



# Parallel Grippers - DPG DIRECTCONNECT™ Modular Series

**DIRECTCONNECT™**  
ADVANCED MODULAR AUTOMATION TECHNOLOGY

**NO  
ADAPTER  
PLATES!**

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ADAPTER  
PLATES!**

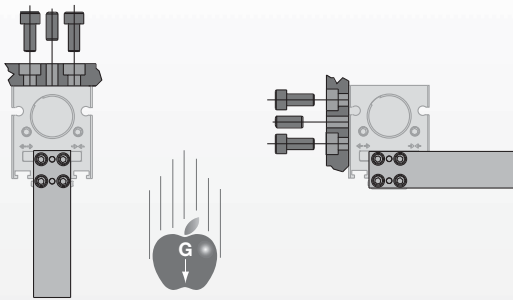
- **Multiple mounting locations:** DIRECTCONNECT™ mounting on top and back of body. Fingers mount to sides or bottom of jaws.
- **Multiple air port positions:** Tapped air ports on front and both sides are standard. Top air ports with counterbores for o-ring manifolded operation and threads for screw-in type fittings are available.

- **Sensing options:** Magneto resistive (Hall Effect) or inductive proximity sensors available.
- **Sense up to four positions:** Up to four jaw positions can be sensed to allow open, closed, part present, or variable part size sensing.
- **Shielded to repel contaminate:** Design repels chips and particulate. Closed jaw position spacing eliminates “chip compactor” effect.
- **Longer finger applications:** Rigid design and full body support of jaw allows for longer finger lengths.

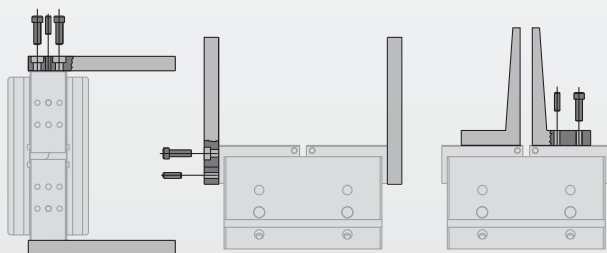
- **Spring assist, spring return:** Cylinders can be double acting, double acting spring assist, failsafe, or single acting in either open or closed direction.
- **Non-synchronous motion:** Non-synchronous motion option provides independent jaw motion allowing the gripper to pick or place at a point other than it's center.
- **Single jaw motion with fixed jaw:** This option locks one jaw in a fixed position while the other jaw is free to move.

## Mounting Information:

Gripper can be mounted and operated in any orientation



Body mounts with screws and locates with slip fit dowel pins for accuracy



Fingers attach with screws and locate on jaws by keying or dowel pin holes

## Technical Specifications:

Pneumatic Specifications	Imperial	Metric
Pressure Operating Range	40-100 psi	3-7 bar
Cylinder Type	Double Acting or Single Acting Spring Return or Double Acting Spring Assist Internally Lubricated Buna-N	
Dynamic Seals	4-way, 2-position for Double Acting or 3-way, 2-position for Single Acting	
Valve Required to Operate		

Air Quality Requirements	40 Micron or Better
Air Filtration	Not Necessary*
Air Lubrication	Low Moisture Content (dry)
Air Humidity	

Temperature Operating Range	-30°~180° F	-35°~80° C
Buna-N Seals (standard)	-20°~300° F	-30°~150° C
Viton® Seals (optional)		

Maintenance Specifications†	5 million cycles
Expected Life	10+ million cycles*
Normal Application w/ Preventative Maintenance	Yes
Field Repairable	Yes
Seal Repair Kits Available	Yes

**Application Restrictions**  
Applications where mechanism lubricant could cause contamination

\*Addition of lubrication will greatly increase service life  
†See Maintenance Section

DIRECTCONNECT™

# Product Features

### Hard Coat Anodize

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

### High Temperature

Optional Viton® seals are available for high temperature applications

### Multiple Air Port Locations

3 standard airport locations (front & 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

### Dowel Holes

Slip fit dowel pin holes in body and jaws

### Superior Jaw Support

Jaws are supported throughout the length of the body

### Versatile Finger Mounting

2 finger mounting surfaces on each jaw

### Shielded Design

Shielded design repels contaminants

### Extremely Compact & Robust Design

### 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)

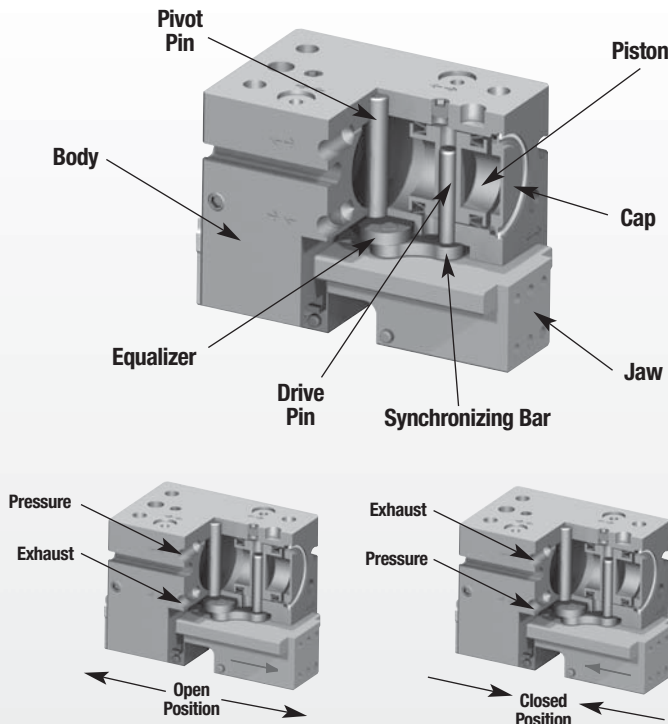
### Optional Features

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

### Self-Lubricating Seals

Self lubricating dynamic seals (Buna-N only)

# Operating Principle



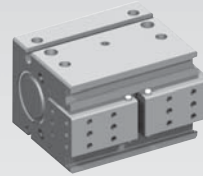
- Dual double acting opposed pistons, connected to both a jaw and a synchronizing bar by a drive pin, actuate in opposite directions.
- The synchronizing bars are connected to the equalizer which synchronizes the motion.
- Suitable for internal or external gripping.
- The synchronizing elements can be removed for non-synchronous operation.

**Designed and manufactured in the USA**

## Style -DPG-10M Parallel Gripper

### Size -1

Style:	▲ DPG-10M-1	
Stroke:	0.25 in.	6.4 mm
Grip Force:	50 lbs.	222 N
Weight:	0.39 lbs.	0.17 Kg

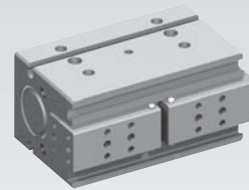


See Page **1.124**

## Style -DPG-10M Parallel Gripper

### Size -2

Style:	▲ DPG-10M-2	
Stroke:	0.50 in.	12.7 mm
Grip Force:	50 lbs.	222 N
Weight:	0.53 lbs.	0.24 Kg

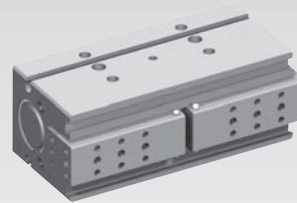


See Page **1.126**

## Style -DPG-10M Parallel Gripper

### Size -3

Style:	▲ DPG-10M-3	
Stroke:	0.75 in.	19.1 mm
Grip Force:	50 lbs.	222 N
Weight:	0.68 lbs.	0.30 Kg

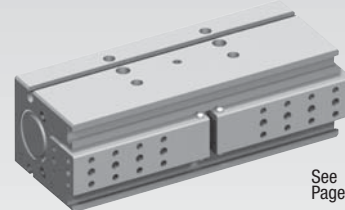


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## Style -DPG-10M Parallel Gripper

### Size -4

Style:	▲ DPG-10M-4	
Stroke:	1.00 in.	25.4 mm
Grip Force:	50 lbs.	222 N
Weight:	0.81 lbs.	0.36 Kg



