



Linear Motion Slides

DLB

DIRECTCONNECT

Internally Powered Series

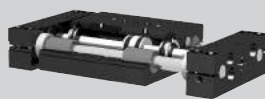
DESIGN ADVANTAGES -B

- Built-in Repairable Cylinder
- Compact for Extremely Small Spaces
- Shortest Strokes
- Very Rigid

See Page **4.2**

DESIGN ADVANTAGES -L

- Built-in Repairable Cylinder
- Longer Strokes in Compact Space Saving Package
- Very Rigid



DLT

DIRECTCONNECT

Internally Powered Series

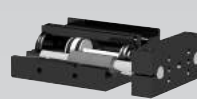
DESIGN ADVANTAGES -B, -E

- Built-in Repairable Cylinder
- Compact for Extremely Small Spaces
- Can Be Used as a Lift Table (-B)
- Greater Shaft Support (-E)
- Shortest Strokes • Lightest Weight

See Page **4.28**

DESIGN ADVANTAGES -L

- Built-in Repairable Cylinder • Longer Strokes
- Compact Design for Small Spaces



DLB

DIRECTCONNECT

Externally Powered Series

DESIGN ADVANTAGES -T

- Disposable Air Cylinder with Sensor Magnet
- Low Cost
- Long Strokes
- Carefree Maintenance

See Page **4.16**

DESIGN ADVANTAGES -A

- Disposable Air Cylinder with Adjustable Air Cushions and Sensor Magnet
- Inexpensive Alternative to Shock Absorbers for Light Payloads

DESIGN ADVANTAGES -N

- NFPA or VDMA Style Cylinders with Adjustable Air Cushions and Sensor Magnet
- Inexpensive Alternative to Shock Absorbers for Light Payloads

DESIGN ADVANTAGES -R

- Position Control in Event of Loss of Air Pressure
- Safety Locking Feature
- VDMA Style Locking Cylinder with Adjustable Air Cushions and Sensor Magnet
- Exhaust Air (from Locking Mechanism) may be Plumbed Away for Contaminant Free Operation

DESIGN ADVANTAGES -U

- Customer Supplies Cylinder. NFPA or VDMA Mounting Kits Available
- Least Expensive
- Design Flexibility

Preferred Market: ● Global



DLT

DIRECTCONNECT

Externally Powered Series

DESIGN ADVANTAGES -T

- Disposable Air Cylinder with Sensor Magnet
- Low Cost
- Long Strokes
- Carefree Maintenance

See Page **4.50**

DESIGN ADVANTAGES -A

- Disposable Air Cylinder with Adjustable Air Cushions and Sensor Magnet
- Inexpensive Alternative to Shock Absorbers for Light Payloads

DESIGN ADVANTAGES -N

- NFPA or VDMA Style Cylinders with Adjustable Air Cushions and Sensor Magnet
- Adjustable Air Cushions Replace Shock Absorbers for Light Payloads

DESIGN ADVANTAGES -R

- Position Control in Event of Loss of Air Pressure
- Safety Locking Feature
- VDMA Style Locking Cylinder with Adjustable Air Cushions and Sensor Magnet
- Exhaust Air (from Locking Mechanism) may be Plumbed Away for Contaminant Free Operation

DESIGN ADVANTAGES -U

- Customer Supplies Cylinder. NFPA or VDMA Mounting Kits Available
- Least Expensive
- Design Flexibility

Preferred Market: ● Global



DLM

DIRECTCONNECT

Mini Ball Rail Slide Series

DESIGN ADVANTAGES

- Multiple Air Port Positions
- Manifold Air Porting
- Retract and extend stroke adjustments for precise positioning with infinite stroke adjustability
- Double Bearing Option for greater load and moment capacity
- Multiple DIRECTCONNECT Mounting Locations
- Thru Mounting on tool plate and body

See Page **4.62**

Preferred Market: ● Global



MPS

Miniature Power Slide Series

DESIGN ADVANTAGES

- Built-in Air Cylinder
- Preloaded "Dual-V" roller bearings eliminate side play for excellent part position repeatability
- Extremely Small Size
- Payload can be attached to either the tooling plate or the slide

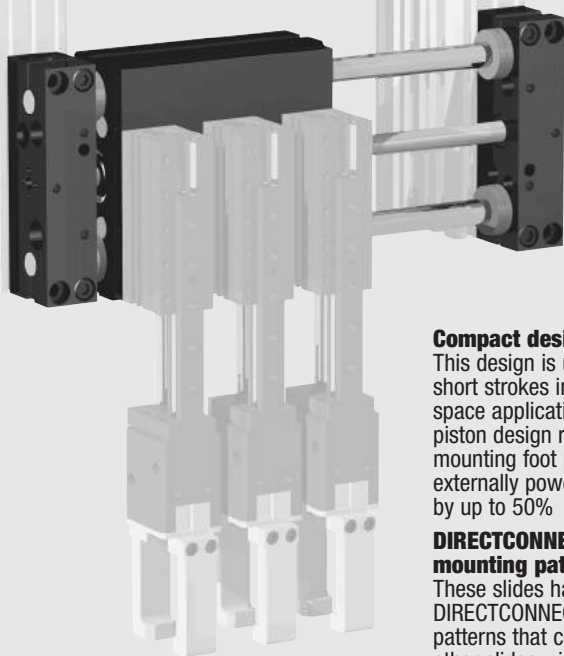
See Page **4.90**



DLB SERIES

DESTACO

DLB Integrated Cylinder Base Slide



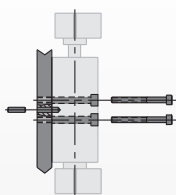
Compact design:
This design is used for short strokes in limited space applications. Internal piston design reduces the mounting foot print over externally powered slides by up to 50%

DIRECTCONNECT mounting patterns:
These slides have DIRECTCONNECT mounting patterns that connect to other slides without the need for adapter plates.

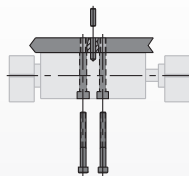
DLB SERIES

Mounting Information:

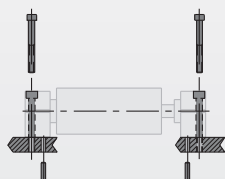
Mounts and operates in any orientation



Payload attaches to tapped holes in body with screws and locates using slip fit dowel pin holes



Payload attaches with screws through clearance and counterbored holes in body and locates using slip fit dowel pin holes



End blocks mount with screws and locate with slip fit dowel pin holes

Technical Specifications:

Pneumatic Specifications

Pressure Operating Range*
Cylinder Type
Dynamic Seals
Valve Required to Operate

Imperial
40-100 psi
Metric
3-7 bar
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)
Viton® Seals (optional)

-30°~180° F
-20°~300° F
-35°~80° C
-30°~150° C

Maintenance Specifications†

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

5 million cycles
10+ million cycles*
No
No

Application Restrictions

Flow controls, shock absorbers and urethane bumpers recommended for nearly all applications. Use composite bushing in dirty or gritty environments. Never use silicone based lubricants with composite bushings.

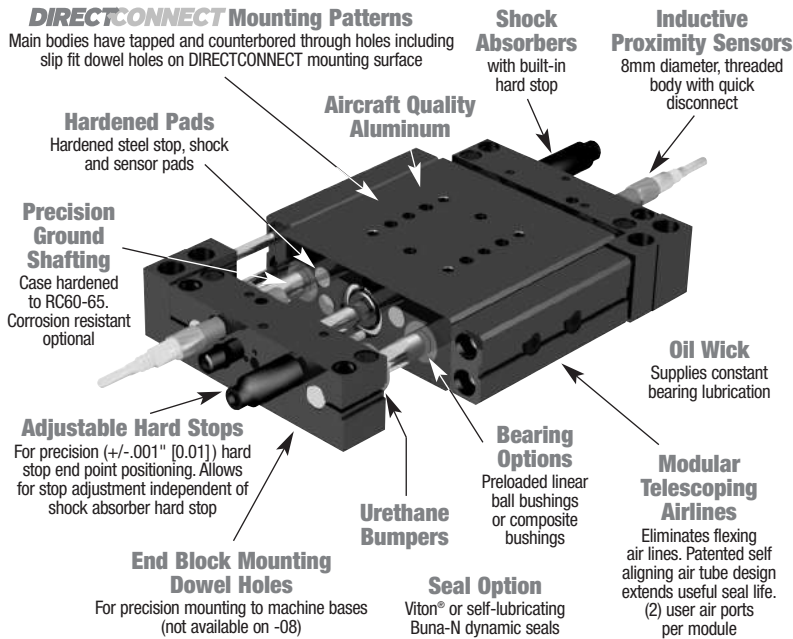
*Higher pressure possible. Consult factory with application details.

**Addition of lubrication will greatly increase service life

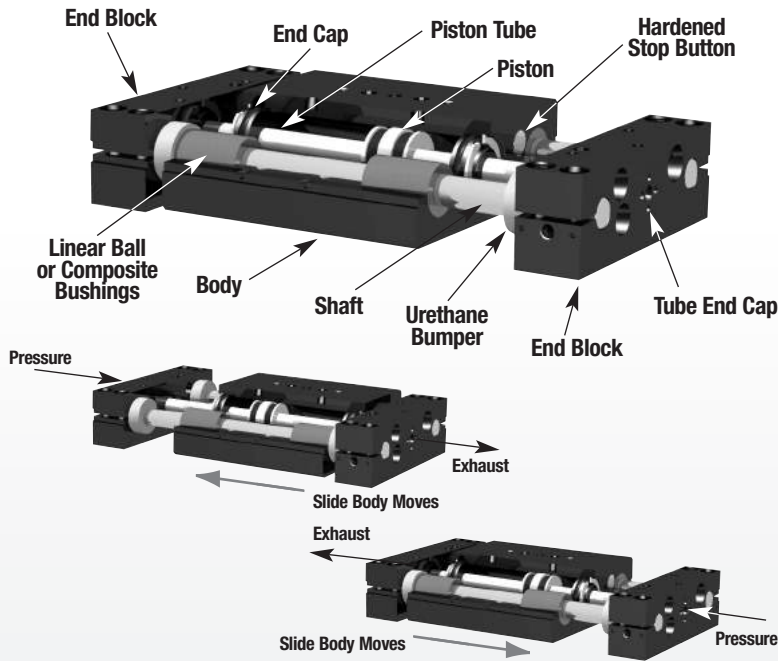
†See Maintenance Section

DIRECTCONNECT™

Product Features



Operating Principle

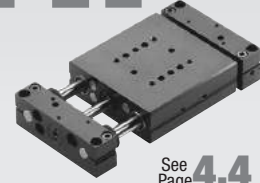


- A stationary piston is sandwiched between two fixed end blocks by two hollow piston tubes.
- The piston separates the cylinder bore in the body into two chambers
- The tubes fit into the piston in such a way that allows air to escape from the tube/ piston interface into one air chamber of the body.
- The body is guided by four linear bearings sliding on two shafts that are supported by the end blocks.
- The body has two end caps attached to each end of the cylinder bore which seals the air chambers.
- When air is supplied through a piston tube, it pressurizes that side of the cylinder of the body.
- The pressure creates a force against the end cap which pulls the body along with it.

Designed and manufactured in the USA

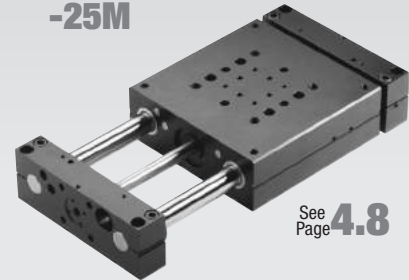
Style-B Short Body Slide

Size 06M, 08M, 10M (shown), 12M, 16M



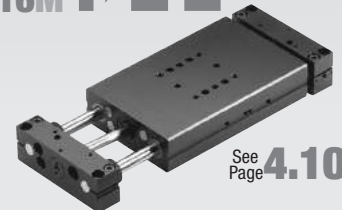
Style-B Short Body Slide

Size -20 (shown), -25, -20M, -25M



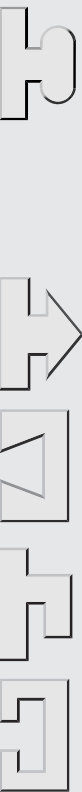
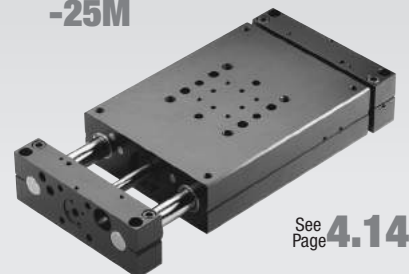
Style-L Long Body Slide

Size -06M, -08M, -10M (shown), -12M, -16M



Style-L Long Body Slide

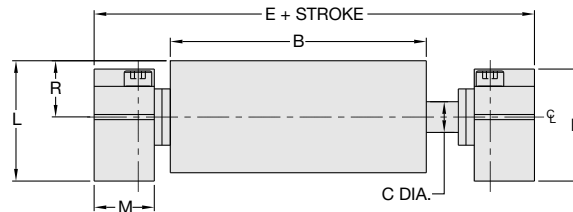
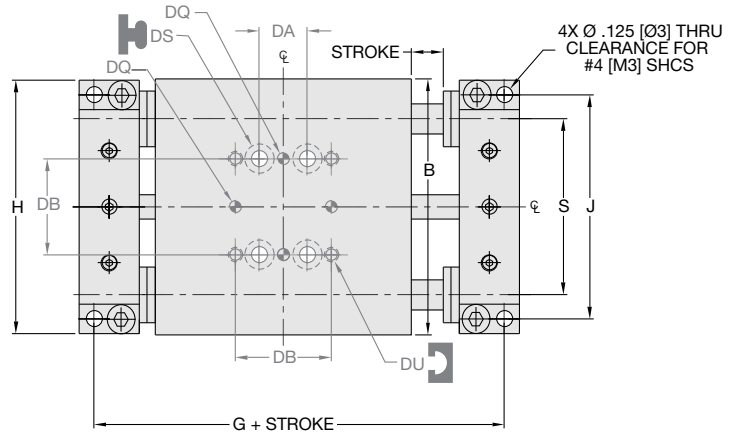
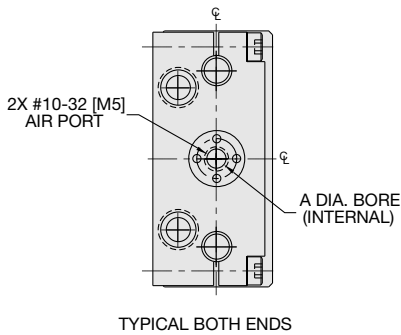
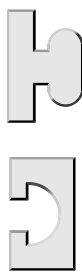
Size -20 (shown), -25, -20M, -25M



DLB SERIES

DIRECTCONNECT™

DLB-B Product Specifications



UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

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

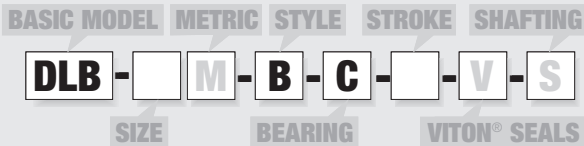
BASIC UNIT DIMENSIONS

MODEL #	A	B	C	E	G	H	J	K	L	M	R	S
DLB-06	0.563	2.000	0.236	3.19	2.956	1.980	1.750	0.875	0.936	0.470	.438	1.375
DLB-08	0.563	2.500	0.315	3.69	3.456	2.470	2.250	0.875	0.936	0.470	.438	1.750
DLB-06M	14	50.8	6.0	81.0	75.1	50.3	44.4	22.2	23.7	11.9	11.13	34.93
DLB-08M	14	63.5	8.0	93.7	87.8	62.7	57.1	22.2	23.7	11.9	11.13	44.45

DIRECTCONNECT DIMENSIONS
STANDARD MOUNTING PATTERN FOR ALL SIZES

	Imperial (inches)	Metric (mm)
DA	.375	9.5
DB	.750	19.1
DQ	.0940 x .078 DP	3H7 x 2 DP
DS	Clr & C'bore for #4	Clr & C'bore for #4
DU	#4-40 x .25 DP	M3 x 6 DP

How to Order: Basic Unit



- SIZE** 06, 08
- METRIC** M
- STYLE** B Short body slide with built-in repairable cylinder
- BEARING** C Composite bushings
- STROKE** (inches)
DLB-06 .25, .50, 1.00, 1.25
DLB-08 .25, .50, 1.00, 1.50, 1.75
- STROKE** (mm)
DLB-06M 6, 12, 25, 30
DLB-08M 6, 12, 25, 40, 44
- VITON®** V Viton® Seals
- SHAFTING** S Corrosion resistant shafting

Custom strokes available. Please consult factory.

SAMPLE ORDER: DLB-06M-B-C-25-V

Ex: Base Slide, Size 6 Metric, Short Body Style w/Built-in Cylinder, Composite Bushings, 25mm Stroke, Viton® Seals

Accessories: (Order Separately)

SHOCK/STOP ACCESSORIES

	DLB-06M	DLB-08M	QTY/SLIDE
Shock Absorber	SHOK-030	SHOK-030	1 or 2
Adjustable Hard Stop	DLT-0623	DLT-0623	1 or 2

INDUCTIVE SENSOR ACCESSORIES †

	DLB-06M	DLB-08M	QTY/SLIDE
Inductive Sensor PNP Qk. Disconnect	OISP-011	OISP-011	1 or 2
Inductive Sensor NPN Qk. Disconnect	OISN-011	OISN-011	1 or 2
Quick Disconnect 2M Cable Length	CABL-010	CABL-010	1 or 2
Quick Disconnect 5M Cable Length	CABL-013	CABL-013	1 or 2

PNEUMATIC ACCESSORIES

	DLB-06M	DLB-08M	QTY/SLIDE
#10-32 Adjustable Flow Control	VLVF-007	VLVF-007	1 or 2
M5 Adjustable Flow Control	VLVF-008	VLVF-008	1 or 2
Cylinder Seal Repair Kit	SLKT-109	SLKT-109	1
Viton® Cylinder Seal Repair Kit	SLKT-109V	SLKT-109V	1

†Sensor and cable sold separately

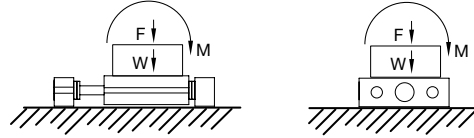


DLB-B Product Specifications

Loading Specifications Table - Style DLB -06M, 08M -B

	06	06M	08	08M
Maximum Payload (W) horizontal motion using Shock Absorbers	3 lbs.	1.4 kg	5 lbs.	2.3 kg
Maximum Payload (W) vertical motion using Shock Absorbers	1.5 lbs.	0.7 kg	2.5 lbs.	1.1 kg
Maximum Payload (W) horizontal motion using Urethane Bumpers	1 lbs.	0.5 kg	1 lbs.	0.5 kg
Maximum Total Applied Load + Payload (F+W)	10 lbs.	45 N	12 lbs.	53.4 N
Total Maximum Moment about any Axis (M)	15 in.-lbs.	1.7 N-m	30 in.-lbs.	3.4 N-m

F=Externally applied force
W=Weight of payload
F+W=Total force
M=Maximum moment

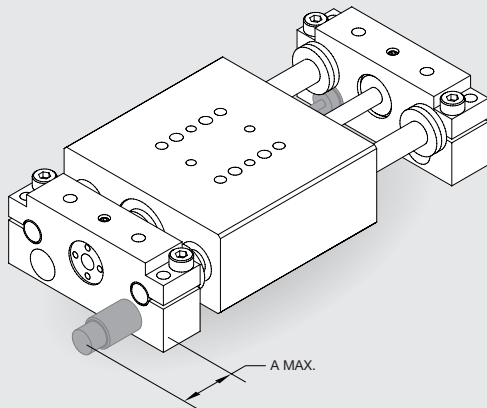


Shock Absorbers and Flow Controls are recommended for nearly all applications

Specifications	DLB-06	DLB-06M
Maximum Air Pressure	100 psi	7 bar
Thrust Force @ 80psi/5.5bar	20 lbs.	89 N
Weight (Basic Unit)	0.44 lbs.	0.20 kg
Additional Weight per Stroke	0.03 lbs./in.	0.53 g/mm
Cylinder Bore Diameter	0.563"	14.29 mm
Shaft Diameter	0.236"	6 mm

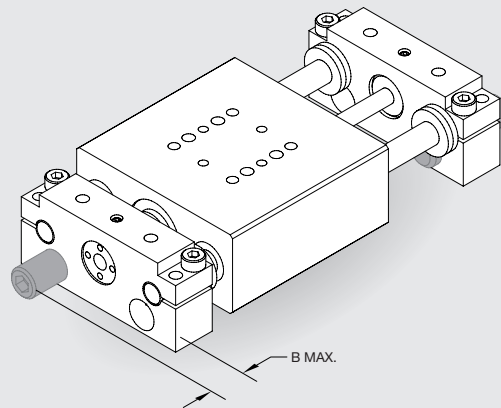
Specifications	DLB-08	DLB-08M
Maximum Air Pressure	100 psi	7 bar
Thrust Force @ 80psi/5.5bar	20 lbs.	89 N
Weight (Basic Unit)	0.79 lbs.	0.36 kg
Additional Weight per Stroke	0.05 lbs./in.	0.88 g/mm
Cylinder Bore Diameter	0.563"	14.29 mm
Shaft Diameter	0.315"	8 mm

Accessory Mounting Technical Data



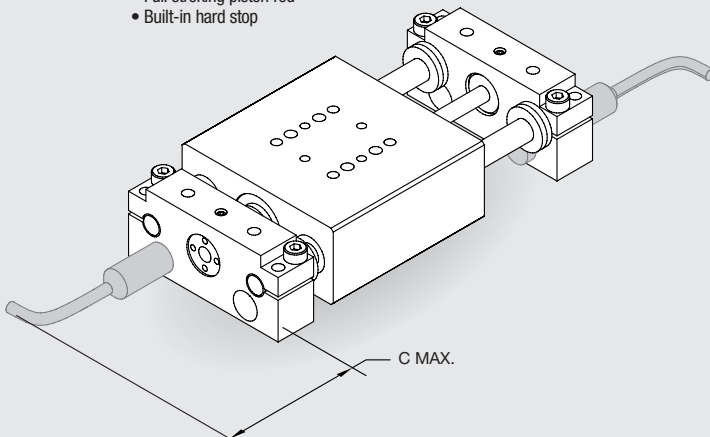
Shock Absorbers

- Full stroking piston rod
- Built-in hard stop



Adjustable Hard Stops

- For precision (+/-0.001") hard stop end point positioning
- Allows for stop adjustment independent of shock absorber hard stop
- Allen wrench adjustable

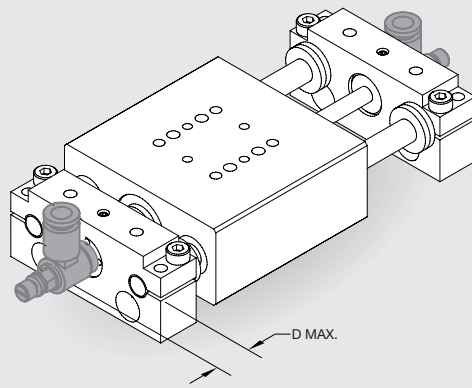


Inductive Proximity Sensors

- 8mm diameter, threaded body
- Threaded quick disconnect with built-in LED output
- PNP and NPN available

Quick Disconnect Cable

- Threaded coupling with knurled head for secure electrical connections
- 2 meter cable length
- 5 meter cable length



Flow Controls for Cylinders

- Thumb screw adjust with locking nut for adjusting cylinder speed
- #10-32 or M5 pipe threads

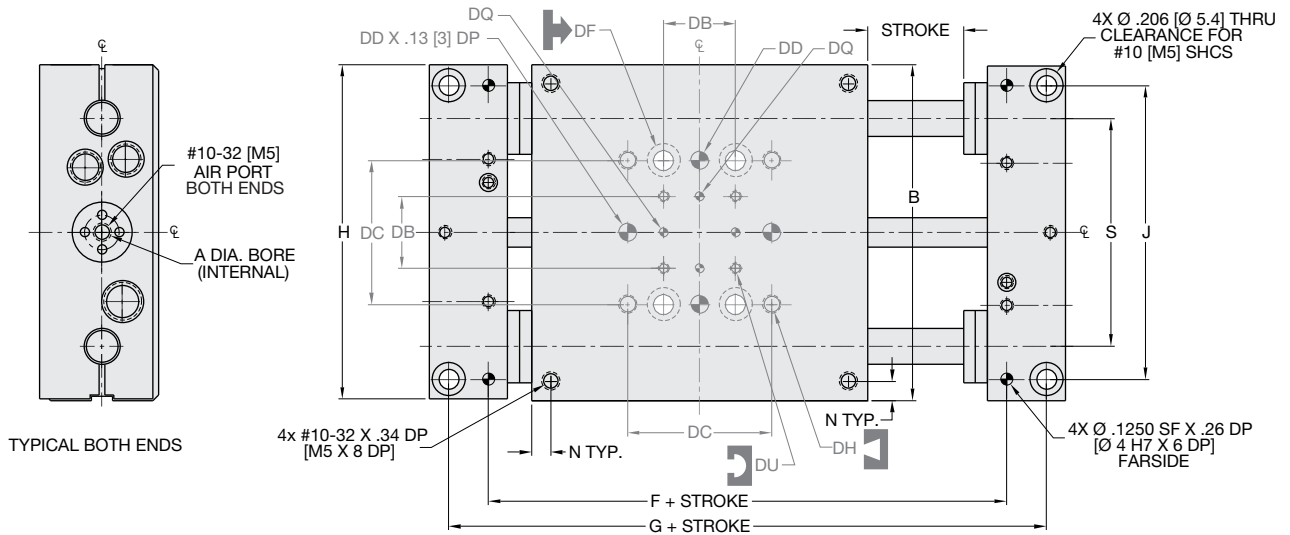
	A	B	C	D
DLB-06	0.53"	0.40	1.8	1.02
DLB-08	0.53"	0.40	1.8	1.02
DLB-06M	13.5mm	10.2	45.7	25.9
DLB-08M	13.5mm	10.2	45.7	25.9



DLB SERIES

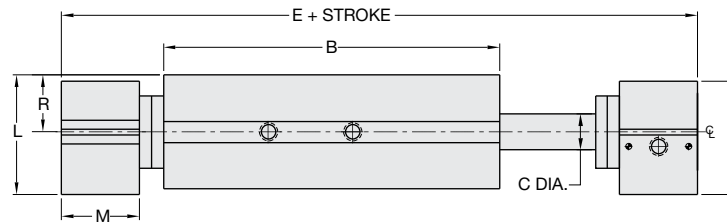
DIRECTCONNECT™

DLB-B Product Specifications



UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

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



DLB SERIES

DIRECTCONNECT™

BASIC UNIT DIMENSIONS

MODEL #	BORE DIA.		BODY SIZE		SHAFT DIA.		BASIC UNIT DIMENSIONS													
	A	B	C	E	F	G	H	J	K	L	M	N	R	S						
DLB-10	3/4	3.50	.375	5.63	4.3975	5.228	3.485	3.0600	1.178	1.245	.813	N/A	.594	2.375						
DLB-12	1	4.00	.472	6.13	4.8975	5.728	3.985	3.5000	1.615	1.657	.813	.375	.813	2.750						
DLB-16	1	4.75	.630	6.88	5.6475	6.478	4.735	4.2500	1.615	1.657	.813	.375	.813	2.750						
DLB-10M	19	88.9	9.5	143.0	111.70	132.8	88.5	77.72	29.9	31.6	20.7	N/A	15.09	60.33						
DLB-12M	25	101.6	12	155.7	124.40	145.5	101.2	88.90	41.0	42.1	20.7	9.5	20.65	69.85						
DLB-16M	25	120.7	16	174.8	143.45	164.5	120.3	107.95	41.0	42.1	20.7	9.5	20.65	69.85						

DIRECTCONNECT DIMENSIONS
STANDARD MOUNTING PATTERN FOR ALL SIZES

	Imperial (inches)	Metric (mm)
DB	.750	19.1
DC	1.500	38.1
DD	.1880 X .25 DP	5mm H7 X 6 DP
DF	Clearance for #10	Clearance for M5
DH	#10-32 X .34DP	M5 X 8.5DP
DQ	.0940 X .078 DP	3H7 X 2 DP
DU	#4-40 X .25 DP	M3 X 6 DP

How to Order: Basic Unit

BASIC MODEL METRIC STYLE STROKE SHAFTING



SIZE

BEARING

VITON® SEALS

SIZE 10, 12, 16

METRIC M

STYLE B Short body slide with built-in repairable cylinder

BEARING B Linear ball bearings

C Composite bushings

STROKE (inches)

DLB-10 1-2 @ 1" increments

DLB-12 1-2 @ 1" increments

DLB-16 1-3 @ 1" increments

Custom strokes available. Please consult factory.

STROKE (mm)

DLB-10M 25, 50

DLB-12M 25, 50

DLB-16M 25, 50, 80

VITON® V Viton® Seals

SHAFTING S Corrosion resistant shafting

SAMPLE ORDER: DLB-12M-B-C-25

Ex: Base Slide, Size 12 Metric, Short Body Style w/Built-in Cylinder, Composite Bushings, 25mm Stroke

Accessories: (Order Separately) DLB-10M DLB-12M DLB-16M QTY/SLIDE

SHOCK/STOP ACCESSORIES

Shock Absorber	SHOK-028	SHOK-010	SHOK-010	1 or 2
Adjustable Hard Stop	DLT-1023	DLT-1023	DLT-1023	1 or 2

INDUCTIVE SENSOR ACCESSORIES †

Inductive Sensor PNP Qk. Disconnect	OISP-011	OISP-011	OISP-011	1 or 2
Inductive Sensor NPN Qk. Disconnect	OISN-011	OISN-011	OISN-011	1 or 2
Quick Disconnect 2M Cable Length	CABL-010	CABL-010	CABL-010	1 or 2
Quick Disconnect 5M Cable Length	CABL-013	CABL-013	CABL-013	1 or 2

PNEUMATIC ACCESSORIES

1/8 NPT Telescopic Airlines (up to 2")	OTAL-037	OTAL-037	OTAL-037	1, 2, 3 or 4
1/8 NPT Telescopic Airlines (up to 3")	OTAL-038	OTAL-038	OTAL-038	1, 2, 3 or 4
#10-32 Adjustable Flow Control	VLVF-007	VLVF-007	VLVF-007	1 or 2
G1/8 Telescopic Airlines (up to 50mm)	OTAL-043	OTAL-043	OTAL-043	1, 2, 3 or 4
G1/8 Telescopic Airlines (up to 80mm)	OTAL-044	OTAL-044	OTAL-044	1, 2, 3 or 4
M5 Adjustable Flow Control	VLVF-008	VLVF-008	VLVF-008	1 or 2
Cylinder Seal Repair Kit	SLKT-101	SLKT-103	SLKT-103	1
Viton® Cylinder Seal Repair Kit	SLKT-101V	SLKT-103V	SLKT-103V	1

†Sensor and cable sold separately

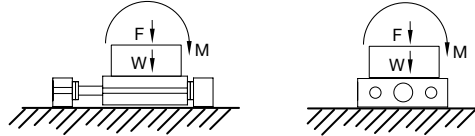


DLB-B Product Specifications

Loading Specifications Table - Style DLB-10M, 12M,16M -B

	10	10M	12	12M	16	16M
Maximum Payload (W) horizontal motion w/Shock Absorbers	15 lbs.	6.8 kg	30 lbs.	13.6 kg	45 lbs.	20.4 kg
Maximum Payload (W) vertical motion w/Shock Absorbers	7 lbs.	3.1 kg	15 lbs.	6.8 kg	22 lbs.	9.9 kg
Maximum Payload (W) horizontal motion w/Urethane Bumpers	5 lbs.	2.2 kg	10 lbs.	4.5 kg	15 lbs.	6.8 kg
Maximum Total Applied Load + Payload (F+W)	25 lbs.	111 N	40 lbs.	178 N	70 lbs.	311N
Total Maximum Moment about any Axis (M)	75 in.-lbs.	8.4 N-m	150 in.-lbs.	16.9 N-m	300 in.-lbs.	33.9 N-m

F=Externally applied force
W=Weight of payload
F+W=Total force
M=Maximum moment



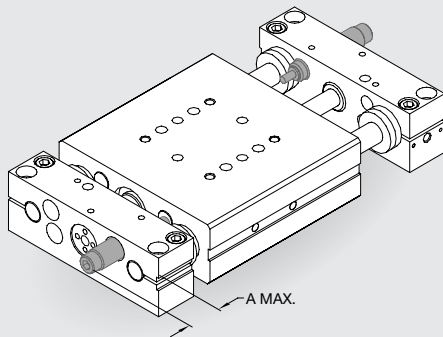
Shock Absorbers and Flow Controls are recommended for nearly all applications

Specifications	DLB-10	DLB-10M
Maximum Air Pressure.....	100 psi	6.9 bar
Thrust Force @ 80psi/5.5bar.	29 lbs.	129 N
Weight (Basic Unit).....	2.08 lbs.	0.93 kg
Additional Weight per Stroke..	0.08 lbs./in.	1.4g/mm
Cylinder Bore Diameter	3/4"	19mm
Shaft Diameter	0.375"	9.5mm

Specifications	DLB-12	DLB-12M
Maximum Air Pressure.....	100 psi	6.9 bar
Thrust Force @ 80psi/5.5bar.	57 lbs.	254 N
Weight (Basic Unit).....	3.83 lbs.	1.7 kg
Additional Weight per Stroke..	0.12 lbs./in.	2.1g/mm
Cylinder Bore Diameter	1.0"	25mm
Shaft Diameter	0.472"	12mm

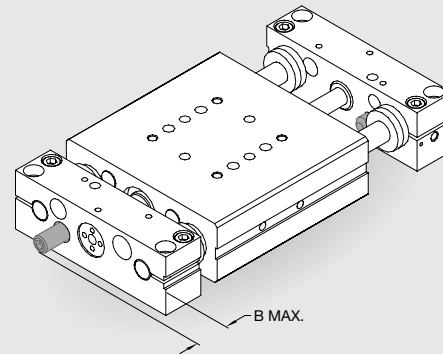
Specifications	DLB-16	DLB-16M
Maximum Air Pressure.....	100 psi	6.9 bar
Thrust Force @ 80psi/5.5bar.	57 lbs.	254 N
Weight (Basic Unit).....	5.19 lbs.	2.4 kg
Additional Weight per Stroke..	0.19 lbs./in.	3.3g/mm
Cylinder Bore Diameter	1.0"	25mm
Shaft Diameter .....	.630"	16mm

Accessory Mounting Technical Data



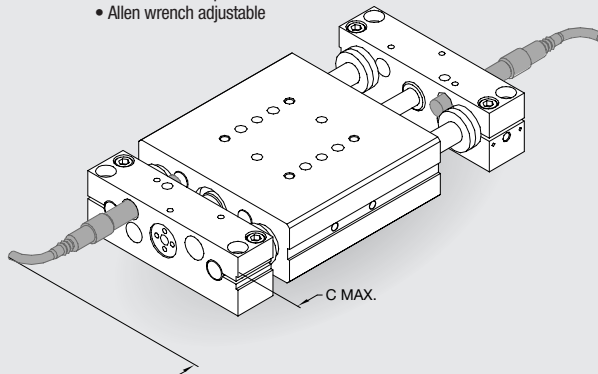
Shock Absorbers

- Full stroking piston rod
- Built-in hard stop
- Allen wrench adjustable



Adjustable Hard Stops

- For precision (+/- .001") hard stop end point positioning
- Allows for stop adjustment independent of shock absorber hard stop
- Allen wrench adjustable

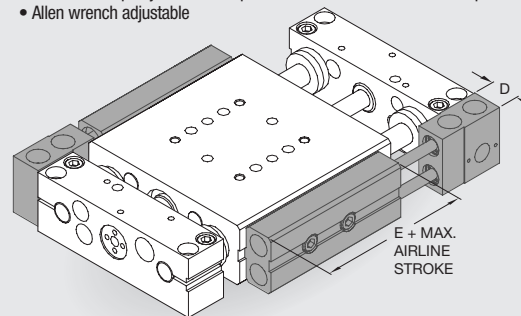


Inductive Proximity Sensors

- 8mm diameter
- Threaded quick disconnect with built-in LED output
- PNP and NPN available

Quick Disconnect Cable

- Threaded coupling with knurled head for secure electrical connections
- 2 meter cable length
- 5 meter cable length



Telescoping Airlines

- Eliminate flexing air lines
- Self aligning air tube design extends useful seal life
- Modular stackable design. Up to (4) modules can be stacked
- Modules can be mounted on either side of slide
- 1/8 NPT or G1/8 pipe threads
- (2) user air ports per module

Flow Controls for Cylinders

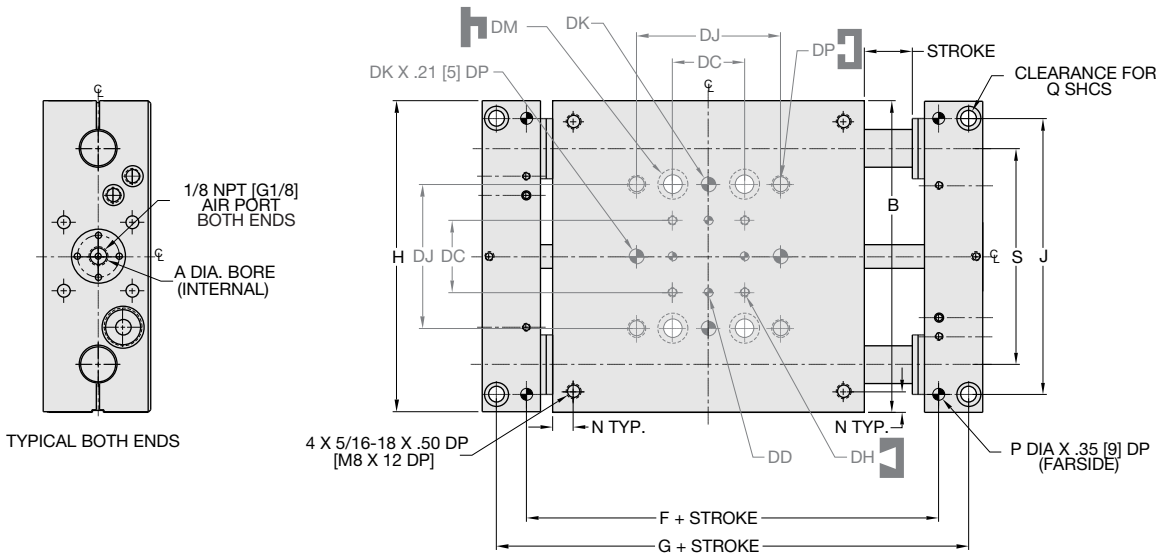
- Thumb screw adjust with locking nut for adjusting cylinder speed
- #10-32 or M5 pipe threads

	A	B	C	D	E
DLB-10	.70"	.47	2.5	.577	3.60
DLB-12	.95"	.47	2.5	.577	3.60
DLB-16	.95"	.47	2.5	.577	3.60
DLB-10M	17.8mm	11.9	63.5	14.7	91.4
DLB-12M	24.1mm	11.9	63.5	14.7	91.4
DLB-16M	24.1mm	11.9	63.5	14.7	91.4

DLB SERIES

DIRECTCONNECT™

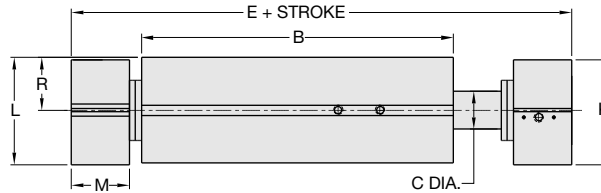
DLB-B Product Specifications



TYPICAL BOTH ENDS

UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

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

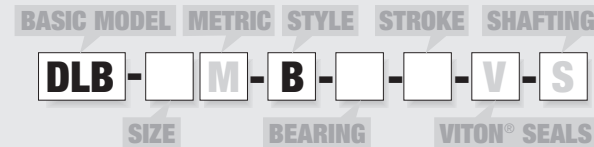


DIRECTCONNECT DIMENSIONS STANDARD MOUNTING PATTERN FOR ALL SIZES

	Imperial (inches)	Metric (mm)
DC	1.500	38.1
DD	.1880 X .25 DP	5 mm H7 X 6 DP
DH	#10-32 X .34 DP	M5 X 8.5 DP
DJ	3.000	76.2
DK	.3130 X .37 DP	8 mm H7 X 9.4 DP
DM	Clr & C'bore for 3/8	Clr & C'bore for M10
DP	3/8-16 X .50 DP	M10 X 12 DP

MODEL #	BORE DIA.		BODY SIZE		SHAFT DIA.		BASIC UNIT DIMENSIONS												
	A	B	C	E	F	G	H	J	K	L	M	N	P	Q	R	S			
DLB-20	1 1/2	6.50	.787	9.42	7.5850	8.836	6.480	5.7500	2.180	2.236	1.210	.438	.2505	5/16	1.100	4.500			
DLB-25	1 1/2	7.50	.984	10.84	8.7320	10.108	7.480	6.7500	2.180	2.236	1.420	.438	.3130	3/8	1.100	5.250			
DLB-20M	38	165.1	20	239.3	192.66	224.4	164.6	146.05	55.4	56.8	30.7	11.1	6.00	M8	27.94	114.30			
DLB-25M	38	190.5	25	275.3	221.79	256.7	190.0	171.45	55.4	56.8	36.1	11.1	8.00	M10	27.94	133.35			

How to Order: Basic Unit



- SIZE** 20, 25
- METRIC** M
- STYLE** B Short body slide with built-in repairable cylinder
- BEARING** B Linear ball bearings
C Composite bushings
- STROKE** (inches)
DLB-20 1-4 @ 1" increments
DLB-25 1-5 @ 1" increments
- STROKE** (mm)
DLB-20M 25, 50, 80, 100
DLB-25M 25, 50, 80, 100, 125
- VITON®** V Viton® seals
- SHAFTING** S Corrosion resistant shafting

Custom strokes available. Please consult factory.

