

Parallel Grippers - DPP DIRECTCONNECT™ Precision Series

• Multiple Mounting Locations:

All sizes have DIRECTCONNECT top mounting and DIRECTCONNECT thru hole mounting on back side.

• Multiple Air Port Locations:

Multiple air port locations: tapped air ports on front, top and both sides are standard. Top port is also manifold ready.

• Sensing options:

Magneto resistive or inductive proximity sensors available. Up to 4 positions can be sensed.

• Precision applications:

Preloaded "Dual-V" roller bearings eliminate side play for excellent part position repeatability.

• Longer finger applications:

Rigid design and low friction design allows for longer gripper finger lengths to be used when compared to other grippers of equal weight & size.

• Delicate part handling:

Low friction mechanism allows for repeatable gripping forces for holding delicate parts. Grip force is easily adjusted by regulating air pressure.

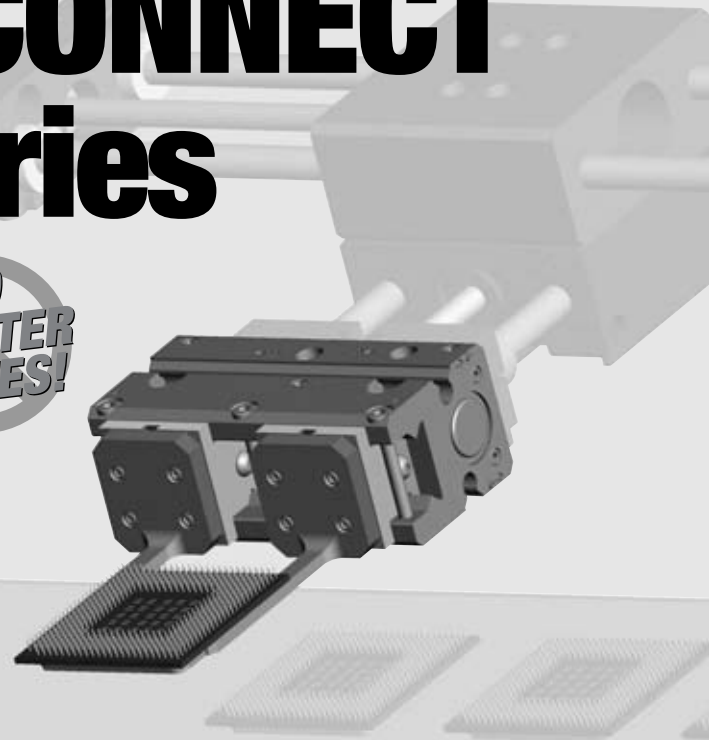
• Non-synchronous motion:

Non-synchronous option provides independent jaw motion allowing the gripper to pick or place at a point other than its center.

• Spring return:

Optional double acting spring assist for increased force or fail-safe operation or operate as a single acting to open and to spring closed.

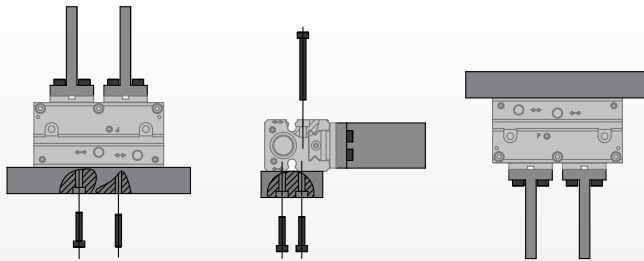
**NO
ADAPTER
PLATES!**



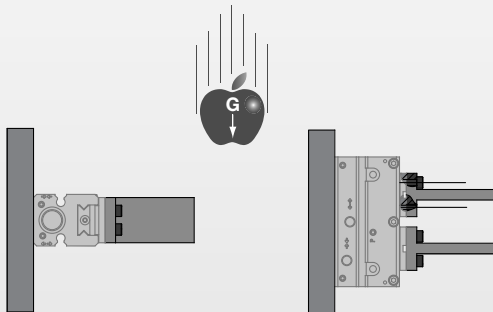
DIRECTCONNECT™
ADVANCED MODULAR AUTOMATION TECHNOLOGY

Mounting Information:

Grippers can be mounted & operated in any orientation



Body mounts with screws and locates with H7 dowel pins for accuracy



Fingers attach to jaws with screws and locate by key slot and/or H7 dowel pins

Technical Specifications:

Pneumatic Specifications

Pressure Operating Range
Standard
-C Spring Closed Option
Cylinder Type

Imperial

5-100 psi
20-100 psi

Metric

0.3-7 bar
1.5-7 bar

Double Acting or
Single Acting Spring Return or
Double Acting Spring Assist
Internally Lubricated Buna-N
4-way, 2-position for Double Acting
or
3-way, 2-position for Single Acting

Dynamic Seals
Valve Required to Operate

Air Quality Requirements

Air Filtration
Air Lubrication
Air Humidity

40 Micron or Better
Not Necessary*
Low Moisture Content (dry)

Temperature Operating Range

Buna-N Seals (standard)
Viton® Seals (optional)

-30°~180° F
-20°~250° F

-35°~80° C
-30°~120° C

Maintenance Specifications†

Expected Life
Normal Application
w/Preventative Maintenance
Field Repairable
Seal Repair Kits Available

5 million cycles
10+ million cycles*
Yes
Yes

Application Restrictions

- Dirty or gritty environments
- Machine operations generating chips
- Environments with loose particulate
- Applications where mechanism lubricant could cause contamination

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

Product Features

Excellent Accuracy

Excellent parallelism and accuracy between gripper mounting surface and jaw surfaces

Standard Purge/Scavenge Port

Used with a vacuum for clean room environments or positive pressure for harsh environments and jaw surfaces

Shielded Design

Shielded design repels contamination from penetrating the "Dual-V" roller bearings

Accessory Mounting Slots

For Magneto Resistive and Inductive sensors (Sensors sold separately)

Top Manifold Air Ports

Eliminates the need for airlines

Hard Coat Anodize

One piece, aircraft quality aluminum body, has hard-coat anodize 60 RC with Teflon impregnation

Multiple Air Port Locations

4 standard locations; front, top and both sides

DIRECTCONNECT Mounting Patterns

DIRECTCONNECT™ tapped and dowel mounting surfaces on top and side of body.

Superior Jaw Support

Jaws are supported using our patented "Dual-V" roller bearing design

Dowel Holes

H7 dowel pin holes in body and jaws. Jaws also have key slot for better finger alignment

Hardened Plated Jaws

For wear resistance and longer life

"Dual-V" Roller Bearings

Provide low friction motion and are preloaded for maximum support and zero side play

Adjustable Pre-load Screws

Allows for adjustment of preload on roller bearings

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)

Sensor magnets on pistons come standard for Magneto Resistive Sensing

Viton Seals

Available for high temperature applications

High Grip Force

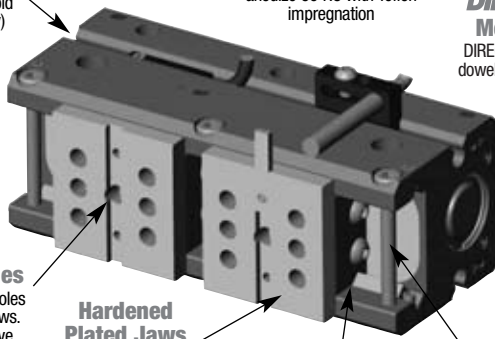
With respect to weight due to extremely efficient drive mechanism

Optional Spring Assist

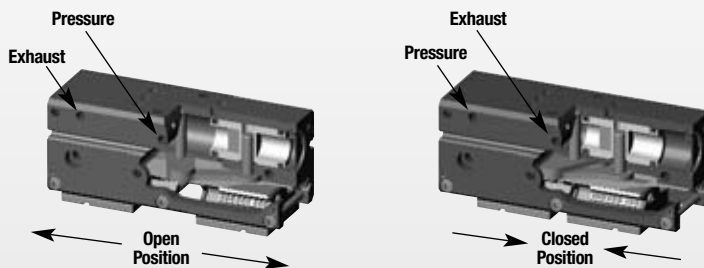
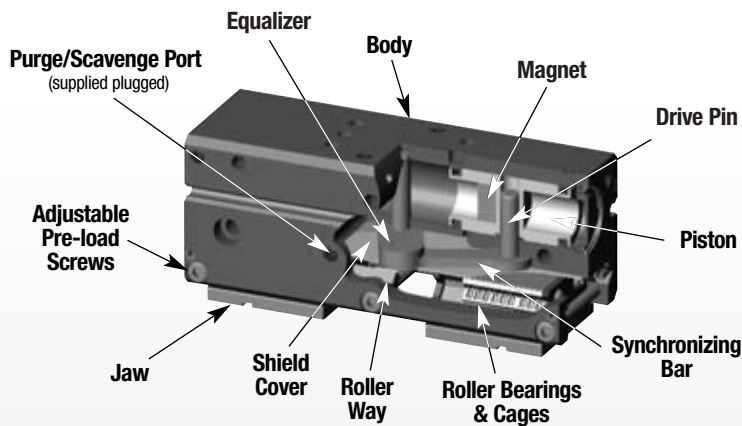
For close stroke

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, manufactured and assembled in the USA

Style -DPP Parallel Gripper

Size -10M-06

Style:	10M-06
Stroke:	0.25 in. 6.4 mm
Grip Force:	25 lbs. 111 N
Weight:	0.35 lbs. 0.16 Kg



Size -10M-12

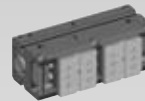
Style:	10M-12
Stroke:	0.50 in. 12.7 mm
Grip Force:	25 lbs. 111 N
Weight:	0.45 lbs. 0.20 Kg



Style -DPP Parallel Gripper

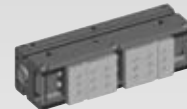
Size -14M-15

Style:	14M-15
Stroke:	0.63 in. 15.9 mm
Grip Force:	45 lbs. 200 N
Weight:	1.05 lbs. 0.48 Kg



Size -14M-25

Style:	14M-25
Stroke:	1.00 in. 25.4 mm
Grip Force:	45 lbs. 200 N
Weight:	1.25 lbs. 0.57 Kg



Style -DPP Parallel Gripper

Size -20M-25

Style:	20M-25
Stroke:	1.00 in. 25.4 mm
Grip Force:	95 lbs. 423 N
Weight:	2.25 lbs. 1.02 Kg



