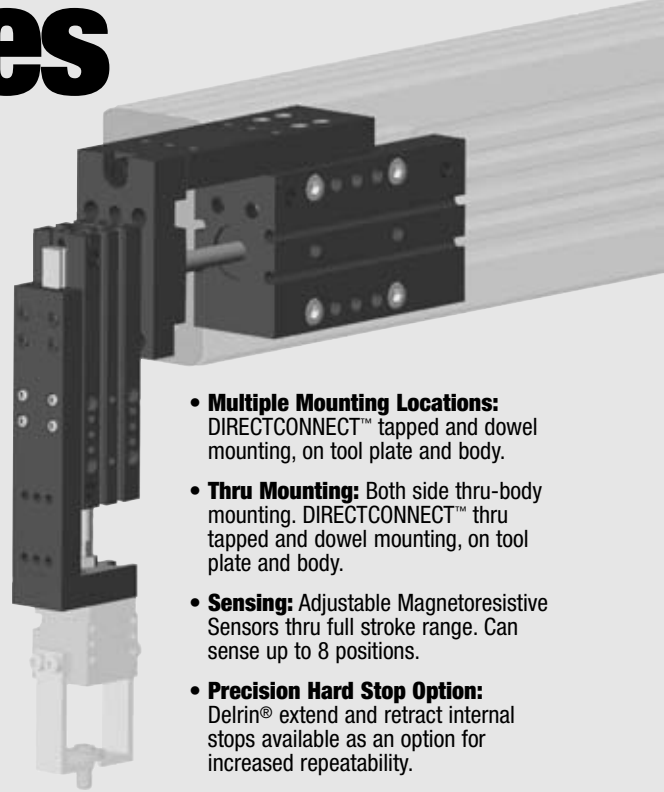




Mini Ball Rail Slides- DLM DIRECTCONNECT™ Modular Series



• Multiple Air Port Positions:

Tapped air ports on each side, rear and bottom standard.

• Manifold Air Porting:

Bottom air ports can be manifold O-ring sealed.

• Stroke Adjustments:

Retract and extend adjustments for precise positioning with infinite stroke adjustability.

• Double Bearing Option:

Longer strokes available with double bearings for greater load and moment capacity.

• Multiple Mounting Locations:

DIRECTCONNECT™ tapped and dowel mounting, on tool plate and body.

• Thru Mounting:

Both side thru-body mounting. DIRECTCONNECT™ thru tapped and dowel mounting, on tool plate and body.

• Sensing:

Adjustable Magneto-resistive Sensors thru full stroke range. Can sense up to 8 positions.

• Precision Hard Stop Option:

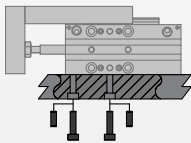
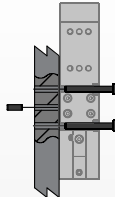
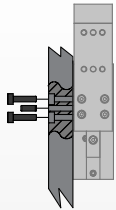
Delrin® extend and retract internal stops available as an option for increased repeatability.

Note: The new DLM series replaces our MPS product line. The MPS series information is still available on our website and are available for sale. We encourage you to consider the new DLM design for new projects.

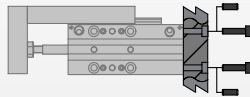
Mounting Information:

Slides can be mounted in any orientation

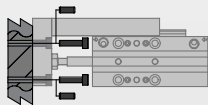
Body can be mounted from either side using the DIRECTCONNECT™ pattern of tapped and dowel holes or thru bolts mounting and dowel holes



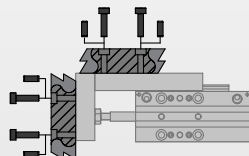
Body can be mounted from the bottom using the DIRECTCONNECT™ pattern of tapped and dowel holes.



Body can be mounted from the back using the DIRECTCONNECT™ pattern of tapped and dowel holes.



Payload attaches to tool plate DIRECTCONNECT™ mounting pattern with screws and locates using slip fit dowel holes.



Payload attaches to tool plate DIRECTCONNECT™ to the front or to the top of the slide with tapped and dowel holes.

Technical Specifications:

Pneumatic Specifications

Pressure Operating Range
Cylinder Type
Dynamic Seals
Valve Required to Operate

Imperial
20-100 psi
Double Acting
Internally Lubricated Buna-N
4-way, 2-position

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) -30°~180° F -35°~80° 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

- Machining operations generating chips
- Environments with loose particulate

*Addition of lubrication will greatly increase service life.



Product Features

Double Bearing (-D Option)
Three longer stroke sizes available with two bearings as an option for greater moment capacity

DIRECTCONNECT Mounting Patterns
Mounting on all six sides (standard)

Bearing Seals
Bearing Blocks are equipped with low friction seals

Multiple Air Port Locations
4 standard airport location (bottom, back, and both sides)

Recirculating Ball Bearings Rail Slide
Preloaded for accuracy, built-in ball retention

Retract Stroke Adjustment
5 mm Adjustment

Precision Tool Plate Position Adjustment
5 mm adjustment

Dowel Holes Standard
Slip fit dowel holes in body and tool plate

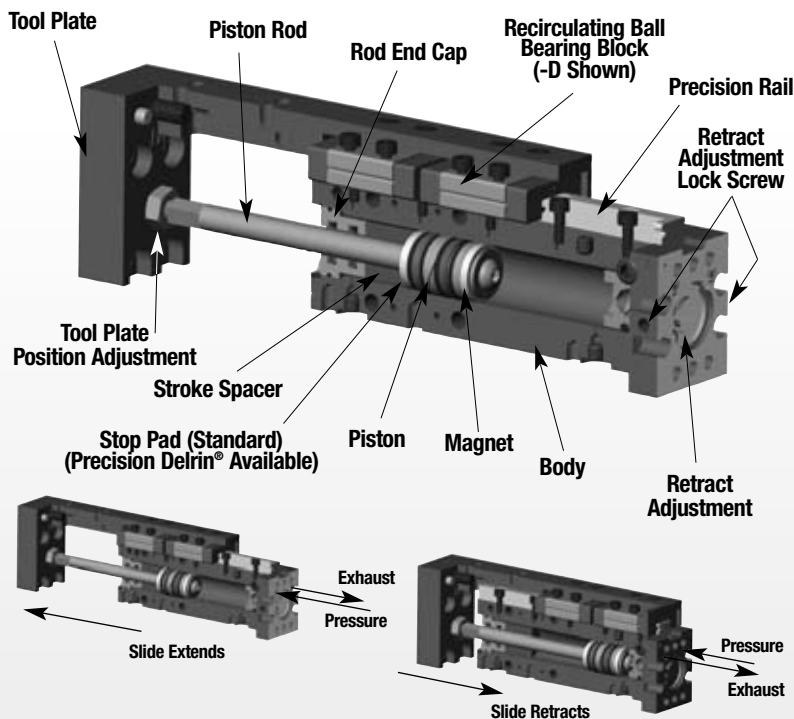
Thru-Body Mounting
C'bored holes for socket head cap screw on both sides

Manifold Air Ports
Bottom air ports are C'bored for O-ring manifold seals

Magneto Resistive Sensing
Mounting slots and magnet are standard for up to eight sensors (Sensors sold separately)

Precision Stops (-P Option)
Delrin® internal stops are available for increased repeatability

Operating Principle



- A double acting piston slides within the body bore when pressure is applied.
- The piston is coupled to the tool plate with the piston rod.
- The tool plate is connected to the ball rail slide block which is guided by the precision rail.
- The stops are internal and attached to the piston and piston rod.
- Combination of internal spacers and user retract adjustment allow for infinite adjustment within stroke range.

Designed, manufactured and assembled in the USA

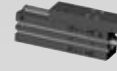
Style -DLM Mini Ball Rail Slide

Size -07M-12



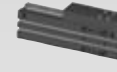
Style:	07M-12	
Max. Stroke:	0.50 in.	12 mm
Weight:	0.28 lbs.	0.13 Kg
Thrust Force:	15 lbs.	66.7 N
Max Payload:	1.0 lb.	0.45 kg

Size -07M-25



Style:	07M-25	
Max. Stroke:	1.00 in.	25 mm
Weight:	0.35 lbs.	0.16 Kg
Thrust Force:	15 lbs.	66.7 N
Max Payload:	1.0 lb.	0.45 kg

Size -07M-38



Style:	07M-38	
Max. Stroke:	1.50 in.	38 mm
Weight:	0.43 lbs.	0.20 Kg
Thrust Force:	15 lbs.	66.7 N
Max Payload:	1.0 lb.	0.45 kg

Size -07M-50



Style:	07M-50	
Max. Stroke:	2.00 in.	50 mm
Weight:	0.50 lbs.	0.23 Kg
Thrust Force:	15 lbs.	66.7 N
Max Payload:	1.0 lb.	0.45 kg



See Pages **4.72-4.79**

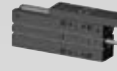
Style -DLM Mini Ball Rail Slide

Size -09M-25



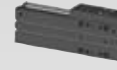
Style:	09M-25	
Max. Stroke:	1.00 in.	25 mm
Weight:	1.08 lbs.	0.49 Kg
Thrust Force:	31 lbs.	138 N
Max Payload:	2.0 lb.	0.91 kg

Size -09M-50



Style:	09M-50	
Max. Stroke:	2.00 in.	50 mm
Weight:	1.11 lbs.	0.64 Kg
Thrust Force:	31 lbs.	138 N
Max Payload:	2.0 lb.	0.91 kg

Size -09M-75



Style:	09M-75	
Max. Stroke:	3.00 in.	75 mm
Weight:	1.78 lbs.	0.81 Kg
Thrust Force:	31 lbs.	138 N
Max Payload:	2.0 lb.	0.91 kg

Size -09M-100



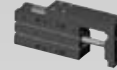
Style:	09M-100	
Max. Stroke:	4.00 in.	100 mm
Weight:	2.13 lbs.	0.97 Kg
Thrust Force:	31 lbs.	138 N
Max Payload:	2.0 lb.	0.91 kg



See Pages **4.80-4.87**

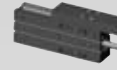
Style -DLM Mini Ball Rail Slide

Size -12M-25



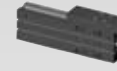
Style:	12M-25	
Max. Stroke:	1.00 in.	25 mm
Weight:	1.18 lbs.	0.54 Kg
Thrust Force:	52 lbs.	231 N
Max Payload:	4.0 lb.	1.81 kg

Size -12M-50



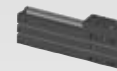
Style:	12M-50	
Max. Stroke:	2.00 in.	50 mm
Weight:	1.43 lbs.	0.65 Kg
Thrust Force:	52 lbs.	231 N
Max Payload:	4.0 lb.	1.81 kg

Size -12M-75



Style:	12M-75	
Max. Stroke:	3.00 in.	75 mm
Weight:	1.80 lbs.	0.82 Kg
Thrust Force:	52 lbs.	231 N
Max Payload:	4.0 lb.	1.81 kg

Size -12M-100



Style:	12M-100	
Max. Stroke:	4.00 in.	100 mm
Weight:	2.25 lbs.	1.02 Kg
Thrust Force:	52 lbs.	231 N
Max Payload:	4.0 lb.	1.81 kg

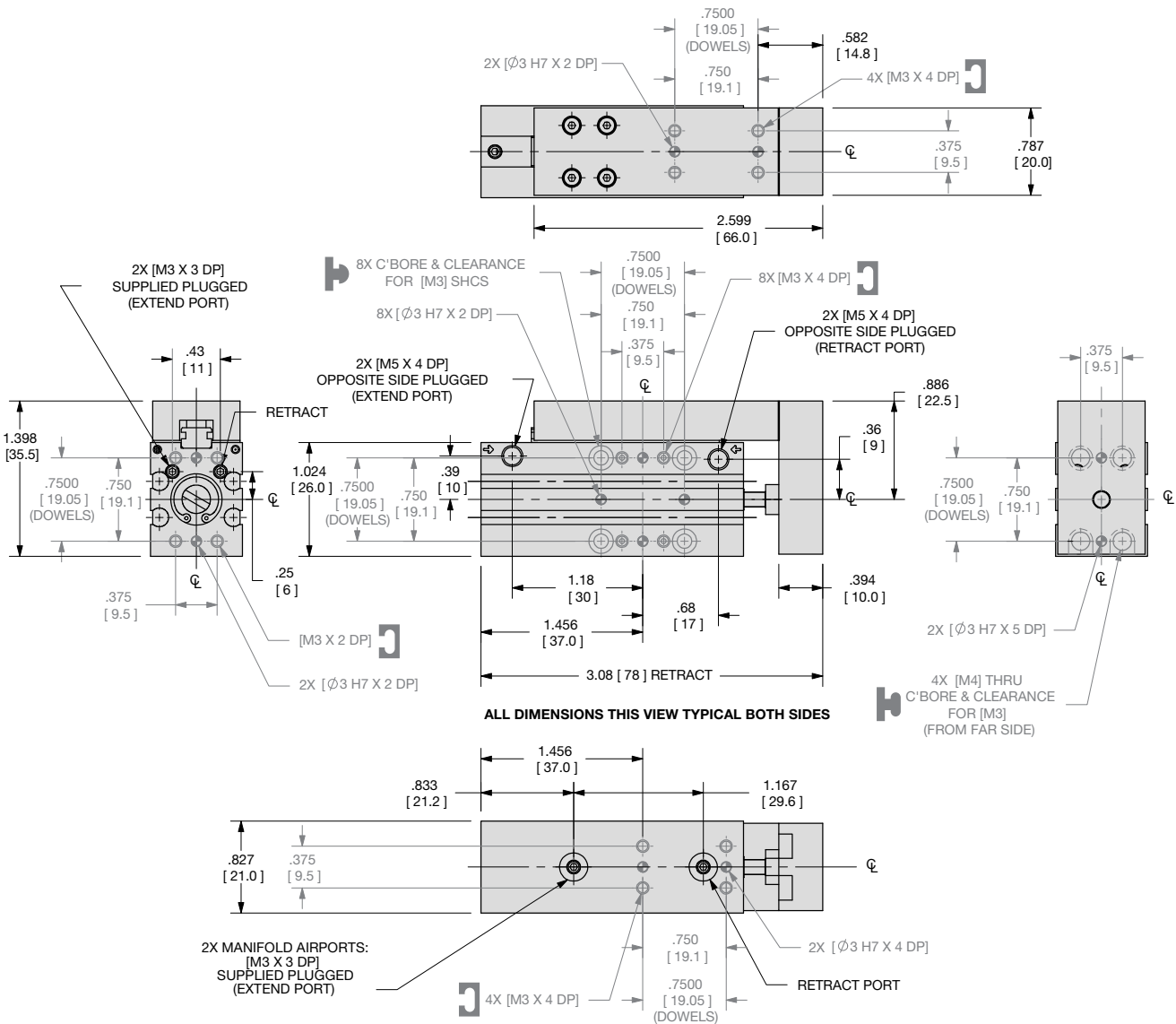


See Pages **4.88-4.95**

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

www.comoso.com

MINI BALL RAIL SLIDE DLM-07M-12 DIRECTCONNECT MODULAR SERIES



UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

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

Dimensions are symmetrical about centerline
Third Angle Projection
All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or [±.013mm]
Metric Threads Course Pitch

NOTE: DIRECTCONNECT™ DIMENSIONS ARE SHOWN IN BLUE

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

BASIC MODEL **BODY SIZE** **PRECISION STOPS**

DLM-07M - **12** - **P**

STROKE
(See Below)

BODY SIZE 12
STROKE (mm)
5, 10, 12

PRECISION STOPS P

SENSOR ACCESSORIES

	ORDER #	QTY/UNIT
PNP Magneto Resistive Sensor with Quick Disconnect*	OHSP-017	1-4
NPN Magneto Resistive Sensor with Quick Disconnect*	OHSN-017	1-4
PNP Magneto Resistive Sensor 90° Barrel (with Qk. Disc)*	OHSP-011	1-4
NPN Magneto Resistive Sensor 90° Barrel (with Qk. Disc.)*	OHSN-011	1-4
Quick Disconnect Cable (2 meters long)*	CABL-010	1-4
Quick Disconnect Cable (5 meters long)*	CABL-013	1-4

PNEUMATIC ACCESSORIES

	ORDER #	QTY/UNIT
Seal Repair Kit	SLKT-236	1
Manifold Seal Kit	SLKT-239	1
Adjustable Flow Control	VLVF-008	1 or 2

*Sensor and cable sold separately

SAMPLE ORDER: DLM-07M-12-10-P

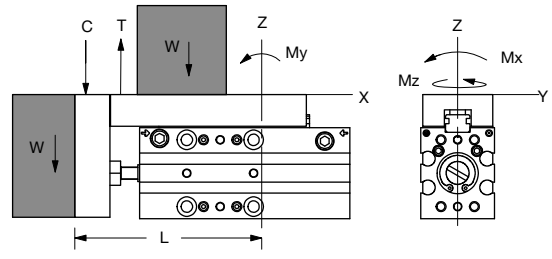
Ex: DLM-07M Mini Ball Rail Slide, -12 Body Size, 10mm Stroke, Precision Stops



MINI BALL RAIL SLIDE DLM-07M-12 DIRECTCONNECT MODULAR SERIES



Specifications	DLM-07M-12	
Thrust Force F @ 100 psi, 7 bar.....	15 lbs.	66 N
Max. Stroke	0.50 in.	12 mm
Stroke Reduction (return)	0.19 in.	5 mm
Weight	0.28 lbs.	0.13 Kg
Maximum Payload W	1.0 lbs.	0.45 Kg
Maximum Payload (-P Option)	0.5 lbs.	0.23 Kg
Cylinder Bore \emptyset	0.437 in.	11 mm
Temperature Range	-30°~180° F	-35°~80° C
Actuation per 25mm of travel	0.07 sec.	
Linear accuracy per 25mm of travel.....	±0.0001 in.	±0.005 mm
Repeatability (-P Option)	±0.003 in.	±0.08 mm
Pressure Range.....	20-100 psi	1.4-7 bar
Valve required to actuate	4-way, 2-position	

