

Robotic Accessories

Square Jaw Brute™ Parallel Grippers

Operating Principle

True Parallel Motion of the fingers is achieved through a toggle mechanism linking the piston of the double acting pneumatic cylinder to the jaws. The jaws remain syn-

chronous and parallel through the normal motion of the piston. This parallel motion provides a consistent grip force throughout the range the stroke.

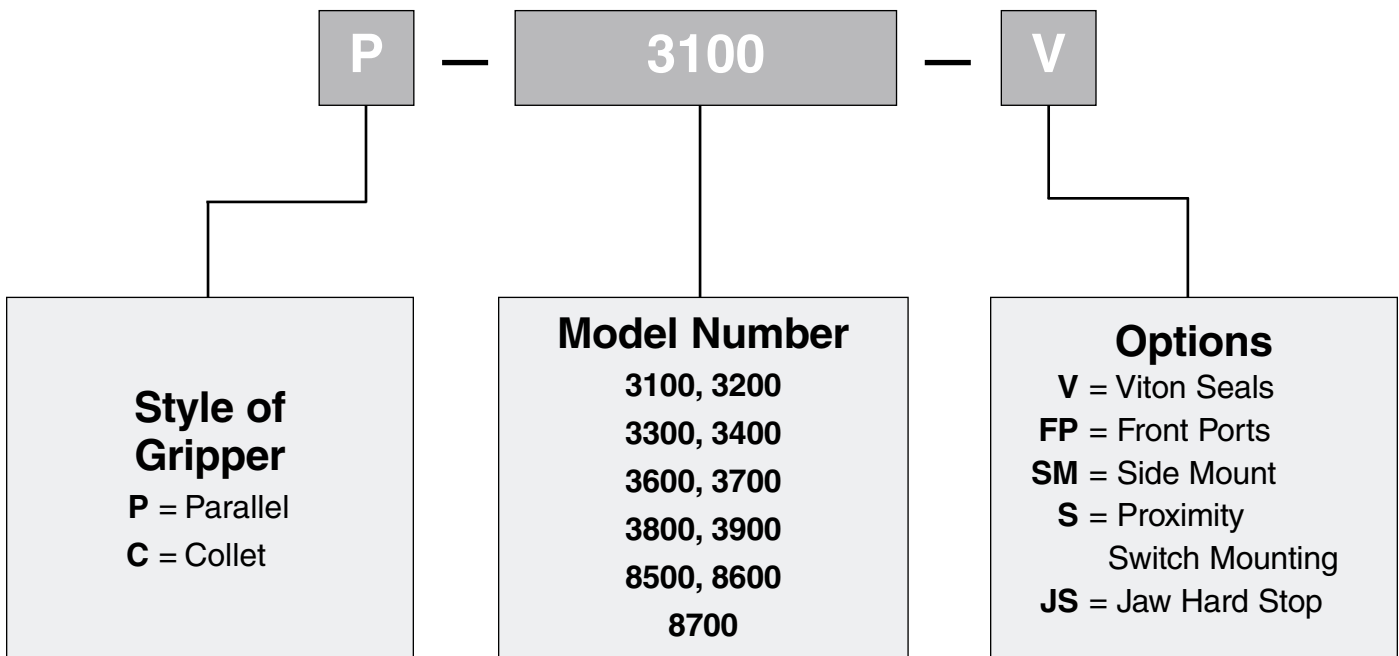
Features

- The Square Jaw Brute™ is field repairable for minimum downtime. Most replacement parts are available the same day, to be shipped from our facility.
- The Square Jaw Brute™ Gripper has been designed to provide long life with trouble free operation. Beta test site applications have achieved over 10 million loaded cycles with minimal wear. Actual life cycle of the gripper may vary depending on the application, maintenance and environment. Contact our Technical Sales department for actual case studies.
- The customer interface mounting holes are metric. See specific model in the catalog for sizes and locations.
- Hardened tool steel wear surfaces allow the Square Jaw Brute™ to operate for millions of cycles in dirty environments where anodized aluminum wear surfaces have failed.
- The cylinders come standard with a magnetic piston which enables mid-stroke signaling and exact end of stroke sensing. A sensor can be positioned anywhere in any of the standard 6 dovetail slots and is locked into position with an integral screw. Multiple sensors can be installed in one or more of the dovetails. Sensors are ordered separately (see Sensor section).
- Standard seals are internally lubricated modified Buna N O-rings. All units are factory lubricated with Magnalube®-G (a grease loaded with microscopic size particles of TFE in suspension). This combination has been found suitable for long life in most non-lube service applications.