SAMPLE ORDER: DLB-20-B-C-3-V

Ex: Base Slide, Size 20, Short Body Style w/Built-in Cylinder, Composite Bushings, 3 Inch Stroke, Viton® Seals

Accessories: (Order Separately)

SHOCK/STOP ACCESSORIES

	DLB-20 M	DLB-25 M	QTY/SLIDE
Shock Absorber (adjustable dampening)	SHOK-029	SHOK-029	1 or 2
Adjustable Hard Stop	DLT-1023	DLT-1023	1 or 2

INDUCTIVE SENSOR Accessories¹

	DLB-20 M	DLB-25 M	QTY/SLIDE
Inductive Sensor PNP Qk. Disconnect	OISP-011	OISP-011	1 or 2
Inductive Sensor NPN Qk. Disconnect	OISN-011	OISN-011	1 or 2
Quick. Disconnect 2M Cable Length	CABL-010	CABL-010	1 or 2
Quick. Disconnect 5M Cable Length	CABL-013	CABL-013	1 or 2

PNEUMATIC Accessories

	DLB-20 M	DLB-25 M	QTY/SLIDE
1/8 NPT Telescopic Airlines (up to 4")	OTAL-049	OTAL-049	1, 2, 3 or 4
1/8 NPT Telescopic Airlines (up to 5")	OTAL-050	OTAL-050	1, 2, 3 or 4
1/8 NPT Adjustable Flow Control	VLVF-004	VLVF-004	1 or 2
G1/8 Telescopic Airlines (up to 100mm)	OTAL-051	OTAL-051	1, 2, 3 or 4
G1/8 Telescopic Airlines (up to 125mm)	OTAL-052	OTAL-052	1, 2, 3 or 4
G1/8 Adjustable Flow Control	VLVF-005	VLVF-005	1 or 2
Cylinder Seal Repair Kit	SLKT-105	SLKT-105	1
Viton® Cylinder Seal Repair Kit	SLKT-105V	SLKT-105V	1

¹Sensor and cable sold separately

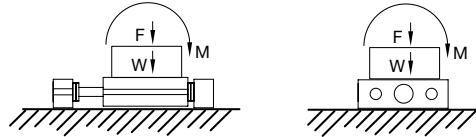


DLB-B Product Specifications

Loading Specifications Table - Style DLB-20M, 25M -B

	20	20M	25	25M
Maximum Payload (W) horizontal motion using Shock Absorbers	60 lbs.	27.2 kg	100 lbs.	45.3 kg
Maximum Payload (W) vertical motion using Shock Absorbers	30 lbs.	13.6 kg	50 lbs.	22.0 kg
Maximum Payload (W) horizontal motion using Urethane Bumpers	20 lbs.	9.1 kg	25 lbs.	11.3 kg
Maximum Total Applied Load + Payload (F+W)	100 lbs.	444 N	150 lbs.	667 N
Total Maximum Moment about any Axis (M)	600 in.-lbs.	67.7 N-m	1200 in.-lbs.	135.5 N-m

F=Externally applied force
W=Weight of payload
F+W=Total force
M=Maximum moment

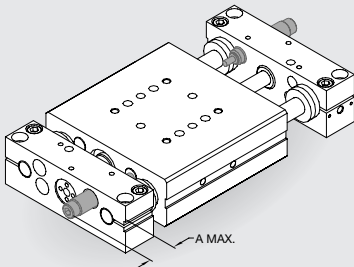


Shock Absorbers and Flow Controls are recommended for nearly all applications

Specifications	DLB-20	DLB-20M
Maximum Air Pressure	100 psi	6.9 bar
Thrust Force @ 80psi/5.5bar	126 lbs.	560 N
Weight (Basic Unit)	13.0 lbs.	5.9 kg
Additional Weight per Stroke	0.32 lbs./in.	5.54g/mm
Cylinder Bore Diameter	1-1/2"	38mm
Shaft Diameter	0.787"	20mm

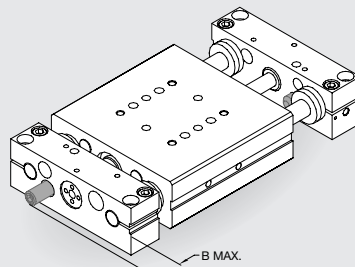
Specifications	DLB-25	DLB-25M
Maximum Air Pressure	100 psi	6.9 bar
Thrust Force @ 80psi/5.5bar	126 lbs.	560 N
Weight (Basic Unit)	18.2 lbs.	8.2 kg
Additional Weight per Stroke	0.47 lbs./in.	8.4g/mm
Cylinder Bore Diameter	1-1/2"	38mm
Shaft Diameter	0.984"	25mm

Accessory Mounting Technical Data



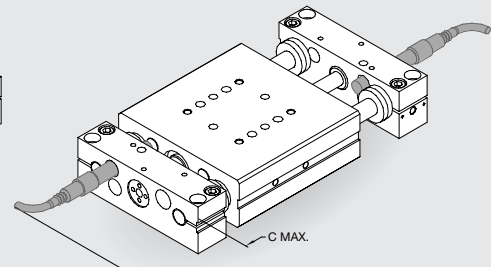
Shock Absorbers

- Full stroking piston rod
- Built-in hard stop
- Position adjustable
- Adjustable dampening



Adjustable Hard Stops

- For precision (+/- .001") hard stop end point positioning
- Allows for stop adjustment independent of shock absorber hard stop
- Allen wrench adjustable

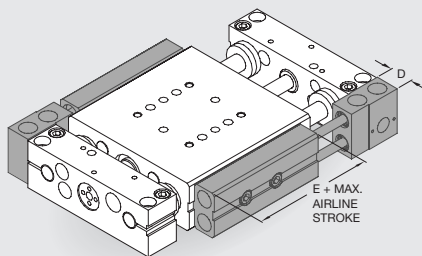


Inductive Proximity Sensors

- 8mm diameter
- Threaded quick disconnect with built-in LED output
- PNP and NPN available

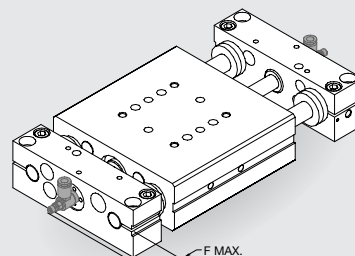
Quick Disconnect Cable

- Threaded coupling with knurled head for secure electrical connections
- 2 meter cable length
- 5 meter cable length



Telescoping Airlines

- Eliminate flexing air lines
- Self aligning air tube design extends useful seal life
- Modular stackable design. Up to (4) modules can be stacked
- Modules can be mounted on either side of slide
- 1/8 NPT or G1/8 pipe threads
- (2) user air ports per module



Flow Controls for Cylinders

- Thumb screw adjust with locking nut for adjusting cylinder speed
- 1/8 NPT or G1/8 pipe threads

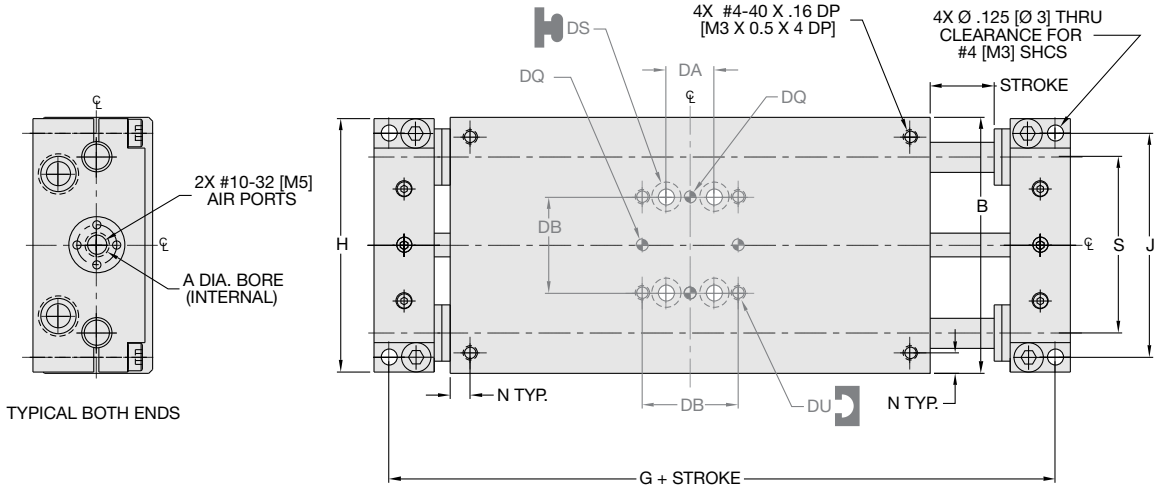
	A	B	C	D	E	F
DLB-20	2.03"	.10	2.1	.577	3.60	1.25
DLB-25	1.82"	.10	1.9	.577	3.60	1.25
DLB-20M	51.6mm	2.5	53.8	14.7	91.4	31.8
DLB-25M	46.2mm	2.5	48.3	14.7	91.4	31.8

DLB SERIES

DIRECTCONNECT™



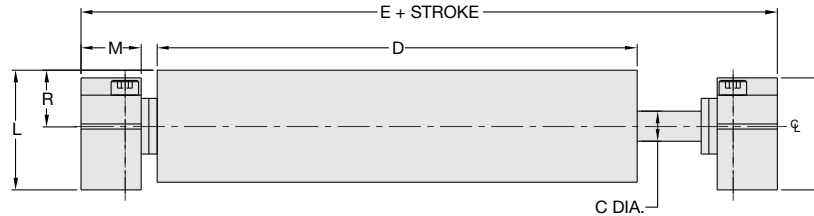
DLB-L Product Specifications



TYPICAL BOTH ENDS

UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

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



DLB SERIES

BASIC UNIT DIMENSIONS

MODEL #	A	B	C	D	E	G	H	J	K	L	M	N	R	S
DLB-06	0.563	2.00	0.236	3.75	4.94	4.71	1.980	1.750	0.875	0.936	0.470	.156	.438	1.375
DLB-08	0.563	2.50	0.315	4.25	5.44	5.206	2.470	2.250	0.875	0.935	.470	.156	.438	1.750
DLB-06M	14	50.8	6.0	95.2	125.5	119.6	50.3	44.4	22.2	23.7	11.9	3.96	11.13	34.93
DLB-08M	14	63.5	8.0	107.9	138.2	132.2	62.7	57.1	22.2	23.7	11.9	3.96	11.13	44.45

DIRECTCONNECT DIMENSIONS

	Imperial (inches)	Metric (mm)
DA	.375	9.5
DB	.750	19.1
DQ	.0940 x .078 DP	3H7 x 2 DP
DS	Clr & C'bore for #4	Clr & C'bore for M3
DU	#4-40 X .25 DP	M3 X 6 DP

How to Order: Basic Unit



- SIZE** 06, 08
- METRIC** M
- STYLE** L Long body slide with built-in repairable cylinder
- BEARING** C Composite bushings
- STROKE** (inches)
DLB-06 .50, 1.00, 1.50, 2.00, 2.50, 3.00
DLB-08 .50, 1.00, 1.50, 2.00, 2.50, 3.00, 3.50
- STROKE** (mm)
DLB-06M 12, 25, 40, 50, 65, 75
DLB-08M 12, 25, 40, 50, 65, 75, 85
- VITON®** V Viton® seals
- SHAFTING** S Corrosion resistant shafting

Custom strokes available. Please consult factory.

SAMPLE ORDER: DLB-06M-L-C-40-V

Ex: Base Slide, Size 6 Metric, Long Body Style w/Built-in Cylinder, Composite Bushings, 40mm Stroke, Viton® Seals

Accessories: (Order Separately)

	DLB-06M	DLB-08M	QTY/SLIDE
SHOCK/STOP ACCESSORIES			
Shock Absorber	SHOK-030	SHOK-030	1 or 2
Adjustable Hard Stop	DLT-0623	DLT-0623	1 or 2
INDUCTIVE SENSOR ACCESSORIES †			
Inductive Sensor PNP Qk. Disconnect	OISP-011	OISP-011	1 or 2
Inductive Sensor NPN Qk. Disconnect	OISN-011	OISN-011	1 or 2
Quick Disconnect 2M Cable Length	CABL-010	CABL-010	1 or 2
Quick Disconnect 5M Cable Length	CABL-013	CABL-013	1 or 2
PNEUMATIC ACCESSORIES			
#10-32 Adjustable Flow Control	VLVF-007	VLVF-007	1 or 2
M5 Adjustable Flow Control	VLVF-008	VLVF-008	1 or 2
Cylinder Seal Repair Kit	SLKT-109	SLKT-109	1
Viton® Cylinder Seal Repair Kit	SLKT-109V	SLKT-109V	1

†Sensor and cable sold separately

DIRECTCONNECT™

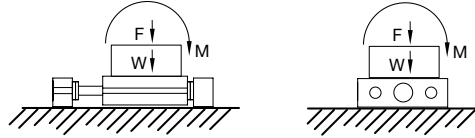


DLB-L Product Specifications

Loading Specifications Table - Style DLB -06M, 08M -L

	06	06M	08	08M
Maximum Payload (W) horizontal motion using Shock Absorbers	3 lbs.	1.4 kg	5 lbs.	2.3 kg
Maximum Payload (W) vertical motion using Shock Absorbers	1.5 lbs.	0.7 kg	2.5 lbs.	1.1 kg
Maximum Payload (W) horizontal motion using Urethane Bumpers	1 lbs.	0.5 kg	1 lbs.	0.5 kg
Maximum Total Applied Load + Payload (F+W)	10 lbs.	45 N	12 lbs.	53.4 N
Total Maximum Moment about any Axis (M)	15 in.-lbs.	1.7 N-m	30 in.-lbs.	3.4 N-m

F=Externally applied force
W=Weight of payload
F+W=Total force
M=Maximum moment

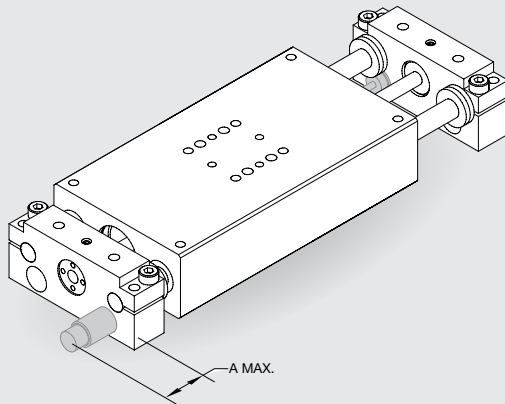


Shock Absorbers and Flow Controls are recommended for nearly all applications

Specifications	DLB-06	DLB-06M
Maximum Air Pressure	100 psi	7 bar
Thrust Force @ 80psi/5.5bar	20 lbs.	89 N
Weight (Basic Unit)	0.71 lbs.	0.32 kg
Additional Weight per Stroke	0.03 lbs./in.	0.54 g/mm
Cylinder Bore Diameter	0.563"	14.29 mm
Shaft Diameter	0.236"	6 mm

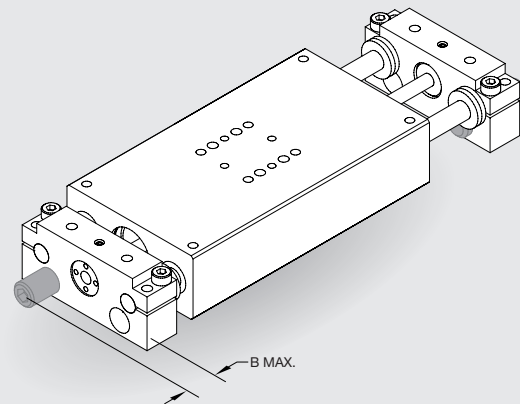
Specifications	DLB-08	DLB-08M
Maximum Air Pressure	100 psi	7 bar
Thrust Force @ 80psi/5.5bar	20 lbs.	111 N
Weight (Basic Unit)	1.24 lbs.	0.56 kg
Additional Weight per Stroke	0.05 lbs./in.	0.88 g/mm
Cylinder Bore Diameter	0.563"	14.29 mm
Shaft Diameter	0.315"	8 mm

Accessory Mounting Technical Data



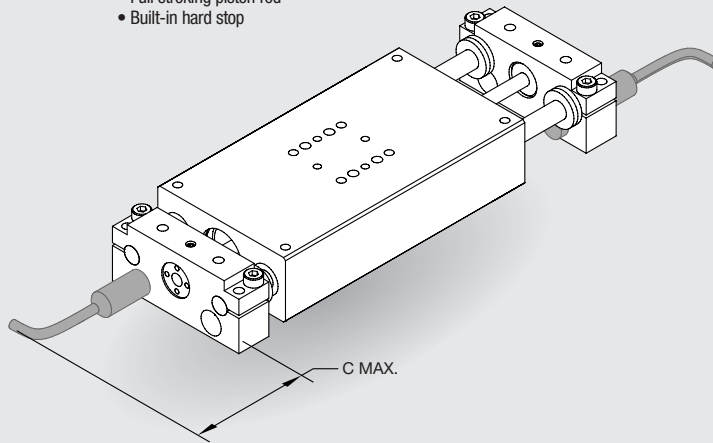
Shock Absorbers

- Full stroking piston rod
- Built-in hard stop



Adjustable Hard Stops

- For precision (+/- .001") hard stop end point positioning
- Allows for stop adjustment independent of shock absorber hard stop
- Allen wrench adjustable

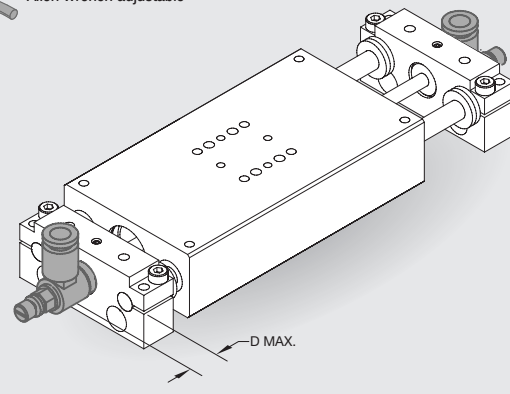


Quick Disconnect Cable

- Threaded coupling with knurled head for secure electrical connections
- 2 meter cable length
- 5 meter cable length

Inductive Proximity Sensors

- 8mm diameter, threaded body
- Threaded quick disconnect with built-in LED output
- PNP and NPN available



Flow Controls for Cylinders

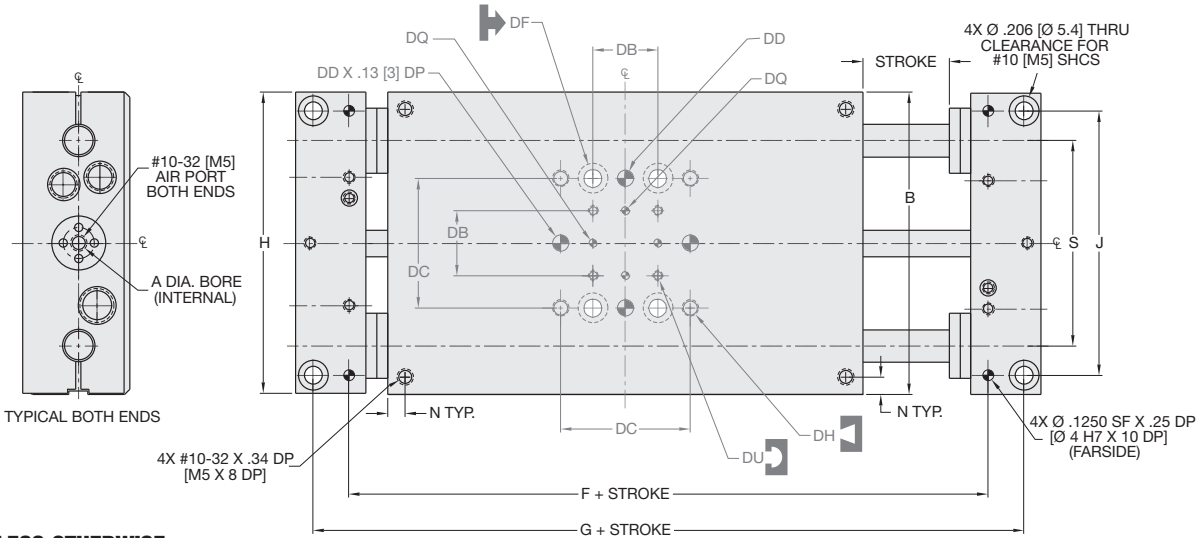
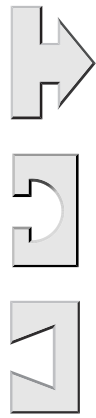
- Thumb screw adjust with locking nut for adjusting cylinder speed
- #10-32 [M5] pipe threads

	A	B	C	D
DLB-06	0.53"	0.40	1.8	1.02
DLB-08	0.53"	0.40	1.8	1.02
DLB-06M	13.5mm	10.2	45.7	25.9
DLB-08M	13.5mm	10.2	45.7	25.9

DLB SERIES

DIRECTCONNECT™

DLB-L Product Specifications



UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

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

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

DLB SERIES

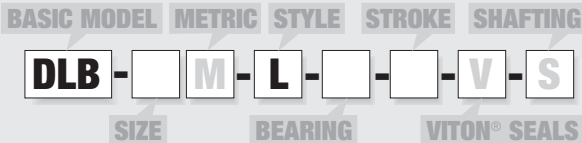
MODEL #	BORE DIA.		BODY SIZE		SHAFT DIA.										
	A	B	C	D	E	F	G	H	J	K	L	M	N	R	S
DLB-10	3/4	3.50	.375	5.50	7.63	6.3975	7.228	3.485	3.0600	1.178	1.245	.813	N/A	.594	2.375
DLB-12	1	4.00	.472	6.50	8.63	7.3975	8.228	3.985	3.5000	1.615	1.657	.813	.375	.813	2.750
DLB-16	1	4.75	.630	7.50	9.63	8.3975	9.228	4.735	4.2500	1.615	1.657	.813	.375	.813	3.250
DLB-10M	19	88.9	9.5	139.7	193.8	162.50	183.6	88.5	77.72	29.9	31.6	20.7	N/A	15.09	60.33
DLB-12M	25	101.6	12	165.1	219.2	187.90	209.0	101.2	88.90	41.0	42.1	20.7	9.5	20.65	69.85
DLB-16M	25	120.7	16	190.5	244.6	213.30	234.4	120.3	107.95	41.0	42.1	20.7	9.5	20.65	82.55

DIRECTCONNECT DIMENSIONS
STANDARD MOUNTING PATTERN FOR ALL SIZES

	Imperial (inches)	Metric (mm)
DB	.750	19.1
DC	1.500	38.1
DD	.1880 X .25 DP	5mm H7 X 6 DP
DF	Clearance for #10	Clearance for M5
DH	#10-32 X .34DP	M5 X 8.5DP
DQ	.0940 X .078 DP	3H7 X 2 DP
DU	#4-40 X .25 DP	M3 X 6 DP

How to Order: Basic Unit

Accessories: (Order Separately) DLB-10M DLB-12M DLB-16M QTY/SLIDE



SIZE 10, 12, 16

METRIC M

STYLE L Long body slide with built-in repairable cylinder

BEARING B Linear ball bearings
C Composite bushings

STROKE (inches)
DLB-10 1-4 @ 1" increments
DLB-12 1-5 @ 1" increments
DLB-16 1-6 @ 1" increments

Custom strokes available.
Please consult factory.

STROKE (mm)
DLB-10M 25, 50, 80, 100
DLB-12M 25, 50, 80, 100, 125
DLB-16M 25, 50, 80, 100, 125, 150

VITON® V Viton® seals

SHAFTING S Corrosion resistant shafting

SAMPLE ORDER: DLB-12M-L-C-25-V

Ex: Base Slide, Size 12 Metric, Long Body Style w/Built-in Cylinder, Composite Bushings, 25mm Stroke, Viton® Seals

SHOCK/STOP ACCESSORIES

Shock Absorber	SHOK-028	SHOK-010	SHOK-010	1 or 2
Adjustable Hard Stop	DLT-1023	DLT-1023	DLT-1023	1 or 2

INDUCTIVE SENSOR ACCESSORIES:

Inductive Sensor PNP Qk. Disconnect	OISP-011	OISP-011	OISP-011	1 or 2
Inductive Sensor NPN Qk. Disconnect	OISN-011	OISN-011	OISN-011	1 or 2
Quick. Disconnect 2M Cable Length	CABL-010	CABL-010	CABL-010	1 or 2
Quick. Disconnect 2M Cable Length	CABL-013	CABL-013	CABL-013	1 or 2

PNEUMATIC ACCESSORIES

1/8 NPT Telescopic Airlines (up to 4")	OTAL-049	OTAL-049	OTAL-049	1, 2, 3 or 4
1/8 NPT Telescopic Airlines (up to 5")	OTAL-050	OTAL-050	OTAL-050	1, 2, 3 or 4
1/8 NPT Telescopic Airlines (up to 6")	OTAL-039	OTAL-039	OTAL-039	1, 2, 3 or 4
#10-32 Adjustable Flow Control	VLVF-007	VLVF-007	VLVF-007	1 or 2
1/8 Telescopic Airlines (up to 100mm)	OTAL-051	OTAL-051	OTAL-051	1, 2, 3 or 4
1/8 Telescopic Airlines (up to 125mm)	OTAL-052	OTAL-052	OTAL-052	1, 2, 3 or 4
1/8 Telescopic Airlines (up to 160mm)	OTAL-045	OTAL-045	OTAL-045	1, 2, 3 or 4
M5 Adjustable Flow Control	VLVF-008	VLVF-008	VLVF-008	1 or 2
Cylinder Seal Repair Kit	SLKT-101	SLKT-103	SLKT-103	1
Viton® Cylinder Seal Repair Kit	SLKT-101V	SLKT-103V	SLKT-103V	1

*Sensor and cable sold separately

DIRECTCONNECT™

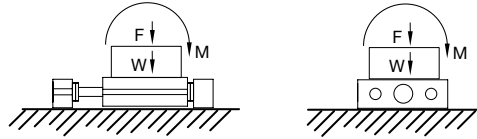


DLB-L Product Specifications

Loading Specifications Table - Style DLB -010M, 12M, 16M -L

	10	10M	12	12M	16	16M
Maximum Payload (W) horizontal motion w/Shock Absorbers	15 lbs.	6.8 kg	30 lbs.	13.6 kg	45 lbs.	20.4 kg
Maximum Payload (W) vertical motion w/Shock Absorbers	7 lbs.	3.1 kg	15 lbs.	6.8 kg	22 lbs.	9.9 kg
Maximum Payload (W) horizontal motion w/Urethane Bumpers	5 lbs.	2.2 kg	10 lbs.	4.5 kg	15 lbs.	6.8 kg
Maximum Total Applied Load + Payload (F+W)	25 lbs.	111 N	40 lbs.	178 N	70 lbs.	311 N
Total Maximum Moment about any Axis (M)	75 in.-lbs.	8.4 N-m	150 in.-lbs.	16.9 N-m	300 in.-lbs.	33.9 N-m

F=Externally applied force
W=Weight of payload
F+W=Total force
M=Maximum moment



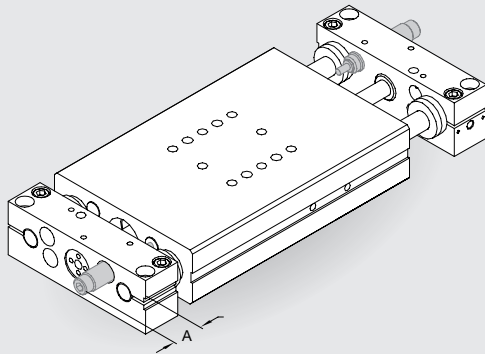
Shock Absorbers and Flow Controls are recommended for nearly all applications

Specifications	DLB-10	DLB-10M
Maximum Air Pressure.....	100 psi	6.9 bar
Thrust Force @ 80psi/5.5bar.	29 lbs.	129 N
Weight (Basic Unit).....	3.34 lbs.	1.5 kg
Additional Weight per Stroke..	0.08 lbs./in.	1.4g/mm
Cylinder Bore Diameter.....	3/4"	19mm
Shaft Diameter.....	0.375"	9.5mm

Specifications	DLB-12	DLB-12M
Maximum Air Pressure.....	100 psi	6.9 bar
Thrust Force @ 80psi/5.5bar.	57 lbs.	254 N
Weight (Basic Unit).....	5.13 lbs.	2.3 kg
Additional Weight per Stroke..	0.12 lbs./in.	2.1g/mm
Cylinder Bore Diameter.....	1.0"	25mm
Shaft Diameter.....	0.472"	12mm

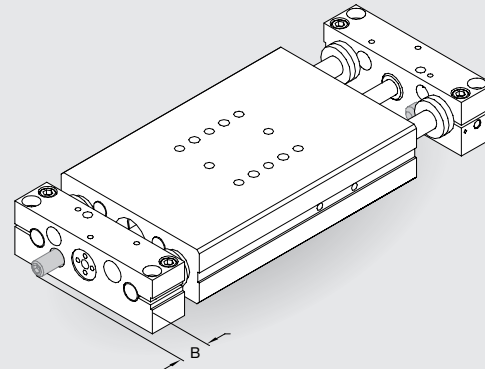
Specifications	DLB-16	DLB-16M
Maximum Air Pressure.....	100 psi	6.9 bar
Thrust Force @ 80psi/5.5bar.	57 lbs.	254 N
Weight (Basic Unit).....	7.30 lbs.	3.3 kg
Additional Weight per Stroke..	0.19 lbs./in.	3.3g/mm
Cylinder Bore Diameter.....	1.0"	25mm
Shaft Diameter.....	0.630"	16mm

Accessory Mounting Technical Data



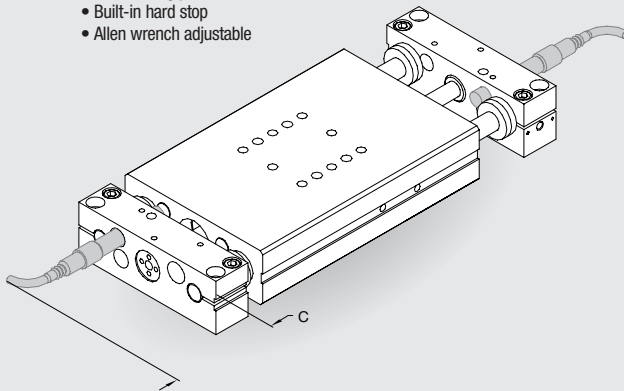
Shock Absorbers

- Full stroking piston rod
- Built-in hard stop
- Allen wrench adjustable



Adjustable Hard Stops

- For precision (+/- .001") hard stop end point positioning
- Allows for stop adjustment independent of shock absorber hard stop
- Allen wrench adjustable

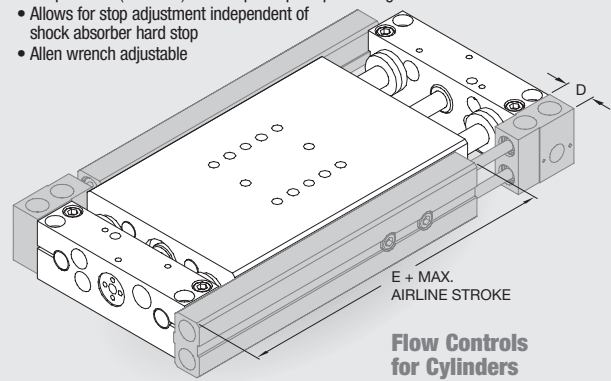


Inductive Proximity Sensors

- 8mm diameter
- Threaded quick disconnect with built-in LED output
- PNP and NPN available

Quick Disconnect Cable

- Threaded coupling with knurled head for secure electrical connections
- 2 meter cable length
- 5 meter cable length



Telescoping Airlines

- Eliminate flexing air lines
- Self aligning air tube design extends useful seal life
- Modular stackable design. Up to (4) modules can be stacked
- Modules can be mounted on either side of slide
- 1/8 NPT or G1/8 pipe threads
- (2) user air ports per module

Flow Controls for Cylinders

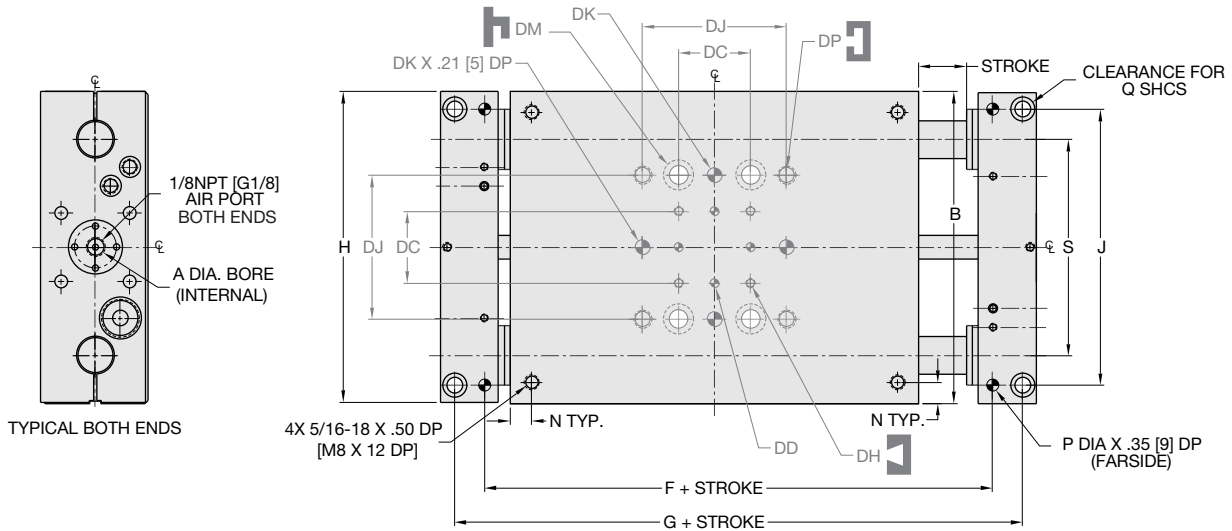
- Thumb screw adjust with locking nut for adjusting cylinder speed
- #10-32 or M5 pipe threads

	A	B	C	D	E
DLB-10	.70"	.47	2.5	.577	3.60
DLB-12	.95"	.47	2.5	.577	3.60
DLB-16	.95"	.47	2.5	.577	3.60
DLB-10M	17.8mm	11.9	63.5	14.7	91.4
DLB-12M	24.1mm	11.9	63.5	14.7	91.4
DLB-16M	24.1mm	11.9	63.5	14.7	91.4

DLB SERIES

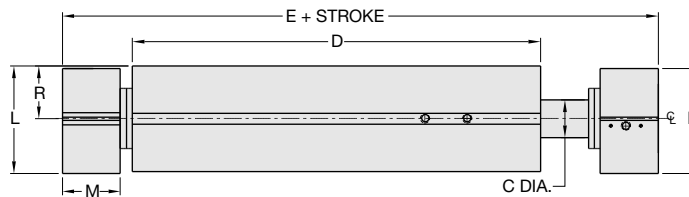
DIRECTCONNECT™

DLB-L Product Specifications



UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

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



DLB SERIES

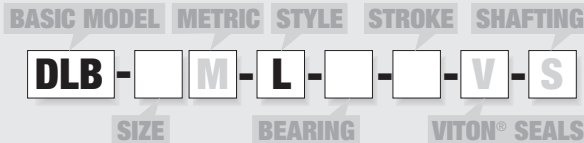
DIRECTCONNECT™

DIRECTCONNECT DIMENSIONS
STANDARD MOUNTING PATTERN FOR ALL SIZES

MODEL #	BORE DIA.			BODY SIZE											SHAFT DIA.		
	A	B	C	D	E	F	G	H	J	K	L	M	N	P		Q	R	S
DLB-20	1 1/2	6.50	.787	8.50	11.42	9.5850	10.836	6.480	5.7500	2.180	2.236	1.210	.438	.2505	5/16	1.100	4.500
DLB-25	1 1/2	7.50	.984	9.50	12.84	10.7320	12.108	7.480	6.7500	2.180	2.236	1.420	.438	.3130	3/8	1.100	5.250
DLB-20M	38	165.1	20	215.9	290.1	243.46	275.2	164.6	146.05	55.4	56.8	30.7	11.1	6.00	M8	27.94	114.30
DLB-25M	38	190.5	25	241.3	326.1	272.59	307.5	190.0	171.45	55.4	56.8	36.1	11.1	8.00	M10	27.94	133.35

	Imperial (inches)	Metric (mm)
DC	1.500	38.1
DD	.1880 X .25 DP	5 mm H7 X 6 DP
DH	#10-32 X .34 DP	M5 X 8.5 DP
DJ	3.000	76.2
DK	.3130 X .37 DP	8 mm H7 X 9.4 DP
DM	Clr & C'bore for 3/8	Clr & C'bore for M10
DP	3/8-16 X .50 DP	M10 X 12 DP

How to Order: Basic Unit



- SIZE **20, 25**
- METRIC **M**
- STYLE **L** Long body slide with built-in repairable cylinder
- BEARING **B** Linear ball bearings
C Composite bushings
- STROKE (inches)
DLB-20 **1-6** @ 1" increments
DLB-25 **1-7** @ 1" increments
- STROKE (mm)
DLB-20M **25, 50, 80, 100, 125, 160**
DLB-25M **25, 50, 80, 100, 125, 160, 175**
- VITON® **V** Viton® seals
- SHAFTING **S** Corrosion resistant shafting

Custom strokes available. Please consult factory.