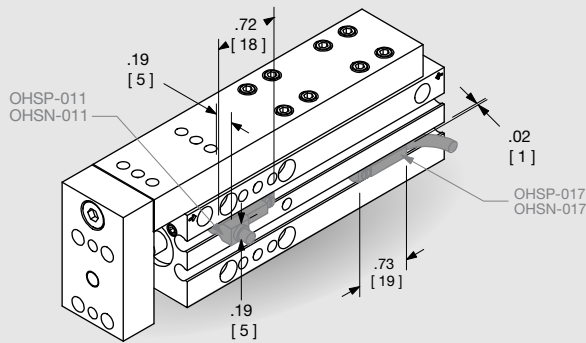


Flow Controls are recommended for nearly all applications

Loading Capacity

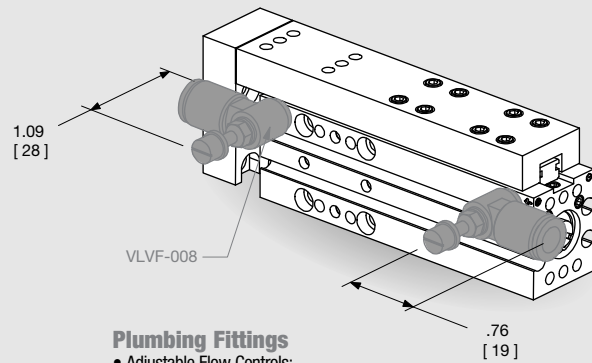
	Static	Dynamic
DLM-07M-12		
Maximum Tensile T	110 lbs. [490 N]	67 lbs. [301 N]
Maximum Compressive C	110 lbs. [490 N]	67 lbs. [301 N]
Maximum Moment M_x	45 in.-lbs. [5.1 Nm]	27 in.-lbs. [3.1 Nm]
Maximum Moment M_y	28 in.-lbs. [3.2 Nm]	16 in.-lbs. [1.9 Nm]
Maximum Moment M_z	28 in.-lbs. [3.2 Nm]	16 in.-lbs. [1.9 Nm]
Distance to Bearing Centerline L	2.10 in. [53 mm]	

Accessory Mounting Technical Data



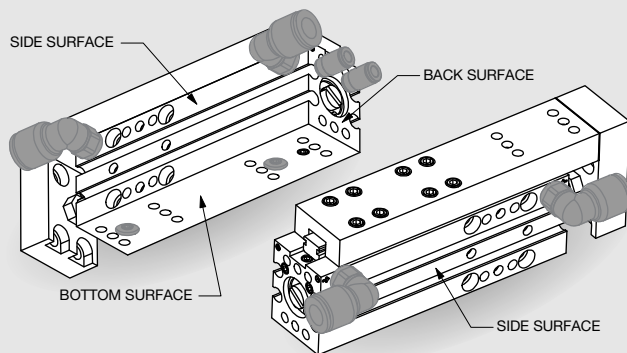
Sensors

- PNP and NPN Magneto Resistive available
- Sensors are slot mounted, no mounting kits required
- Simple adjustment with slotted screw driver
- Built-in LED for ease of positioning and troubleshooting
- Low profile sensor version or 90° wire exit sensor version
- Available with 2M or 5M Quick Disconnect mating cable (order separately)



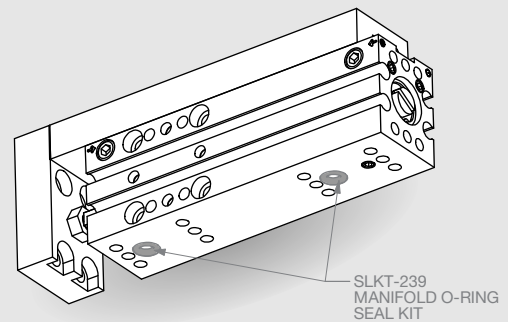
Plumbing Fittings

- Adjustable Flow Controls:
 - Thumb screw adjust with locking nut for adjusting actuation time
 - Available for 6mm O.D. tubing
- Consult Factory for additional available plumbing fittings



Multiple Air Port Locations

- 2 standard M5 air port locations (both sides)
- Bottom and Back airports (M3) are plugged as supplied



Manifold O-ring Seals

- Available in Seal Kit
- Kit is supplied with all seals, plugs & wrenches needed

DLM SERIES

4.73

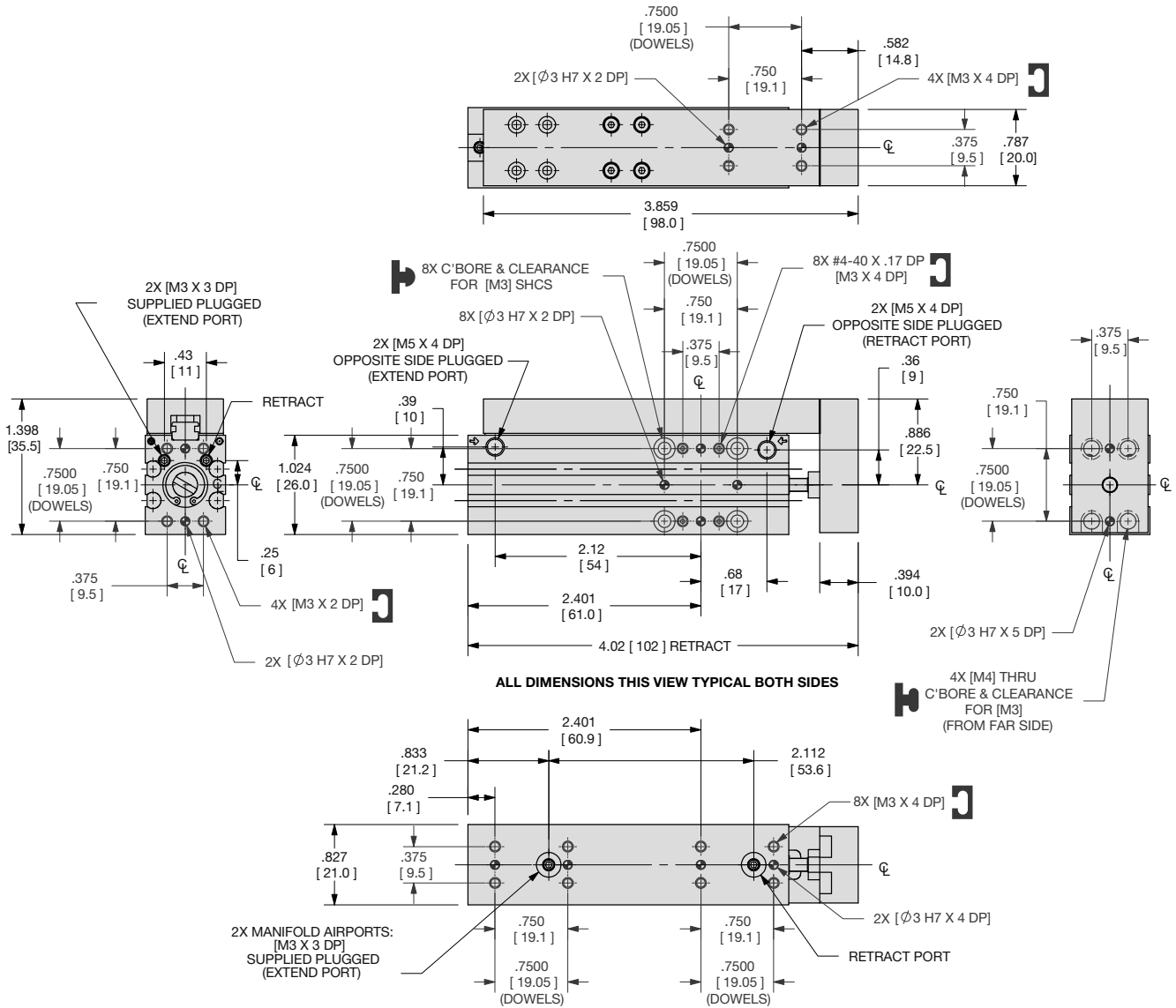
DIRECTCONNECT™

MINI BALL RAIL SLIDE DLM-07M-25 DIRECTCONNECT MODULAR SERIES

DLM SERIES

DLM SERIES

4.74



NOTE: DIRECTCONNECT™ DIMENSIONS ARE SHOWN IN BLUE

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

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

BASIC MODEL **BODY SIZE** (See Below) **PRECISION STOPS**

DLM-07M - 25 - [] - D - P

STROKE (See Below) **DOUBLE BEARINGS**

BODY SIZE 25
STROKE (mm)
12, 15, 20, 25

DOUBLE BEARING D
PRECISION STOPS P

SENSOR ACCESSORIES

	ORDER #	QTY/UNIT
PNP Magneto Resistive Sensor with Quick Disconnect*	OHSP-017	1-4
NPN Magneto Resistive Sensor with Quick Disconnect*	OHSN-017	1-4
PNP Magneto Resistive Sensor 90° Barrel (with Qk. Disc)*	OHSP-011	1-4
NPN Magneto Resistive Sensor 90° Barrel (with Qk. Disc)*	OHSN-011	1-4
Quick Disconnect Cable (2 meters long)*	CABL-010	1-4
Quick Disconnect Cable (5 meters long)*	CABL-013	1-4

PNEUMATIC ACCESSORIES

	ORDER #	QTY/UNIT
Seal Repair Kit	SLKT-236	1
Manifold Seal Kit	SLKT-239	1
Adjustable Flow Control	VLVF-008	1 or 2

*Sensor and cable sold separately

SAMPLE ORDER: DLM-07M-25-15-D

Ex: DLM-07M Mini Ball Rail Slide, -25 Body Size, 15mm Stroke, Double Ball Bearings

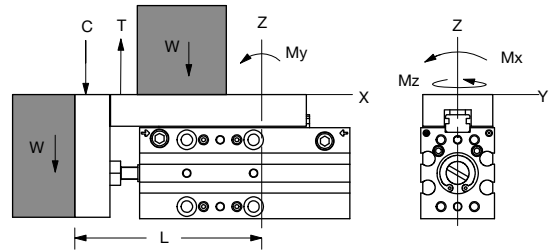
DIRECTCONNECT™



MINI BALL RAIL SLIDE DLM-07M-25 DIRECTCONNECT MODULAR SERIES

DLM SERIES

Specifications	DLM-07M-25	
Thrust Force F @ 100 psi, 7 bar.....	15 lbs.	66 N
Max. Stroke	1.00 in.	25 mm
Stroke Reduction (return)	0.19 in.	5 mm
Weight	0.35 lbs.	0.16 Kg
Maximum Payload W	1.0 lbs.	0.45 Kg
Maximum Payload (-P Option)	0.5 lbs.	0.23 Kg
Cylinder Bore \emptyset	0.437 in.	11 mm
Temperature Range	-30°~180° F	-35°~80° C
Actuation per 25mm of travel	0.07 sec.	
Linear accuracy per 25mm of travel.....	±0.0001 in.	±0.005 mm
Repeatability (-P Option)	±0.003 in.	±0.08 mm
Pressure Range.....	20-100 psi	1.4-7 bar
Valve required to actuate	4-way, 2-position	

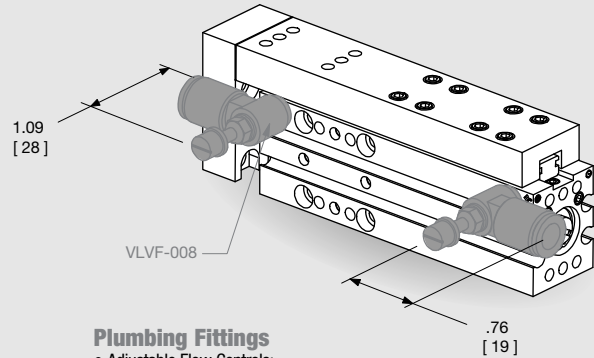
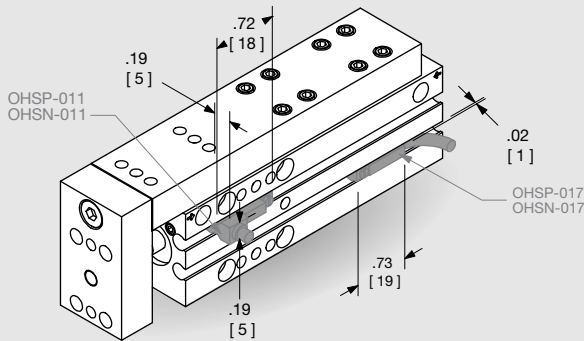


Flow Controls are recommended for nearly all applications

Loading Capacity

	Static	Dynamic
DLM-07M-25		
Maximum Tensile T	110 lbs. [490 N]	67 lbs. [301 N]
Maximum Compressive C	110 lbs. [490 N]	67 lbs. [301 N]
Maximum Moment M_x	45 in.-lbs. [5.1 Nm]	27 in.-lbs. [3.1 Nm]
Maximum Moment M_y	28 in.-lbs. [3.2 Nm]	16 in.-lbs. [1.9 Nm]
Maximum Moment M_z	28 in.-lbs. [3.2 Nm]	16 in.-lbs. [1.9 Nm]
Distance to Bearing Centerline L	2.39 in. [61 mm]	
DLM-07M-25-D		
Maximum Tensile T	220 lbs. [980 N]	135 lbs. [602 N]
Maximum Compressive C	220 lbs. [980 N]	135 lbs. [602 N]
Maximum Moment M_x	90 in.-lbs. [10.2 Nm]	54 in.-lbs. [6.2 Nm]
Maximum Moment M_y	56 in.-lbs. [6.4 Nm]	33 in.-lbs. [3.8 Nm]
Maximum Moment M_z	56 in.-lbs. [6.4 Nm]	33 in.-lbs. [3.8 Nm]
Distance to Bearing Centerline L	2.87 in. [73 mm]	

Accessory Mounting Technical Data

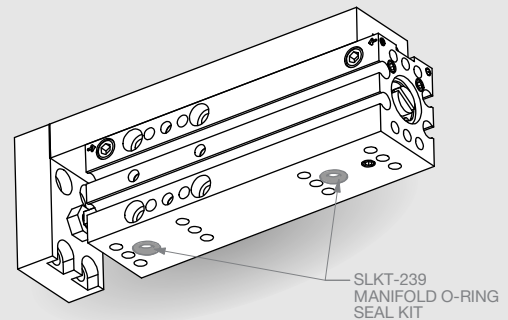
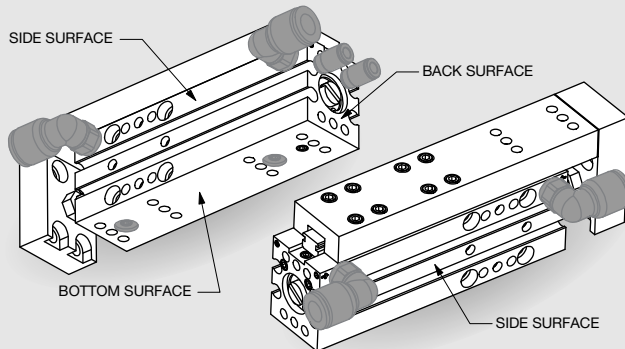


Sensors

- PNP and NPN Magneto Resistive available
- Sensors are slot mounted, no mounting kits required
- Simple adjustment with slotted screw driver
- Built-in LED for ease of positioning and troubleshooting
- Low profile sensor version or 90° wire exit sensor version
- Available with 2M or 5M Quick Disconnect mating cable (order separately)

Plumbing Fittings

- Adjustable Flow Controls:
 - Thumb screw adjust with locking nut for adjusting actuation time
 - Available for 6mm O.D. tubing
- Consult Factory for additional available plumbing fittings



Multiple Air Port Locations

- 2 standard M5 air port locations (both sides)
- Bottom and Back airports (M3) are plugged as supplied

Manifold O-ring Seals

- Available in Seal Kit
- Kit is supplied with all seals, plugs & wrenches needed

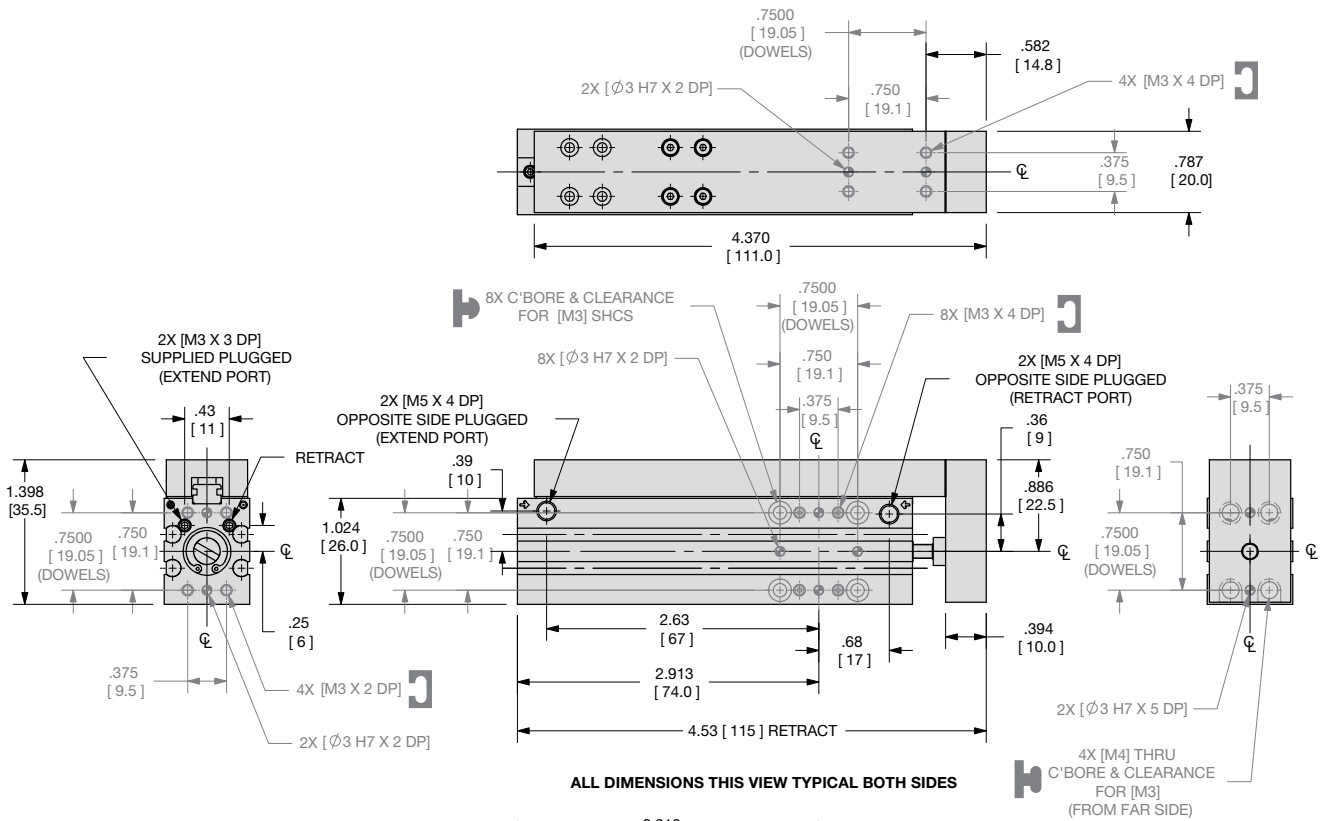
DLM SERIES
4.75

DIRECTCONNECT™

MINI BALL RAIL SLIDE DLM-07M-38 DIRECTCONNECT MODULAR SERIES

DLM SERIES

4.76



NOTE: DIRECTCONNECT™ DIMENSIONS ARE SHOWN IN BLUE

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

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

BASIC MODEL	BODY SIZE	PRECISION STOPS	SENSOR ACCESSORIES	ORDER #	QTY/UNIT
DLM-07M	-38-	-D-P	PNP Magneto Resistive Sensor with Quick Disconnect*	OHSP-017	1-4
			NPN Magneto Resistive Sensor with Quick Disconnect*	OHSN-017	1-4
			PNP Magneto Resistive Sensor 90° Barrel (with Qk. Disc)*	OHSP-011	1-4
			NPN Magneto Resistive Sensor 90° Barrel (with Qk. Disc.)*	OHSN-011	1-4
			Quick Disconnect Cable (2 meters long)*	CABL-010	1-4
			Quick Disconnect Cable (5 meters long)*	CABL-013	1-4

