DFW SERIES 1.196

Parallel Grippers -DPW DIRECTCONNECT Wide Body Series

- DIRECTCONNECT[™] Connectivity: DIRECTCONNECT[™] Tapped and Dowel mounting on body.
- Large or Wide Parts: Wide body design provides secure gripping of large & wide parts.
- Multiple air port positions: Tapped air ports on top and front are standard.
- Manifold Air Porting: Top air ports can be manifold o-ring sealed.
- Inductive Sensor Flexibility: Mount either 3mm or 4mm Inductive sensors with the same bracket (3mm only on DPW-250).
- Magnetoresistive Sensing: Full range adjustable Magnetoresistive Sensors. Magnet supplied standard.
- Long Finger Applications: Jaw support thru the length of the body allows for long fingers to be attached to jaws.
- Thru Jaw Mounting: Offers a wider variety of mounting applications for jaws.
- Shaft Wiper Option: Rugged urethane shaft wipers seal the unit against harsh environments. Designed to be used in machine coolant and metal chip environment applications.

DIRECTCONNE

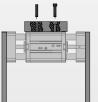
- **Multiple Strokes:** All gripper sizes are available in 2 different strokes.
- **Non-synchronous motion:** The unit can be made non-synchronous providing independent jaw motion allowing the gripper to pick or place at a point other than its center.

Mounting Information:

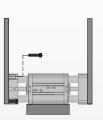
Grippers can be mounted & operated in any direction

Fingers attach with screws and locate on jaws with dowel pins





Body mounts on top with screws and locates with slip fit dowel pin holes for accuracy



Thru mounting on inside of jaws to allow for alternate finger mounting

Jaw design allows for simplified mounting of fingers



Symmetrical mounting pattern on jaws allows for multiple finger orientation

Technical Specifications:

Pneumatic Specifications	Imperial	Metric
Pressure Operating Range	40-100 psi	3-7 bar
Cylinder Type	Double	
Dynamic Seals	Internally Lubr	
Valve Required to Operate	4-way, 2-	-position
Air Quality Requirements		
Air Filtration	40 Micron	
Air Lubrication		cessary*
Air Humidity	Low Moisture	Content (ary)
Temperature Operating Range		
Buna-N Seals (standard)	-30°~180° F	-35°~80° C
Viton [®] Seals (optional)	-20°~300° F	-30°~150° C
Maintenance Specifications		
Expected Life		
Normal Application	5 million	
w/ Preventative Maintenance	10+ million cycles*	
Field Repairable	Yes	
Seal Repair Kits Available	Yes	
-W Option Shaft Wiper Specif		
Wiper Material	90 Duromete	
Temperature Rating (Wiper Only)		
	water, coolant, petr	
	icone, lubricants, d	
	s, hydraulic fluid, tr	
Non-Compatible Chemicals	Ozone, ketones, s brake fi	
Example Applications	Grinding dust, mag	
Example Applications	coolant, paper dus	
Application Restrictions	coolant, paper uus	ธ., พลอแนบพท
Applications where mechanism I	ubricant could cause	e contamination
(use -W Shaft Wiper Option in thi		o oonanniadon
(and the one of the openon in the		

*Addition of lubrication will greatly increase service life

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 This gripper is suitable for internal or external gripping and can be mounted in any orientation.

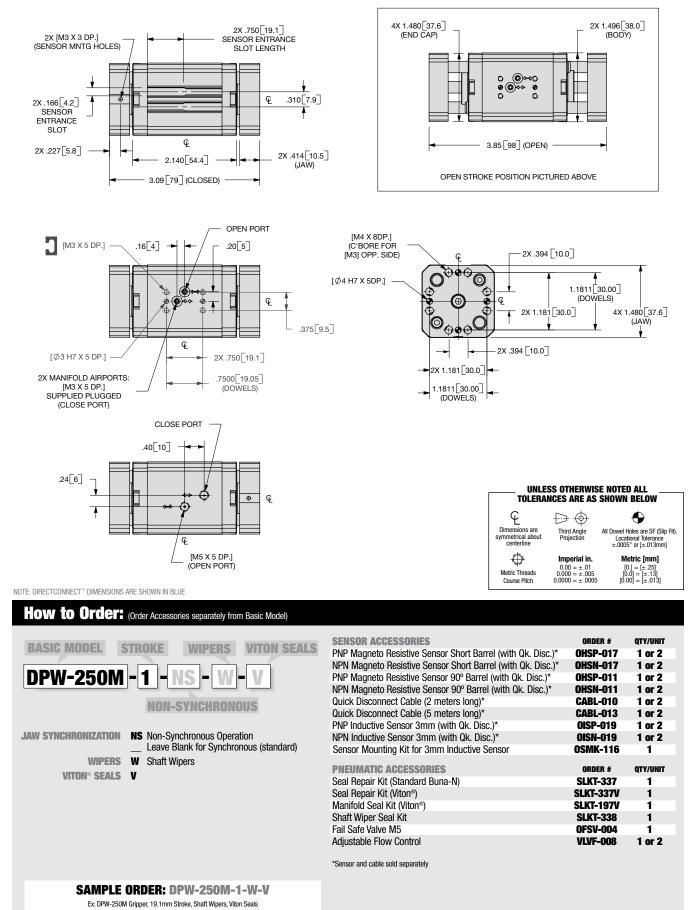
U.S Patent #5,163,729 Designed, manufactured and assembled in the USA

