

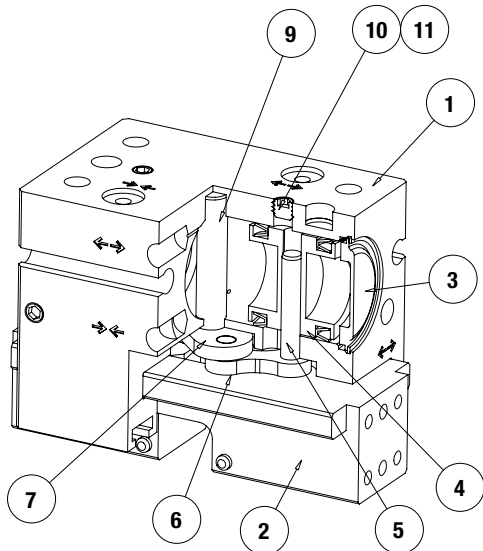
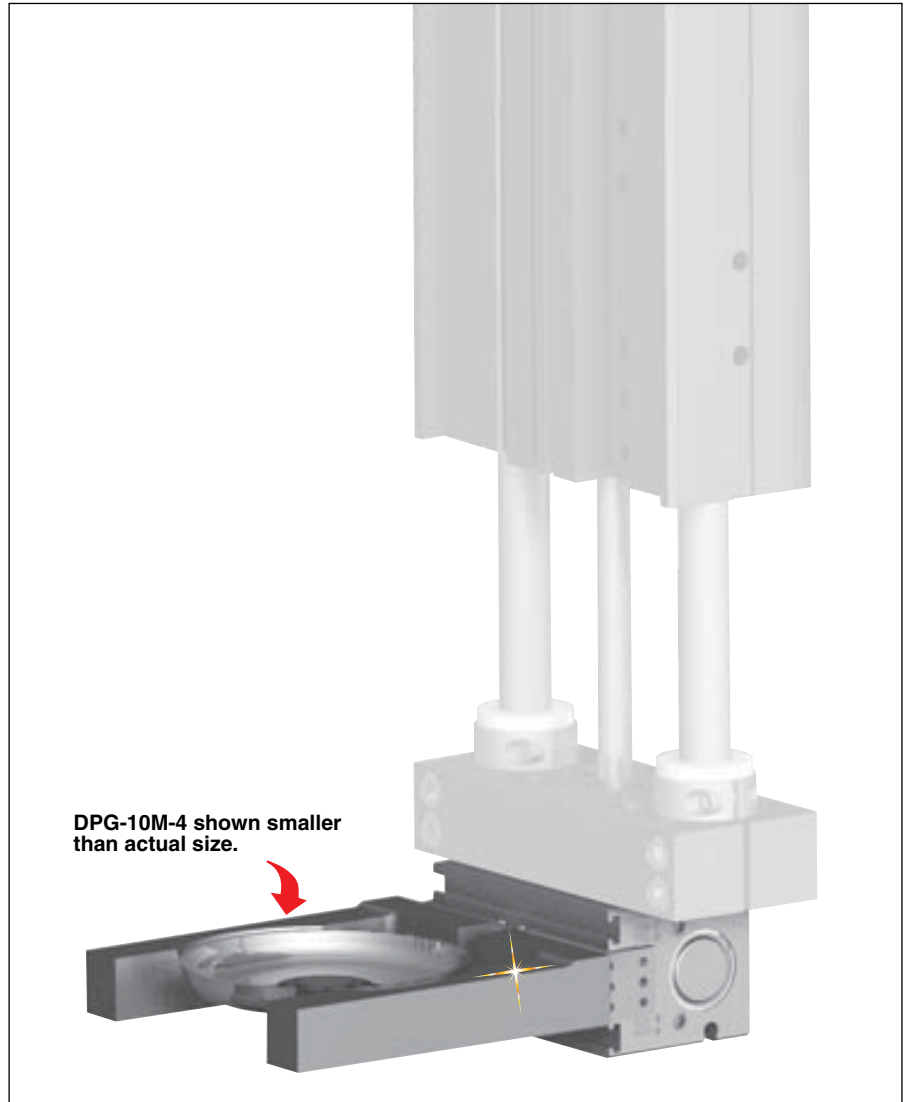
PNEUMATIC GRIPPERS