DOUBLE BEARING	PRECISION STOPS	PNEUMATIC ACCESSORIES	ORDER #	QTY/UNIT
D	P	Seal Repair Kit	SLKT-236	1
		Manifold Seal Kit	SLKT-239	1
		Adjustable Flow Control	VLVF-008	1 or 2

*Sensor and cable sold separately

SAMPLE ORDER: DLM-07M-38-25-D-P

Ex: DLM-07M Mini Ball Rail Slide, -38 Body Size, 25mm Stroke, Double Ball Bearings, Precision Stops

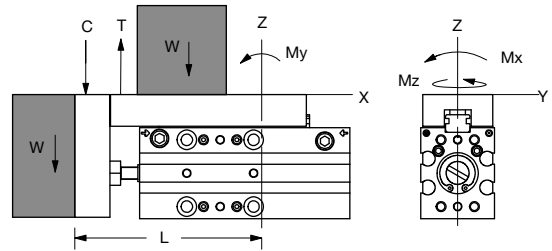
DIRECTCONNECT™



MINI BALL RAIL SLIDE DLM-07M-38 DIRECTCONNECT MODULAR SERIES

DLM SERIES

Specifications	DLM-07M-38	
Thrust Force F @ 100 psi, 7 bar.....	15 lbs.	66 N
Max. Stroke	1.50 in.	38 mm
Stroke Reduction (return)	0.19 in.	5 mm
Weight	0.43 lbs.	0.20 Kg
Maximum Payload W	1.0 lbs.	0.45 Kg
Maximum Payload (-P Option)	0.5 lbs.	0.23 Kg
Cylinder Bore \emptyset	0.437 in.	11 mm
Temperature Range	-30°~180° F	-35°~80° C
Actuation per 25mm of travel	0.07 sec.	
Linear accuracy per 25mm of travel.....	±0.0001 in.	±0.005 mm
Repeatability (-P Option)	±0.003 in.	±0.08 mm
Pressure Range.....	20-100 psi	1.4-7 bar
Valve required to actuate	4-way, 2-position	



Flow Controls are recommended for nearly all applications

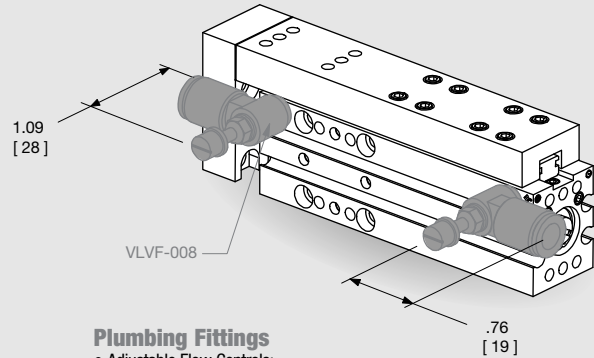
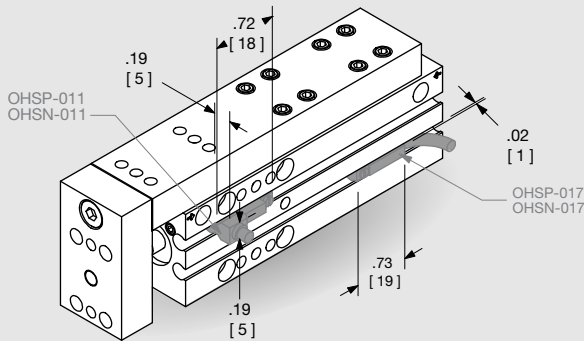
Loading Capacity

	Static	Dynamic
DLM-07M-38		
Maximum Tensile T	110 lbs. [490 N]	67 lbs. [301 N]
Maximum Compressive C	110 lbs. [490 N]	67 lbs. [301 N]
Maximum Moment M_x	45 in.-lbs. [5.1 Nm]	27 in.-lbs. [3.1 Nm]
Maximum Moment M_y	28 in.-lbs. [3.2 Nm]	16 in.-lbs. [1.9 Nm]
Maximum Moment M_z	28 in.-lbs. [3.2 Nm]	16 in.-lbs. [1.9 Nm]
Distance to Bearing Centerline L	2.90 in. [74 mm]	

DLM-07M-38-D

Maximum Tensile T	220 lbs. [980 N]	135 lbs. [602 N]
Maximum Compressive C	220 lbs. [980 N]	135 lbs. [602 N]
Maximum Moment M_x	90 in.-lbs. [10.2 Nm]	54 in.-lbs. [6.2 Nm]
Maximum Moment M_y	56 in.-lbs. [6.4 Nm]	33 in.-lbs. [3.8 Nm]
Maximum Moment M_z	56 in.-lbs. [6.4 Nm]	33 in.-lbs. [3.8 Nm]
Distance to Bearing Centerline L	3.38 in. [86 mm]	

Accessory Mounting Technical Data

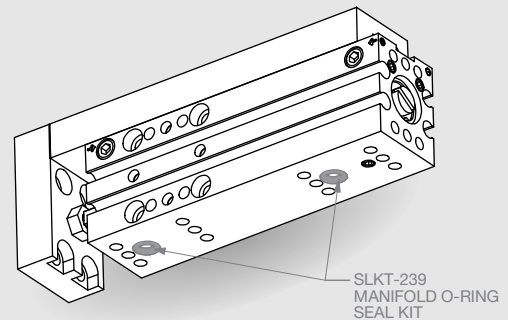
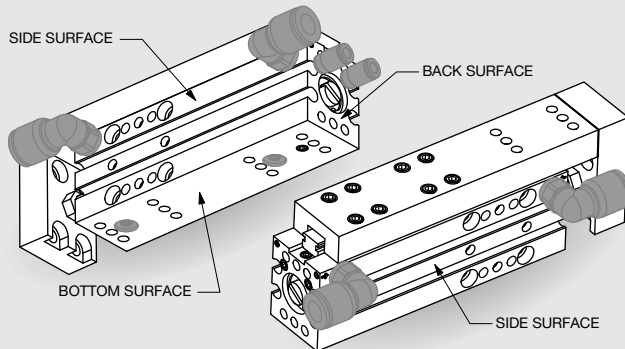


Sensors

- PNP and NPN Magneto Resistive available
- Sensors are slot mounted, no mounting kits required
- Simple adjustment with slotted screw driver
- Built-in LED for ease of positioning and troubleshooting
- Low profile sensor version or 90° wire exit sensor version
- Available with 2M or 5M Quick Disconnect mating cable (order separately)

Plumbing Fittings

- Adjustable Flow Controls:
 - Thumb screw adjust with locking nut for adjusting actuation time
 - Available for 6mm O.D. tubing
- Consult Factory for additional available plumbing fittings



Multiple Air Port Locations

- 2 standard M5 air port locations (both sides)
- Bottom and Back airports (M3) are plugged as supplied

Manifold O-ring Seals

- Available in Seal Kit
- Kit is supplied with all seals, plugs & wrenches needed

DLM SERIES

4.77

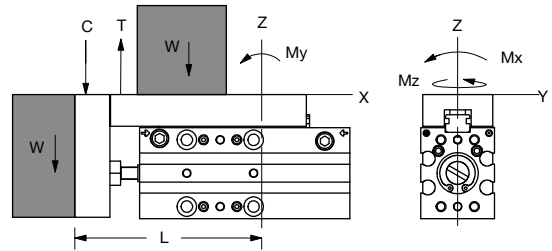
DIRECTCONNECT™



MINI BALL RAIL SLIDE DLM-07M-50 DIRECTCONNECT MODULAR SERIES

DLM SERIES

Specifications	DLM-07M-50	
Thrust Force F @ 100 psi, 7 bar.....	15 lbs.	66 N
Max. Stroke	2.00 in.	50 mm
Stroke Reduction (return)	0.19 in.	5 mm
Weight	0.50 lbs.	0.23 Kg
Maximum Payload W	1.0 lbs.	0.45 Kg
Maximum Payload (-P Option)	0.5 lbs.	0.23 Kg
Cylinder Bore \emptyset	0.437 in.	11 mm
Temperature Range:	-30°~180° F	-35°~80° C
Actuation per 25mm of travel	0.07 sec.	
Linear accuracy per 25mm of travel.....	±0.0001 in.	±0.005 mm
Repeatability (-P Option)	±0.003 in.	±0.08 mm
Pressure Range.....	20-100 psi	1.4-7 bar
Valve required to actuate	4-way, 2-position	



Flow Controls are recommended for nearly all applications

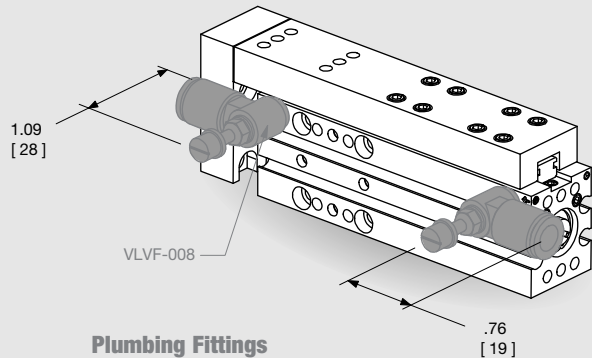
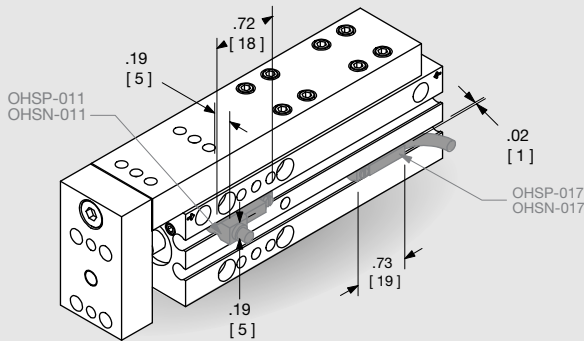
Loading Capacity

	Static	Dynamic
DLM-07M-50		
Maximum Tensile T	110 lbs. [490 N]	67 lbs. [301 N]
Maximum Compressive C	110 lbs. [490 N]	67 lbs. [301 N]
Maximum Moment M_x	45 in.-lbs. [5.1 Nm]	27 in.-lbs. [3.1 Nm]
Maximum Moment M_y	28 in.-lbs. [3.2 Nm]	16 in.-lbs. [1.9 Nm]
Maximum Moment M_z	28 in.-lbs. [3.2 Nm]	16 in.-lbs. [1.9 Nm]
Distance to Bearing Centerline L	3.37 in. [86 mm]	

DLM-07M-50-D

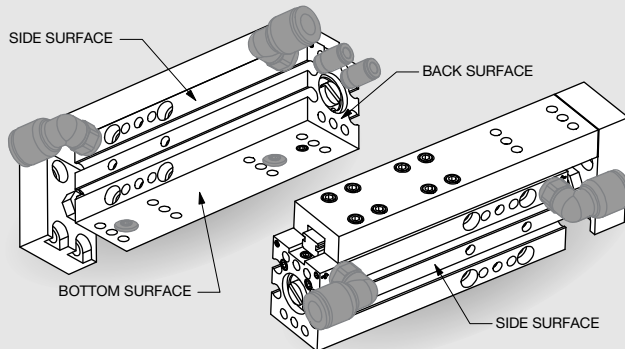
Maximum Tensile T	220 lbs. [980 N]	135 lbs. [602 N]
Maximum Compressive C	220 lbs. [980 N]	135 lbs. [602 N]
Maximum Moment M_x	90 in.-lbs. [10.2 Nm]	54 in.-lbs. [6.2 Nm]
Maximum Moment M_y	56 in.-lbs. [6.4 Nm]	33 in.-lbs. [3.8 Nm]
Maximum Moment M_z	56 in.-lbs. [6.4 Nm]	33 in.-lbs. [3.8 Nm]
Distance to Bearing Centerline L	3.86 in. [98 mm]	

Accessory Mounting Technical Data



Sensors

- PNP and NPN Magneto Resistive available
- Sensors are slot mounted, no mounting kits required
- Simple adjustment with slotted screw driver
- Built-in LED for ease of positioning and troubleshooting
- Low profile sensor version or 90° wire exit sensor version
- Available with 2M or 5M Quick Disconnect mating cable (order separately)

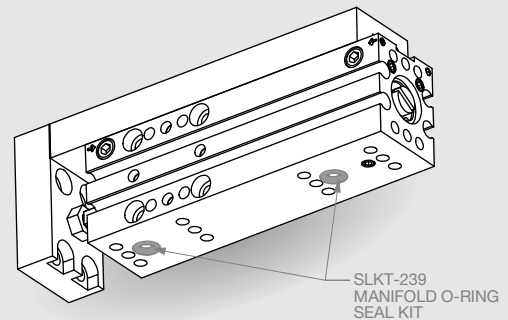


Multiple Air Port Locations

- 2 standard M5 air port locations (both sides)
- Bottom and Back airports (M3) are plugged as supplied

Plumbing Fittings

- Adjustable Flow Controls:
 - Thumb screw adjust with locking nut for adjusting actuation time
 - Available for 1/4" O.D. or 6mm O.D. tubing
- Consult Factory for additional available plumbing fittings



Manifold O-ring Seals

- Available in Seal Kit
- Kit is supplied with all seals, plugs & wrenches needed

DLM SERIES

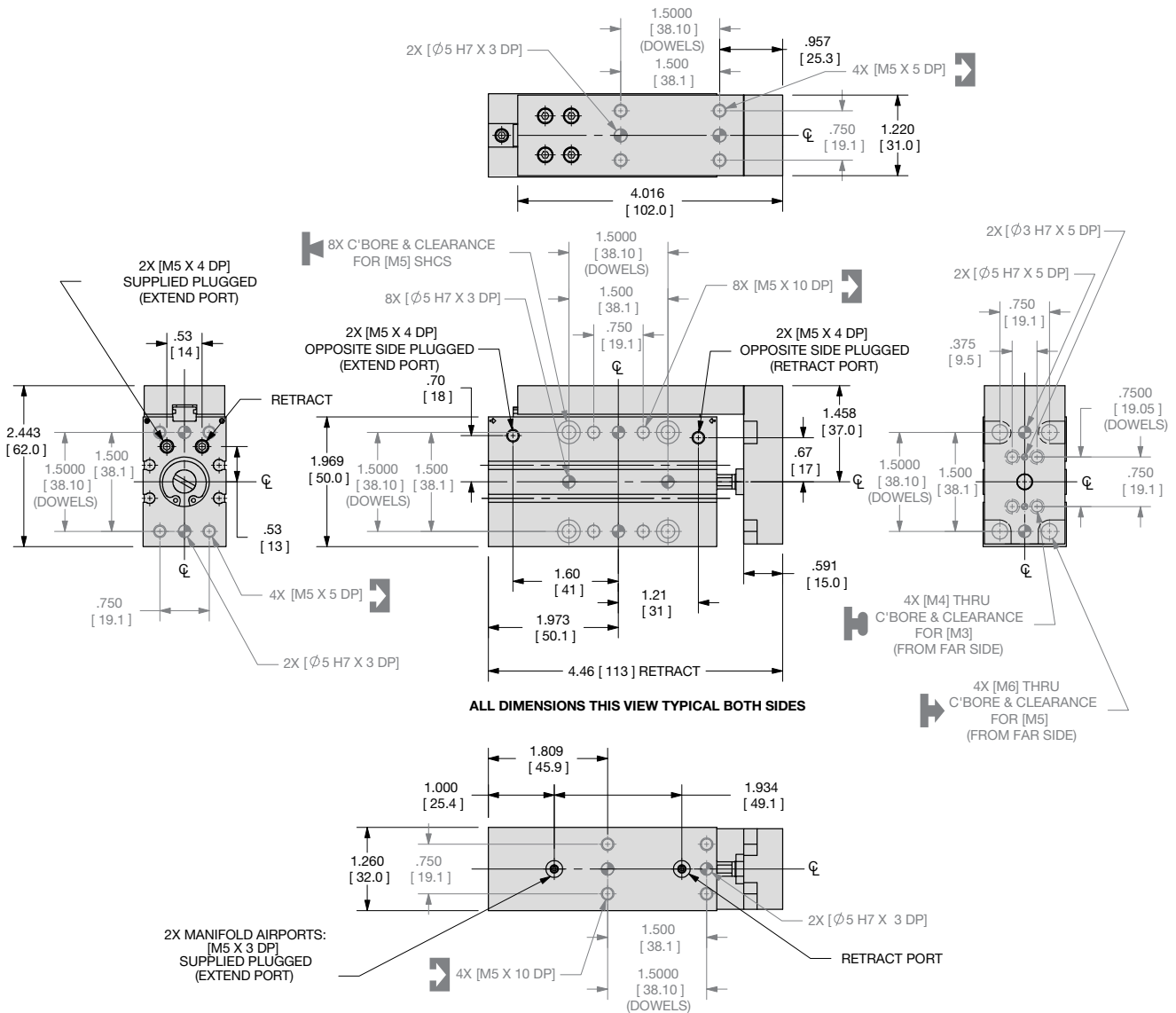
4.79

DIRECTCONNECT™

MINI BALL RAIL SLIDE DLM-09M-25 DIRECTCONNECT MODULAR SERIES

DLM SERIES

4.80



UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

Symbol	Imperial in.	Metric [mm]
	0.00 = ± .01	0.0 = ± .25
	0.000 = ± .005	0.0 = ± .13
	0.000 = ± .005	0.00 = ± .013