Accessories: (Order Separately)

SHOCK/STOP ACCESSORIES

Shock Absorber (adjustable damping)	SHOK-029	SHOK-029	1 or 2
Adjustable Hard Stop	DLT-1023	DLT-1023	1 or 2

INDUCTIVE SENSOR ACCESSORIES*

Inductive Sensor PNP Qk. Disconnect	OISP-011	OISP-011	1 or 2
Inductive Sensor NPN Qk. Disconnect	OISN-011	OISN-011	1 or 2
Quick. Disconnect 2M Cable Length	CABL-010	CABL-010	1 or 2
Quick. Disconnect 5M Cable Length	CABL-013	CABL-013	1 or 2

PNEUMATIC ACCESSORIES

1/8 NPT Telescopic Airlines (up to 6")	OTAL-039	OTAL-039	1, 2, 3 or 4
1/8 NPT Telescopic Airlines (up to 12")	OTAL-040	OTAL-040	1, 2, 3 or 4
1/8 NPT Adjustable Flow Control	VLVF-004	VLVF-004	1 or 2
G1/8 Telescopic Airlines (up to 160mm)	OTAL-045	OTAL-045	1, 2, 3 or 4
G1/8 Telescopic Airlines (up to 300mm)	OTAL-046	OTAL-046	1, 2, 3 or 4
G1/8 Adjustable Flow Control	VLVF-005	VLVF-005	1 or 2
Cylinder Seal Repair Kit	SLKT-105	SLKT-105	1
Viton® Cylinder Seal Repair Kit	SLKT-105V	SLKT-105V	1

*Sensor and cable sold separately

SAMPLE ORDER: DLB-20M-L-C-80-V

Ex: Base Slide, Size 20 Metric, Long Body Style w/Built-in Cylinder, Composite Bushings, 80mm Stroke, Viton® Seals

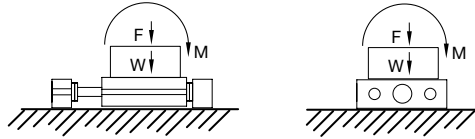


DLB-L Product Specifications

Loading Specifications Table - Style DLB -20M, 25M -L

	20	20M	25	25M
Maximum Payload (W) horizontal motion using Shock Absorbers	60 lbs.	27.2 kg	100 lbs.	45.3 kg
Maximum Payload (W) vertical motion using Shock Absorbers	30 lbs.	13.6 kg	50 lbs.	22.0 kg
Maximum Payload (W) horizontal motion using Urethane Bumpers	20 lbs.	9.1 kg	25 lbs.	11.3 kg
Maximum Total Applied Load + Payload (F+W)	100 lbs.	444 N	150 lbs.	667 N
Total Maximum Moment about any Axis (M)	600 in.-lbs.	67.7 N-m	1200 in.-lbs.	135.5 N-m

F=Externally applied force
W=Weight of payload
F+W=Total force
M=Maximum moment

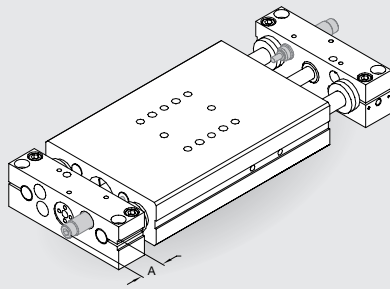


Shock Absorbers and Flow Controls are recommended for nearly all applications

Specifications	DLB-20	DLB-20M
Maximum Air Pressure	100 psi	6.9 bar
Thrust Force @ 80psi/5.5bar	126 lbs.	560 N
Weight (Basic Unit)	15.6 lbs.	7.1 kg
Additional Weight per Stroke	0.32 lbs./in.	5.6g/mm
Cylinder Bore Diameter	1-1/2"	38mm
Shaft Diameter	0.787"	20mm

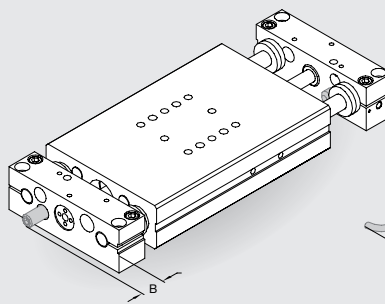
Specifications	DLB-25	DLB-25M
Maximum Air Pressure	100 psi	6.9 bar
Thrust Force @ 80psi/5.5bar	126 lbs.	560 N
Weight (Basic Unit)	21.4 lbs.	9.7 kg
Additional Weight per Stroke	0.47 lbs./in.	8.4g/mm
Cylinder Bore Diameter	1-1/2"	38mm
Shaft Diameter	0.984"	25mm

Accessory Mounting Technical Data



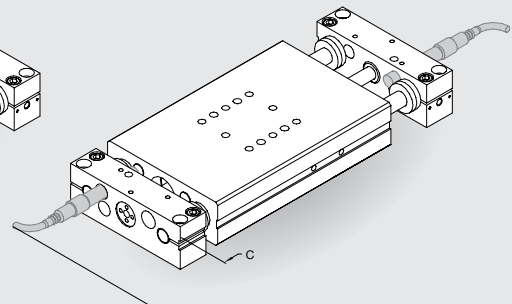
Shock Absorbers

- Full stroking piston rod
- Built-in hard stop
- Position adjustable
- Adjustable dampening



Adjustable Hard Stops

- For precision (+/- .001") hard stop end point positioning
- Allows for stop adjustment independent of shock absorber hard stop
- Allen wrench adjustable

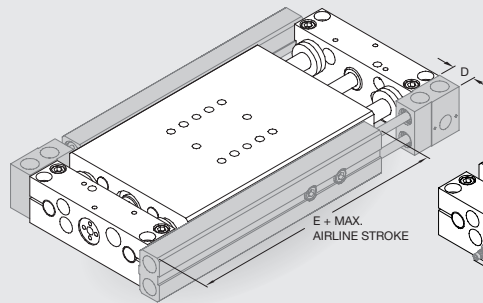


Inductive Proximity Sensors

- 8mm diameter
- Threaded quick disconnect with built-in LED output
- PNP and NPN available

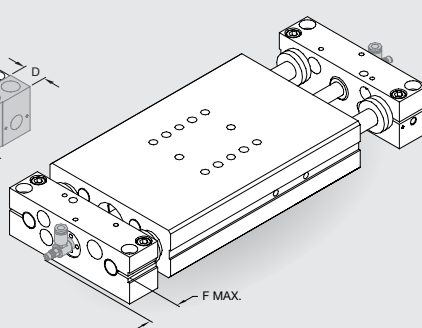
Quick Disconnect Cable

- Threaded coupling with knurled head for secure electrical connections
- 2 meter cable length
- 5 meter cable length



Telescoping Airlines

- Eliminate flexing air lines
- Self aligning air tube design extends useful seal life
- Modular stackable design. Up to (4) modules can be stacked
- Modules can be mounted on either side of slide
- 1/8 NPT or G1/8 pipe threads
- (2) user air ports per module



Flow Controls for Cylinders

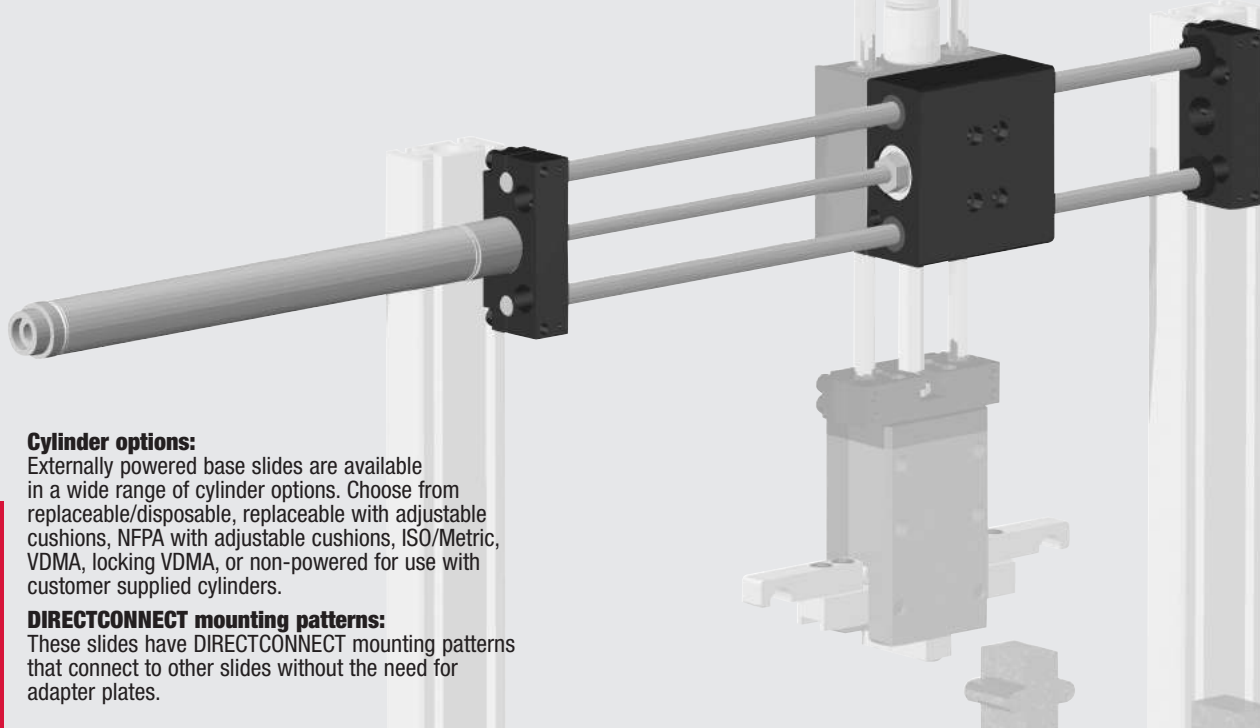
- Thumb screw adjust with locking nut for adjusting cylinder speed
- 1/8 NPT or G1/8 pipe threads

	A	B	C	D	E	F
DLB-20	2.03"	.10	2.1	.577	3.60	1.25
DLB-25	1.82"	.10	1.9	.577	3.60	1.25
DLB-20M	51.6mm	2.5	53.8	14.7	91.4	31.8
DLB-25M	46.2mm	2.5	48.3	14.7	91.4	31.8

DLB SERIES

DIRECTCONNECT™

DLB Externally Powered Base Slide



Cylinder options:

Externally powered base slides are available in a wide range of cylinder options. Choose from replaceable/disposable, replaceable with adjustable cushions, NFPA with adjustable cushions, ISO/Metric, VDMA, locking VDMA, or non-powered for use with customer supplied cylinders.

DIRECTCONNECT mounting patterns:

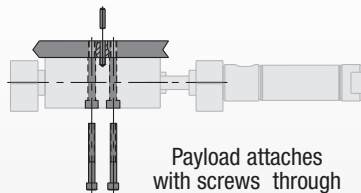
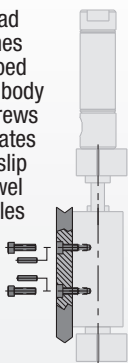
These slides have DIRECTCONNECT mounting patterns that connect to other slides without the need for adapter plates.

DLB SERIES

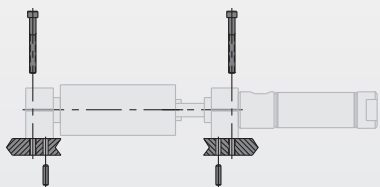
Mounting Information:

Mounts and operates in any orientation

Payload attaches to tapped holes in body with screws and locates using slip fit dowel pin holes



Payload attaches with screws through clearance and counterbored holes in body and locates using slip fit dowel pin holes



End blocks mount with screws and locate with slip fit dowel pin holes

Technical Specifications:

Pneumatic Specifications

Pressure Operating Range*
Cylinder Type
Dynamic Seals
Valve Required to Operate

Imperial
40-100 psi
Metric
3-7 bar
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
Viton Seals (optional) -20°~300° F -30°~150° C

Maintenance Specifications[†]

Expected Life	
Normal Application	5 million cycles
w/ Preventative Maintenance	10+ million cycles [†]
Field Repairable	No
Seal Repair Kits Available	No

Application Restrictions

Flow controls, shock absorbers and urethane bumpers recommended for nearly all applications.
Use composite bushing in dirty or gritty environments.
Never use silicone based lubricants with composite bushings.

*Higher pressure possible. Consult factory with application details.

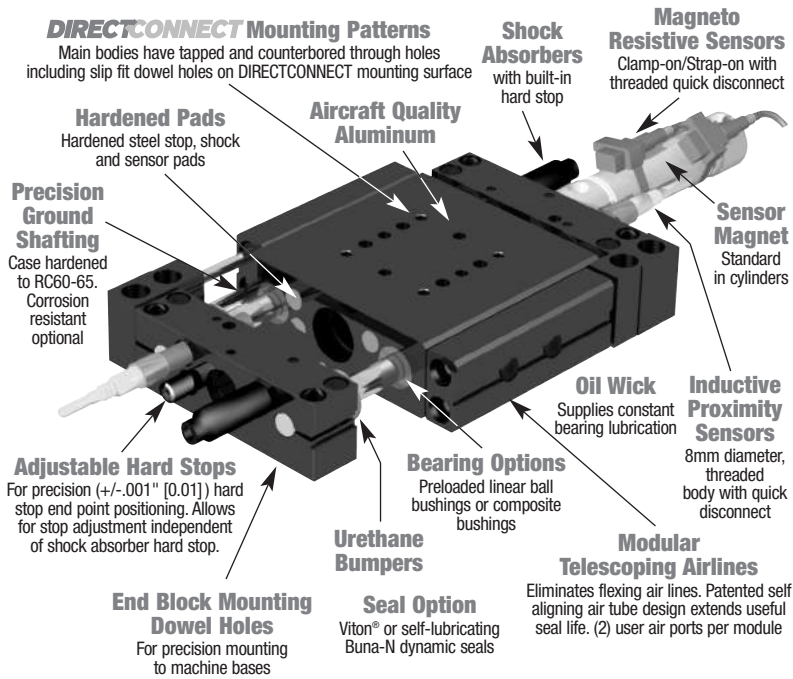
**Addition of lubrication will greatly increase service life

[†]See Maintenance Section

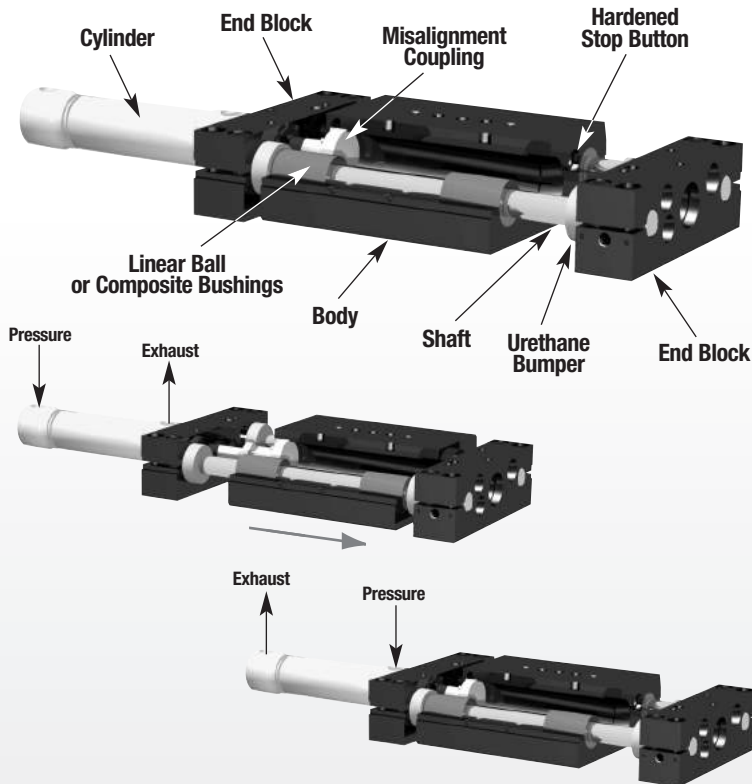
DIRECTCONNECT™



Product Features



Operating Principle



- A moveable body is supported by four linear bushings which slide on two hardened steel shafts.
- The shafts are supported on each end of the slide by two fixed end blocks.
- A double acting air cylinder is mounted to one of the end blocks.
- The piston rod of the cylinder is connected to the slide body with a misalignment coupling.
- When air pressure is applied to the cylinder the slide body moves.

Designed and manufactured in the USA

Style-T, U Replaceable Cyl.

Size -06M -T,U only
-08M -T,U only



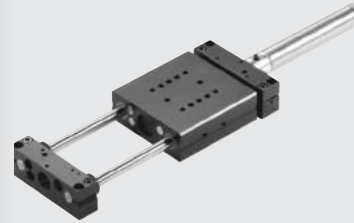
See Page 4.18

Style-T, A Replaceable Cyl.

-10M (Metric -A only) (shown)
-12M (Metric -A only)
-16M (Metric -A only)



See Page 4.20

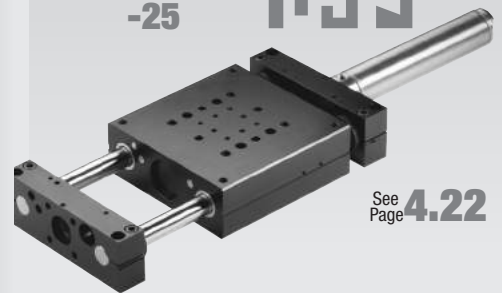


Style-T, A Replaceable Cyl.

Size -20 (shown)
-25



See Page 4.22

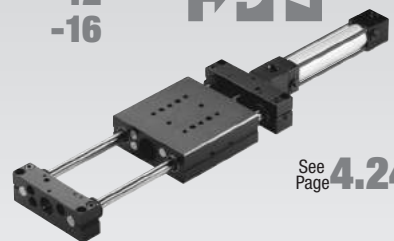


Style-N, U Repairable Cyl.

Size -10 (shown)
-12
-16



See Page 4.24

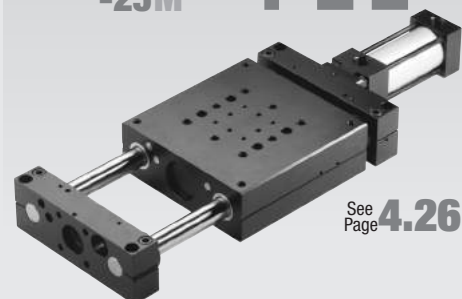


Style-N, R, U Repairable Cyl.

Size -20M (shown)
-25M



See Page 4.26

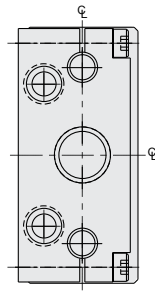
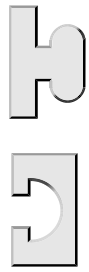


DLB SERIES

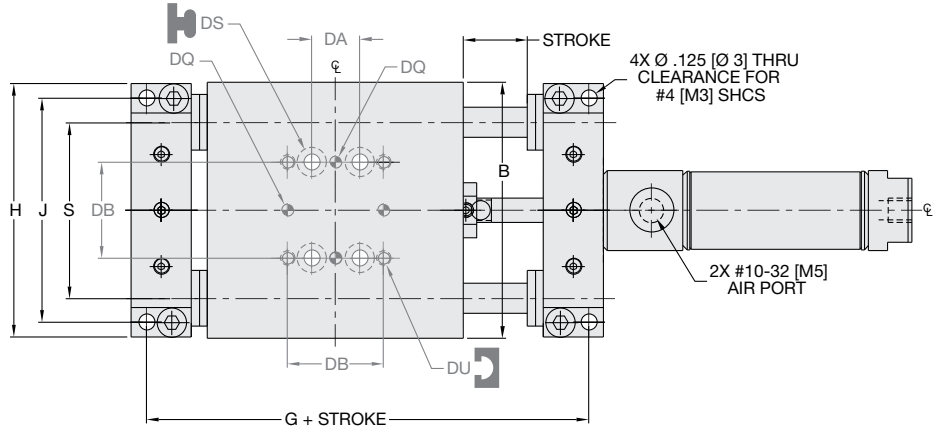
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DLB-T, U Product Specifications

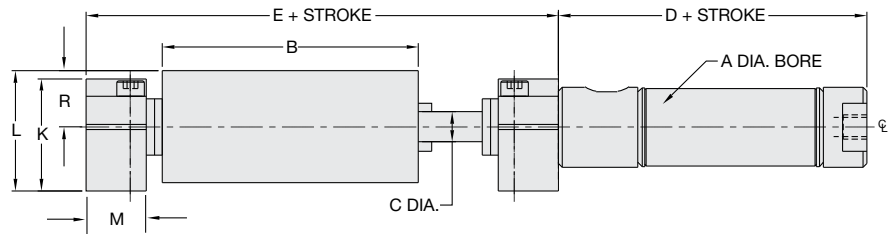


TYPICAL BOTH ENDS



UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

Table with 3 columns: Dimension symbols, Imperial in., and Metric [mm].



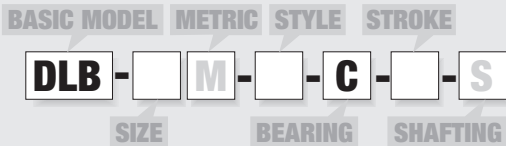
BASIC UNIT DIMENSIONS

Table with columns: MODEL #, A, BORE DIA., B, BODY SIZE, C, SHAFT DIA., D, E, G, H, J, K, L, M, R, S

DIRECTCONNECT DIMENSIONS STANDARD MOUNTING PATTERN FOR ALL SIZES

Table with columns: Dimension, Imperial (inches), and Metric (mm)

How to Order: Basic Unit



- SIZE 06, 08
METRIC M
STYLE T Replaceable cylinder
U Non-powered unit
BEARING C Composite bushings
STROKE (inches) DLB-06 .5, 1, 1.5, 2, 2.5, 3, 4, 5, 6
STROKE (mm) DLB-06M 10, 25, 40, 50, 75, 100, 125, 160

Accessories: (Order Separately)

Table listing accessories like SHOCK/STOP ACCESSORIES, INDUCTIVE SENSOR ACCESSORIES, MAGNETIC SENSOR ACCESSORIES, and PNEUMATIC ACCESSORIES with part numbers and quantities.

SAMPLE ORDER: DLB-06M-T-C-40

Ex: Base Slide, Size 6 Metric, Long Body Style w/Built-in Cylinder, Composite Bushings, 40mm Stroke

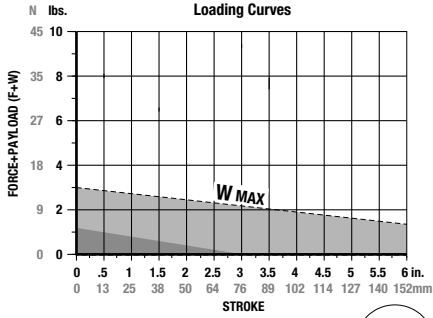
DIRECTCONNECT

DLB SERIES

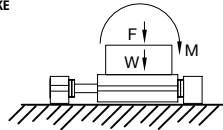


DLB-T, U Product Specifications

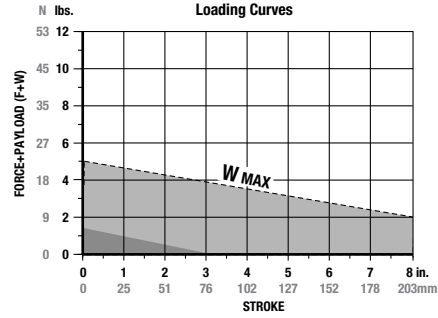
DLB-06M-T,U



F=Externally applied force (lbs. or N)
 W=Weight of payload (lbs. or N)
 F+W=Total force (lbs. or N)



DLB-08M-T,U



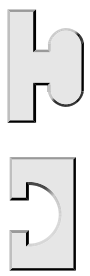
Shock Absorbers and Flow Controls are recommended for nearly all applications

(W) in this range use **Single Shock** in both directions (W) in this range use **Bumpers or Cushioned Cylinder**

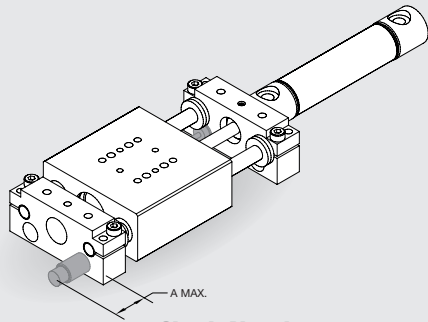
Shaded shock absorption ranges of horizontal payload (W) @ 80psi, flow controls fully open. For vertical applications do not exceed 1/2 of the recommended payload due to the additional acceleration effect of gravity.

Specifications	DLB-06	DLB-06M
Maximum Air Pressure	100 psi	7 bar
Thrust Force @ 80psi/5.5bar.....	20 lbs.	89 N
Weight (Basic Unit).....	0.34 lbs.	0.15 kg
Additional Weight per Stroke	0.05 lbs./in.	0.88 g/mm
Cylinder Bore Diameter.....	0.563"	16 mm
Shaft Diameter.....	0.236"	6 mm
Maximum Moment Load	15 in.-lbs.	1.7 N-m

Specifications	DLB-08	DLB-08M
Maximum Air Pressure	100 psi	7 bar
Thrust Force @ 80psi/5.5bar.....	20 lbs.	89 N
Weight (Basic Unit).....	0.69 lbs.	0.31 kg
Additional Weight per Stroke	0.07 lbs./in.	1.23 g/mm
Cylinder Bore Diameter.....	0.563"	16 mm
Shaft Diameter.....	0.315"	8 mm
Maximum Moment Load	30 in.-lbs.	3.4 N-m

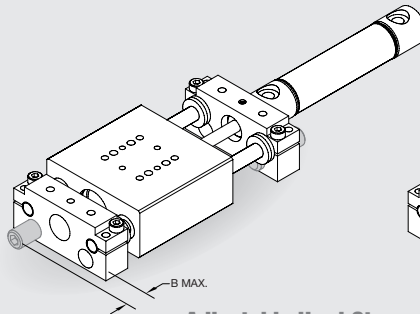


Accessory Mounting Technical Data



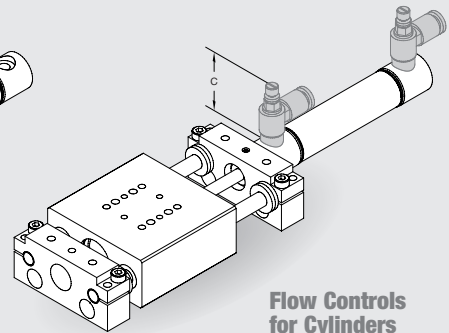
Shock Absorbers

- Full stroking piston rod
- Built-in hard stop



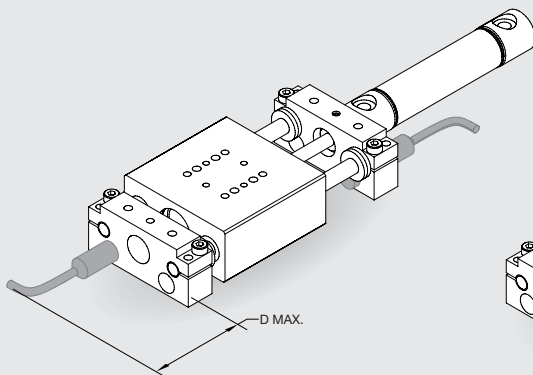
Adjustable Hard Stops

- For precision (+/- .001") hard stop end point positioning
- Allows for stop adjustment independent of shock absorber hard stop
- Allen wrench adjustable



Flow Controls for Cylinders

- Thumb screw adjust with locking nut for adjusting cylinder speed
- #10-32 or M5 pipe threads

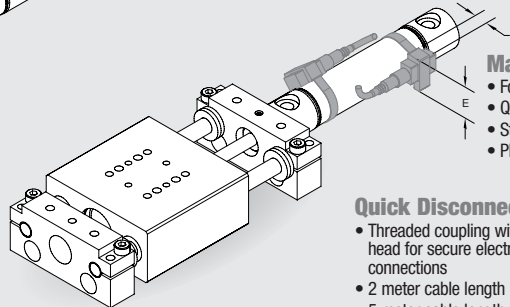


Inductive Proximity Sensors

- 8mm diameter, threaded body
- Threaded quick disconnect with built-in LED output
- PNP and NPN available

Quick Disconnect Cable

- Threaded coupling with knurled head for secure electrical connections
- 2 meter cable length
- 5 meter cable length



Magneto Resistive Sensors

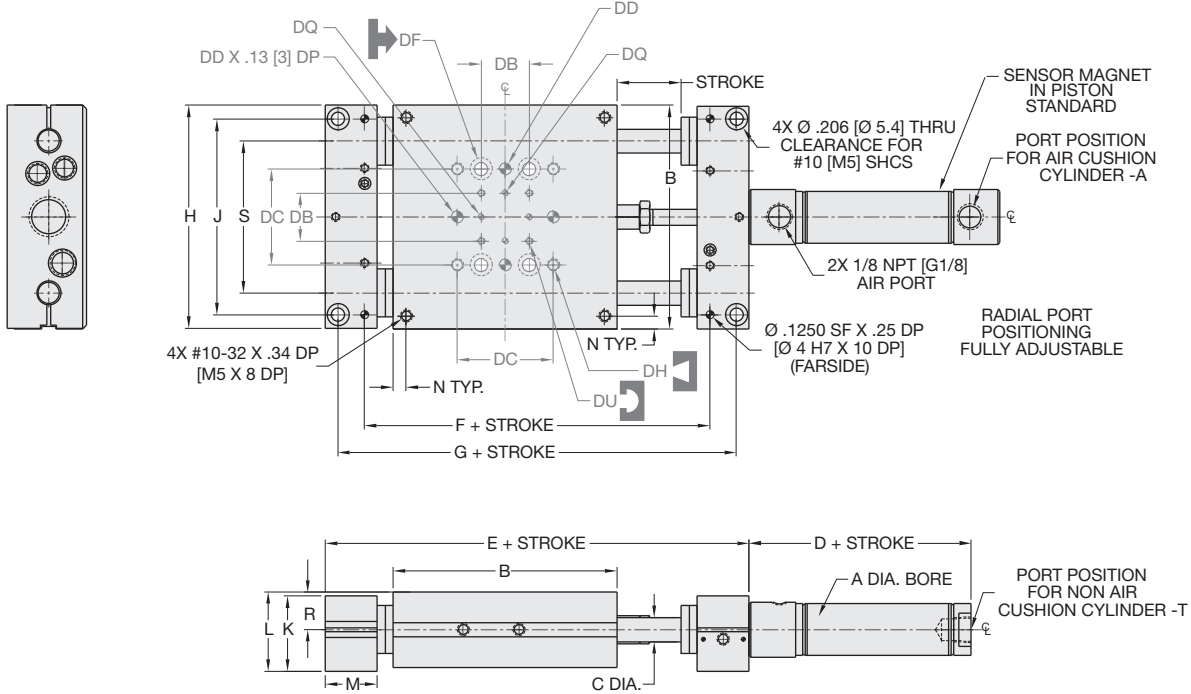
- For all externally mounted cylinders
- Quick Disconnect with built in LED output
- Strap-on mounting kit included
- PNP and NPN available

Quick Disconnect Cable

- Threaded coupling with knurled head for secure electrical connections
- 2 meter cable length
- 5 meter cable length

	A	B	C	D	E	F
DLB-06	0.53"	0.40	1.02	1.8	1.00	0.43
DLB-08	0.53"	0.40	1.02	1.8	1.00	0.43
DLB-06M	13.5mm	10.2	25.9	45.7	25.4	10.9
DLB-08M	13.5mm	10.2	25.9	45.7	25.4	10.9

DLB-T, A Product Specifications



UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

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

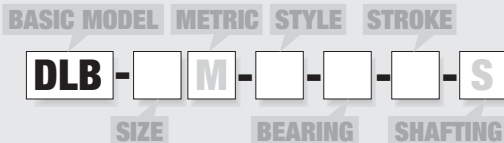
BASIC UNIT DIMENSIONS

MODEL #	BORE DIA.		BODY SIZE		SHAFT DIA.										
	A	B	C	D	E	F	G	H	J	K	L	M	N	R	S
DLB-10	3/4	3.50	.375	2.91	5.63	4.3975	5.228	3.485	3.060	1.178	1.245	.813	N/A	.594	2.375
DLB-12	1 1/16	4.00	.472	2.88	6.13	4.8975	5.728	3.985	3.500	1.615	1.657	.813	.375	.813	2.750
DLB-16	1 1/16	4.75	.630	2.88	6.88	5.6475	6.478	4.735	4.250	1.615	1.657	.813	.375	.813	3.250
DLB-10M	20	88.9	9.5	88.0	149.4	118.05	139.1	88.5	77.7	29.9	31.6	20.7	N/A	15.09	60.33
DLB-12M	25	101.6	12	91.5	162.1	130.75	151.8	101.2	88.9	41.0	42.1	20.7	9.5	20.65	69.85
DLB-16M	25	120.7	16	91.5	181.1	149.80	170.9	120.3	107.9	41.0	42.1	20.7	9.5	20.65	82.55

DIRECTCONNECT DIMENSIONS
STANDARD MOUNTING PATTERN FOR ALL SIZES

	Imperial (inches)	Metric (mm)
DB	.750	19.1
DC	1.500	38.1
DD	.1880 x .25 DP	5mm H7 x 6 DP
DF	Clearance for #10	Clearance for M5
DH	#10-32 x .34 DP	M5 x 8.5 DP
DQ	.0940 x .078 DP	3H7 x 2 DP
DU	#4-40 x .25 DP	M3 X 6 DP

How to Order: Basic Unit



- SIZE** 10, 12, 16
- METRIC** M
- STYLE** T Replaceable cylinder w/o adjustable air cushions (Not avail. in metric)
A Replaceable cylinder with adjustable air cushions
- BEARING** B Linear ball bearings
C Composite bushings
- STROKE** (inches)
DLB-10 1-12 @ 1" increments
DLB-12 1-16 @ 1" increments
DLB-16 1-20 @ 1" increments
Custom strokes available. Please consult factory.
- STROKE** (mm)
DLB-10M 25, 50, 80, 100, 125, 160, 200, 250, 300
DLB-12M 25, 50, 80, 100, 125, 160, 200, 250, 300, 320, 360, 400
DLB-16M 25, 50, 80, 100, 125, 160, 200, 250, 300, 320, 360, 400, 500
- SHAFTING** S Corrosion resistant shafting

SAMPLE ORDER: DLB-10M-A-B-25

Exc Base Slide, Size 10 Metric, Replaceable Cylinder w/Adjustable Air Cushions, Linear Ball Bushings, 25mm Stroke

Accessories: (Order Separately)

SHOCK/STOP ACCESSORIES

Shock Absorber	SHOK-028	SHOK-010	SHOK-010	1 or 2
Adjustable Hard Stop	DLT-1023	DLT-1023	DLT-1023	1 or 2

INDUCTIVE SENSOR ACCESSORIES †

Inductive Sensor PNP Qk. Disconnect	OISP-011	OISP-011	OISP-011	1 or 2
Inductive Sensor NPN Qk. Disconnect	OISN-011	OISN-011	OISN-011	1 or 2
Quick. Disconnect 2M Cable Length	CABL-010	CABL-010	CABL-010	1 or 2
Quick. Disconnect 5M Cable Length	CABL-013	CABL-013	CABL-013	1 or 2

MAGNETIC SENSOR ACCESSORIES †**

Magneto Resistive Sensor PNP Qk. Disc.	OHSP-005	OHSP-005	OHSP-005	1 or 2
Magneto Resistive Sensor NPN Qk. Disc.	OHSN-005	OHSN-005	OHSN-005	1 or 2
Quick. Disconnect 2M Cable Length	CABL-010	CABL-010	CABL-010	1 or 2
Quick. Disconnect 5M Cable Length	CABL-013	CABL-013	CABL-013	1 or 2

PNEUMATIC ACCESSORIES

1/8 NPT Telescopic Airlines (up to 6")	OTAL-039	OTAL-039	OTAL-039	1,2,3 or 4
1/8 NPT Telescopic Airlines (up to 12")	OTAL-040	OTAL-040	OTAL-040	1,2,3 or 4
1/8 NPT Telescopic Airlines (up to 18")	OTAL-041	OTAL-041	OTAL-041	1,2,3 or 4
1/8 NPT Telescopic Airlines (up to 24")	OTAL-042	OTAL-042	OTAL-042	1,2,3 or 4
1/8 NPT Adjustable Flow Control	VLVF-004	VLVF-004	VLVF-004	1 or 2
G1/8 Telescopic Airlines (up to 160mm)	OTAL-045	OTAL-045	OTAL-045	1,2,3 or 4
G1/8 Telescopic Airlines (up to 300mm)	OTAL-046	OTAL-046	OTAL-046	1,2,3 or 4
G1/8 Telescopic Airlines (up to 450mm)	OTAL-047	OTAL-047	OTAL-047	1,2,3 or 4
G1/8 Telescopic Airlines (up to 600mm)	OTAL-048	OTAL-048	OTAL-048	1,2,3 or 4
G1/8 Adjustable Flow Control	VLVF-005	VLVF-005	VLVF-005	1 or 2

†Sensor and cable sold separately **Piston magnet standard

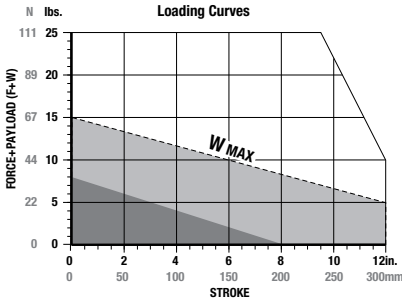
DLB SERIES DIRECTCONNECT™



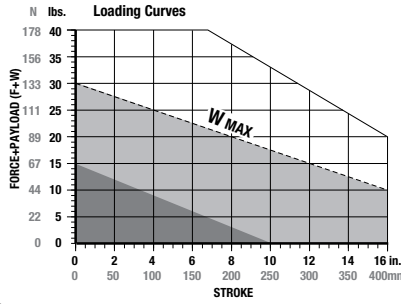
DLB-T, A Product Specifications



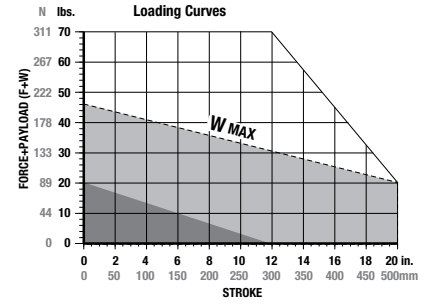
DLB-10M-T,A,U



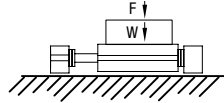
DLB-12M-T,A,U



DLB-16M-T,A,U



F=Externally applied force (lbs. or N)
 W=Weight of payload (lbs. or N)
 F+W=Total force (lbs. or N)



Shock Absorbers and Flow Controls are recommended for nearly all applications

(W) in this range use Single Shock in both directions (W) in this range use Bumpers or Cushioned Cylinder

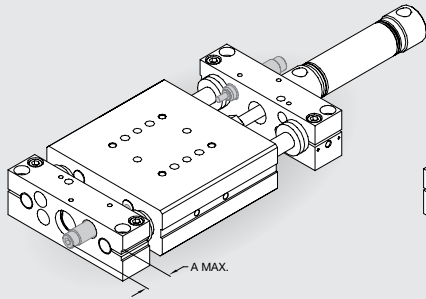
Shaded shock absorption ranges of horizontal payload (W) @ 80psi, flow controls fully open. For vertical applications do not exceed 1/2 of the recommended payload due to the additional acceleration effect of gravity.

Specifications	DLB-10	DLB-10M
Maximum Air Pressure.....	100 psi	6.9 bar
Thrust Force @ 80psi/5.5bar..	31 lbs.	145 N
Weight (Basic Unit -T, -A).....	1.98 lbs.	0.90 kg
Additional Weight per Stroke..	0.09 lbs./in.	1.4 g/mm
Cylinder Bore Diameter	3/4"	20 mm
Shaft Diameter	0.375"	9.5 mm
Maximum Moment Load.....	75 in.-lbs.	8.4 N-m

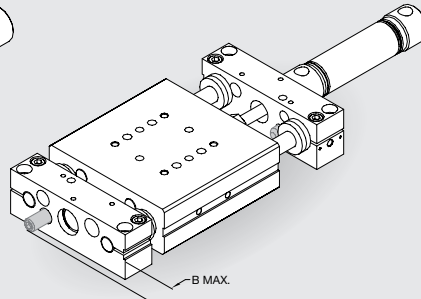
Specifications	DLB-12	DLB-12M
Maximum Air Pressure.....	100 psi	6.9 bar
Thrust Force @ 80psi/5.5bar..	65 lbs.	289 N
Weight (Basic Unit -T, -A).....	3.73 lbs.	1.66 kg
Additional Weight per Stroke..	0.15 lbs./in.	2.9 g/mm
Cylinder Bore Diameter	1-1/16"	25 mm
Shaft Diameter	0.472"	12 mm
Maximum Moment Load.....	150 in.-lbs.	16.9 N-m

Specifications	DLB-16	DLB-16M
Maximum Air Pressure.....	100 psi	6.9 bar
Thrust Force @ 80psi/5.5bar..	65 lbs.	289 N
Weight (Basic Unit -T, -A).....	5.03 lbs.	2.3 kg
Additional Weight per Stroke..	0.23 lbs./in.	4.2 g/mm
Cylinder Bore Diameter	1-1/16"	25 mm
Shaft Diameter	0.630"	16 mm
Maximum Moment Load.....	300 in.-lbs.	33.9 N-m

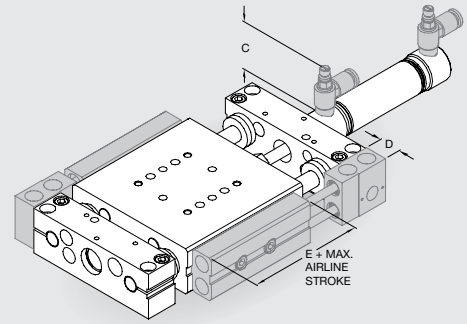
Accessory Mounting Technical Data



- Shock Absorbers**
- Full stroking piston rod
 - Built-in hard stop
 - Allen wrench adjustable

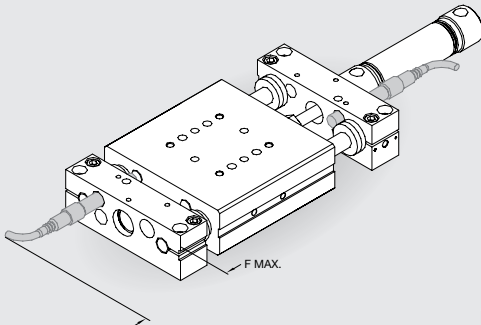


- Adjustable Hard Stops**
- For precision (+/- .001") hard stop end point positioning
 - Allows for stop adjustment independent of shock absorber hard stop
 - Allen wrench adjustable



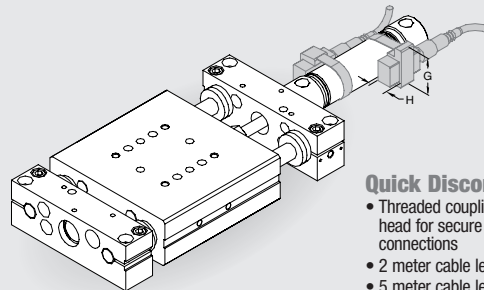
- Telescoping Airlines**
- Eliminate flexing air lines
 - Self aligning air tube design extends useful seal life
 - Modular stackable design. Up to (4) modules can be stacked
 - Modules can be mounted on either side of slide
 - 1/8 NPT or G1/8 pipe threads
 - (2) user air ports per module

- Flow Controls for Cylinders**
- Thumb screw adjust with locking nut for adjusting cylinder speed
 - 1/8 NPT or G1/8 pipe threads



- Inductive Proximity Sensors**
- 8mm diameter
 - Threaded quick disconnect with built-in LED output
 - PNP and NPN available

- Quick Disconnect Cable**
- Threaded coupling with knurled head for secure electrical connections
 - 2 meter cable length
 - 5 meter cable length



- Magneto Resistive Sensors**
- For all externally mounted cylinders
 - Quick Disconnect with built in LED output
 - Strap-on mounting kit included
 - PNP and NPN available

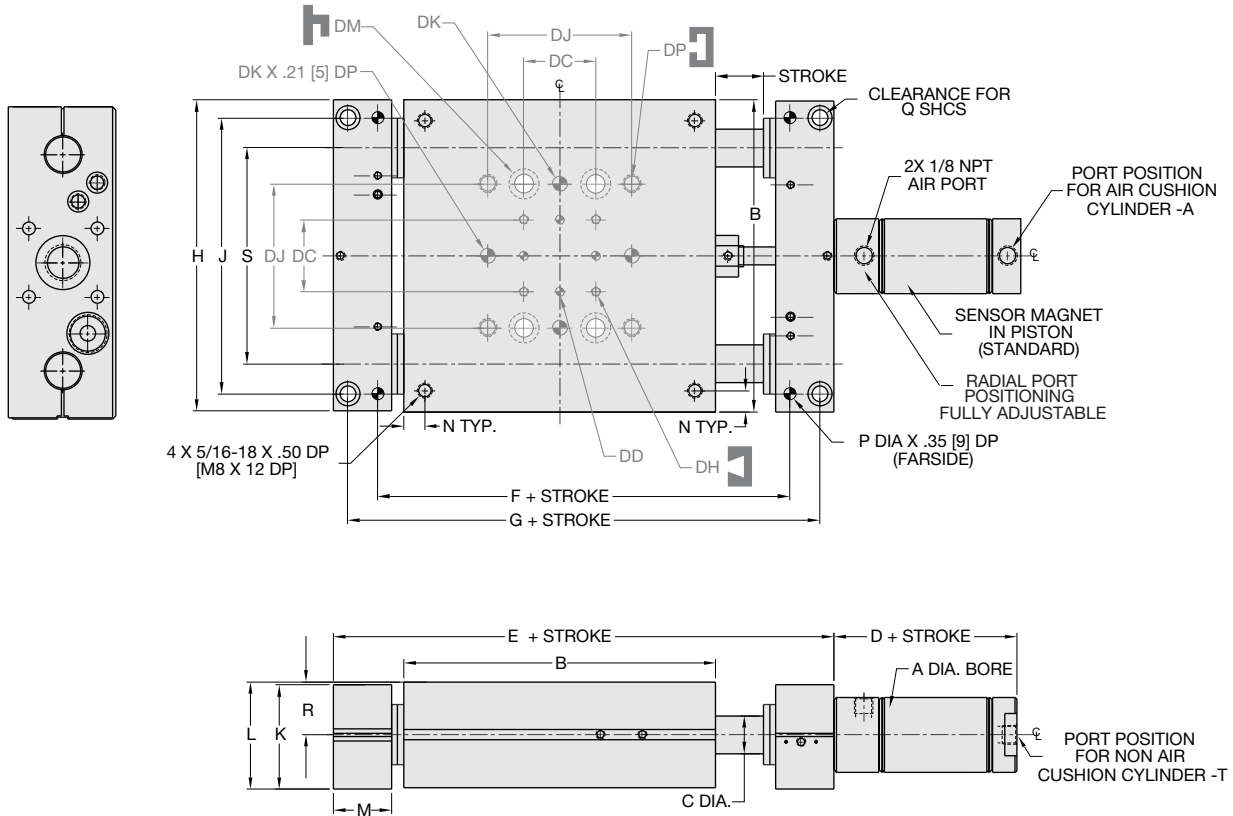
- Quick Disconnect Cable**
- Threaded coupling with knurled head for secure electrical connections
 - 2 meter cable length
 - 5 meter cable length

	A	B	C	D	E	F	G	H
DLB-10	.70"	.47	1.25	.577	3.60	2.5	1.00	.43
DLB-12	.95"	.47	1.25	.577	3.60	2.5	1.00	.43
DLB-16	.95"	.47	1.25	.577	3.60	2.5	1.00	.43
DLB-10M	17.8mm	11.9	31.8	14.7	91.4	63.5	25.4	10.9
DLB-12M	24.1mm	11.9	31.8	14.7	91.4	63.5	25.4	10.9
DLB-16M	24.1mm	11.9	31.8	14.7	91.4	63.5	25.4	10.9

DLB SERIES

DIRECTCONNECT™

DLB-T, A Product Specifications



DLB SERIES

UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

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

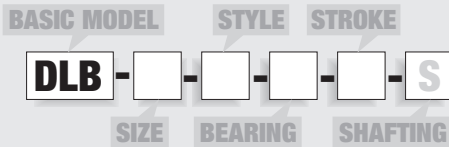
STANDARD MOUNTING PATTERN FOR ALL SIZES

	Imperial (inches)
DC	1.500
DD	.1880 x .25 DP
DH	#10-32 x .38 DP
DJ	3.000
DK	.3130 x .37 DP
DM	Clearance for 3/8
DP	3/8-16 x .50 DP

BASIC UNIT DIMENSIONS

MODEL #	BORE DIA.			BODY SIZE								SHAFT DIA.					
	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S
DLB-20	1 1/2	6.50	.787	3.0	9.42	7.5850	8.836	6.480	5.7500	2.180	2.236	1.210	.438	.2505	5/16	1.100	4.500
DLB-25	1 1/2	7.50	.984	3.0	10.84	8.7320	10.108	7.480	6.7500	2.180	2.236	1.420	.438	.3130	3/8	1.100	5.250

How to Order: Basic Unit



SIZE 20, 25

STYLE T Replaceable cylinder w/o adjustable air cushions
A Replaceable cylinder with adjustable air cushions

BEARING B Linear ball bearings
C Composite bushings

STROKE (inches)
DLB-20 1-24 @ 1" increments
DLB-25 1-26 @ 1" increments

SHAFTING S Corrosion resistant shafting

Custom strokes available. Please consult factory.

