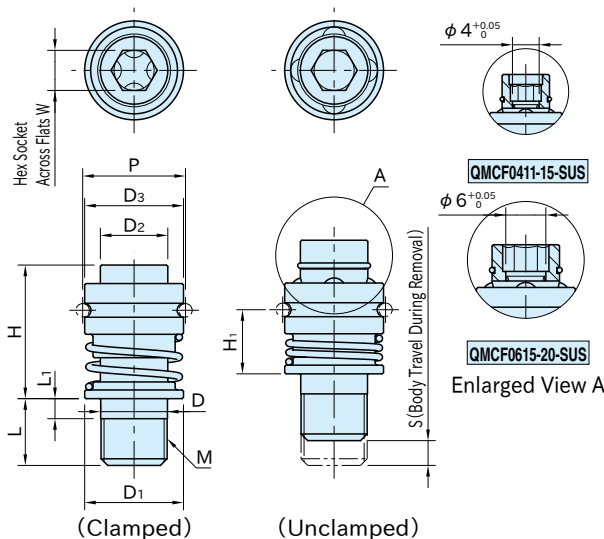




★Key Point

Change gripper fingers with simple robot arm motion.

Body, Slide Pin	Ring	Ball	Spring
SUS303 stainless steel	SUS630 stainless steel Precipitation hardened	SUS440C stainless steel Quenched and tempered	SUS304WPB stainless steel

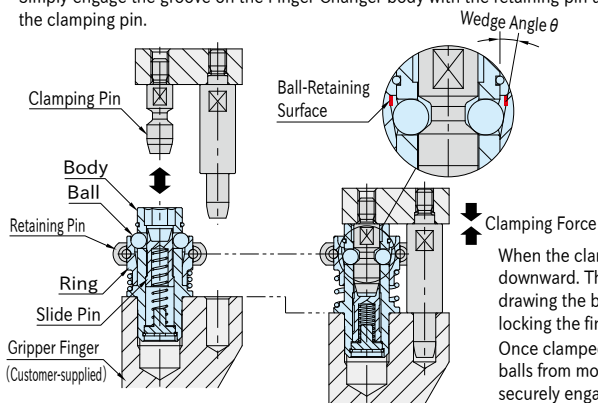
Part Number	D (h9)	M	D ₁	D ₂	D ₃	P	L	L ₁	H (± 0.04)	H ₁	W	S	Clamping Force (N)	Weight (g)
QMCF0411-15-SUS	8	M 8×1 (Fine Thread)	10.8	7.1	10.8	11	8	2.5	15	7	4	2.5	10	8
QMCF0615-20-SUS	10	M10×1 (Fine Thread)	14.8	10.1	14.8	15	10	3	20	9.8	6	3.4	50	20

Part Number	Clamping Pins	Support Pins	Retaining Pins	Mounting Plates for COBOTTA
QMCF0411-15-SUS	QMCFC0411-M3-SUS	QMCFS0411-0315-SUS QMCFS0411-0310-SUS	QMCFE0411-0312-SUS	QMCFP0411-C1
QMCF0615-20-SUS	QMCFC0615-M4-SUS	QMCFS0615-0420-SUS QMCFS0615-0412-SUS	QMCFE0615-0416-SUS	—

QMCFC	CLAMPING PINS	QMCFE	RETAINING PINS
QMCFS	SUPPORT PINS	QMCFP	MOUNTING PLATES FOR COBOTTA

Feature

- MotionAct Finger Changers enable automated gripper finger changes using robot arm movements.
- Simply engage the groove on the Finger Changer body with the retaining pin and move the robot arm to insert or remove the clamping pin.

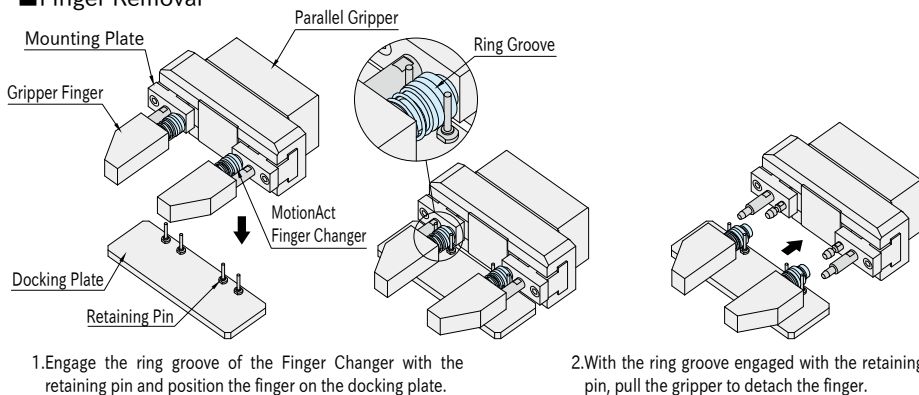


How To Use

For smoother robot teaching, start with the finger removal sequence.