NOTE: DIRECTCONNECT™ DIMENSIONS ARE SHOWN IN BLUE

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

BASIC MODEL **BODY SIZE** **PRECISION STOPS**

DLM-09M - 25 - P

STROKE
(See Below)

BODY SIZE **25**
STROKE (mm)
5, 10, 15, 20, 25

PRECISION STOPS **P**

SENSOR ACCESSORIES	ORDER #	QTY/UNIT
PNP Magneto Resistive Sensor with Quick Disconnect*	OHSP-017	1-4
NPN Magneto Resistive Sensor with Quick Disconnect*	OHSN-017	1-4
PNP Magneto Resistive Sensor 90° Barrel (with Qk. Disc.)*	OHSP-011	1-4
NPN Magneto Resistive Sensor 90° Barrel (with Qk. Disc.)*	OHSN-011	1-4
Quick Disconnect Cable (2 meters long)*	CABL-010	1-4
Quick Disconnect Cable (5 meters long)*	CABL-013	1-4

PNEUMATIC ACCESSORIES	ORDER #	QTY/UNIT
Seal Repair Kit	SLKT-237	1
Manifold Seal Kit	SLKT-240	1
Adjustable Flow Control	VLVF-008	1 or 2

*Sensor and cable sold separately

SAMPLE ORDER: DLM-09M-25-15-P
Ex: DLM-09M Mini Ball Rail Slide, -25 Body Size, 15mm Stroke, Precision Stops

DIRECTCONNECT™



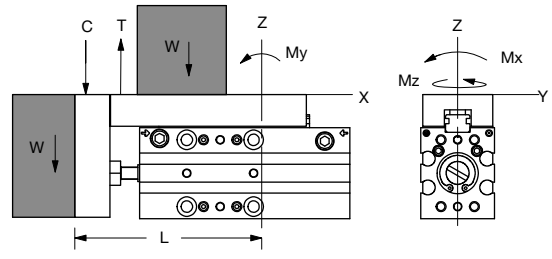
MINI BALL RAIL SLIDE DLM-09M-25 DIRECTCONNECT MODULAR SERIES



DLM SERIES
4.81

DIRECTCONNECT™

Specifications	DLM-09M-25	
Thrust Force F @ 100 psi, 7 bar.....	31 lbs.	138 N
Max. Stroke	1.00 in.	25 mm
Stroke Reduction (return)	0.19 in.	5 mm
Weight	1.08 lbs.	0.49 Kg
Maximum Payload W	2.0 lbs.	0.90 Kg
Maximum Payload (-P Option)	1.0 lbs.	0.45 Kg
Cylinder Bore \emptyset	0.630 in.	16 mm
Temperature Range:	-30°~180° F	-35°~80° C
Actuation per 25mm of travel	0.10 sec.	
Linear accuracy per 25mm of travel.....	±0.0001 in.	±0.005 mm
Repeatability (-P Option)	±0.003 in.	±0.08 mm
Pressure Range.....	20-100 psi	1.4-7 bar
Valve required to actuate	4-way, 2-position	

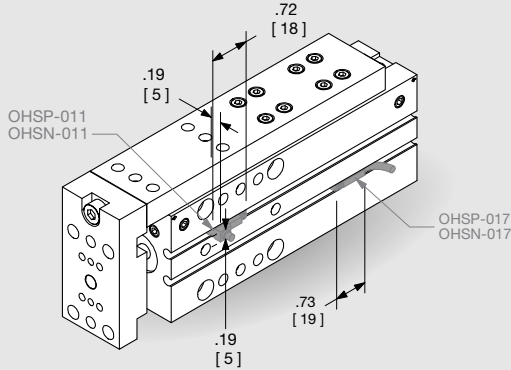


Flow Controls are recommended for nearly all applications

Loading Capacity

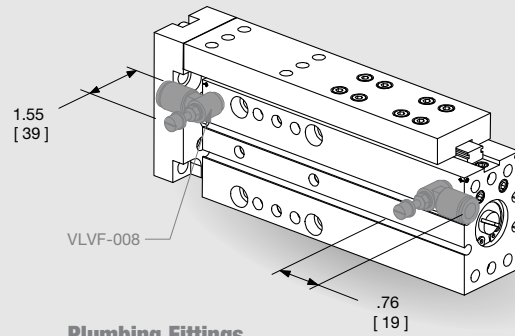
	Static	Dynamic
DLM-09M-25		
Maximum Tensile T	165 lbs. [735 N]	92 lbs. [413 N]
Maximum Compressive C	165 lbs. [735 N]	92 lbs. [413 N]
Maximum Moment M_x	84 in.-lbs. [9.6 Nm]	47 in.-lbs. [5.4 Nm]
Maximum Moment M_y	56 in.-lbs. [6.4 Nm]	31 in.-lbs. [3.6 Nm]
Maximum Moment M_z	56 in.-lbs. [6.4 Nm]	31 in.-lbs. [3.6 Nm]
Distance to Bearing Centerline L	3.40 in. [86 mm]	

Accessory Mounting Technical Data



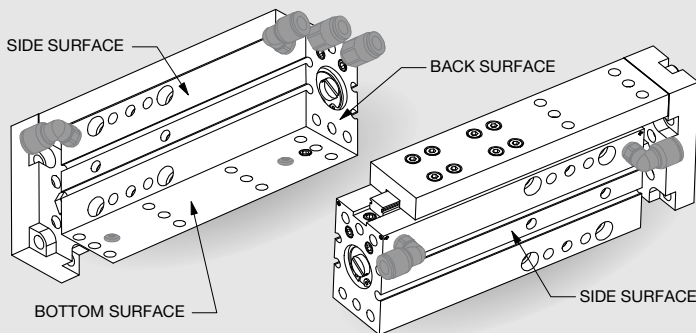
Sensors

- PNP and NPN Magneto Resistive available
- Sensors are slot mounted, no mounting kits required
- Simple adjustment with slotted screw driver
- Built-in LED for ease of positioning and troubleshooting
- Low profile sensor version or 90° wire exit sensor version
- Available with 2M or 5M Quick Disconnect mating cable (order separately)



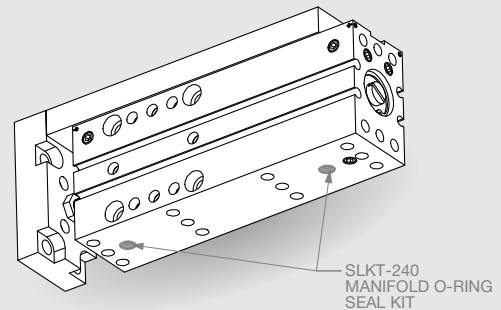
Plumbing Fittings

- Adjustable Flow Controls:
 - Thumb screw adjust with locking nut for adjusting actuation time
 - Available for 6mm O.D. tubing
- Consult Factory for additional available plumbing fittings



Multiple Air Port Locations

- 2 standard M5 air port locations (both sides)
- Bottom and Back airports (M3) are plugged as supplied



Manifold O-ring Seals

- Available in Seal Kit
- Kit is supplied with all seals, plugs & wrenches needed



MINI BALL RAIL SLIDE DLM-09M-50 DIRECTCONNECT MODULAR SERIES

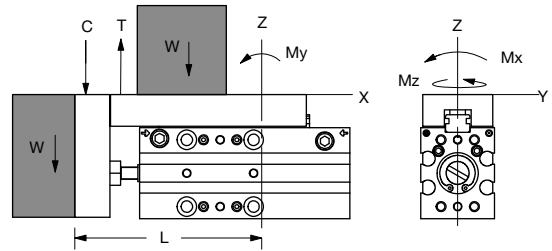


DLM SERIES

4.83

DIRECTCONNECT™

Specifications	DLM-09M-50	
Thrust Force F @ 100 psi, 7 bar.....	31 lbs.	138 N
Max. Stroke	2.00 in.	50 mm
Stroke Reduction (return)	0.19 in.	5 mm
Weight	1.41 lbs.	0.64 Kg
Maximum Payload W	2.0 lbs.	0.90 Kg
Maximum Payload (-P Option)	1.0 lbs.	0.45 Kg
Cylinder Bore \emptyset	0.630 in.	16 mm
Temperature Range	-30°~180° F	-35°~80° C
Actuation per 25mm of travel	0.10 sec.	
Linear accuracy per 25mm of travel.....	±0.0001 in.	±0.005 mm
Repeatability (-P Option)	±0.003 in.	±0.08 mm
Pressure Range.....	20-100 psi	1.4-7 bar
Valve required to actuate	4-way, 2-position	



Flow Controls are recommended for nearly all applications

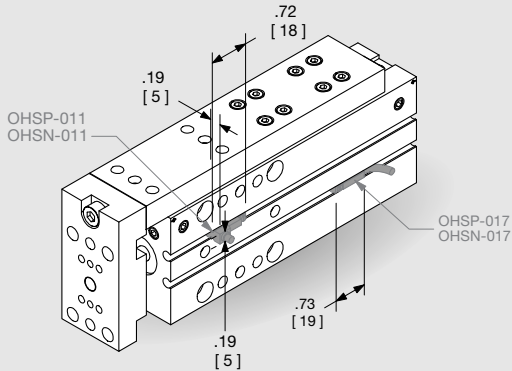
Loading Capacity

	Static	Dynamic
DLM-09M-50		
Maximum Tensile T	165 lbs. [735 N]	92 lbs. [413 N]
Maximum Compressive C	165 lbs. [735 N]	92 lbs. [413 N]
Maximum Moment M_x	84 in.-lbs. [9.6 Nm]	47 in.-lbs. [5.4 Nm]
Maximum Moment M_y	56 in.-lbs. [6.4 Nm]	31 in.-lbs. [3.6 Nm]
Maximum Moment M_z	56 in.-lbs. [6.4 Nm]	31 in.-lbs. [3.6 Nm]
Distance to Bearing Centerline L	4.13 in. [105 mm]	

DLM-09M-50-D

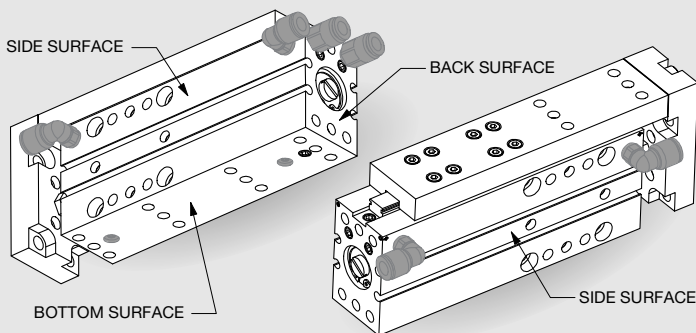
Maximum Tensile T	330 lbs. [1470 N]	185 lbs. [826 N]
Maximum Compressive C	330 lbs. [1470 N]	185 lbs. [826 N]
Maximum Moment M_x	169 in.-lbs. [19.2 Nm]	95 in.-lbs. [10.8 Nm]
Maximum Moment M_y	113 in.-lbs. [12.8 Nm]	63 in.-lbs. [7.2 Nm]
Maximum Moment M_z	113 in.-lbs. [12.8 Nm]	63 in.-lbs. [7.2 Nm]
Distance to Bearing Centerline L	4.75 in. [121 mm]	

Accessory Mounting Technical Data



Sensors

- PNP and NPN Magneto Resistive available
- Sensors are slot mounted, no mounting kits required
- Simple adjustment with slotted screw driver
- Built-in LED for ease of positioning and troubleshooting
- Low profile sensor version or 90° wire exit sensor version
- Available with 2M or 5M Quick Disconnect mating cable (order separately)

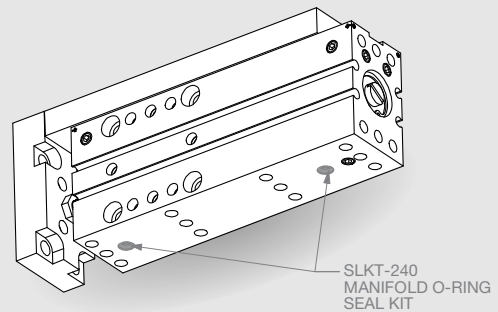


Multiple Air Port Locations

- 2 standard M5 air port locations (both sides)
- Bottom and Back airports (M3) are plugged as supplied

Plumbing Fittings

- Adjustable Flow Controls:
 - Thumb screw adjust with locking nut for adjusting actuation time
 - Available 6mm O.D. tubing
- Consult Factory for additional available plumbing fittings



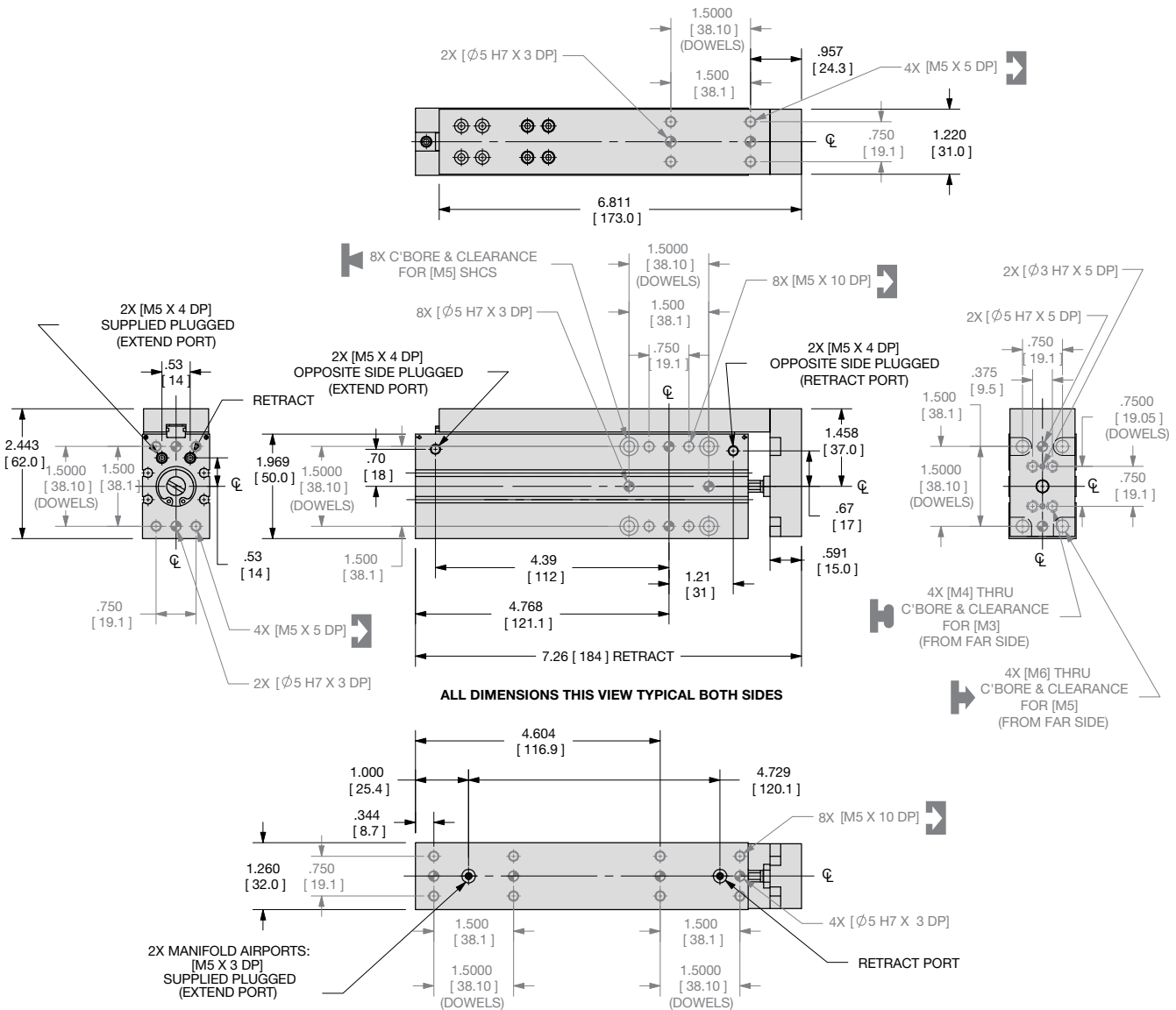
Manifold O-ring Seals

- Available in Seal Kit
- Kit is supplied with all seals, plugs & wrenches needed



MINI BALL RAIL SLIDE DLM-09M-75 DIRECTCONNECT MODULAR SERIES

DLM SERIES 4.84



NOTE: DIRECTCONNECT™ DIMENSIONS ARE SHOWN IN BLUE

UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

Symbol	Imperial in.	Metric [mm]
	0.00 = ±.01	[0.] = [±.25]
	0.000 = ±.005	[0.0] = [±.13]
	0.0000 = ±.0005	[0.00] = [±.013]
	All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or [±.013mm]	
	Metric Threads Course Pitch	

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

BASIC MODEL **BODY SIZE** (See Below) **PRECISION STOPS**

DLM-09M - **75** - - **D** - **P**

STROKE (See Below) **DOUBLE BEARINGS**

BODY SIZE 75
STROKE (mm)
 50, 55, 60, 65, 70, 75

DOUBLE BEARING D
PRECISION STOPS P

SENSOR ACCESSORIES

- PNP Magneto Resistive Sensor with Quick Disconnect* **OHSP-017**
- NPN Magneto Resistive Sensor with Quick Disconnect* **OHSN-017**
- PNP Magneto Resistive Sensor 90° Barrel (with Qk. Disc)* **OHSP-011**
- NPN Magneto Resistive Sensor 90° Barrel (with Qk. Disc.)* **OHSN-011**
- Quick Disconnect Cable (2 meters long)* **CABL-010**
- Quick Disconnect Cable (5 meters long)* **CABL-013**

ORDER # **QTY/UNIT**

PNEUMATIC ACCESSORIES

- Seal Repair Kit **SLKT-237** 1
- Manifold Seal Kit **SLKT-240** 1
- Adjustable Flow Control **VLVF-008** 1 or 2

ORDER # **QTY/UNIT**

*Sensor and cable sold separately

SAMPLE ORDER: DLM-09M-75-75-D-P

Ex: DLM-09M Mini Ball Rail Slide, -75 Body Size, 75mm Stroke, Double Ball Bearings, Precision Stops