SAMPLE ORDER: DLB-20-A-B-8

Ex: Base Slide, Size 20, Replaceable Cylinder w/Adjustable Air Cushions, Linear Ball Bushings, 8 inch Stroke

Accessories: (Order Separately)

SHOCK/STOP ACCESSORIES

	DLB-20	DLB-25	QTY/SLIDE
Shock Absorber (adjustable dampening)	SHOK-029	SHOK-029	1 or 2
Adjustable Hard Stop	DLT-1023	DLT-1023	1 or 2

INDUCTIVE SENSOR ACCESSORIES †

	DLB-20	DLB-25	QTY/SLIDE
Inductive Sensor PNP Qk. Disconnect	OISP-011	OISP-011	1 or 2
Inductive Sensor NPN Qk. Disconnect	OISN-011	OISN-011	1 or 2
Quick. Disconnect 2M Cable Length	CABL-010	CABL-010	1 or 2
Quick. Disconnect 5M Cable Length	CABL-013	CABL-013	1 or 2

MAGNETIC SENSOR ACCESSORIES †**

	DLB-20	DLB-25	QTY/SLIDE
Magneto Resistive Sensor PNP Qk. Disc.	OHSP-005	OHSP-005	1 or 2
Magneto Resistive Sensor NPN Qk. Disc.	OHSN-005	OHSN-005	1 or 2
Quick. Disconnect 2M Cable Length	CABL-010	CABL-010	1 or 2
Quick. Disconnect 5M Cable Length	CABL-013	CABL-013	1 or 2

PNEUMATIC ACCESSORIES

	DLB-20	DLB-25	QTY/SLIDE
1/8 NPT Telescopic Airlines (up to 6")	OTAL-039	OTAL-039	1, 2, 3 or 4
1/8 NPT Telescopic Airlines (up to 12")	OTAL-040	OTAL-040	1, 2, 3 or 4
1/8 NPT Telescopic Airlines (up to 18")	OTAL-041	OTAL-041	1, 2, 3 or 4
1/8 NPT Telescopic Airlines (up to 24")	OTAL-042	OTAL-042	1, 2, 3 or 4
1/8 NPT Adjustable Flow Control	VLVF-004	VLVF-004	1 or 2

†Sensor and cable sold separately **Piston magnet standard

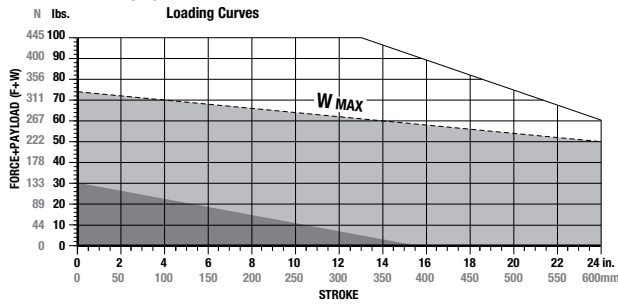
DIRECTCONNECT™



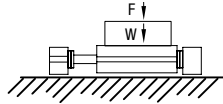
DLB-T, A Product Specifications



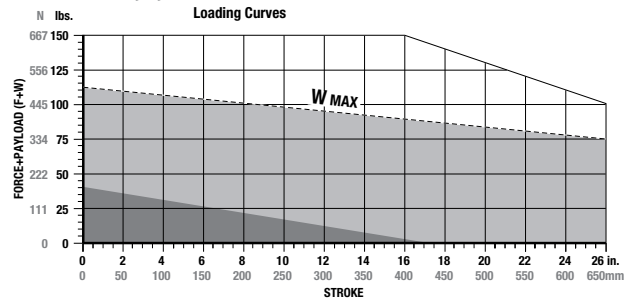
DLB-20-T,A,U



F=Externally applied force (lbs. or N)
 W=Weight of payload (lbs. or N)
 F+W=Total force (lbs. or N)



DLB-25-T,A,U



Shock Absorbers and Flow Controls are recommended for nearly all applications

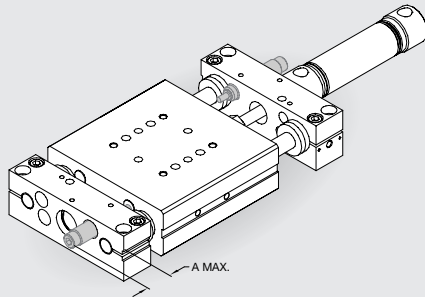
(W) in this range use **Single Shock** in both directions (W) in this range use **Bumpers or Cushioned Cylinder**

Shaded shock absorption ranges of horizontal payload (W) @ 80psi, flow controls fully open. For vertical applications do not exceed 1/2 of the recommended payload due to the additional acceleration effect of gravity.

Specifications	DLB-20
Maximum Air Pressure	100 psi
Thrust Force @ 80psi/5.5bar.....	130 lbs.
Weight (Basic Unit -T, -A)	12.6 lbs.
Additional Weight per Stroke	0.38 lbs./in.
Cylinder Bore Diameter	1-1/2"
Shaft Diameter	0.787"
Maximum Moment Load	600 in.-lbs.

Specifications	DLB-25
Maximum Air Pressure.....	100 psi
Thrust Force @ 80psi/5.5bar.....	130 lbs.
Weight (Basic Unit -T, -A)	17.7 lbs.
Additional Weight per Stroke.....	0.53 lbs./in.
Cylinder Bore Diameter	1-1/2"
Shaft Diameter	0.984"
Maximum Moment Load.....	1200 in.-lbs.

Accessory Mounting Technical Data

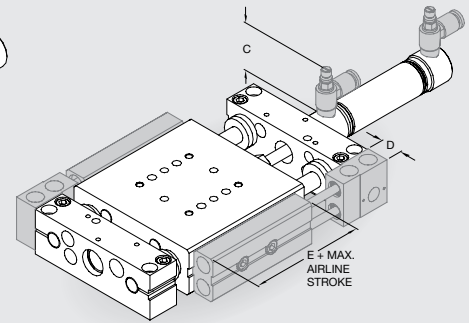


Shock Absorbers

- Full stroking piston rod
- Built-in hard stop
- Position adjustable
- Adjustable dampening

Adjustable Hard Stops

- For precision (+/- .001") hard stop end point positioning
- Allows for stop adjustment independent of shock absorber hard stop
- Allen wrench adjustable

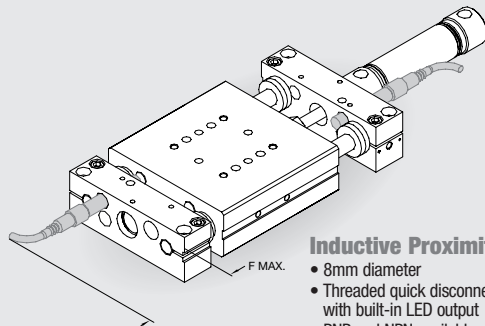


Telescoping Airlines

- Eliminate flexing air lines
- Self aligning air tube design extends useful seal life
- Modular stackable design. Up to (4) modules can be stacked
- Modules can be mounted on either side of slide
- 1/8 NPT pipe threads
- (2) user air ports per module

Flow Controls for Cylinders

- Thumb screw adjust with locking nut for adjusting cylinder speed
- 1/8 NPT pipe threads

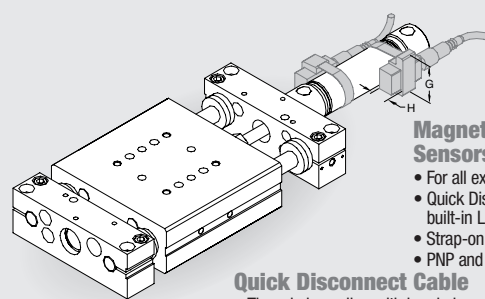


Inductive Proximity Sensors

- 8mm diameter
- Threaded quick disconnect with built-in LED output
- PNP and NPN available

Quick Disconnect Cable

- Threaded coupling with knurled head for secure electrical connections
- 2 meter cable length
- 5 meter cable length



Magneto Resistive Sensors

- For all externally mounted cylinders
- Quick Disconnect with built-in LED output
- Strap-on mounting kit included
- PNP and NPN available

Quick Disconnect Cable

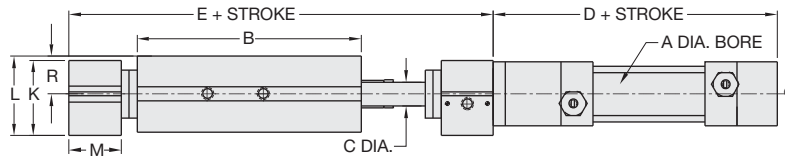
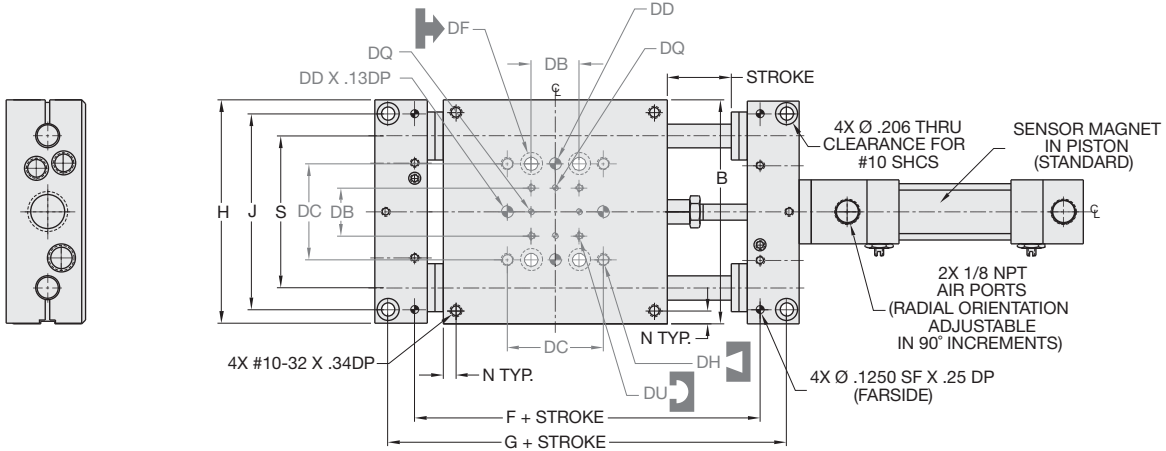
- Threaded coupling with knurled head for secure electrical connections
- 2 meter cable length
- 5 meter cable length

	A	B	C	D	E	F	G	H
DLB-20	2.03"	.10	1.25	.577	3.60	2.12	1.00	.43
DLB-25	1.82"	.10	1.25	.577	3.60	1.90	1.00	.43

DLB SERIES

DIRECTCONNECT™

DLB-N, U Product Specifications



UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

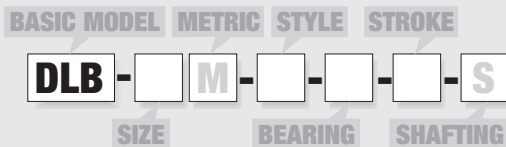
				Imperial in.	Metric [mm]
Dimensions are symmetrical about centerline	Third Angle Projection	All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or [±.013mm]	Metric Threads Course Pitch	0.00 = ±.01 0.000 = ±.005 0.0000 = ±.0005	[0.] = [±.25] [0.0] = [±.13] [0.00] = [±.013]

DIRECTCONNECT
DIMENSIONS
STANDARD MOUNTING PATTERN FOR ALL SIZES

	Imperial (inches)
DB	.750
DC	1.500
DD	.1880 x .25 DP
DF	Clearance for #10
DH	#10-32 x .34 DP
DQ	.0940 x .078 DP
DU	#4-40 X .25 DP

MODEL #	BORE DIA.		BODY SIZE		SHAFT DIA.		BASIC UNIT DIMENSIONS									
	A	B	C	D	E	F	G	H	J	K	L	M	N	R	S	
DLB-10	3/4	3.50	.375	3.44	5.63	4.3975	5.228	3.485	3.0600	1.178	1.245	.813	N/A	.594	2.375	
DLB-12	1 1/8	4.00	.472	3.44	6.13	4.8975	5.728	3.985	3.5000	1.615	1.657	.813	.375	.813	2.750	
DLB-16	1 1/8	4.75	.630	3.44	6.88	5.6475	6.478	4.735	4.2500	1.615	1.657	.813	.375	.813	3.250	

How to Order: Basic Unit



SIZE 10, 12, 16

STYLE **N** Repairable NFPA cylinder w/fixed air cushions (Not available in Metric)

U Non-powered unit (Without cylinder. Metric Units: Mount VDMA cylinder directly. NFPA not available. Imperial Units: Mount NFPA cylinders using NFPA mounting kit. VDMA not available.)

BEARING **B** Linear ball bearings
C Composite bushings

STROKE (inches)
DLB-10 1-12 @ 1" increments
DLB-12 1-16 @ 1" increments
DLB-16 1-20 @ 1" increments

Custom strokes available. Please consult factory.

STROKE (mm)
DLB-10M 25, 50, 80, 100, 125, 160, 200, 250, 300
DLB-12M 25, 50, 80, 100, 125, 160, 200, 250, 300, 320, 360, 400
DLB-16M 25, 50, 80, 100, 125, 160, 200, 250, 300, 320, 360, 400, 500

SHAFTING **S** Corrosion resistant shafting

SAMPLE ORDER: DLB-10-N-B-6

Ex: Base Slide, Size 10, Repairable Cylinder w/Fixed Air Cushions, Linear Ball Bushings, 6 Inch Stroke

Accessories: (Order Separately)

SHOCK/STOP ACCESSORIES

Shock Absorber	SHOK-028	SHOK-010	SHOK-010	1 or 2
Adjustable Hard Stop	DLT-1023	DLT-1023	DLT-1023	1 or 2

INDUCTIVE SENSOR ACCESSORIES¹

Inductive Sensor PNP Qk. Disconnect	OISP-011	OISP-011	OISP-011	1 or 2
Inductive Sensor NPN Qk. Disconnect	OISN-011	OISN-011	OISN-011	1 or 2
Quick. Disconnect 2M Cable Length	CABL-010	CABL-010	CABL-010	1 or 2
Quick. Disconnect 5M Cable Length	CABL-013	CABL-013	CABL-013	1 or 2

MAGNETIC SENSOR ACCESSORIES¹ **

Magneto Resistive Sensor PNP Qk. Disc.	OHSP-005	OHSP-005	OHSP-005	1 or 2
Magneto Resistive Sensor NPN Qk. Disc.	OHSN-005	OHSN-005	OHSN-005	1 or 2
Quick. Disconnect 2M Cable Length	CABL-010	CABL-010	CABL-010	1 or 2
Quick. Disconnect 5M Cable Length	CABL-013	CABL-013	CABL-013	1 or 2

PNEUMATIC ACCESSORIES

NFPA Cylinder Mounting Kit (-U only)	ODLT-001	ODLT-002	ODLT-002	1
1/8 NPT Telescopic Airlines (up to 6")	OTAL-039	OTAL-039	OTAL-039	1,2,3 or 4
1/8 NPT Telescopic Airlines (up to 12")	OTAL-040	OTAL-040	OTAL-040	1,2,3 or 4
1/8 NPT Telescopic Airlines (up to 18")	OTAL-041	OTAL-041	OTAL-041	1,2,3 or 4
1/8 NPT Telescopic Airlines (up to 24")	OTAL-042	OTAL-042	OTAL-042	1,2,3 or 4
1/8 NPT Adjustable Flow Control	VLVF-004	VLVF-004	VLVF-004	1 or 2

¹Sensor and cable sold separately **Piston magnet standard

DLB SERIES

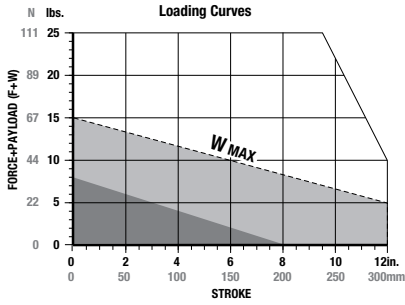
DIRECTCONNECT™



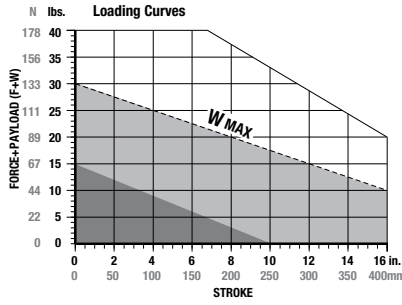
DLB-N, U Product Specifications



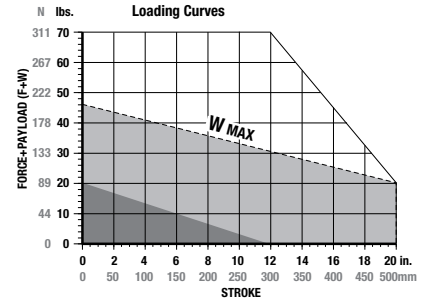
DLB-10-N,U



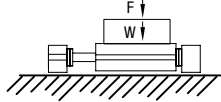
DLB-12-N,U



DLB-16-N,U



F=Externally applied force (lbs. or N)
 W=Weight of payload (lbs. or N)
 F+W=Total force (lbs. or N)



Shock Absorbers and Flow Controls are recommended for nearly all applications

(W) in this range use **Single Shock** in both directions (W) in this range use **Bumpers or Cushioned Cylinder**

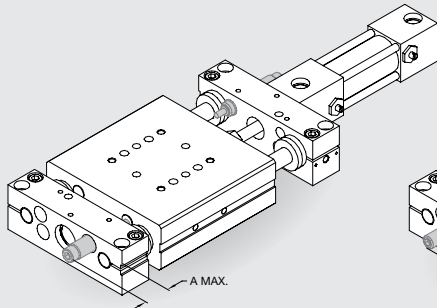
Shaded shock absorption ranges of horizontal payload (W) @ 80psi, flow controls fully open. For vertical applications do not exceed 1/2 of the recommended payload due to the additional acceleration effect of gravity.

Specifications	DLB-10
Maximum Air Pressure.....	100 psi
Thrust Force @ 80psi/5.5bar.....	29 lbs.
Weight (Basic Unit -N).....	2.01 lbs.
Additional Weight per Stroke.....	0.08 lbs./in.
Cylinder Bore Diameter.....	3/4"
Shaft Diameter.....	0.375"
Maximum Moment Load.....	75 in.-lbs.

Specifications	DLB-12
Maximum Air Pressure.....	100 psi
Thrust Force @ 80psi/5.5bar.....	71 lbs.
Weight (Basic Unit -N).....	3.79 lbs.
Additional Weight per Stroke.....	0.16 lbs./in.
Cylinder Bore Diameter.....	1-1/8"
Shaft Diameter.....	0.472"
Maximum Moment Load.....	150 in.-lbs.

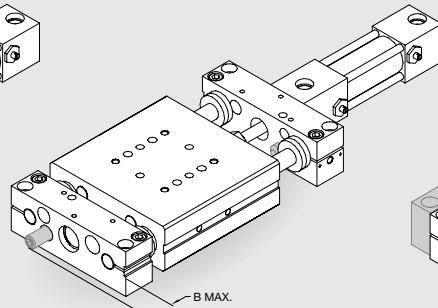
Specifications	DLB-16
Maximum Air Pressure.....	100 psi
Thrust Force @ 80psi/5.5bar.....	71 lbs.
Weight (Basic Unit -N).....	5.09 lbs.
Additional Weight per Stroke.....	0.24 lbs./in.
Cylinder Bore Diameter.....	1-1/8"
Shaft Diameter.....	0.630"
Maximum Moment Load.....	300 in.-lbs.

Accessory Mounting Technical Data



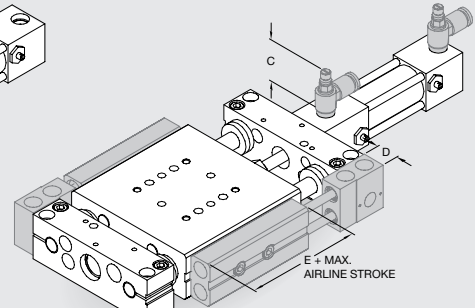
Shock Absorbers

- Full stroking piston rod
- Built-in hard stop
- Allen wrench adjustable



Adjustable Hard Stops

- For precision (+/- .001") hard stop end point positioning
- Allows for stop adjustment independent of shock absorber hard stop
- Allen wrench adjustable

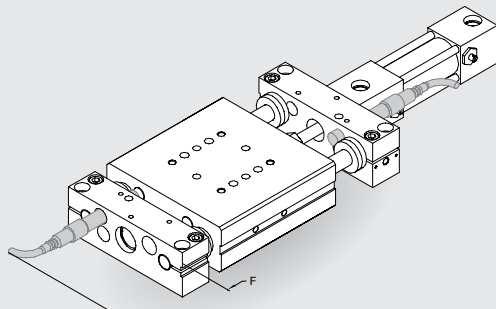


Flow Controls for Cylinders

- Thumb screw adjust with locking nut for adjusting cylinder speed
- 1/8 NPT pipe threads

Telescoping Airlines

- Eliminate flexing air lines
- Self aligning air tube design extends useful seal life
- Modular stackable design. Up to (4) modules can be stacked
- Modules can be mounted on either side of slide
- 1/8 NPT pipe threads
- (2) user air ports per module

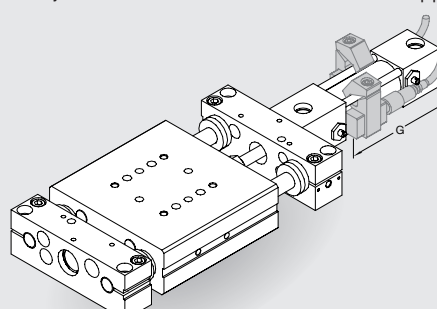


Inductive Proximity Sensors

- 8mm diameter
- Threaded quick disconnect with built-in LED output
- PNP and NPN available

Quick Disconnect Cable

- Threaded coupling with knurled head for secure electrical connections
- 2 meter cable length
- 5 meter cable length

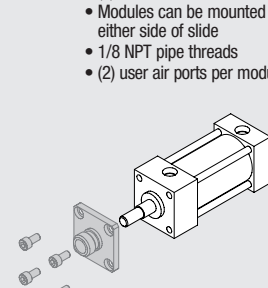


Magneto Resistive Sensors

- For all externally mounted cylinders
- Quick Disconnect with built in LED output
- Clamp-on mounting kit included
- PNP and NPN available

Quick Disconnect Cable

- Threaded coupling with knurled head for secure electrical connections
- 2 meter cable length
- 5 meter cable length



NFPA Cylinder Mounting Kit

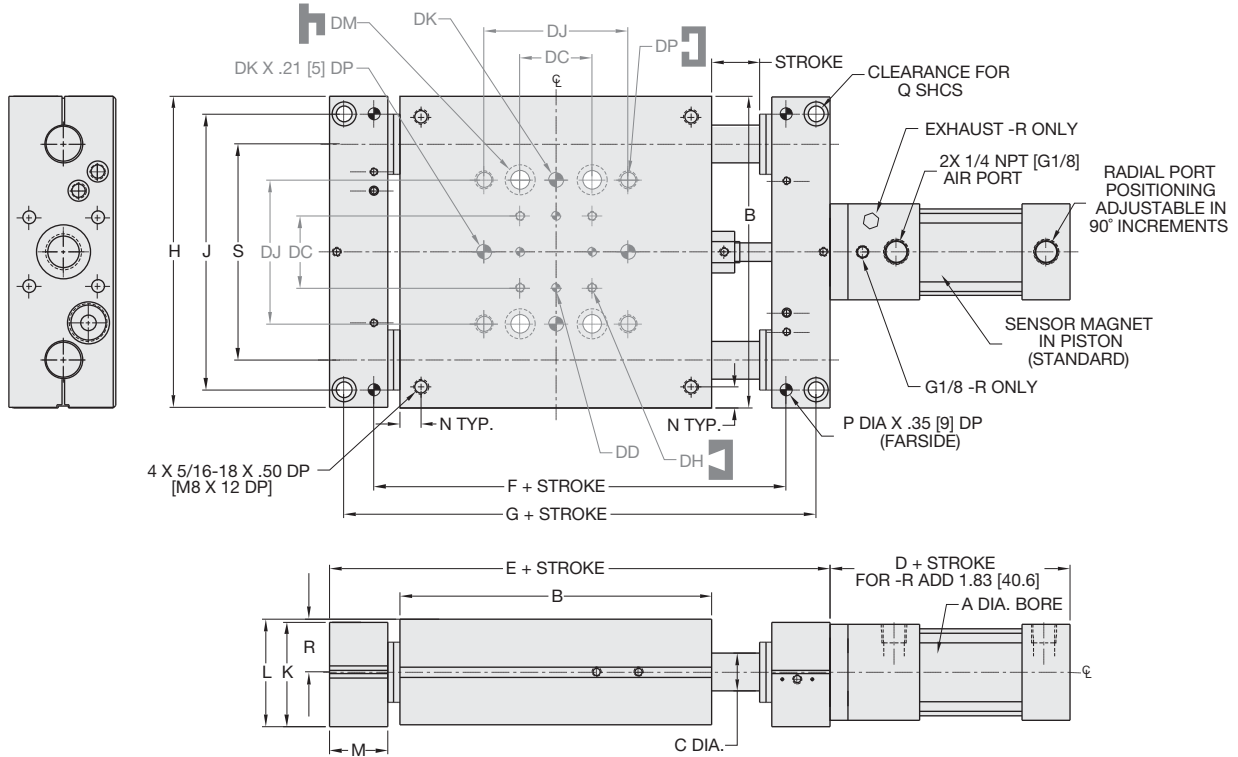
- Used to mount standard face mounted NFPA cylinders to non-powered units (-U)

	A	B	C	D	E	F	G
DLB-10	.70"	.47	1.25	.577	3.60	2.5	3.00
DLB-12	.95"	.47	1.25	.577	3.60	2.5	3.00
DLB-16	.95"	.47	1.25	.577	3.60	2.5	3.00
DLB-10M	17.8mm	11.9	31.8	14.7	91.4	63.5	76.2
DLB-12M	24.1mm	11.9	31.8	14.7	91.4	63.5	76.2
DLB-16M	24.1mm	11.9	31.8	14.7	91.4	63.5	76.2

DLB SERIES

DIRECTCONNECT™

DLB-N, R, U Product Specifications



UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

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

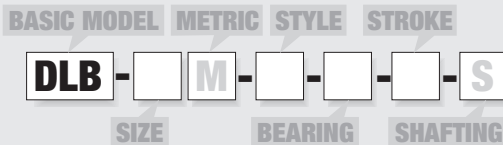
BASIC UNIT DIMENSIONS

MODEL #	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	
DLB-20	1 1/2	32mm	6.50	.787	3.63	9.42	7.5850	8.836	6.480	5.7500	2.180	2.236	1.210	.438	.2505	5/16	1.100	4.500
DLB-25	1 1/2	32mm	7.50	.984	3.63	10.84	8.7320	10.108	7.480	6.7500	2.180	2.236	1.420	.438	.3130	3/8	1.100	5.250
DLB-20M	32	32	165.1	20	98.0	239.3	192.66	224.4	164.6	146.05	55.4	56.8	30.7	11.1	6.00	M8	27.94	114.30
DLB-25M	32	32	190.5	25	98.0	275.3	221.79	256.7	190.0	171.45	55.4	56.8	36.1	11.1	8.00	M10	27.94	113.35

DIRECTCONNECT DIMENSIONS
STANDARD MOUNTING PATTERN FOR ALL SIZES

	Imperial (inches)	Metric (mm)
DC	1.500	38.1
DD	.1880 x .25 DP	5mm H7 x 6 DP
DH	#10-32 x .38 DP	M5 x 9 DP
DJ	3.000	76.2
DK	.3130 x .37 DP	8mm H7 x 9.4 DP
DM	Clearance for 3/8	Clearance for M10
DP	3/8-16 X .50 DP	M10 X 12 DP

How to Order: Basic Unit



SIZE 20, 25

METRIC M

STYLE N Repairable NFPA/VDMA cylinder w/adjustable air cushions
R Repairable locking VDMA cylinder w/adjustable air cushions
U Non-powered unit (Without cylinder. Metric Units: Mount VDMA cylinder directly. NFPA not available. Imperial Units: Mount NFPA cylinders using NFPA mounting kit. VDMA not available.)

BEARING B Linear ball bearings
C Composite bushings

STROKE (inches)
DLB-20 1-24 @ 1" increments
DLB-25 1-26 @ 1" increments

Custom strokes available.
Please consult factory.

STROKE (mm)
DLB-20M 25, 50, 80, 100, 125, 160, 200, 250, 300, 320, 360, 400, 500
DLB-25M 25, 50, 80, 100, 125, 160, 200, 250, 300, 320, 360, 400, 500

SHAFTING S Corrosion resistant shafting

SAMPLE ORDER: DLB-20-N-B-12

Ex: Base Slide, Size 20, Repairable NFPA Cylinder w/Adjustable Air Cushions, Linear Ball Bushings, Inch Stroke

Accessories: (Order Separately)

SHOCK/STOP ACCESSORIES

Shock Absorber (adjustable dampening)	SHOK-029	SHOK-029	1 or 2
Adjustable Hard Stop	DLT-1023	DLT-1023	1 or 2

INDUCTIVE SENSOR ACCESSORIES†

Inductive Sensor PNP Qk. Disconnect	OISP-011	OISP-011	1 or 2
Inductive Sensor NPN Qk. Disconnect	OISN-011	OISN-011	1 or 2
Quick. Disconnect 2M Cable Length	CABL-010	CABL-010	1 or 2
Quick. Disconnect 5M Cable Length	CABL-013	CABL-013	1 or 2
Cable Extension Cord 1M Length	CABL-015	CABL-015	1 or 2
Cable Extension Cord 2M Length	CABL-016	CABL-016	1 or 2

MAGNETIC SENSOR ACCESSORIES† **

Magneto Resistive Sensor PNP Qk. Disc.	OHSP-020	OHSP-020	1 or 2
Magneto Resistive Sensor NPN Qk. Disc.	OHSN-020	OHSN-020	1 or 2
Quick. Disconnect 2M Cable Length	CABL-010	CABL-010	1 or 2
Quick. Disconnect 5M Cable Length	CABL-013	CABL-013	1 or 2
Cable Extension Cord 1M Length	CABL-015	CABL-015	1 or 2
Cable Extension Cord 2M Length	CABL-016	CABL-016	1 or 2

PNEUMATIC ACCESSORIES

NFPA Cylinder Mounting Kit (-U only)	ODLB-001	ODLB-001	1
1/8 NPT Telescopic Airlines (up to 6")	OTAL-039	OTAL-039	1, 2, 3 or 4
1/8 NPT Telescopic Airlines (up to 12")	OTAL-040	OTAL-040	1, 2, 3 or 4
1/8 NPT Telescopic Airlines (up to 18")	OTAL-041	OTAL-041	1, 2, 3 or 4
1/8 NPT Telescopic Airlines (up to 24")	OTAL-042	OTAL-042	1, 2, 3 or 4
1/4 NPT Adjustable Flow Control	VLVF-006	VLVF-006	1 or 2
G1/8 Telescopic Airlines (up to 160mm)	OTAL-045	OTAL-045	1, 2, 3 or 4
G1/8 Telescopic Airlines (up to 300mm)	OTAL-046	OTAL-046	1, 2, 3 or 4
G1/8 Telescopic Airlines (up to 450mm)	OTAL-047	OTAL-047	1, 2, 3 or 4
G1/8 Telescopic Airlines (up to 600mm)	OTAL-048	OTAL-048	1, 2, 3 or 4
G1/8 Adjustable Flow Control	VLVF-005	VLVF-005	1 or 2
G1/8 Male to 1/8 NPT Adapter	PLFT-025	PLFT-025	1 or 2

†Sensor and cable sold separately **Piston magnet standard



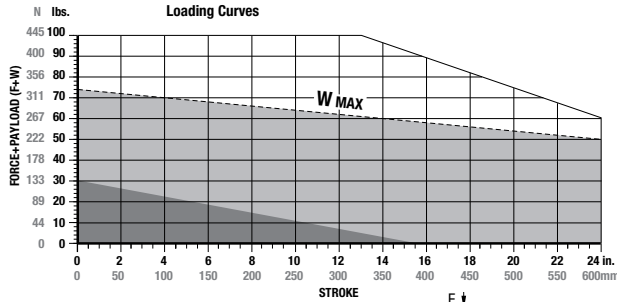
DLB SERIES

DIRECTCONNECT™

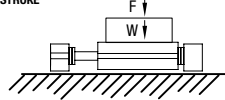


DLB-N, R, U Product Specifications

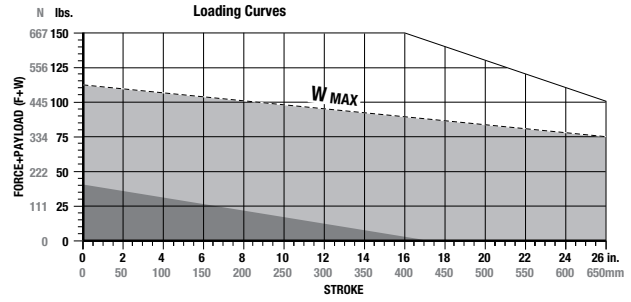
DLB -20M -N, R, U



F=Externally applied force (lbs. or N)
 W=Weight of payload (lbs. or N)
 F+W=Total force (lbs. or N)



DLB -25M -N, R, U



Shock Absorbers and Flow Controls are recommended for nearly all applications

(W) in this range use Single Shock in both directions

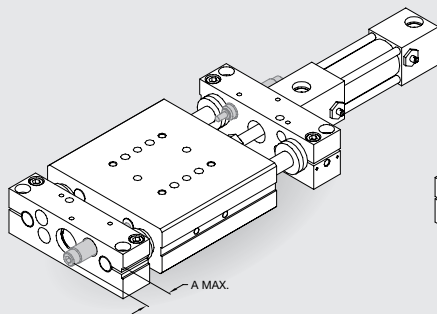
(W) in this range use Bumpers or Cushioned Cylinder

Shaded shock absorption ranges of horizontal payload (W) @ 80psi, flow controls fully open. For vertical applications do not exceed 1/2 of the recommended payload due to the additional acceleration effect of gravity.

Specifications	DLB-20	DLB-20M
Maximum Air Pressure.....	100 psi	6.9 bar
Thrust Force @ 80psi/5.5bar.....	117 lbs.	443 N
Weight (Basic Unit -N, -R).....	12.9 lbs.	5.9 kg
Additional Weight per Stroke -N, -R	0.53 lbs./in.	9.5 g/mm
Cylinder Bore Diameter -N	1-1/2"	32 mm
Cylinder Bore Diameter -R	32 mm	32 mm
Shaft Diameter.....	0.787"	20 mm
Maximum Moment Load	600 in.-lbs.	67.8 N-m
Min. Air Pressure to Release Cylinder Lock -R.....	60 psi	4 bar
Holding Force of Locking Mechanism -R	123 psi	550 N

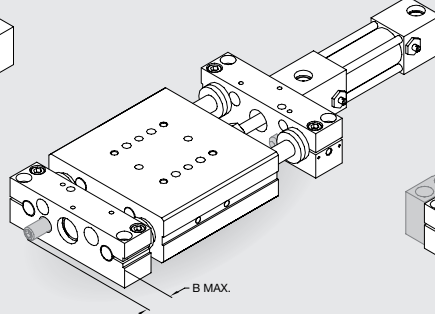
Specifications	DLB-25	DLB-25M
Maximum Air Pressure.....	100 psi	6.9 bar
Thrust Force @ 80psi/5.5bar.....	117 lbs.	443 N
Weight (Basic Unit -N, -R).....	18.0 lbs.	8.3 kg
Additional Weight per Stroke -N, -R	0.68 lbs./in.	12.1 g/mm
Cylinder Bore Diameter -N	1-1/2"	32 mm
Cylinder Bore Diameter -R	32 mm	32 mm
Shaft Diameter.....	0.984"	25 mm
Maximum Moment Load	1200 in.-lbs.	135 N-m
Min. Air Pressure to Release Cylinder Lock -R.....	60 psi	4 bar
Holding Force of Locking Mechanism -R	123 psi	550 N

Accessory Mounting Technical Data



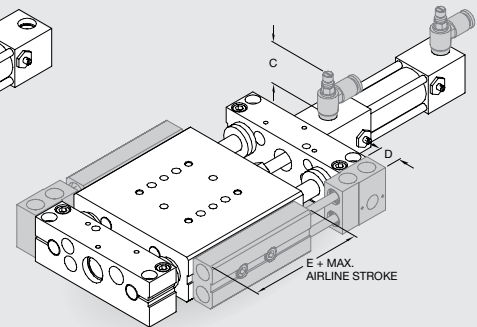
Shock Absorbers

- Full stroking piston rod
- Built-in hard stop
- Position adjustable
- Adjustable dampening



Adjustable Hard Stops

- For precision (+/- .001") hard stop end point positioning
- Allows for stop adjustment independent of shock absorber hard stop
- Allen wrench adjustable

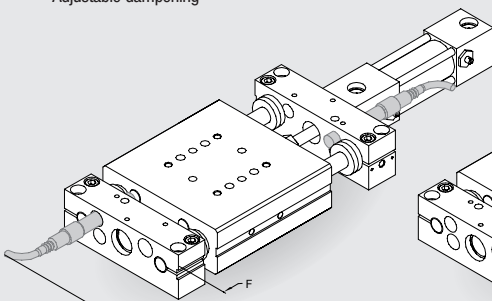


Telescoping Airlines

- Eliminate flexing air lines
- Self aligning air tube design extends useful seal life
- Modular stackable design. Up to (4) modules can be stacked
- Modules can be mounted on either side of slide
- 1/8 NPT or G1/8 pipe threads
- (2) user air ports per module

Flow Controls for Cylinders

- Thumb screw adjust with locking nut for adjusting cylinder speed
- 1/4 NPT or G1/8 pipe threads

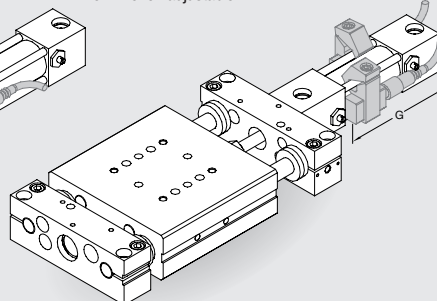


Inductive Proximity Sensors

- 8mm diameter
- Threaded quick disconnect with built-in LED output
- PNP and NPN available

Quick Disconnect Cable

- Threaded coupling with knurled head for secure electrical connections
- 2 meter cable length
- 5 meter cable length
- Quick disconnect cable extensions cords available in 1 or 2 meter lengths

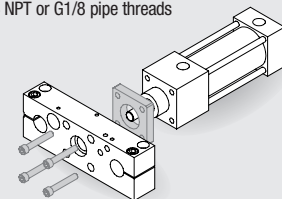


Magneto Resistive Sensors

- For all externally mounted cylinders
- Quick Disconnect with built in LED output
- Clamp-on mounting kit included
- PNP and NPN available

Quick Disconnect Cable

- Threaded coupling with knurled head for secure electrical connections
- 2 meter cable length
- 5 meter cable length
- Quick disconnect cable extensions cords available in 1 or 2 meter lengths



NFPA Cylinder Mounting Kit

- Used to mount standard face mounted NFPA cylinders to non-powered units (-U) Refer to accessories mounting section.