Note: When using a pneumatic gripper, teach the robot with the gripper at the fully open or fully closed position.

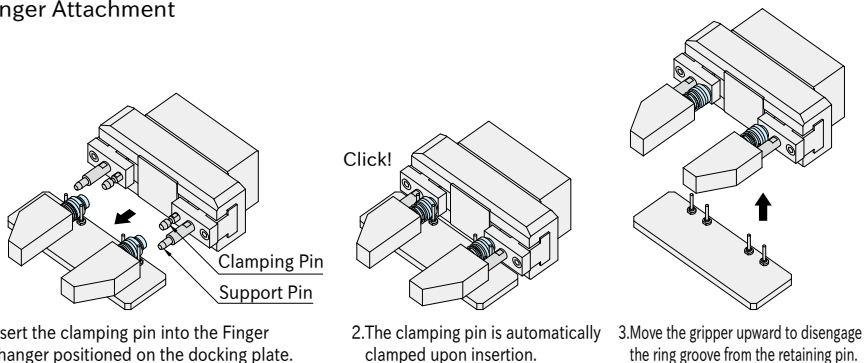
■ Finger Removal



1. Engage the ring groove of the Finger Changer with the retaining pin and position the finger on the docking plate.

2. With the ring groove engaged with the retaining pin, pull the gripper to detach the finger.

■ Finger Attachment



1. Insert the clamping pin into the Finger Changer positioned on the docking plate.

2. The clamping pin is automatically clamped upon insertion.

3. Move the gripper upward to disengage the ring groove from the retaining pin.



Continuing on Next Page

Technical Information

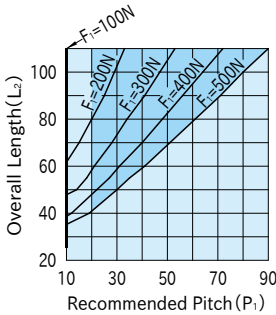
Part Number	Heatresistant Temperature (°C)	Allowable Tensile Load W_1 (N)	Allowable Load F_1 (N) *	Load on Robot (N) **
QMCFO411-15-SUS	180	350	500	5
QMCF0615-20-SUS		600	900	20

*) Allowable load when used with one support pin.

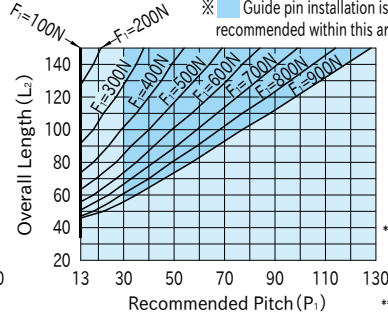
**) This is the load applied to the robot during attachment or detachment of the Finger Changer, based on internal testing. Use this value for reference only.

Recommended Pitch by Finger Length and Load

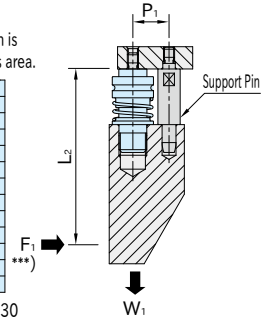
QMCFO411-15-SUS



QMCF0615-20-SUS



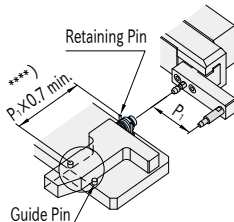
※ Guide pin installation is recommended within this area.



*** F_1 is the allowable load per finger.

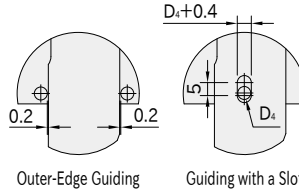
The total allowable load for the parallel gripper is $F_1 \times 2$.

Finger Guiding



****) Distance between the retaining pin and guide pin

<Guide Pin Details>



The finger may tilt during attachment or detachment. A larger pitch (P_1) between the Finger Changer and the support pin increases misalignment caused by tilting, making pin engagement difficult. Provide guide pins or other guiding features to keep the finger aligned.

