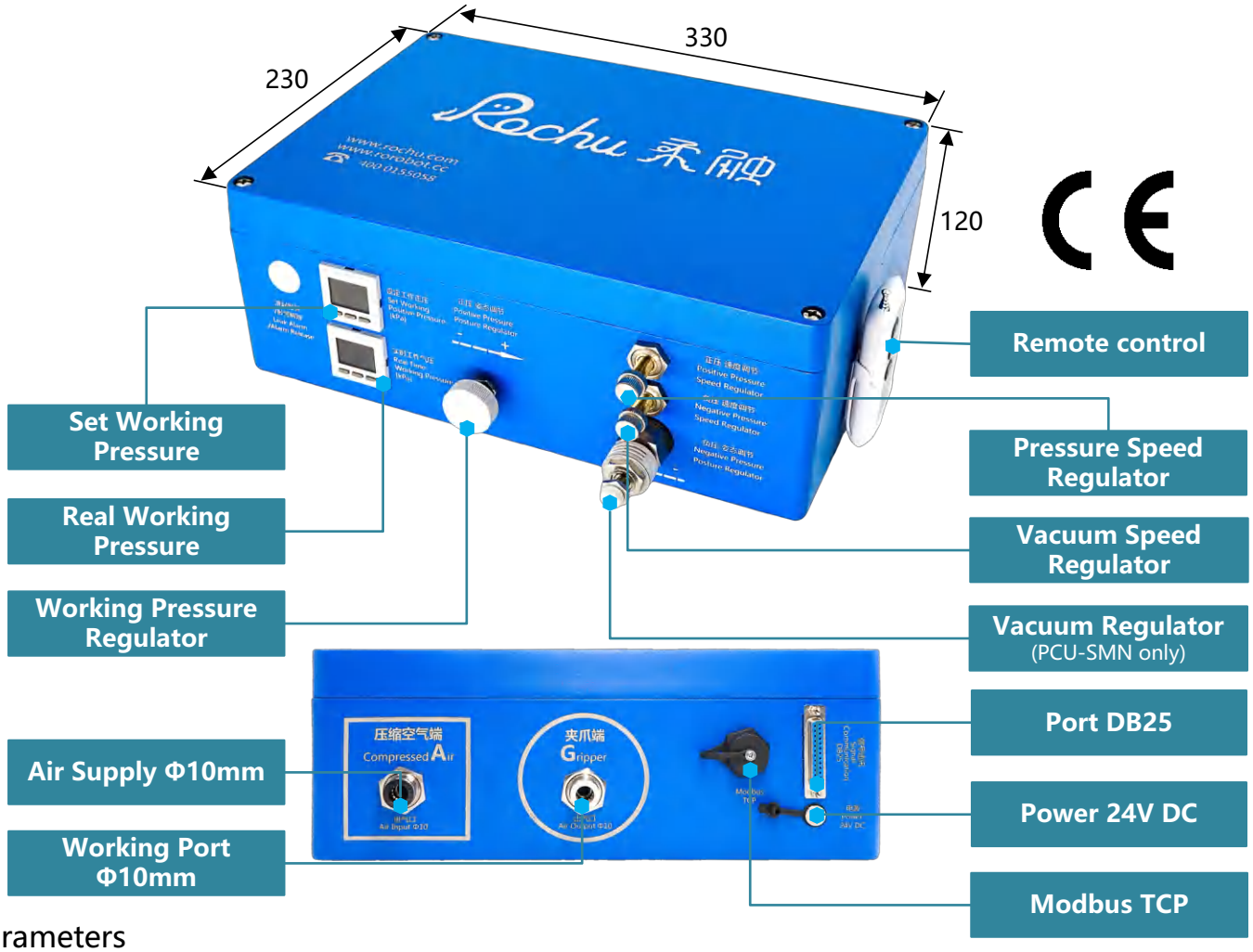
ACU
Active Control Unit

page. 71

PCU Passive Control Unit

scan to watch videos

- **Universal soft gripper's controller, with powerful adjustment and communication functions.**
- Adjustable working pressure, opening and closing speed and other dimensions.
- Can communicate with industrial mechanical arm or PLC, compatible with I/O (high and low level) and modBUS.
- With attitude feedback signal function.
- Equipped with manual remote control.
- IP53 protection class, can adapt to a variety of harsh environment in the workplace
- EU CE security certification.