Size -20M-38

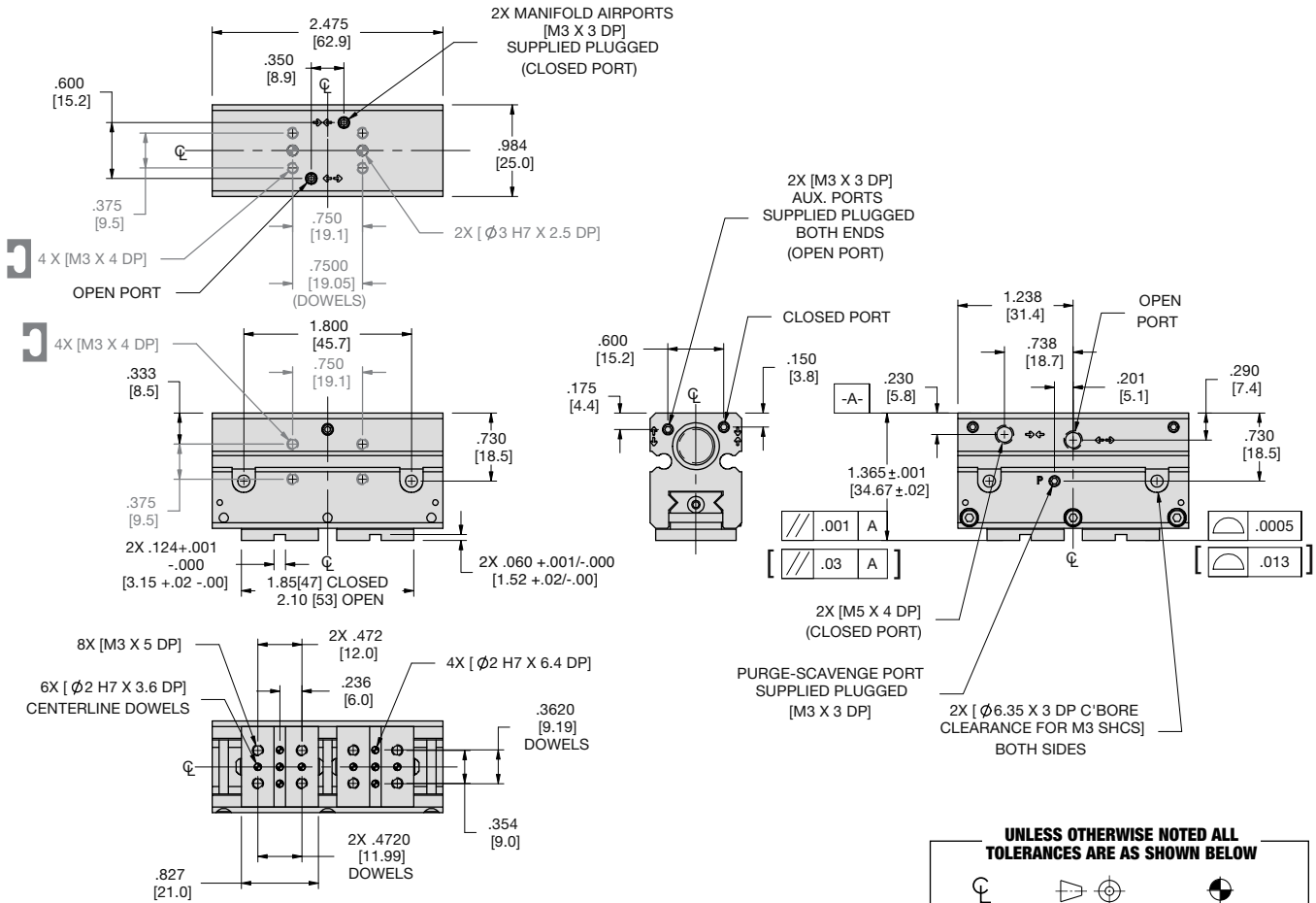
Style:	20M-38
Stroke:	1.50 in. 38.1 mm
Grip Force:	95 lbs. 423 N
Weight:	3.10 lbs. 1.41 Kg



PARALLEL GRIPPERS DPP-10M-06 DIRECTCONNECT PRECISION SERIES

DPP SERIES

1.76



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)

NOTE: DIRECTCONNECT™ DIMENSIONS ARE SHOWN IN BLUE

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

BASIC MODEL SPRING VITON SEALS

DPP-10M-06 - C - NS - V

NON-SYNCHRONOUS

SPRING C Spring Closed
— Leave Blank. No Spring Option (standard)

JAW SYNCHRONIZATION NS Non-Synchronous Operation
— Leave Blank for Synchronous (standard)

VITON® SEALS V High Temperature Viton Seals

SENSOR ACCESSORIES

	ORDER #	QTY/UNIT
Inductive Sensor Mounting Kit (Mounts 2 sensors)	OSMK-119	1 or 2
NPN Inductive Sensor (with Qk. Disc.)*	OISN-014	1, 2, 3 or 4
PNP Inductive Sensor (with Qk. Disc.)*	OISP-014	1, 2, 3 or 4
NPN Magneto Resistive Sensor (with Qk. Disc.)*†	OHSN-017	1, 2, 3 or 4
PNP Magneto Resistive Sensor (with Qk. Disc.)*†	OHSP-017	1, 2, 3 or 4
NPN Magneto Resistive Sensor 90° (with Qk. Disc.)*†	OHSN-011	1, 2, 3 or 4
PNP Magneto Resistive Sensor 90° (with Qk. Disc.)*†	OHSP-011	1, 2, 3 or 4
Quick Disconnect Cable (2 meters long)*	CABL-010	1, 2, 3 or 4
Quick Disconnect Cable (5 meters long)*	CABL-013	1, 2, 3 or 4

PNEUMATIC ACCESSORIES

	ORDER #	QTY/UNIT
Seal Repair Kit (Standard Buna-N)	SLKT-343	1
Seal Repair Kit (Viton)	SLKT-343V	1
Manifold Seal Kit (Viton® only)	SLKT-241V	1
Adjustable Flow Control-M3 Elbow-3MM OD Tube Push-in Style	VLVF-018	1 or 2
Adjustable Flow Control-M5 Elbow-6MM OD Tube Push-in Style	VLVF-008	1 or 2
Fail Safe Valve- M5	OFSV-004	1

*Sensor and cable sold separately. †Piston Magnet standard

SAMPLE ORDER: DPP-10M-06-C-NS-V

Ex: DPP-10 Metric Gripper, 6mm Stroke, Spring Closed, Non Synchronous, Viton Seals

DIRECTCONNECT™



PARALLEL GRIPPERS DPP-10M-06 DIRECTCONNECT PRECISION SERIES

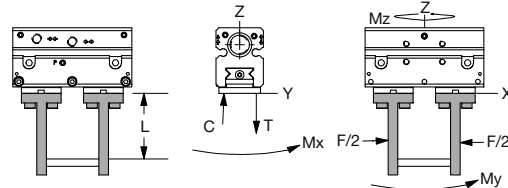
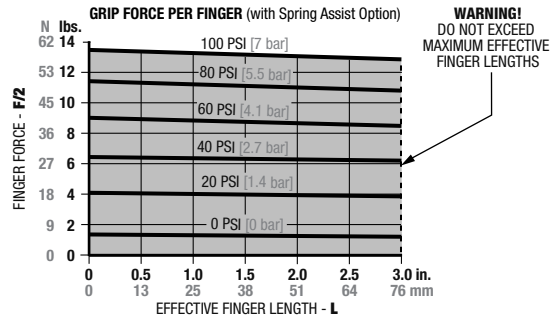
DPP SERIES

1.77



Specifications	DPP-10M-06	
Total Rated Grip Force F @ 100 psi, 7 bar*	27 lbs.	120 N
Stroke	0.25 in.	6.4 mm
Weight	0.35 lbs.	0.16 Kg
Pressure Range (Without Springs)	5-100 psi	0.3-7 bar
Pressure Range (With Springs)	20-100 psi	1.4-7 bar
Cylinder Bore (2X)	0.406 in.	10.3 mm
Displacement	0.032 in ³	0.5 cm ³
Temperature Range: Standard Seals	-30°~180° F	-35°~80° C
Viton® Seals	-20°~250° F	-30°~150° C
Actuation (Without Spring/With Spring)	0.10/0.11 sec.	0.10/0.11 sec.
Accuracy	±0.001 in.	±0.03 mm
Repeatability	±0.0005 in.	±0.01 mm
Valve required to actuate single acting	3-way, 2-position	
Valve required to actuate double acting	4-way, 2-position	

*With Springs

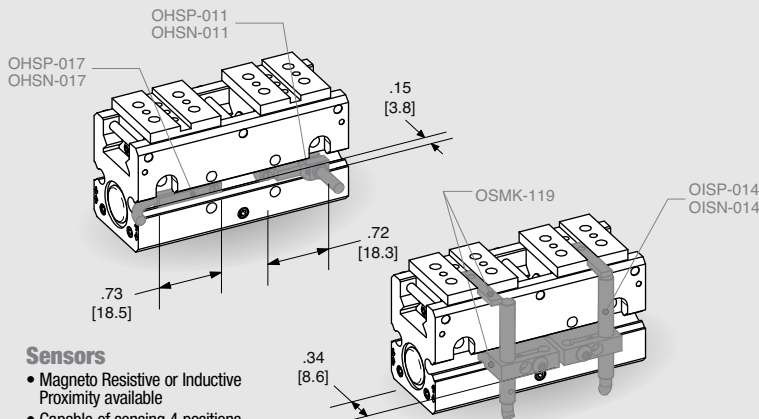


Loading Capacity

	Static	Dynamic
Maximum Tensile T	60 lbs. [267 N]	20 lbs. [89 N]
Maximum Compressive C	60 lbs. [267 N]	20 lbs. [89 N]
Maximum Moment M_x	35 in.-lbs. [4.0 Nm]	12 in.-lbs. [1.4 Nm]
Maximum Moment M_y	50 in.-lbs. [5.6 Nm]	17 in.-lbs. [1.9 Nm]
Maximum Moment M_z	35 in.-lbs. [4.0 Nm]	12 in.-lbs. [1.4 Nm]

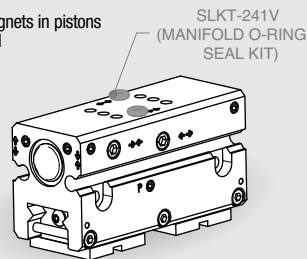
Note: Capacities are per set of jaws and are not simultaneous.

Accessory Mounting Technical Data



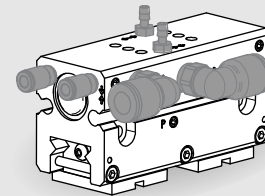
Sensors

- Magneto Resistive or Inductive Proximity available
- 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
- Sensors magnets in pistons are standard



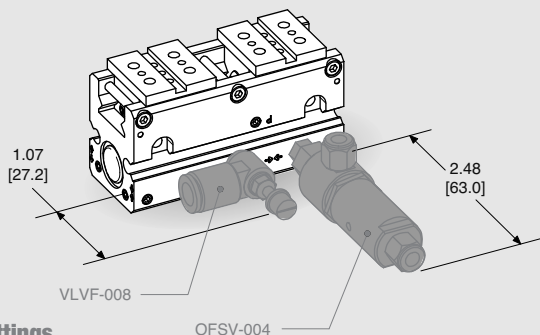
Manifold O-Ring Seals

- Can be used to seal top Air Ports
- Seals in manifold kit are Viton
- O-Ring C'bores in customer's mounting plate must be: 0.215 [05.5] X .060±.002 [1.52±.05] deep
- Kit is supplied with all seals, plugs and wrenches needed



Multiple Air Port Locations

- Standard M5 Air Ports on front surface
- 3 M3 Air Port locations (Left, right, and top surface) are plugged as standard