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See **1.208**

PARALLEL GRIPPERS DPW-250M-1 DIRECTCONNECT WIDE BODY SERIES





SERIES

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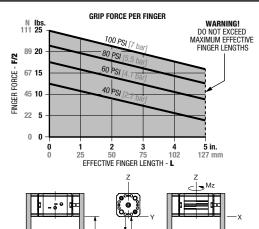
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Specifications	DPW-25 0	M-1
Total Rated Grip Force F @ 100 psi, 7 bar	50 lbs.	222 N
Stroke	0.75 in.	19.1 mm
Pressure Range	40-100 psi	3-7 bar
Cylinder Bore Ø	0.625 in.	15.9 mm
Displacement	0.023 in ³ .	3.8 cm ³
Weight	0.662 lbs.	0.30 Kg
Temperature Range: Standard Seals	-30°~180° F	-35°~80° C
Viton [®] Seals	-20°~300° F	-30°~150° C
Actuation	0.12 sec.	0.12 sec.
Accuracy	±0.003 in.	±0.08 mm
Repeatability	±0.001 in.	±0.03 mm
Valve required to actuate	4-way, 2-p	osition

PARALLEL GRIPPERS DPW-250M-1 DIRECT CONNECT WIDE BODY SERIES





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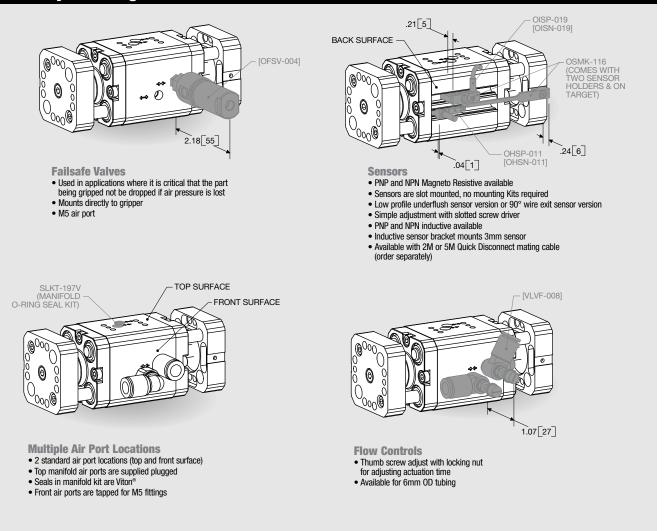
F/2

-M

Loading Capacity[†] Static Dynamic Maximum Tensile T 60 lbs. [267 N] 12 lbs. [53 N] Maximum Compressive C 60 lbs. [267 N] 12 lbs. [53 N] Maximum Moment Mx 120 in.-1bs. [14 Nm] 24 in.-1bs. [3 Nm] Maximum Moment My 180 in.-Ibs. [20 Nm] 36 in.-Ibs. [4 Nm] 24 in.-Ibs. [3 Nm] Maximum Moment Mz 120 in.-1bs. [14 Nm] *Capacities are per set of jaws and are not simultaneous

Mx F/2

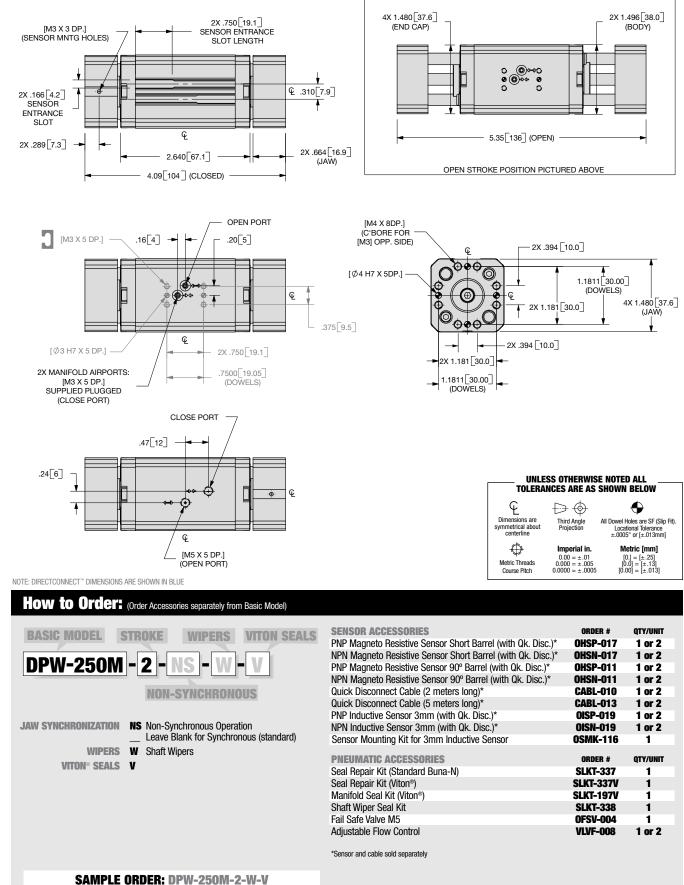
Accessory Mounting Technical Data



DIRECTCONNECT

PARALLEL GRIPPERS DPW-250M-2 DIRECTCONNECT WIDE BODY SERIES

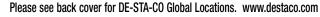




SERIES

Mad

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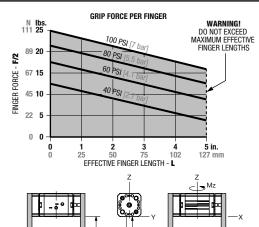