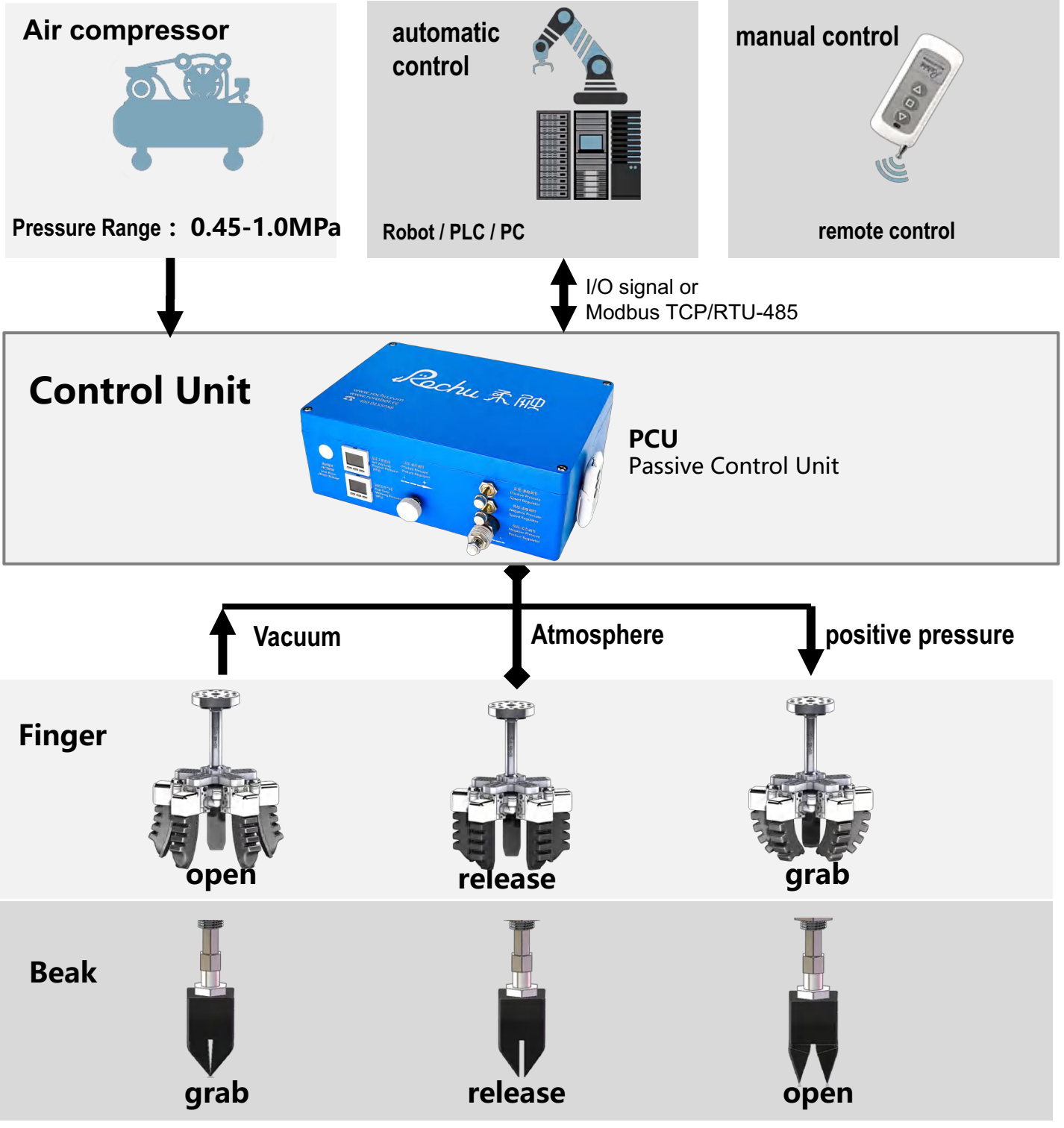
Parameters

Item	Range	Item	Range
Rated voltage	24VDC±10%	Shell material	Aluminum
Rated Power	36W	Size [mm]	330*230*120
Input Air source	0.45~1.0MPa Dry and clean air，Flow＞200L/min	Net Weight [kg]	5.8
Output pressure	-70~120kPa（PCU-SMN）| -70~305kPa（PCU-HMN）	Protection level	IP53
Working mode	During the reception of the signal, the gripper is continuously driven	Life time	20M times
control mode	a. I/O，24VDC signal，DB25 Port	Feedback mode	a. I/O，Switching signal，DB25 port
	b. Modbus，TCP/RTU-485		b. Modbus，TCP/RTU-485
	c. remote controller，315MHz		

CU

Standard Control Mode

scan to watch videos



Model of PCU

scan to watch videos

PCU has two choices: **standard [S]** and **high-speed [H].** Standard type can adjust clamping and opening speed. High-speed type has greater flow and faster response speed, which is suitable for food, 3C and other high-speed handling conditions.
The voltage regulation mode can be **manual**ly regulated **[M], voltage signal regulation [V]** (input signal 0-10V) or **current signal regulation [A]** (input signal 4-20mA) to adjust the output working pressure.
Normal [N] (0-120kPa) drives the flexible beak and standard fingers, or **high pressure [H]** (0-305kpa) drives the Rochu gripper, depending on the output safe pressure range.

Model

Control Unit		function							
Model		Manual Pres. Reg	Electronic Pres. Reg	Remote Control	Status Feed-back	Speed Reg.	Safe pressure	Positive pressure flow [L/min]	Vacuum flow [L/min]
Standard model 【Note 1】	**PCU-SMN**	•		•	•	•	120kpa	140	25
	PCU-HMN	•		•	•		120kpa	200	50
	PCU-SMH	•		•	•	•	305kpa	140	25
	PCU-HMH	•		•	•		305kpa	200	50
Non-standard model 【Note 2】	PCU-SVN		•	•	•		120kpa	140	25
	PCU-HVN		•	•	•		120kpa	200	50
	PCU-SAN		•	•	•		120kpa	140	25
	PCU-HAN		•	•	•		120kpa	200	50
	PCU-SVH		•	•	•		305kpa	140	25
	PCU-HVH		•	•	•		305kpa	200	50
	PCU-SAH		•	•	•		305kpa	140	25
	PCU-HAH		•	•	•		305kpa	200	50

NOTE1：standard model, standing stock.
NOTE2：Non standard model, please consult your local dealer for delivery time.

Encoding Method

PCU - □ □ □

functional characteristics	
Mark	content
S	**Standard** common models are fully functional and plug and play
H	**High-speed** Large flow driver, drive efficiency greatly improved

voltage regulation mode	
Mark	content
M	Manual
V	Voltage signal regulation，input signal 0-10V
A	Current signal regulation，input signal 4-20mA