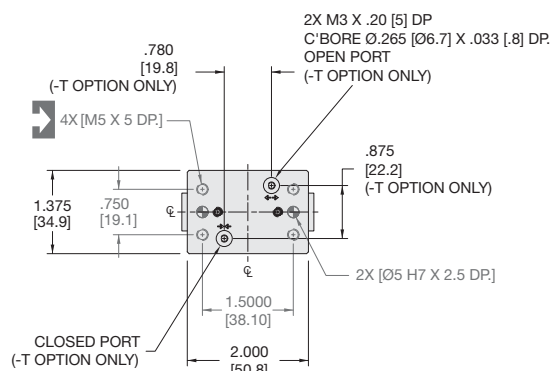
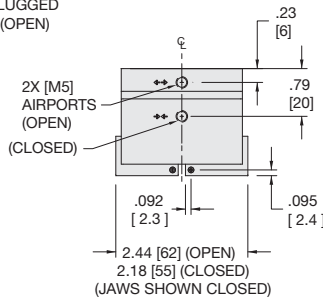
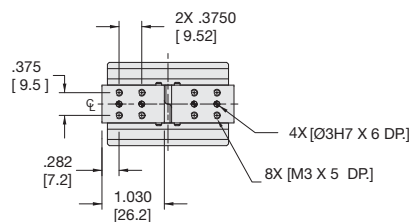
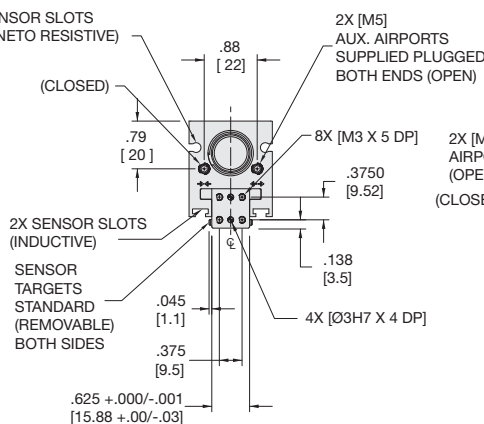
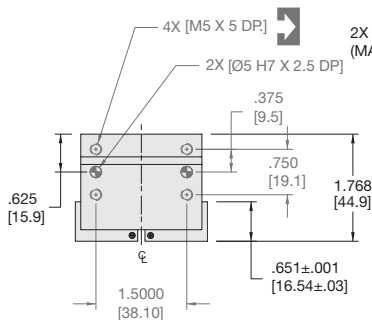
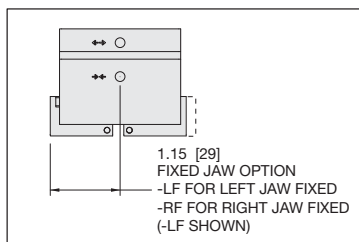
See Page **1.130**



# PARALLEL GRIPPER DPG-10M-1 DIRECTCONNECT™ MODULAR SERIES

DPG SERIES

1.124



UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

Dimensions are symmetrical about centerline

Third Angle Projection

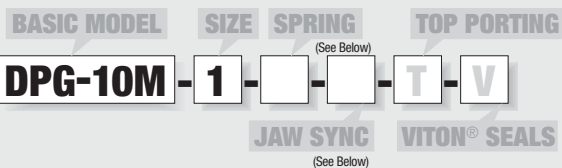
All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or ±.013mm

Metric Threads Course Pitch

**Imperial in.**  
0.00 = ±.01  
0.000 = ±.005  
0.0000 = ±.0005

**Metric [mm]**  
[0.] = [±.25]  
[0.0] = [±.13]  
[0.00] = [±.013]

## How to Order: (Order Accessories separately from Basic Model)



**SPRING DIRECTION**

**O** Spring Open  
**C** Spring Closed  
— Leave Blank. No Spring Option (standard)

**JAW SYNCHRONIZATION CONFIGURATION**

**LF** Left Jaw Fixed  
**RF** Right Jaw Fixed  
**NS** Non-synchronous Jaws  
— Leave Blank for Synchronous (standard)

### SENSOR ACCESSORIES

	ORDER #	QTY/UNIT
Inductive Sensor Mounting Kit (Mounts 2 Sensors)	<b>OSMK-097</b>	<b>1 or 2</b>
NPN Inductive Sensor with Qk. Disconnect*	<b>OISP-019</b>	<b>1,2,3, or 4</b>
PNP Inductive Sensor with Qk. Disconnect*	<b>OISP-019</b>	<b>1,2,3, or 4</b>
NPN Magneto Resistive Sensor w/Qk. Disconnect*	<b>OHSN-017</b>	<b>1,2,3, or 4</b>
PNP Magneto Resistive Sensor w/Qk. Disconnect*	<b>OHSN-017</b>	<b>1,2,3, or 4</b>
NPN Magneto Resistive Sensor (90°) w/Qk. Disconnect*	<b>OHSN-011</b>	<b>1,2,3, or 4</b>
PNP Magneto Resistive Sensor (90°) w/Qk. Disconnect*	<b>OHSN-011</b>	<b>1,2,3, or 4</b>
Quick Disconnect Cable (2 meters long)*	<b>CABL-010</b>	<b>1,2,3, or 4</b>
Quick Disconnect Cable (5 meters long)*	<b>CABL-013</b>	<b>1,2,3, or 4</b>
Quick Disconnect Cable Extension Cord (1 meter long)*	<b>CABL-015</b>	<b>1,2,3, or 4</b>
Quick Disconnect Cable Extension Cord (2 meters long)*	<b>CABL-016</b>	<b>1,2,3, or 4</b>

### PNEUMATIC ACCESSORIES

	ORDER #	QTY/UNIT
Standard Seal Repair Kit	<b>SLKT-183</b>	<b>1</b>
Viton® Seal Repair Kit	<b>SLKT-183V</b>	<b>1</b>
-T Option Plumbing Fitting - M3 male to 3mm OD Tube Push-in Style	<b>PLFT-021</b>	<b>1 or 2</b>
-T Option Plumbing Fitting - M3 male to 2mm ID Tube Barb Style	<b>PLFT-022</b>	<b>1 or 2</b>
Fail Safe Valve - M5 (Metric)	<b>OFSV-004</b>	<b>1</b>
Adjustable Flow Control (Metric)	<b>VLVF-008</b>	<b>1 or 2</b>
Top Port Manifold Seal Kit	<b>SLKT-184V</b>	<b>1</b>

\*Sensor and cable sold separately

### SAMPLE ORDER: DPG-10M-1-C-V

Ex: DPG-10M Gripper, Metric, Size 1, Spring Close, Viton® Seals

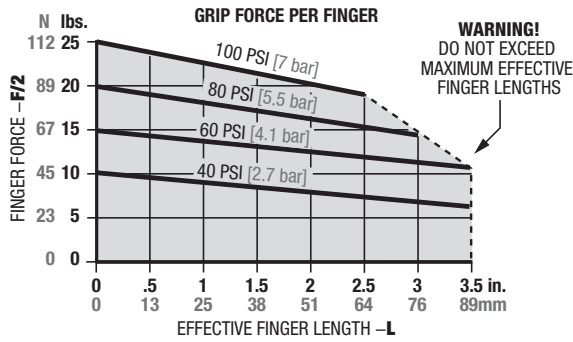
DIRECTCONNECT™



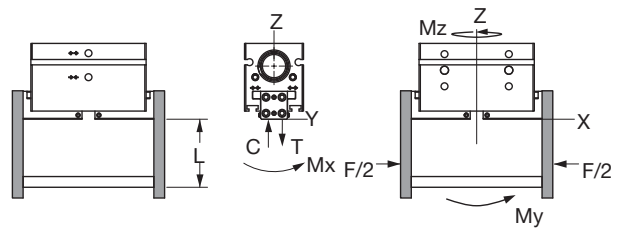
# PARALLEL GRIPPER DPG-10M-1 DIRECTCONNECT™ MODULAR SERIES

DPG SERIES

1.125



Total Additional Grip Force	Spring Open	Spring Close
@ Full Open.....	6 lbs. 26 N	9 lbs. 40 N
@ Full Close.....	11 lbs. 49 N	6 lbs. 26 N



### Loading Capacity†

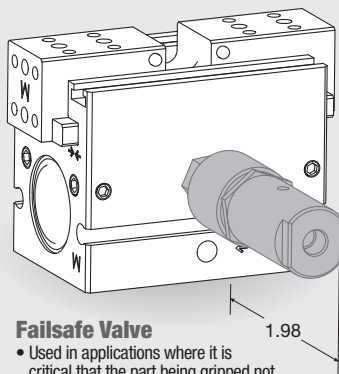
	Static	Dynamic
Maximum Tensile <b>T</b>	175 lbs. [778 N]	20 lbs. [89 N]
Maximum Compressive <b>C</b>	400 lbs. [1779 N]	20 lbs. [89 N]
Maximum Moment <b>M<sub>x</sub></b>	150 in.-lbs. [17 Nm]	20 in.-lbs. [2 Nm]
Maximum Moment <b>M<sub>y</sub></b>	175 in.-lbs. [20 Nm]	30 in.-lbs. [3 Nm]
Maximum Moment <b>M<sub>z</sub></b>	150 in.-lbs. [17 Nm]	20 in.-lbs. [2 Nm]