Ex: DPW-250M Gripper, 31.8mm Stroke, Shaft Wipers, Viton Seals



Specifications	DPW-250N	1-2
Total Rated Grip Force F @ 100 psi, 7 bar	50 lbs.	222 N
Stroke	1.25 in.	31.8 mm
Pressure Range	40-100 psi	3-7 bar
Cylinder Bore Ø	0.625 in.	15.9 mm
Displacement	0.383 in ³ .	6.3 cm ³
Weight	0.856 lbs.	0.39 Kg
Temperature Range: Standard Seals	-30°~180° F	-35°~80° C
Viton [®] Seals	-20°~300° F	-30°~150° C
Actuation	0.14 sec.	0.14 sec.
Accuracy	±0.003 in.	±0.08 mm
Repeatability	±0.001 in.	±0.03 mm
Valve required to actuate	4-way, 2-p	osition

PARALLEL GRIPPERS DPW-250M-2 DIRECT CONNECT WIDE BODY SERIES



M E/2

Static

60 lbs. [267 N]

60 lbs. [267 N]

120 in.-1bs. [14 Nm]

180 in.-Ibs. [20 Nm]

120 in.-1bs. [14 Nm]

Loading Capacity[†]

Maximum Compressive C

Maximum Moment Mx

Maximum Moment My

Maximum Moment Mz

*Capacities are per set of jaws and are not simultaneous

Maximum Tensile T



F/2

Dynamic

12 lbs. [53 N]

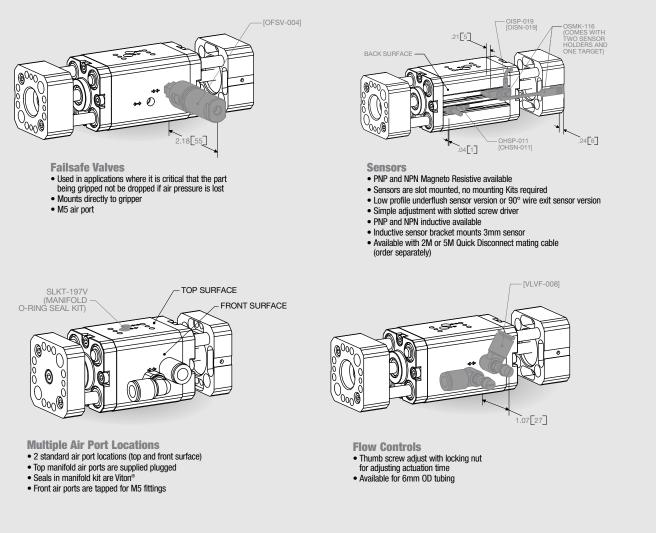
12 lbs. [53 N]

24 in.-1bs. [3 Nm]

36 in.-Ibs. [4 Nm] 24 in.-Ibs. [3 Nm]

-M

Accessory Mounting Technical Data

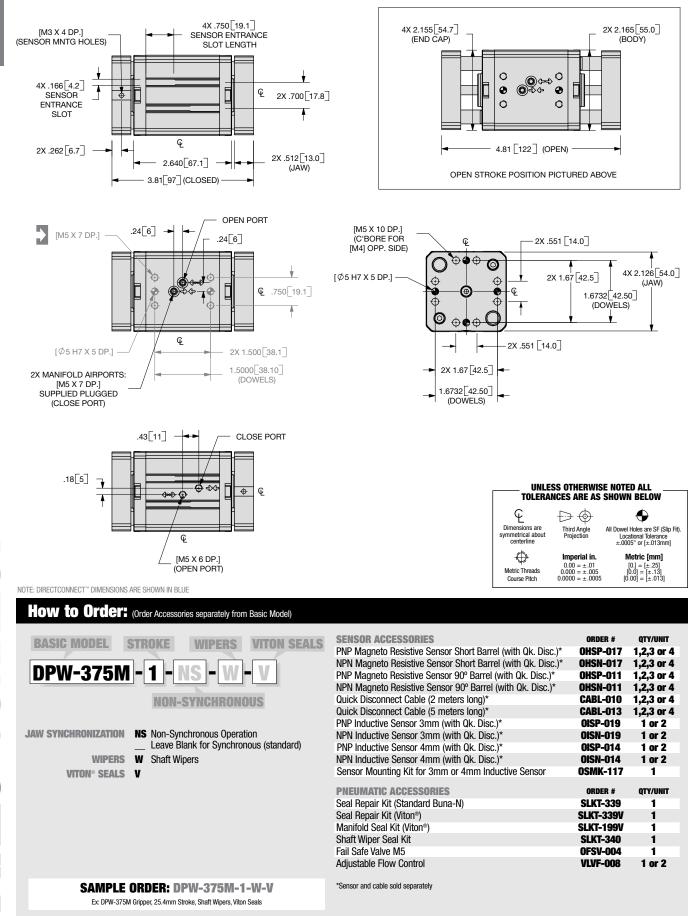


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PARALLEL GRIPPERS DPW-375M-1 DIRECTCONNECT WIDE BODY SERIES





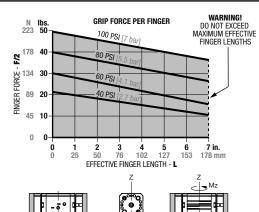
www.comoso.com

DPW SERIES 1.202



Specifications	DPW-3751	Л-1
Total Rated Grip Force F @ 100 psi, 7 bar	100 lbs.	445 N
Stroke	1.00 in.	25.4 mm
Pressure Range	40-100 psi	3-7 bar
Cylinder Bore Ø	0.938 in.	23.8 mm
Displacement	0.690 in ³ .	11.3 cm ³
Weight	1.80 lbs.	0.81 Kg
Temperature Range: Standard Seals	-30°~180° F	-35°~80° C
Viton® Seals	-20°~300° F	-30°~150° C
Actuation	0.16 sec.	0.16 sec.
Accuracy	±0.003 in.	±0.08 mm
Repeatability	±0.001 in.	±0.03 mm
Valve required to actuate	4-way, 2-p	osition

