Robotic Accessories
Box Slide Parallel Grippers

Machine Tool Quality

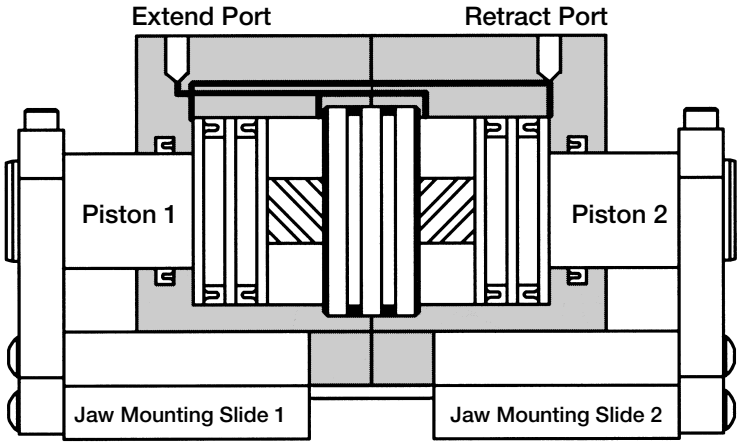
Thousands of Robotic Accessories box slide parallel grippers have demonstrated machine tool quality in die casting, forging, and other torturous environments. Bodies are hardcoated to a Rockwell(c) 70 hardness. All cylinder bores are roller burnished and TFE impregnated to improve seal life and minimize friction.

The pistons are ground and electroless nickel-plated for environmental hardening and to minimize seal friction. Gib plates are hardened and ground and the solid steel movable, jaw-mounting slide is electroless nickel-plated. Robotic Accessories parallel grippers are engineered to go 10,000,000 cycles and beyond!

Patented Synchronous Technology–Extended Life

Synchronous grippers utilize Robotic Accessories US patent number 4,591,199. The force and synchronizing double helix are independent systems. The double helix works only to center the part to ±0.001 inches. All of the gripping force is provided by two pistons that are driven either pneumatically or hydraulically. The independence of the force and synchronization systems provides precision over the typical 10,000,000+ cycle life of the unit.

Synchronized Box Slide Parallel Gripper



Double Synchronizing Helix

Application Flexibility – Four Styles of Gripper

SYNCHRONOUS—Moves parts from a poorly defined to a well defined position.

The synchronized grippers use the patented ROBOTIC ACCESSORIES double helix technology to implement the classic gripper style. This style centers parts to ±0.0010". The stroke offered by all of the ROBOTIC ACCESSORIES grippers allows an entire family of parts to be assembled, picked and placed, or held for machining operations without changing the gripper or the tooling.

NON-SYNCHRONOUS—Moves parts from a well defined to a poorly defined position.

In many applications the part is being withdrawn from a well defined position. The part has been captured by a holding device like a chuck, nest or mold. In these cases, the holding device determines the centerline of the part. If a synchronous gripper is used it will also dictate a centerline that will be different by the error in the positioning system. Two different centerlines means that the part will be "racked" or "dinged" when it is removed from the holding device.

The non-synchronous grippers comply to the position of the part, they do not dictate a centerline but "honor" the existing centerline. This avoids the problems induced by errors in the positioning system.

SEQUENCED—References an edge or surface of the part rather than the center.

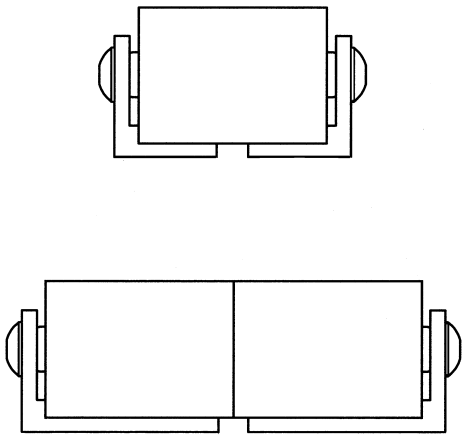
When the application requires a family of parts be presented with reference to an edge or surface, a sequenced gripper is required. In the sequenced grippers, jaw 1 closes to a final position (this references the surface or edge), then jaw 2 complies with the other side of the part. In welding, riveting and other "surface sensitive" operations, the sequenced gripper will present the surface to the process regardless of the thickness of the material.

QUAD-PORTED—Used when complete system control of each jaw is required.

In some sequenced or compliant applications, the timing and force exerted by each jaw is critical to the success of the process. In these cases, a quad-ported gripper provides the user with the ultimate in flexibility. Each jaw is independently ported both open and closed. This porting provides for the ultimate in control. Each jaw can be timed, run at a unique pressure, and driven at a unique speed.

