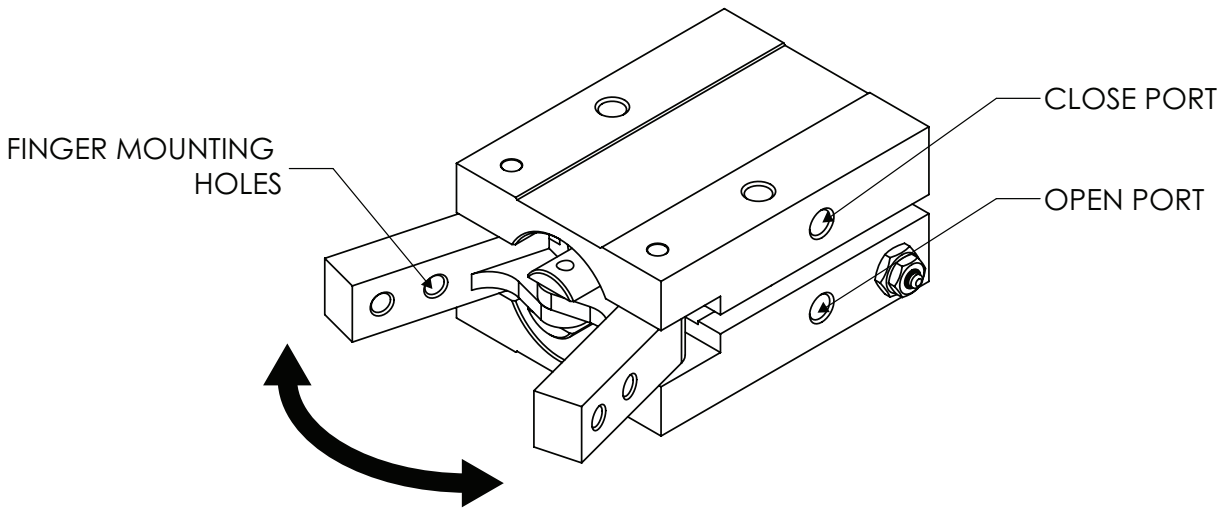
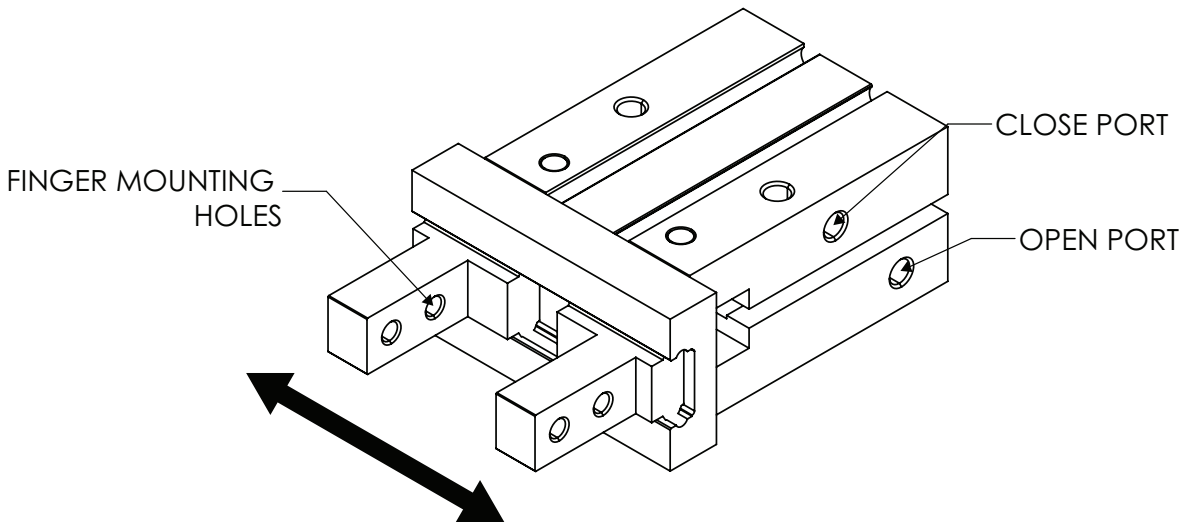