PARALLEL GRIPPERS DPW-375M-1 DIRECT CONNECT WIDE BODY SERIES



Mx F/2

Static

120 lbs. [534 N]

120 lbs. [534 N]

210 in.-Ibs. [24 Nm]

300 in.-1bs. [34 Nm]

210 in.-1bs. [24 Nm]

Loading Capacity[†]

Maximum Compressive C

Maximum Moment Mx

Maximum Moment My

Maximum Moment Mz

*Capacities are per set of jaws and are not simultaneous

Maximum Tensile T



\rightarrow

F/2

Dynamic

24 lbs. [107 N]

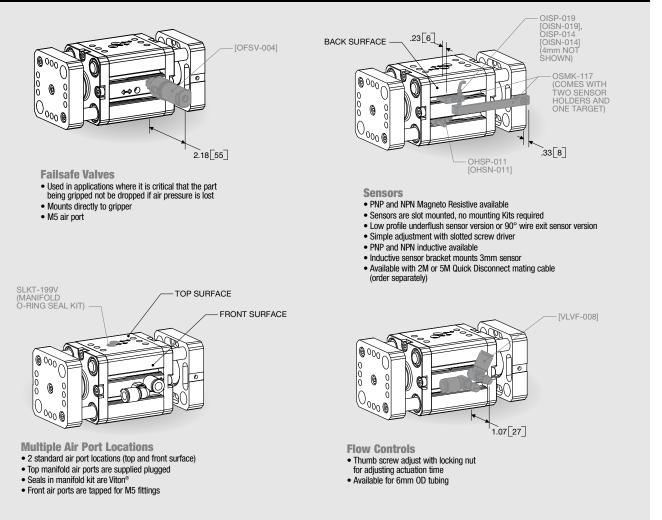
24 lbs. [107 N]

42 in.-Ibs. [5 Nm] 60 in.-Ibs. [7 Nm]

42 in.-Ibs. [5 Nm]

-M

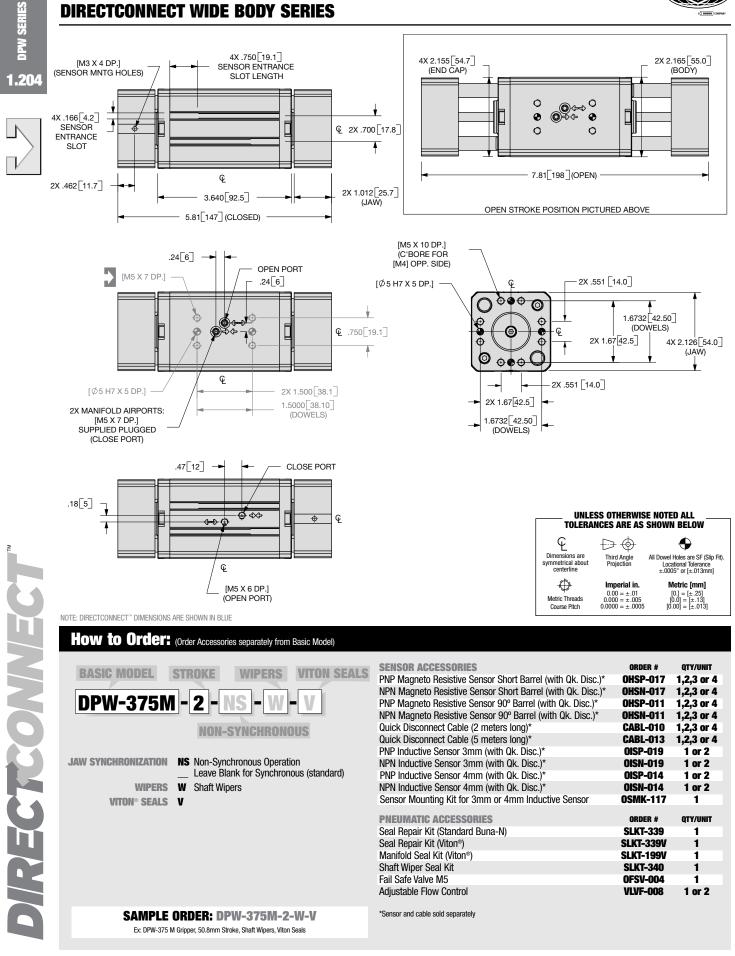
Accessory Mounting Technical Data



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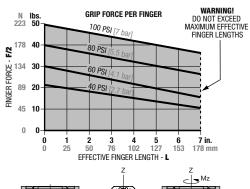
PARALLEL GRIPPERS DPW-375M-2 DIRECTCONNECT WIDE BODY SERIES

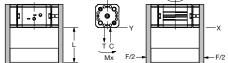




Specifications	DPW-375	M-2
Total Rated Grip Force F @ 100 psi, 7 bar	100 lbs.	445 N
Stroke	2.00 in.	50.8mm
Pressure Range	40-100 psi	3-7 bar
Cylinder Bore Ø	0.938 in.	23.8 mm
Displacement	1.382 in ³ .	22.6 cm ³
Weight	2.66 lbs.	1.20 Kg
Temperature Range: Standard Seals	-30°~180° F	-35°~80° C
Viton [®] Seals	-20°~300° F	-30°~150° C
Actuation	0.20 sec.	0.20 sec.
Accuracy	±0.003 in.	±0.08 mm
Repeatability	±0.001 in.	±0.03 mm
Valve required to actuate	4-way, 2-position	