PARALLEL JAWS DIRECTCONNECT™

MODULAR SERIES

DPG Series

- Grippers Can be Mounted and Operated in Any Orientation
- Up to 5 million Cycles in Typical Life Cycle
- Temperature Operating Range -35 to 80°C (-30 to 180°F)
- Non-Synchronous and Single Jaw Motion
- Repeatability and Accuracy of ± 0.05 mm (± 0.002 ")
- Highly Configurable Modular Automation
- Multiply Pneumatic Air Port Locations
- Operates Under Pressure Range of 3 to 7 Bar (40 to 100 psi)
- System Requires Air Filtration of 40 Micron or Better
- 4 Way, 2 Position Valve Required
- Gripper Finger Tooling is Customer Responsibility
- Available in Spring Open or Spring Closed Configuration



DPG SERIES ASSEMBLED VIEW		
ITEM	QUANTITY	NAME
01	1	Body
02	2	Jaw
03	2	Cap
04	2	Piston
05	2	Drive Pin
06	2	Synchronizing Bar
07	1	Equalizer
09	1	Pivot Pin
10	2	Set Screw—Drive Pin Access Plug
11	1	Set Screw—Plug (-LF and -RF options only)

PRODUCT FEATURES

Hard Coat Anodize

The body and jaws have hard-coat anodize 60RC with PTFE impregnation

High Temperature

Optional Viton® seals are available for high temperature applications

Multiple Air Port Locations

3 standard air port locations (front and both sides)
Optional top airports available

Sensor Mounting Slots

Standard mounting slots for magneto resistive and inductive sensors (sensors sold separately)

One Piece Body

One piece lightweight aircraft quality aluminum body

DIRECTCONNECT™

Mounting Patterns

2 DIRECTCONNECT™ mounting surfaces on top and back of body

Sensor Targets

Magnets come standard in pistons for magneto resistive sensors
Four inductive sensor targets on sides of jaws

Superior Jaw Support

Jaws are supported throughout the length of the body

Dowel Holes

Slip fit dowel pin holes in body and jaws

Versatile Finger Mounting

2 finger mounting surfaces on each jaw

Shielded Design

Shielded design repels contaminants

Extremely Compact and Robust Design

Self-Lubricating Seals

Self lubricating dynamic seals (Buna-N only)

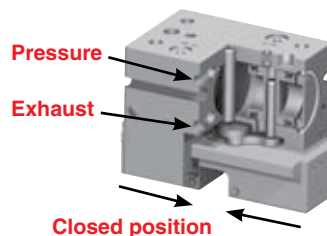
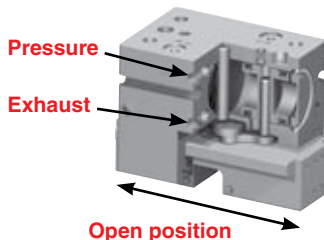
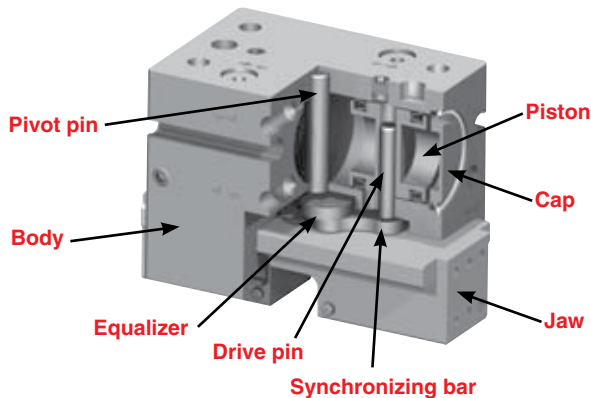
Multiple Sensor Capabilities

Capable of sensing both jaws in the open and closed positions (up to 4 sensors can be used for multi-position sensing)

Optional Features

- Top air ports eliminating the need for airlines
- Fixed jaw configurations
- Spring assist for open or close stroke
- Non-synchronous version

OPERATING PRINCIPLE

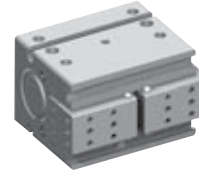


- Dual Double Acting Opposed Pistons, Connected to Both a Jaw and a Synchronizing Bar by a Drive Pin, Actuate in Opposite Directions
- The Synchronizing Bars are Connected to the Equalizer which Synchronizes the Motion
- Suitable for Internal or External Gripping
- The Synchronizing Elements Can Be Removed for Non-Synchronous Operation