Output pressure	
Mark	content
N	Normal
H	High pressure

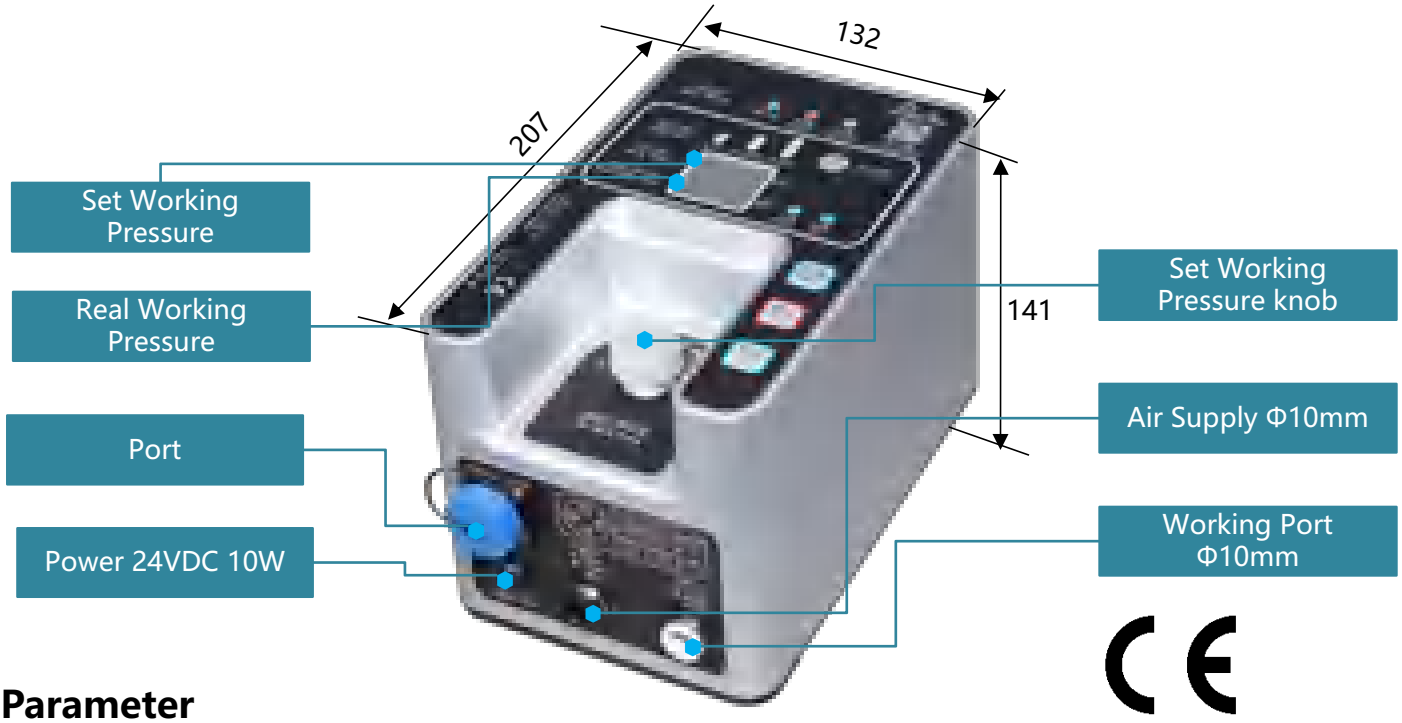
CU

iPCU2 *integrated Passive Control Unit 2*

small, light and easy Control Unit for all soft gripper.

scan to watch videos

- High pressure air input, precise low pressure air or vacuum output.
- Can be used on **all** soft finger or beaks.
- Manual air pressure precise setting.
- Integrated panel with digital display and operation buttons.
- Remote controlling with (I/O level signal), suitable for all robot arms or PLC.



Parameter

Item	Range	item	Range
Power	24 VDC ± 10%	Frame material	ABS
Rated power	10 W	size	207x132x141 mm
Input air	0.45~1.00 MPa，flow > 200 L/min	N.W.	2.0 kg
Output air pressure	-90~60kPa (Low)	Life time	50 million times
	-90~120kPa (middle)	Control mode	a. Manual button
	-90~300kPa (high)		b. I/O，level signal
Protection grade	IP54	Working pressure setting	Manual