PARALLEL GRIPPERS DPW-375M-2 DIRECT CONNECT WIDE BODY SERIES





		My
Loading Capacity [†]	Static	Dynamic
Maximum Tensile T	120 lbs. [534 N]	24 lbs. [107 N]
Maximum Compressive C	120 lbs. [534 N]	24 lbs. [107 N]
Maximum Moment Mx	210 in1bs. [24 Nm]	42 inIbs. [5 Nm]
Maximum Moment My	300 in1bs. [34 Nm]	60 inIbs. [7 Nm]

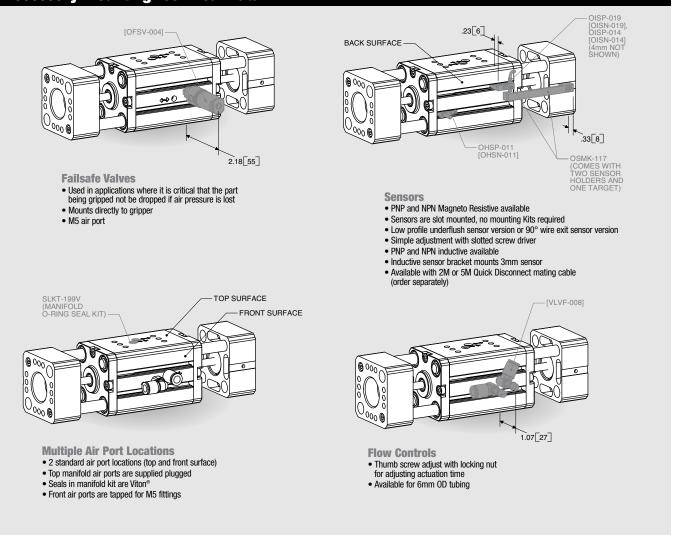
210 in.-Ibs. [24 Nm]

Maximum Moment Mz

*Capacities are per set of jaws and are not simultaneous

42 in.-Ibs. [5 Nm]

Accessory Mounting Technical Data



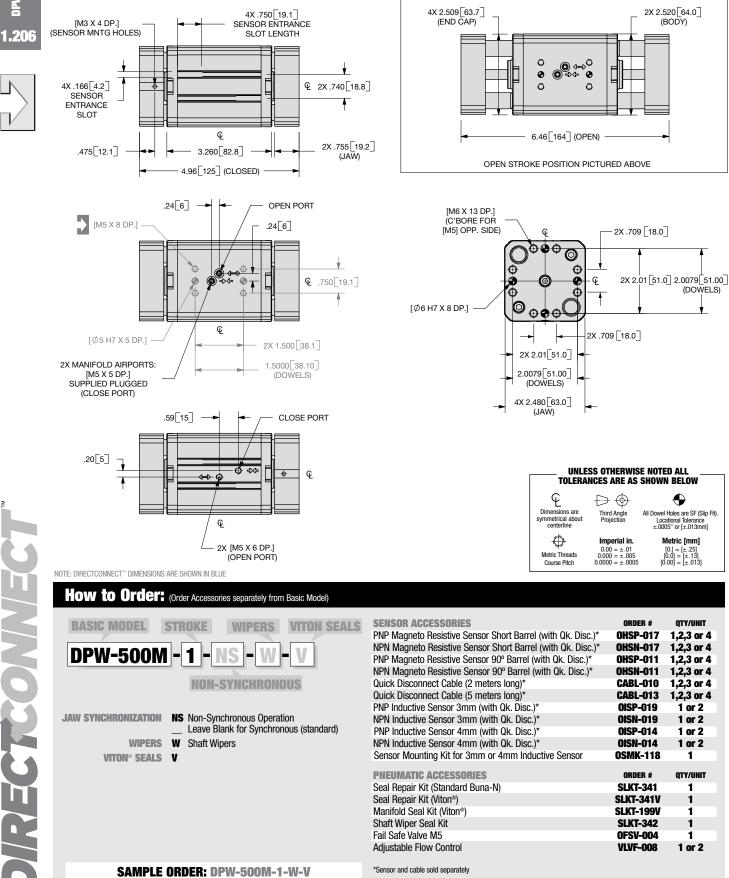
DIRECTCONNE

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PARALLEL GRIPPERS DPW-500M-1 DIRECTCONNECT WIDE BODY SERIES

SERIES





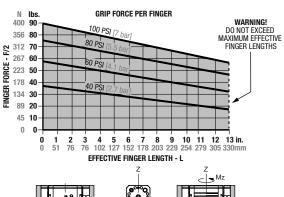
SAMPLE ORDER: DPW-500M-1-W-V Ex: DPW-500M Gripper, 38.1mm Stroke, Shaft Wipers, Viton Seals

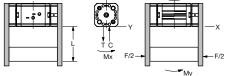
*Sensor and cable sold separately



Specifications	DPW-50	DM-1
Total Rated Grip Force F @ 100 psi, 7 bar	180 lbs.	800 N
Stroke	1.50 in.	38.1 mm
Pressure Range	40-100 psi	3-7 bar
Cylinder Bore Ø	1.250 in.	31.8 mm
Displacement	1.841 in ³ .	30.2 cm ³
Weight	3.27 lbs.	1.48 Kg
Temperature Range: Standard Seals	-30°~180° F	-35°~80° C
Viton [®] Seals	-20°~300° F	-30°~150° C
Actuation	0.20 sec.	0.20 sec.
Accuracy	±0.003 in.	±0.08 mm
Repeatability	±0.001 in.	±0.03 mm
Valve required to actuate 4-way, 2-position		osition