Plumbing Fittings

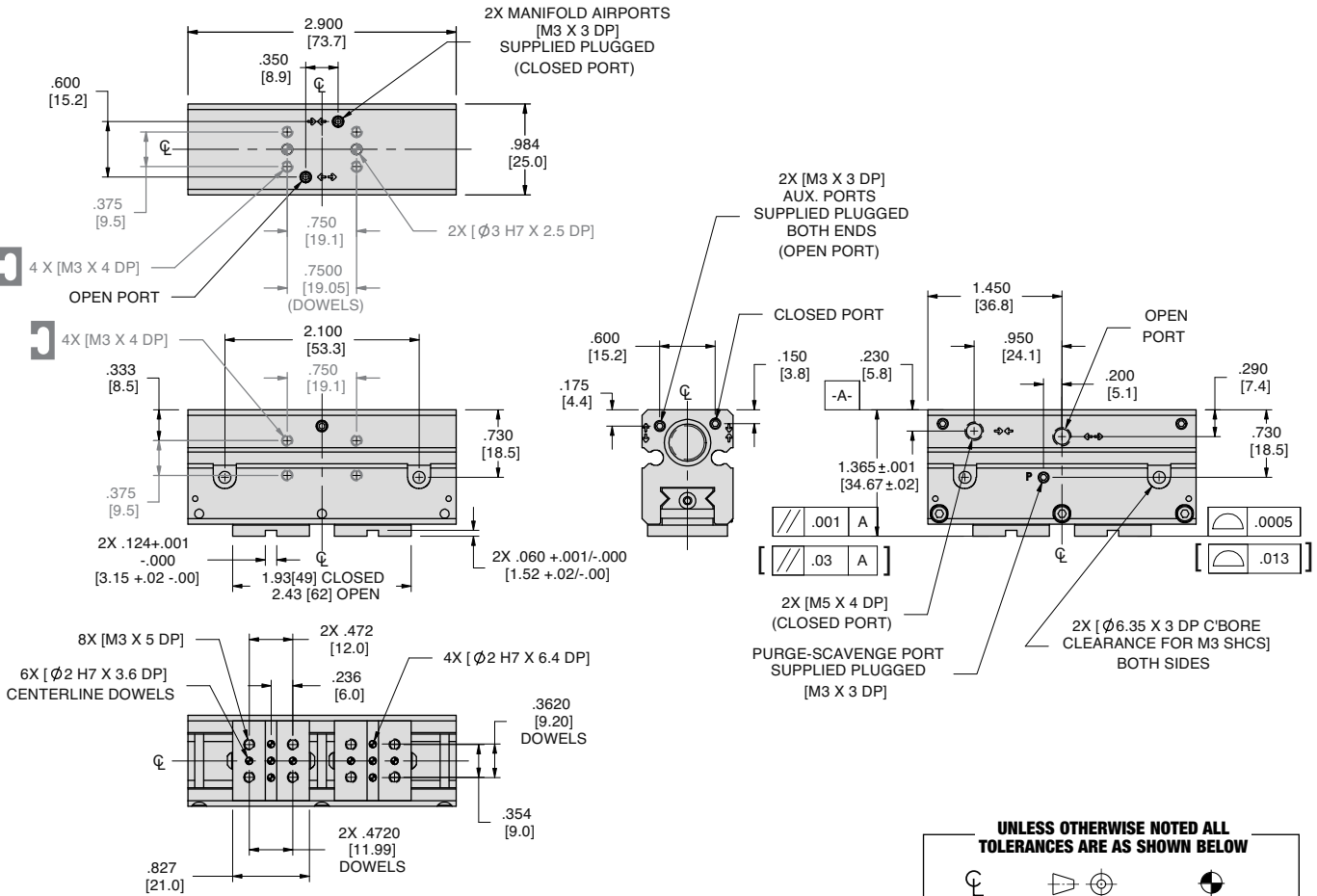
- Adjustable flow controls
 - Have thumb screw adjust with locking nut for adjusting actuation time
 - Available for 3mm or 6mm O.D. Tubing
- Failsafe valve for applications
 - Where it is critical that the part being gripped not be dropped if air pressure is lost
 - Can mount directly to gripper or in-line with plumbing to gripper
 - For M5 Air Ports
- Consult factory for additional plumbing fittings

DIRECTCONNECT™

PARALLEL GRIPPERS DPP-10M-12 DIRECTCONNECT PRECISION SERIES

DPP SERIES

1.78



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)
	Imperial in.	Metric [mm]
Metric Threads Course Pitch	0.00 = ±.01 0.000 = ±.005 0.0000 = ±.0005	[0] = (±.25) [0.0] = (±.13) [0.00] = (±.013)

NOTE: DIRECTCONNECT™ DIMENSIONS ARE SHOWN IN BLUE

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

BASIC MODEL **SPRING** **VITON SEALS**

DPP-10M-12 - C - NS - V

NON-SYNCHRONOUS

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

JAW SYNCHRONIZATION **NS** Non-Synchronous Operation
 — Leave Blank for Synchronous (standard)

VITON® SEALS **V** High Temperature Viton Seals

SENSOR ACCESSORIES	ORDER #	QTY/UNIT
Inductive Sensor Mounting Kit (Mounts 2 sensors)	OSMK-119	1 or 2
NPN Inductive Sensor (with Qk. Disc.)*	OISN-014	1, 2, 3 or 4
PNP Inductive Sensor (with Qk. Disc.)*	OISP-014	1, 2, 3 or 4
NPN Magneto Resistive Sensor (with Qk. Disc.)*†	OHSN-017	1, 2, 3 or 4
PNP Magneto Resistive Sensor (with Qk. Disc.)*†	OHSP-017	1, 2, 3 or 4
NPN Magneto Resistive Sensor 90° (with Qk. Disc.)*†	OHSN-011	1, 2, 3 or 4
PNP Magneto Resistive Sensor 90° (with Qk. Disc.)*†	OHSP-011	1, 2, 3 or 4
Quick Disconnect Cable (2 meters long)*	CABL-010	1, 2, 3 or 4
Quick Disconnect Cable (5 meters long)*	CABL-013	1, 2, 3 or 4
PNEUMATIC ACCESSORIES	ORDER #	QTY/UNIT
Seal Repair Kit (Standard Buna-N)	SLKT-343	1
Seal Repair Kit (Viton)	SLKT-343V	1
Manifold Seal Kit (Viton® only)	SLKT-241V	1
Adjustable Flow Control-M3 Elbow-3MM OD Tube Push-in Style	VLVF-018	1 or 2
Adjustable Flow Control-M5 Elbow-6MM OD Tube Push-in Style	VLVF-008	1 or 2
Fail Safe Valve- M5	OFSV-004	1

*Sensor and cable sold separately. †Piston Magnet standard

SAMPLE ORDER: DPP-10M-12-C-NS-V
Ex: DPP-10 Metric Gripper, 12mm Stroke, Spring Closed, Non Synchronous, Viton Seals

DIRECTCONNECT™



PARALLEL GRIPPERS DPP-10M-12 DIRECTCONNECT PRECISION SERIES

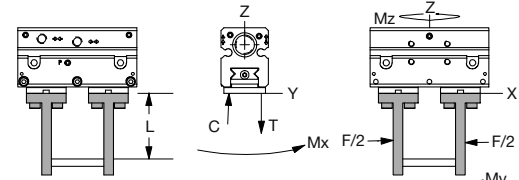
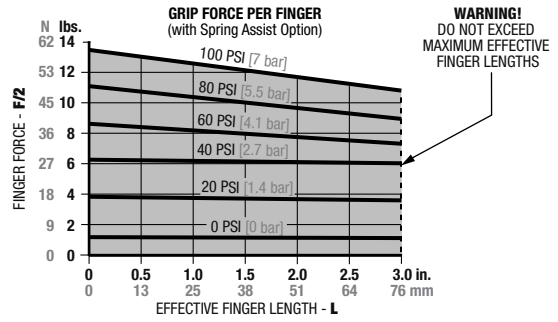
DPP SERIES

1.79



Specifications	DPP-10M-12	
Total Rated Grip Force F @ 100 psi, 7 bar*	27 lbs.	120 N
Stroke	0.50 in.	12.7 mm
Weight	0.45 lbs.	0.20 Kg
Pressure Range (Without Springs)	5-100 psi	0.3-7 bar
Pressure Range (With Springs)	20-100 psi	1.4-7 bar
Cylinder Bore (2X)	0.406 in.	10.3 mm
Displacement	0.065 in ³	1.1 cm ³
Temperature Range: Standard Seals	-30°~180° F	-35°~80° C
Viton® Seals	-20°~250° F	-30°~120° C
Actuation (Without Spring/With Spring)	0.11/0.12 sec.	0.11/0.12 sec.
Accuracy	±0.001 in.	±0.03 mm
Repeatability	±0.0005 in.	±0.01 mm
Valve required to actuate single acting	3-way, 2-position	
Valve required to actuate double acting	4-way, 2-position	

*With Springs

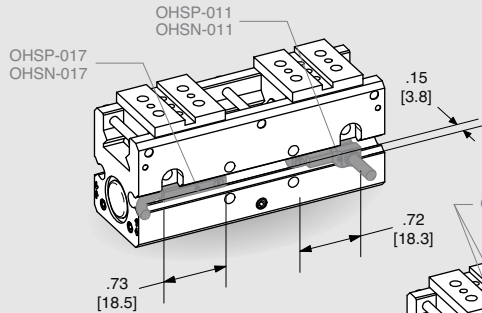


Loading Capacity

	Static	Dynamic
Maximum Tensile T	70 lbs. [311 N]	23 lbs. [102 N]
Maximum Compressive C	70 lbs. [311 N]	23 lbs. [102 N]
Maximum Moment M_x	50 in.-lbs. [5.6 Nm]	17 in.-lbs. [1.9 Nm]
Maximum Moment M_y	65 in.-lbs. [7.3 Nm]	22 in.-lbs. [2.5 Nm]
Maximum Moment M_z	50 in.-lbs. [5.6 Nm]	17 in.-lbs. [1.9 Nm]

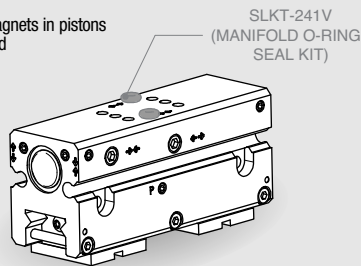
Note: Capacities are per set of jaws and are not simultaneous.

Accessory Mounting Technical Data



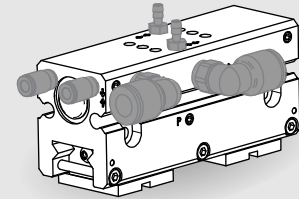
Sensors

- Magneto Resistive or Inductive Proximity available
- 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
- Sensors magnets in pistons are standard



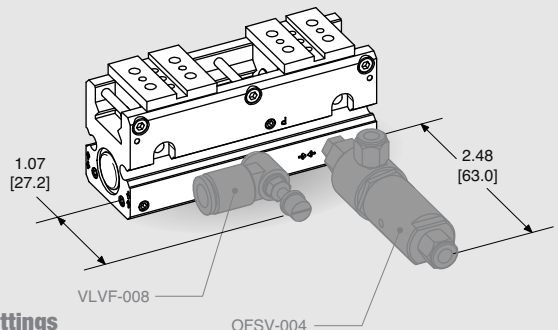
Manifold O-Ring Seals

- Can be used to seal top Air Ports
- Seals in manifold kit are Viton
- O-Ring C'bores in customer's mounting plate must be: $\varnothing.215 [\varnothing 5.5] \times .060 \pm .002 [1.52 \pm .05]$ deep
- Kit is supplied with all seals, plugs and wrenches needed



Multiple Air Port Locations

- Standard M5 Air Ports on front surface
- 3 M3 Air Port locations (Left, right, and top surface) are plugged as standard