CU

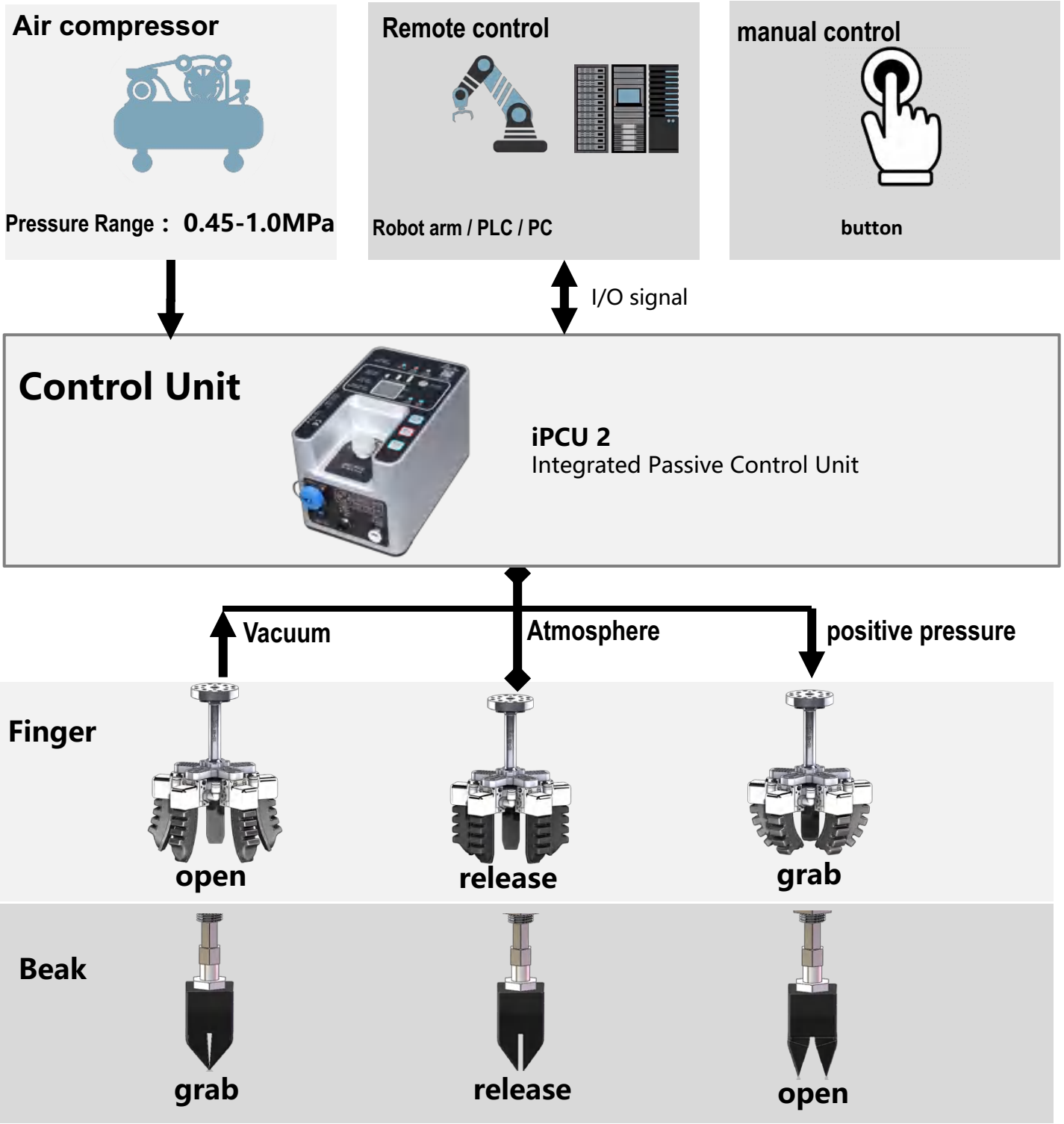
Model

There are two models of iPCU2: **iPCU2-SMN** and **iPCU2-HMN**. iPCU-HMN has higher air flow and faster response speed, which is suitable for high speed handling.

	Model	Positive pressure flow	Negative pressure flow
		[L/min]	[L/min]
Standard	**iPCU2 - SMN**	200	40
High speed	**iPCU2 - HMN**	260	80