DPG-10M PARALLEL GRIPPERS

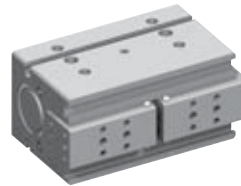
SIZE "-1"

Style: DPG-10M-1
Stroke: 6.4 mm (0.25")
Grip Force: 222 N (50 lb)
Weight: 0.17 kg (0.39 lb)



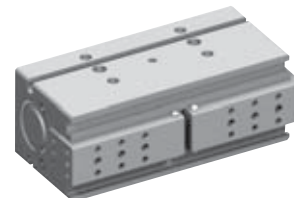
SIZE "-2"

Style: DPG-10M-2
Stroke: 12.7 mm (0.50")
Grip Force: 222 N (50 lb)
Weight: 0.24 kg (0.53 lb)



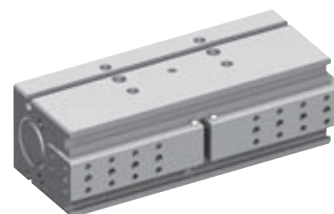
SIZE "-3"

Style: DPG-10M-3
Stroke: 19.1 mm (0.75")
Grip Force: 222 N (50 lb)
Weight: 0.30 kg (0.68 lb)

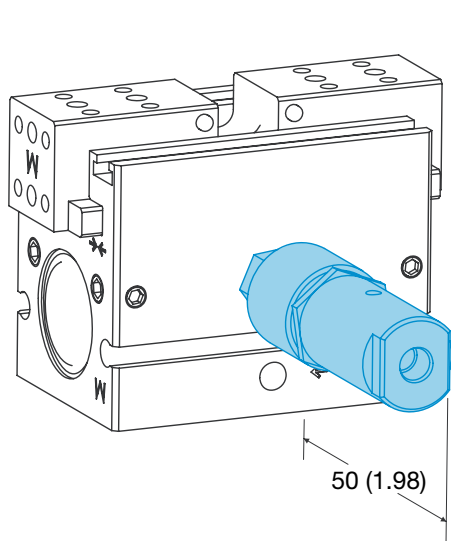


SIZE "-4"

Style: DPG-10M-4
Stroke: 25.4 mm (1.00")
Grip Force: 222 N (50 lb)
Weight: 0.36 kg (0.81 lb)

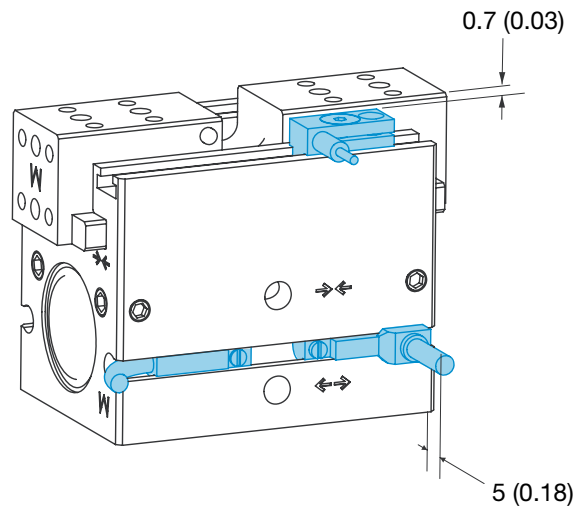


ACCESSORY MOUNTING EXAMPLES



Failsafe Valve

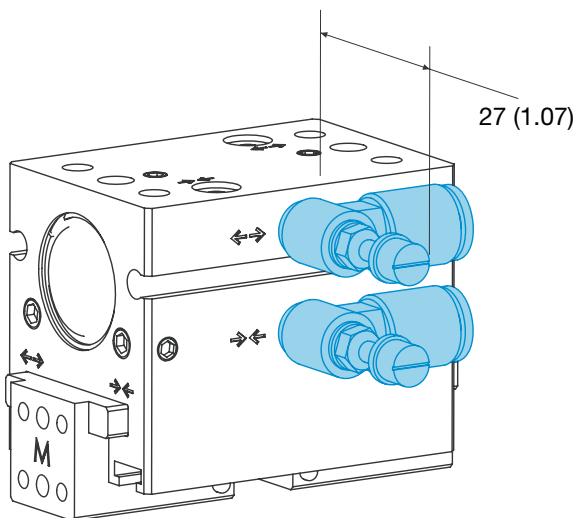
- Used in Applications Where it is Critical that the Part Being Gripped Not be Dropped if Air Pressure is Lost
- Mounts Directly to Gripper
- M5 Air Port