†Capacities are per set of jaws and are not simultaneous

Specifications	DPG-10M-1	
Total Rated Grip Force <b>F</b> @ 100 psi, 7 bar.....	50 lbs.	222 N
Stroke.....	0.25 in.	6.4 mm
Weight.....	0.39 lbs.	0.17 Kg
Pressure Range.....	40-100 psi	3-7 bar
Cylinder Bore Ø.....	0.688 in.	17.5 mm
Displacement.....	0.076 in <sup>3</sup>	1.2 cm <sup>3</sup>

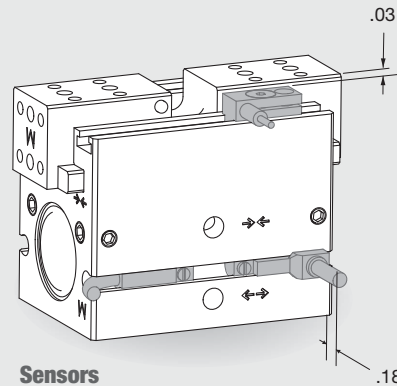
Specifications (cont.)	DPG-10M-1	
Temperature Range: Standard Seals.....	-30°~180° F	-35°~80° C
Viton® Seals.....	-20°~300° F	-30°~150° C
Actuation.....	0.13 sec.	0.13 sec.
Accuracy.....	±0.002 in.	±0.05 mm
Repeatability.....	±0.002 in.	±0.05 mm
Valve required to actuate.....	4-way, 2-position	

## Accessory Mounting Technical Data



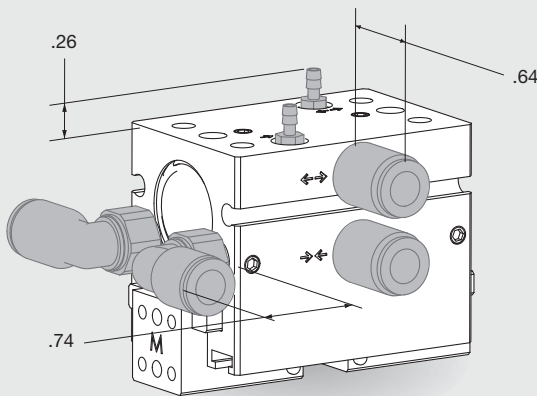
### Failsafe Valve

- 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



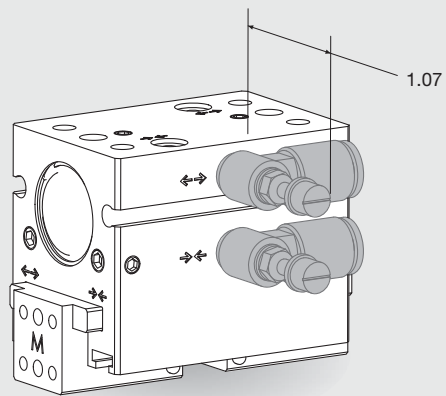
### Sensors

- 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



### 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



### Flow Controls

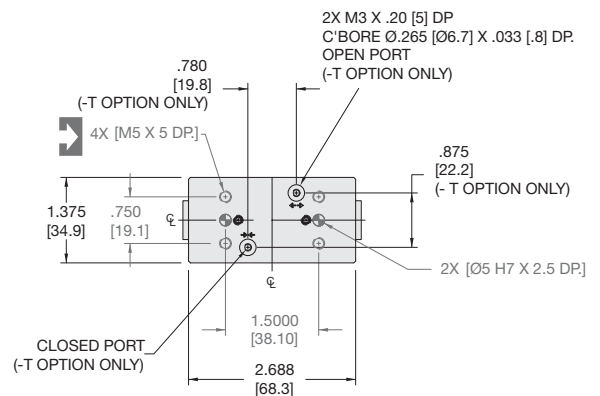
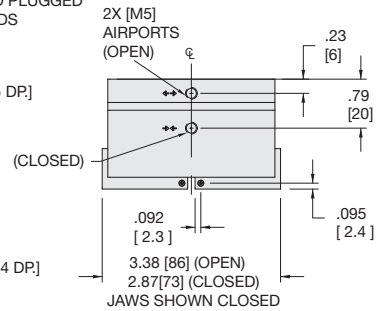
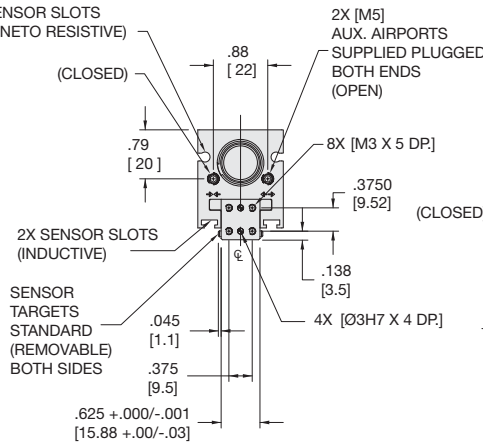
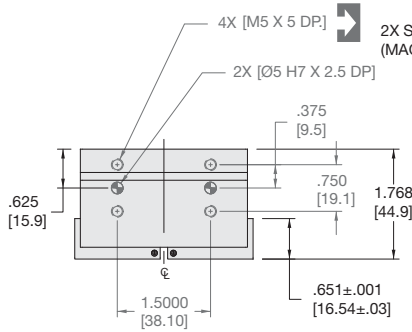
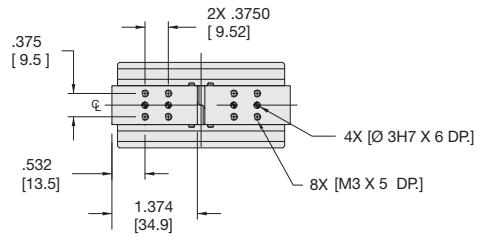
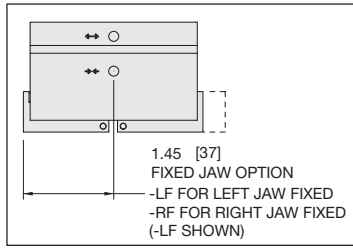
- Thumb screw adjust with locking nut for adjusting actuation time
- Available for 5mm OD tubing

DIRECTCONNECT™

# PARALLEL GRIPPER DPG-10M-2 DIRECTCONNECT™ MODULAR SERIES

DPG SERIES

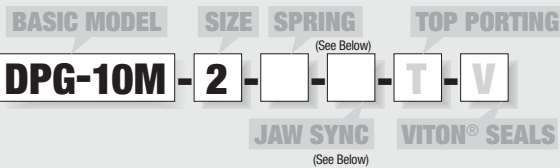
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**UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW**

Dimensions are symmetrical about centerline	Third Angle Projection	All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or [±.013mm]
	<b>Imperial in.</b>	<b>Metric [mm]</b>
Metric Threads Course Pitch	0.00 = ±.01 0.000 = ±.005 0.0000 = ±.0005	[0.] = [±.25] [0.0] = [±.13] [0.00] = [±.013]

**How to Order:** (Order Accessories separately from Basic Model)



**SPRING DIRECTION**

**O** Spring Open  
**C** Spring Closed  
— Leave Blank. No Spring Option (standard)

**JAW SYNCHRONIZATION CONFIGURATION**

**LF** Left Jaw Fixed  
**RF** Right Jaw Fixed  
**NS** Non-synchronous Jaws  
— Leave Blank for Synchronous (standard)

**SENSOR ACCESSORIES**

	ORDER #	QTY/UNIT
Inductive Sensor Mounting Kit (Mounts 2 Sensors)	<b>OSMK-097</b>	<b>1 or 2</b>
NPN Inductive Sensor with Qk. Disconnect*	<b>OISN-019</b>	<b>1,2,3, or 4</b>
PNP Inductive Sensor with Qk. Disconnect*	<b>OISP-019</b>	<b>1,2,3, or 4</b>
NPN Magneto Resistive Sensor w/Qk. Disconnect*	<b>OHSN-017</b>	<b>1,2,3, or 4</b>
PNP Magneto Resistive Sensor w/Qk. Disconnect*	<b>OHSP-017</b>	<b>1,2,3, or 4</b>
NPN Magneto Resistive Sensor (90°) w/Qk. Disconnect*	<b>OHSN-011</b>	<b>1,2,3, or 4</b>
PNP Magneto Resistive Sensor (90°) w/Qk. Disconnect*	<b>OHSP-011</b>	<b>1,2,3, or 4</b>
Quick Disconnect Cable (2 meters long)*	<b>CABL-010</b>	<b>1,2,3, or 4</b>
Quick Disconnect Cable (5 meters long)*	<b>CABL-013</b>	<b>1,2,3, or 4</b>
Quick Disconnect Cable Extension Cord (1 meter long)*	<b>CABL-015</b>	<b>1,2,3, or 4</b>
Quick Disconnect Cable Extension Cord (2 meters long)*	<b>CABL-016</b>	<b>1,2,3, or 4</b>