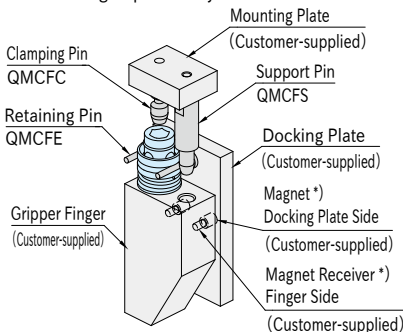
Guide Required When:

- **QMCFO411** size: $P_1 \geq 20$
- **QMCF0615** size: $P_1 \geq 30$

Configuration Examples

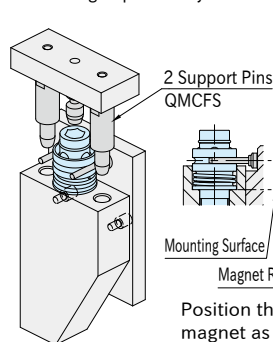
Standard Positioning - One Support Pin

Positioning Repeatability: ± 0.2

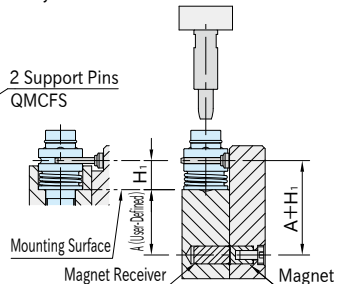


Precision Positioning - Two Support Pins

Positioning Repeatability: ± 0.03



<Magnet Details>



Position the magnet receiver and magnet as shown above.

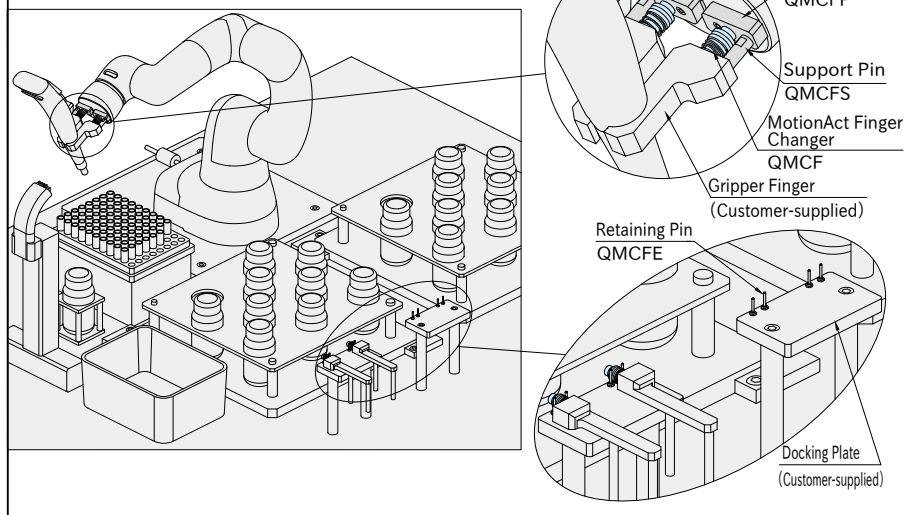
Refer to the following H_1 values:

- **QMCFO411-15-SUS**: 7
- **QMCF0615-20-SUS**: 9.8

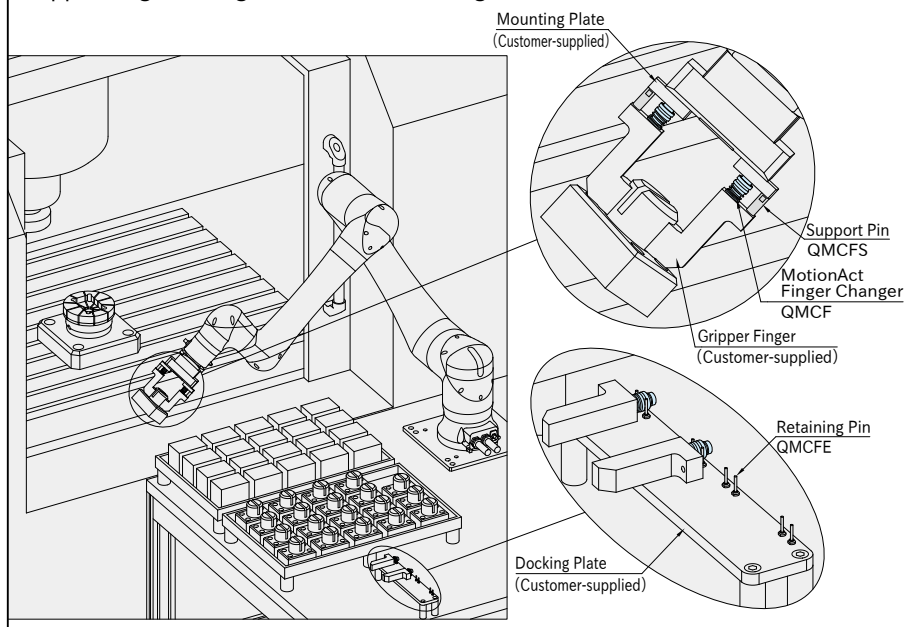
Note: When used in a vertical orientation, hold the finger in place with a magnet.