Plumbing Fittings

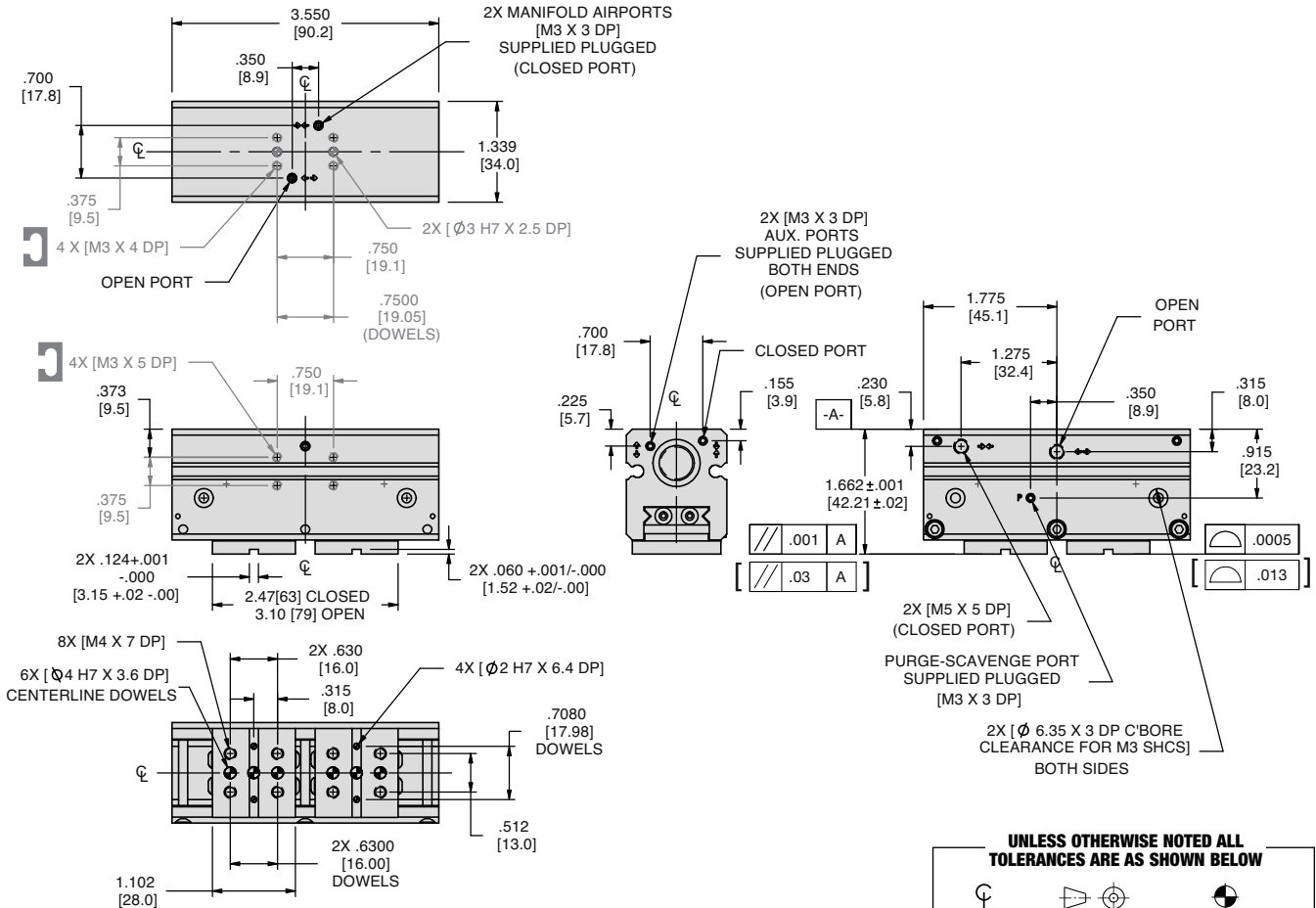
- Adjustable flow controls
 - Have thumb screw adjust with locking nut for adjusting actuation time
 - Available for 3mm or 6mm O.D. Tubing
- Failsafe valve for applications
 - Where it is critical that the part being gripped not be dropped if air pressure is lost
 - Can mount directly to gripper or in-line with plumbing to gripper
 - For M5 Air Ports
- Consult factory for additional plumbing fittings

DIRECTCONNECT™

PARALLEL GRIPPERS DPP-14M-15 DIRECTCONNECT PRECISION SERIES

DPP SERIES

1.80



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.		Metric [mm]	
		0.00 = ±.01		[0] = [±.25]	
		0.000 = ±.005		[0.0] = [±.13]	
		0.0000 = ±.0005		[0.00] = [±.013]	

NOTE: DIRECTCONNECT™ DIMENSIONS ARE SHOWN IN BLUE

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

BASIC MODEL **SPRING** **VITON SEALS**

DPP-14M-15 - C - NS - V

NON-SYNCHRONOUS

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

JAW SYNCHRONIZATION **NS** Non-Synchronous Operation
 — Leave Blank for Synchronous (standard)

VITON® SEALS **V** High Temperature Viton Seals

SENSOR ACCESSORIES

	ORDER #	QTY/UNIT
Inductive Sensor Mounting Kit (Mounts 2 sensors)	OSMK-119	1 or 2
NPN Inductive Sensor (with Qk. Disc.)*	OISN-014	1, 2, 3 or 4
PNP Inductive Sensor (with Qk. Disc.)*	OISP-014	1, 2, 3 or 4
NPN Magneto Resistive Sensor (with Qk. Disc.)*†	OHSN-017	1, 2, 3 or 4
PNP Magneto Resistive Sensor (with Qk. Disc.)*†	OHSP-017	1, 2, 3 or 4
NPN Magneto Resistive Sensor 90° (with Qk. Disc.)*†	OHSN-011	1, 2, 3 or 4
PNP Magneto Resistive Sensor 90° (with Qk. Disc.)*†	OHSP-011	1, 2, 3 or 4
Quick Disconnect Cable (2 meters long)*	CABL-010	1, 2, 3 or 4
Quick Disconnect Cable (5 meters long)*	CABL-013	1, 2, 3 or 4

PNEUMATIC ACCESSORIES

	ORDER #	QTY/UNIT
Seal Repair Kit (Standard Buna-N)	SLKT-344	1
Seal Repair Kit (Viton)	SLKT-344V	1
Manifold Seal Kit (Viton® only)	SLKT-241V	1
Adjustable Flow Control-M3 Elbow-3MM OD Tube Push-in Style	VLVF-018	1 or 2
Adjustable Flow Control-M5 Elbow-6MM OD Tube Push-in Style	VLVF-008	1 or 2
Fail Safe Valve- M5	OFSV-004	1

*Sensor and cable sold separately. †Piston Magnet standard

SAMPLE ORDER: DPP-14M-15-C-NS-V

Ex: DPP-14 Metric Gripper, 15mm Stroke, Spring Closed, Non Synchronous, Viton Seals

DIRECTCONNECT™



PARALLEL GRIPPERS DPP-14M-15 DIRECTCONNECT PRECISION SERIES

DPP SERIES

1.81

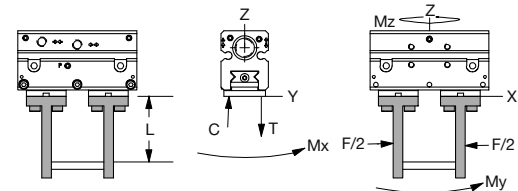
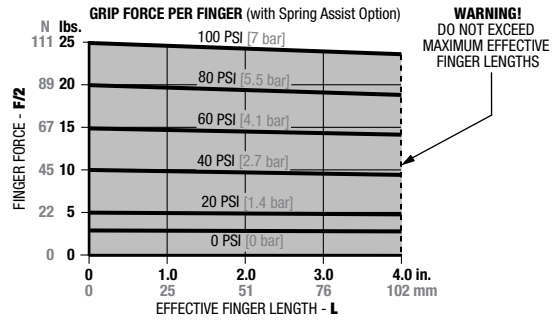


Specifications

DPP-14M-15

Total Rated Grip Force F @ 100 psi, 7 bar*	51 lbs.	227 N
Stroke	0.63 in.	15.9 mm
Weight	1.05 lbs.	0.48 Kg
Pressure Range (Without Springs)	5-100 psi	0.3-7 bar
Pressure Range (With Springs)	50-100 psi	3.4-7 bar
Cylinder Bore (2X)	0.563 in.	14.3 mm
Displacement	0.156 in ³	2.5 cm ³
Temperature Range: Standard Seals	-30°~180° F	-35°~80° C
Viton® Seals	-20°~250° F	-30°~120° C
Actuation (Without Spring/With Spring)	0.15/0.16 sec.	0.15/0.16 sec.
Accuracy	±0.001 in.	±0.03 mm
Repeatability	±0.0005 in.	±0.01 mm
Valve required to actuate single acting	3-way, 2-position	
Valve required to actuate double acting	4-way, 2-position	

*With Springs

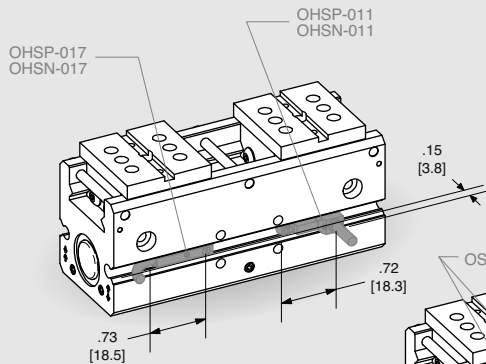


Loading Capacity

	Static	Dynamic
Maximum Tensile T	125 lbs. [556 N]	42 lbs. [187 N]
Maximum Compressive C	125 lbs. [556 N]	42 lbs. [187 N]
Maximum Moment M_x	80 in.-lbs. [9.0 Nm]	27 in.-lbs. [3.1 Nm]
Maximum Moment M_y	105 in.-lbs. [12 Nm]	35 in.-lbs. [4.0 Nm]
Maximum Moment M_z	80 in.-lbs. [9.0 Nm]	27 in.-lbs. [3.1 Nm]

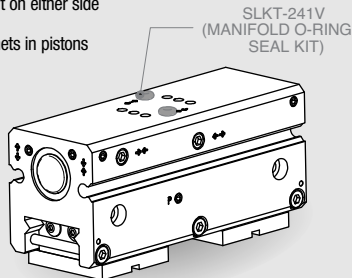
Note: Capacities are per set of jaws and are not simultaneous.