Application Guidelines

- The maximum load the gripper can handle will vary based on the size, shape and texture of the part, texture and shape of the fingers, acceleration and speed of the system and air line pressure.
- Design the tooling fingers as short as possible to maximize grip force and extend the life of the gripper. See loading charts specific to each gripper.
- All grippers are factory lubricated for service under normal operating conditions. Periodic lubrication of the slide and jaws is required. The frequency is dependent on the application and environmental conditions.
- The gripper is designed for use in temperatures from -25°F to 250°F (-32°C to 121°C). Viton Seals are optional for high temperature environments (up to 400°F/204°C) and are resistant to many hostile fluids.
- A four way solenoid valve is required to control the gripper.
- Always key and/or dowel fingers onto the jaws.
- The grip force can be adjusted by varying the air pressure.
- Use dry air only, not to exceed 120 psi/8.3 bar.

How to Order



Options

Viton Seals (-V) these seals are optional for high temperature environments (up to 400°F/204°C) and are resistant to many hostile fluids.

Front Ports (-FP) The location of the air ports can be rotated in 90° increments relative to the jaws at your request.

Side Mounting (-SM) A side mounting plate is available for all 2 Jaw Square Jaw Brute™ Grippers.

Proximity Switches (-S) Proximity Switches thread directly into the housing of the gripper

offering protection from dirt and debris. Contact Robotic Accessories for model availability.

Hard Stop (-JS) A pneumatically actuated hard stop is available at any location along the stroke in the close direction on 2 jaw models. This creates a third close/open position. Contact Robotic Accessories for model availability.

Adapter Plates can be ordered separately and are available for any model.

Sensors

Sensors are mounted in the dovetail slots in the wall of the gripper cylinder. They are actuated by the magnetic piston. The sensors are 1/4" with a 3/8" boot and can be mounted in or removed from the gripper at any time. These sensors are encased in a plastic housing

and are corrosion resistant. The 45° wire outlet allows close mounting. Each sensor is furnished complete with a hex socket screw, mounting clamp and a hex wrench for secure installation. The table below lists the sensor specifications and ordering information.

Ordering Guide – Dovetail Style Magnetic Sensors

Sensor Type	Prewired 9 ft. Part No.	Quick Disconnect Part No.*	Wire Leads	LED	Electrical Characteristics	
Electronic	4008	4009	3	Yes	Sourcing PNP 6-24 VDC, 0.20 Amp Max Current 0.5 Voltage Drop	<p>Do Not Reverse Polarity Brown 6-24 VDC (+) Black (-) Blue Electronic Sensor Sourcing</p> <p>Do Not Reverse Polarity Brown 6-24 VDC (+) Black (-) Blue Electronic Sensor Sinking</p> <p>Brown (DC+) Blue (DC-) Reed Switch with LED</p>
Electronic	4010	4011	3	Yes	Sinking NPN 6-24 VDC, 0.20 Amp Max Current 0.5 Voltage Drop	
Reed	4015	4016	2	Yes	5-120 VDC/VAC, 0.03 Amp Max current, 4 Watt Max, 2.0 Voltage Drop	

*Quick Disconnect Styles are supplied with 6 inch pigtail with male connector. Order Female cordsets separately.

Female Cordsets for Quick Disconnect

Length	1 Meter	2 Meters	5 Meters
Part No.	4012	4013	4014

Temperature range for Sensors: -4° to +176°F / -20° to +80°C