Sensors

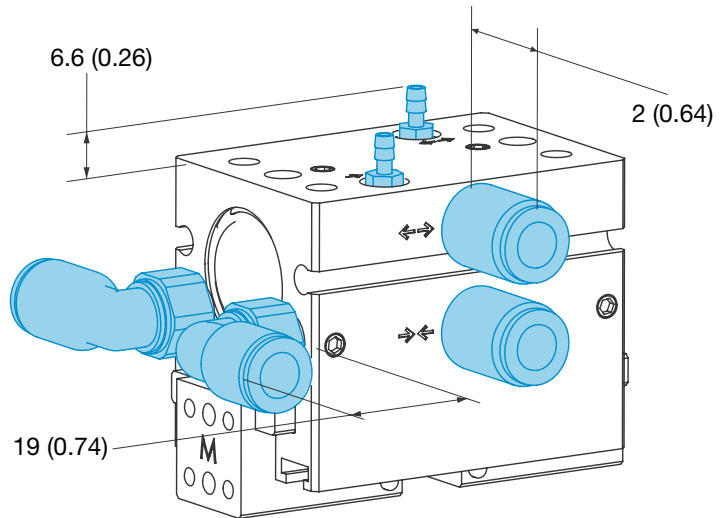
- Choose from Magneto Resistive and Inductive Prox
- Capable of Sensing 4 Positions Open and Closed on Both Jaws
- PNP and NPN Available
- Magneto Resistive Sensors are Slot Mounted, No Mounting Kits Required
- Threaded Quick Disconnect with Built-In LED Output
- Sensors Mount on Either Side of Gripper

Dimensions: mm (inch)