Connection of iPCU2

scan to watch videos

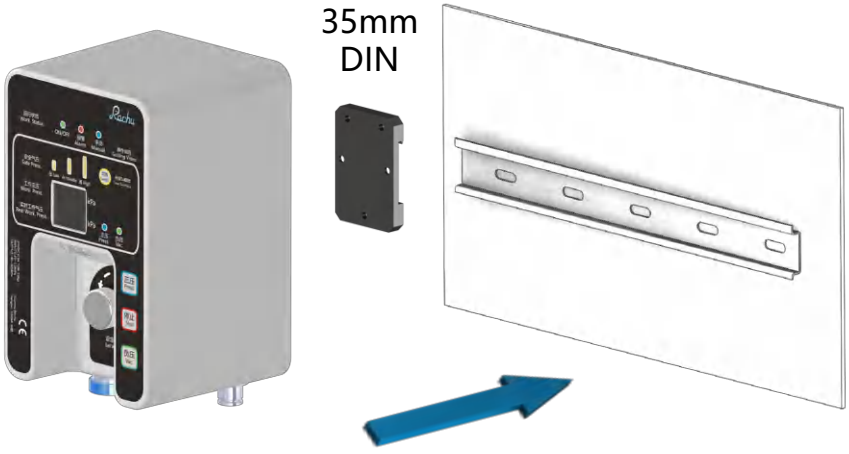


CU

Installation

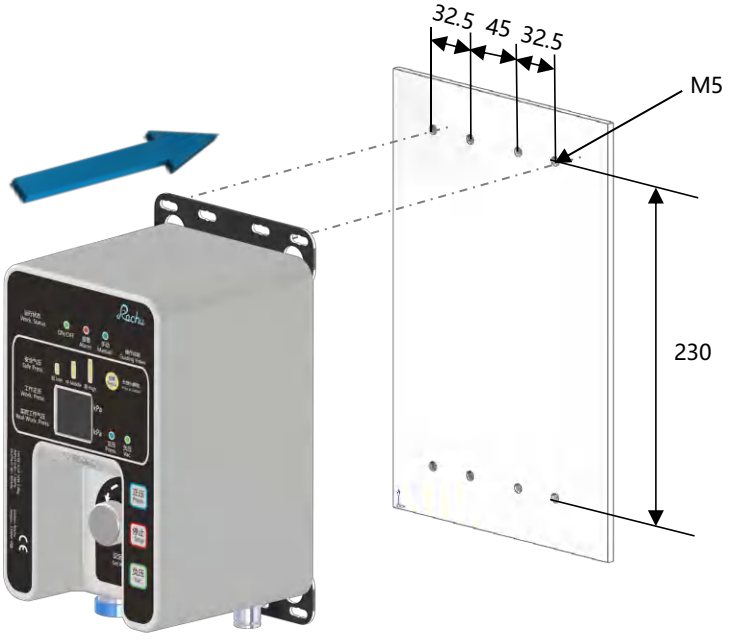
Place directly

Slot to install



CU

Panel to install

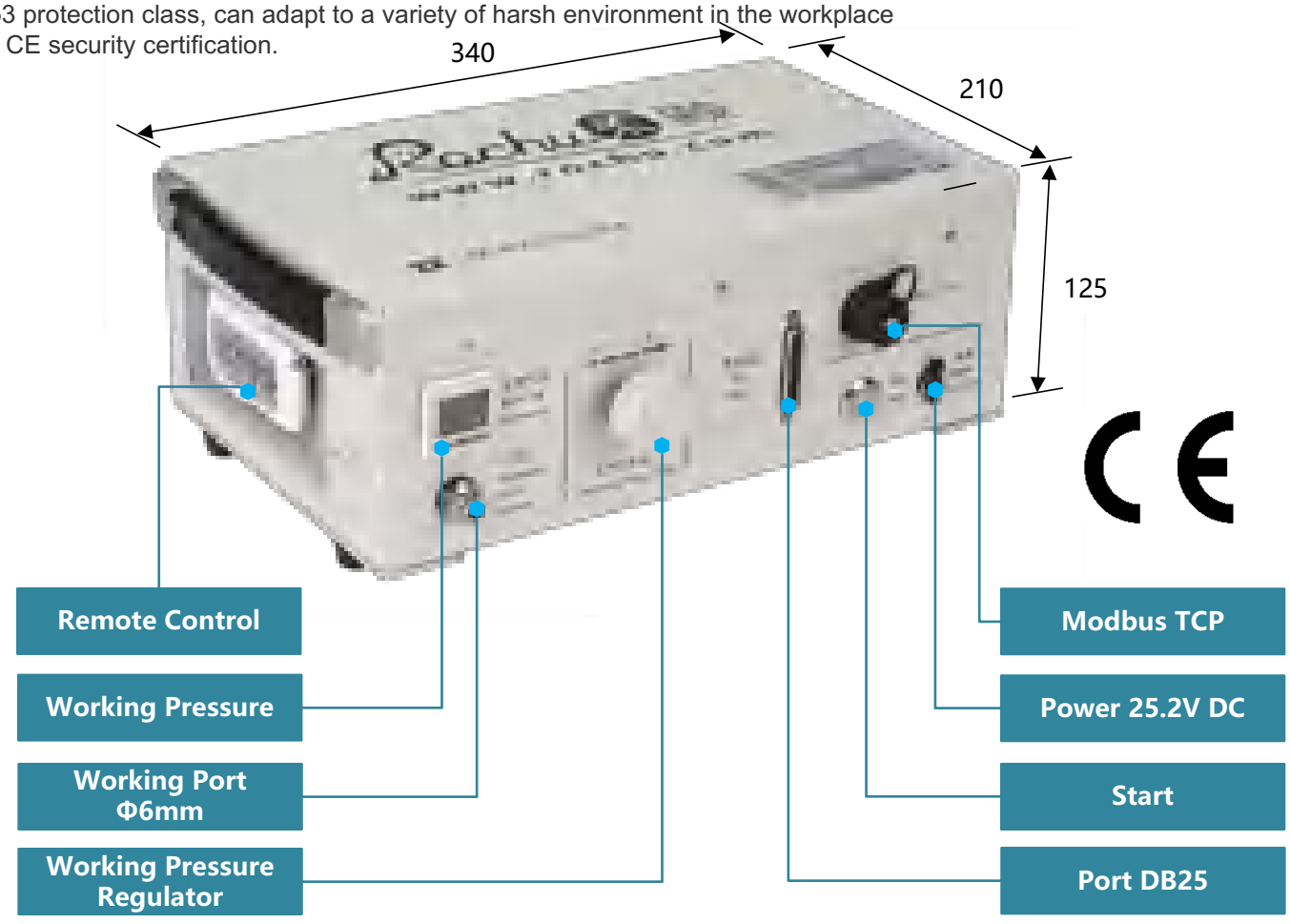


Active Control Unit

Mobile controller, easy to carry, plug and play

scan to watch videos

Built-in drive air source and battery, under full power, it can continuously drive the soft gripper to work for 3.5 hours without external power source and air source, which is specially designed for the working site with no air source.
AGV mobile robot workstation can be used.
The output air pressure is -70~120kPa, and the clamping force is adjusted by manual knob or electronic signal.
Can communicate with industrial mechanical arm or PLC, compatible with I/O (high and low level) and modBUS.
With attitude feedback signal function.
Equipped with manual control remote control.
IP53 protection class, can adapt to a variety of harsh environment in the workplace
EU CE security certification.



CU

Parameters

Item	Range	Item	Range
Rated voltage	25.2V DC	Shell material	Steel
Rated Power	120W	Size [mm]	340*210*125
Output pressure	-70~120kPa	Weight [kg]	7.7
Life time	1000 hours	Protection level	IP53
Control mode	a. I/O，24VDC signal，DB25 Port	Feedback mode	a. I/O，Switching signal，DB25 Port
	b. Modbus，TCP/RTU-485		b. Modbus，TCP/RTU-485
	c. Remote control, 315MHz	Battery working time	3.5 hours
Positive pressure flow	8 L/min	vacuum flow	8 L/min

Model of ACU

scan to watch videos

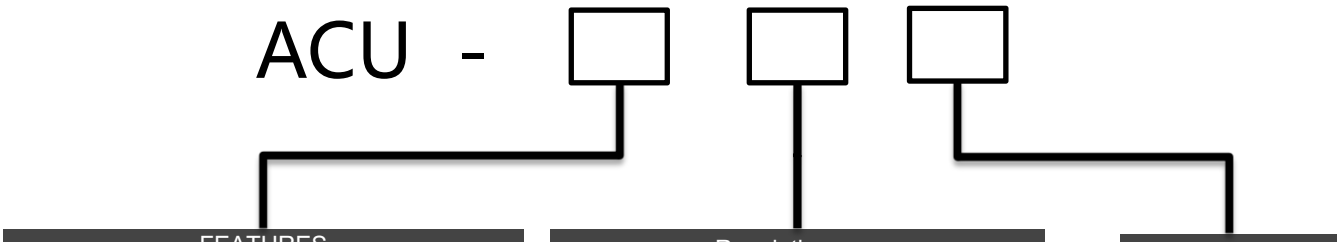
- ACU can be regulated **manually [M],** or by **voltage signal [V]** (input signal 0-10V) or **current signal [A]** (input signal 4-20mA) to regulate the output working pressure.