**PNEUMATIC ACCESSORIES**

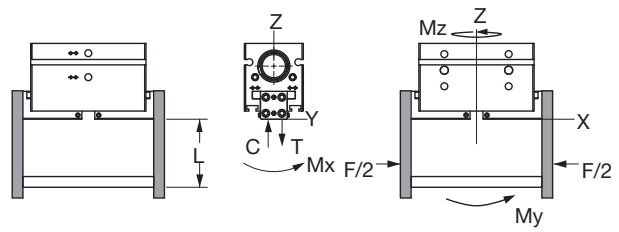
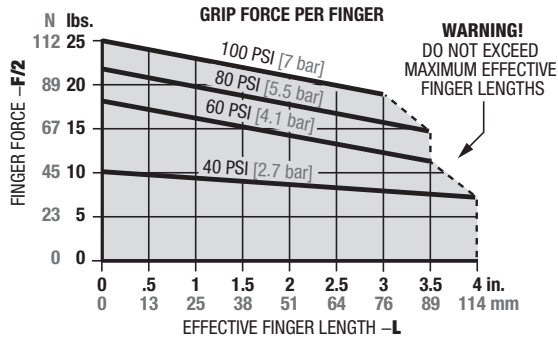
	ORDER #	QTY/UNIT
Standard Seal Repair Kit	<b>SLKT-183</b>	<b>1</b>
Viton® Seal Repair Kit	<b>SLKT-183V</b>	<b>1</b>
-T Option Plumbing Fitting - M3 male to 3mm OD Tube Push-in Style	<b>PLFT-021</b>	<b>1 or 2</b>
-T Option Plumbing Fitting - M3 male to 2mm ID Tube Barb Style	<b>PLFT-022</b>	<b>1 or 2</b>
Fail Safe Valve - M5 (Metric)	<b>OFSV-004</b>	<b>1</b>
Adjustable Flow Control (Metric)	<b>VLVF-008</b>	<b>1 or 2</b>
Top Port Manifold Seal Kit	<b>SLKT-184V</b>	<b>1</b>

\*Sensor and cable sold separately

**SAMPLE ORDER: DPG-10M-2-C-LF-V**

Ex: DPG-10M Gripper, Metric, Size 2, Spring Close, Left Jaw Fixed, Viton® Seals

DIRECTCONNECT™



### Loading Capacity†

	Static	Dynamic
Maximum Tensile <b>T</b>	200 lbs. [890 N]	25 lbs. [111 N]
Maximum Compressive <b>C</b>	425 lbs. [1890 N]	25 lbs. [111 N]
Maximum Moment <b>M<sub>x</sub></b>	175 in.-lbs. [20 Nm]	25 in.-lbs. [3 Nm]
Maximum Moment <b>M<sub>y</sub></b>	200 in.-lbs. [23 Nm]	35 in.-lbs. [4 Nm]
Maximum Moment <b>M<sub>z</sub></b>	175 in.-lbs. [20 Nm]	25 in.-lbs. [3 Nm]

†Capacities are per set of jaws and are not simultaneous

Total Additional Grip Force	Spring Open	Spring Close
@ Full Open.....	6 lbs. 26 N	14 lbs. 62 N
@ Full Close.....	15 lbs. 66 N	6 lbs. 26 N

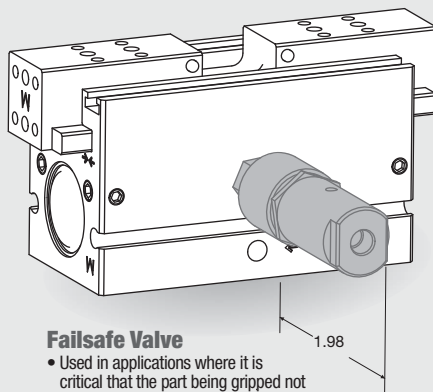
### Specifications DPG-10M-2

Total Rated Grip Force <b>F</b> @ 100 psi, 7 bar.....	50 lbs.	222 N
Stroke.....	0.50 in.	12.7 mm
Weight.....	0.53 lbs.	0.24 Kg
Pressure Range.....	40-100 psi	3-7 bar
Cylinder Bore Ø.....	0.688 in.	17.5 mm
Displacement.....	0.153 in <sup>3</sup>	2.5 cm <sup>3</sup>

### Specifications (cont.) DPG-10M-2

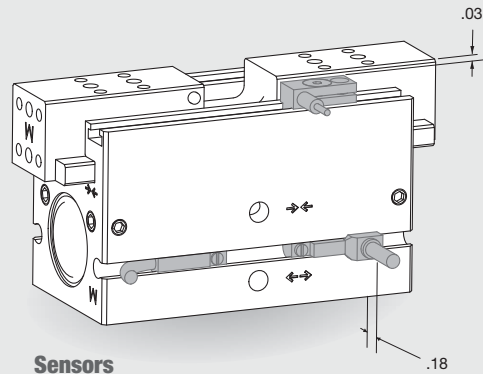
Temperature Range: Standard Seals.....	-30°~180° F	-35°~80° C
Viton® Seals.....	-20°~300° F	-30°~150° C
Actuation.....	0.19 sec.	0.19 sec.
Accuracy.....	±0.002 in.	±0.05 mm
Repeatability.....	±0.002 in.	±0.05 mm
Valve required to actuate.....	4-way, 2-position	