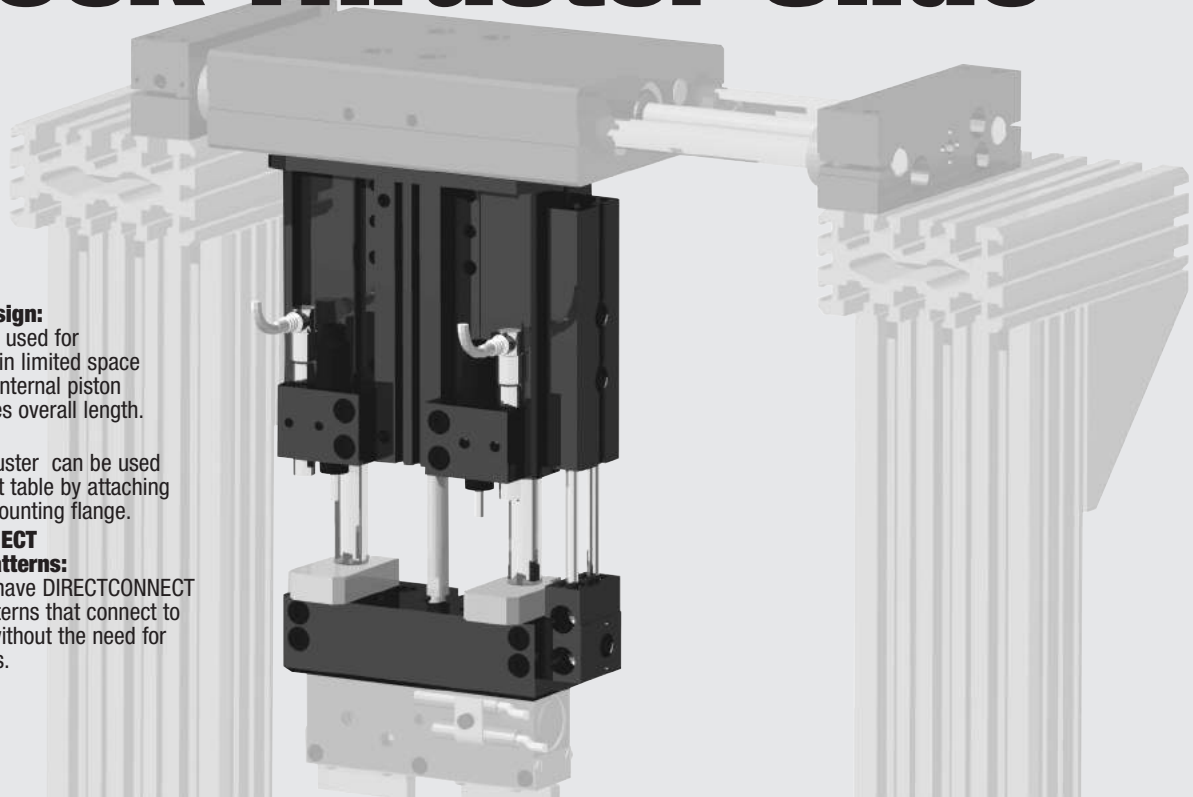
	A	B	C	D	E	F	G
DLB-20	2.03"	.10	1.40	.577	3.60	2.12	3.00
DLB-25	1.82"	.10	1.40	.577	3.60	1.90	3.00
DLB-20M	51.6mm	2.5	31.8	14.7	91.4	53.8	76.2
DLB-25M	46.2mm	2.5	31.8	14.7	91.4	48.3	76.2

DLB SERIES

DIRECTCONNECT™

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DLT Integrated Cylinder Block Thruster Slide



Compact design:
This design is used for short strokes in limited space applications. Internal piston design reduces overall length.

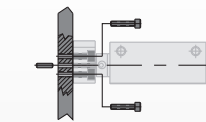
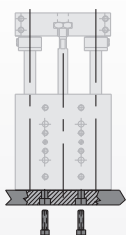
Lift table:
The block thruster can be used as a power lift table by attaching an optional mounting flange.

DIRECTCONNECT mounting patterns:
These slides have DIRECTCONNECT mounting patterns that connect to other slides without the need for adapter plates.

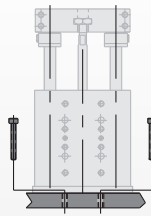
DLT SERIES

Mounting Information:

Mounts and operates in any orientation



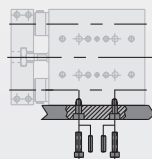
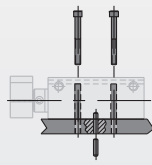
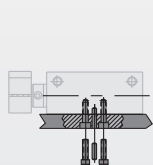
Payload attaches to tooling plate with screws and locates using slip fit dowel pin holes.



Body can end mount on end using optional mounting flange.



Body can be back mounted using DIRECTCONNECT mounting from the back or front of the thruster.



Body mounts with screws and locate with slip fit dowel pin holes on side or bottom using DIRECTCONNECT mounting patterns.

Technical Specifications:

Pneumatic Specifications
Pressure Operating Range*
Cylinder Type
Dynamic Seals
Valve Required to Operate

Imperial
40-100 psi
Metric
3-7 bar
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)
Viton® Seals (optional)

-30°~180° F
-20°~300° F
-35°~80° C
-30°~150° 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

Flow controls, shock absorbers and urethane bumpers recommended for nearly all applications.
Use composite bushing in dirty or gritty environments.
Never use silicone based lubricants with composite bushings.

*Higher pressure possible. Consult factory with application details.

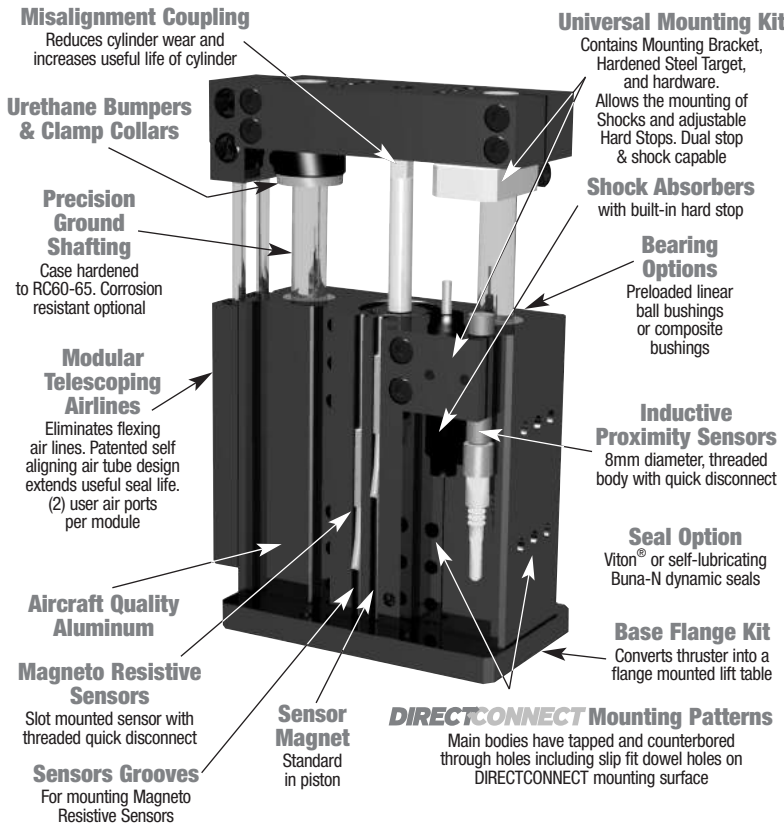
**Addition of lubrication will greatly increase service life

[†]See Maintenance Section

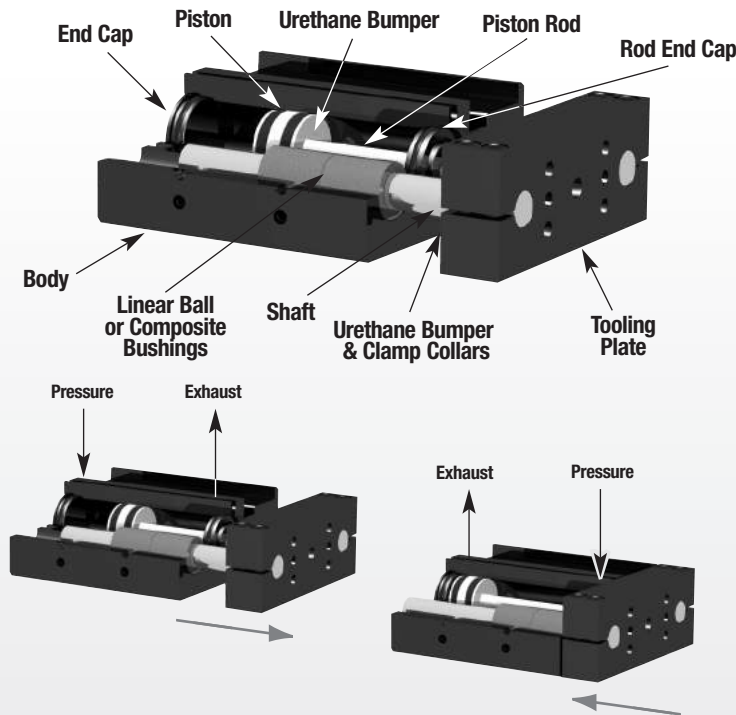
DIRECTCONNECT™



Product Features



Operating Principle



- A double acting internal cylinder located within the body drives a piston rod that connects to the tooling plate with a misalignment coupling.
- The tooling is attached to two hardened steel shafts which are supported by and move in four linear bushings located in the body.

Designed and manufactured in the USA

Style-B Block Thruster

Size -06M



See Page 4.30

Style-B Block Thruster

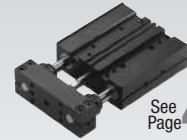
Size -08M



See Page 4.30

Style-B Block Thruster

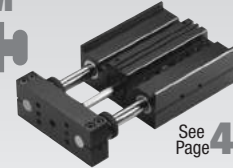
Size -10M



See Page 4.32

Style-B Block Thruster

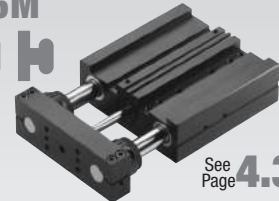
Size -12M



See Page 4.32

Style-B Block Thruster

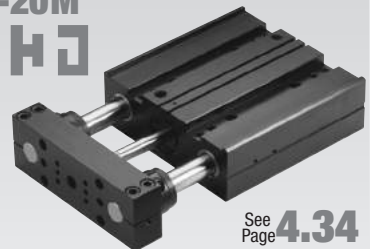
Size -16M



See Page 4.32

Style-B Block Thruster

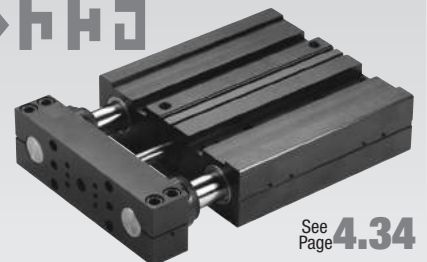
Size -20M



See Page 4.34

Style-B Block Thruster

Size -25M



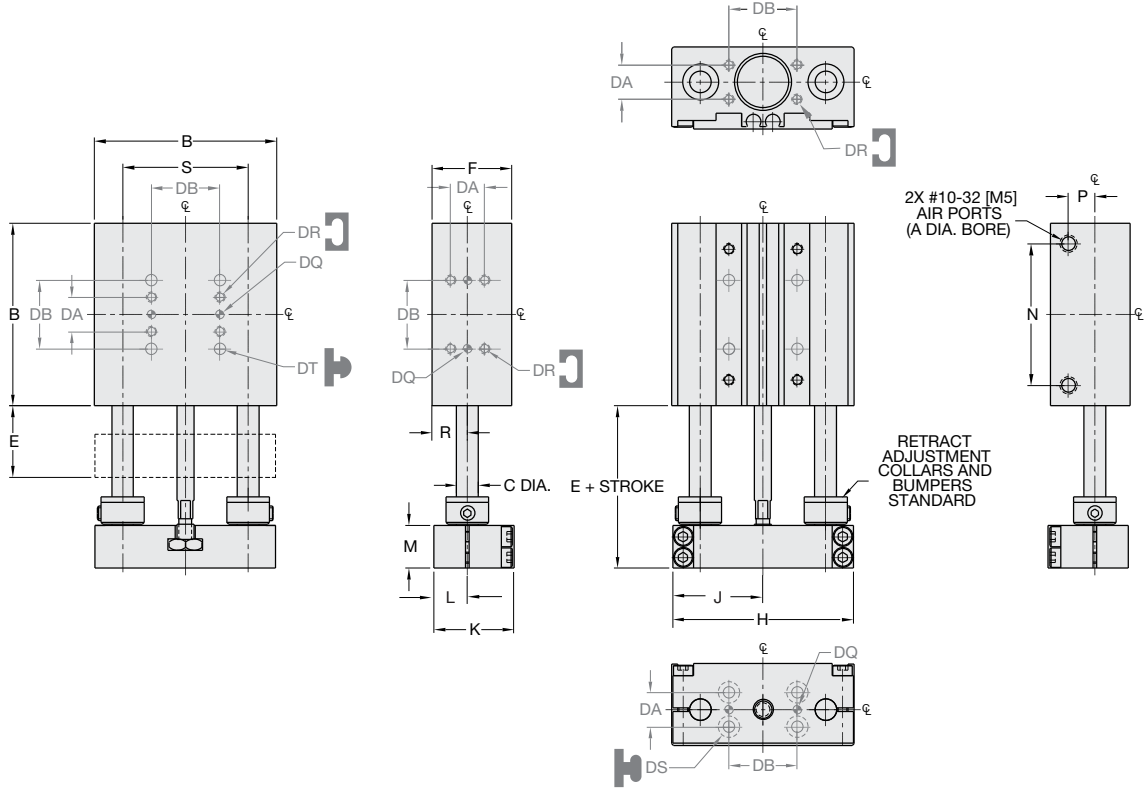
See Page 4.34

DLT SERIES

DLT SERIES

DIRECTCONNECT™

DLT-B Series Product Specifications



UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

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

DIRECTCONNECT DIMENSIONS
STANDARD MOUNTING PATTERN FOR ALL SIZES

	Imperial (inches)	Metric (mm)
DA	.375	9.5
DB	.750	19.1
DQ	.0940 x .078 DP	3H7 x 2 DP
DR	#4-40 x .25 DP	M3 x 6 DP
DS	Clearance for #4	Clearance for M3
DT	Clearance for #4	Clearance for M3

BASIC UNIT DIMENSIONS

MODEL #	BORE DIA.		BODY SIZE		SHAFT DIA.		BASIC UNIT DIMENSIONS												
	A	B	C	E	F	H	J	K	L	M	N	P	R	S					
DLT-06	0.563	2.00	0.236	0.783	0.88	1.980	.990	0.875	.365	0.470	1.55	0.29	.390	1.375					
DLT-08	0.563	2.50	0.315	0.783	0.88	2.470	1.235	0.875	.365	0.470	2.05	0.29	.390	1.750					
DLT-06M	14	50.8	6.0	19.9	22.4	50.3	25.1	22.2	9.3	11.9	39.4	7.4	9.9	34.93					
DLT-08M	14	63.5	8.0	19.9	22.4	62.7	31.0	22.2	9.3	11.9	52.1	7.4	9.9	44.45					

How to Order: Basic Unit

BASIC MODEL METRIC STYLE STROKE SHAFTING

DLT - **M** - **B** - **C** - **V** - **S**

SIZE **BEARING** **VITON® SEALS**

SIZE 06, 08

METRIC M

STYLE B Block thruster with built-in repairable cylinder

BEARING C Composite bushings

STROKE (inches)
DLT-06 .25, .5, 1, 1.25
DLT-08 .25, .5, 1, 1.5, 1.75

STROKE (mm)
DLT-06M 6, 12, 25, 30
DLT-08M 6, 12, 25, 30, 40, 44

VITON® V Viton® seals

SHAFTING S Corrosion resistant shafting

Custom strokes available. Please consult factory.

SAMPLE ORDER: DLT-06-B-C-1.5-V

Ex: Thruster, Size 06, Block Style, Composite Bushings, 1.5 Inch Stroke, Viton® Seals

Accessories: (Order Separately)

	DLT-06M	DLT-08M	QTY/THRUSTER
SHOCK/STOP ACCESSORIES			
Universal Mounting Kit (Shock or Stop)	OSAK-069	OSAK-070	1 or 2
Shock Absorber*	SHOK-030	SHOK-030	1 or 2
Adjustable Hard Stop*	DLT-623	DLT-623	1 or 2
INDUCTIVE SENSOR ACCESSORIES †			
Inductive Sensor Mounting Kit	OSMK-076	OSMK-077	1
Inductive Sensor PNP Qk. Disconnect †	OISP-014	OISP-014	1
Inductive Sensor NPN Qk. Disconnect †	OISN-014	OISN-014	1
Quick Disconnect 2 M Cable Length	CABL-010	CABL-010	1
Quick Disconnect 5 M Cable Length	CABL-013	CABL-013	1
MAGNETIC SENSOR ACCESSORIES ** †			
Magneto Resistive Sensor PNP Qk. Disc.†	OHSP-017	OHSP-017	1 or 2
Magneto Resistive Sensor NPN Qk. Disc.†	OHSN-017	OHSN-017	1 or 2
Quick Disconnect 2 M Cable Length	CABL-010	CABL-010	1 or 2
Quick Disconnect 5 M Cable Length	CABL-013	CABL-013	1 or 2
PNEUMATIC ACCESSORIES			
#10-32 Adjustable Flow Control	VLVF-007	VLVF-007	1 or 2
M5 Adjustable Flow Control	VLVF-008	VLVF-008	1 or 2
Cylinder Seal Repair Kit	SLKT-108	SLKT-108	1
Viton® Seal Repair Kit	SLKT-108V	SLKT-108V	1
MOUNTING ACCESSORIES			
Base Flange Kit (Imperial & Metric)	ODLT-015	ODLT-016	1

*Requires Universal Mounting Kit †Sensor and cable sold separately **Piston magnet standard

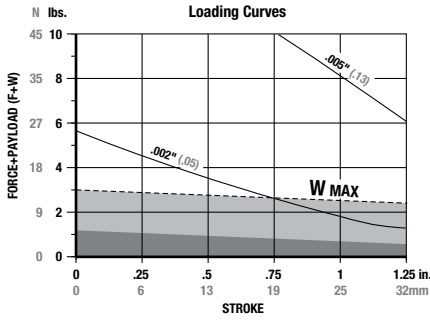
DLT SERIES

DIRECTCONNECT™

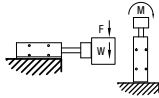


DLT-B Series Product Specifications

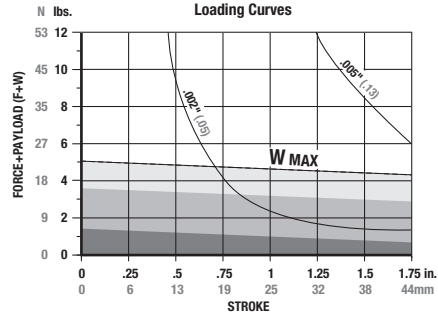
DLT -06M -B



F=Externally applied force (lbs. or N)
W=Weight of payload (lbs. or N)
F+W=Total deflection force (lbs. or N)
M=Maximum moment (in.-lb. or N-m)



DLT -08M -B



Shock Absorbers and Flow Controls are recommended for nearly all applications

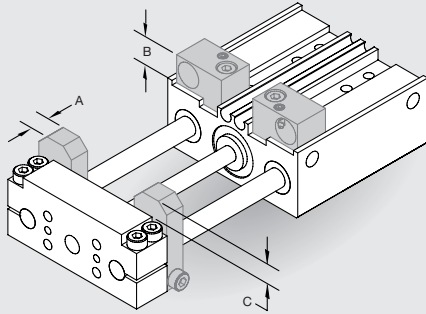
Use **Double Shocks** in both directions Use **Single Shock** in both directions Use **Bumpers or Cushioned Cylinder**

Shaded shock absorption ranges of horizontal payload (W) @ 80psi, flow controls fully open. For vertical applications do not exceed 1/2 of the recommended payload due to the additional acceleration effect of gravity.

Specifications	DLT-06	DLT-06M
Maximum Air Pressure	100 psi	7 bar
Thrust Force @ 80psi/5.5bar.....	20 lbs.	89 N
Weight (Basic Unit).....	0.34 lbs.	0.15 kg
Cylinder Bore Diameter.....	0.563"	14.3 mm
Shaft Diameter.....	0.236"	6 mm
Max (M) Vertical Motion.....	5 in.-lbs.	0.6 N-m

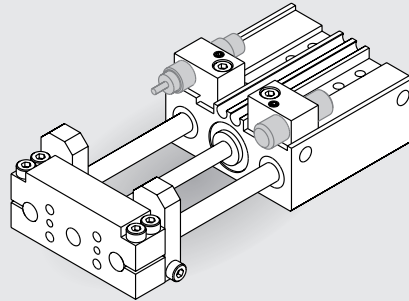
Specifications	DLT-08	DLT-08M
Maximum Air Pressure	100 psi	7 bar
Thrust Force @ 80psi/5.5bar.....	20 lbs.	89 N
Weight (Basic Unit).....	0.65 lbs.	0.30 kg
Cylinder Bore Diameter.....	0.563"	14.3 mm
Shaft Diameter.....	0.315"	8 mm
Max (M) Vertical Motion.....	10 in.-lbs.	1.1 N-m

Accessory Mounting Technical Data



Universal Mounting Kit

- Kit mounts (1) Shock Absorber or (1) Adjustable Hard Stop
- Kit includes (1) Mounting Bracket, (1) Hardened Tool Steel Target and Hardware
- Target allows for unlimited retract stroke adjustment (no extend position adjustment). Fine adjustment is achieved using Adjustable Hard Stop or Shock Absorber
- Mounting Bracket keys into body for secure positioning and excellent rigidity
- Two possible mounting positions

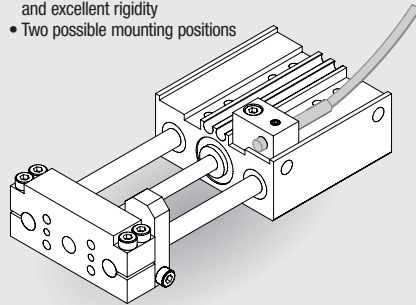


Adjustable Hard Stops

- For precision (+/- .001") end point positioning of retract position
- Allows for end stop position adjustment independent of shock absorber hard stop
- Allen wrench adjustable

Shock Absorbers

- Full stroking piston rod
- Built-in hard stop
- Position adjustable

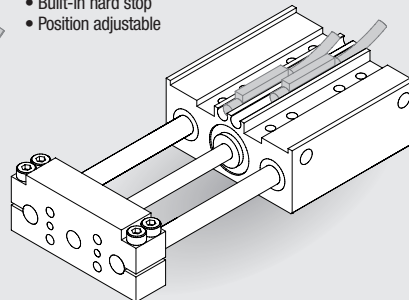


Inductive Proximity Sensors

- 4 mm diameter
- Threaded quick disconnect with built-in LED output
- PNP and NPN available

Quick Disconnect Cables

- Quick disconnect 2M cable Length
- Quick disconnect 5M cable Length

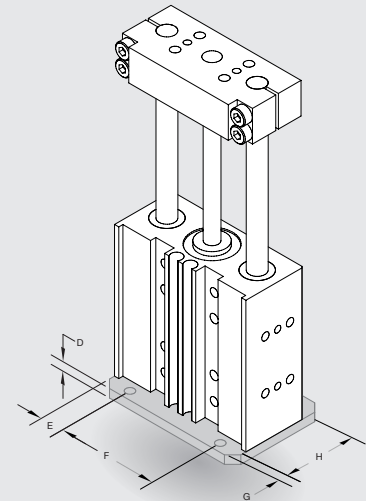


Magneto Resistive Sensors

- No mounting kit required (slot mounted)
- Built-in LED output
- PNP and NPN available
- Hard wired 2 meter cable length
- Low profile

Quick Disconnect Cables

- Quick disconnect 2M cable Length
- Quick disconnect 5M cable Length



Base Flange Kit

- Convert Thruster unit into a Flange mounted Lift Table
- Provides a **DIRECTCONNECT** mounting pattern on the bottom surface

Flow Controls for Cylinders

- Thumb screw adjust with locking nut for adjusting cylinder speed
- #10-32 or M5 pipe threads

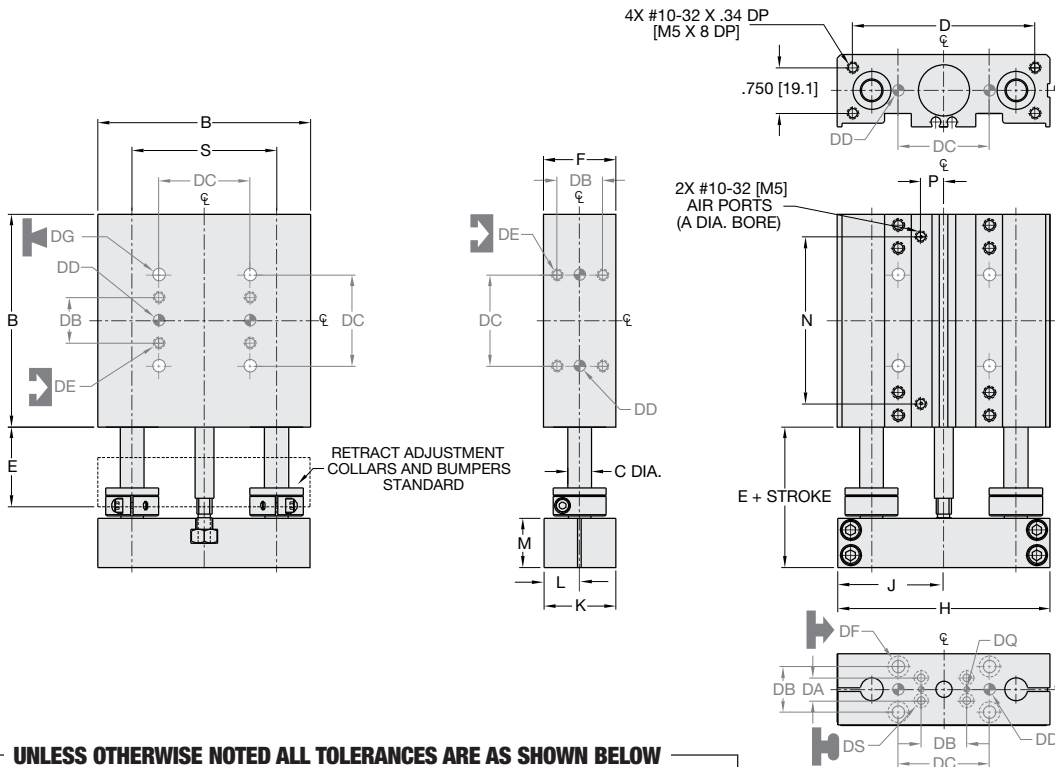
	A	B	C	D	E	F	G	H
DLT-06	.250"	.310	.270	.125	.313	1.376	.125	1.125
DLT-08	.250"	.310	.270	.125	.563	1.376	.125	1.125
DLT-06M	6.4 mm	7.9	6.7	3.2	8.0	35	3.2	28.6
DLT-08M	6.4 mm	7.9	6.7	3.2	14.3	35	3.2	28.6



DLT SERIES

DIRECTCONNECT™

DLT-B Series Product Specifications



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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BASIC UNIT DIMENSIONS

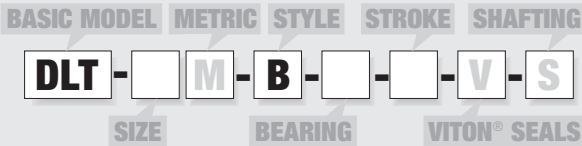
MODEL #	BORE DIA.		BODY SIZE		SHAFT DIA.									
	A	B	C	D	E	F	H	J	K	L	M	N	P	S
DLT-10	3/4	3.50	.375	3.000	1.313	1.19	3.490	1.740	1.178	.584	.813	2.75	0.37	2.375
DLT-12	1	4.00	.472	3.625	1.313	1.63	3.985	1.985	1.615	.802	.813	3.28	0.37	2.750
DLT-16	1	4.75	.630	4.375	1.375	1.63	4.735	2.360	1.615	.802	.813	4.03	0.37	3.250
DLT-10M	19	88.9	9.5	76.2	33.4	30.2	88.6	44.2	29.9	14.8	20.7	69.7	9.4	60.33
DLT-12M	25	101.6	12.0	92.1	33.4	41.4	101.2	50.4	41.0	20.4	20.7	83.3	9.4	69.85
DLT-16M	25	120.7	16.0	111.1	34.9	41.4	120.3	59.9	41.0	20.4	20.7	102.4	9.4	82.55

DIRECTCONNECT DIMENSIONS
STANDARD MOUNTING PATTERN FOR ALL SIZES

	Imperial (inches)	Metric (mm)
DA	.375	9.5
DB	.750	19.1
DC	1.500	38.1
DD	.1880 x .25 DP	5mm H7 x 6 DP
DE	#10-32 x .34 DP	M5 x 8.5 DP
DF	Clearance for #10	Clearance for M5
DG	Clearance for #10	Clearance for M5
DQ	.0940 x .078 DP	3H7 x 2 DP
DS	Clr & C'bore for #4	Clr & C'bore for M3

How to Order: Basic Unit

Accessories: (Order Separately) DLT-10M DLT-12M DLT-16M QTY/THRUSTER



- SIZE** 10, 12, 16
- METRIC** M
- STYLE** B Block thruster with built-in repairable cylinder
- BEARING** B Linear ball bearings
C Composite bushings
- STROKE** (inches)
DLT-10 .5-2 @ .5" increments
DLT-12 .5-2 @ .5" increments
DLT-16 .5-3 @ .5" increments
- STROKE** (mm)
DLT-10M 12, 25, 40, 50
DLT-12M 12, 25, 40, 50
DLT-16M 12, 25, 40, 50, 65, 75
- VITON®** V Viton® seals
- SHAFTING** S Corrosion resistant shafting

Custom strokes available. Please consult factory.

SAMPLE ORDER: DLT-10-B-C-1.5-V

Ex: Thruster, Size 10, Block Style, Composite Bushings, 1.5 inch Stroke, Viton® Seals

SHOCK/STOP ACCESSORIES

Universal Mounting Kit (Shock, Stop or Sensor)	OSAK-055	OSAK-057	OSAK-059	1 or 2
Shock Absorber*	SHOK-028	SHOK-010	SHOK-010	1 or 2
Adjustable Hard Stop*	DLT-1023	DLT-1023	DLT-1023	1 or 2

INDUCTIVE SENSOR ACCESSORIES*

Inductive Sensor PNP Qk. Disconnect*	OISP-011	OISP-011	OISP-011	1
Inductive Sensor NPN Qk. Disconnect*	OISN-011	OISN-011	OISN-011	1
Quick Disconnect 2 M Cable Length	CABL-010	CABL-010	CABL-010	1
Quick Disconnect 5 M Cable Length	CABL-013	CABL-013	CABL-013	1

MAGNETIC SENSOR ACCESSORIES**†

Magneto Resistive Sensor PNP Qk. Disc.†	OHSP-017	OHSP-017	OHSP-017	1 or 2
Magneto Resistive Sensor NPN Qk. Disc.†	OHSN-017	OHSN-017	OHSN-017	1 or 2
Quick Disconnect 2 M Cable Length	CABL-010	CABL-010	CABL-010	1
Quick Disconnect 5 M Cable Length	CABL-013	CABL-013	CABL-013	1

PNEUMATIC ACCESSORIES

1/8 NPT Telescopic Airlines (up to 2")	OTAL-037	OTAL-037	OTAL-037	1, 2, 3 or 4
1/8 NPT Telescopic Airlines (up to 3")	OTAL-038	OTAL-038	OTAL-038	1, 2, 3 or 4
#10-32 Adjustable Flow Control	VLVF-007	VLVF-007	VLVF-007	1 or 2
G1/8 Telescopic Airlines (up to 50mm)	OTAL-043	OTAL-043	OTAL-043	1, 2, 3 or 4
G1/8 Telescopic Airlines (up to 80mm)	OTAL-044	OTAL-044	OTAL-044	1, 2, 3 or 4
M5 Adjustable Flow Control	VLVF-008	VLVF-008	VLVF-008	1 or 2
Cylinder Seal Repair Kit	SLKT-100	SLKT-102	SLKT-102	1
Viton® Seal Repair Kit	SLKT-100V	SLKT-102V	SLKT-102V	1

MOUNTING ACCESSORIES

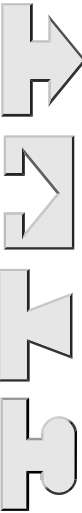
Base Flange Kit (Imperial)	ODLT-005	ODLT-007	ODLT-009	1
Base Flange Kit (Metric)	ODLT-006	ODLT-008	ODLT-010	1

*Requires Universal Mounting Kit †Sensor and cable sold separately **Piston magnet standard

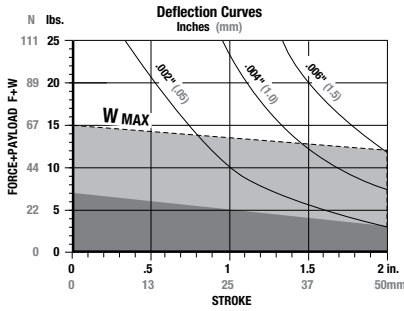
DLT SERIES

DIRECTCONNECT™

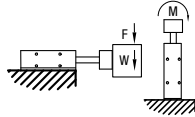
DLT-B Series Product Specifications



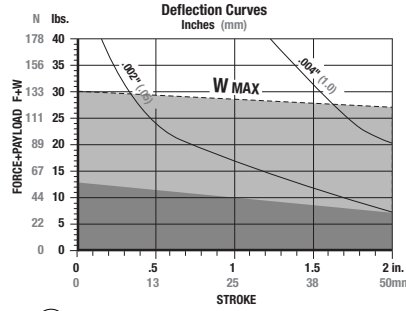
DLT-10M-B



F=Externally applied force (lbs. or N)
 W=Weight of payload (lbs. or N)
 F+W=Total deflection force (lbs. or N)
 M=Maximum moment (in.-lb. or N-m)



DLT-12M-B



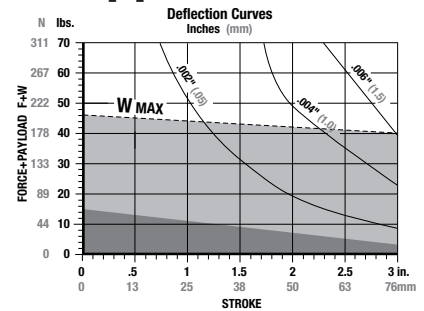
Shock Absorbers and Flow Controls are recommended for nearly all applications

(W) in this range use **Single Shock** in retract direction

(W) in this range use **Bumpers or Cushioned Cylinder**

Shaded shock absorption ranges of horizontal payload (W) @ 80psi, flow controls fully open. For vertical applications do not exceed 1/2 of the recommended payload due to the additional acceleration effect of gravity.

DLT-16[M]-B

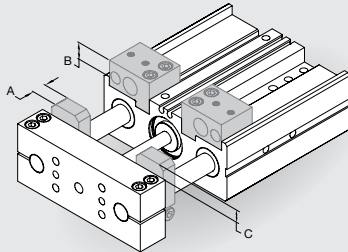


Specifications	DLT-10	DLT-10M
Maximum Air Pressure	100 psi	6.9 bar
Thrust Force @ 80psi/5.5bar	35 lbs.	155 N
Weight (Basic Unit)	1.81 lbs.	0.82 kg
Cylinder Bore Diameter	3/4"	19mm
Shaft Diameter	0.375"	9.5mm
Max (M) Vertical Motion	25 in-lbs.	2.8N-m

Specifications	DLT-12	DLT-12M
Maximum Air Pressure	100 psi	6.9 bar
Thrust Force @ 80psi/5.5bar	62 lbs.	275 N
Weight (Basic Unit)	2.88 lbs.	1.31 kg
Cylinder Bore Diameter	1"	25mm
Shaft Diameter	0.472"	12mm
Max (M) Vertical Motion	50 in-lbs.	5.6N-m

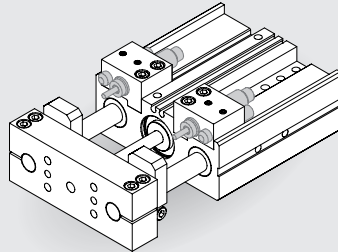
Specifications	DLT-16	DLT-16M
Maximum Air Pressure	100 psi	6.9 bar
Thrust Force @ 80psi/5.5bar	62 lbs.	275 N
Weight (Basic Unit)	4.38 lbs.	1.99 kg
Cylinder Bore Diameter	1"	25mm
Shaft Diameter	0.630"	16mm
Max (M) Vertical Motion	100 in-lbs.	11.3N-m

Accessory Mounting Technical Data



Universal Mounting Kit

- Kit mounts (1) Shock Absorber and (1) Inductive Proximity Sensor or (1) Shock and (1) Adjustable Hard Stop
- Kit includes (1) Mounting Bracket, (1) Hardened Tool Steel Target and Hardware
- Target allows for unlimited retract stroke adjustment (no extend position adjustment). Fine adjustment is achieved using Adjustable Hard Stop or Shock Absorber
- Mounting Bracket keys into body for secure positioning and excellent rigidity
- Two possible mounting positions

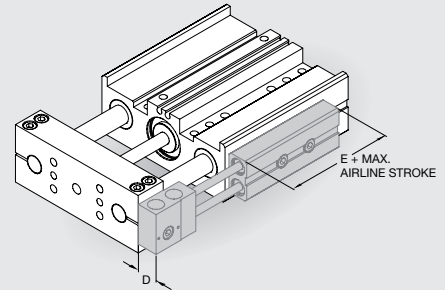


Adjustable Hard Stops

- For precision (+/- .001") end point positioning of retract position
- Allows for end stop position adjustment independent of shock absorber hard stop
- Allen wrench adjustable

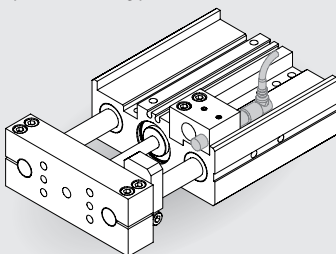
Shock Absorbers

- Full stroking piston rod
- Built-in hard stop
- Allen wrench adjustable



Telescoping Airlines

- Eliminate flexing air lines
- Self aligning air tube design extends useful seal life
- Modular stackable design. Up to (4) modules can be stacked
- 1/8 NPT or G1/8 pipe threads
- (2) user air ports per module

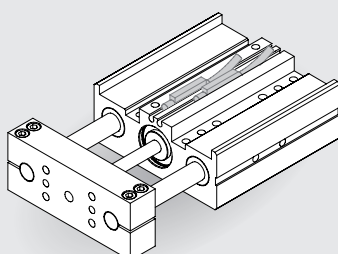


Inductive Proximity Sensors

- 8mm diameter
- Threaded quick disconnect with built-in LED output
- PNP and NPN available

Quick Disconnect Cable

- Threaded coupling with knurled head for secure electrical connections
- 2 meter cable length
- 5 meter cable length

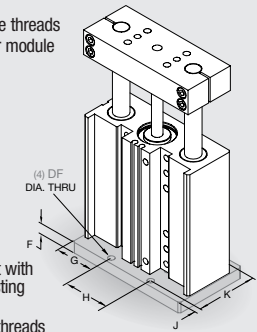


Magneto Resistive Sensors

- No mounting kit required (slot mounted)
- Threaded quick disconnect with built-in LED output
- PNP and NPN available
- Low profile

Quick Disconnect Cable

- Threaded coupling with knurled head for secure electrical connections
- 2 meter cable length
- 5 meter cable length



Flow Controls for Cylinders

- Thumb screw adjust with locking nut for adjusting cylinder speed
- #10-32 or M5 pipe threads

Base Flange Kit

- Convert Thruster unit into a Flange mounted Lift Table
- Provides a **DIRECTCONNECT** mounting pattern on the bottom surface

	A	B	C	D	E	F	G	H	J	K
DLT-10	.375"	.480	.320	.577	2.0	.355	1.00	1.500	.188	1.500
DLT-12	.357"	.450	.230	.577	2.0	.355	1.281	1.500	.188	2.000
DLT-16	.437"	.450	.340	.577	2.0	.355	1.656	1.500	.188	2.000
DLT-10M	9.5mm	12.2	8.1	14.7	50.8	9.0	25.4	38.1	4.8	38.1
DLT-12M	9.5mm	11.4	5.8	14.7	50.8	9.0	32.5	38.1	4.8	50.8
DLT-16M	11.1mm	11.4	8.6	14.7	50.8	9.0	42.1	38.1	4.8	50.8

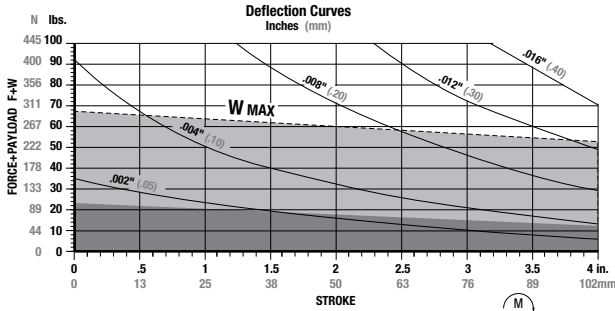
DLT SERIES

DIRECTCONNECT™

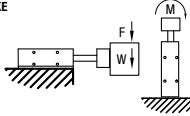


DLT-B Series Product Specifications

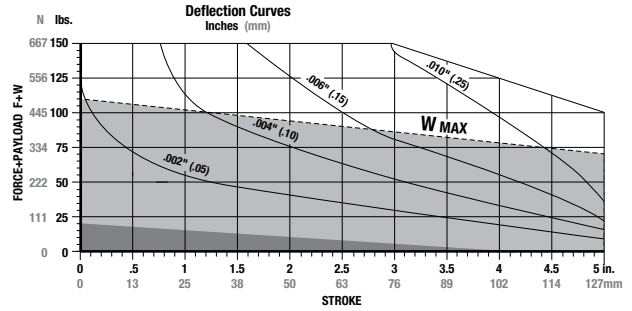
DLT-20M-B



F=Externally applied force (lbs. or N)
 W=Weight of payload (lbs. or N)
 F+W=Total deflection force (lbs. or N)
 M=Maximum moment (in.-lb. or N-m)



DLT-25M-B



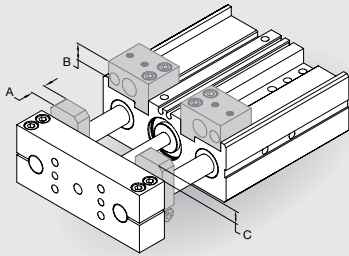
Shock Absorbers and Flow Controls are recommended for nearly all applications
 (W) in this range use Single Shock in retract direction (W) in this range use Bumpers or Cushioned Cylinder

Shaded shock absorption ranges of horizontal payload (W) @ 80psi, flow controls fully open. For vertical applications do not exceed 1/2 of the recommended payload due to the additional acceleration effect of gravity.

