

INTRODUCTION

TRUE PARALLEL MOTION GRIPPERS & ACCESSORIES

Parallel motion grippers represent a highly versatile and flexible design. The integral pneumatic cylinder pushes the jaws open. The jaws slide along two hardened guide rods providing rigid, long lasting true parallel motion. The pull stroke closes the jaws. A four-way valve circuit is required for control.

All units are of two jaw design.

Gripping forces, formulas, unit weights, and dimensions are included in this section.

ENGINEERING DATA

SELF CONTAINED ACTUATOR

All models feature Compact Air cylinder actuators as an integral, yet self-contained, component. Cylinders feature low profiles, low weight aluminum alloy bodies, and stainless steel piston rods. All units are pre-lubricated for life.

MATERIALS

Actuators are aluminum alloy with nylon rod bushings. All sliding parts are heat treated steel for long, trouble-free operation. Mechanism cover pieces are stamped stainless steel.

ACTUATOR SEALS

As standard, actuators are packed with seals of Buna-N rubber. Temperature limits are from 0° F to 200° F (-18° C to 90° C). All actuators are pre-lubricated at the factory and do not require additional lubrication.
Seal options — Section C.

TOOLING

Com-Pick II grippers are "generic" in standard form. Base jaws are slotted and tapped for tooling. Pre-modified "L" jaws and aluminum blanks are stocked or you can add your own V-blocks, pads, sensors, etc. Also, see Section D.

THEORETICAL GRIPPING FORCE FORMULAS

NOTE: Gripping forces are constant at any point of jaw travel. Due to friction caused by leverage, 7% to 10% force loss per inch of tooling length should be considered. Long jaw tooling will reduce the life of the gripper and is not recommended. Consult factory.

$$\text{GRIPPING FORCE} = \frac{\text{PSI X PISTON AREA}}{2}$$

PISTON AREAS IN.²

BORE	SERIES	1/2	3/4	1-1/8	1-3/8	1-5/8	2"
		052	072	112	132	162	202
IN. ²	Push (Open)	.2	.44	1.0	1.5	2	3
IN. ²	Pull (Close)	.15	.36	.8	1.2	1.7	2.7

ENGINEERING DATA — Continued

PRESSURE RATINGS

PNEUMATIC	Clean, dry or lubricated — 15 PSI to 200 PSI (125 PSI In 052 series)
HYDRAULIC	Consult Factory

PRE-CALCULATED GRIPPING FORCES

GRIPPER		AIR PRESSURE (PSI)				
SERIES	BORE	20 PSI	40 PSI	60 PSI	80 PSI	100 PSI
052	1/2	2 Lbs.	4 Lbs.	6 Lbs.	8 Lbs.	10 Lbs.
		1.5 Lbs.	3 Lbs.	4.5 Lbs.	6 Lbs.	7.5 Lbs.
072	3/4	4.4 Lbs.	8.8 Lbs.	13.2 Lbs.	17.6 Lbs.	22 Lbs.
		3.6 Lbs.	7.2 Lbs.	10.8 Lbs.	14.4 Lbs.	18 Lbs.
112	1-1/8	10 Lbs.	20 Lbs.	30 Lbs.	40 Lbs.	50 Lbs.
		8 Lbs.	16 Lbs.	24 Lbs.	32 Lbs.	40 Lbs.
132	1-3/8	15 Lbs.	30 Lbs.	45 Lbs.	60 Lbs.	75 Lbs.
		12 Lbs.	24 Lbs.	36 Lbs.	48 Lbs.	60 Lbs.
162	1-5/8	20 Lbs.	40 Lbs.	60 Lbs.	80 Lbs.	100 Lbs.
		17 Lbs.	34 Lbs.	51 Lbs.	68 Lbs.	85 Lbs.
202	2"	30 Lbs.	60 Lbs.	90 Lbs.	120 Lbs.	150 Lbs.
		27 Lbs.	54 Lbs.	81 Lbs.	108 Lbs.	135 Lbs.

 — Open — I.D. Gripping

 — Closed — O.D. Gripping

★ IMPORTANT NOTES ★

- Gripping forces are theoretical and will vary due to friction. 7% to 10% force reduction per inch of tooling length is approximate force loss.
- Long, heavy tooling decreases performance of the gripper and should be avoided.

Maximum recommended tooling length:

- Series 052, 072 and 112 = 2"
- Series 132, 162 and 202 = 5"

ESTIMATED UNIT WEIGHTS Without Tooling (Lbs)

SERIES	052	072	112	132	162	202
Short Travel	.21	.60	.95	2.05	2.20	2.65
Long Travel	.25	.70	1.10	2.30	2.45	2.95

DOUBLE ROD END ACTUATORS

Unlike the angular type grippers, Double Rod End Actuators are not stocked for Parallel Grippers due to the extra length the double ended rod adds in the longer strokes required for parallel gripping. Double Rod End Actuators can be special ordered. Primary application for this option is limit sensing w/mechanical switches. See section C for Solid State Piston Sensors.