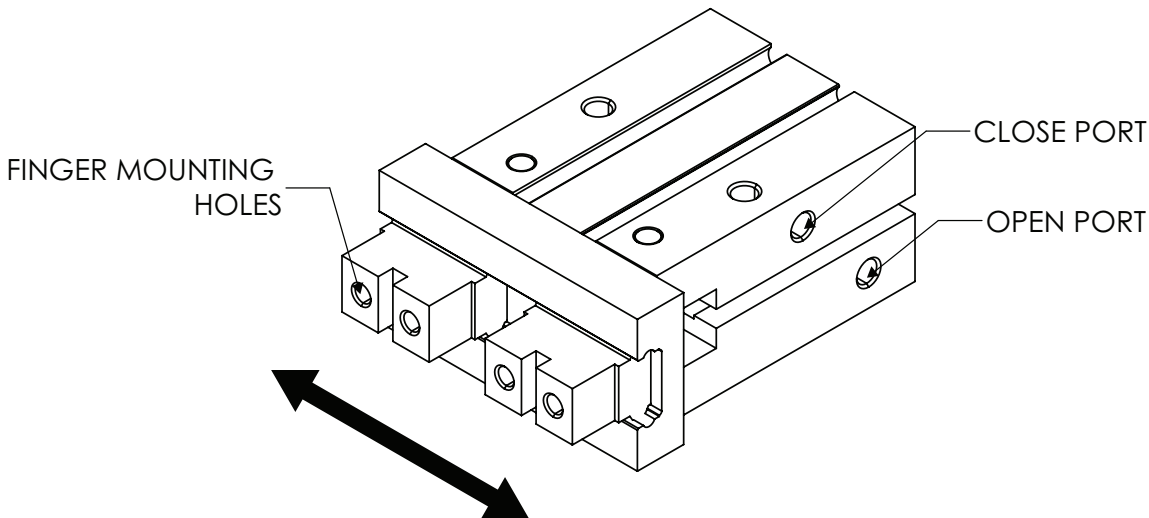
ANGULAR GRIPPER



PARALLEL GRIPPER



PARALLEL GRIPPER BOTTOM MOUNT

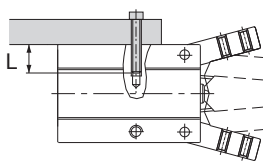


Grippers (Angular)

Angular Gripper Installation Notes

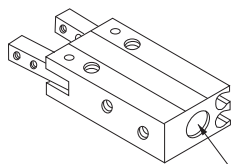
- The gripper force can be reduced and working pieces may fall when the supplied pressure is low or there are abrupt changes.
- Dropping the gripper prior to installation may cause damage and prevent usage.
- It is not recommended to expose the grippers to unnecessary external or impact force.
- Avoid twisting of the gripping jaw or gripping jaw parts.
- Ensure that fastening bolts are properly torqued per the tables below.

Side Installation

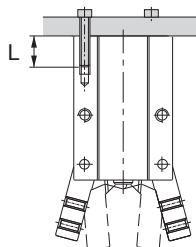


Bore Size	Bolt Type	Max. Screw Torque (Nm [lb-in])	Max. Screw Depth (mm)
10	M3 x 0.5	0.88 [7.79]	6
16	M4 x 0.7	1.6 [14.16]	6.5
20	M5 x 0.8	3.3 [29.21]	8
25	M6 x 1.0	5.9 [52.22]	10
32	M6 x 1.0	5.9 [52.22]	10

Rear Installation Type



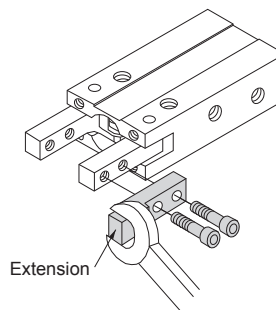
Pilot bore available for mounting and positioning



Bore Size	Bolt Type	Max. Screw Torque (Nm [lb-in])	Max. Screw Depth (mm)	Diameter of Pilot (mm)	Depth of Pilot Bore (mm)
6	-	-	-	7H9	1.5
10	M3 x 0.5	0.88 [7.79]	6	11H9	1.5
16	M4 x 0.7	2.1 [18.59]	8	17H9	1.5
20	M5 x 0.8	4.3 [38.06]	10	21H9	1.5
25	M6 x 1.0	7.3 [64.61]	12	26H9	1.5
32	M6 x 1.0	7.3 [64.61]	12	34H9	1.5

Gripping Jaw Extension Installation

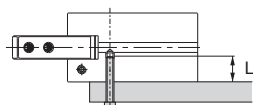
- To install custom designed extensions, first hold the extension by using a wrench then lock the screws into place with an allen wrench. Clamping the body directly and torquing the screws without support will cause damage to the gripper. See illustration and chart for proper mounting.