PARALLEL GRIPPERS DPW-500M-1 DIRECT CONNECT WIDE BODY SERIES





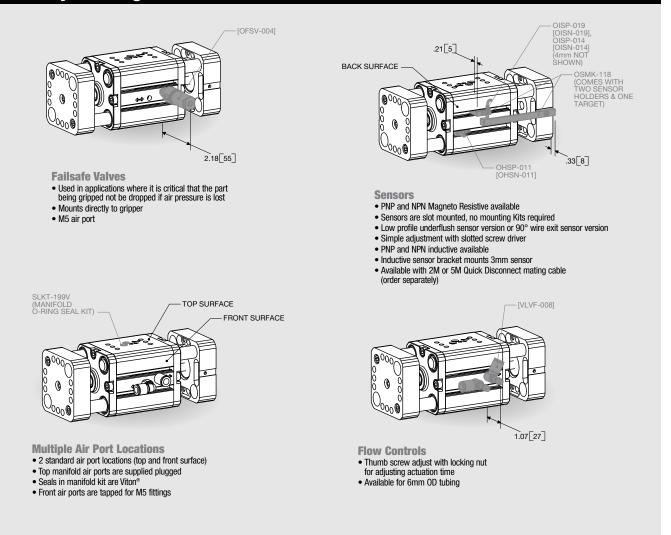
Static

Dynamic

Loading Capacity[†]

Maximum Tensile T	600 lbs. [2668 N]	60 lbs. [267 N]
Maximum Compressive C	600 lbs. [2668 N]	60 lbs. [267 N]
Maximum Moment M _X	600 in1bs. [68 Nm]	60 in1bs. [7 Nm]
Maximum Moment My	900 inIbs. [102 Nm]	90 inIbs. [10 Nm]
Maximum Moment Mz	600 in1bs. [68 Nm]	60 in1bs. [7 Nm]
*Capacities are per set of jaws and are n	not simultaneous	

Accessory Mounting Technical Data



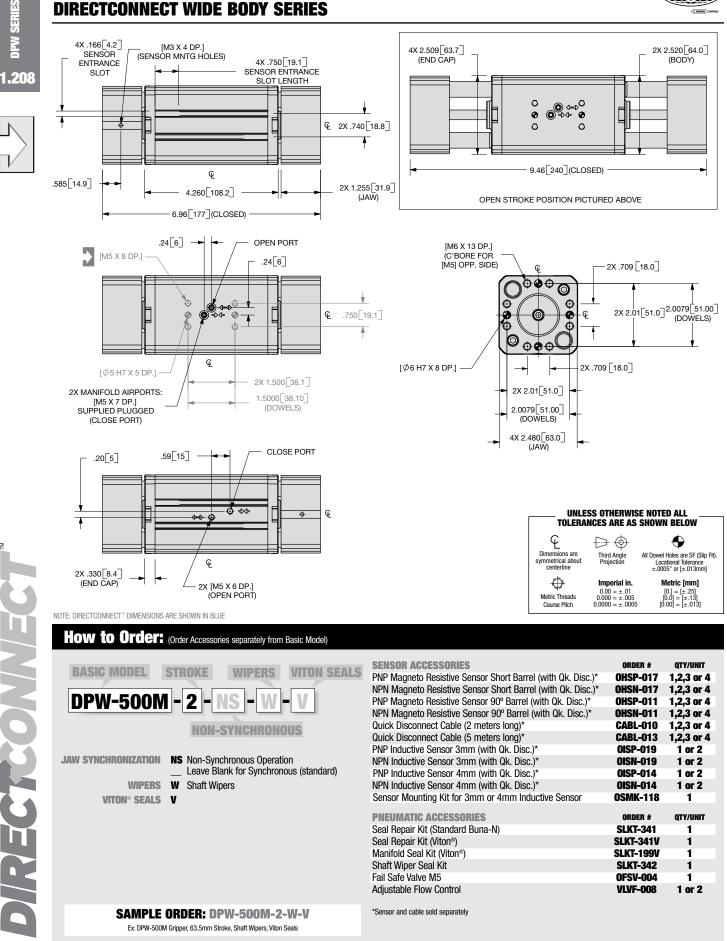
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PARALLEL GRIPPERS DPW-500M-2 DIRECTCONNECT WIDE BODY SERIES



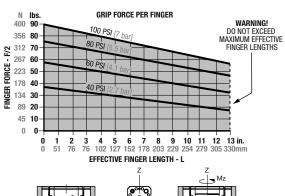
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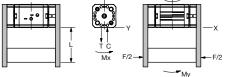
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Specifications	DPW-50 ()M-2
Total Rated Grip Force F @ 100 psi, 7 bar	180 lbs.	800 N
Stroke	2.50 in.	63.5 mm
Pressure Range	40-100 psi	3-7 bar
Cylinder Bore Ø	1.250 in.	31.8 mm
Displacement	3.068 in ³ .	50.3 cm ³
Weight	4.39 lbs.	2.0 Kg
Temperature Range: Standard Seals	-30°~180° F	-35°~80° C
Viton [®] Seals	-20°~300° F	-30°~150° C
Actuation	0.28 sec.	0.28 sec.
Accuracy	±0.003 in.	±0.08 mm
Repeatability	±0.001 in.	±0.03 mm
Valve required to actuate	4-way, 2-position	