Special Capabilities

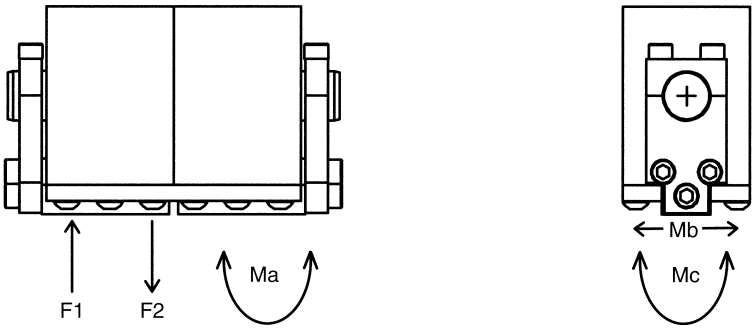
ROBOTIC ACCESSORIES offers the broadest line of parallel grippers available today. The long stroke grippers provide unsurpassed flexibility in handling a wide variety of parts.



Ultra Long Stroke
To Handle a Wide Variety of Parts

Jaw Force & Torque

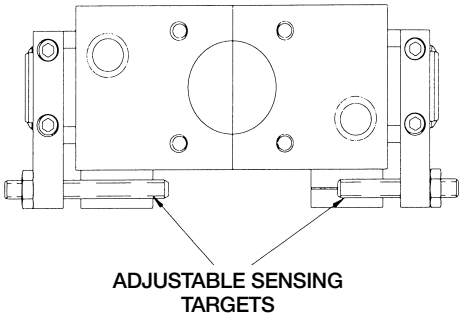
The forces and moments indicated in the chart below are for loads after the gripper has grasped the part and the jaws have completed their motion. If force and torque is applied to the gripper while the jaw is moving please see the ROBOTIC ACCESSORIES PX-Series grippers.

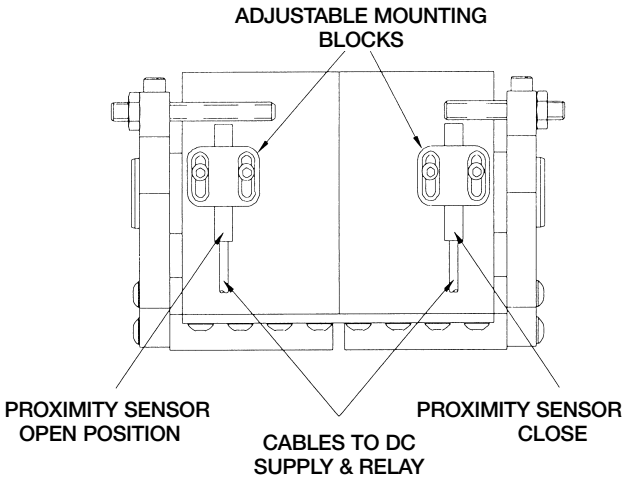


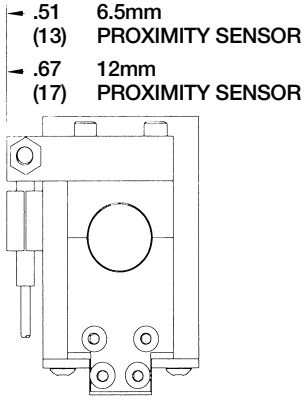
Model	Ma IN•Lbs (kgf-CM)	Mb IN•Lbs (kgf-CM)	Mc IN•Lbs (kgf-CM)	F1 Lbs (kgf)	F2 Lbs (kgf)
P-7700 to P-7900	32 (35)	43 (50)	54 (60)	5 (2.3)	5 (2.3)
P-6950	295 (340)	432 (500)	302 (350)	62 (28.0)	42 (19.2)
P-7000	648 (750)	1080 (1250)	1231 (1400)	246 (111.8)	169 (77.0)
P-7100	1095 (1250)	1825 (2100)	2020 (2300)	750 (340.9)	556 (252.5)
P-7150 & P-7200	1743 (2000)	2905 (3350)	3424 (4000)	1000 (454.5)	928 (421.7)

Robotic Accessories
Proximity Sensors

Not Available on Miniature Box Slide Grippers P-7700, P-7800 & P-7900







Specifications & Dimensions

Model	Voltage Range	Output	Operating Temperatures	Shielded	Overload Protected
6.5mm–DC	10–60 VDC	Sourcing (PNP) Sinking (NPN)	-14°F – +158°F	Yes	Yes
12mm–AC	90–130 VAC	N. O. N. C.	-14°F – +158°F	Yes	No