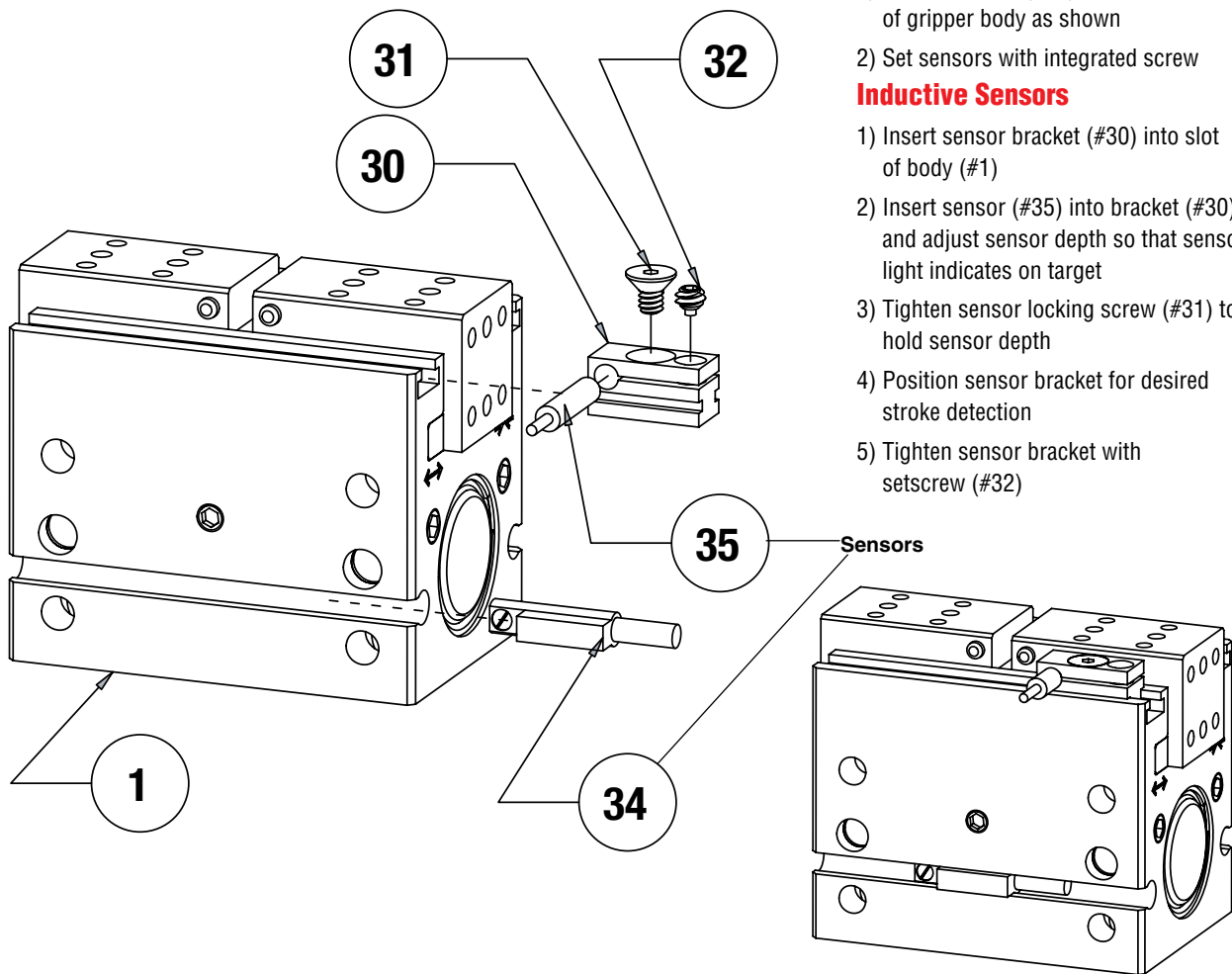
Flow Controls

- Thumb Screw Adjust with Locking Nut for Adjusting Actuation Time
- Available for 5 mm (0.2") OD Tubing



Multiple Air Port Locations

- 3 Standard Air Port Locations (Front and Both Sides)
- Optional Top Ports are Tapped for M3 Fittings
- Consult Factory for Plumbing Fitting Part Numbers



Installation

Magneto Resistive Sensors

1) Install sensors (#34) in profile slots of gripper body as shown

2) Set sensors with integrated screw

Inductive Sensors

1) Insert sensor bracket (#30) into slot of body (#1)

2) Insert sensor (#35) into bracket (#30) and adjust sensor depth so that sensor light indicates on target

3) Tighten sensor locking screw (#31) to hold sensor depth

4) Position sensor bracket for desired stroke detection

5) Tighten sensor bracket with setscrew (#32)

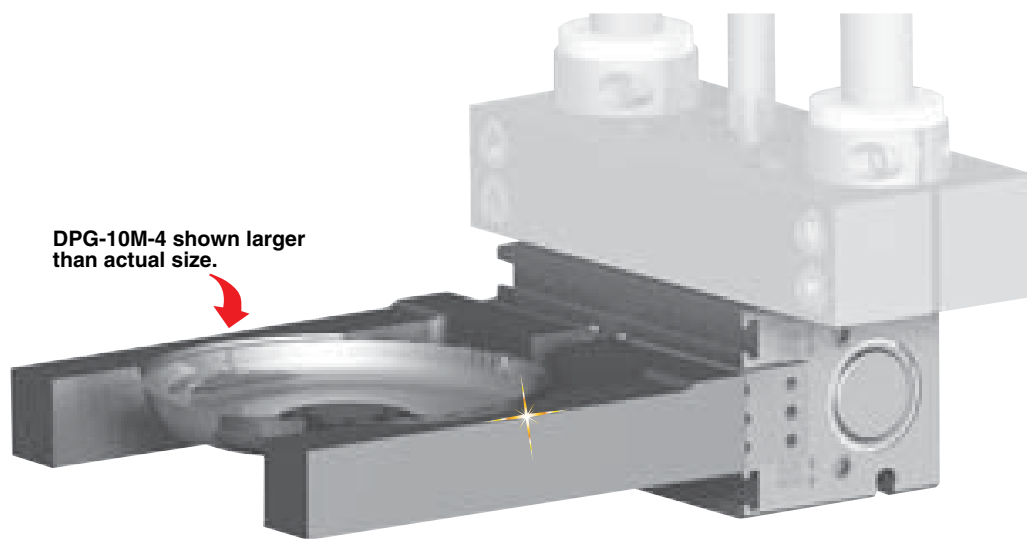
Assembly Procedure (See next page)