PARALLEL GRIPPERS DPW-500M-2 DIRECT CONNECT WIDE BODY SERIES





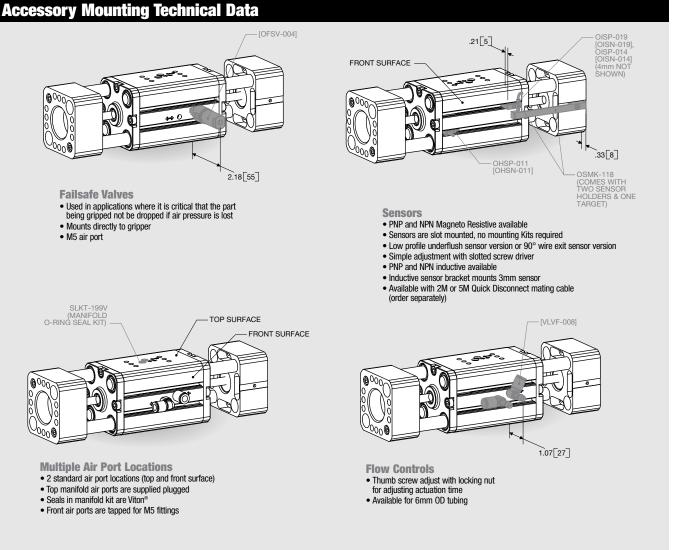
Static

Dynamic

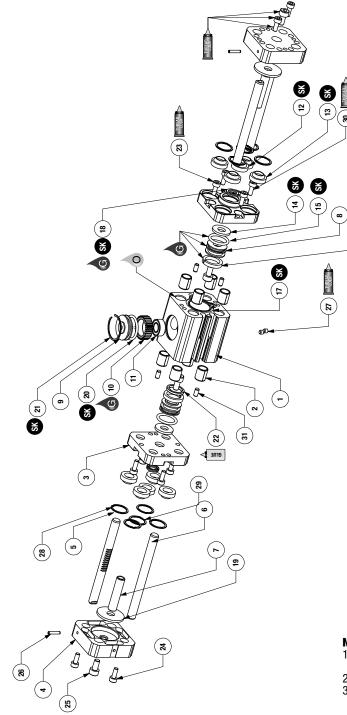


• • •		
Maximum Tensile T	600 lbs. [2668 N]	60 lbs. [267 N]
Maximum Compressive C	600 lbs. [2668 N]	60 lbs. [267 N]
Maximum Moment M _X	600 in1bs. [68 Nm]	60 in1bs. [7 Nm]
Maximum Moment My	900 inIbs. [102 Nm]	90 in1bs. [10 Nm]
Maximum Moment Mz	600 in1bs. [68 Nm]	60 in1bs. [7 Nm]
*Capacities are per set of jaws and are	not simultaneous	

Assessment Houseling Technical Data



DPW SERIES EXPLODED VIEW



Assembly Procedure:

- 1) Lubricate and install seals on piston.
- 2) Install pistons and shafts.
- 3) Mount end caps to enclose piston assembly.
- 4) Install tooling plates and shafts.
- 5) Place bearing, shaft, and gear into body and install cap and retaining ring for sync version.
- a) For disassembly, use magnet to pull gear out of body.
- b) Install 2 gear shafts with teeth facing syncing gear. Use dowel to align gear shafts in correct position.

Item	Qty	Name
01	1	Body
02	8	Bushing, Oil Impregnated Bronze
03	2	End Cap
04	2	Jaw
05*	2	Guide Shaft, Rack
06*	2	Guide Shaft (Qty 4 for -NS)
07	2	Piston Rod
08	2	Piston
09	1	Cap, Gear
10*	1	Gear
11*	1	Bearing, Radial
12*	2	Piston Rod Wiper (Shaft Wiper
		"-W" option only)
13*	8	Shaft Wiper (Shaft Wiper "-W" option only)
14	2	Piston Bumper
15	2	Piston O-ring
16	2	Teflon Ring
17*	2	Body O-ring
18	2	U-cup
19	2	Jaw Bumper
20	1	Gear Cap O-ring
21	1	Retaining Ring
22	1	Magnet
23	8	End Cap Mntg Screw
24	4	Guide Shaft Mntg Screw
25	4	Piston Shaft Mntg Screw
26*	2	Guide Shaft Alignment Dowel
27	2	Manifold Port Plug
28	8	Retainer Ring (Shaft Wiper "-W" Option only)
29	2	Retainer Ring (Shaft Wiper "-W" Option only)
30*	4	End Cap Mntg Screw
31	4	End Cap Dowel Pins
51	т	

*Notes:

(X

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- 1) Contact the Robohand Sales Department for a complete spare parts list with order numbers and prices.
- 2) Quantity of #6 is 4 when ordering a Non-synchronous aripper.
- 3) Items #5, #10, #11, and #26 are for synchronous grippers only.
- 4) Items #12 and #13 are for -W option only.
- 5) Item #17 (Body O-ring) shown in body groove.
- 6) Item #23 Quantity is 6 for 375-1 and 375-2 only.
- 7) Item #30 is only used in 375-1 and 375-2.

Non-Synchronous Procedure:

- 1) Take DPW synchronous gripper and remove the retaining ring and gear cap.
- Remove gear from gripper. 2)
- 3) Replace gear cap and retaining ring. The gripper is now non-synchronous

-W Option Assembly Procedure:

- Take out guide shaft and piston rod mounting screws.
 Remove jaws from guide shafts and piston rods.
- 3ĺ Take out end cap mounting screws and pull off end caps. Take out piston.
- 4) Slide out shafts and press wipers in pockets thru front side. Install retaining rings.
- 5) Replace shafts, pistons, and end caps.
- 6) Be sure to apply thread locker to mounting screws. The gripper now has shaft wipers.