Accessory Mounting Technical Data



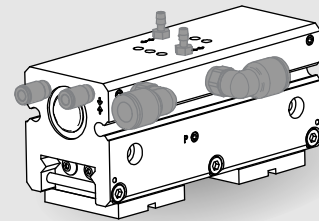
Sensors

- Magneto Resistive or Inductive Proximity available
- 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
- Sensors magnets in pistons are standard



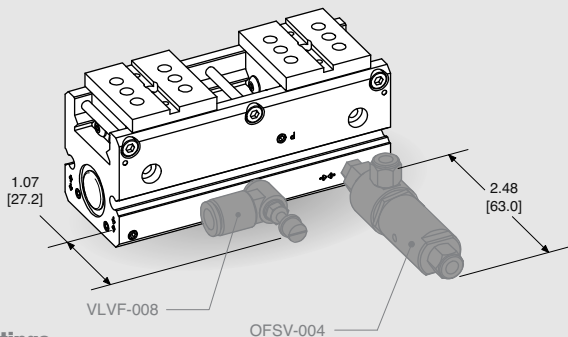
Manifold O-Ring Seals

- Can be used to seal top Air Ports
- Seals in manifold Kit are Viton
- O-Ring C'bores in customer's mounting plate must be: $\varnothing.215 [\varnothing5.5] \times .060 \pm .002 [1.52 \pm .05]$ deep
- Kit is supplied with all seals, plugs and wrenches needed



Multiple Air Port Locations

- Standard M5 Air Ports on front surface
- 3 M3 Air Port locations (Left, right, and top surface) are plugged as standard



Plumbing Fittings

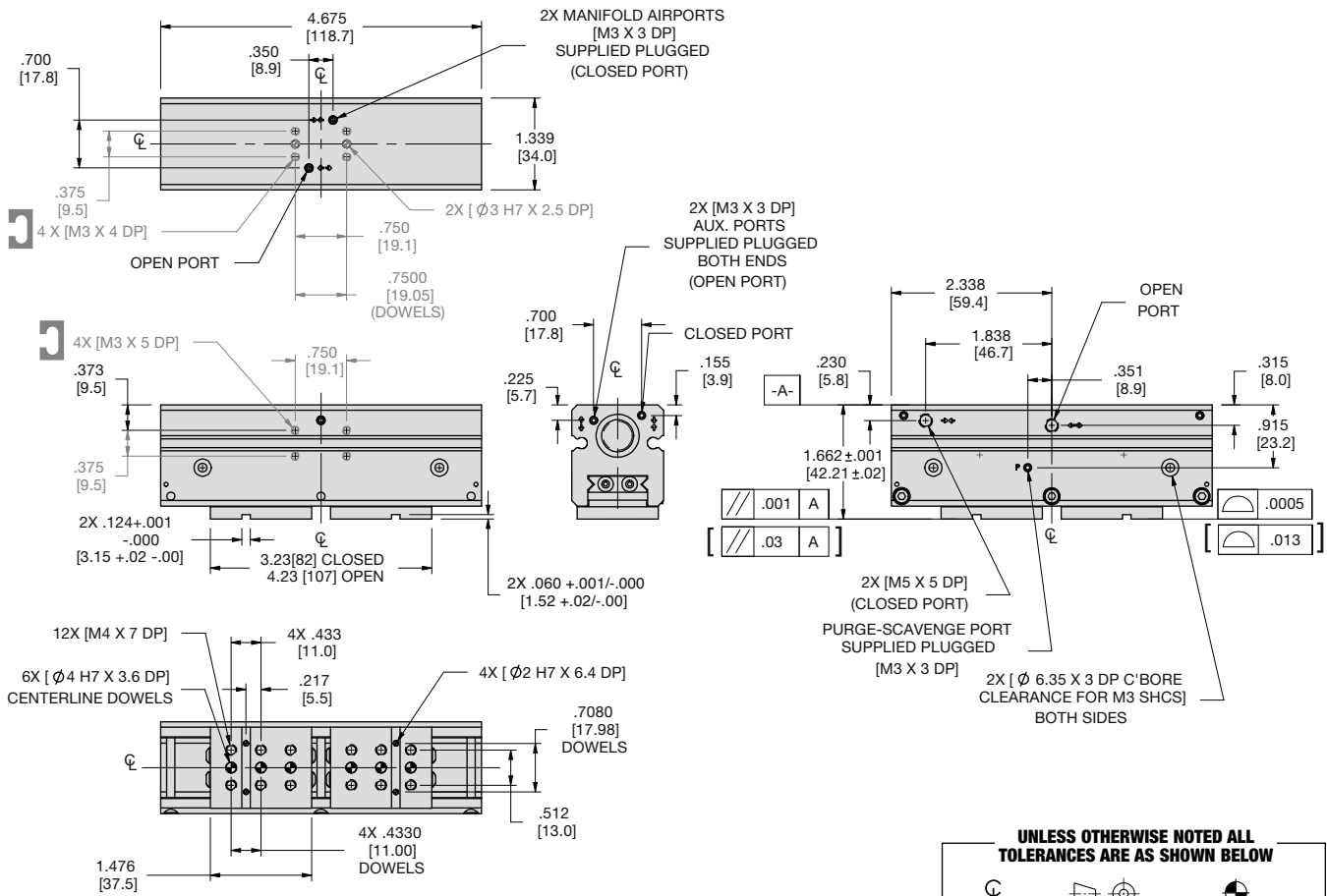
- Adjustable flow controls
 - Have thumb screw adjust with locking nut for adjusting actuation time
 - Available for 3mm or 6mm O.D. Tubing
- Failsafe valve for applications
 - Where it is critical that the part being gripped not be dropped if air pressure is lost
 - Can mount directly to gripper or in-line with plumbing to gripper
 - For M5 Air Ports
- Consult factory for additional plumbing fittings

Please see back cover for DE-STA-CO Global Locations. www.destaco.com

www.comoso.com

DIRECTCONNECT™

PARALLEL GRIPPERS DPP-14M-25 DIRECTCONNECT PRECISION SERIES



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.	Metric [mm]		
		0.00 = ± .01	[0] = (± .25)		
		0.000 = ± .005	[0.0] = (± .13)		
		0.0000 = ± .0005	[0.00] = (± .013)		

NOTE: DIRECTCONNECT™ DIMENSIONS ARE SHOWN IN BLUE

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

BASIC MODEL **SPRING** **VITON SEALS**

DPP-14M-25 - C - NS - V

NON-SYNCHRONOUS

SPRING C Spring Closed
 — Leave Blank. No Spring Option (standard)

JAW SYNCHRONIZATION NS Non-Synchronous Operation
 — Leave Blank for Synchronous (standard)

VITON® SEALS V High Temperature Viton Seals

SENSOR ACCESSORIES

	ORDER #	QTY/UNIT
Inductive Sensor Mounting Kit (Mounts 2 sensors)	OSMK-119	1 or 2
NPN Inductive Sensor (with Qk. Disc.)*	OISN-014	1, 2, 3 or 4
PNP Inductive Sensor (with Qk. Disc.)*	OISP-014	1, 2, 3 or 4
NPN Magneto Resistive Sensor (with Qk. Disc.)*†	OHSN-017	1, 2, 3 or 4
PNP Magneto Resistive Sensor (with Qk. Disc.)*†	OHSP-017	1, 2, 3 or 4
NPN Magneto Resistive Sensor 90° (with Qk. Disc.)*†	OHSN-011	1, 2, 3 or 4
PNP Magneto Resistive Sensor 90° (with Qk. Disc.)*†	OHSP-011	1, 2, 3 or 4
Quick Disconnect Cable (2 meters long)*	CABL-010	1, 2, 3 or 4
Quick Disconnect Cable (5 meters long)*	CABL-013	1, 2, 3 or 4

PNEUMATIC ACCESSORIES

	ORDER #	QTY/UNIT
Seal Repair Kit (Standard Buna-N)	SLKT-344	1
Seal Repair Kit (Viton)	SLKT-344V	1
Manifold Seal Kit (Viton® only)	SLKT-241V	1
Adjustable Flow Control-M3 Elbow-3MM OD Tube Push-in Style	VLVF-018	1 or 2
Adjustable Flow Control-M5 Elbow-6MM OD Tube Push-in Style	VLVF-008	1 or 2
Fail Safe Valve- M5	OFSV-004	1

*Sensor and cable sold separately. †Piston Magnet standard

SAMPLE ORDER: DPP-14M-25-C-NS-V

Ex: DPP-14 Metric Gripper, 25mm Stroke, Spring Closed, Non Synchronous, Viton Seals



PARALLEL GRIPPERS DPP-14M-25 DIRECTCONNECT PRECISION SERIES

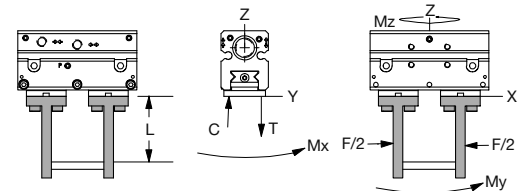
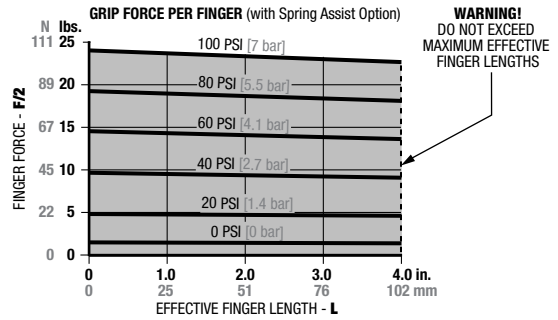
DPP SERIES

1.83



Specifications	DPP-14M-25	
Total Rated Grip Force F @ 100 psi, 7 bar*	48 lbs.	214 N
Stroke	1.00 in.	25.4 mm
Weight	1.25 lbs.	0.57 Kg
Pressure Range (Without Springs)	5-100 psi	0.3-7 bar
Pressure Range (With Springs)	50-100 psi	3.4-7 bar
Cylinder Bore (2X)	0.563 in.	14.3 mm
Displacement	0.249 in ³	4.1 cm ³
Temperature Range: Standard Seals	-30°~180° F	-35°~80° C
Viton® Seals	-20°~250° F	-30°~120° C
Actuation (Without Spring/With Spring)	0.19/0.20 sec.	0.19/0.20 sec.
Accuracy	±0.001 in.	±0.03 mm
Repeatability	±0.0005 in.	±0.01 mm
Valve required to actuate single acting	3-way, 2-position	
Valve required to actuate double acting	4-way, 2-position	

*With Springs

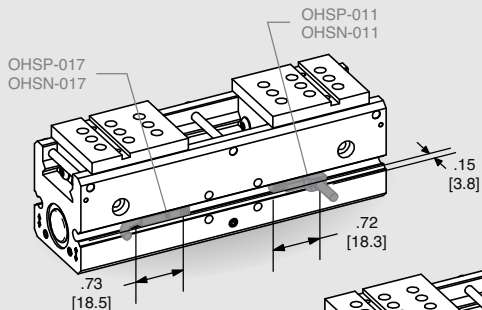


Loading Capacity

	Static	Dynamic
Maximum Tensile T	165 lbs. [734 N]	55 lbs. [245 N]
Maximum Compressive C	165 lbs. [734 N]	55 lbs. [245 N]
Maximum Moment M_x	100 in.-lbs. [11 Nm]	33 in.-lbs. [3.7 Nm]
Maximum Moment M_y	125 in.-lbs. [14 Nm]	42 in.-lbs. [4.7 Nm]
Maximum Moment M_z	100 in.-lbs. [11 Nm]	33 in.-lbs. [3.7 Nm]

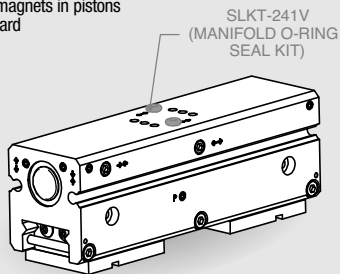
Note: Capacities are per set of jaws and are not simultaneous.