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

www.comoso.com



MINI BALL RAIL SLIDE DLM-09M-75 DIRECTCONNECT MODULAR SERIES

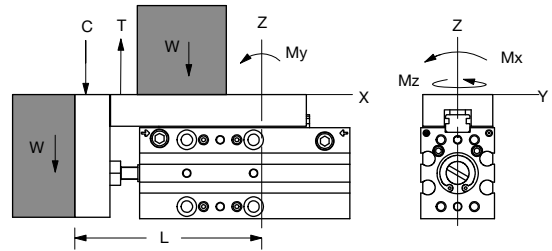


DLM SERIES

4.85

DIRECTCONNECT™

Specifications	DLM-09M-75	
Thrust Force F @ 100 psi, 7 bar.....	31 lbs.	138 N
Max. Stroke	3.00 in.	150 mm
Stroke Reduction (return)	0.19 in.	5 mm
Weight	1.78 lbs.	0.81 Kg
Maximum Payload W	2.0 lbs.	0.90 Kg
Maximum Payload (-P Option)	1.0 lbs.	0.45 Kg
Cylinder Bore \emptyset	0.630 in.	16 mm
Temperature Range	-30°~180° F	-35°~80° C
Actuation per 25mm of travel	0.10 sec.	
Linear accuracy per 25mm of travel.....	±0.0001 in.	±0.005 mm
Repeatability (-P Option)	±0.003 in.	±0.08 mm
Pressure Range.....	20-100 psi	1.4-7 bar
Valve required to actuate	4-way, 2-position	



Flow Controls are recommended for nearly all applications

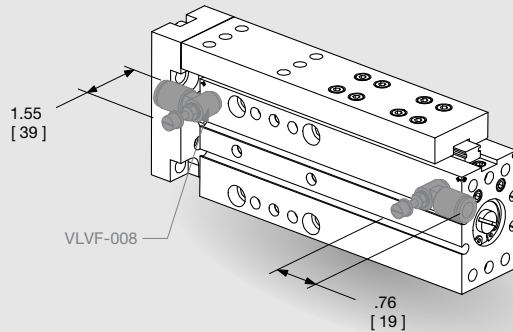
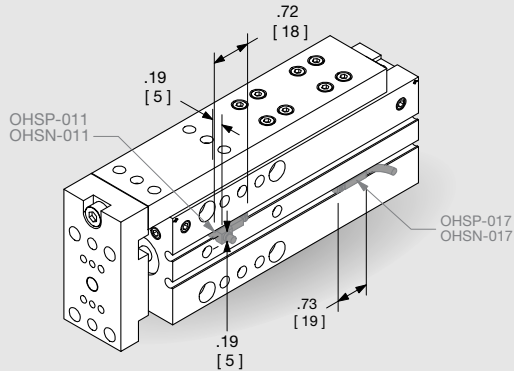
Loading Capacity

	Static	Dynamic
DLM-09M-75		
Maximum Tensile T	165 lbs. [735 N]	92 lbs. [413 N]
Maximum Compressive C	165 lbs. [735 N]	92 lbs. [413 N]
Maximum Moment M_x	84 in.-lbs. [9.6 Nm]	47 in.-lbs. [5.4 Nm]
Maximum Moment M_y	56 in.-lbs. [6.4 Nm]	31 in.-lbs. [3.6 Nm]
Maximum Moment M_z	56 in.-lbs. [6.4 Nm]	31 in.-lbs. [3.6 Nm]
Distance to Bearing Centerline L	4.95 in. [126 mm]	

DLM-09M-75-D

Maximum Tensile T	330 lbs. [1470 N]	185 lbs. [826 N]
Maximum Compressive C	330 lbs. [1470 N]	185 lbs. [826 N]
Maximum Moment M_x	169 in.-lbs. [19.2 Nm]	95 in.-lbs. [10.8 Nm]
Maximum Moment M_y	113 in.-lbs. [12.8 Nm]	63 in.-lbs. [7.2 Nm]
Maximum Moment M_z	113 in.-lbs. [12.8 Nm]	63 in.-lbs. [7.2 Nm]
Distance to Bearing Centerline L	5.58 in. [142 mm]	

Accessory Mounting Technical Data

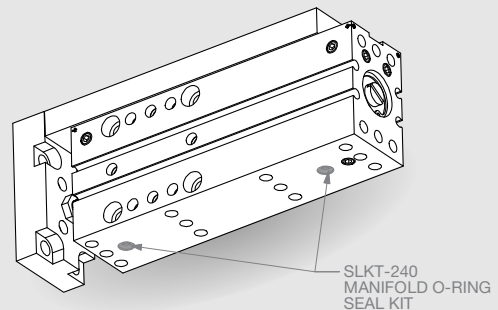
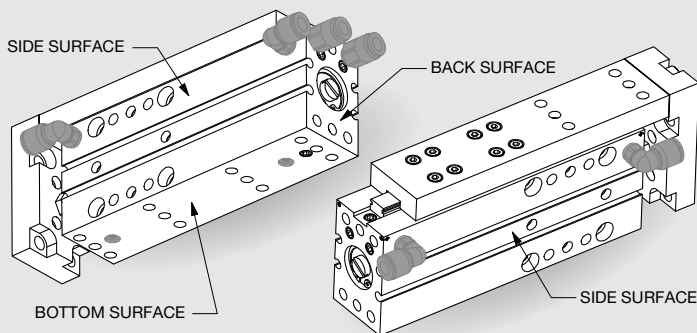


Sensors

- PNP and NPN Magneto Resistive available
- Sensors are slot mounted, no mounting kits required
- Simple adjustment with slotted screw driver
- Built-in LED for ease of positioning and troubleshooting
- Low profile sensor version or 90° wire exit sensor version
- Available with 2M or 5M Quick Disconnect mating cable (order separately)

Plumbing Fittings

- Adjustable Flow Controls:
 - Thumb screw adjust with locking nut for adjusting actuation time
 - Available 6mm O.D. tubing
- Consult Factory for additional available plumbing fittings



Multiple Air Port Locations

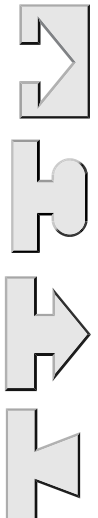
- 2 standard M5 air port locations (both sides)
- Bottom and Back airports (M3) are plugged as supplied

Manifold O-ring Seals

- Available in Seal Kit
- Kit is supplied with all seals, plugs & wrenches needed

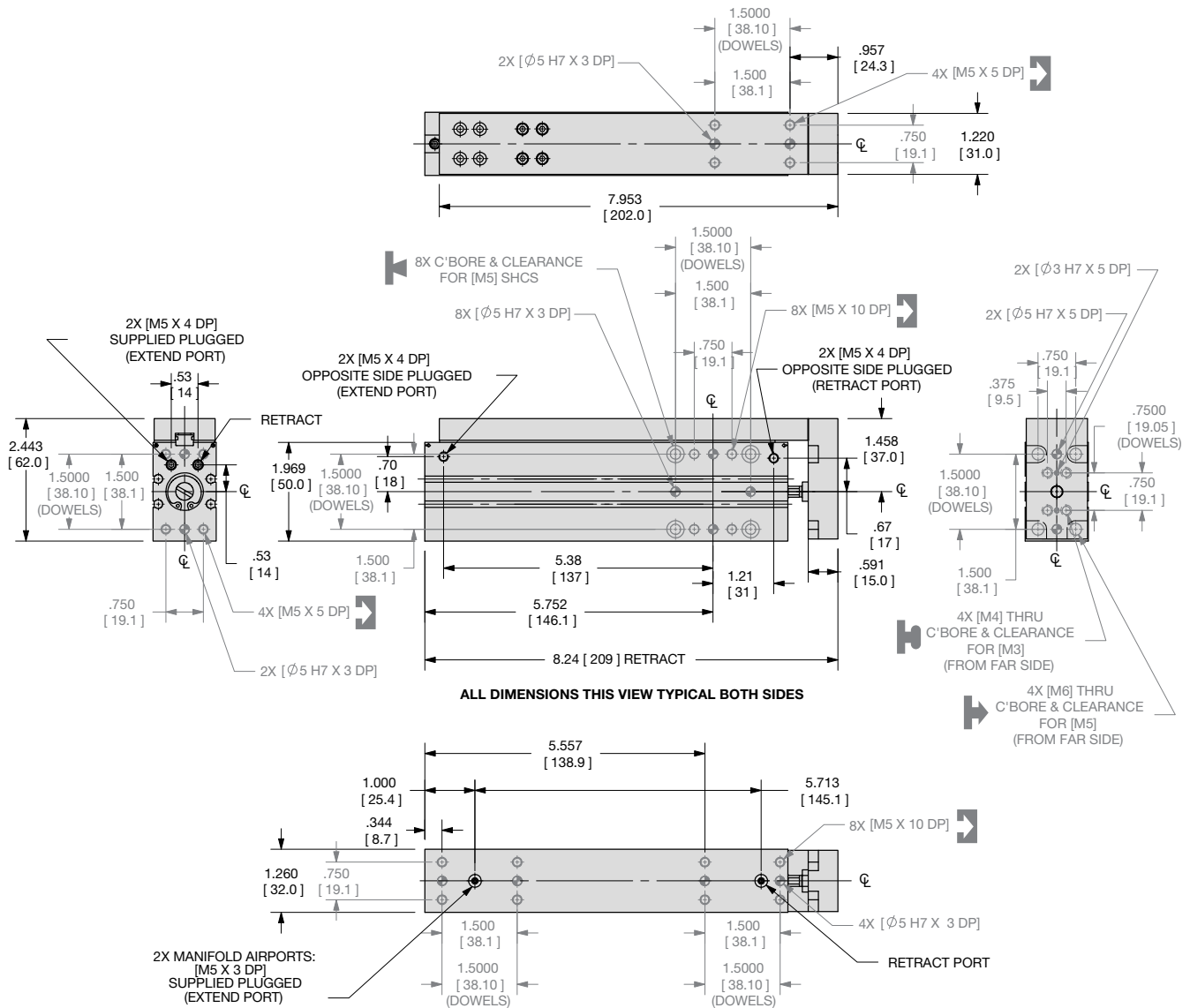


MINI BALL RAIL SLIDE DLM-09M-100 DIRECTCONNECT MODULAR SERIES



DLM SERIES

4.86



ALL DIMENSIONS THIS VIEW TYPICAL BOTH SIDES

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
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NOTE: DIRECTCONNECT™ DIMENSIONS ARE SHOWN IN BLUE



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

BASIC MODEL **BODY SIZE** (See Below) **PRECISION STOPS**

DLM-09M-100 - **100** - **D** - **P**

STROKE (See Below) **DOUBLE BEARINGS**

BODY SIZE 100
STROKE (mm)
 75, 80, 85, 90, 95, 100

DOUBLE BEARING D
PRECISION STOPS P

SENSOR ACCESSORIES

- PNP Magneto Resistive Sensor with Quick Disconnect* **OHSP-017** 1-4
- NPN Magneto Resistive Sensor with Quick Disconnect* **OHSN-017** 1-4
- PNP Magneto Resistive Sensor 90° Barrel (with Qk. Disc)* **OHSP-011** 1-4
- NPN Magneto Resistive Sensor 90° Barrel (with Qk. Disc)* **OHSN-011** 1-4
- Quick Disconnect Cable (2 meters long)* **CABL-010** 1-4
- Quick Disconnect Cable (5 meters long)* **CABL-013** 1-4

ORDER # **QTY/UNIT**

PNEUMATIC ACCESSORIES

- Seal Repair Kit **SLKT-237** 1
- Manifold Seal Kit **SLKT-240** 1
- Adjustable Flow Control **VLVF-008** 1 or 2

ORDER # **QTY/UNIT**

*Sensor and cable sold separately

SAMPLE ORDER: DLM-09M-100-85-D-P

Ex: DLM-09M Mini Ball Rail Slide, -100 Body Size, 85mm Stroke, Double Ball Bearings, Precision Stops

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

www.comoso.com



MINI BALL RAIL SLIDE DLM-09M-100 DIRECTCONNECT MODULAR SERIES

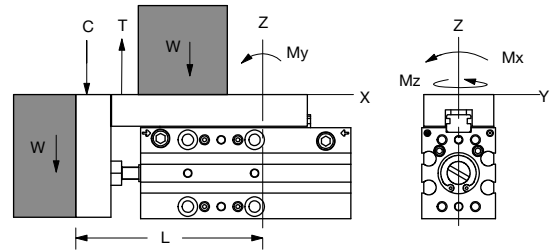


DLM SERIES

4.87

DIRECTCONNECT™

Specifications	DLM-09M-100	
Thrust Force F @ 100 psi, 7 bar.....	31 lbs.	138 N
Max. Stroke	4.00 in.	200 mm
Stroke Reduction (return)	0.19 in.	5 mm
Weight	2.13 lbs.	0.97 Kg
Maximum Payload W	2.0 lbs.	0.90 Kg
Maximum Payload (-P Option)	1.0 lbs.	0.45 Kg
Cylinder Bore \emptyset	0.630 in.	16 mm
Temperature Range:	-30°~180° F	-35°~80° C
Actuation per 25mm of travel	0.10 sec.	
Linear accuracy per 25mm of travel.....	±0.0001 in.	±0.005 mm
Repeatability (-P Option)	±0.003 in.	±0.08 mm
Pressure Range.....	20-100 psi	1.4-7 bar
Valve required to actuate	4-way, 2-position	



Flow Controls are recommended for nearly all applications

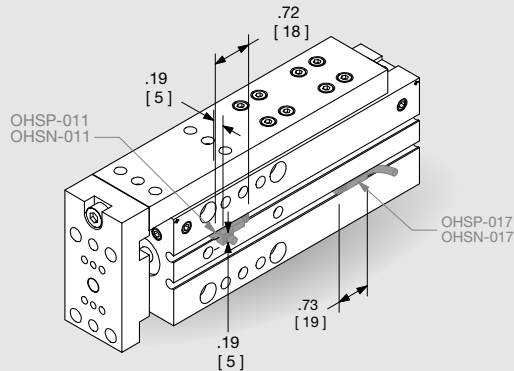
Loading Capacity

	Static	Dynamic
DLM-09M-100		
Maximum Tensile T	165 lbs. [735 N]	92 lbs. [413 N]
Maximum Compressive C	165 lbs. [735 N]	92 lbs. [413 N]
Maximum Moment M_x	84 in.-lbs. [9.6 Nm]	47 in.-lbs. [5.4 Nm]
Maximum Moment M_y	56 in.-lbs. [6.4 Nm]	31 in.-lbs. [3.6 Nm]
Maximum Moment M_z	56 in.-lbs. [6.4 Nm]	31 in.-lbs. [3.6 Nm]
Distance to Bearing Centerline L	6.10 in. [155 mm]	

DLM-09M-100-D

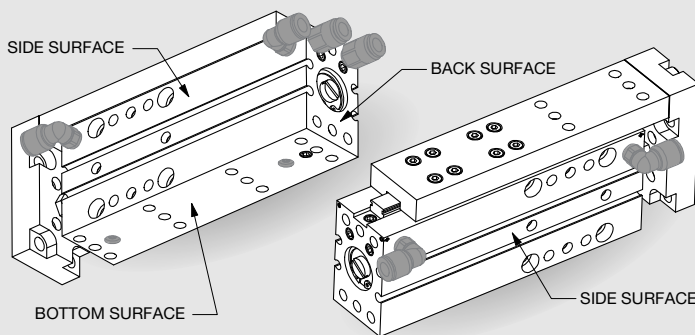
Maximum Tensile T	330 lbs. [1470 N]	185 lbs. [826 N]
Maximum Compressive C	330 lbs. [1470 N]	185 lbs. [826 N]
Maximum Moment M_x	169 in.-lbs. [19.2 Nm]	95 in.-lbs. [10.8 Nm]
Maximum Moment M_y	113 in.-lbs. [12.8 Nm]	63 in.-lbs. [7.2 Nm]
Maximum Moment M_z	113 in.-lbs. [12.8 Nm]	63 in.-lbs. [7.2 Nm]
Distance to Bearing Centerline L	6.72 in. [171 mm]	

Accessory Mounting Technical Data



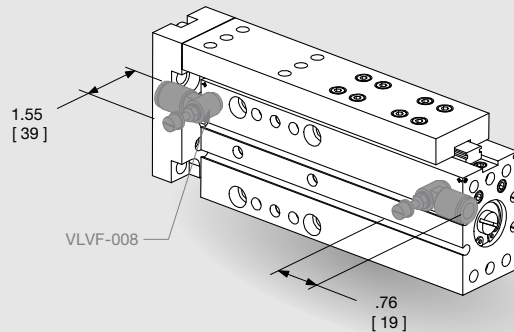
Sensors

- PNP and NPN Magneto Resistive available
- Sensors are slot mounted, no mounting kits required
- Simple adjustment with slotted screw driver
- Built-in LED for ease of positioning and troubleshooting
- Low profile sensor version or 90° wire exit sensor version
- Available with 2M or 5M Quick Disconnect mating cable (order separately)



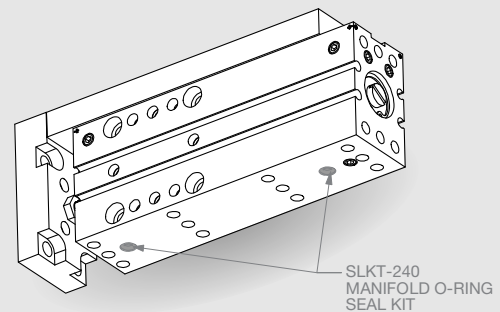
Multiple Air Port Locations

- 2 standard M5 air port locations (both sides)
- Bottom and Back airports (M3) are plugged as supplied



Plumbing Fittings

- Adjustable Flow Controls:
 - Thumb screw adjust with locking nut for adjusting actuation time
 - Available for 6mm O.D. tubing
- Consult Factory for additional available plumbing fittings

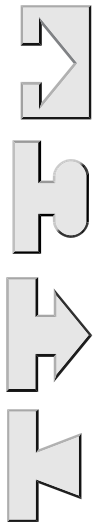


Manifold O-ring Seals

- Available in Seal Kit
- Kit is supplied with all seals, plugs & wrenches needed