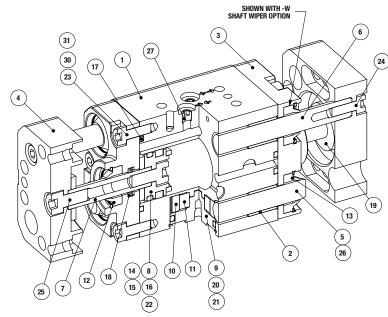
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DPW SERIES ASSEMBLED VIEW



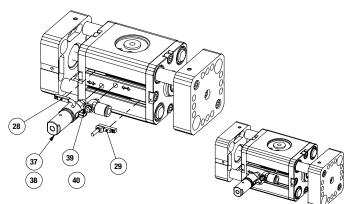


*Notes:

- 1) Contact the Robohand Sales Department for a complete spare parts list with order numbers and prices.
- 2) Quantity of #6 is 4 when ordering a Non-synchronous gripper.
- 3) Items #5, #10, #11, and #26 are for synchronous grippers only.
- 4) Items #12 and #13 are for –W option only.
- 5) Item #17 (Body O-ring) shown in body groove.
- 6) Item #23 Quantity is 6 for 375-1 and 375-2 only.
- 7) Item #30 is only used in 375-1 and 375-2.

ltem	Qty	Name
01	1	Body
02	8	Bushing, Oil Impregnated Bronze
03	2	End Cap
04	2	Jaw
05*	2 2 2 2	Guide Shaft, Rack
06*	2	Guide Shaft (Qty 4 for NS)
07	2	Piston Rod
08		Piston
09	1	Cap, Gear
10*	1	Gear
11*	1	Bearing, Radial
12*	2	Piston Rod Wiper (Shaft Wiper
		"-W" option only)
13*	8	Shaft Wiper (Shaft Wiper "-W" option only)
14	2	Piston Bumper
15	2	Piston O-Ring
16	2	Teflon Ring
17*	2	Body O-Ring
18	2	U-cup
19	2	Jaw Bumper
20	1	Gear Cap O-ring
21	1	Retaining ring
22	1	Magnet
23	8	End Cap Mntg Screw
24	4	Guide Shaft Mntg Screw
25	4	Piston Shaft Mntg Screw
26*	2	Guide Shaft Alignment Dowel
27	2	Manifold Port Plug
28	8	Retainer Ring (Shaft Wiper "-W" Option only)
29	2	Retainer Ring (Shaft Wiper "-W" Option only)
30*	4	End Cap Mntg Screw
31	4	End Cap Dowel Pins

Accessory Installation & Adjustment Instructions



Plumbing Fittings:

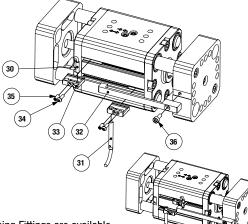
- 1) Flow Controls #39 or #40 can be inserted and used in any open or closed airport to help control the stroke actuation.
- 2) Fail-Safe Valve #37 or #38 can be used in either the open or closed airport to help limit the possibility of dropping the part if air pressure is lost.

Magneto-Resistive Sensors:

1) Insert sensors #28 or #29 into the opening at the end of the profile slot and lock the sensor into position with the integrated screw.

Inductive Sensors:

- Mount inductive sensor target (#32) to jaw using mounting screw (#36).
 Insert sensor bracket (#33) into slot of body.
 Insert sensor (#30 or #31) into appropriate 3mm or 4mm opening in
- bracket and adjust sensor depth so that sensor light indicates target (#32).
- 4) Tighten sensor locking screw (#34).
- 5) Position sensor bracket for desired stroke detection.
- 6) Tighten sensor bracket with set screw (#35) to lock stroke detection position.



Other Plumbing Fittings are available for each size - Consult Factory

ltem	Qty	Name
28	1,2	Magneto Resistive Sensor (short barrel) w/Qk. Disconnect
29	1,2	Magneto Resistive Sensor (90° barrel) w/Qk. Disconnect
30	1,2	Inductive Sensor (3mm) w/Qk. Disconnect
31	1,2	Inductive Sensor (4mm) w/Qk. Disconnect
		(DPW-375 & 500 only)
39	1,2	Adjustable Flow Control (Imperial) #10-32 elbow - 1/4" OD
		Push-in Style
40	1,2	Adjustable Flow Control (Metric) M5 elbow - 6mm 0D
		Push-in Style
37	1	Fail Safe Valve (Imperial) #10-32
38	1	Fail Safe Valve (Metric) M5

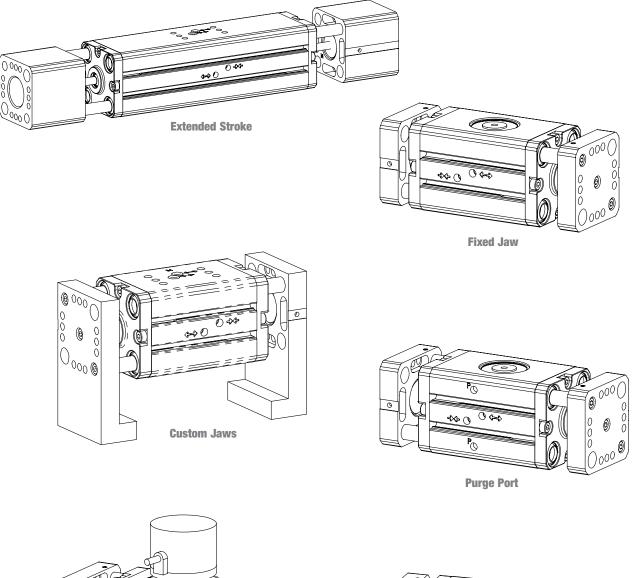
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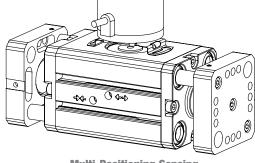
DPW SERIES SPECIALS



Smaller or Larger Bores Metallic Rod Scrapers Extended Strokes Alternate Materials and more...

Drawings are for concept only. Contact Robohand Tech Support with project requirements.





Multi-Positioning Sensing