Accessory Mounting Technical Data



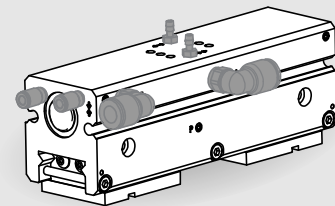
Sensors

- Magneto Resistive or Inductive Proximity available
- 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
- Sensors magnets in pistons are standard



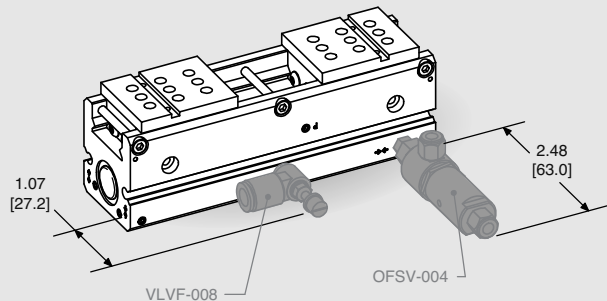
Manifold O-Ring Seals

- Can be used to seal top Air Ports
- Seals in manifold kit are Viton
- O-Ring C'bores in customer's mounting plate must be: $\varnothing.215 [\varnothing5.5] \times .060 \pm .002 [1.52 \pm .05]$ deep
- Kit is supplied with all seals, plugs and wrenches needed



Multiple Air Port Locations

- Standard M5 Air Ports on front surface
- 3 M3 Air Port locations (Left, right, and top surface) are plugged as standard



Plumbing Fittings

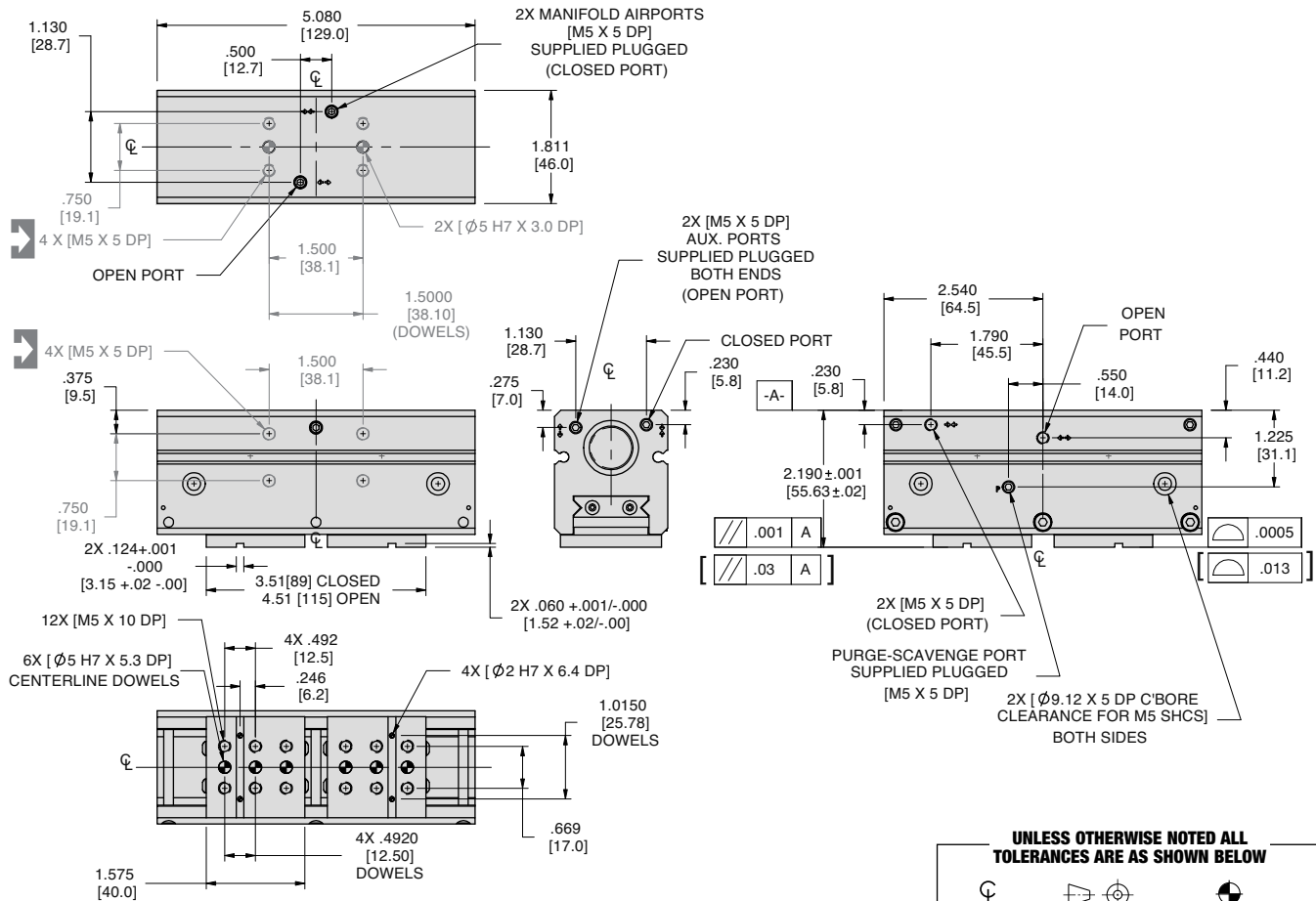
- Adjustable flow controls
 - Have thumb screw adjust with locking nut for adjusting actuation time
 - Available for 3mm or 6mm O.D. Tubing
- Failsafe valve for applications
 - Where it is critical that the part being gripped not be dropped if air pressure is lost
 - Can mount directly to gripper or in-line with plumbing to gripper
 - For M5 Air Ports
- Consult factory for additional plumbing fittings

DIRECTCONNECT™

PARALLEL GRIPPERS DPP-20M-25 DIRECTCONNECT PRECISION SERIES

DPP SERIES

1.84



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)

NOTE: DIRECTCONNECT™ DIMENSIONS ARE SHOWN IN BLUE

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

BASIC MODEL **SPRING** **VITON SEALS**

DPP-20M-25 - C - NS - V

NON-SYNCHRONOUS

SPRING C Spring Closed
— Leave Blank. No Spring Option (standard)

JAW SYNCHRONIZATION NS Non-Synchronous Operation
— Leave Blank for Synchronous (standard)

VITON® SEALS V High Temperature Viton Seals

SENSOR ACCESSORIES

	ORDER #	QTY/UNIT
Inductive Sensor Mounting Kit (Mounts 2 sensors)	OSMK-120	1 or 2
NPN Inductive Sensor (with Qk. Disc.)*	OISN-014	1, 2, 3 or 4
PNP Inductive Sensor (with Qk. Disc.)*	OISP-014	1, 2, 3 or 4
NPN Magneto Resistive Sensor (with Qk. Disc.)*†	OHSN-017	1, 2, 3 or 4
PNP Magneto Resistive Sensor (with Qk. Disc.)*†	OHSP-017	1, 2, 3 or 4
NPN Magneto Resistive Sensor 90° (with Qk. Disc.)*†	OHSN-011	1, 2, 3 or 4
PNP Magneto Resistive Sensor 90° (with Qk. Disc.)*†	OHSP-011	1, 2, 3 or 4
Quick Disconnect Cable (2 meters long)*	CABL-010	1, 2, 3 or 4
Quick Disconnect Cable (5 meters long)*	CABL-013	1, 2, 3 or 4

PNEUMATIC ACCESSORIES

	ORDER #	QTY/UNIT
Seal Repair Kit (Standard Buna-N)	SLKT-345	1
Seal Repair Kit (Viton)	SLKT-345V	1
Manifold Seal Kit (Viton® only)	SLKT-242V	1
Adjustable Flow Control-M5 Elbow-6MM OD Tube Push-in Style	VLVF-008	1 or 2
Fail Safe Valve- M5	OFSV-004	1

*Sensor and cable sold separately. †Piston Magnet standard

SAMPLE ORDER: DPP-20M-25-C-NS-V

Ex: DPP-20 Metric Gripper, 25mm Stroke, Spring Closed, Non Synchronous, Viton Seals



PARALLEL GRIPPERS DPP-20M-25 DIRECTCONNECT PRECISION SERIES

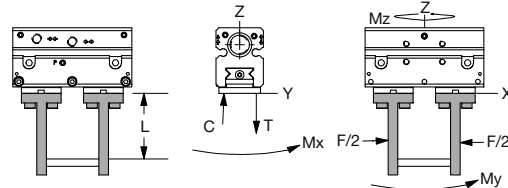
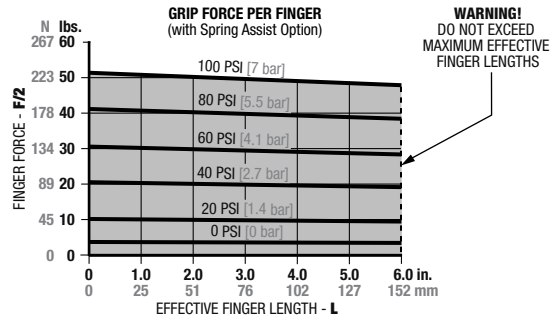
DPP SERIES

1.85



Specifications	DPP-20M-25	
Total Rated Grip Force F @ 100 psi, 7 bar*	103 lbs.	458 N
Stroke	1.00 in.	25.4 mm
Weight	2.25 lbs.	1.02 Kg
Pressure Range (Without Springs)	5-100 psi	0.3-7 bar
Pressure Range (With Springs)	40-100 psi	2.8-7 bar
Cylinder Bore (2X)	0.813 in.	20.7 mm
Displacement	0.519 in ³	8.5 cm ³
Temperature Range: Standard Seals	-30°~180° F	-35°~80° C
Viton® Seals	-20°~250° F	-30°~120° C
Actuation (Without Spring/With Spring)	0.20/0.22 sec.	0.20/0.22 sec.
Accuracy	±0.001 in.	±0.03 mm
Repeatability	±0.0005 in.	±0.01 mm
Valve required to actuate single acting	3-way, 2-position	
Valve required to actuate double acting	4-way, 2-position	

*With Springs

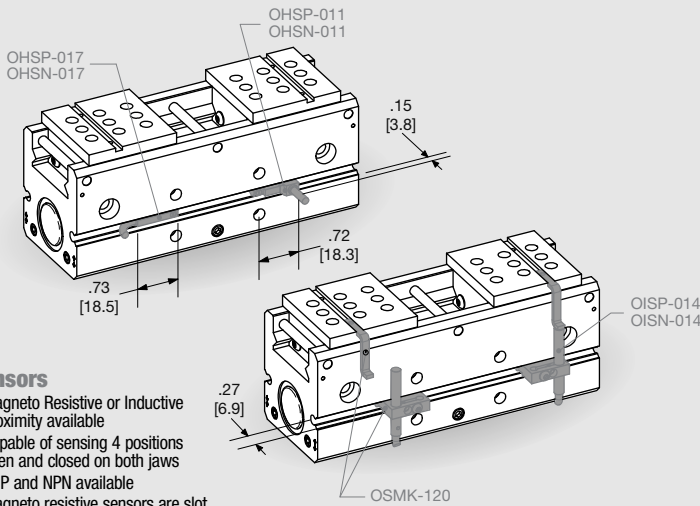


Loading Capacity

	Static	Dynamic
Maximum Tensile T	150 lbs. [667 N]	50 lbs. [222 N]
Maximum Compressive C	150 lbs. [667 N]	50 lbs. [222 N]
Maximum Moment M_x	300 in.-lbs. [34 Nm]	100 in.-lbs. [11 Nm]
Maximum Moment M_y	350 in.-lbs. [40 Nm]	117 in.-lbs. [13 Nm]
Maximum Moment M_z	300 in.-lbs. [34 Nm]	100 in.-lbs. [11 Nm]

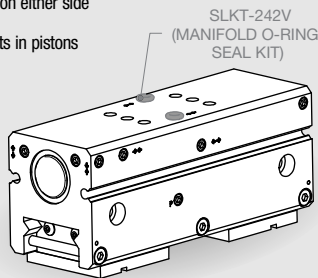
Note: Capacities are per set of jaws and are not simultaneous.