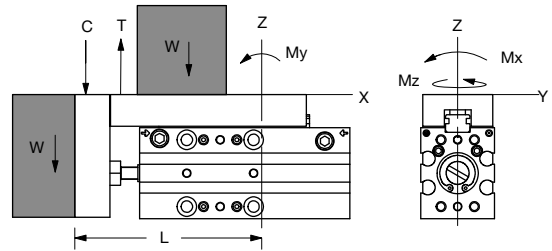
MINI BALL RAIL SLIDE DLM-12M-25 DIRECTCONNECT MODULAR SERIES



DLM SERIES
4.89

DIRECTCONNECT™

Specifications	DLM-12M-25	
Thrust Force F @ 100 psi, 7 bar.....	51 lbs.	230 N
Max. Stroke	1.00 in.	25 mm
Stroke Reduction (return)	0.19 in.	5 mm
Weight	1.18 lbs.	0.54 Kg
Maximum Payload W	4.0 lbs.	1.81 Kg
Maximum Payload (-P Option)	2.0 lbs.	0.90 Kg
Cylinder Bore \emptyset	0.813 in.	22 mm
Temperature Range:	-30°~180° F	-35°~80° C
Actuation per 25mm of travel	0.14 sec.	
Linear accuracy per 25mm of travel.....	±0.0001 in.	±0.005 mm
Repeatability (-P Option)	±0.003 in.	±0.08 mm
Pressure Range.....	20-100 psi	1.4-7 bar
Valve required to actuate	4-way, 2-position	

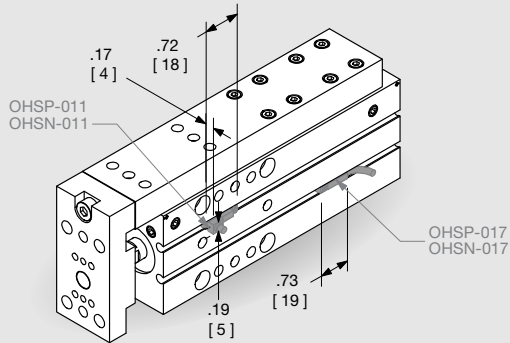


Flow Controls are recommended for nearly all applications

Loading Capacity

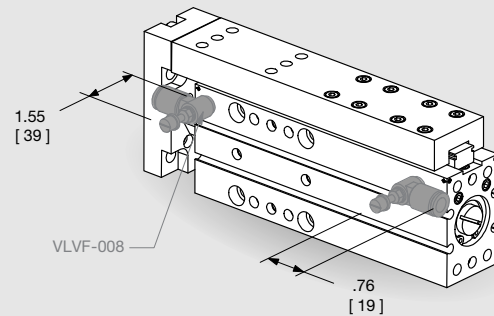
	Static	Dynamic
DLM-12M-25		
Maximum Tensile T	273 lbs. [1214 N]	181 lbs. [808 N]
Maximum Compressive C	273 lbs. [1214 N]	181 lbs. [808 N]
Maximum Moment M_x	182 in.-lbs. [20.6 Nm]	121 in.-lbs. [13.7 Nm]
Maximum Moment M_y	104 in.-lbs. [11.8 Nm]	69 in.-lbs. [7.9 Nm]
Maximum Moment M_z	104 in.-lbs. [11.8 Nm]	69 in.-lbs. [7.9 Nm]
Distance to Bearing Centerline L	3.45 in. [88 mm]	

Accessory Mounting Technical Data



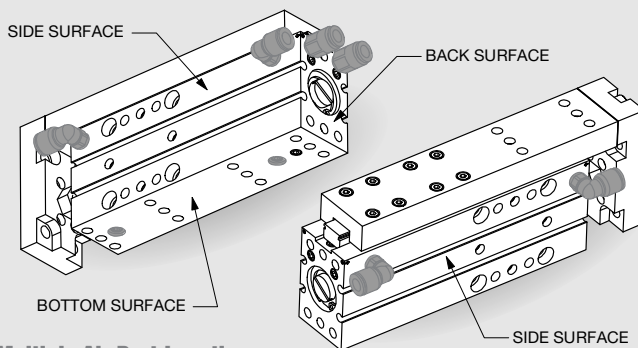
Sensors

- PNP and NPN Magneto Resistive available
- Sensors are slot mounted, no mounting kits required
- Simple adjustment with slotted screw driver
- Built-in LED for ease of positioning and troubleshooting
- Low profile sensor version or 90° wire exit sensor version
- Available with 2M or 5M Quick Disconnect mating cable (order separately)



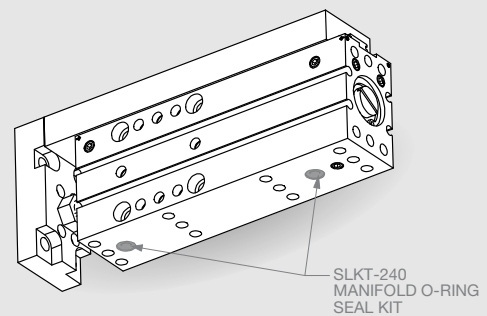
Plumbing Fittings

- Adjustable Flow Controls:
 - Thumb screw adjust with locking nut for adjusting actuation time
 - Available for 6mm O.D. tubing
- Consult Factory for additional available plumbing fittings



Multiple Air Port Locations

- 2 standard M5 air port locations (both sides)
- Bottom and Back airports (M3) are plugged as supplied

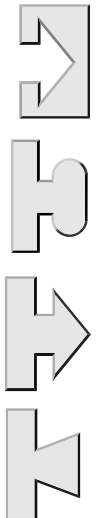


Manifold O-ring Seals

- Available in Seal Kit
- Kit is supplied with all seals, plugs & wrenches needed

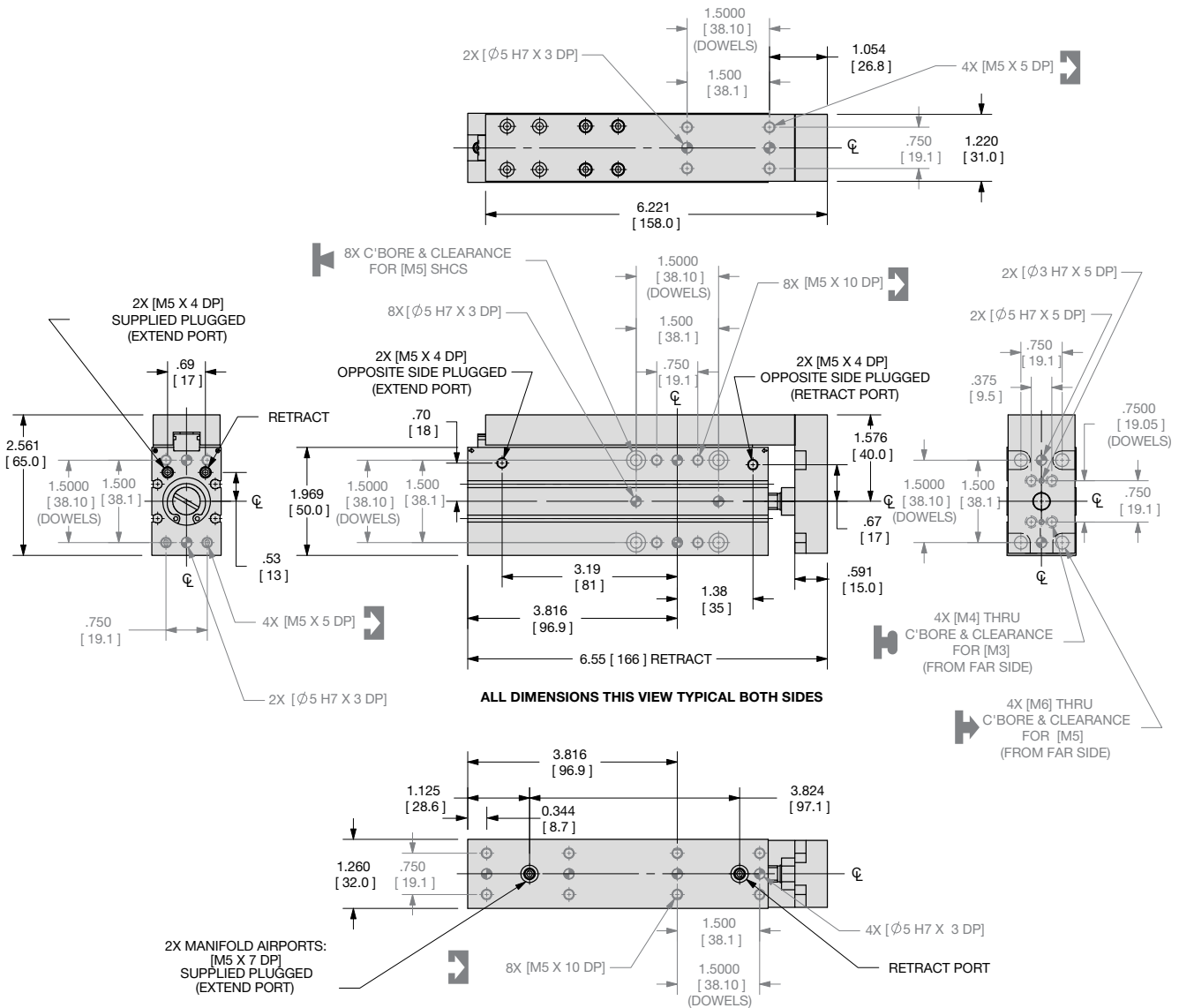


MINI BALL RAIL SLIDE DLM-12M-50 DIRECTCONNECT MODULAR SERIES



DLM SERIES

4.90



ALL DIMENSIONS THIS VIEW TYPICAL BOTH SIDES

UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

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

Dimensions are symmetrical about centerline
 All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or [±.013mm]
 Metric Threads Course Pitch

NOTE: DIRECTCONNECT™ DIMENSIONS ARE SHOWN IN BLUE

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

BASIC MODEL **BODY SIZE** (See Below) **PRECISION STOPS**
DLM-12M - **50** - **D** - **P**
STROKE (See Below) **DOUBLE BEARINGS**

BODY SIZE 50
STROKE (mm)
25, 30, 35, 40, 45, 50

DOUBLE BEARING D
PRECISION STOPS P

SENSOR ACCESSORIES

	ORDER #	QTY/UNIT
PNP Magneto Resistive Sensor with Quick Disconnect*	OHSP-017	1-4
NPN Magneto Resistive Sensor with Quick Disconnect*	OHSN-017	1-4
PNP Magneto Resistive Sensor 90° Barrel (with Qk. Disc)*	OHSP-011	1-4
NPN Magneto Resistive Sensor 90° Barrel (with Qk. Disc)*	OHSN-011	1-4
Quick Disconnect Cable (2 meters long)*	CABL-010	1-4
Quick Disconnect Cable (5 meters long)*	CABL-013	1-4

PNEUMATIC ACCESSORIES

	ORDER #	QTY/UNIT
Seal Repair Kit	SLKT-238	1
Manifold Seal Kit	SLKT-240	1
Adjustable Flow Control	VLVF-008	1 or 2

*Sensor and cable sold separately

SAMPLE ORDER: DLM-12M-50-45-D-P

Ex: DLM-12M Mini Ball Rail Slide, -50 Body Size, 45mm Stroke, Double Ball Bearings, Precision Stops

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

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MINI BALL RAIL SLIDE DLM-12M-50 DIRECTCONNECT MODULAR SERIES

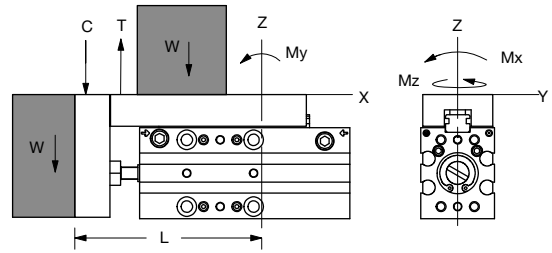


DLM SERIES

4.91

DIRECTCONNECT™

Specifications	DLM-12M-50	
Thrust Force F @ 100 psi, 7 bar.....	51 lbs.	230 N
Max. Stroke	2.00 in.	50 mm
Stroke Reduction (return)	0.19 in.	5 mm
Weight	1.43 lbs.	0.65 Kg
Maximum Payload W	4.0 lbs.	1.81 Kg
Maximum Payload (-P Option)	2.0 lbs.	0.90 Kg
Cylinder Bore \emptyset	0.813 in.	22 mm
Temperature Range:	-30°~180° F	-35°~80° C
Actuation per 25mm of travel	0.14 sec.	
Linear accuracy per 25mm of travel.....	±0.0001 in.	±0.005 mm
Repeatability (-P Option)	±0.003 in.	±0.08 mm
Pressure Range.....	20-100 psi	1.4-7 bar
Valve required to actuate	4-way, 2-position	



Flow Controls are recommended for nearly all applications

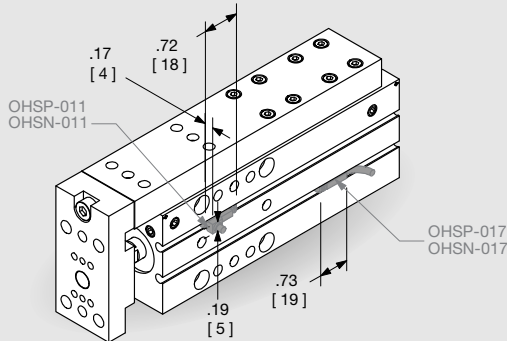
Loading Capacity

	Static	Dynamic
DLM-12M-50		
Maximum Tensile T	273 lbs. [1214 N]	181 lbs. [808 N]
Maximum Compressive C	273 lbs. [1214 N]	181 lbs. [808 N]
Maximum Moment M_x	182 in.-lbs. [20.6 Nm]	121 in.-lbs. [13.7 Nm]
Maximum Moment M_y	104 in.-lbs. [11.8 Nm]	69 in.-lbs. [7.9 Nm]
Maximum Moment M_z	104 in.-lbs. [11.8 Nm]	69 in.-lbs. [7.9 Nm]
Distance to Bearing Centerline L	4.10 in. [104 mm]	

DLM-12M-50-D

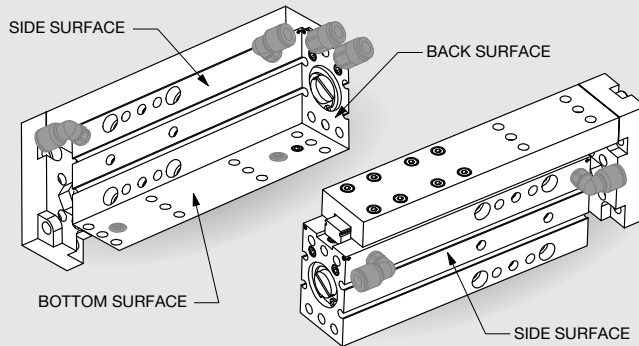
Maximum Tensile T	546 lbs. [2429 N]	363 lbs. [1617 N]
Maximum Compressive C	546 lbs. [2429 N]	363 lbs. [1617 N]
Maximum Moment M_x	364 in.-lbs. [41.2 Nm]	95 in.-lbs. [27.4 Nm]
Maximum Moment M_y	208 in.-lbs. [23.6 Nm]	139 in.-lbs. [15.8 Nm]
Maximum Moment M_z	208 in.-lbs. [23.6 Nm]	139 in.-lbs. [15.8 Nm]
Distance to Bearing Centerline L	4.82 in. [122 mm]	

Accessory Mounting Technical Data



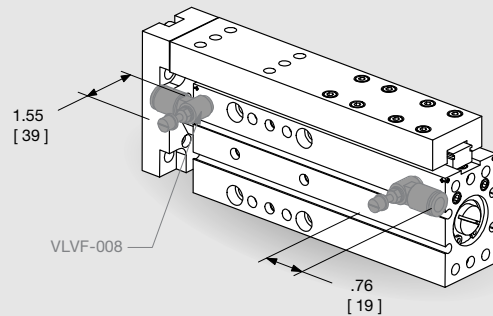
Sensors

- PNP and NPN Magneto Resistive available
- Sensors are slot mounted, no mounting kits required
- Simple adjustment with slotted screw driver
- Built-in LED for ease of positioning and troubleshooting
- Low profile sensor version or 90° wire exit sensor version
- Available with 2M or 5M Quick Disconnect mating cable (order separately)



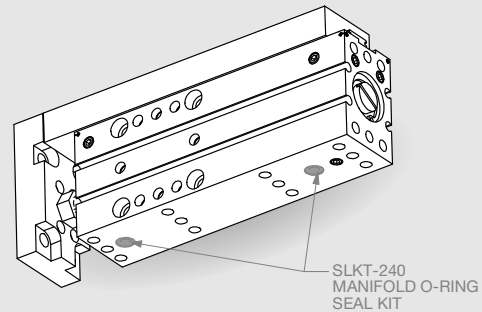
Multiple Air Port Locations

- 2 standard M5 air port locations (both sides)
- Bottom and Back airports (M3) are plugged as supplied



Plumbing Fittings

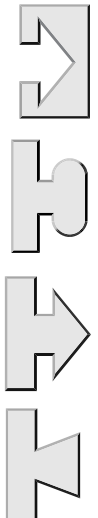
- Adjustable Flow Controls:
 - Thumb screw adjust with locking nut for adjusting actuation time
 - Available for 6mm O.D. tubing
- Consult Factory for additional available plumbing fittings