Specifications	DLT-20	DLT-20M
Maximum Air Pressure	100 psi	6.9 bar
Thrust Force @ 80psi/5.5bar.....	140 lbs.	622 N
Weight (Basic Unit).....	11.2 lbs.	5.1 kg
Cylinder Bore Diameter.....	1-1/2"	38mm
Shaft Diameter.....	0.787"	20mm
Max (M) Vertical Motion.....	250 in.-lbs.	28.2N-m

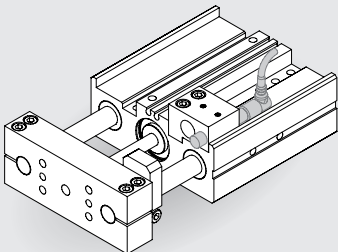
Specifications	DLT-25	DLT-25M
Maximum Air Pressure	100 psi	6.9 bar
Thrust Force @ 80psi/5.5bar.....	140 lbs.	622 N
Weight (Basic Unit).....	15.7 lbs.	7.2 kg
Cylinder Bore Diameter.....	1-1/2"	38mm
Shaft Diameter.....	0.984"	25mm
Max (M) Vertical Motion.....	500 in.-lbs.	56.4N-m

Accessory Mounting Technical Data



Universal Mounting Kit

- Kit mounts (1) Shock Absorber and (1) Inductive Proximity Sensor or (1) Shock and (1) Adjustable Hard Stop
- Kit includes (1) Mounting Bracket, (1) Hardened Tool Steel Target and Hardware
- Target allows for unlimited retract stroke adjustment (no extend position adjustment). Fine adjustment is achieved using Adjustable Hard Stop or Shock Absorber
- Mounting Bracket keys into body for secure positioning and excellent rigidity
- Two possible mounting positions

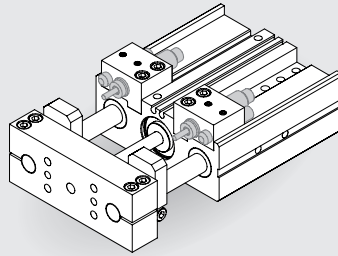


Inductive Proximity Sensors

- 8mm diameter
- Threaded quick disconnect with built-in LED output
- PNP and NPN available

Quick Disconnect Cable

- Threaded coupling with knurled head for secure electrical connections
- 2 meter cable length
- 5 meter cable length

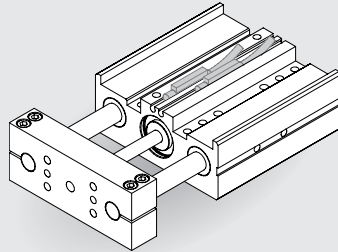


Adjustable Hard Stops

- For precision (+/- .001") end point positioning of retract position
- Allows for end stop position adjustment independent of shock absorber hard stop
- Allen wrench adjustable

Shock Absorbers

- Full stroking piston rod
- Built-in hard stop
- Position adjustable
- Adjustable dampening

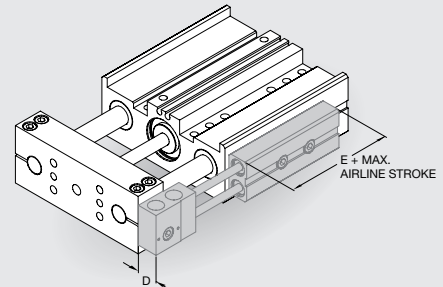


Magneto Resistive Sensors

- No mounting kit required (slot mounted)
- Threaded quick disconnect with built-in LED output
- PNP and NPN available
- Low profile

Quick Disconnect Cable

- Threaded coupling with knurled head for secure electrical connections
- 2 meter cable length
- 5 meter cable length

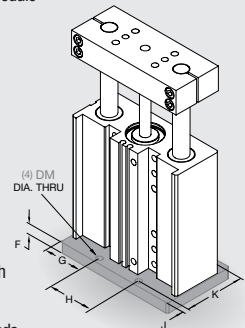


Telescoping Airlines

- Eliminate flexing air lines
- Self aligning air tube design extends useful seal life
- Modular stackable design. Up to (4) modules can be stacked
- 1/8 NPT or G1/8 pipe threads
- (2) user air ports per module

Flow Controls for Cylinders

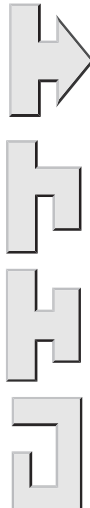
- Thumb screw adjust with locking nut for adjusting cylinder speed
- #10-32 or M5 pipe threads



Base Flange Kit

- Convert Thruster unit into a Flange mounted Lift Table
- Provides a DIRECTCONNECT mounting pattern on the bottom surface

	A	B	C	D	E	F	G	H	J	K
DLT-20	.500"	.92	.67	.577	2.0	.480	1.750	3.000	.375	3.000
DLT-25	.500"	.92	.67	.577	2.0	.480	2.250	3.000	.375	3.000
DLT-20M	12.7mm	23.4	17.0	14.7	50.8	12.2	44.5	76.2	9.5	76.2
DLT-25M	12.7mm	23.4	17.0	14.7	50.8	12.2	57.2	76.2	9.5	76.2



TWIN TUBE

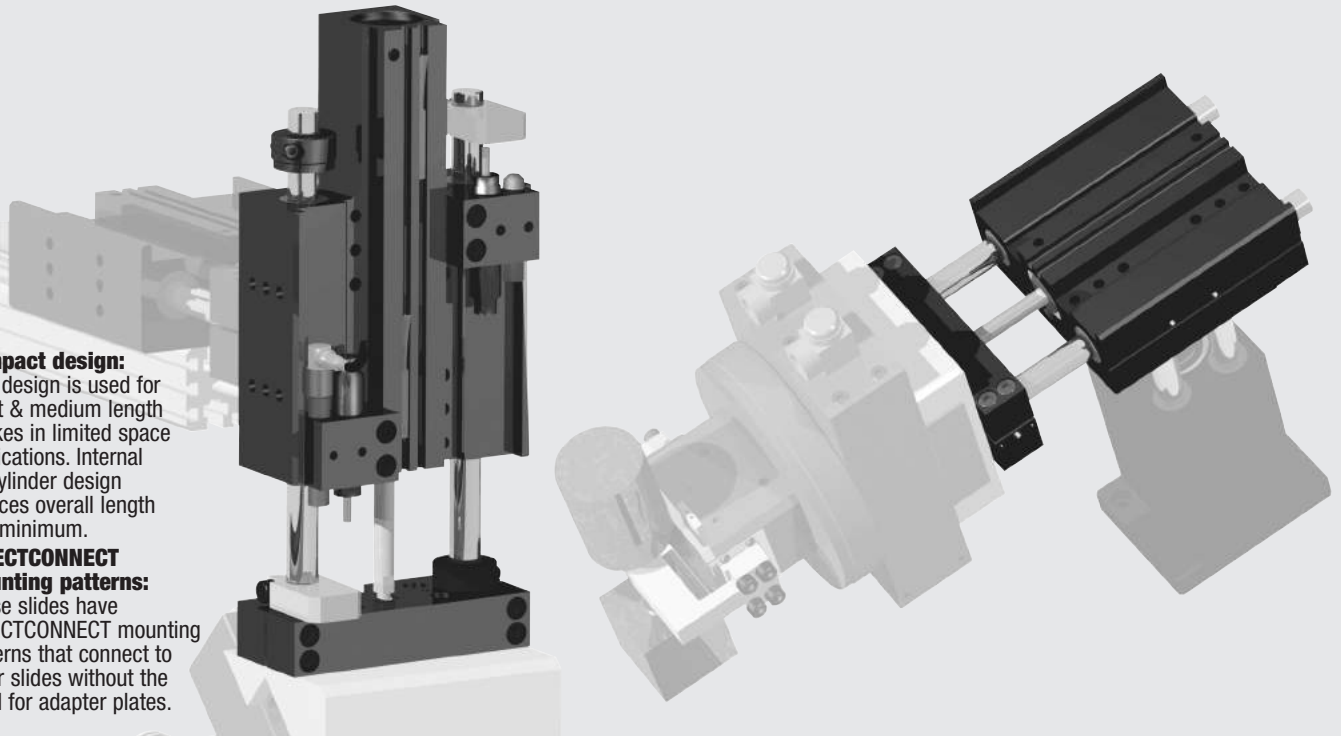
DLT Integrated Cylinder Thruster Slide

Compact design:

This design is used for short & medium length strokes in limited space applications. Internal air cylinder design reduces overall length to a minimum.

DIRECTCONNECT mounting patterns:

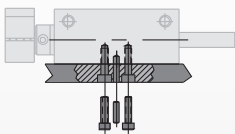
These slides have DIRECTCONNECT mounting patterns that connect to other slides without the need for adapter plates.



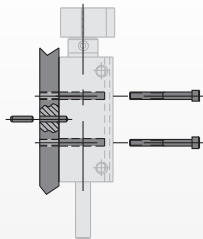
DLT SERIES

Mounting Information:

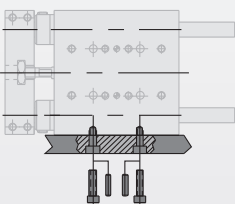
Mounts and operates in any orientation



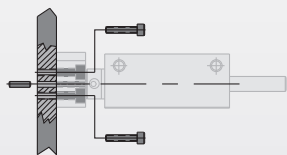
Body can be mounted from the back using the directconnect pattern of threaded mounting and dowel pin holes



Body back mounts with screws from the front using the clearance and counterbored DIRECTCONNECT pattern and located with dowel holes.



Body mounts with screws and locate with slip fit dowel pin holes on side using DIRECTCONNECT mounting patterns.



Payload attaches to tooling plate directconnect mounting pattern with screws and locates using slip fit dowel pin holes.

Technical Specifications:

Pneumatic Specifications

Pressure Operating Range*
Cylinder Type
Dynamic Seals
Valve Required to Operate

Imperial
40-100 psi
Metric
3-7 bar
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)
Viton® Seals (optional)

-30°~180° F
-20°~300° F
-35°~80° C
-30°~150° C

Maintenance Specifications†

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

5 million cycles
10+ million cycles¹
Yes
Yes

Application Restrictions

Flow controls, shock absorbers and urethane bumpers recommended for nearly all applications.
Use composite bushing in dirty or gritty environments.
Never use silicone based lubricants with composite bushings.

*Higher pressure possible. Consult factory with application details.

**Addition of lubrication will greatly increase service life

¹See Maintenance Section

DIRECTCONNECT™



Product Features

DIRECTCONNECT Mounting Patterns

Main bodies have tapped and counterbored through holes including slip fit dowel holes on DIRECTCONNECT mounting surface

Universal Mounting Kit

Contains Mounting Bracket, Hardened Steel Target, and hardware. Allows the mounting of Shocks and adjustable Hard Stops

Sensor Magnet
Standard in piston

Magneto Resistive Sensors
Slot mounted sensor with threaded quick disconnect.

Inductive Proximity Sensors

8mm diameter, threaded body with quick disconnect

Urethane Bumpers & Clamp Collars

Sensors Grooves
For mounting Magneto Resistive Sensors

Shock Absorbers
with built-in hard stop. Dual shock capable

Oil Wick
Supplies constant bearing lubrication

Misalignment Coupling
Increases service life

Adjustable Hard Stops
For precision (+/- .001" [0.01]) hard stop end point positioning. Allows for stop adjustment independent of shock absorber hard stop. Dual stop capable

Aircraft Quality Aluminum

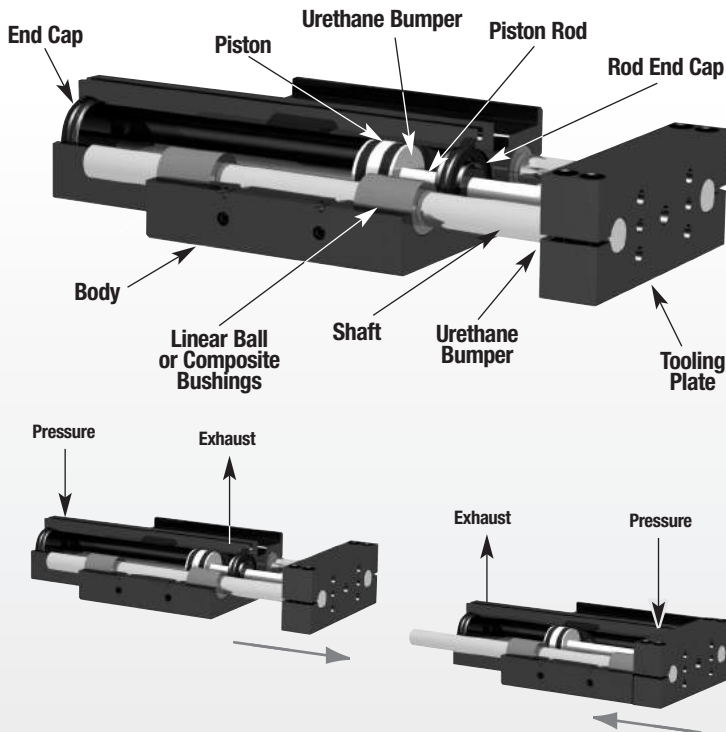
Seal Option
Viton® or self-lubricating Buna-N dynamic seals

Precision Ground Shafting
Case hardened to RC60-65. Corrosion resistant optional

Bearing Options
Preloaded linear ball bushings or composite bushings

Modular Telescoping Airlines
Eliminates flexing air lines. Patented self aligning air tube design extends useful seal life. (2) user air ports per module

Operating Principle



- A double acting internal cylinder located within the body drives a piston rod that connects to the tooling plate with a misalignment coupling.
- The tooling is attached to two hardened steel shafts which are supported by and move in four linear bushings located in the body.

Designed and manufactured in the USA

Style-E Short Body Thruster

Size -06M

See Page 4.38



-10M (shown)

-12M

-16M

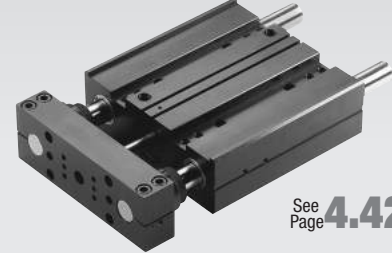
See Page 4.40



Style-E Short Body Thruster

Size -20M (shown)

-25M

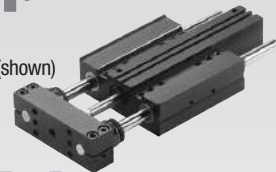


See Page 4.42

Style-L Long Body Thruster

Size -06M

See Page 4.44



-10M (shown)

-12M

-16M

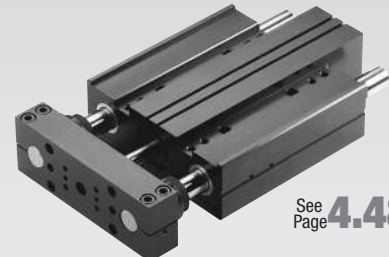
See Page 4.46



Style-L Long Body Thruster

Size -20M (shown)

-25M



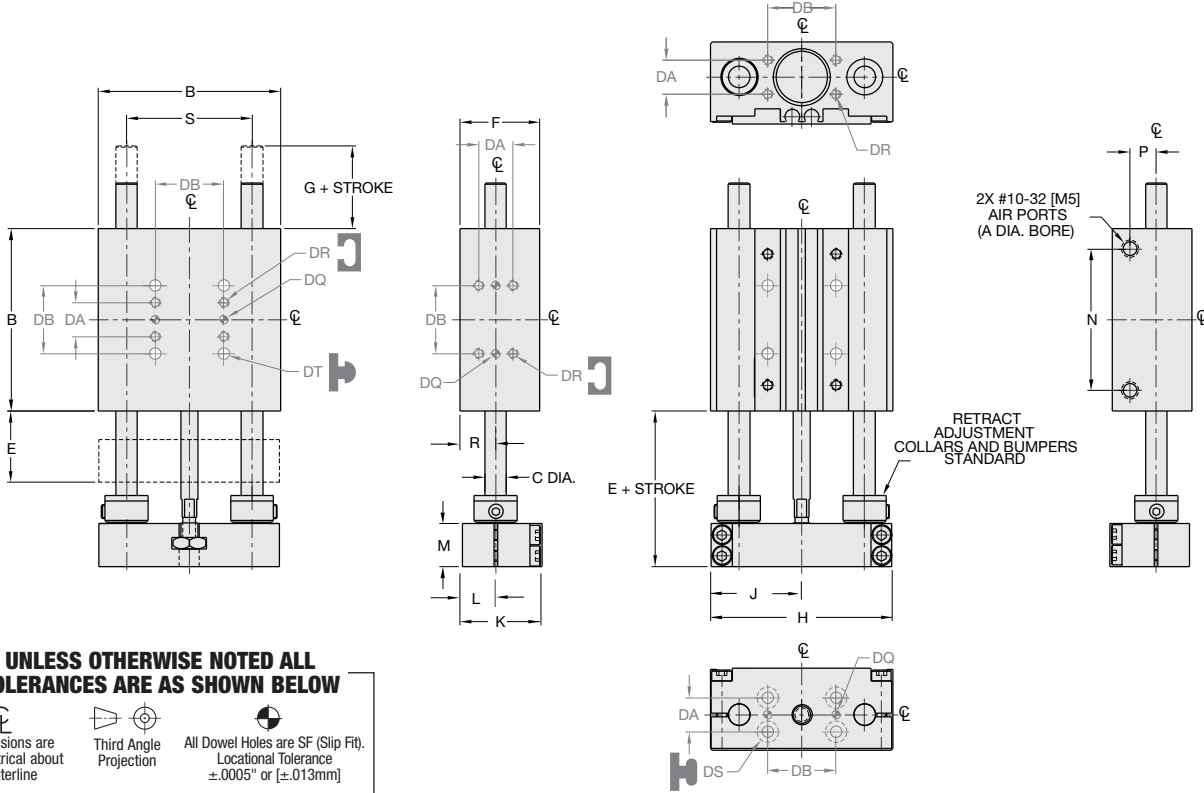
See Page 4.48

DLT SERIES

DLT SERIES

DIRECTCONNECT™

DLT-E Series Product Specifications



UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

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

DLT SERIES

DIRECTCONNECT DIMENSIONS
STANDARD MOUNTING PATTERN FOR ALL SIZES

	Imperial (inches)	Metric (mm)
DA	.375	9.5
DB	.750	19.1
DQ	.0940 x .078 DP	3H7 x 2 DP
DR	#4-40 x .25 DP	M3 x 6 DP
DS	Clr & C'bore for #4	Clr & C'bore for M3
DT	Clr & C'bore for #4	Clr & C'bore for M3

MODEL #	BORE DIA.		BODY SIZE		SHAFT DIA.										
	A	B	C	E	F	G	H	J	K	L	M	N	P	R	S
DLT-06	0.563	2.00	0.236	0.783	0.88	0.66	1.980	.990	0.875	.365	0.470	1.55	0.29	.390	1.375
DLT-08	0.563	2.50	0.315	0.783	0.88	0.41	2.470	1.235	0.875	.365	0.470	2.05	0.29	.390	1.750
DLT-06M	14	50.8	6.0	19.9	22.4	16.8	50.3	25.1	22.2	9.3	11.9	39.4	7.4	9.9	34.93
DLT-08M	14	63.5	8.0	19.9	22.4	10.4	62.7	31.0	22.2	9.3	11.9	52.1	7.4	9.9	44.95

How to Order: Basic Unit

BASIC MODEL METRIC STYLE STROKE SHAFTING



SIZE **06, 08**

METRIC **M**

STYLE **E** Short body thruster with built-in repairable cylinder

BEARING **C** Composite bushings

STROKE (inches)
DLT-06 **.25, .5, 1, 1.25**
DLT-08 **.25, .5, 1, 1.5, 1.75**

Custom strokes available.
Please consult factory.

STROKE (mm)
DLT-06M **6, 12, 25, 30**
DLT-08M **6, 12, 25, 40, 44**

VITON® **V** Viton® seals

SHAFTING **S** Corrosion resistant shafting

Accessories: (Order Separately)

SHOCK/STOP ACCESSORIES

	DLT-06M	DLT-08M	QTY/THRUSTER
Universal Mounting Kit (Shock or Stop)	OSAK-069	OSAK-070	1, 2, 3, or 4
Shock Absorber (2 Max. on -06)*	SHOK-030	SHOK-030	1, 2, 3, or 4
Adjustable Hard Stop*	DLT-0623	DLT-0623	1, 2, 3, or 4
Urethane Bumper/Stop Collar Kit	OSAK-067	OSAK-068	1

INDUCTIVE SENSOR ACCESSORIES†

	DLT-06M	DLT-08M	QTY/THRUSTER
Inductive Sensor Mounting Kit	OSMK-076	OSMK-077	1 or 2
Inductive Sensor PNP Qk. Disconnect †	OISP-014	OISP-014	1 or 2
Inductive Sensor NPN Qk. Disconnect †	OISN-014	OISN-014	1 or 2
Quick. Disconnect 2M Cable Length †	CABL-010	CABL-010	1 or 2
Quick. Disconnect 5M Cable Length †	CABL-013	CABL-013	1 or 2

MAGNETIC SENSOR ACCESSORIES**

	DLT-06M	DLT-08M	QTY/THRUSTER
Magneto Resistive Sensor PNP Qk. Disc.†	OHSP-017	OHSP-017	1 or 2
Magneto Resistive Sensor NPN Qk. Disc.†	OHSN-017	OHSN-017	1 or 2
Quick. Disconnect 2M Cable Length †	CABL-010	CABL-010	1 or 2
Quick. Disconnect 5M Cable Length †	CABL-013	CABL-013	1 or 2

PNEUMATIC ACCESSORIES

	DLT-06M	DLT-08M	QTY/THRUSTER
#10-32 Adjustable Flow Control (Imperial)	VLVF-007	VLVF-007	1 or 2
M5 Adjustable Flow Control (Metric)	VLVF-008	VLVF-008	1 or 2
Cylinder Seal Repair Kit	SLKT-108	SLKT-108	1
Viton® Cylinder Seal Repair Kit	SLKT-108V	SLKT-108V	1

*Requires Universal Mounting Kit †Sensor and cable sold separately **Piston magnet standard

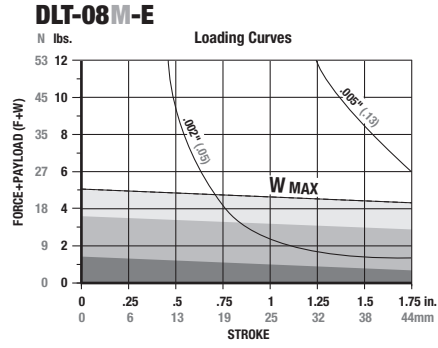
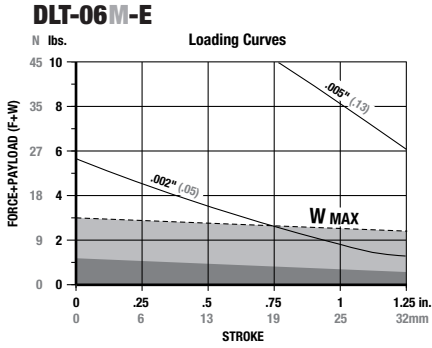
SAMPLE ORDER: DLT-06-E-C-1.5-V

Ex: Thruster, Size 06, Short Body Style, Composite Bushings, 1.5 Inch Stroke, Viton® Seals

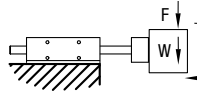
DIRECTCONNECT™



DLT-E Series Product Specifications



F=Externally applied force (lbs. or N)
W=Weight of payload (lbs. or N)
F+W=Total deflection force (lbs. or N)
M=Maximum moment (in.-lb. or N-m)



Shock Absorbers and Flow Controls are recommended for nearly all applications

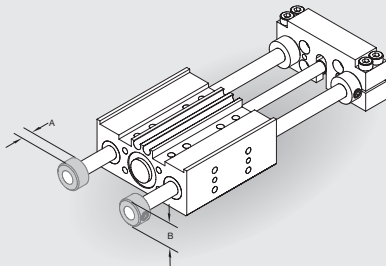
Use **Double Shocks** in both directions Use **Single Shock** in both directions Use **Bumpers or Cushioned Cylinder**

Shaded shock absorption ranges of horizontal payload (W) @ 80psi, flow controls fully open. For vertical applications do not exceed 1/2 of the recommended payload due to the additional acceleration effect of gravity.

Specifications	DLT-06	DLT-06M
Maximum Air Pressure	100 psi	7 bar
Thrust Force @ 80psi/5.5 bar.....	20 lbs.	84 N
Weight (Basic Unit).....	0.34 lbs.	0.15 kg
Cylinder Bore Diameter.....	0.563"	14.3 mm
Shaft Diameter.....	0.236"	6 mm
Max (M) Vertical Motion.....	5 in.-lbs.	0.6 N-m

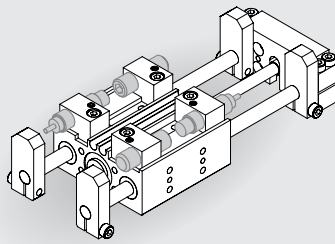
Specifications	DLT-08	DLT-08M
Maximum Air Pressure	100 psi	7 bar
Thrust Force @ 80psi/5.5 bar.....	20 lbs.	89 N
Weight (Basic Unit).....	0.65 lbs.	0.30 kg
Cylinder Bore Diameter.....	0.563"	14.3 mm
Shaft Diameter.....	0.315"	8 mm
Max (M) Vertical Motion.....	10 in.-lbs.	1.1 N-m

Accessory Mounting Technical Data



Urethane Bumpers & Clamp Collars

- Urethane Bumpers for shock absorption and noise dampening
- Adjustable Clamp Collars for end of stroke position adjustment
- Kit contains (2) Collars and (2) Shock Pads for adjustment of travel in one direction
- (1) Kit required for extend (kit for retract comes standard)

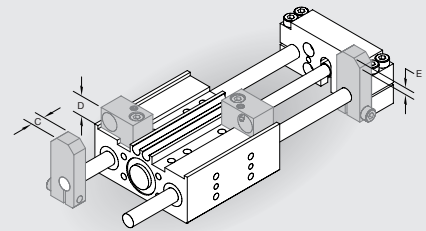


Adjustable Hard Stops

- For precision (+/- .001") end point positioning of retract position
- Allows for end stop position adjustment independent of shock absorber hard stop
- Allen wrench adjustable

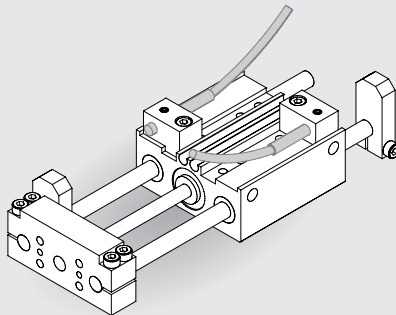
Shock Absorbers

- Full stroking piston rod
- Built-in hard stop
- Position adjustable



Universal Mounting Kit

- Kit mounts (1) Shock Absorber or (1) Adjustable Hard Stop
- Kit includes (1) Mounting Bracket, (1) Hardened Tool Steel Target and Hardware
- Target allows for unlimited retract stroke adjustment (no extend position adjustment). Fine adjustment is achieved using Adjustable Hard Stop or Shock Absorber
- Mounting Bracket keys into body for secure positioning and excellent rigidity
- Four possible mounting positions

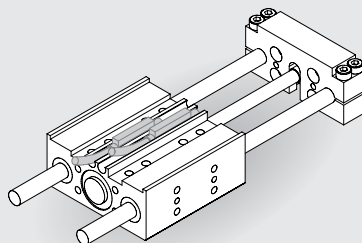


Inductive Proximity Sensors

- 4 mm diameter
- Threaded quick disconnect with built-in LED output
- PNP and NPN available

Quick Disconnect Cable

- Threaded coupling with knurled head for secure electrical connections
- 2 meter cable length
- 5 meter cable length



Magneto Resistive Sensors

- No mounting kit required (slot mounted)
- Threaded quick disconnect with built-in LED output
- PNP and NPN available
- Low profile

Quick Disconnect Cable

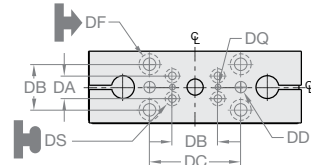
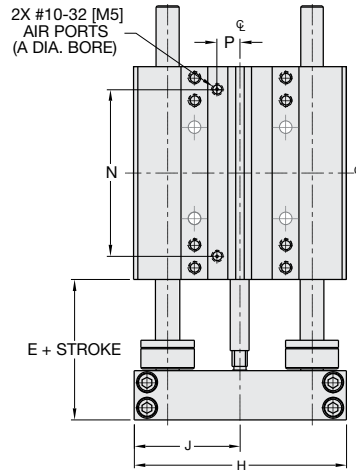
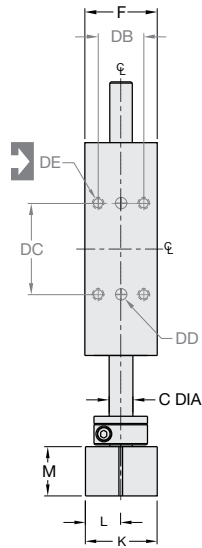
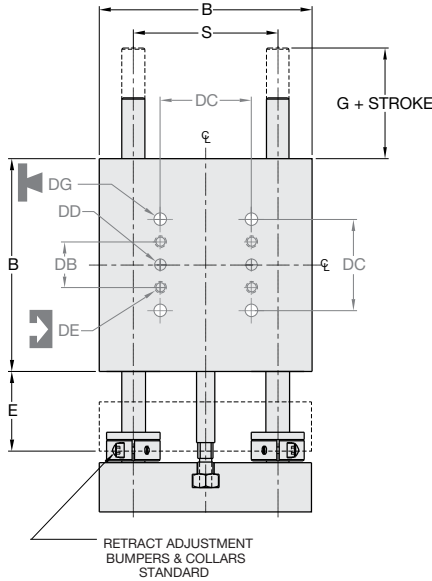
- Threaded coupling with knurled head for secure electrical connections
- 2 meter cable length
- 5 meter cable length

	A	B	C	D	E
DLT-06	.236"	.470	.250	.310	.270
DLT-08	.236"	.630	.250	.310	.270
DLT-06M	6mm	12.0	6.4	7.9	6.9
DLT-08M	6mm	16.0	6.4	7.9	6.9

DLT SERIES

DIRECTCONNECT™

DLT-E Series Product Specifications



UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

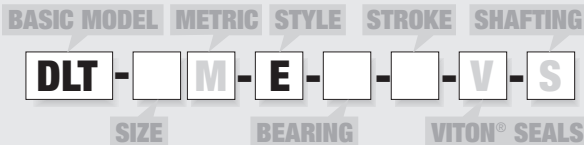
Dimensions are symmetrical about centerline	Third Angle Projection	All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or (±.013mm)
Metric Threads Course Pitch	Imperial in. 0.00 = ±.01 0.000 = ±.005 0.0000 = ±.0005	Metric [mm] [0.] = [±.25] [0.0] = [±.13] [0.00] = [±.013]

MODEL #	BORE DIA.		BODY SIZE		SHAFT DIA.		BASIC UNIT DIMENSIONS												
	A	B	C	E	F	G	H	J	K	L	M	N	P	S					
DLT-10	3/4	3.50	.375	1.313	1.19	.82	3.490	1.740	1.178	.584	.813	2.75	.37	2.375					
DLT-12	1	4.00	.472	1.313	1.63	.82	3.985	1.985	1.615	.802	.813	3.28	.37	2.750					
DLT-16	1	4.75	.630	1.375	1.63	.76	4.735	2.360	1.615	.802	.813	4.03	.37	3.250					
DLT-10M	19	88.9	9.5	33.4	30.2	20.8	88.6	44.2	29.9	14.8	20.7	69.7	9.4	60.33					
DLT-12M	25	101.6	12.0	33.4	41.4	20.8	101.2	50.4	41.0	20.4	20.7	83.3	9.4	69.85					
DLT-16M	25	120.7	16.0	34.9	41.4	19.3	120.3	59.9	41.0	20.4	20.7	102.4	9.4	82.55					

DIRECTCONNECT DIMENSIONS STANDARD MOUNTING PATTERN FOR ALL SIZES

	Imperial (inches)	Metric (mm)
DA	.375	9.5
DB	.750	19.1
DC	1.500	38.1
DD	.1880 x .25 DP	5mm H7 x 6 DP
DE	#10-32 x .34 DP	M5 x 8.5 DP
DF	Clearance for #10	Clearance for M5
DG	Clearance for #10	Clearance for M5
DQ	.0940 x .078 DP	3H7 x 2 DP
DS	Clr & C'bore for #4	Clr & C'bore for M3

How to Order: Basic Unit



- SIZE** 10, 12, 16
- METRIC** M
- STYLE** E Short body thruster with built-in repairable cylinder
- BEARING** B Linear ball bearings
C Composite bushings
- STROKE** (inches)
DLT-10 1-2 @ 1" increments
DLT-12 1-2 @ 1" increments
DLT-16 1-3 @ 1" increments
- STROKE** (mm)
DLT-10M 25, 50
DLT-12M 25, 50
DLT-16M 25, 50, 75
- VITON®** V Viton® seals
- SHAFTING** S Corrosion resistant shafting

Custom strokes available. Please consult factory.

SAMPLE ORDER: DLT-10-E-C-1-V

Ex: Thruster, Size 10, Short Body Style, Composite Bushings, 1 inch Stroke, Viton® Seals

Accessories: (Order Separately) DLT-10M DLT-12M DLT-16M QTY/THRUSTER

SHOCK/STOP ACCESSORIES

Universal Mounting Kit (Shock, Stop or Sensor)	OSAK-055	OSAK-057	OSAK-059	1,2,3 or 4
Urethane Bumper/Clamp Collar Kit	OSAK-056	OSAK-058	OSAK-060	1
Urethane Bumper/Clamp Collar Kit (-10M)	OSAK-065			1
Urethane Bumper/Clamp Collar Kit (-12M)		OSAK-066		1
Shock Absorber*	SHOK-028	SHOK-010	SHOK-010	1,2,3 or 4
Adjustable Hard Stop*	DLT-1023	DLT-1023	DLT-1023	1,2,3 or 4

INDUCTIVE SENSOR ACCESSORIES*

Inductive Sensor PNP Qk. Disconnect*	OISP-011	OISP-011	OISP-011	1 or 2
Inductive Sensor NPN Qk. Disconnect*	OISN-011	OISN-011	OISN-011	1 or 2
Quick. Disconnect 2M Cable Length †	CABL-010	CABL-010	CABL-010	1 or 2
Quick. Disconnect 5M Cable Length †	CABL-013	CABL-013	CABL-013	1 or 2

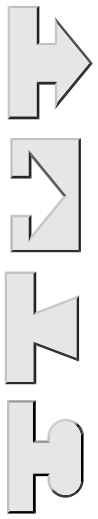
MAGNETIC SENSOR ACCESSORIES**†

Magneto Resistive Sensor PNP Qk. Disc.†	OHSP-017	OHSP-017	OHSP-017	1 or 2
Magneto Resistive Sensor NPN Qk. Disc.†	OHSN-017	OHSN-017	OHSN-017	1 or 2
Quick. Disconnect 2M Cable Length †	CABL-010	CABL-010	CABL-010	1 or 2
Quick. Disconnect 5M Cable Length †	CABL-013	CABL-013	CABL-013	1 or 2

PNEUMATIC ACCESSORIES

1/8 NPT Telescopic Airlines (up to 2")	OTAL-037	OTAL-037	OTAL-037	1,2,3 or 4
1/8 NPT Telescopic Airlines (up to 3")	OTAL-038	OTAL-038	OTAL-038	1,2,3 or 4
#10-32 Adjustable Flow Control	VLVF-007	VLVF-007	VLVF-007	1 or 2
G1/8 Telescopic Airlines (up to 50mm)	OTAL-043	OTAL-043	OTAL-043	1,2,3 or 4
G1/8 Telescopic Airlines (up to 80mm)	OTAL-044	OTAL-044	OTAL-044	1,2,3 or 4
M5 Adjustable Flow Control	VLVF-008	VLVF-008	VLVF-008	1 or 2
Cylinder Seal Repair Kit	SLKT-100	SLKT-102	SLKT-102	1
Viton® Cylinder Seal Repair Kit	SLKT-100V	SLKT-102V	SLKT-102V	1

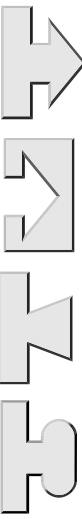
*Requires Universal Mounting Kit †Sensor and cable sold separately **Piston magnet standard



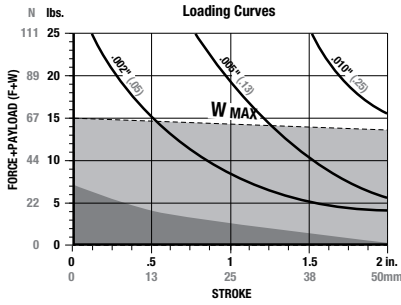
DLT SERIES

DIRECTCONNECT™

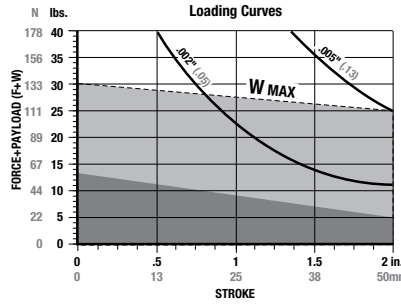
DLT-E Series Product Specifications



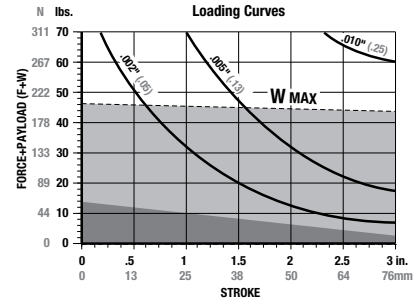
DLT-10M-E



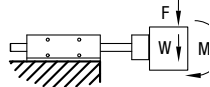
DLT-12M-E



DLT-16M-E



F=Externally applied force (lbs. or N)
W=Weight of payload (lbs. or N)
F+W=Total force (lbs. or N)



Shock Absorbers and Flow Controls are recommended for nearly all applications

(W) in this range use **Single Shock** in both directions

W in this range use **Urethane Bumpers**

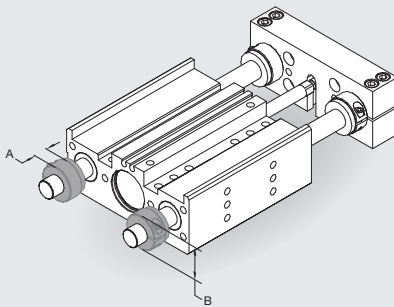
Shaded shock absorption ranges of horizontal payload (W) @ 80psi, flow controls fully open. For vertical applications do not exceed 1/2 of the recommended payload due to the additional acceleration effect of gravity.