Accessory Mounting Technical Data



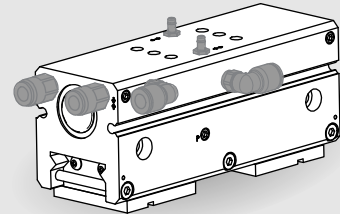
Sensors

- Magneto Resistive or Inductive Proximity available
- 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
- Sensors magnets in pistons are standard



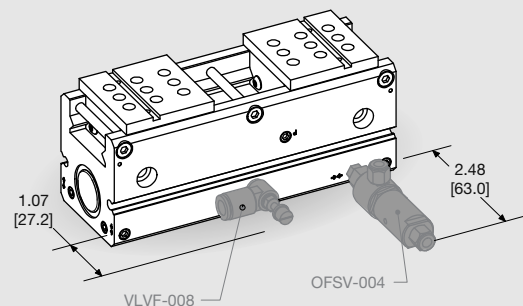
Manifold O-Ring Seals

- Can be used to seal top Air Ports
- Seals in manifold kit are Viton
- O-Ring C'bores in customer's mounting plate must be: 0.290 [07.4] X .060±.002 [1.52±.05] deep
- Kit is supplied with all seals, plugs and wrenches needed



Multiple Air Port Locations

- Standard M5 Air Ports on front surface
- 3 M5 Air Port locations (Left, right, and top surface) are plugged as standard



Plumbing Fittings

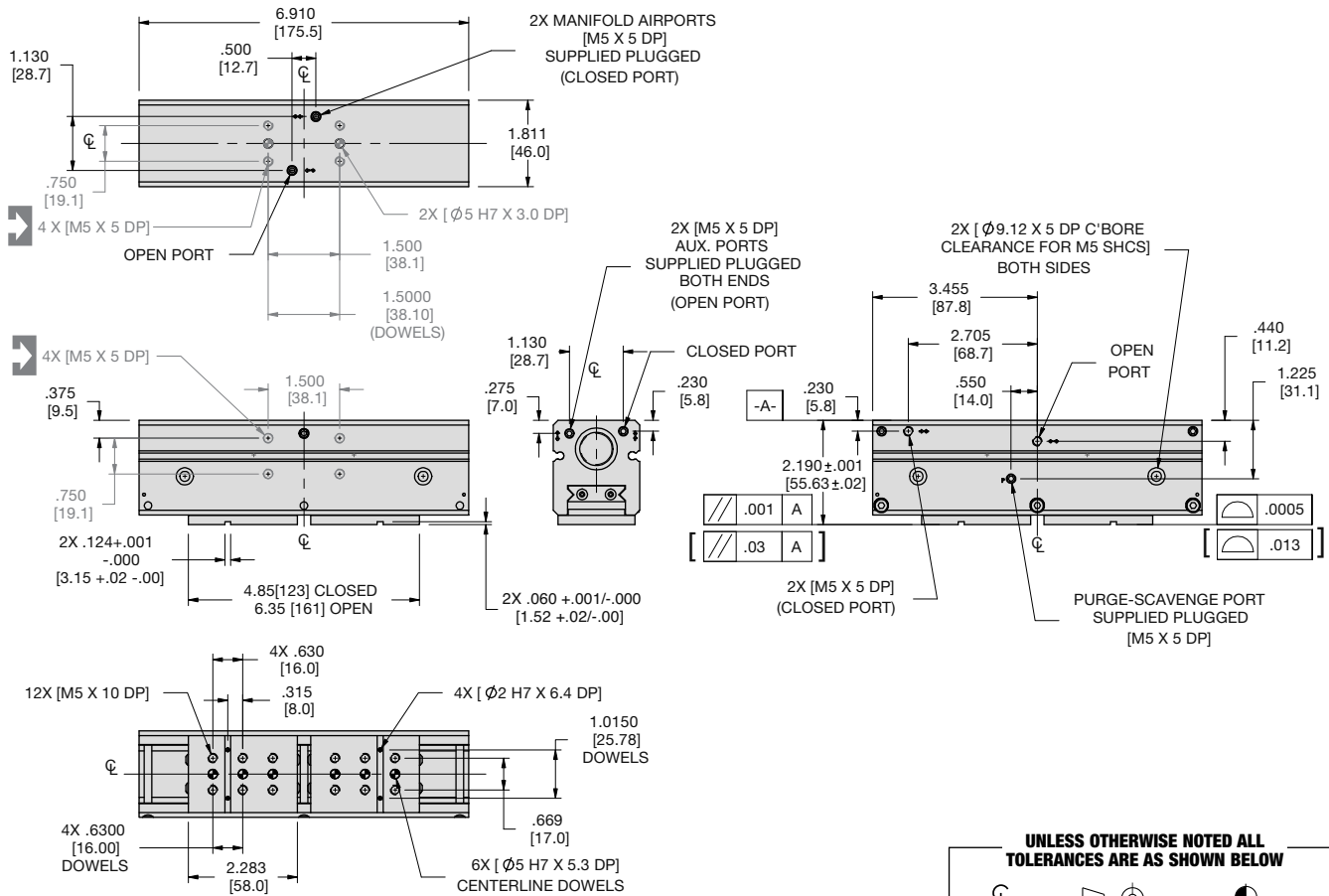
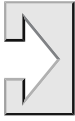
- Adjustable flow controls
 - Have thumb screw adjust with locking nut for adjusting actuation time
 - Available for 6mm O.D. Tubing
- Failsafe valve for applications
 - Where it is critical that the part being gripped not be dropped if air pressure is lost
 - Can mount directly to gripper or in-line with plumbing to gripper
 - For M5 Air Ports
- Consult factory for additional plumbing fittings

DIRECTCONNECT™

PARALLEL GRIPPERS DPP-20M-38 DIRECTCONNECT PRECISION SERIES

DPP SERIES

1.86



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)

NOTE: DIRECTCONNECT™ DIMENSIONS ARE SHOWN IN BLUE

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

BASIC MODEL SPRING VITON SEALS

DPP-20M-38 - C - NS - V

NON-SYNCHRONOUS

SPRING C Spring Closed
— Leave Blank. No Spring Option (standard)

JAW SYNCHRONIZATION NS Non-Synchronous Operation
— Leave Blank for Synchronous (standard)

VITON® SEALS V High Temperature Viton Seals

SENSOR ACCESSORIES

	ORDER #	QTY/UNIT
Inductive Sensor Mounting Kit (Mounts 2 sensors)	OSMK-120	1 or 2
NPN Inductive Sensor (with Qk. Disc.)*	OISN-014	1, 2, 3 or 4
PNP Inductive Sensor (with Qk. Disc.)*	OISP-014	1, 2, 3 or 4
NPN Magneto Resistive Sensor (with Qk. Disc.)*†	OHSN-017	1, 2, 3 or 4
PNP Magneto Resistive Sensor (with Qk. Disc.)*†	OHSP-017	1, 2, 3 or 4
NPN Magneto Resistive Sensor 90° (with Qk. Disc.)*†	OHSN-011	1, 2, 3 or 4
PNP Magneto Resistive Sensor 90° (with Qk. Disc.)*†	OHSP-011	1, 2, 3 or 4
Quick Disconnect Cable (2 meters long)*	CABL-010	1, 2, 3 or 4
Quick Disconnect Cable (5 meters long)*	CABL-013	1, 2, 3 or 4

PNEUMATIC ACCESSORIES

	ORDER #	QTY/UNIT
Seal Repair Kit (Standard Buna-N)	SLKT-345	1
Seal Repair Kit (Viton)	SLKT-345V	1
Manifold Seal Kit (Viton® only)	SLKT-242V	1
Adjustable Flow Control-M5 Elbow-6MM OD Tube Push-in Style	VLVF-008	1 or 2
Fail Safe Valve- M5	OFSV-004	1

*Sensor and cable sold separately. †Piston Magnet standard

SAMPLE ORDER: DPP-20M-38-C-NS-V

Ex: DPP-20 Metric Gripper, 38mm Stroke, Spring Closed, Non Synchronous, Viton Seals

DIRECTCONNECT™



PARALLEL GRIPPERS DPP-20M-38 DIRECTCONNECT PRECISION SERIES

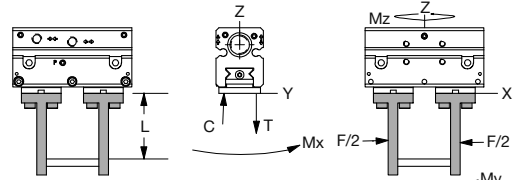
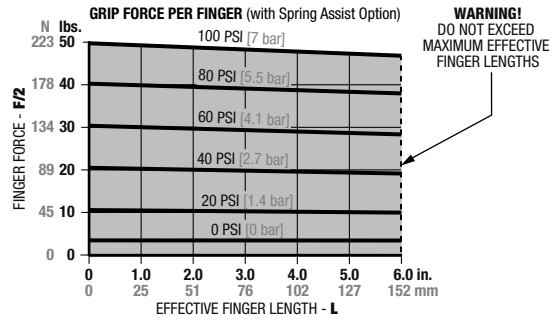
DPP SERIES

1.87



Specifications	DPP-20M-38	
Total Rated Grip Force F @ 100 psi, 7 bar*	101 lbs.	449 N
Stroke	1.50 in.	38.1 mm
Weight	3.10 lbs.	1.41 Kg
Pressure Range (Without Springs)	5-100 psi	0.3-7 bar
Pressure Range (With Springs)	30-100 psi	2.1-7 bar
Cylinder Bore (2X)	0.813 in.	20.7 mm
Displacement	0.779 in ³	12.8 cm ³
Temperature Range: Standard Seals	-30°~180° F	-35°~80° C
Viton® Seals	-20°~250° F	-30°~120° C
Actuation (Without Spring/With Spring)	0.24/0.29 sec.	0.24/0.29 sec.
Accuracy	±0.001 in.	±0.03 mm
Repeatability	±0.0005 in.	±0.01 mm
Valve required to actuate single acting	3-way, 2-position	
Valve required to actuate double acting	4-way, 2-position	

*With Springs

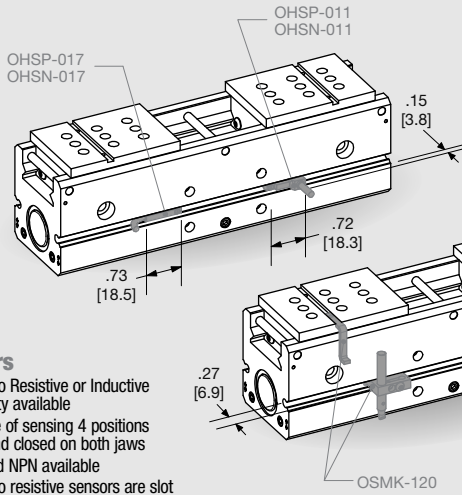


Loading Capacity

	Static	Dynamic
Maximum Tensile T	200 lbs. [890 N]	67 lbs. [298 N]
Maximum Compressive C	200 lbs. [890 N]	67 lbs. [298 N]
Maximum Moment M_x	400 in.-lbs. [45 Nm]	133 in.-lbs. [15 Nm]
Maximum Moment M_y	450 in.-lbs. [51 Nm]	150 in.-lbs. [17 Nm]
Maximum Moment M_z	400 in.-lbs. [45 Nm]	133 in.-lbs. [15 Nm]

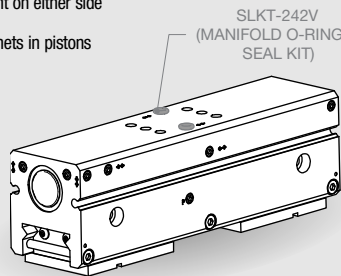
Note: Capacities are per set of jaws and are not simultaneous.