Model

Model		Manual	Electronic regulation	Wireless remote	Posture feedback	Speed regulation	Safe pressure	Positive pressure flow [L/min]	Negative pressure flow [L/min]
Standard 【Note 1】	**ACU-MMN**	•		•	•		120kpa	8	8
Non-standard 【Note 2】	ACU-MVN		•	•	•		120kpa	8	8
	ACU-MAN		•	•	•		120kpa	8	8

Note 1: Standard: in stock
Note 2:Non-standard:please check with local distributor

Encoding Method



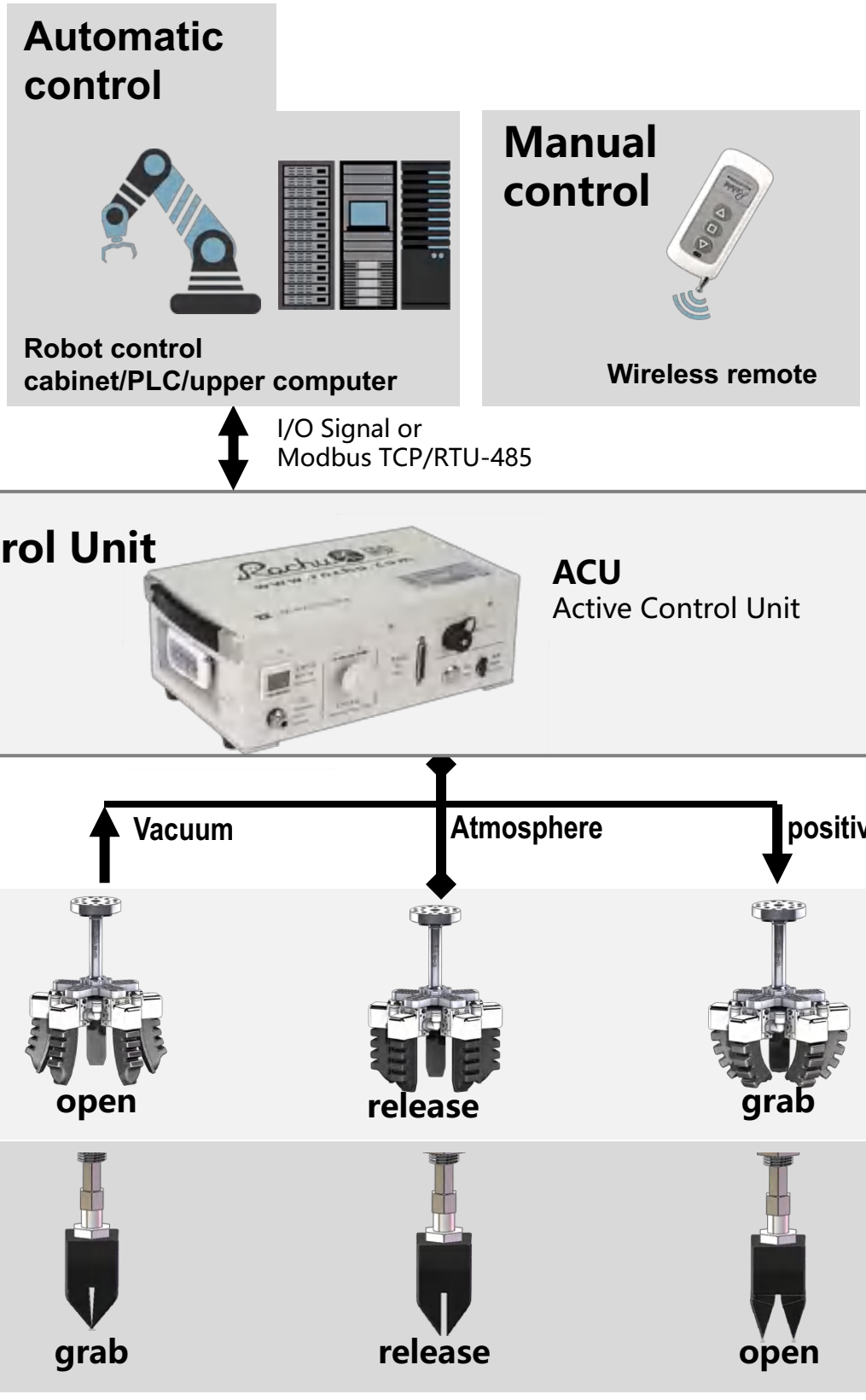
FEATURES	
Mark	content
M	**Mobile** No external air source, rechargeable operation

Regulating way	
Mark	content
M	Manual
V	Electronic voltage regulation，input signal 0-10V
A	Electronic voltage regulation，input signal 4-20mA

Output pressure	
Mark	content
N	Normal

Connection of ACU

scan to watch videos



CU

List of Control Unit

Control Unit		Function							
Model		Manual regulation	Electronic regulation	Wireless remote	Posture feedback	Speed regulation	Safe pressure	Positive pressure flow [L/min]	Negative pressure flow [L/min]
Standard 【Note 1】	PCU-SMN	●		●	●	●	120kpa	140	25
	PCU-HMN	●		●	●		120kpa	200	50
	PCU-SMH	●		●	●	●	305kpa	140	25
	PCU-HMH	●		●	●		305kpa	200	50
	iPCU2-SMN	●					adjustable	200	40
	iPCU2-HMN	●					adjustable	260	80
	ACU-MMN	●		●	●		120kpa	8	8
Non-standard 【Note 2】	ACU-MVN		●	●	●		120kpa	8	8
	ACU-MAN		●	●	●		120kpa	8	8
	PCU-SVN		●	●	●		120kpa	140	25
	PCU-HVN		●	●	●		120kpa	200	50
	PCU-SAN		●	●	●		120kpa	140	25
	PCU-HAN		●	●	●		120kpa	200	50
	PCU-SVH		●	●	●		305kpa	140	25
	PCU-HVH		●	●	●		305kpa	200	50
	PCU-SAH		●	●	●		305kpa	140	25
	PCU-HAH		●	●	●		305kpa	200	50

Note 1: Standard: in stock
Note 2: Non-standard: please consult your local dealer for delivery time.