## Accessory Mounting Technical Data



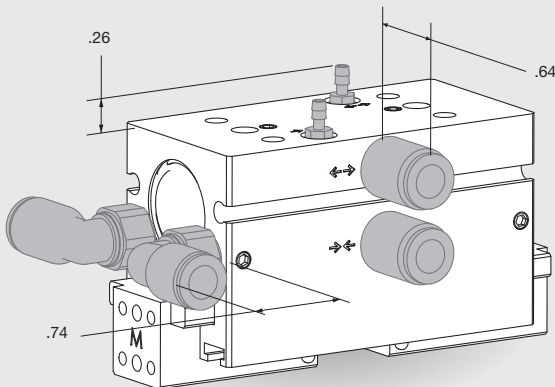
### Failsafe Valve

- 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



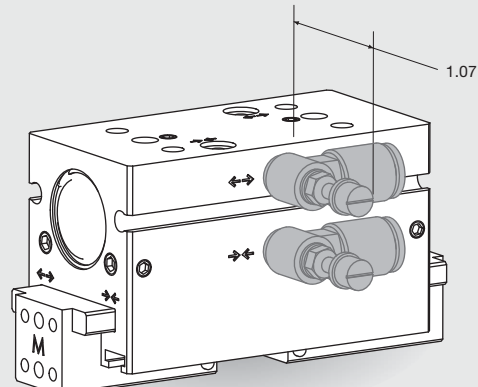
### Sensors

- 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



### 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



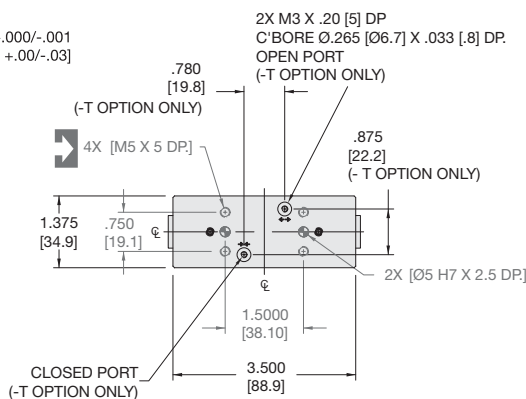
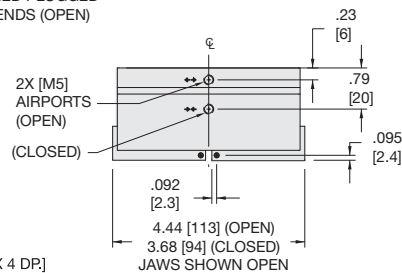
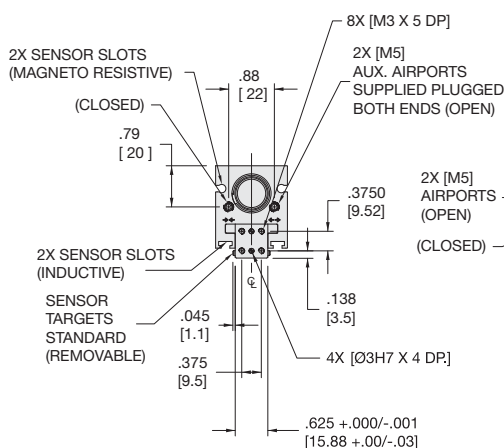
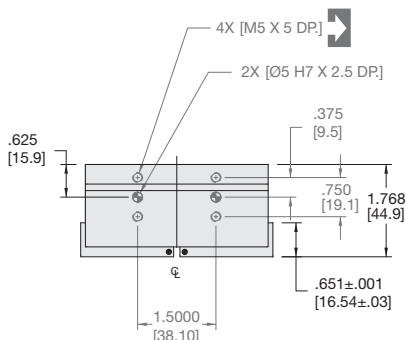
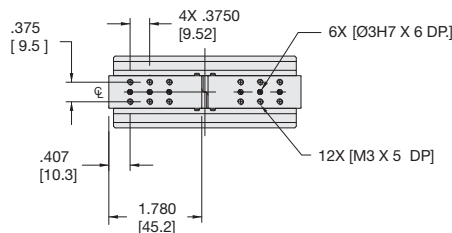
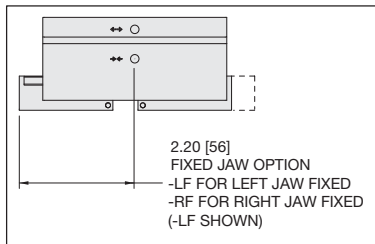
### Flow Controls

- Thumb screw adjust with locking nut for adjusting actuation time
- Available for 5mm OD tubing

# PARALLEL GRIPPER DPG-10M-3 DIRECTCONNECT™ MODULAR SERIES

DPG SERIES

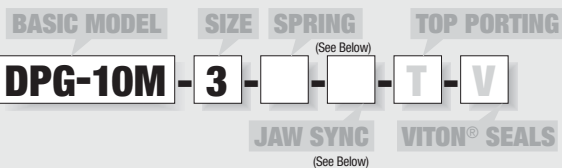
1.128



**UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW**

Dimensions are symmetrical about centerline	Third Angle Projection	All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or [±.013mm]
	<b>Imperial in.</b>	<b>Metric [mm]</b>
Metric Threads Course Pitch	0.00 = ±.01 0.000 = ±.005 0.0000 = ±.0005	[0.] = [±.25] [0.0] = [±.13] [0.00] = [±.013]

**How to Order:** (Order Accessories separately from Basic Model)



<b>SPRING DIRECTION</b>	<b>O</b> Spring Open
	<b>C</b> Spring Closed
	— Leave Blank. No Spring Option (standard)
<b>JAW SYNCHRONIZATION CONFIGURATION</b>	<b>LF</b> Left Jaw Fixed
	<b>RF</b> Right Jaw Fixed
	<b>NS</b> Non-synchronous Jaws
	— Leave Blank for Synchronous (standard)

**SENSOR ACCESSORIES**

	ORDER #	QTY/UNIT
Inductive Sensor Mounting Kit (Mounts 2 Sensors)	<b>OSMK-097</b>	<b>1 or 2</b>
NPN Inductive Sensor with Qk. Disconnect*	<b>OISP-019</b>	<b>1,2,3, or 4</b>
PNP Inductive Sensor with Qk. Disconnect*	<b>OISP-019</b>	<b>1,2,3, or 4</b>
NPN Magneto Resistive Sensor w/Qk. Disconnect*	<b>OHSN-017</b>	<b>1,2,3, or 4</b>
PNP Magneto Resistive Sensor w/Qk. Disconnect*	<b>OHSP-017</b>	<b>1,2,3, or 4</b>
NPN Magneto Resistive Sensor (90°) w/Qk. Disconnect*	<b>OHSN-011</b>	<b>1,2,3, or 4</b>
PNP Magneto Resistive Sensor (90°) w/Qk. Disconnect*	<b>OHSP-011</b>	<b>1,2,3, or 4</b>
Quick Disconnect Cable (2 meters long)*	<b>CABL-010</b>	<b>1,2,3, or 4</b>
Quick Disconnect Cable (5 meters long)*	<b>CABL-013</b>	<b>1,2,3, or 4</b>
Quick Disconnect Cable Extension Cord (1 meter long)*	<b>CABL-015</b>	<b>1,2,3, or 4</b>
Quick Disconnect Cable Extension Cord (2 meters long)*	<b>CABL-016</b>	<b>1,2,3, or 4</b>

**PNEUMATIC ACCESSORIES**

	ORDER #	QTY/UNIT
Standard Seal Repair Kit	<b>SLKT-183</b>	<b>1</b>
Viton® Seal Repair Kit	<b>SLKT-183V</b>	<b>1</b>
-T Option Plumbing Fitting - M3 male to 3mm OD Tube Push-in Style	<b>PLFT-021</b>	<b>1 or 2</b>
-T Option Plumbing Fitting - M3 male to 2mm ID Tube Barb Style	<b>PLFT-022</b>	<b>1 or 2</b>
Fail Safe Valve - M5 (Metric)	<b>OFSV-004</b>	<b>1</b>
Adjustable Flow Control (Metric)	<b>VLVF-008</b>	<b>1 or 2</b>
Top Port Manifold Seal Kit	<b>SLKT-184V</b>	<b>1</b>

\*Sensor and cable sold separately

**SAMPLE ORDER: DPG-10M-3-C-RF-V**

Ex: DPG-10M Gripper, Metric, Size 3, Spring Close, Right Jaw Fixed, Viton® Seals

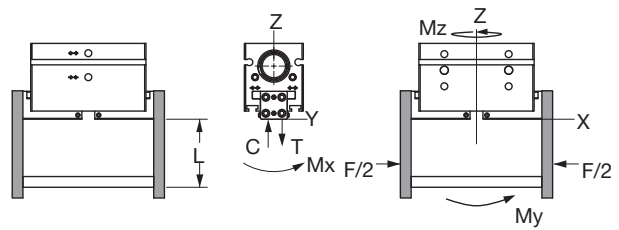
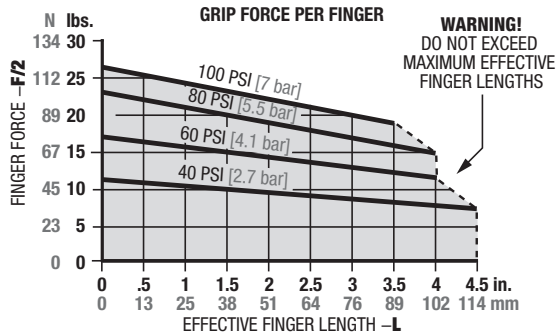
DIRECTCONNECT™



# PARALLEL GRIPPER DPG-10M-3 DIRECTCONNECT™ MODULAR SERIES

DPG SERIES

1.129



Total Additional Grip Force	Spring Open	Spring Close
@ Full Open.....	6 lbs. 26 N	15 lbs. 66 N
@ Full Close.....	23 lbs. 102 N	6 lbs. 26 N

### Loading Capacity†

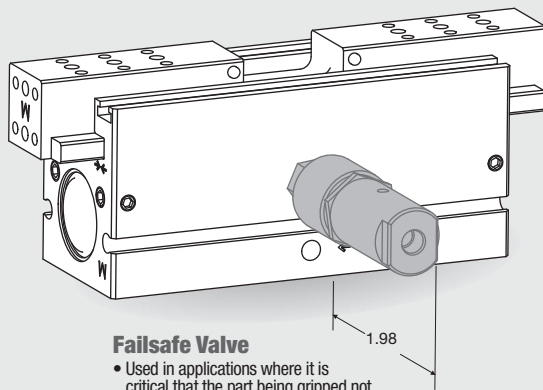
	Static	Dynamic
Maximum Tensile <b>T</b>	225 lbs. [1001 N]	30 lbs. [133 N]
Maximum Compressive <b>C</b>	450 lbs. [2002 N]	30 lbs. [133 N]
Maximum Moment <b>M<sub>x</sub></b>	200 in.-lbs. [23 Nm]	30 in.-lbs. [3 Nm]
Maximum Moment <b>M<sub>y</sub></b>	225 in.-lbs. [25 Nm]	40 in.-lbs. [5 Nm]
Maximum Moment <b>M<sub>z</sub></b>	200 in.-lbs. [23 Nm]	30 in.-lbs. [3 Nm]