Specifications	DLT-10	DLT-10M
Maximum Air Pressure.....	100 psi	6.9 bar
Thrust Force @ 80psi/5.5bar.	35 lbs.	155 N
Weight (Basic Unit).....	1.87 lbs.	.84 kg
Additional Weight per Stroke..	0.08 lbs./in.	1.5g/mm
Cylinder Bore Diameter	3/4"	19mm
Shaft Diameter	0.375"	9.5mm

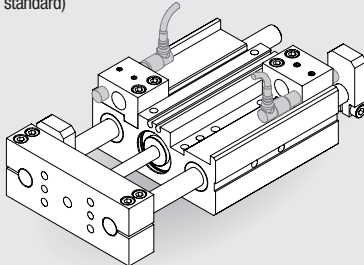
Specifications	DLT-12	DLT-12M
Maximum Air Pressure.....	100 psi	6.9 bar
Thrust Force @ 80psi/5.5bar.	62 lbs.	275 N
Weight (Basic Unit).....	2.98 lbs.	1.35 kg
Additional Weight per Stroke..	0.12 lbs./in.	2.2g/mm
Cylinder Bore Diameter	1"	25mm
Shaft Diameter	0.472"	12mm

Specifications	DLT-16	DLT-16M
Maximum Air Pressure.....	100 psi	6.9 bar
Thrust Force @ 80psi/5.5bar.	62 lbs.	275 N
Weight (Basic Unit).....	4.56 lbs.	2.07 kg
Additional Weight per Stroke..	0.20 lbs./in.	3.5g/mm
Cylinder Bore Diameter	1"	25mm
Shaft Diameter	0.630"	16mm

Accessory Mounting Technical Data

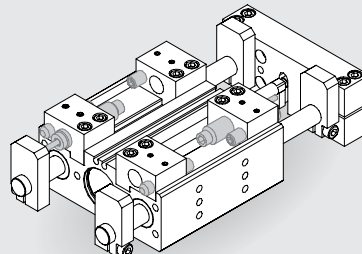


- Urethane Bumpers & Clamp Collars**
- Urethane Bumpers for shock absorption and noise dampening
 - Adjustable Clamp Collars for end of stroke position adjustment
 - Kit contains (2) Collars and (2) Shock Pads for adjustment of travel in one direction
 - (1) Kit required for extend (kit for retract comes standard)

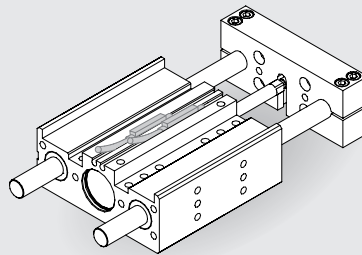


- Inductive Proximity Sensors**
- 8mm diameter
 - Threaded quick disconnect with built-in LED output
 - PNP and NPN available

- Quick Disconnect Cable**
- Threaded coupling with knurled head for secure electrical connections
 - 2 meter cable length
 - 5 meter cable length

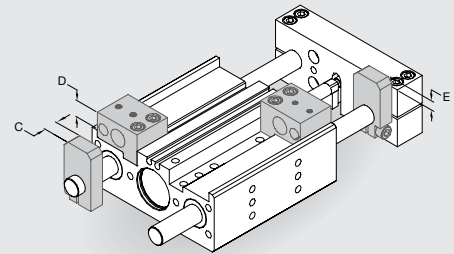


- Adjustable Hard Stops**
- For precision (+/- .001") end point positioning
 - Allows for end stop position adjustment independent of shock absorber hard stop
 - Allen wrench adjustable
- Shock Absorbers**
- Full stroking piston rod
 - Built-in hard stop
 - Allen wrench adjustable

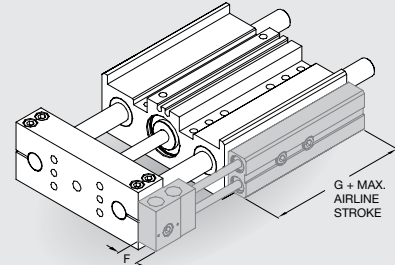


- Magneto Resistive Sensors**
- No mounting kit required (slot mounted)
 - Threaded quick disconnect with built-in LED output
 - PNP and NPN available
 - Low profile

- Quick Disconnect Cable**
- Threaded coupling with knurled head for secure electrical connections
 - 2 meter cable length
 - 5 meter cable length



- Universal Mounting Kit**
- Kit mounts (1) Shock Absorber and (1) Inductive Proximity Sensor or (1) Shock and (1) Adjustable Hard Stop
 - Kit includes (1) Mounting Bracket, (1) Hardened Tool Steel Target and Hardware
 - Target allows for unlimited stroke adjustment. Fine adjustment is achieved using Adjustable Hard Stop or Shock Absorber
 - Mounting Bracket keys into body for secure positioning and excellent rigidity
 - Four possible mounting positions



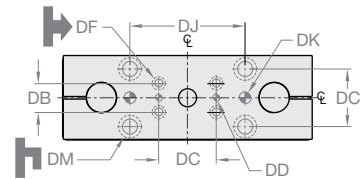
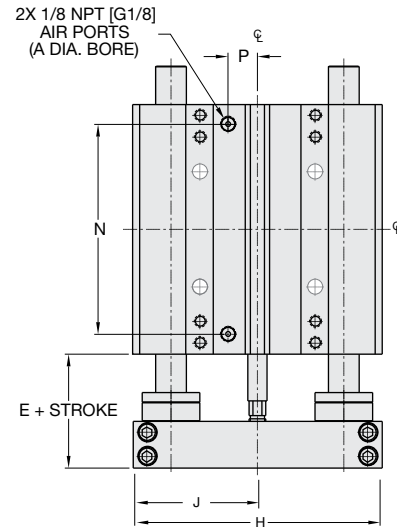
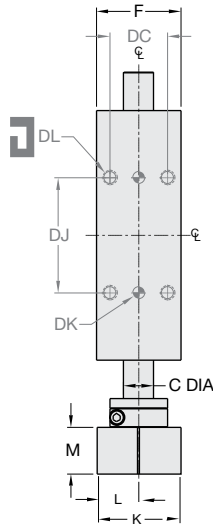
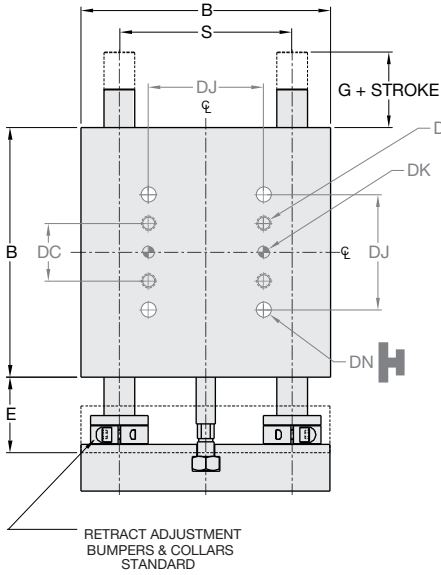
- Telescoping Airlines**
- Eliminate flexing air lines
 - Self aligning air tube design extends useful seal life
 - Modular stackable design. Up to (4) modules can be stacked
 - 1/8 NPT or G1/8 pipe threads
 - (2) user air ports per module

	A	B	C	D	E	F	G
DLT-10	.343"	.87	.375	.480	.320	.577	3.60
DLT-12	.375"	.94	.375	.450	.230	.577	3.60
DLT-16	.437"	1.31	.437	.450	.340	.577	3.60
DLT-10M	8.7mm	22.1	9.5	12.2	8.1	14.7	91.4
DLT-12M	9.5mm	23.9	9.5	11.4	5.8	14.7	91.4
DLT-16M	11.1mm	33.3	11.1	11.4	8.6	14.7	91.4

DLT SERIES

DIRECTCONNECT™

DLT-E Series Product Specifications



UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

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

DIRECTCONNECT DIMENSIONS
STANDARD MOUNTING PATTERN FOR ALL SIZES

	Imperial (inches)	Metric (mm)
DB	.750	19.1
DC	1.500	38.1
DD	.1880 x .25DP	5mm H7 x 6DP
DF	Clearance for #10	Clearance for M5
DJ	3.000	76.2
DK	.3130 x .37 DP	8mm H7 x 9.4 DP
DL	3/8-16 x .56 DP	M10 x 14.2 DP
DM	Clearance for 3/8	Clearance for M10
DN	Clearance for 3/8	Clearance for M10

MODEL #	BORE DIA.		BODY SIZE		SHAFT DIA.									
	A	B	C	E	F	G	H	J	K	L	M	N	P	S
DLT-20	1 1/2	6.50	.787	1.960	2.20	.960	6.480	3.230	2.180	1.080	1.210	5.47	.77	4.300
DLT-25	1 1/2	7.50	.984	2.170	2.20	1.170	7.480	3.730	2.180	1.080	1.420	6.47	.77	5.250
DLT-20M	38	165.1	20	49.8	55.9	24.4	164.6	82.0	55.4	27.4	30.7	138.9	19.5	114.30
DLT-25M	38	190.5	25	55.1	55.9	29.7	190.0	94.7	55.4	27.4	36.1	164.3	19.5	133.35

How to Order: Basic Unit

Accessories: (Order Separately)

DLT-20M DLT-25M QTY/THRUSTER

BASIC MODEL METRIC STYLE STROKE SHAFTING



- SIZE 20, 25
- METRIC M
- STYLE E Short body thruster with built-in repairable cylinder
- BEARING B Linear ball bearings
C Composite bushings
- STROKE (inches)
DLT-20 1-4 @ 1" increments
DLT-25 1-5 @ 1" increments
Custom strokes available. Please consult factory.
- STROKE (mm)
DLT-20M 25, 50, 75, 100
DLT-25M 25, 50, 75, 100, 125
- VITON® V Viton® seals
- SHAFTING S Corrosion resistant shafting

SHOCK/STOP ACCESSORIES

Universal Mounting Kit (Shock, Stop or Sensor)	OSAK-061	OSAK-063	1, 2, 3 or 4
Urethane Bumper/Clamp Collar Kit	OSAK-062	OSAK-064	1
Shock Absorber (adjustable dampening)*	SHOK-029	SHOK-029	1, 2, 3 or 4
Adjustable Hard Stop*	DLT-1023	DLT-1023	1, 2, 3 or 4

INDUCTIVE SENSOR ACCESSORIES*

Inductive Sensor PNP Qk. Disconnect*	OISP-011	OISP-011	1 or 2
Inductive Sensor NPN Qk. Disconnect*	OISN-011	OISN-011	1 or 2
Quick. Disconnect 2M Cable Length †	CABL-010	CABL-010	1 or 2
Quick. Disconnect 5M Cable Length †	CABL-013	CABL-013	1 or 2

MAGNETIC SENSOR ACCESSORIES**†

Magneto Resistive Sensor PNP Qk. Disc.†	OHSP-017	OHSP-017	1 or 2
Magneto Resistive Sensor NPN Qk. Disc.†	OHSN-017	OHSN-017	1 or 2
Quick. Disconnect 2M Cable Length †	CABL-010	CABL-010	1 or 2
Quick. Disconnect 5M Cable Length †	CABL-013	CABL-013	1 or 2

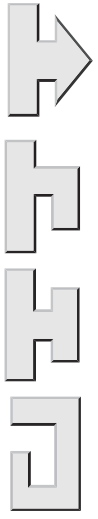
PNEUMATIC ACCESSORIES

1/8 NPT Telescopic Airlines (up to 4")	OTAL-049	OTAL-049	1, 2, 3 or 4
1/8 NPT Telescopic Airlines (up to 5")	OTAL-050	OTAL-050	1, 2, 3 or 4
1/8 NPT Adjustable Flow Control	VLVF-004	VLVF-004	1 or 2
G1/8 Telescopic Airlines (up to 100mm)	OTAL-051	OTAL-051	1, 2, 3 or 4
G1/8 Telescopic Airlines (up to 125mm)	OTAL-052	OTAL-052	1, 2, 3 or 4
G1/8 Adjustable Flow Control	VLVF-005	VLVF-005	1 or 2
Cylinder Seal Repair Kit	SLKT-104	SLKT-104	1
Viton® Cylinder Seal Repair Kit	SLKT-104V	SLKT-104V	1

*Requires Universal Mounting Kit †Sensor and cable sold separately **Piston magnet standard

SAMPLE ORDER: DLT-20-E-B-4-V

Ex: Thruster, Size 20, Short Body Style, Linear Ball Bushings, 4 Inch Stroke, Viton® Seals



DLT SERIES

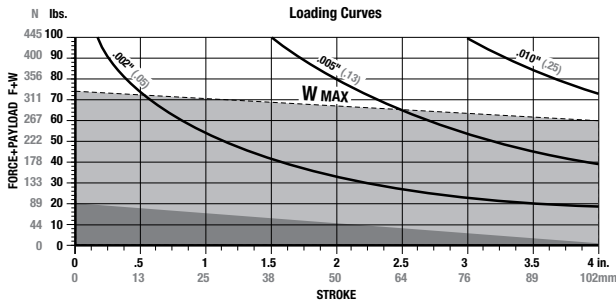
DIRECTCONNECT™



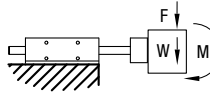
DLT-E Series Product Specifications



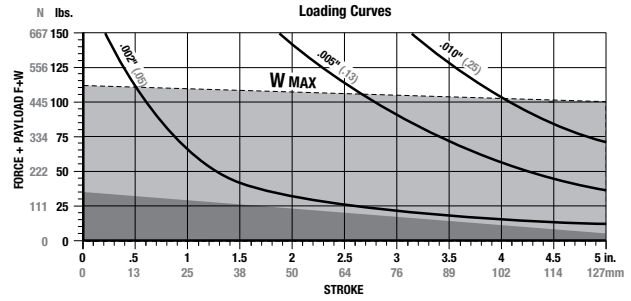
DLT-20M-E



F=Externally applied force (lbs. or N)
 W=Weight of payload (lbs. or N)
 F+W=Total force (lbs. or N)



DLT-25M-E



Shock Absorbers and Flow Controls are recommended for nearly all applications

(W) in this range use Single Shock in both directions

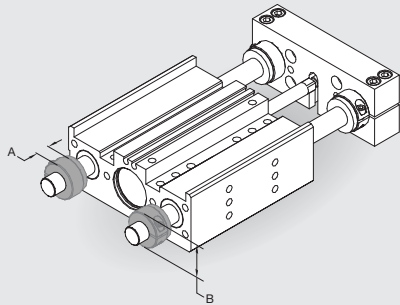
(W) in this range use Urethane Bumpers

Shaded shock absorption ranges of horizontal payload (W) @ 80psi, flow controls fully open. For vertical applications do not exceed 1/2 of the recommended payload due to the additional acceleration effect of gravity.

Specifications	DLT-20	DLT-20M
Maximum Air Pressure	100 psi	6.9 bar
Thrust Force @ 80psi/5.5bar	140 lbs.	622 N
Weight (Basic Unit)	11.6 lbs.	5.2 kg
Additional Weight per Stroke	0.31 lbs./in.	5.5g/mm
Cylinder Bore Diameter	1-1/2"	38mm
Shaft Diameter	0.787"	20mm

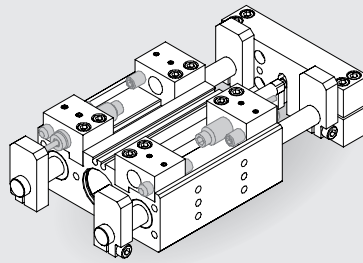
Specifications	DLT-25	DLT-25M
Maximum Air Pressure	100 psi	6.9 bar
Thrust Force @ 80psi/5.5bar	140 lbs.	622 N
Weight (Basic Unit)	16.4 lbs.	7.42 kg
Additional Weight per Stroke	0.47 lbs./in.	8.4g/mm
Cylinder Bore Diameter	1-1/2"	38mm
Shaft Diameter	0.984"	25mm

Accessory Mounting Technical Data (For detailed information refer to option specification pages at end of catalog)



Urethane Bumpers & Clamp Collars

- Urethane Bumpers for shock absorption and noise dampening
- Adjustable Clamp Collars for end of stroke position adjustment
- Kit contains (2) Collars and (2) Shock Pads for adjustment of travel in one direction
- (1) Kit required for extend (kit for retract comes standard)

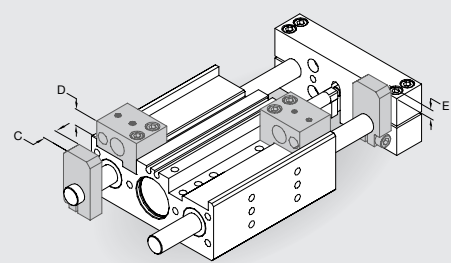


Adjustable Hard Stops

- For precision (+/- .001") end point positioning
- Allows for end stop position adjustment independent of shock absorber hard stop
- Allen wrench adjustable

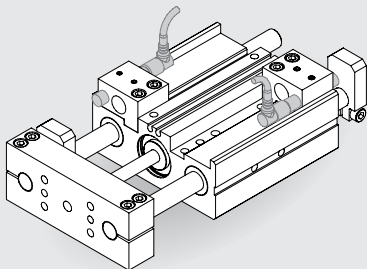
Shock Absorbers

- Full stroking piston rod
- Built-in hard stop
- Position adjustable
- Adjustable dampening



Universal Mounting Kit

- Kit mounts (1) Shock Absorber and (1) Inductive Proximity Sensor or (1) Shock and (1) Adjustable Hard Stop
- Kit includes (1) Mounting Bracket, (1) Hardened Tool Steel Target and Hardware
- Target allows for unlimited stroke adjustment. Fine adjustment is achieved using Adjustable Hard Stop or Shock Absorber
- Mounting Bracket keys into body for secure positioning and excellent rigidity
- Four possible mounting positions

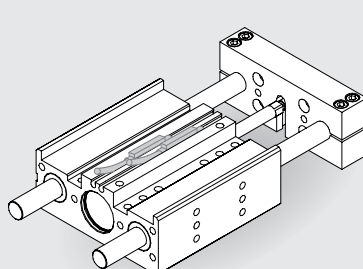


Inductive Proximity Sensors

- 8mm diameter
- Threaded quick disconnect with built-in LED output
- PNP and NPN available

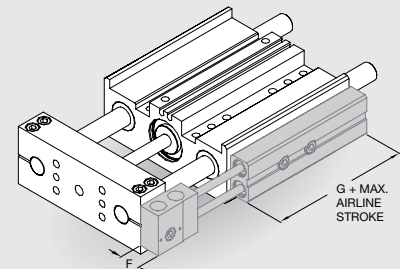
Quick Disconnect Cable

- Threaded coupling with knurled head for secure electrical connections
- 2 meter cable length



Magneto Resistive Sensors

- No mounting kit required (slot mounted)
- Built-in LED output
- PNP and NPN available
- Quick disconnect cable
- Low profile



Telescoping Airlines

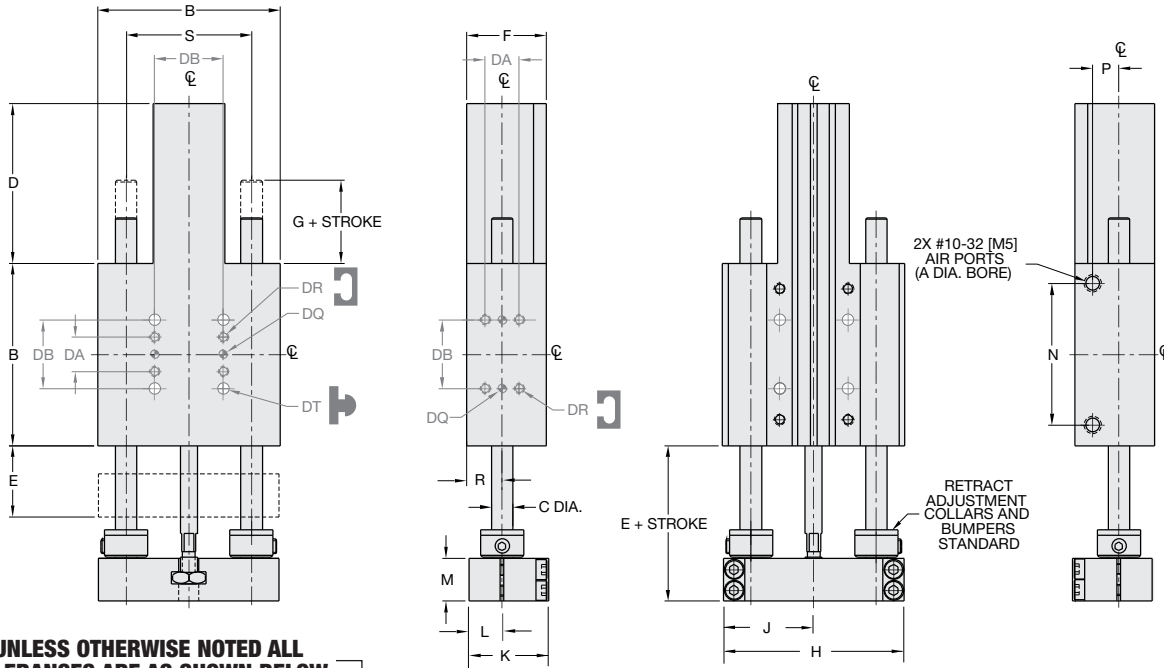
- Eliminate flexing air lines
- Self aligning air tube design extends useful seal life
- Modular stackable design. Up to (4) modules can be stacked
- 1/8 NPT or G1/8 pipe threads
- (2) user air ports per module

	A	B	C	D	E	F	G
DLT-20	.500"	1.50	.500	.92	.67	.577	3.60
DLT-25	.500"	1.75	.500	.92	.67	.577	3.60
DLT-20M	12.7mm	38.1	12.7	22.4	17.0	14.7	91.4
DLT-25M	12.7mm	44.5	12.7	22.4	17.0	14.7	91.4

DLT SERIES

DIRECTCONNECT™

DLT-L Series Product Specifications



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]

DLT SERIES

BASIC UNIT DIMENSIONS

MODEL #	A	B	C	D	E	F	G	H	J	K	L	M	N	P	R	S
DLT-06	0.563	2.00	0.236	1.75	0.783	0.88	0.66	1.980	.990	0.875	.365	0.470	1.55	0.21	.390	1.375
DLT-08	0.563	2.50	0.315	1.75	0.783	0.88	0.41	2.470	1.235	0.875	.365	0.470	2.05	0.21	.390	1.750
DLT-06M	14	50.8	6.0	44.4	19.9	22.4	16.8	50.3	25.1	22.2	9.3	11.9	39.4	5.4	9.9	34.93
DLT-08M	14	63.5	8.0	44.4	19.9	22.4	10.4	62.7	31.0	22.2	9.3	11.9	52.1	5.4	9.9	44.45

DIRECTCONNECT DIMENSIONS
STANDARD MOUNTING PATTERN FOR ALL SIZES

	Imperial (inches)	Metric (mm)
DA	.375	9.5
DB	.750	19.1
DQ	.0940 x .078 DP	3H7 x 2 DP
DR	#4-40 x .25 DP	M3 x 6 DP
DS	Clr & C'bore for #4	Clr & C'bore for M3
DT	Clr & C'bore for #4	Clr & C'bore for M3

How to Order: Basic Unit

BASIC MODEL METRIC STYLE STROKE SHAFTING



SIZE **06, 08**

METRIC **M**

STYLE **L** Long body thruster with built-in repairable cylinder

BEARING **C** Composite bushings

STROKE (inches)

DLT-06 **.5, 1, 1.5, 2, 2.5, 3,**
DLT-08 **.5, 1, 1.5, 2, 2.5, 3, 3.5**

Custom strokes available. Please consult factory.

STROKE (mm)

DLT-06M **12, 25, 40, 50, 65, 75**
DLT-08M **12, 25, 40, 50, 65, 75, 85**

VITON® **V** Viton® seals

SHAFTING **S** Corrosion resistant shafting

Accessories: (Order Separately)

SHOCK/STOP ACCESSORIES

	DLT-06M	DLT-08M	QTY/THRUSTER
Universal Mounting Kit (Shock or Stop)	OSAK-069	OSAK-070	1, 2, 3, or 4
Shock Absorber (2 Max. on -06)*	SHOK-030	SHOK-030	1, 2, 3, or 4
Adjustable Hard Stop*	DLT-0623	DLT-0623	1, 2, 3, or 4
Urethane Bumper/Stop Collar Kit	OSAK-067	OSAK-068	1

INDUCTIVE SENSOR ACCESSORIES†

	DLT-06M	DLT-08M	QTY/THRUSTER
Inductive Sensor Mounting Kit	OSMK-076	OSMK-077	1 or 2
Inductive Sensor PNP Qk. Disconnect**†	OISP-014	OISP-014	1 or 2
Inductive Sensor NPN Qk. Disconnect**†	OISN-014	OISN-014	1 or 2
Quick Disconnect 2M Cable Length †	CABL-010	CABL-010	1 or 2
Quick Disconnect 5M Cable Length †	CABL-013	CABL-013	1 or 2

MAGNETIC SENSOR ACCESSORIES**†

	DLT-06M	DLT-08M	QTY/THRUSTER
Magneto Resistive Sensor PNP Qk. Disc.†	OHSP-017	OHSP-017	1 or 2
Magneto Resistive Sensor NPN Qk. Disc.†	OHSN-017	OHSN-017	1 or 2
Quick. Disconnect 2M Cable Length †	CABL-010	CABL-010	1 or 2
Quick. Disconnect 5M Cable Length †	CABL-013	CABL-013	1 or 2

PNEUMATIC ACCESSORIES

	DLT-06M	DLT-08M	QTY/THRUSTER
#10-32 Adjustable Flow Control (Imperial)	VLVF-007	VLVF-007	1 or 2
M5 Adjustable Flow Control (Metric)	VLVF-008	VLVF-008	1 or 2
Cylinder Seal Repair Kit	SLKT-108	SLKT-108	1
Viton® Cylinder Seal Repair Kit	SLKT-108V	SLKT-108V	1

*Requires Universal Mounting Kit †Sensor and cable sold separately **Piston magnet standard

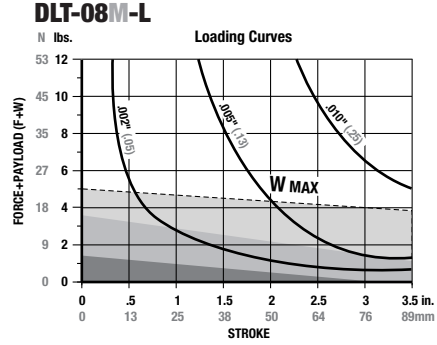
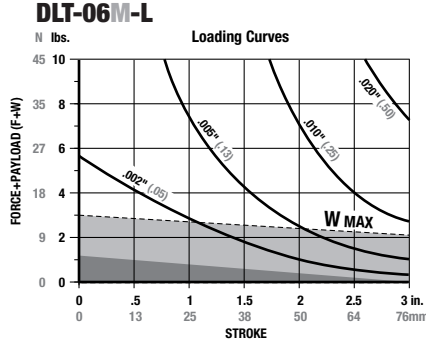
SAMPLE ORDER: DLT-06-M-L-C-50-V

Ex: Thruster, Size 06, Metric, Long Body Style, Composite Bushings, 50mm Stroke, Viton® Seals

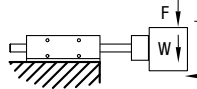
DIRECTCONNECT™



DLT-L Series Product Specifications



F=Externally applied force (lbs. or N)
W=Weight of payload (lbs. or N)
F+W=Total deflection force (lbs. or N)
M=Maximum moment (in.-lb. or N-m)



Shock Absorbers and Flow Controls are recommended for nearly all applications

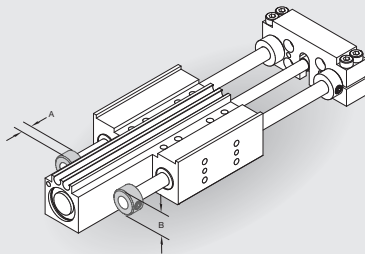
Use **Double Shocks** in both directions Use **Single Shock** in both directions Use **Bumpers or Cushioned Cylinder**

Shaded shock absorption ranges of horizontal payload (W) @ 80psi, flow controls fully open. For vertical applications do not exceed 1/2 of the recommended payload due to the additional acceleration effect of gravity.

Specifications	DLT-06	DLT-06M
Maximum Air Pressure	100 psi	7 bar
Thrust Force @ 80psi/5.5bar.....	20 lbs.	89 N
Weight (Basic Unit).....	0.61 lbs.	0.28 kg
Cylinder Bore Diameter.....	0.563"	14.3 mm
Shaft Diameter.....	0.236"	6 mm
Max (M) Vertical Motion.....	5 in.-lbs.	0.6 N-m

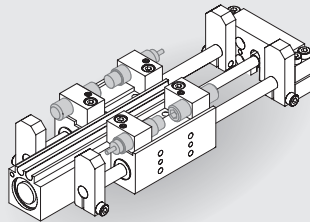
Specifications	DLT-08	DLT-08M
Maximum Air Pressure	100 psi	7 bar
Thrust Force @ 80psi/5.5bar.....	20 lbs.	89 N
Weight (Basic Unit).....	0.96 lbs.	0.44 kg
Cylinder Bore Diameter.....	0.563"	14.3 mm
Shaft Diameter.....	0.315"	8.0 mm
Max (M) Vertical Motion.....	10 in.-lbs.	1.3 N-m

Accessory Mounting Technical Data



Urethane Bumpers & Clamp Collars

- Urethane Bumpers for shock absorption and noise dampening
- Adjustable Clamp Collars for end of stroke position adjustment
- Kit contains (2) Collars and (2) Shock Pads for adjustment of travel in one direction
- (1) Kit required for extend (kit for retract comes standard)

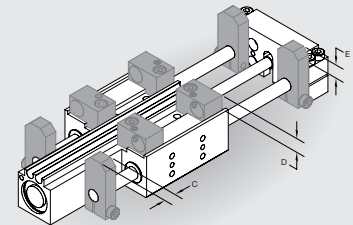


Adjustable Hard Stops

- For precision (+/- .001") end point positioning of retract position
- Allows for end stop position adjustment independent of shock absorber hard stop
- Allen wrench adjustable

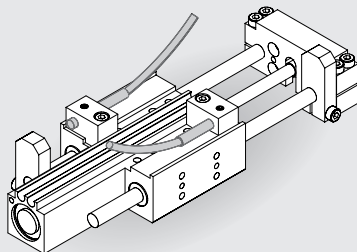
Shock Absorbers

- Full stroking piston rod
- Built-in hard stop
- Position adjustable
- Adjustable dampening



Universal Mounting Kit

- Kit mounts (1) Shock Absorber or (1) Adjustable Hard Stop
- Kit includes (1) Mounting Bracket, (1) Hardened Tool Steel Target and Hardware
- Target allows for unlimited retract stroke adjustment (no extend position adjustment). Fine adjustment is achieved using Adjustable Hard Stop or Shock Absorber
- Mounting Bracket keys into body for secure positioning and excellent rigidity
- Four possible mounting positions

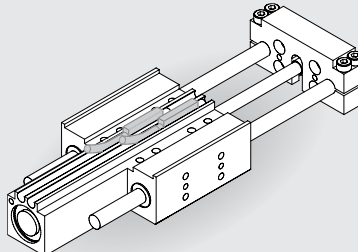


Inductive Proximity Sensors

- 4mm diameter
- Threaded quick disconnect with built-in LED output
- PNP and NPN available

Quick Disconnect Cable

- Threaded coupling with knurled head for secure electrical connections
- 2 meter cable length
- 5 meter cable length



Magneto Resistive Sensors

- No mounting kit required (slot mounted)
- Threaded quick disconnect with built-in LED output
- PNP and NPN available
- Low profile

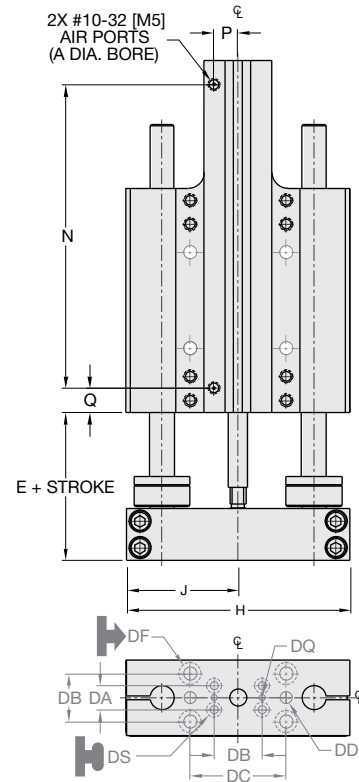
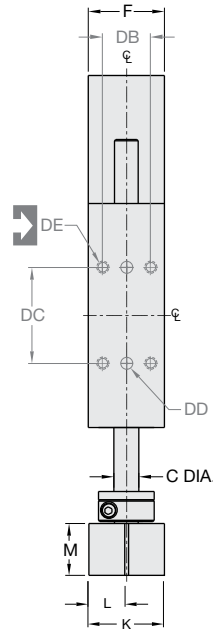
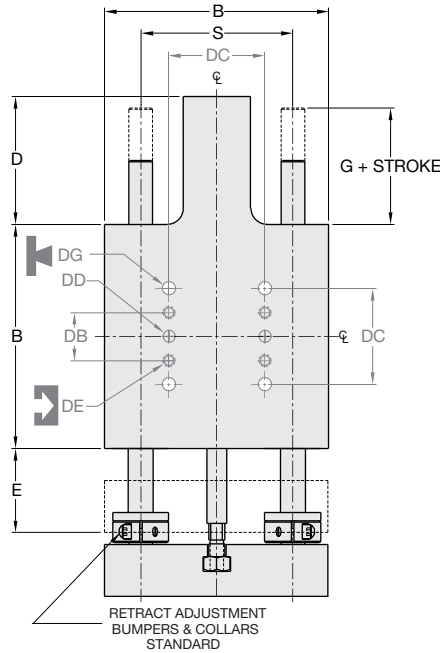
Quick Disconnect Cable

- Threaded coupling with knurled head for secure electrical connections
- 2 meter cable length
- 5 meter cable length

	A	B	C	D	E
DLT-06	.236"	.47	.250	.31	.27
DLT-08	.236"	.63	.250	.31	.27
DLT-06M	6.0 mm	12.0	6.4	7.9	6.9
DLT-08M	6.0 mm	16.0	6.4	7.9	6.9



DLT-L Series Product Specifications



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]

DLT SERIES

DIRECTCONNECT™

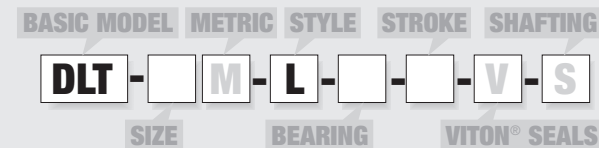
BASIC UNIT DIMENSIONS

MODEL #	BORE DIA.		BODY SIZE		SHAFT DIA.											
	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	S
DLT-10	.75	3.50	.375	2.00	1.313	1.19	0.82	3.490	1.740	1.178	.584	.813	4.75	0.38	0.38	2.375
DLT-12	1	4.00	.472	2.50	1.313	1.63	0.82	3.985	1.985	1.615	.802	.813	5.78	0.37	0.36	2.750
DLT-16	1	4.75	.630	2.75	1.375	1.63	0.76	4.735	2.360	1.615	.802	.813	6.78	0.37	0.36	3.250
DLT-10M	19	88.9	9.5	50.8	33.4	30.2	20.8	88.6	44.2	29.9	14.8	20.7	120.7	9.6	9.6	60.33
DLT-12M	25	101.6	12.0	63.5	33.4	41.4	20.8	101.2	50.4	41.0	20.4	20.7	146.8	9.4	9.1	69.85
DLT-16M	25	120.7	16.0	69.9	34.9	41.4	19.3	120.3	59.9	41.0	20.4	20.7	172.2	9.4	9.1	82.55

DIRECTCONNECT DIMENSIONS
STANDARD MOUNTING PATTERN FOR ALL SIZES

	Imperial (inches)	Metric (mm)
DA	.375	9.5
DB	.750	19.1
DC	1.500	38.1
DD	.1880 x .25 DP	5mm H7 x 6 DP
DE	#10-32 x .34 DP	M5 x 8.5 DP
DF	Clearance for #10	Clearance for M5
DG	Clearance for #10	Clearance for M5
DQ	.0940 x .078 DP	3H7 x 2 DP
DS	Clr & C'bore for #4	Clr & C'bore for M3

How to Order: Basic Unit



- SIZE** 10, 12, 16
- METRIC** M
- STYLE** L Long body thruster with built-in repairable cylinder
- BEARING** B Linear ball bearings
C Composite bushings
- STROKE** (inches)
DLT-10 1-4 @ 1" increments
DLT-12 1-5 @ 1" increments
DLT-16 1-6 @ 1" increments
Custom strokes available. Please consult factory.
- STROKE** (mm)
DLT-10M 25, 50, 80, 100
DLT-12M 25, 50, 80, 100, 125
DLT-16M 25, 50, 80, 100, 125, 150
- VITON®** V Viton® seals
- SHAFTING** S Corrosion resistant shafting

Accessories: (Order Separately)

SHOCK/STOP ACCESSORIES

	DLT-10M	DLT-12M	DLT-16M	QTY/THRUSTER
Universal Mounting Kit (Shock, Stop or Sensor)	OSAK-055	OSAK-057	OSAK-059	1, 2, 3 or 4
Urethane Bumper/Clamp Collar Kit	OSAK-056	OSAK-058	OSAK-060	1
Urethane Bumper/Clamp Collar Kit (-10M)	OSAK-065			1
Urethane Bumper/Clamp Collar Kit (-12M)		OSAK-066		1
Shock Absorber*	SHOK-028	SHOK-010	SHOK-010	1, 2, 3 or 4
Adjustable Hard Stop*	DLT-1023	DLT-1023	DLT-1023	1, 2, 3 or 4

INDUCTIVE SENSOR ACCESSORIES†

	DLT-10M	DLT-12M	DLT-16M	QTY/THRUSTER
Inductive Sensor PNP Qk. Disconnect*	OISP-011	OISP-011	OISP-011	1 or 2
Inductive Sensor NPN Qk. Disconnect*	OISN-011	OISN-011	OISN-011	1 or 2
Quick Disconnect 2M Cable Length †	CABL-010	CABL-010	CABL-010	1 or 2
Quick Disconnect 5M Cable Length †	CABL-013	CABL-013	CABL-013	1 or 2

MAGNETIC SENSOR ACCESSORIES***

	DLT-10M	DLT-12M	DLT-16M	QTY/THRUSTER
Magneto Resistive Sensor PNP Qk. Disc.†	OHSP-017	OHSP-017	OHSP-017	1 or 2
Magneto Resistive Sensor NPN Qk. Disc.†	OHSN-017	OHSN-017	OHSN-017	1 or 2
Quick Disconnect 2M Cable Length †	CABL-010	CABL-010	CABL-010	1 or 2
Quick Disconnect 5M Cable Length †	CABL-013	CABL-013	CABL-013	1 or 2

PNEUMATIC ACCESSORIES

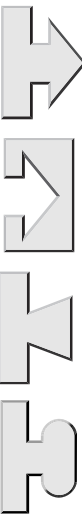
	DLT-10M	DLT-12M	DLT-16M	QTY/THRUSTER
1/8 NPT Telescopic Airlines (up to 3")	OTAL-038	OTAL-038	OTAL-038	1, 2, 3 or 4
1/8 NPT Telescopic Airlines (up to 6")	OTAL-039	OTAL-039	OTAL-039	1, 2, 3 or 4
#10-32 Adjustable Flow Control	VLVF-007	VLVF-007	VLVF-007	1 or 2
G1/8 Telescopic Airlines (up to 80mm)	OTAL-044	OTAL-044	OTAL-044	1, 2, 3 or 4
G1/8 Telescopic Airlines (up to 160mm)	OTAL-045	OTAL-045	OTAL-045	1, 2, 3 or 4
M5 Adjustable Flow Control	VLVF-008	VLVF-008	VLVF-008	1 or 2
Cylinder Seal Repair Kit	SLKT-100	SLKT-102	SLKT-102	1
Viton® Cylinder Seal Repair Kit	SLKT-100V	SLKT-102V	SLKT-102V	1

*Requires Universal Mounting Kit †Sensor and cable sold separately ***Piston magnet standard

SAMPLE ORDER: DLT-10M-L-C-25-V

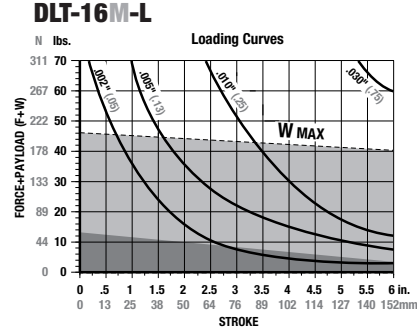
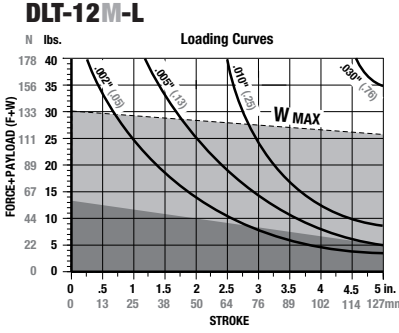
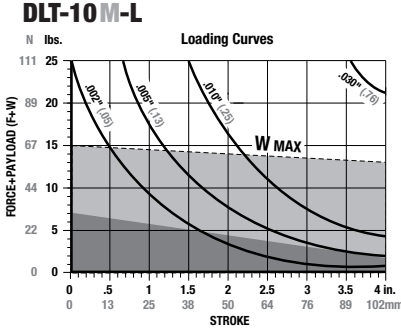
Ex: Thruster, Size 10 Metric, Long Body Style, Composite Bushings, 25mm Stroke, Viton® Seals

DLT-L Series Product Specifications

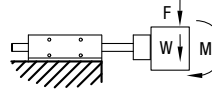


DLT SERIES

DIRECTCONNECT™



F=Externally applied force (lbs. or N)
 W=Weight of payload (lbs. or N)
 F+W=Total force (lbs. or N)



Shock Absorbers and Flow Controls are recommended for nearly all applications

(W) in this range use **Single Shock** in both directions

(W) in this range use **Urethane Bumpers**

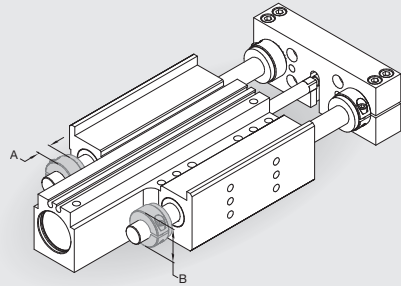
Shaded shock absorption ranges of horizontal payload (W) @ 80psi, flow controls fully open. For vertical applications do not exceed 1/2 of the recommended payload due to the additional acceleration effect of gravity.