Encoding Method

□ CU - □ □ □

Type	
Mark	content
P	Passive
A	Active
iP	Integrated passive

Features	
Mark	Content
S	**Standard** common models are fully functional and plug and play
H	**High speed** Large flow driver, drive efficiency greatly improved
M	**Mobile** No external air source, rechargeable operation

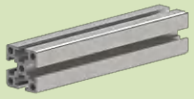
voltage regulation mode	
Mark	content
M	Manual
V	Voltage signal regulation, input signal 0-10V
A	Current signal regulation, input signal 4-20mA

Output pressure	
Mark	content
N	Normal
H	High pressure

5

Other parts

CP *page. 76*
connection part



P *page. 77*
Profile

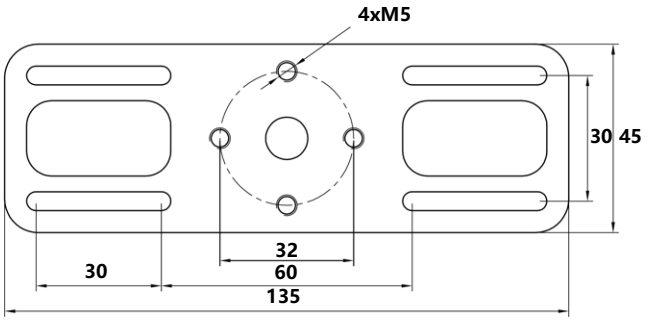
TN *page. 77*
T-Nut

BR *page. 78*
Bracket

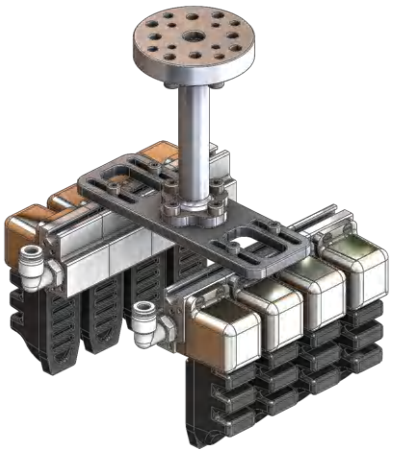
connection part

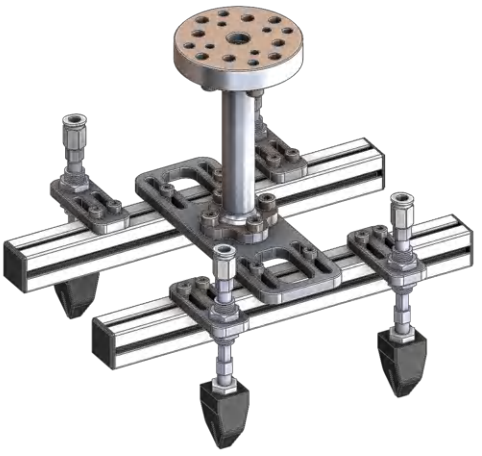
CP-04

- Connector plate for profile **[P]** or finger module **[FM]**
- Accessory package PK-CP04 included



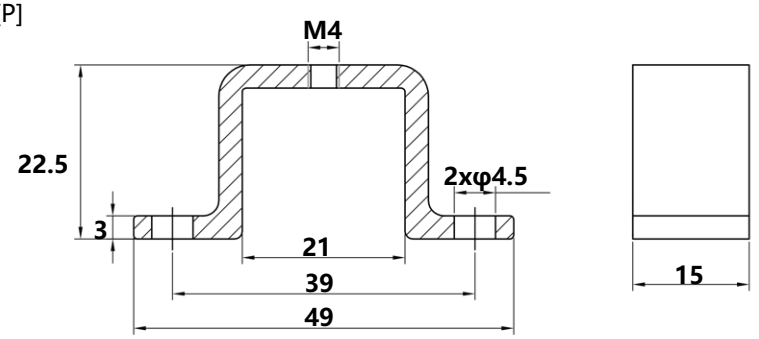
Accessory package
PK-CP04
4 x SF-081 (M4)
4 x SF-076 (M4x14)



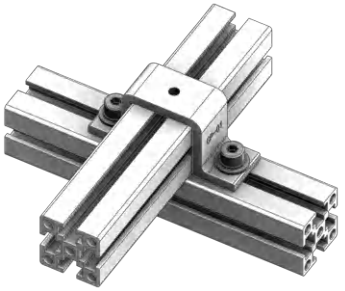


CP-01

- cross fixing of two aluminium profiles [P]
- Accessory package PK-CP01 included

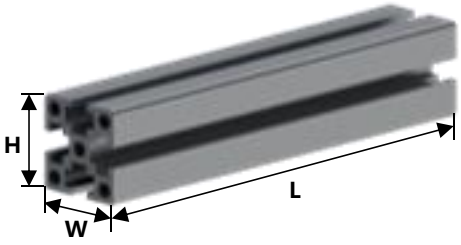


Accessory package
PK-CP01
2 x SF-081 (M4)
2 x SF-075 (M4x12)



OP

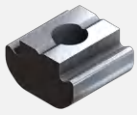
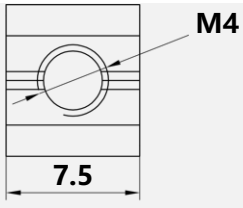
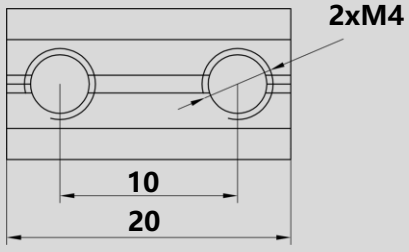
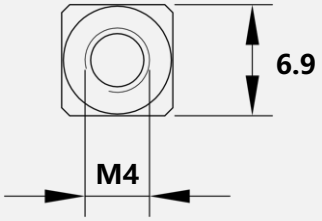
Profile