†Capacities are per set of jaws and are not simultaneous

Specifications	DPG-10M-3	
Total Rated Grip Force <b>F</b> @ 100 psi, 7 bar.....	50 lbs.	222 N
Stroke.....	0.75 in.	19.1 mm
Weight.....	0.68 lbs.	0.30 Kg
Pressure Range.....	40-100 psi	3-7 bar
Cylinder Bore Ø.....	0.688 in.	17.5 mm
Displacement.....	0.230 in³	3.8 cm³

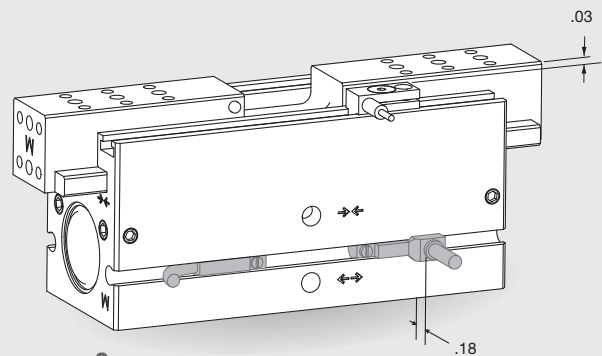
Specifications (cont.)	DPG-10M-3	
Temperature Range: Standard Seals.....	-30°~180° F	-35°~80° C
Viton® Seals.....	-20°~300° F	-30°~150° C
Actuation.....	0.29 sec.	0.29 sec.
Accuracy.....	±0.002 in.	±0.05 mm
Repeatability.....	±0.002 in.	±0.05 mm
Valve required to actuate.....	4-way, 2-position	

## Accessory Mounting Technical Data



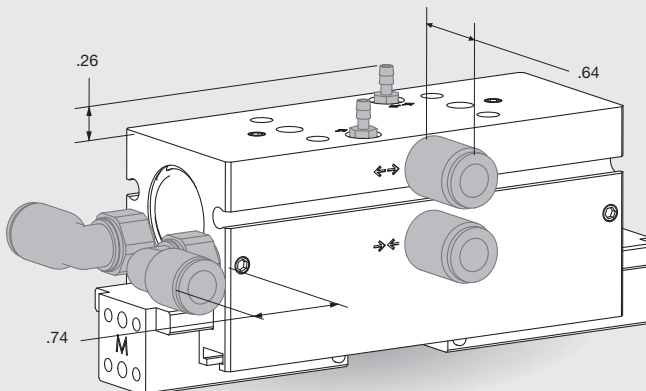
### Failsafe Valve

- 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



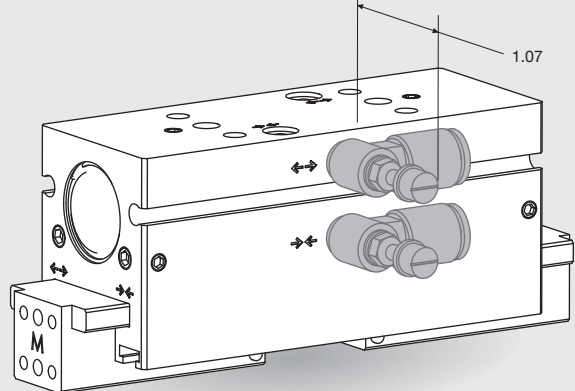
### Sensors

- 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



### 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



### Flow Controls

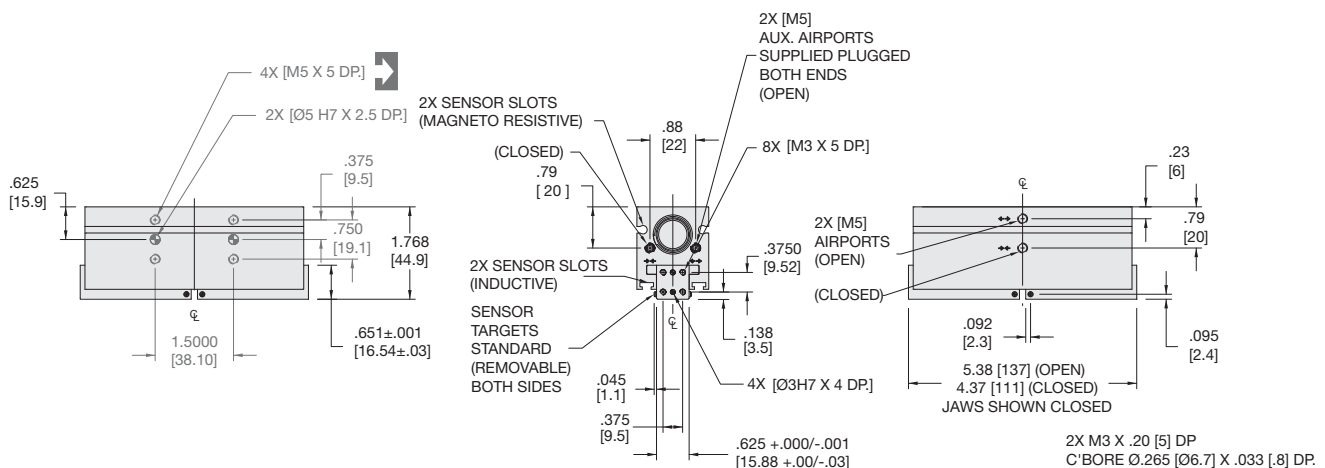
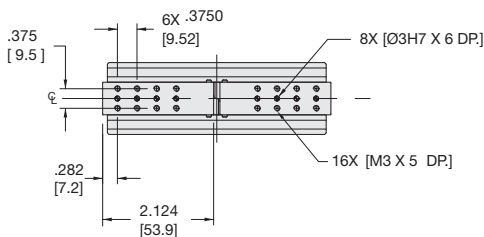
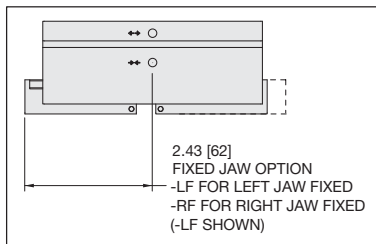
- Thumb screw adjust with locking nut for adjusting actuation time
- Available for 5mm OD tubing

DIRECTCONNECT™

# PARALLEL GRIPPER DPG-10M-4 DIRECTCONNECT™ MODULAR SERIES

DPG SERIES

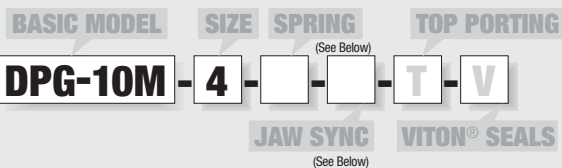
1.130



**UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW**

Dimensions are symmetrical about centerline	Third Angle Projection	All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or [±.013mm]
	<b>Imperial in.</b>	<b>Metric [mm]</b>
Metric Threads Course Pitch	0.00 = ±.01 0.000 = ±.005 0.0000 = ±.0005	[0.] = [±.25] [0.0] = [±.13] [0.00] = [±.013]

**How to Order:** (Order Accessories separately from Basic Model)



<b>SPRING DIRECTION</b>	<b>O</b> Spring Open
	<b>C</b> Spring Closed
	— Leave Blank. No Spring Option (standard)
<b>JAW SYNCHRONIZATION CONFIGURATION</b>	<b>LF</b> Left Jaw Fixed
	<b>RF</b> Right Jaw Fixed
	<b>NS</b> Non-synchronous Jaws
	— Leave Blank for Synchronous (standard)