Bore Size	Bolt Type	Max. Screw Torque (Nm [lb-in])
6	M2 x 0.4	0.15 [1.33]
10	M2.5 x 0.45	0.31 [2.74]
16	M3 x 0.5	0.59 [5.22]
20	M4 x 0.7	1.4 [12.39]
25	M5 x 0.8	2.8 [24.78]
32	M6 x 1.0	4.9 [43.37]

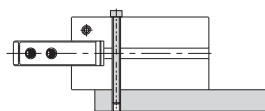
- For proper gripping, the work-piece must be located in the center line of the gripping jaws. Also note, the gripping jaws should close on the work-piece at the same time to prevent damage.
- Install so that there are no external forces on the gripper. Transverse loads on the gripper can cause impact loads and can lead to shaking and damage to the gripper jaws. Installation should include clearance so that the gripper will not impact other work pieces or accessories during its extension.
- A flow control valve should be used to adjust the gripper action if the operation is too fast.
- No personnel or other materials should be present in the gripping path, to prevent injury or damage.
- Confirm that the gripper is locked out of a working state and discharged of compressed air prior to removal.

Front Threaded Hole Installation



Bore Size	Bolt Type	Max. Screw Torque (Nm [lb-in])	Max. Screw Depth (mm)
6	M3 x 0.5	0.69 [6.11]	5
10	M3 x 0.5	0.69 [6.11]	5
16	M4 x 0.7	2.1 [18.59]	7
20	M5 x 0.8	4.3 [38.06]	8
25	M6 x 1.0	7.3 [64.61]	10
32	M6 x 1.0	7.3 [64.61]	10

Front Through Hole Installation



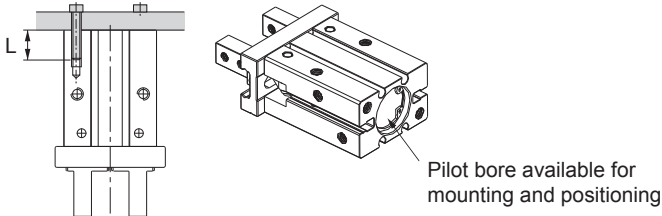
Bore Size	Bolt Type	Max. Screw Torque (Nm [lb-in])	Max. Screw Depth (mm)
6	M2.5 x 0.45	0.49 [4.34]	5
10	M2.5 x 0.45	0.49 [4.34]	5
16	M3 x 0.5	0.88 [7.79]	7
20	M4 x 0.7	2.1 [18.59]	8
25	M5 x 0.8	4.3 [38.06]	10
32	M5 x 0.8	4.3 [38.06]	10

Grippers (Parallel)

Parallel Gripper Installation Notes

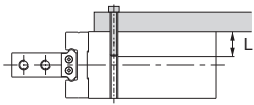
- The gripper force can be reduced and working pieces may fall when the supplied pressure is low or there are abrupt changes. Take care to consider this during machine design.
- Dropping the gripper prior to installation may cause damage and prevent usage.
- It is not recommended to expose the grippers to unnecessary external or impact force.
- Avoid twisting of the gripping jaw or gripping jaw parts.
- Ensure that fastening bolts are properly torqued per the tables below.

Rear Installation Type



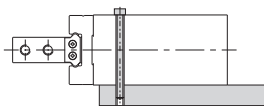
Bore Size	Bolt Type	Max. Screw Torque (Nm [lb-in])	Max. Screw Depth (mm)	Diameter of Pilot Bore (mm)	Depth of Pilot Bore (mm)
10	M3 x 0.5	0.88 [7.79]	6	∅ 11 + 0.05	1.5
16	M4 x 0.7	2.1 [18.59]	8	∅ 17 + 0.05	1.5
20	M5 x 0.8	4.3 [38.06]	10	∅ 21 + 0.05	2
25	M6 x 1.0	7.3 [64.61]	12	∅ 26 + 0.05	2
32	M6 x 1.0	7.9 [69.92]	12	∅ 34 + 0.05	2.5
40	M8 x 1.25	17.7 [156.66]	16	∅ 42 + 0.05	2.5

Front Threaded Hole Installation



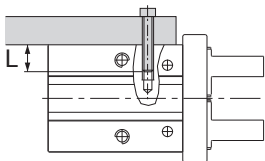
Bore Size	Bolt Type	Max. Screw Torque (Nm [lb-in])	Max. Screw Depth (mm)
6	M3 x 0.5	0.69 [6.11]	10
10	M3 x 0.5	0.69 [6.11]	5
16	M4 x 0.7	2.1 [18.59]	7
20	M5 x 0.8	4.3 [38.06]	8
25	M6 x 1.0	7.3 [64.61]	10
32	M6 x 1.0	7.9 [69.92]	12
40	M8 x 1.25	17.7 [156.66]	12