Accessory Mounting Technical Data



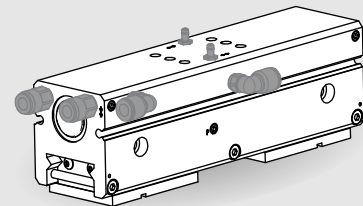
Sensors

- Magneto Resistive or Inductive Proximity available
- 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
- Sensors magnets in pistons are standard



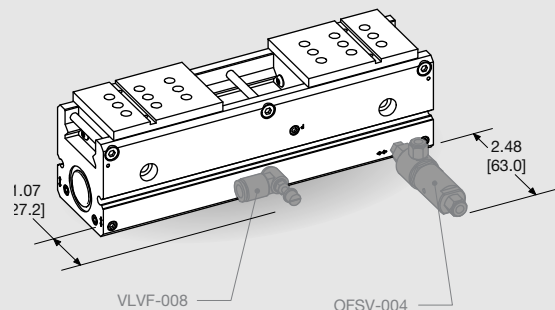
Manifold O-Ring Seals

- Can be used to seal top Air Ports
- Seals in manifold kit are Viton
- O-Ring C'bores in customer's mounting plate must be: 0.290 [07.4] X .060±.002 [1.52±.05] deep
- Kit is supplied with all seals, plugs and wrenches needed



Multiple Air Port Locations

- Standard M5 Air Ports on front surface
- 3 M5 Air Port locations (Left, right, and top surface) are plugged as standard

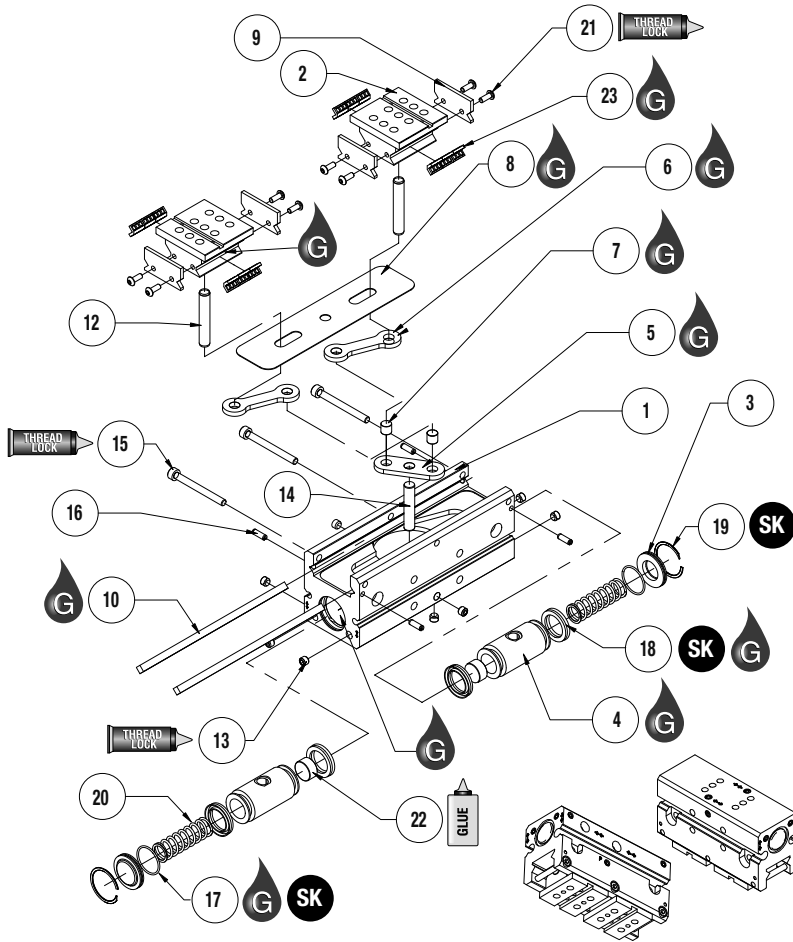


Plumbing Fittings

- Adjustable flow controls
 - Have thumb screw adjust with locking nut for adjusting actuation time
 - Available for 6mm O.D. Tubing
- Failsafe valve for applications
 - Where it is critical that the part being gripped not be dropped if air pressure is lost
 - Can mount directly to gripper or in-line with plumbing to gripper
 - For M5 Air Ports
- Consult factory for additional plumbing fittings

DIRECTCONNECT™

DPP SERIES EXPLODED VIEW



Item	Qty	Name
01	1	Body
02	2	Jaw
03	2	Cap
04	2	Piston
05	1	Equalizer
06	2	Link
07	2	Equalizer Pin
08	1	Linkage Cover
09	4	Wiper
10	2	Way
12	2	Drive Pin
13	10	Set Screw – Air & Purge Plug
14	1	Pivot Pin
15	3	Preload Screw
16	4	Way Locating Pin
17	2	O-Ring – Cap Seal
18	4	U-Cup – Piston Seal
19	2	Retaining Ring
20	2	Spring for -C Spring Closed Option
21*	–	BHCS – Wiper Mounting Screw
22*	–	Magnet
23*	–	S'assy, Cage & Roller Bearings

Notes:

- 1) Contact the Robohand Sales Department for a complete spare parts list with order number and prices.
- 2)* Item #21 quantity varies per gripper size. Size -10M has 4 per unit. Sizes -14M, -20M have 8 per unit.
- 3)* Item #22 quantity varies per gripper size. Size -10M has 4 per unit. Sizes -14M, -20M have 2 per unit.
- 4)* Item #23 quantity and number of different sub-assemblies varies per gripper model. Contact Sales to determine the correct quantity and part numbers needed.

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

Assembly Procedure:

- 1) Lubricate #1 body (jaw cavity & bore).
- 2) Plug cross ports in body with #13 set screws.
- 3) Press #14 pivot pin into body.
- 4) Insert #22 magnet(s) into each #4 piston making sure magnets repel each other between pistons.
- 5) Lubricate and install #18 seals onto pistons.
- 6) Insert pistons into body with magnet sides facing in toward pivot pin.
- 7) Press #7 equalizer pins into #5 equalizer.
- 8) Assemble equalizer with #6 links and place onto pivot pin in body making sure holes in links line up with holes in pistons.
- 9) Place #8 linkage cover over equalizer and link assembly and seat in body pocket.
- 10) Press #12 drive pin into each #2 jaw.
- 11) Lubricate jaw bearing surfaces and install #9 wiper on each jaw end with #21 mounting screws.
- 12) Place #23 cage and roller bearing assemblies on jaw bearing grooves.
- 13) Place jaws into body aligning the drive pins with the holes in the linkage cover, links, and pistons. If jaws have off center key slot in them, jaws should be installed with this slot farther away from the gripper's center.
- 14) Slide #10 ways into body trapping them between body and jaws.
- 15) Install #16 way locating pins at each end of body to secure ways.
- 16) For -C spring closed option, insert #20 springs into pistons.
- 17) Place #17 seals onto #3 caps and install onto body with #19 retaining rings.
- 18) Install #15 preload screws and torque per preload adjustment procedure.

Preload Adjustment Procedure:

- 1) Tighten center preload screw first and then outer ones to the torque specification in step 2.
- 2) Use the following torque specification per gripper.
 - DPP-10M – 6 in-lb [0.68 Nm]
 - DPP-14M – 8 in-lb [0.90 Nm]
 - DPP-20M – 13 in-lb [1.47 Nm]

Note: Torque specifications provided are factory settings. Fine adjustment may be needed based on intent & application.

Non-Synchronous Procedure:

- 1) Remove preload screws, press out way locating pins, and slide out ways.
- 2) Pull out jaws and roller bearing assemblies. (If -C spring closed option, remove retaining rings, caps, and springs first.)
- 3) Remove linkage cover from body.
- 4) Remove equalizer and links from body.
- 5) Re-install linkage cover into body.
- 6) Re-install jaws and roller bearing assemblies into body aligning the drive pins with the hole in the linkage cover and each piston.
- 7) Re-install ways, press in way locating pins, and re-install preload screws. (If -C spring closed option, re-install springs, caps and retaining rings.)



Seal Kit Items



Thread Locker



Krytox™ Lubricant



Lightweight Machine Oil



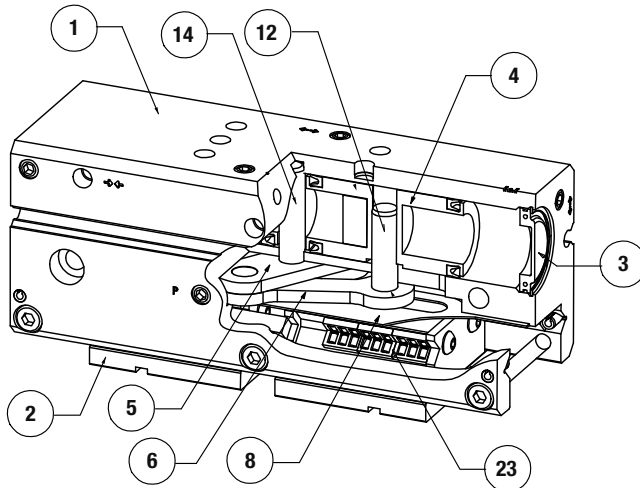
Teflon™ Based Grease



Super Bonder



Third Angle Projection

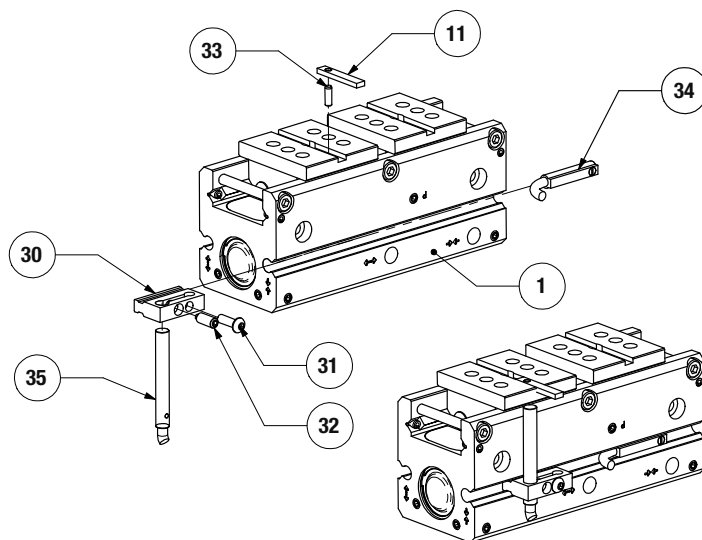


Item	Qty	Name
01	1	Body
02	2	Jaw
03	2	Cap
04	2	Piston
05	1	Equalizer
06	2	Link
08	1	Linkage Cover
12	2	Drive Pin
14	1	Pivot Pin
23*	-	S'assy, Cage & Roller Bearings

Notes:

- 1) Contact the Robohand Sales Department for a complete spare parts list with order number and prices.
- 2)* Item #23 quantity and number of different sub-assemblies varies per gripper model. Contact Sales to determine the correct quantity and part numbers needed.

Accessory Installation & Adjustment Instructions



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 (#30) into slot of body.
- 2) Insert dowel pin (#33) and target (#11) into jaw slot.
- 3) Insert sensor into bracket and adjust sensor depth so that sensor light indicates on target.
- 4) Tighten sensor locking screw (#31) to hold sensor depth.
- 5) Position sensor bracket for desired stroke detection.
- 6) Tighten sensor bracket with set screw (#32) to lock stroke detection position.



Seal Kit Items



Thread Locker



Krytox™ Lubricant



Lightweight Machine Oil



Teflon™ Based Grease



Super Bonder



Third Angle Projection