**SENSOR ACCESSORIES**

	ORDER #	QTY/UNIT
Inductive Sensor Mounting Kit (Mounts 2 Sensors)	<b>OSMK-097</b>	<b>1 or 2</b>
NPN Inductive Sensor with Qk. Disconnect*	<b>OISN-019</b>	<b>1,2,3, or 4</b>
PNP Inductive Sensor with Qk. Disconnect*	<b>OISP-019</b>	<b>1,2,3, or 4</b>
NPN Magneto Resistive Sensor w/Qk. Disconnect*	<b>OHSN-017</b>	<b>1,2,3, or 4</b>
PNP Magneto Resistive Sensor w/Qk. Disconnect*	<b>OHSP-017</b>	<b>1,2,3, or 4</b>
NPN Magneto Resistive Sensor (90°) w/Qk. Disconnect*	<b>OHSN-011</b>	<b>1,2,3, or 4</b>
PNP Magneto Resistive Sensor (90°) w/Qk. Disconnect*	<b>OHSP-011</b>	<b>1,2,3, or 4</b>
Quick Disconnect Cable (2 meters long)*	<b>CABL-010</b>	<b>1,2,3, or 4</b>
Quick Disconnect Cable (5 meters long)*	<b>CABL-013</b>	<b>1,2,3, or 4</b>
Quick Disconnect Cable Extension Cord (1 meter long)*	<b>CABL-015</b>	<b>1,2,3, or 4</b>
Quick Disconnect Cable Extension Cord (2 meters long)*	<b>CABL-016</b>	<b>1,2,3, or 4</b>

**PNEUMATIC ACCESSORIES**

	ORDER #	QTY/UNIT
Standard Seal Repair Kit	<b>SLKT-183</b>	<b>1</b>
Viton® Seal Repair Kit	<b>SLKT-183V</b>	<b>1</b>
-T Option Plumbing Fitting - M3 male to 3mm OD Tube Push-in Style	<b>PLFT-021</b>	<b>1 or 2</b>
-T Option Plumbing Fitting - M3 male to 2mm ID Tube Barb Style	<b>PLFT-022</b>	<b>1 or 2</b>
Fail Safe Valve - M5 (Metric)	<b>OFSV-004</b>	<b>1</b>
Adjustable Flow Control (Metric)	<b>VLVF-008</b>	<b>1 or 2</b>
Top Port Manifold Seal Kit	<b>SLKT-184V</b>	<b>1</b>

\*Sensor and cable sold separately

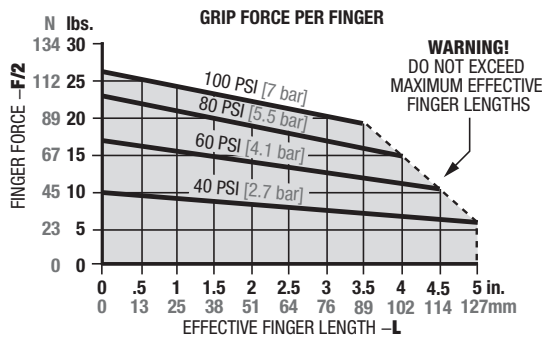
**SAMPLE ORDER: DPG-10M-4-0-NS-V**

Ex: DPG-10M Gripper, Metric, Size 4, Spring Open, Non-Synchronous Jaws, Viton® Seals

DIRECTCONNECT™

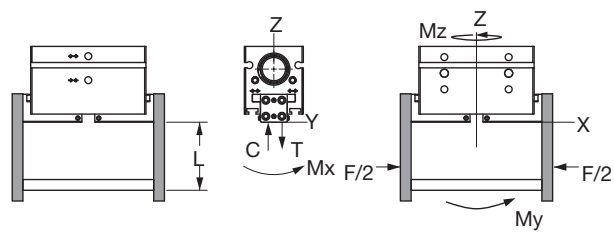


# PARALLEL GRIPPER DPG-10M-4 DIRECTCONNECT™ MODULAR SERIES



**WARNING!**  
DO NOT EXCEED  
MAXIMUM EFFECTIVE  
FINGER LENGTHS

Total Additional Grip Force	Spring Open	Spring Close
@ Full Open.....	6 lbs. 26 N	15 lbs. 66 N
@ Full Close.....	22 lbs. 97 N	6 lbs. 26 N



### Loading Capacity†

	Static	Dynamic
Maximum Tensile <b>T</b>	250 lbs. [1112 N]	35 lbs. [156 N]
Maximum Compressive <b>C</b>	475 lbs. [2113 N]	35 lbs. [156 N]
Maximum Moment <b>M<sub>x</sub></b>	225 in.-lbs. [25 Nm]	35 in.-lbs. [4 Nm]
Maximum Moment <b>M<sub>y</sub></b>	250 in.-lbs. [28 Nm]	45 in.-lbs. [5 Nm]
Maximum Moment <b>M<sub>z</sub></b>	225 in.-lbs. [25 Nm]	35 in.-lbs. [4 Nm]

†Capacities are per set of jaws and are not simultaneous

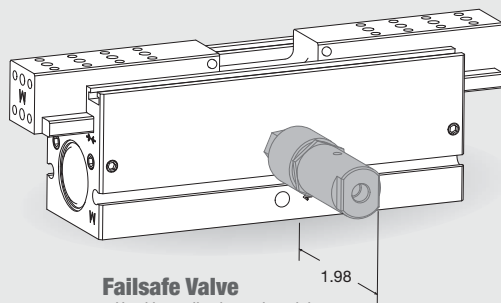
### Specifications DPG-10M-4

Total Rated Grip Force <b>F</b> @ 100 psi, 7 bar.....	50 lbs.	222 N
Stroke.....	1.00 in.	25.4 mm
Weight.....	0.81 lbs.	0.36 Kg
Pressure Range.....	40-100 psi	3-7 bar
Cylinder Bore Ø.....	0.688 in.	17.5 mm
Displacement.....	0.306 in³	5.0 cm³

### Specifications DPG-10M-4

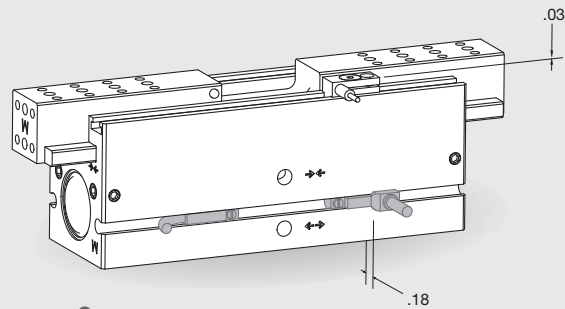
Temperature Range: Standard Seals.....	-30°~180° F	-35°~80° C
Viton® Seals.....	-20°~300° F	-30°~150° C
Actuation.....	0.40 sec.	0.40 sec.
Accuracy.....	±0.002 in.	±0.05 mm
Repeatability.....	±0.002 in.	±0.05 mm
Valve required to actuate.....	4-way, 2-position	