Manifold O-ring Seals

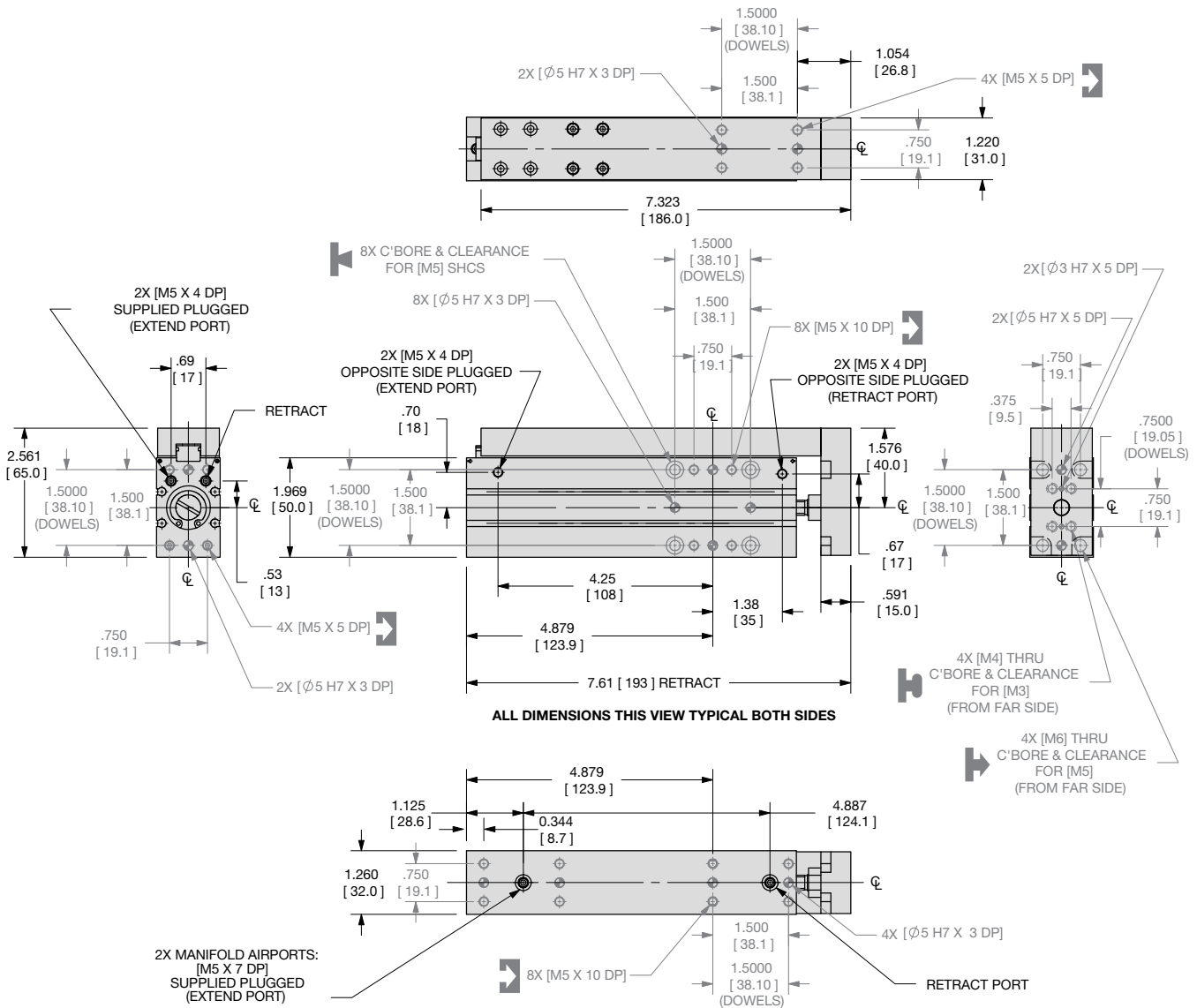
- Available in Seal Kit
- Kit is supplied with all seals, plugs & wrenches needed

MINI BALL RAIL SLIDE DLM-12M-75 DIRECTCONNECT MODULAR SERIES



DLM SERIES

4.92



ALL DIMENSIONS THIS VIEW TYPICAL BOTH SIDES

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
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NOTE: DIRECTCONNECT™ DIMENSIONS ARE SHOWN IN BLUE

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

BASIC MODEL **BODY SIZE** **PRECISION STOPS**

DLM-12M - **75** - [] - **D** - **P**

(See Below)

STROKE **DOUBLE BEARINGS**

(See Below)

BODY SIZE 75
STROKE (mm)
50, 55, 60, 65, 70, 75

DOUBLE BEARING D
PRECISION STOPS P

SENSOR ACCESSORIES

- PNP Magneto Resistive Sensor with Quick Disconnect* **OHSP-017**
- NPN Magneto Resistive Sensor with Quick Disconnect* **OHSN-017**
- PNP Magneto Resistive Sensor 90° Barrel (with Qk. Disc)* **OHSP-011**
- NPN Magneto Resistive Sensor 90° Barrel (with Qk. Disc)* **OHSN-011**
- Quick Disconnect Cable (2 meters long)* **CABL-010**
- Quick Disconnect Cable (5 meters long)* **CABL-013**

ORDER #	QTY/UNIT
OHSP-017	1-4
OHSN-017	1-4
OHSP-011	1-4
OHSN-011	1-4
CABL-010	1-4
CABL-013	1-4

PNEUMATIC ACCESSORIES

- Seal Repair Kit **SLKT-238**
- Manifold Seal Kit **SLKT-240**
- Adjustable Flow Control **VLVF-008**

ORDER #	QTY/UNIT
SLKT-238	1
SLKT-240	1
VLVF-008	1 or 2

*Sensor and cable sold separately

SAMPLE ORDER: DLM-12M-75-65-P

Ex: DLM-12M Mini Ball Rail Slide, -75 Body Size, 65mm Stroke, Precision Stops





MINI BALL RAIL SLIDE DLM-12M-75 DIRECTCONNECT MODULAR SERIES

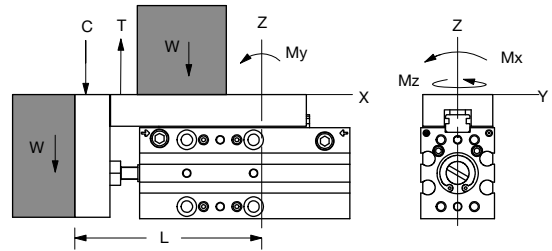


DLM SERIES

4.93

DIRECTCONNECT™

Specifications	DLM-12M-75	
Thrust Force F @ 100 psi, 7 bar.....	51 lbs.	230 N
Max. Stroke	3.00 in.	150 mm
Stroke Reduction (return)	0.19 in.	5 mm
Weight	1.80 lbs.	0.82 Kg
Maximum Payload W	4.0 lbs.	1.81 Kg
Maximum Payload (-P Option)	2.0 lbs.	0.90 Kg
Cylinder Bore \emptyset	0.813 in.	22 mm
Temperature Range	-30°~180° F	-35°~80° C
Actuation per 25mm of travel	0.14 sec.	
Linear accuracy per 25mm of travel.....	±0.0001 in.	±0.005 mm
Repeatability (-P Option)	±0.003 in.	±0.08 mm
Pressure Range.....	20-100 psi	1.4-7 bar
Valve required to actuate	4-way, 2-position	



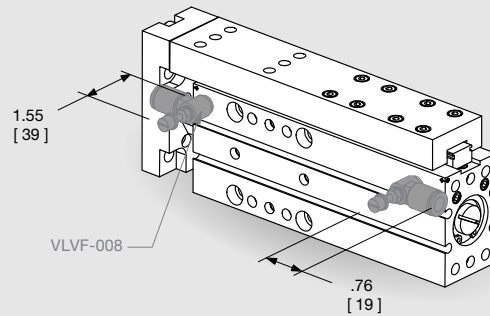
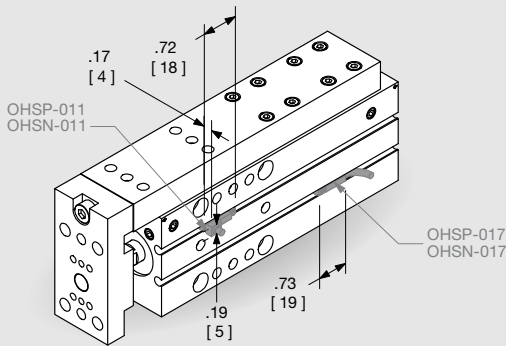
Flow Controls are recommended for nearly all applications

Loading Capacity

	Static	Dynamic
DLM-12M-75		
Maximum Tensile T	273 lbs. [1214 N]	181 lbs. [808 N]
Maximum Compressive C	273 lbs. [1214 N]	181 lbs. [808 N]
Maximum Moment M_x	182 in.-lbs. [20.6 Nm]	121 in.-lbs. [13.7 Nm]
Maximum Moment M_y	104 in.-lbs. [11.8 Nm]	69 in.-lbs. [7.9 Nm]
Maximum Moment M_z	104 in.-lbs. [11.8 Nm]	69 in.-lbs. [7.9 Nm]
Distance to Bearing Centerline L	5.21 in. [132 mm]	

DLM-12M-75-D		
Maximum Tensile T	546 lbs. [2429 N]	363 lbs. [1617 N]
Maximum Compressive C	546 lbs. [2429 N]	363 lbs. [1617 N]
Maximum Moment M_x	364 in.-lbs. [41.2 Nm]	242 in.-lbs. [27.4 Nm]
Maximum Moment M_y	208 in.-lbs. [23.6 Nm]	139 in.-lbs. [15.8 Nm]
Maximum Moment M_z	208 in.-lbs. [23.6 Nm]	139 in.-lbs. [15.8 Nm]
Distance to Bearing Centerline L	5.92 in. [150 mm]	

Accessory Mounting Technical Data

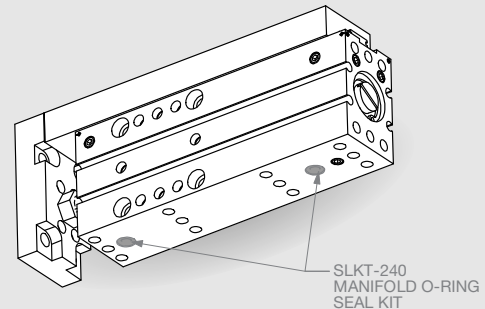
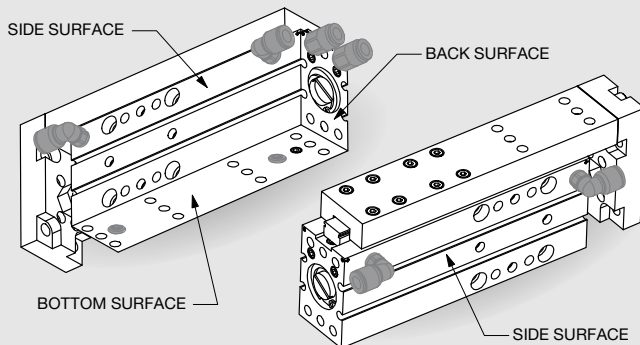


Sensors

- PNP and NPN Magneto Resistive available
- Sensors are slot mounted, no mounting kits required
- Simple adjustment with slotted screw driver
- Built-in LED for ease of positioning and troubleshooting
- Low profile sensor version or 90° wire exit sensor version
- Available with 2M or 5M Quick Disconnect mating cable (order separately)

Plumbing Fittings

- Adjustable Flow Controls:
 - Thumb screw adjust with locking nut for adjusting actuation time
 - Available for 6mm O.D. tubing
- Consult Factory for additional available plumbing fittings



Multiple Air Port Locations

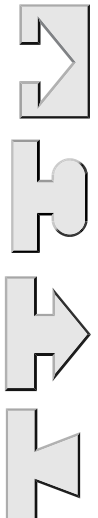
- 2 standard M5 air port locations (both sides)
- Bottom and Back airports (M3) are plugged as supplied

Manifold O-ring Seals

- Available in Seal Kit
- Kit is supplied with all seals, plugs & wrenches needed

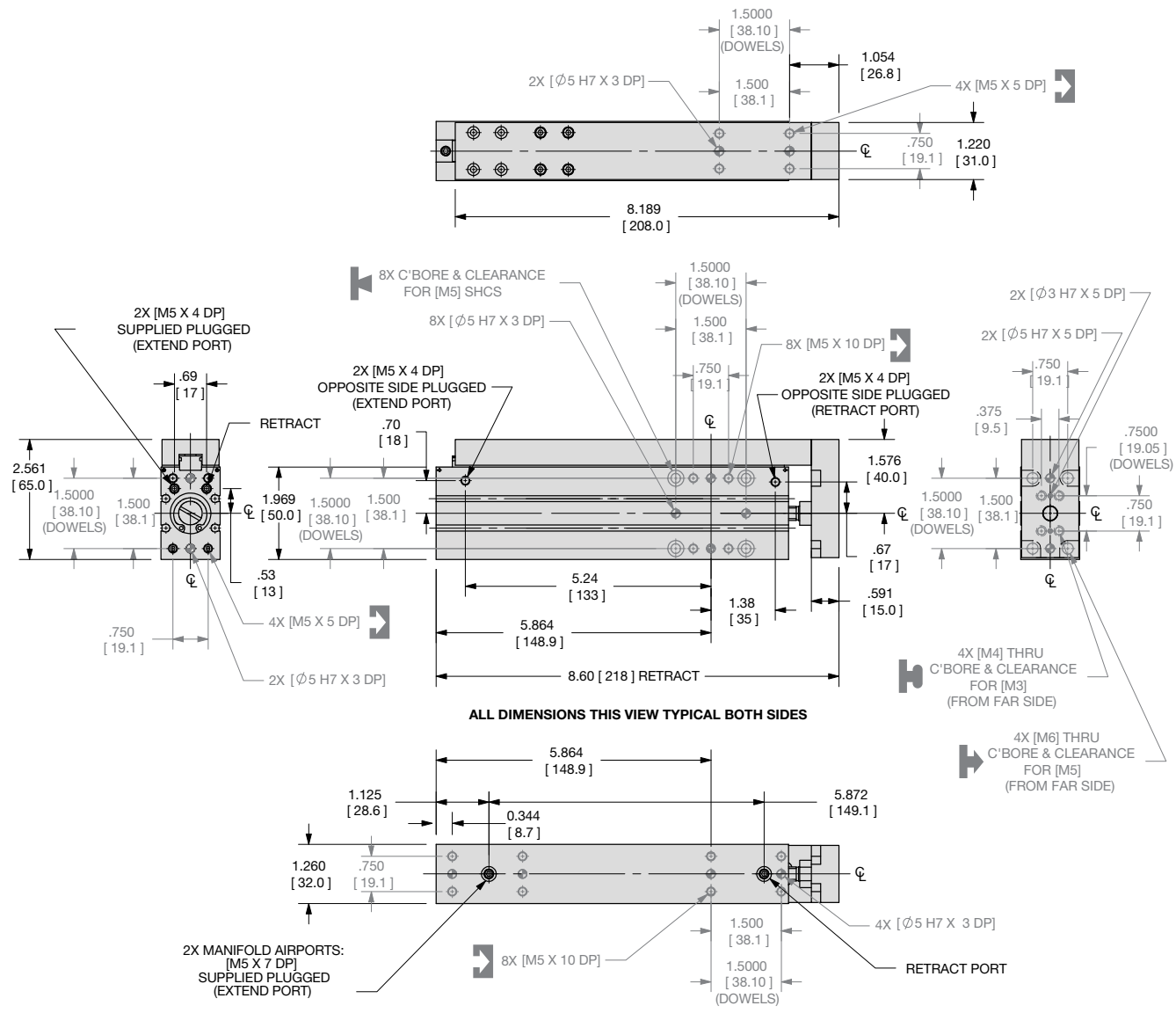


MINI BALL RAIL SLIDE DLM-12M-100 DIRECTCONNECT MODULAR SERIES



DLM SERIES

4.94



ALL DIMENSIONS THIS VIEW TYPICAL BOTH SIDES

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.] = ±.13 [0.00] = ±.013
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NOTE: DIRECTCONNECT™ DIMENSIONS ARE SHOWN IN BLUE

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

BASIC MODEL **BODY SIZE** (See Below) **PRECISION STOPS**

DLM-12M - 100 - [] - D - P

STROKE **DOUBLE BEARINGS**

BODY SIZE 100
STROKE (mm)
 75, 80, 85, 90, 95, 100

DOUBLE BEARING D
PRECISION STOPS P

SENSOR ACCESSORIES

	ORDER #	QTY/UNIT
PNP Magneto Resistive Sensor with Quick Disconnect*	OHSP-017	1-4
NPN Magneto Resistive Sensor with Quick Disconnect*	OHSN-017	1-4
PNP Magneto Resistive Sensor 90° Barrel (with Qk. Disc)*	OHSP-011	1-4
NPN Magneto Resistive Sensor 90° Barrel (with Qk. Disc)*	OHSN-011	1-4
Quick Disconnect Cable (2 meters long)*	CABL-010	1-4
Quick Disconnect Cable (5 meters long)*	CABL-013	1-4

PNEUMATIC ACCESSORIES

	ORDER #	QTY/UNIT
Seal Repair Kit	SLKT-238	1
Manifold Seal Kit	SLKT-240	1
Adjustable Flow Control	VLVF-008	1 or 2

*Sensor and cable sold separately

SAMPLE ORDER: DLM-12M-100-80-D
 Ex: DLM-12M Mini Ball Rail Slide, -100 Body Size, 80mm Stroke, Double Ball Bearings

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

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MINI BALL RAIL SLIDE DLM-12M-100 DIRECTCONNECT MODULAR SERIES

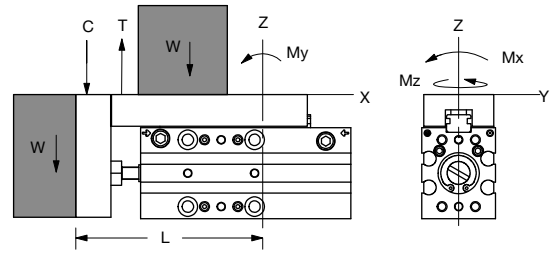


DLM SERIES

4.95

DIRECTCONNECT™

Specifications	DLM-12M-100	
Thrust Force F @ 100 psi, 7 bar.....	51 lbs.	230 N
Max. Stroke	4.00 in.	200 mm
Stroke Reduction (return)	0.19 in.	5 mm
Weight	2.25 lbs.	1.02 Kg
Maximum Payload W	4.0 lbs.	1.81 Kg
Maximum Payload (-P Option)	2.0 lbs.	0.90 Kg
Cylinder Bore \emptyset	0.813 in.	22 mm
Temperature Range:	-30°~180° F	-35°~80° C
Actuation per 25mm of travel	0.14 sec.	
Linear accuracy per 25mm of travel.....	±0.0001 in.	±0.005 mm
Repeatability (-P Option)	±0.003 in.	±0.08 mm
Pressure Range.....	20-100 psi	1.4-7 bar
Valve required to actuate	4-way, 2-position	



Flow Controls are recommended for nearly all applications

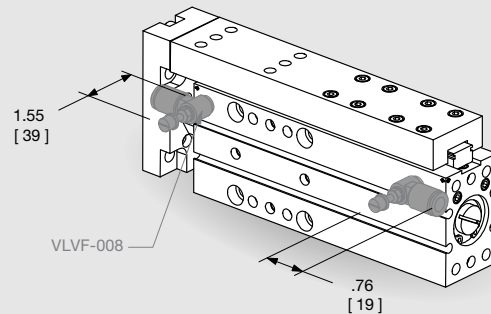
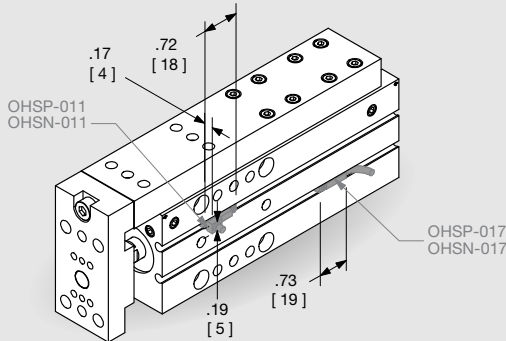
Loading Capacity