Front Through Hole Installation



Bore Size	Bolt Type	Max. Screw Torque (Nm [lb-in])	Max. Screw Depth (mm)
6	M2.5 x 0.45	0.49 [4.34]	-
10	M2.5 x 0.45	0.49 [4.34]	5
16	M3 x 0.5	0.88 [7.79]	8
20	M4 x 0.7	2.1 [18.59]	10
25	M5 x 0.8	4.3 [38.06]	12
32	M5 x 0.8	4.3 [38.06]	13
40	M6 x 1.0	7.3 [64.61]	16

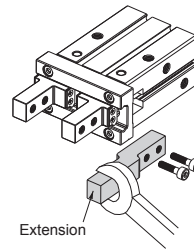
Side Installation



Bore Size	Bolt Type	Max. Screw Torque (Nm [lb-Nm])	Max. Screw Depth (mm)
10	M3 x 0.5	0.9 [7.97]	6
16	M4 x 0.7	1.6 [14.16]	4.5
20	M5 x 0.8	3.3 [29.21]	8
25	M6 x 1.0	5.9 [52.22]	10
32	M6 x 1.0	5.9 [52.22]	10
40	M8 x 1.25	13.7 [121.26]	12

Gripping Jaw Extension Installation

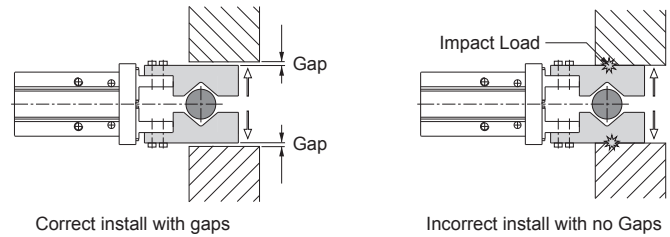
- To install custom designed extensions, first hold the extension by using a wrench then lock the screws into place with an allen wrench. Clamping the body directly and torquing the screws without support will cause damage to the gripper. See illustration and chart for proper mounting.



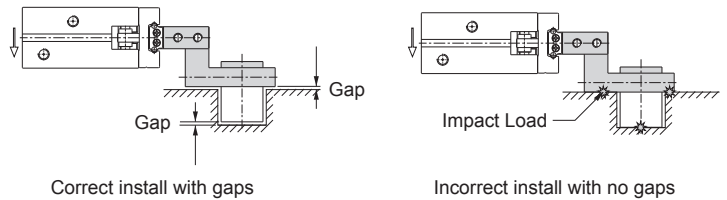
Bore Size	Bolt Type	Max. Locking Moment (Nm)
6	M2 x 0.4	0.15
10	M2.5 x 0.45	0.31
16	M3 x 0.5	0.59
20	M4 x 0.7	1.4
25	M5 x 0.8	2.8
32	M6 x 1.0	4.9
40	M8 x 1.25	11.8

- Install so that there are no external forces on the gripper. Transverse loads on the gripper can cause impact loads and can lead to shaking and damage to the gripper jaws. Installation should include clearance so that the gripper will not impact other work pieces or accessories during its extension.

- Gripper open state, end of stroke:

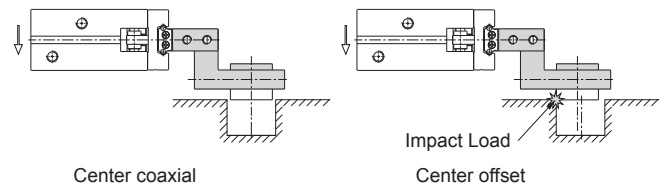
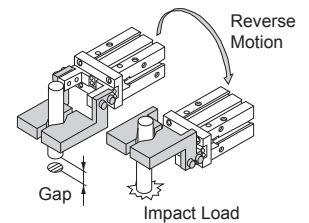


- Gripper closed state, end of stroke:



- When used in the reverse motion state, gripping point must be precise to ensure the gripper does not impact with surrounding objects.

- The center line should be coaxial when work-pieces are inserted with no offset to ensure there are no external forces on the gripper. During testing the pressure should be reduced to the gripper to guarantee safety and that there are no impacts.



- A flow control valve should be used to adjust the gripper action if the operation is too fast.
- No personnel or other materials should be present in the gripping path, to prevent injury or damage.
- Confirm that the gripper is locked out of a working state and discharged of compressed air prior to removal.