## Accessory Mounting Technical Data



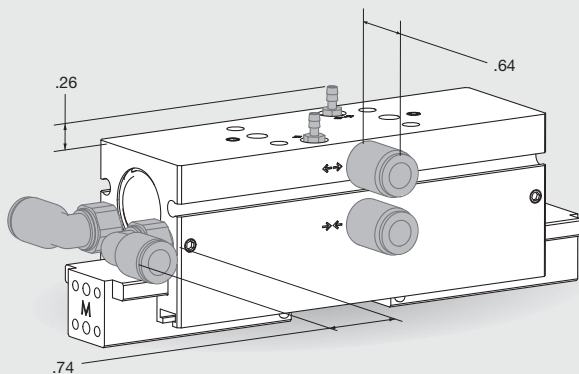
### Failsafe Valve

- 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



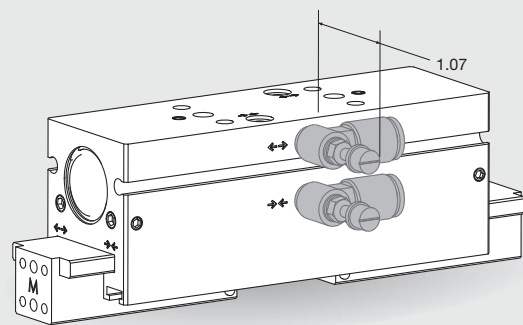
### Sensors

- 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



### Multiple Air Port Locations

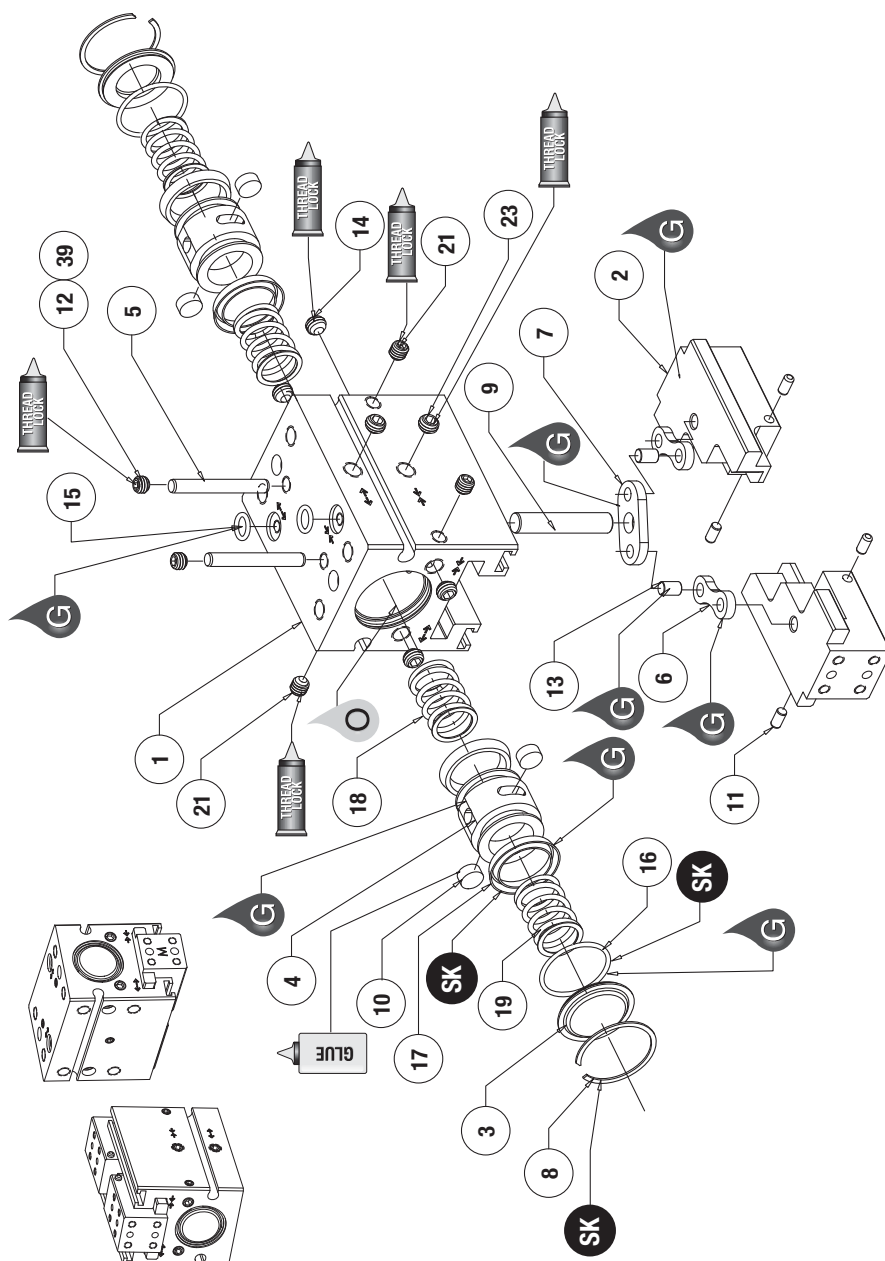
- 3 standard air port locations (front and both sides)
- Optional top ports are tapped for M3 fittings
- Consult factory for plumbing fitting part numbers



### Flow Controls

- Thumb screw adjust with locking nut for adjusting actuation time
- Available for 5mm OD tubing

# DPG SERIES EXPLODED VIEW



Item	Qty	Name
01	1	Body
02	2	Jaw
03	2	Cap
04	2	Piston
05	2	Drive Pin
06	2	Synchronizing Bar
07	1	Equalizer
08	2	Retaining Ring
09	1	Pivot Pin
10	4	Magnet
11	4	Targets for Inductive Sensors
12	2	Set Screw - Drive Pin Access Plug
13	2	Equalizer/Synchronizing Bar pivot pin
14	4	Set Screw - End Port Plugs
15	2	O-ring - Top Porting Manifold Seals (-T option)
16	2	O-ring - Cap Seals
17	4	U-cup - Piston Seals
18	2	Springs for "-O" Spring-Open Option
19	2	Springs for "-C" Spring-Closed Option
21	3	Set Screw - Internal Porting Plugs
23	2	Set Screw - Side Porting Plugs (-T option)
39	1	Set Screw - Plug (-LF and -RF options only)

**NOTE:** Contact the Robohand Sales Department for a complete spare parts list with order numbers and prices.

**SK Seal Repair Kit Order #'s See Product Data Sheets**

### Assembly Procedure

- 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

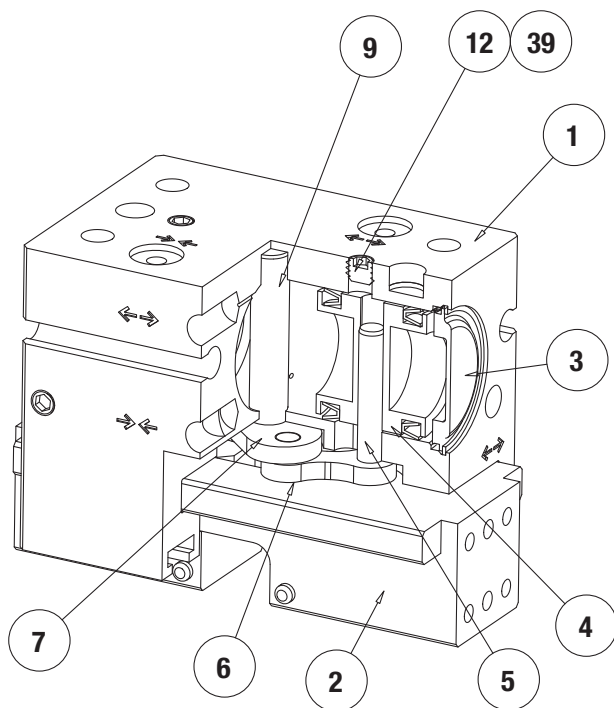
making sure holes in synchronizing bars line up with holes in pistons.

- 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.

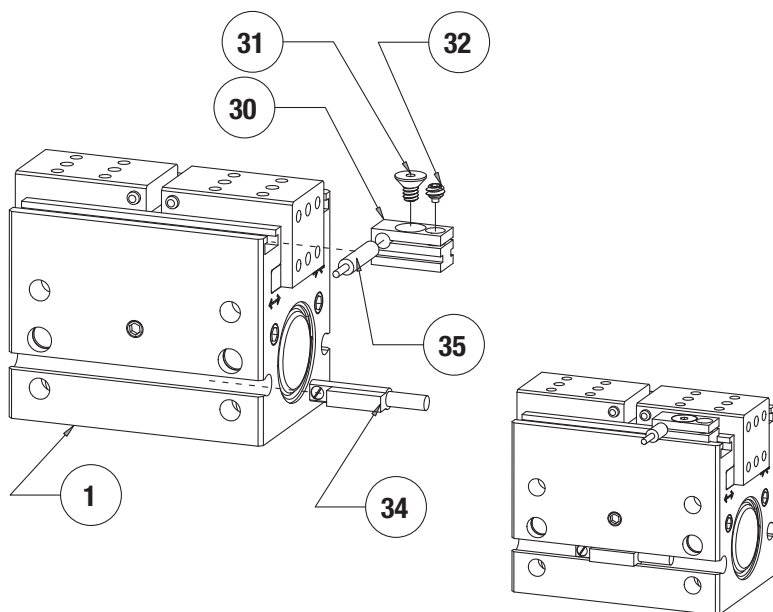
Seal Kit Items	Thread Locker	Krytox™ Lubricant	Lightweight Machine Oil	Teflon™ Based Grease	Super Bonder	Third Angle Projection



Item	Qty	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
12	2	Set Screw - Drive Pin Access Plug
39	1	Set Screw - Plug (-LF and -RF options only)

**NOTE:** Contact the Robohand Sales Department for a complete spare parts list with order numbers and prices.

## ACCESSORY INSTALLATION & ADJUSTMENT INSTRUCTIONS



### Installation:

#### Magneto Resistive Sensors

- 1) Install sensors in profile slots of gripper body as shown.
- 2) Set sensors with integrated screw.

#### Inductive Sensors

- 1) Insert sensor bracket into slot of body.
- 2) Insert sensor into bracket 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) to lock stroke detection position.



Seal Kit  
Items



Thread  
Locker



Krytox™  
Lubricant



Lightweight  
Machine Oil



Teflon™ Based  
Grease



Super  
Bonder



Third Angle  
Projection