	Static	Dynamic
DLM-12M-100		
Maximum Tensile T	273 lbs. [1214 N]	181 lbs. [808 N]
Maximum Compressive C	273 lbs. [1214 N]	181 lbs. [808 N]
Maximum Moment M_x	182 in.-lbs. [20.6 Nm]	121 in.-lbs. [13.7 Nm]
Maximum Moment M_y	104 in.-lbs. [11.8 Nm]	69 in.-lbs. [7.9 Nm]
Maximum Moment M_z	104 in.-lbs. [11.8 Nm]	69 in.-lbs. [7.9 Nm]
Distance to Bearing Centerline L	6.07 in. [154 mm]	

DLM-12M-100-D

Maximum Tensile T	546 lbs. [2429 N]	363 lbs. [1617 N]
Maximum Compressive C	546 lbs. [2429 N]	363 lbs. [1617 N]
Maximum Moment M_x	364 in.-lbs. [41.2 Nm]	242 in.-lbs. [27.4 Nm]
Maximum Moment M_y	208 in.-lbs. [23.6 Nm]	139 in.-lbs. [15.8 Nm]
Maximum Moment M_z	208 in.-lbs. [23.6 Nm]	139 in.-lbs. [15.8 Nm]
Distance to Bearing Centerline L	6.79 in. [172 mm]	

Accessory Mounting Technical Data

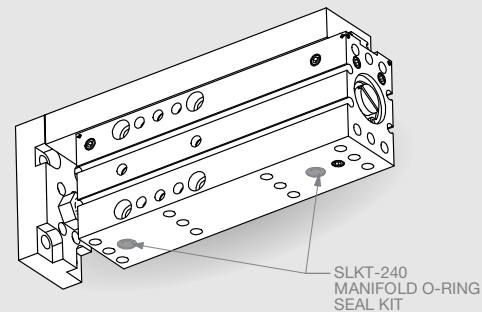
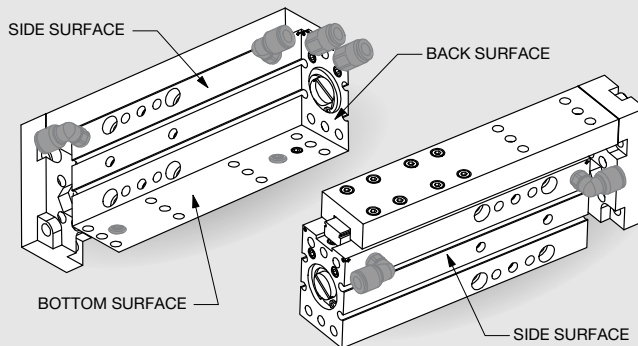


Sensors

- PNP and NPN Magneto Resistive available
- Sensors are slot mounted, no mounting kits required
- Simple adjustment with slotted screw driver
- Built-in LED for ease of positioning and troubleshooting
- Low profile sensor version or 90° wire exit sensor version
- Available with 2M or 5M Quick Disconnect mating cable (order separately)

Plumbing Fittings

- Adjustable Flow Controls:
 - Thumb screw adjust with locking nut for adjusting actuation time
 - Available for 6mm O.D. tubing
- Consult Factory for additional available plumbing fittings



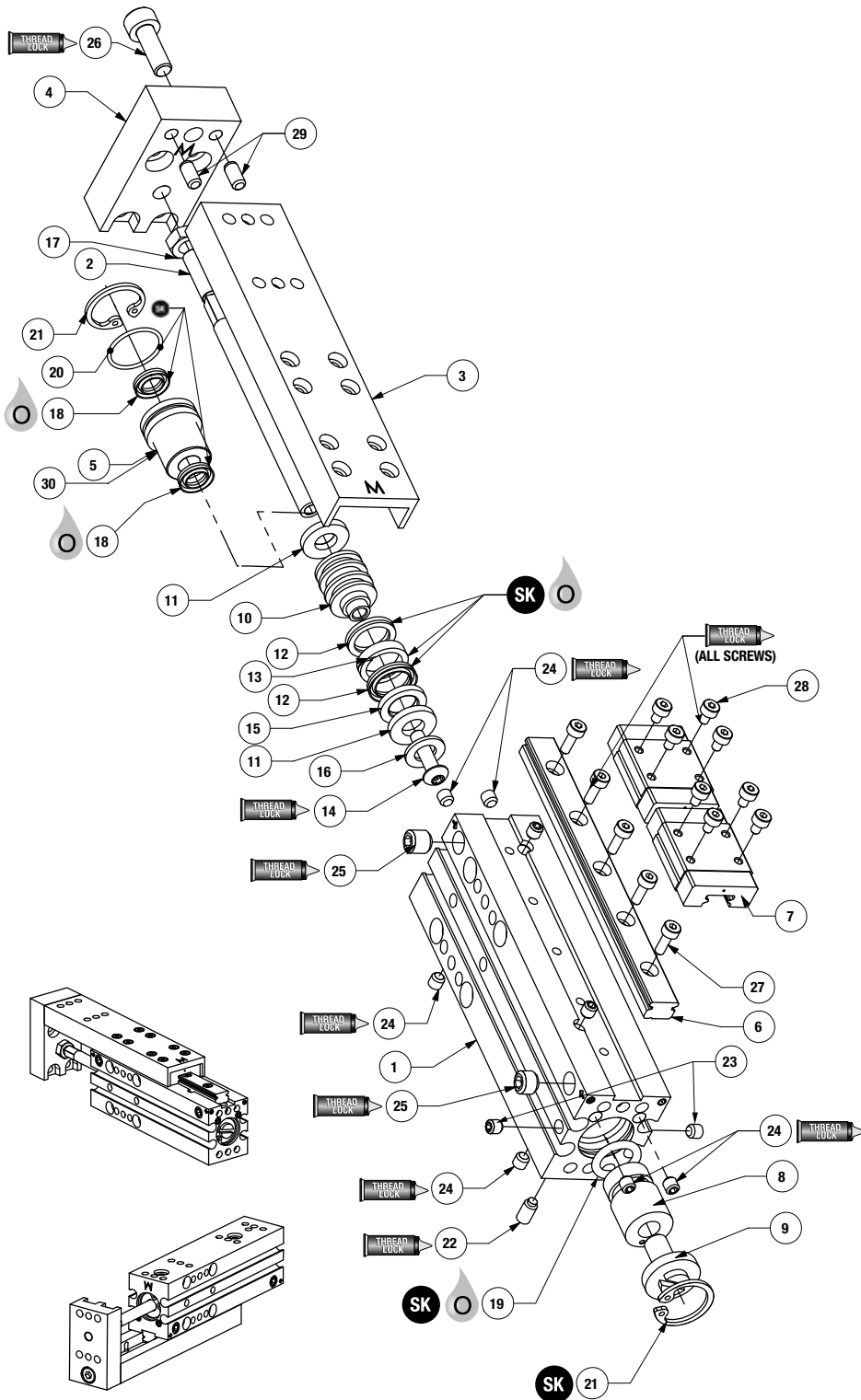
Multiple Air Port Locations

- 2 standard M5 air port locations (both sides)
- Bottom and Back airports (M3) are plugged as supplied

Manifold O-ring Seals

- Available in Seal Kit
- Kit is supplied with all seals, plugs & wrenches needed

DLM SERIES EXPLODED VIEW



DLM SERIES
MAINTENANCE
4.96

Item	Qty	Name
01	1	Body
02	1	Piston Shaft
03	1	Tool Plate Face
04	1	Tool Plate Face
05	1	Shaft End Cap
06	1	Guide Rail Bearing
07	1 or 2	Bearing Block
08	1	Stop
09	1	Adjustment Stud
10	1	Piston
11	2	Shock Pad
12	2	Piston U-Cup
13	1	Teflon Ring
14	1	Piston Screw
15	1	Magnet
16	1	Piston Washer
17	1	Jam Nut
18	1	End Cap U-Cup
19	2	Stop O-Ring
20	1	Shaft End Cap O-Ring
21	2	Cap Retaining Ring
22	1	Stop Set Screw
23	2	Adjustment Stud Set Screw
24	8	Plug Set Screw
25	2	Port Plug Set Screw
26	1	Tool Plate Screw
27	3-9	Rail Screw
28	4 or 8	Bearing Screw
29	2	Face Plate Dowel
30	1	Piston Spacer

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

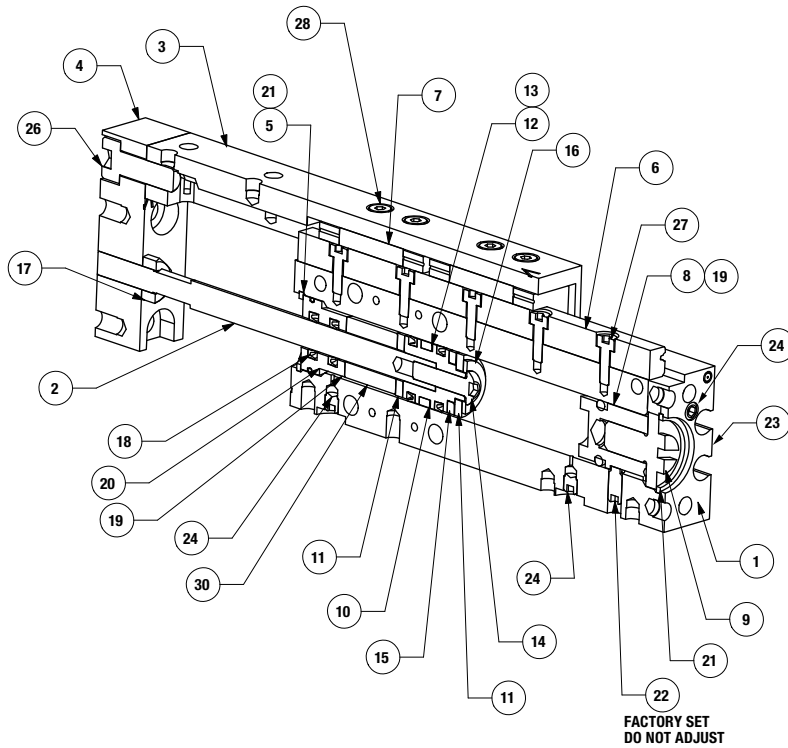
Assembly Procedure

- 1) Install set screw plugs in appropriate ports in body using thread sealer
- 2) Attach Rail to Body
- 3) Attach Tool Plate Face to Tool Plate Top
- 4) Glue Magnet to Piston
- 5) Lube and install seals in Piston, Stop and End Cap
- 6) Install Stop Pad (retract) and Washer in Piston
- 7) Attach Nut to Shaft
- 8) Attach Piston to Shaft with End Cap, Spacer and Stop Pad (extend)
- 9) Install Stop from front of Body
- 10) Install Dog Point Set Screw
- 11) Install Adjustment Studs
- 12) Install Piston Assembly
- 13) Install Bearing Block
- 14) Install Tool Plate Assembly

Seal Kit Items	Thread Locker	Krytox™ Lubricant	Lightweight Machine Oil	Teflon™ Based Grease	Super Bonder	Third Angle Projection
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Please see back cover for DE-STA-CO Global Locations. www.destaco.com

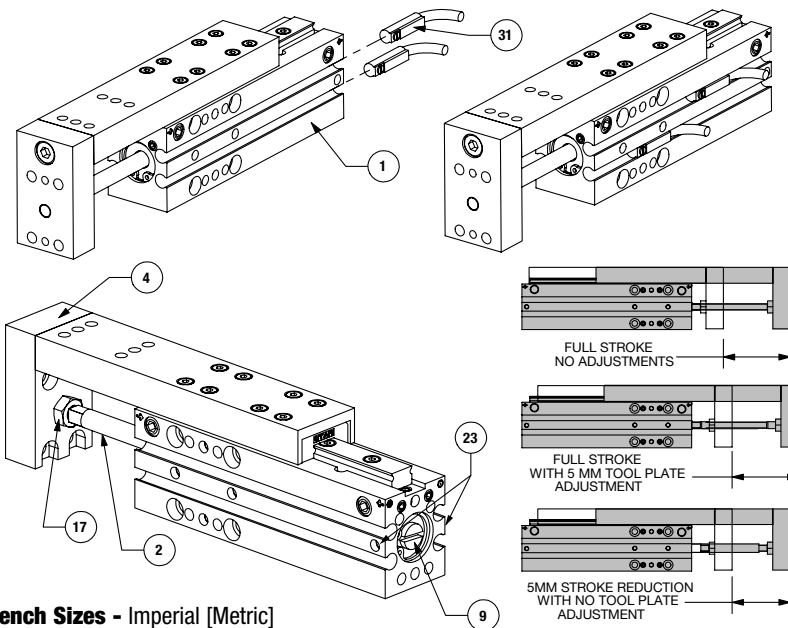
www.comoso.com



Item	Qty	Name
01	1	Body
02	1	Piston Shaft
03	1	Tool Plate Top
04	1	Tool Plate Face
05	1	Shaft End Cap
06	1	Guide Rail Bearing
07	1 or 2	Bearing Block
08	1	Stop
09	1	Adjustment Stud
10	1	Piston
11	2	Shock Pad
12	2	Piston U-Cup
13	1	Teflon Ring
14	1	Piston Screw
15	1	Magnet
16	1	Piston Washer
17	1	Jam Nut
18	1	End Cap U-Cup
19	2	Stop O-Ring
20	1	Shaft End Cap O-Ring
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22	1	Stop Set Screw
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26	1	Tool Plate Screw
27	3-9	Rail Screw
28	4 or 8	Bearing Screw
29	2	Face Plate Dowel
30	1	Piston Spacer

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

Accessory Installation & Adjustment Instructions



Item	Qty	Name
1	1	Body
31	1-4	Sensor

Assembly Procedure

- 1) Install sensor in profile slots as shown
- 2) Once adjusted for end stroke, lock in position with integrated set screws

Stroke and Position Adjustment Procedure

- 1) Tool Plate position can be adjusted up to 5mm by loosening Jam Nut (17) and unthreading Shaft (2) from Tool Plate Face (4).

Caution. Do not exceed 5mm. Shaft may completely unthread from Tool Plate Face. There is no limit and it is the responsibility of the installer/adjuster not to exceed 5mm from factory settings.

Retighten Jam Nut upon attaining desired location.

- 2) Retract stroke can be adjusted up to 5mm by loosening Adjustment Stud Set Screws (23) and then turning Adjustment Stud (9). Maximum and minimum limits are integral to this adjustment and cannot be exceeded. Retighten Set Screw upon attaining desired location.

Wrench Sizes - Imperial [Metric]

Model	Nut	Flats on Shaft
-07	9/32 [7]	1/8 [3]
-09	13/32 [10]	7/32 [6]
-12	9/16 [13]	5/16 [8]



Seal Kit Items



Thread Locker



Krytox™ Lubricant



Lightweight Machine Oil



Teflon™ Based Grease



Super Bonder

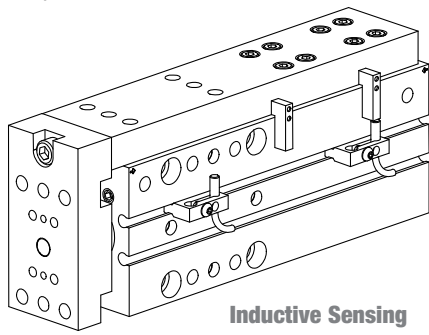


Third Angle Projection

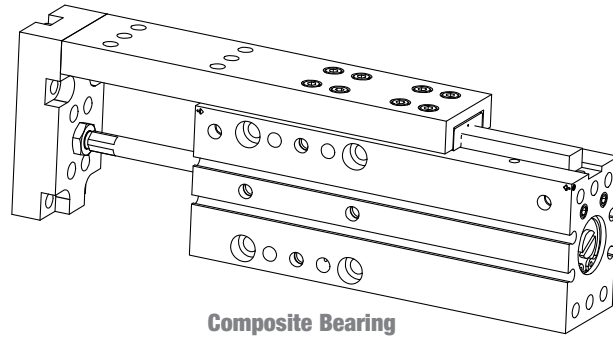
DLM SERIES SPECIALS

**Inductive Sensing,
Composite Bearings,
Opposing Tool Plates,
Dual Support,
Spring Retract/Extend
and more...**

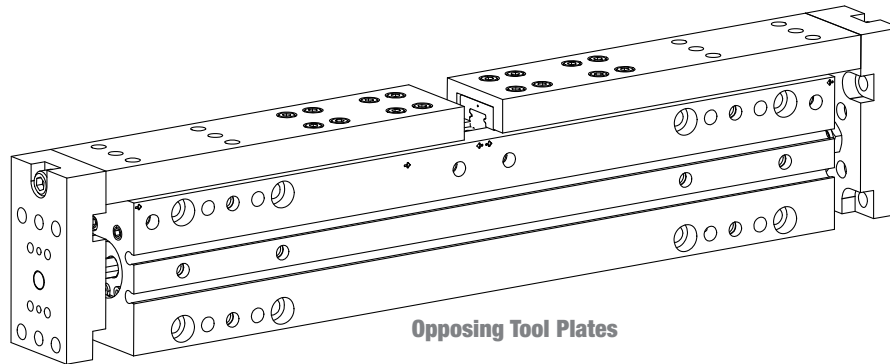
Drawings are for concept only.
Contact Robohand Tech Support
with project requirements.



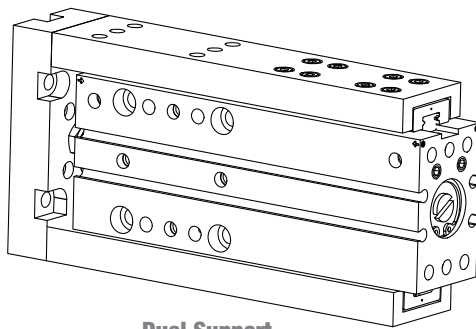
Inductive Sensing



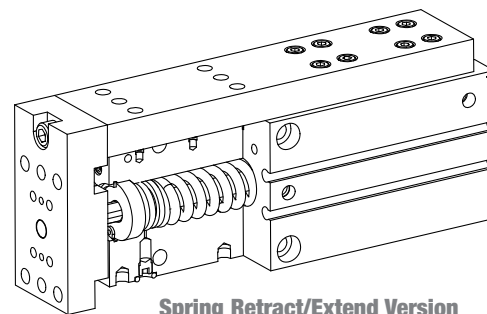
**Composite Bearing
Versions**



Opposing Tool Plates



Dual Support



Spring Retract/Extend Version