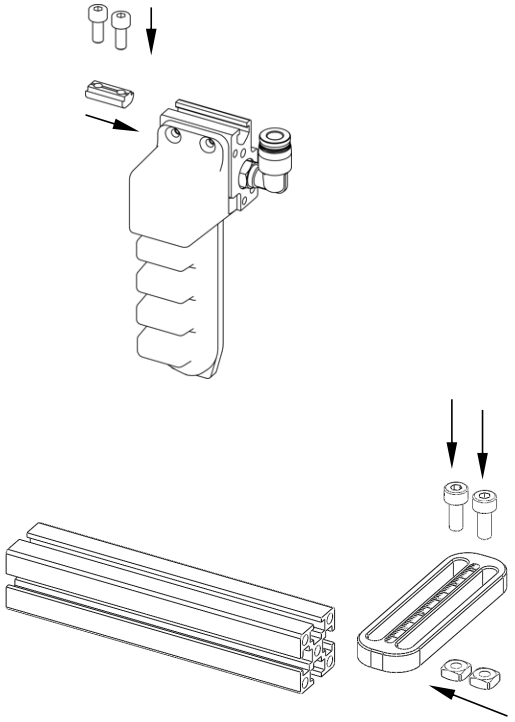


Type	L [mm]	W [mm]	H [mm]
P-20100	100	20	20
P-20150	150	20	20
P-20200	200	20	20
P-20300	300	20	20
P-20400	400	20	20
P-20500	500	20	20

Nut

T-nut [TN] is a standard nut used to fix the Rochu finger module [FM], the sliding mounting plate [SMP] and the Aluminium Profile [P].

Item	3D Drawing	Dimension drawing
TN-01		
TN-03		
SF-81		

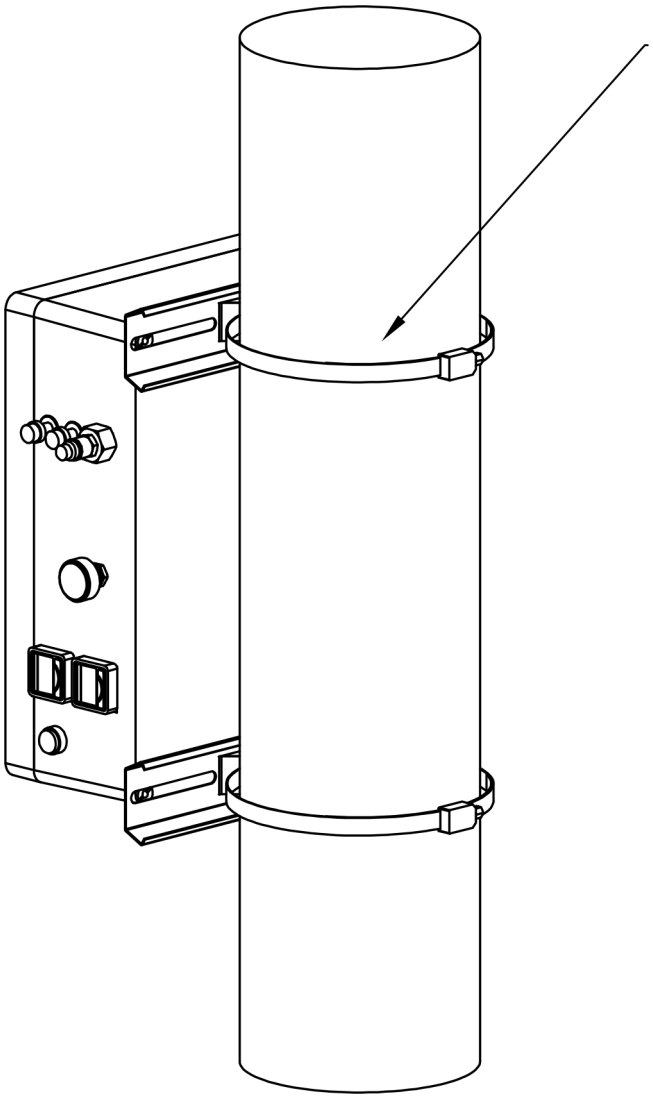


Bracket

BR-06 Bracket

It can be used to fix the PCU control unit or iPCU2 control unit on circular or square pipe

For round tube φ 50---180mm,
For square tube circumference 140-500mm



Partners

李群自动化
GKM
Quotient Kinematics Machine

遨博智能
AUBO

ROBOT
HOENIX
翼菲自动化

ioranges

UNIVERSAL ROBOTS
Certified

FANUC

YASKAWA
MOTOMAN ROBOTICS

atomrobot
阿童木机器人

ABB

BOSCH

KUKA

Alibaba Group
阿里巴巴集团

申洲国际

EPSON

TM
ROBOT

DOBOT

口碑
Koubei

华域汽车

CATL
宁德时代

台达
DELTA

faurecia

MISUMI

BORUNTE

HUAWEI

HUROT
HUMAN & ROBOT TOGETHER

株式会社
Robot Bank For The World

KLA Tencor

指南车
ROBOTICS EXPERT

平方和
SIGMA SQUARES TECH

KFC

STEP
新时达

Anjoy
安井

Rochu®

Give your robot a soft hand

Web : www.rochu.com

E-mail : sales@egroeco.com

sales@rochu.com

Facebook: www.facebook.com/egroeco

Instagram: www.instagram.com/egroeco

YouTube: www.youtube.com/rochusoftrobotic

Distributed by

All stated here is subject to change without advance notice.