- 1) Lubricate body
- 2) Plug cross ports in body
- 3) Press pivot pin into body
- 4) Insert magnets into pistons making sure magnets attract to each other
- 5) Lubricate and install seals onto pistons
- 6) Insert pistons into body aligning drive pin hole in pistons with the drive pin hole in the body
- 7) Press pins into equalizer

- 8) Assemble equalizer with synchronizing bars and place onto pivot pin in body making sure holes in synchronizing bars line up with holes in pistons
- 9) From top body mounting surface insert drive pins through the pistons and into the synchronizing bars making sure not to go through the synchronizing bars
- 10) Place jaws into body aligning the drive pins with the hole in the jaws
- 11) Press drive pins into jaws
- 12) Install drive pin plugs into body
- 13) Place seals onto caps and install with retaining rings

Non-Synchronous Procedure

- 1) Remove drive pin plugs
- 2) Press drive pins out of body from jaw side
- 3) Remove jaws from body
- 4) Remove equalizer and synchronizing bars from body
- 5) Re-install jaws into body aligning the drive pin with the hole in the jaws
- 6) Press drive pins into jaws
- 7) Re-install drive pin plugs into body



DPG-10M-4 shown larger than actual size.

To Order			
MODEL NO.	DESCRIPTION	STROKE	GRIP FORCE
DPG-10M-1	Gripper size 1 open	6.4 mm (0.25")	222 N (50 lb)
DPG-10M-1-C	Gripper size 1 closed	6.4 mm (0.25")	222 N (50 lb)
DPG-10M-2	Gripper size 2 open	12.7 mm (0.50")	222 N (50 lb)
DPG-10M-2-C	Gripper size 2 closed	12.7 mm (0.50")	222 N (50 lb)
DPG-10M-3	Gripper size 3 open	19.1 mm (0.75")	222 N (50 lb)
DPG-10M-3-C	Gripper size 3 closed	19.1 mm (0.75")	222 N (50 lb)
DPG-10M-4	Gripper size 4 open	25.4 mm (1.00")	222 N (50 lb)
DPG-10M-4-C	Gripper size 4 closed	25.4 mm (1.00")	222 N (50 lb)

Add suffix "-C" to model number if requesting spring closed configuration.

Ordering Example: *DPG-10M-2-C*, gripper, size 2, spring closed configuration. *DPG-10M-2*, gripper, size 2, spring open configuration.

Sensor Accessories

MODEL NO.	DESCRIPTION	QUANTITY
OSMK-097	Inductive sensor mounting kit mounts 2 sensors	1 or 2
OISN-019	NPN inductive sensor with quick disconnect*	1, 2, 3 or 4
OISP-019	PNP inductive sensor with quick disconnect*	1, 2, 3 or 4
OHSN-017	NPN magneto resistive sensor with quick disconnect*	1, 2, 3 or 4
OHSP-017	PNP magneto resistive sensor with quick disconnect*	1, 2, 3 or 4
OHSN-011	NPN magneto resistive sensor (90°) with quick disconnect*	1, 2, 3 or 4
OHSP-011	PNP magneto resistive sensor (90°) with quick disconnect*	1, 2, 3 or 4
CABL-010	Quick disconnect cable [2 m (6.6') long]*	1, 2, 3 or 4
CABL-013	Quick disconnect cable [5 m (16') long]*	1, 2, 3 or 4
CABL-015	Quick disconnect extension cable [1 m (3') long]*	1, 2, 3 or 4
CABL-016	Quick disconnect extension cable [2 m (6.6') long]*	1, 2, 3 or 4

* Sensor and cable sold separately.

Pneumatic Accessories

MODEL NO.	DESCRIPTION	QUANTITY
OFSV-004	Fail safe valve	1
VLVF-008	Flow control	1 or 2
SLKT-184V	Top port manifold seal	1

Ordering Example: *DPG-10M-4-C*, gripper, size 4, closed grip configuration. 2 *OISP-019*, PNP inductive sensors, quick disconnect, and 2 *CABL-010*, quick disconnect 2 m (6.6') cables.