Application Example

Gripper Finger Change in a Laboratory – Handling Sample Containers and Electric Pipettes



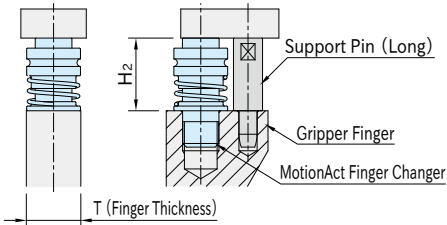
Gripper Finger Change for Machine Tending



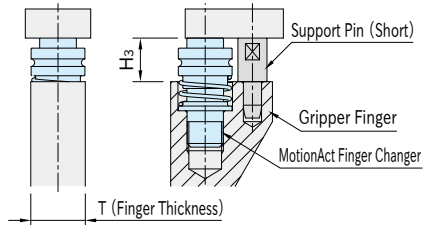
How To Install

■ Mounting Options

Standard Mounting

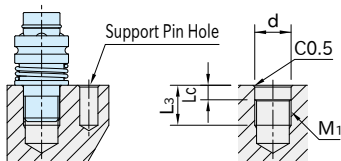


Recessed Mounting

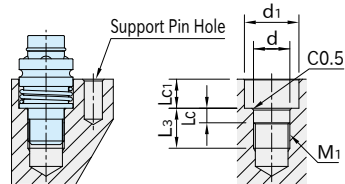


■ Finger Changer Mounting Hole Dimensions

Standard Mounting

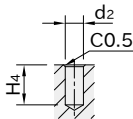


Recessed Mounting



Part Number	H ₂	H ₃	d (+0.10/-0.05)	d ₁ (+0.3/-0.1)	M ₁	L ₃	L _c	L _{c1}	T	
									Standard Mounting	Recessed Mounting
QMCF0411-15-SUS	15	10	8	11	M 8×1 (Fine Thread)	9	3.5	5	11 - 23	13 - 17.5
QMCF0615-20-SUS	20	12	10	15	M10×1 (Fine Thread)	11	4	8	15 - 30	17 - 23

■ Support Pin Hole Dimensions (Finger Side)



Part Number	d ₂				H ₄
	1 Support Pin		2 Support Pins *)		
QMCF0411-15-SUS	4	$\begin{smallmatrix} (+0.35) \\ (+0.25) \end{smallmatrix}$	4	$\begin{smallmatrix} (+0.02) \\ 0 \end{smallmatrix}$	9
QMCF0615-20-SUS	5		5		11

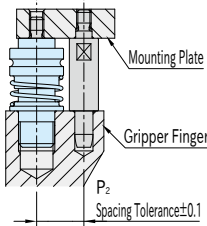
*) Use two support pins for precision positioning.

Accuracy

■ Machining Accuracy

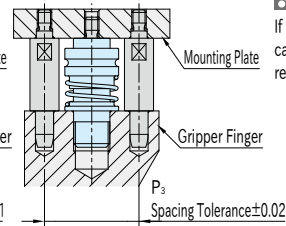
Standard Positioning

Spacing Tolerance±0.1



Precision Positioning

Spacing Tolerance±0.02



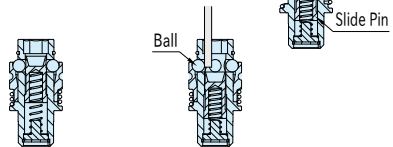
Part Number	P ₂	P ₃
QMCF0411-15-SUS	≥ 10	≥ 20
QMCF0615-20-SUS	≥ 13	≥ 26

■ Repeatability

Positioning repeatability is ±0.2 mm for Standard Positioning and ±0.03 mm for Precision Positioning.

⚠ Caution

If the ring is displaced as shown, the clamping pin cannot be inserted. Follow step 1 or 2 below to return the Finger Changer to the unclamped state.



1. Push the ring downward to raise the slide pin and return the Finger Changer to the unclamped state.
2. If the slide pin does not rise in step 1, hold the ring down and use a thin rod to push the balls outward.

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