Specifications	DLT-10	DLT-10M
Maximum Air Pressure	100 psi	6.9 bar
Thrust Force @ 80psi/5.5bar	35 lbs.	155 N
Weight (Basic Unit)	1.95 lbs.	0.88 kg
Additional Weight per Stroke	0.08 lbs./in.	1.4g/mm
Cylinder Bore Diameter	3/4"	19mm
Shaft Diameter	0.375"	9.5mm

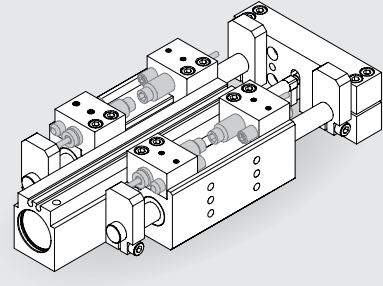
Specifications	DLT-12	DLT-12M
Maximum Air Pressure	100 psi	6.9 bar
Thrust Force @ 80psi/5.5bar	62 lbs.	275 N
Weight (Basic Unit)	3.21 lbs.	1.46 kg
Additional Weight per Stroke	0.12 lbs./in.	2.2g/mm
Cylinder Bore Diameter	1"	25mm
Shaft Diameter	0.472"	12mm

Specifications	DLT-16	DLT-16M
Maximum Air Pressure	100 psi	6.9 bar
Thrust Force @ 80psi/5.5bar	62 lbs.	275 N
Weight (Basic Unit)	4.81 lbs.	2.03 kg
Additional Weight per Stroke	0.20 lbs./in.	3.5g/mm
Cylinder Bore Diameter	1"	25mm
Shaft Diameter	0.630"	16mm

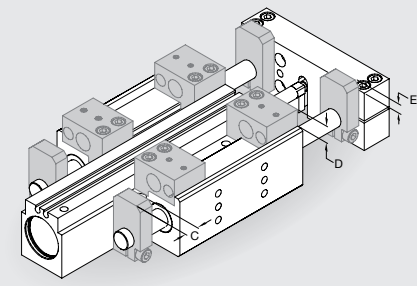
Accessory Mounting Technical Data



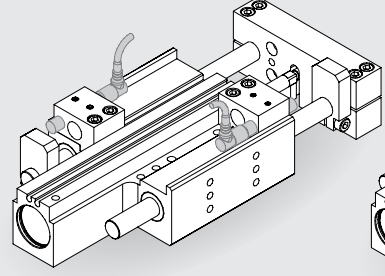
- Urethane Bumpers & Clamp Collars**
- Urethane Bumpers for shock absorption and noise dampening
 - Adjustable Clamp Collars for end of stroke position adjustment
 - Kit contains (2) Collars and (2) Shock Pads for adjustment of travel in one direction
 - (1) Kit required for extend (kit for retract comes standard)



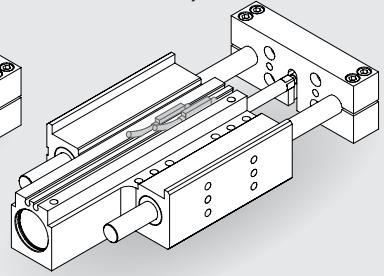
- Adjustable Hard Stops**
- For precision (+/- .001") end point positioning
 - Allows for end stop position adjustment independent of shock absorber hard stop
 - Allen wrench adjustable
- Shock Absorbers**
- Full stroking piston rod
 - Built-in hard stop
 - Allen wrench adjustable



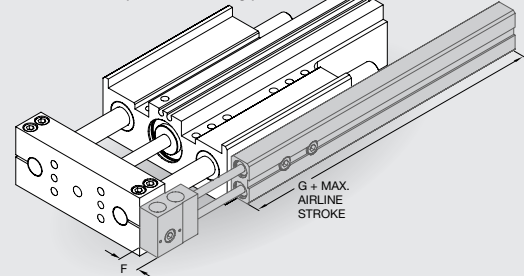
- Universal Mounting Kit**
- Kit mounts (1) Shock Absorber and (1) Inductive Proximity Sensor or (1) Shock and (1) Adjustable Hard Stop
 - Kit includes (1) Mounting Bracket, (1) Hardened Tool Steel Target and Hardware
 - Target allows for unlimited stroke adjustment. Fine adjustment is achieved using Adjustable Hard Stop or Shock Absorber
 - Mounting Bracket keys into body for secure positioning and excellent rigidity
 - Four possible mounting positions



- Inductive Proximity Sensors**
- 8mm diameter
 - Threaded quick disconnect with built-in LED output
 - PNP and NPN available



- Magneto Resistive Sensors**
- No mounting kit required (slot mounted)
 - Threaded quick disconnect with built-in LED output
 - PNP and NPN available
 - Low profile



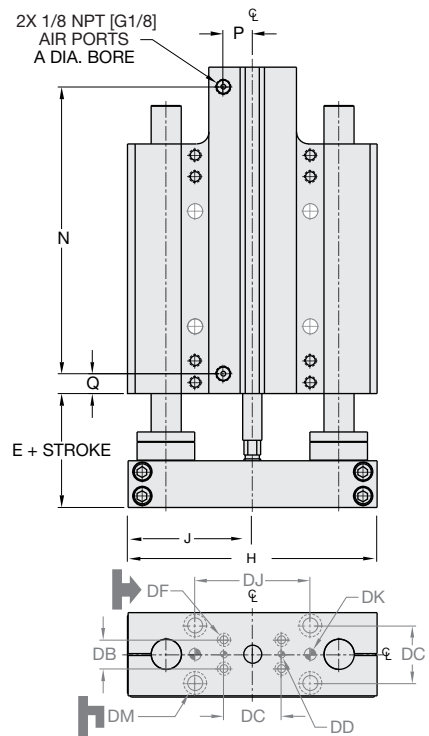
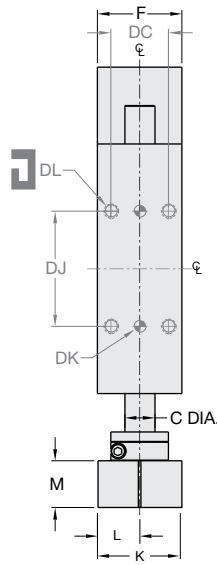
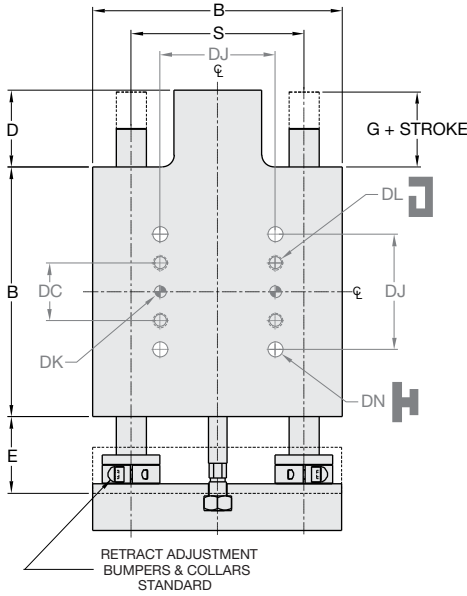
- Telescoping Airlines**
- Eliminate flexing air lines
 - Self aligning air tube design extends useful seal life
 - Modular stackable design. Up to (4) modules can be stacked
 - 1/8 NPT or G1/8 pipe threads
 - (2) user air ports per module

- Quick Disconnect Cable**
- Threaded coupling with knurled head for secure electrical connections
 - 2 meter cable length
 - 5 meter cable length

- Quick Disconnect Cable**
- Threaded coupling with knurled head for secure electrical connections
 - 2 meter cable length
 - 5 meter cable length

	A	B	C	D	E	F	G
DLT-10	.343"	.87	.375	.480	.320	.577	3.60
DLT-12	.375"	.95	.375	.450	.230	.577	3.60
DLT-16	.437"	1.31	.437	.450	.340	.577	3.60
DLT-10M	8.7mm	22.1	9.5	12.2	8.1	14.7	91.4
DLT-12M	9.5mm	23.9	9.5	11.4	5.8	14.7	91.4
DLT-16M	11.1mm	33.3	11.1	11.4	8.6	14.7	91.4

DLT-L Series Product Specifications



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]

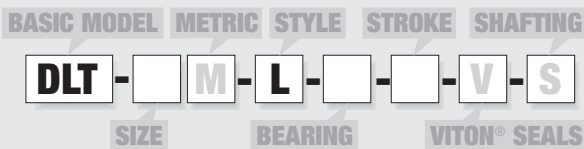
BASIC UNIT DIMENSIONS

MODEL #	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	S
DLT-20	1 1/2	6.50	.787	2.00	1.960	2.20	.960	6.480	3.230	2.180	1.080	1.210	7.469	.77	.52	4.500
DLT-25	1 1/2	7.50	.984	2.00	2.170	2.20	1.170	7.480	3.730	2.180	1.080	1.420	8.468	.77	.52	5.250
DLT-20M	38	165.1	20	50.8	49.8	55.9	24.4	164.6	82.0	55.4	27.4	30.7	189.7	19.4	13.1	114.30
DLT-25M	38	190.5	25	50.8	55.1	55.9	29.7	190.0	94.7	55.4	27.4	36.1	215.1	19.4	13.1	133.35

DIRECTCONNECT DIMENSIONS
STANDARD MOUNTING PATTERN FOR ALL SIZES

	Imperial (inches)	Metric (mm)
DB	.750	19.1
DC	1.500	38.1
DD	.1880 x .25DP	5mm H7 x 6DP
DF	Clearance for #10	Clearance for M5
DJ	3.000	76.2
DK	.3130 x .37 DP	8mm H7 x 9.4 DP
DL	3/8-16 x .56 DP	M10 x 14.2 DP
DM	Clearance for 3/8	Clearance for M10
DN	Clearance for 3/8	Clearance for M10

How to Order: Basic Unit



- SIZE** 20, 25
- METRIC** M
- STYLE** L Long body thruster with built-in repairable cylinder
- BEARING** B Linear ball bearings
C Composite bushings
- STROKE** (inches)
DLT-20 1-6 @ 1" increments
DLT-25 1-7 @ 1" increments
Custom strokes available. Please consult factory.
- STROKE** (mm)
DLT-20M 25, 50, 75, 100, 125, 160
DLT-25M 25, 50, 75, 100, 125, 160, 175
- VITON®** V Viton® seals
- SHAFTING** S Corrosion resistant shafting

SAMPLE ORDER: DLT-20-L-B-2-V

Ex: Thruster, Size 20, Long Body Style, Linear Ball Bushings, 2 Inch Stroke, Viton® Seals

Accessories: (Order Separately)

SHOCK/STOP ACCESSORIES

	DLT-20M	DLT-25M	QTY/THRUSTER
Universal Mounting Kit (Shock, Stop or Sensor)	OSAK-061	OSAK-063	1, 2, 3 or 4
Urethane Bumper/Clamp Collar Kit	OSAK-062	OSAK-064	1
Shock Absorber (adjustable dampening)*	SHOK-029	SHOK-029	1, 2, 3 or 4
Adjustable Hard Stop*	DLT-1023	DLT-1023	1, 2, 3 or 4

INDUCTIVE SENSOR ACCESSORIES*

	DLT-20M	DLT-25M	QTY/THRUSTER
Inductive Sensor PNP Qk. Disconnect*	OISP-011	OISP-011	1 or 2
Inductive Sensor NPN Qk. Disconnect*	OISN-011	OISN-011	1 or 2
Quick Disconnect 2M Cable Length †	CABL-010	CABL-010	1 or 2
Quick Disconnect 5M Cable Length †	CABL-013	CABL-013	1 or 2

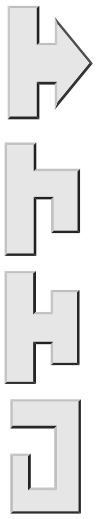
MAGNETIC SENSOR ACCESSORIES**

	DLT-20M	DLT-25M	QTY/THRUSTER
Magneto Resistive Sensor PNP Qk. Disc.†	OHSP-017	OHSP-017	1 or 2
Magneto Resistive Sensor NPN Qk. Disc.†	OHSN-017	OHSN-017	1 or 2
Quick Disconnect 2M Cable Length †	CABL-010	CABL-010	1 or 2
Quick Disconnect 5M Cable Length †	CABL-013	CABL-013	1 or 2

PNEUMATIC ACCESSORIES

	DLT-20M	DLT-25M	QTY/THRUSTER
1/8 NPT Telescopic Airlines (up to 6")	OTAL-039	OTAL-039	1, 2, 3 or 4
1/8 NPT Telescopic Airlines (up to 12")	OTAL-040	OTAL-040	1, 2, 3 or 4
1/8 NPT Adjustable Flow Control	VLVF-004	VLVF-004	1 or 2
G1/8 Telescopic Airlines (up to 160mm)	OTAL-045	OTAL-045	1, 2, 3 or 4
G1/8 Telescopic Airlines (up to 300mm)	OTAL-046	OTAL-046	1, 2, 3 or 4
G1/8 Adjustable Flow Control	VLVF-005	VLVF-005	1 or 2
Cylinder Seal Repair Kit	SLKT-104	SLKT-104	1
Viton® Cylinder Seal Repair Kit	SLKT-104V	SLKT-104V	1

*Requires Universal Mounting Kit †Sensor and cable sold separately **Piston magnet standard



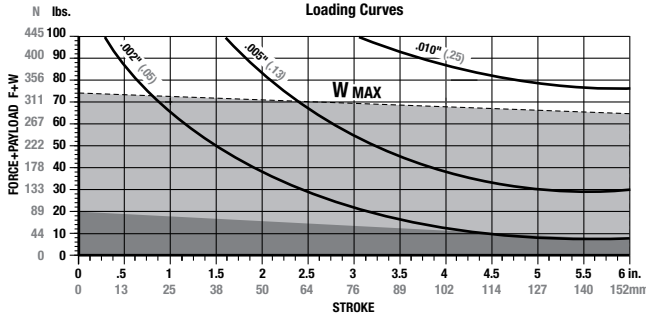
DLT SERIES

DIRECTCONNECT™

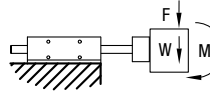


DLT-L Series Product Specifications

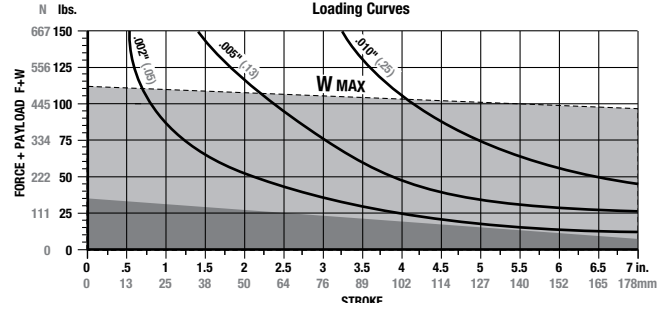
DLT-20M-L



F=Externally applied force (lbs. or N)
 W=Weight of payload (lbs. or N)
 F+W=Total force (lbs. or N)



DLT-25M-L



Shock Absorbers and Flow Controls are recommended for nearly all applications

(W) in this range use Single Shock in both directions

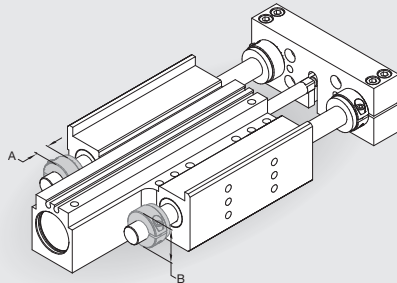
(W) in this range use Urethane Bumpers

Shaded shock absorption ranges of horizontal payload (W) @ 80psi, flow controls fully open. For vertical applications do not exceed 1/2 of the recommended payload due to the additional acceleration effect of gravity.

Specifications	DLT-20	DLT-20M
Maximum Air Pressure	100 psi	6.9 bar
Thrust Force @ 80psi/5.5bar	140 lbs.	622 N
Weight (Basic Unit)	12.0 lbs.	5.5 kg
Additional Weight per Stroke	0.31 lbs./in.	5.5g/mm
Cylinder Bore Diameter	1-1/2"	38mm
Shaft Diameter	0.787"	20mm

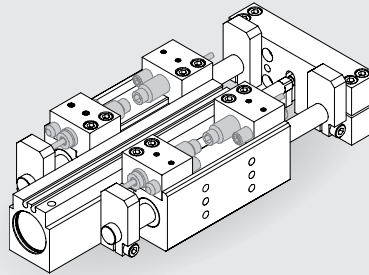
Specifications	DLT-25	DLT-25M
Maximum Air Pressure	100 psi	6.9 bar
Thrust Force @ 80psi/5.5bar	140 lbs.	622 N
Weight (Basic Unit)	17.4 lbs.	7.9 kg
Additional Weight per Stroke	0.47 lbs./in.	8.4g/mm
Cylinder Bore Diameter	1-1/2"	38mm
Shaft Diameter	0.984"	25mm

Accessory Mounting Technical Data



Urethane Bumpers & Clamp Collars

- Urethane Bumpers for shock absorption and noise dampening
- Adjustable Clamp Collars for end of stroke position adjustment
- Kit contains (2) Collars and (2) Shock Pads for adjustment of travel in one direction
- (1) Kit required for retract (kit for extend standard)

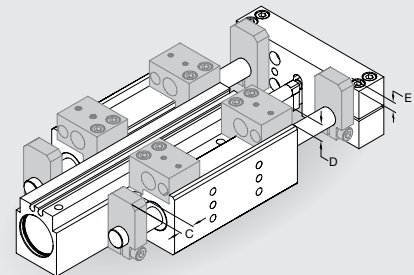


Adjustable Hard Stops

- For precision (+/- .001") end point positioning
- Allows for end stop position adjustment independent of shock absorber hard stop
- Allen wrench adjustable

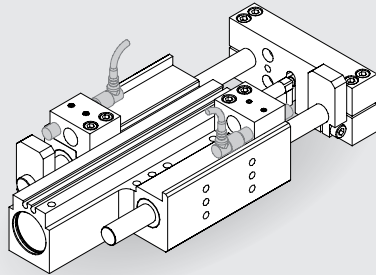
Shock Absorbers

- Full stroking piston rod
- Built-in hard stop
- Position adjustable
- Adjustable dampening



Universal Mounting Kit

- Kit mounts (1) Shock Absorber and (1) Inductive Proximity Sensor or (1) Shock and (1) Adjustable Hard Stop
- Kit includes Mounting Bracket, Hardened Tool Steel Target and Hardware
- Target allows for unlimited stroke adjustment. Fine adjustment is achieved using Adjustable Hard Stop or Shock Absorber
- Mounting Bracket keys into body for secure positioning and excellent rigidity
- Four possible mounting positions

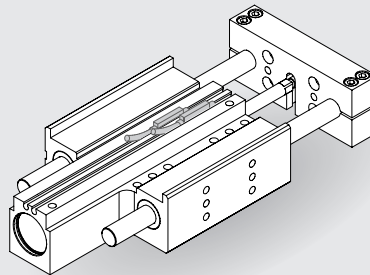


Inductive Proximity Sensors

- 8mm diameter
- Threaded quick disconnect with built-in LED output
- PNP and NPN available

Quick Disconnect Cable

- Threaded coupling with knurled head for secure electrical connections
- 2 meter cable length
- 5 meter cable length

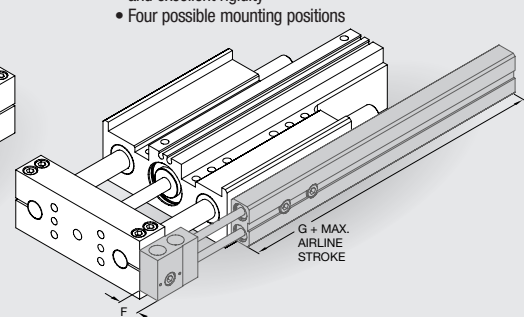


Magneto Resistive Sensors

- No mounting kit required
- Threaded quick disconnect with built-in LED output
- PNP and NPN available
- Low profile

Quick Disconnect Cable

- Threaded coupling with knurled head for secure electrical connections
- 2 meter cable length
- 5 meter cable length



Telescoping Airlines

- Eliminate flexing air lines
- Self aligning air tube design extends useful seal life
- Modular stackable design. Up to (4) modules can be stacked
- 1/8 NPT or G1/8 pipe threads
- (2) user air ports per module

	A	B	C	D	E	F	G
DLT-20	.500"	1.50	.500	.92	.67	.577	3.60
DLT-25	.500"	1.75	.500	.92	.67	.577	3.60
DLT-20M	12.7mm	38.1	12.7	23.4	17.0	14.7	91.4
DLT-25M	12.7mm	44.5	12.7	23.4	17.0	14.7	91.4



DLT SERIES

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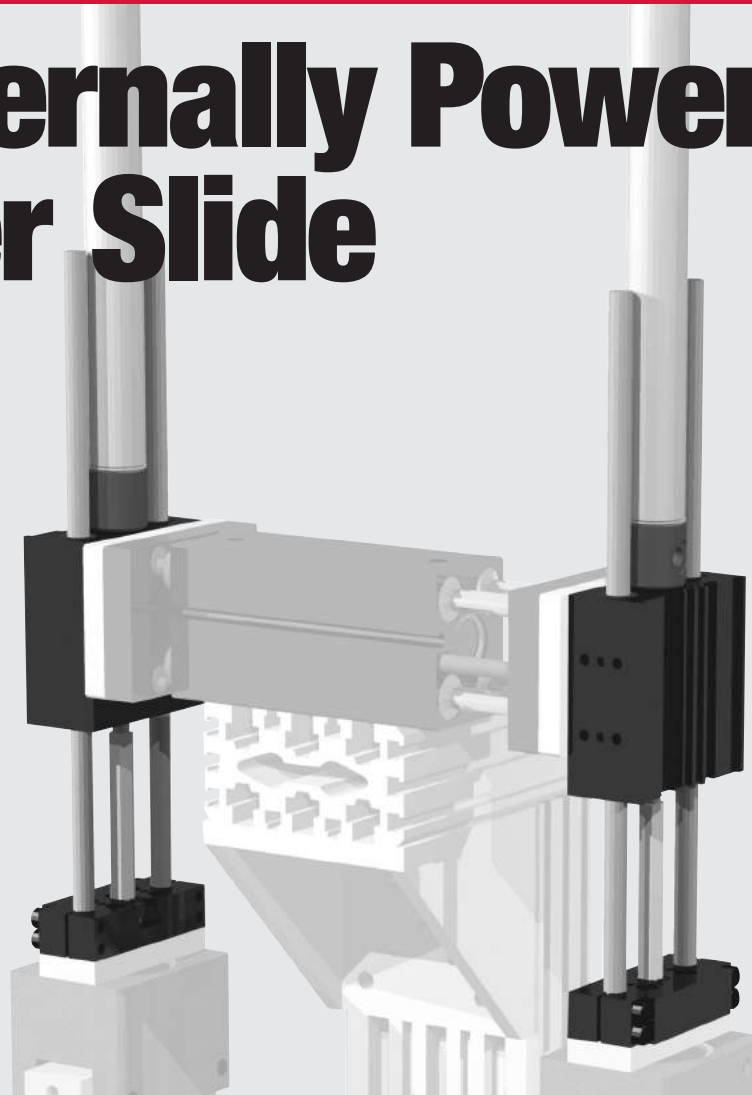
DLT Externally Powered Thruster Slide

Cylinder options:

Externally powered thruster slides are available in a wide range of cylinder options. Choose from replaceable/disposable, replaceable with adjustable cushions, NFPA with adjustable cushions, ISO/metric, VDMA, Locking VDNA, or non-powered for customer supplied cylinders.

DIRECTCONNECT mounting patterns:

These slides have DIRECTCONNECT mounting patterns that connect to other slides without the need for adapter plates.

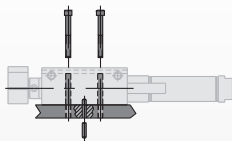


DLT SERIES

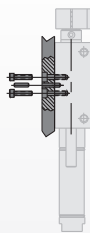
DLT SERIES

Mounting Information:

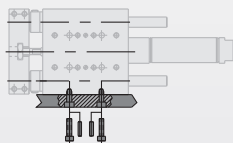
Mounts and operates in any orientation



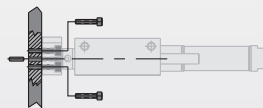
Body can be back mounted with screws from the front using the clearance and counterbored DIRECTCONNECT pattern and located with dowel holes.



Body can be mounted from the back using the DIRECTCONNECT pattern of threaded mounting and dowel pin holes.



Body mounts with screws and locate with slip fit dowel pin holes on side using DIRECTCONNECT mounting patterns.



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

Technical Specifications:

Pneumatic Specifications

Pressure Operating Range*
Cylinder Type
Dynamic Seals
Valve Required to Operate

Imperial
40-100 psi
Metric
3-7 bar
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)
Viton® Seals (optional)

-30°~180° F
-20°~300° F
-35°~80° C
-30°~150° C

Maintenance Specifications†

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

5 million cycles
10+ million cycles†
No
No

Application Restrictions

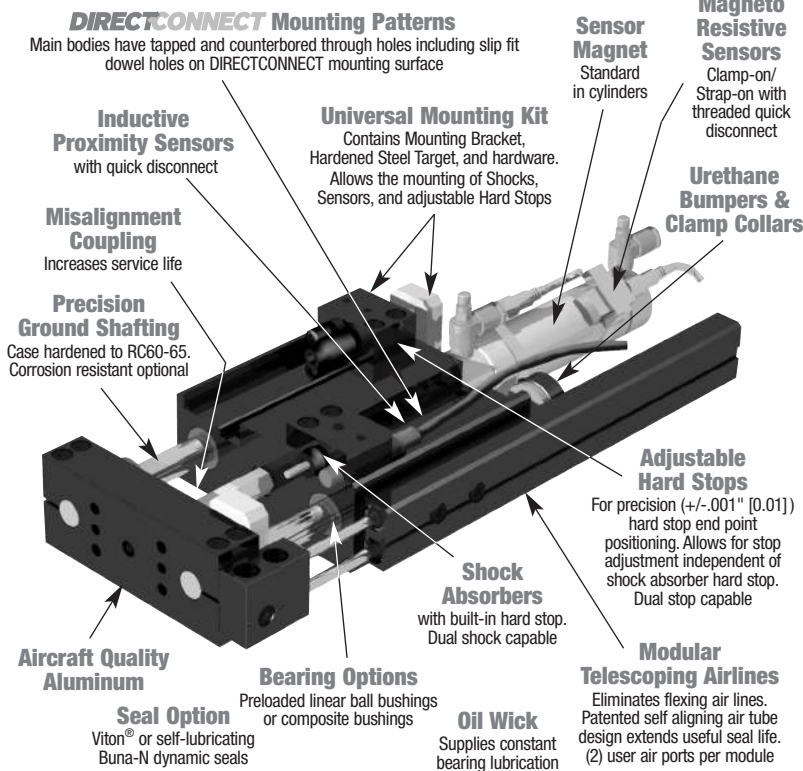
Flow controls, shock absorbers and urethane bumpers recommended for nearly all applications.
Use composite bushing in dirty or gritty environments.
Never use silicone based lubricants with composite bushings.

*Higher pressure possible. Consult factory with application details.
**Addition of lubrication will greatly increase service life
† See Maintenance Section

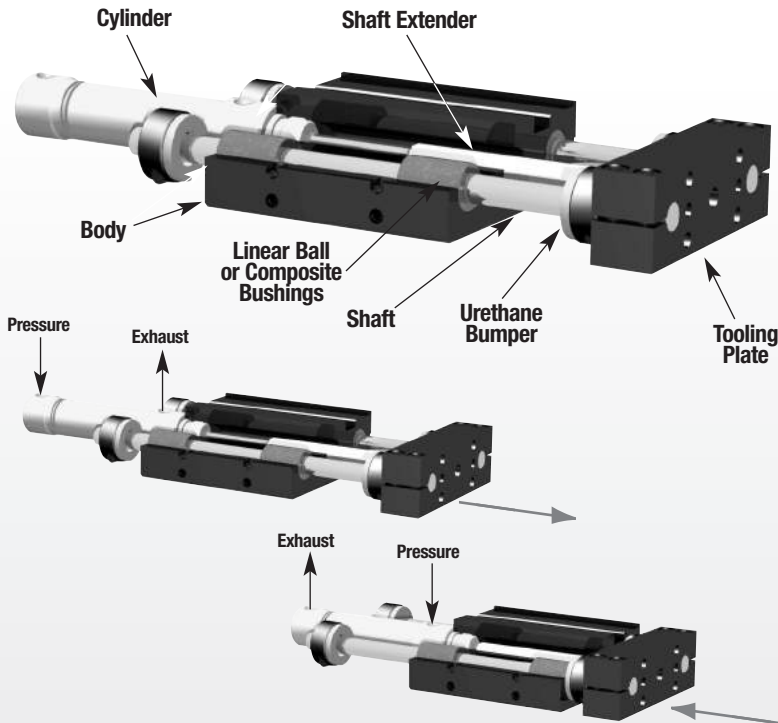
DIRECTCONNECT™



Product Features



Operating Principle



- A double acting cylinder drives a shaft extender that connects to the tooling plate with a misalignment coupling.
- The tooling plate is attached to two hardened steel shafts which are supported by and move in four linear bushings located in the body.

Designed and manufactured in the USA

Style-T, U Replaceable Cyl.

Size -06M -T, U only
-08M -T, U only



See Page 4.52

Style-T, A Replaceable Cyl.

-10M (Metric -A only) (shown)
-12M (Metric -A only)
-16M (Metric -A only)



See Page 4.54

Style-T, A Replaceable Cyl.

Size -20 (shown)
-25



See Page 4.56

Style-N, U Repairable Cyl.

Size -10 (shown)
-12
-16



See Page 4.58

Style-N, R, U Repairable Cyl.

Size -20M (shown)
-25M



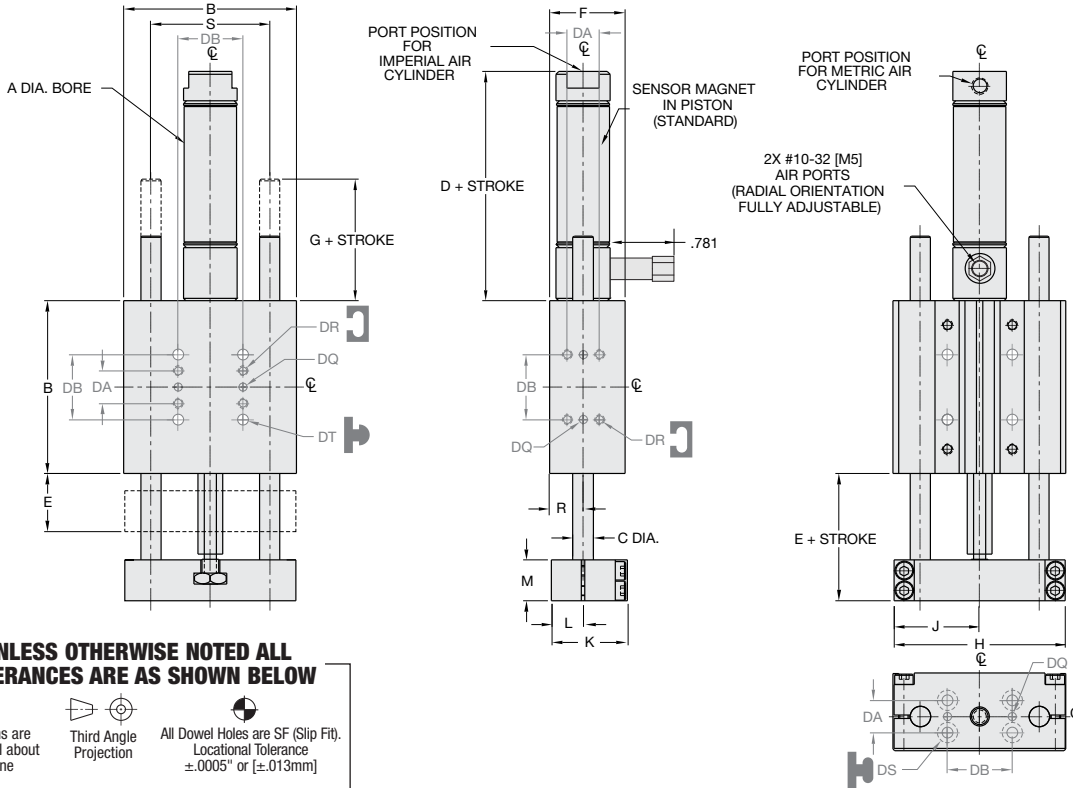
See Page 4.60

DLT SERIES

DLT SERIES

DIRECTCONNECT™

DLT-T, U Series Product Specifications



UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

	Dimensions are symmetrical about centerline		Third Angle Projection		All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or [±.013mm]
	Metric Threads Course Pitch	Imperial in.	Metric [mm]		
		0.00 = ±.01	[0.1] = [±.25]		
		0.000 = ±.005	[0.0] = [±.13]		
		0.0000 = ±.0005	[0.00] = [±.013]		

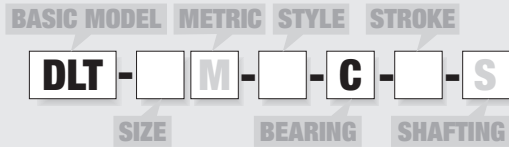
BASIC UNIT DIMENSIONS

MODEL #	BORE DIA.		BODY SIZE		SHAFT DIA.		BASIC UNIT DIMENSIONS									
	A	B	C	D	E	F	G	H	J	K	L	M	R	S		
DLT-06	0.563	2.00	0.236	2.16	0.783	0.88	0.66	1.980	.990	0.875	.365	0.470	.390	1.375		
DLT-08	0.563	2.50	0.315	2.16	0.783	0.88	0.41	2.470	1.235	0.875	.365	0.470	.390	1.750		
DLT-06M	16	50.8	6.0	54.9	19.9	22.4	16.7	50.3	25.1	22.2	9.3	11.9	9.9	34.93		
DLT-08M	16	64.0	8.0	54.9	19.9	22.4	10.4	62.7	31.4	22.2	9.3	11.9	9.9	44.45		

DIRECTCONNECT DIMENSIONS
STANDARD MOUNTING PATTERN FOR ALL SIZES

	Imperial (inches)	Metric (mm)
DA	.375	9.5
DB	.750	19.1
DQ	.0940 x .078 DP	3H7 x 2 DP
DR	#4-40 x .25 DP	M3 x 6 DP
DS	Clr & C'bore for #4	Clr & C'bore for M3
DT	Clr & C'bore for #4	Clr & C'bore for M3

How to Order: Basic Unit



SIZE **06, 08**

Oversized guide shafts available. Please consult factory.

METRIC **M**

STYLE **T** Replaceable cylinder

U Non-powered unit (Without cylinder. Directly mounts replaceable style cylinders)

BEARING **C** Composite bushings

STROKE (inches)

DLT-06 **.5, 1, 1.5, 2, 2.5, 3, 4, 5, 6**

DLT-08 **.5, 1, 1.5, 2, 2.5, 3, 4, 5, 6, 7, 8**

Custom strokes available. Please consult factory.

STROKE (mm)

DLT-06M **10, 25, 40, 50, 75, 100, 125, 160**

DLT-08M **10, 25, 40, 50, 75, 100, 125, 160, 175, 200**

SHAFTING **S** Corrosion resistant shafting

SAMPLE ORDER: DLT-08M-T-B-25

Ex: Thruster, Size 8 Metric, Replaceable Cylinder, Linear Ball Bushings, 25mm Stroke

Accessories: (Order Separately)

SHOCK/STOP ACCESSORIES

	DLT-06M	DLT-08M	QTY/THRUSTER
Universal Mounting Kit (Shock or Stop)	OSAK-069	OSAK-070	1, 2, 3, or 4
Shock Absorber (2 Max. on -06)*	SHOK-030	SHOK-030	1, 2, 3, or 4
Adjustable Hard Stop*	DLT-0623	DLT-0623	1, 2, 3, or 4
Urethane Bumper/Stop Collar Kit	OSAK-067	OSAK-068	1 or 2

INDUCTIVE SENSOR ACCESSORIES¹

	DLT-06M	DLT-08M	QTY/THRUSTER
Inductive Sensor Mounting Kit	OSMK-076	OSMK-077	1
Inductive Sensor PNP Qk. Disconnect [†]	OISP-014	OISP-014	1
Inductive Sensor NPN Qk. Disconnect [†]	OISN-014	OISN-014	1
Quick. Disconnect 2M Cable Length [†]	CABL-010	CABL-010	1
Quick. Disconnect 5M Cable Length [†]	CABL-013	CABL-013	1

MAGNETIC SENSOR ACCESSORIES^{**}

	DLT-06M	DLT-08M	QTY/THRUSTER
Magneto Resistive Sensor PNP Qk. Disc. [†]	OHSP-005	OHSP-005	1 or 2
Magneto Resistive Sensor NPN Qk. Disc. [†]	OHSN-005	OHSN-005	1 or 2
Quick. Disconnect 2M Cable Length [†]	CABL-010	CABL-010	1 or 2
Quick. Disconnect 5M Cable Length [†]	CABL-013	CABL-013	1 or 2

PNEUMATIC ACCESSORIES

	DLT-06M	DLT-08M	QTY/THRUSTER
#10-32 Adjustable Flow Control (Imperial) ^{††}	VLVF-007	VLVF-007	1 or 2
M5 Adjustable Flow Control (Metric) ^{††}	VLVF-008	VLVF-008	1 or 2
#10-32 Retract Port Standoff (Imperial)	PLFT-070	PLFT-070	1
M5 Retract Port Standoff (Metric)	PLFT-071	PLFT-071	1

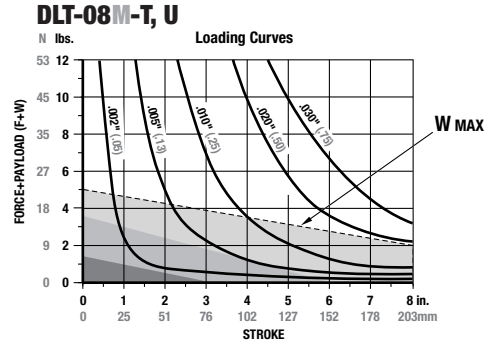
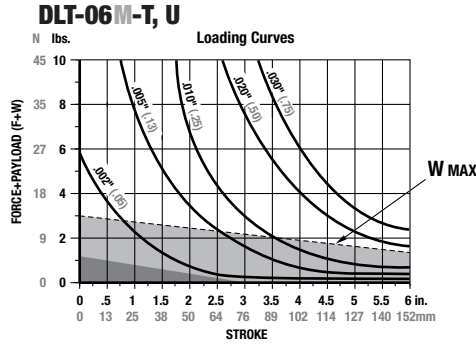
¹Sensor and cable sold separately ^{**}Piston magnet standard ^{††}Requires Port Standoff

DIRECTCONNECT™

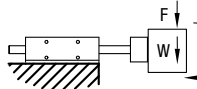
DLT SERIES



DLT-T, U Series Product Specifications



F=Externally applied force (lbs. or N)
W=Weight of payload (lbs. or N)
F+W=Total deflection force (lbs. or N)
M=Maximum moment (in.-lb. or N-m)



Shock Absorbers and Flow Controls are recommended for nearly all applications

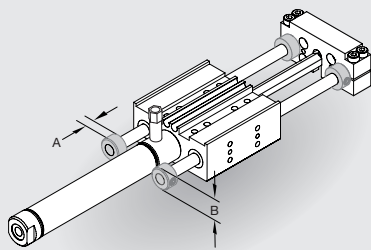
Use **Double Shocks** in both directions Use **Single Shock** in both directions Use **Bumpers or Cushioned Cylinder**

Shaded shock absorption ranges of horizontal payload (W) @ 80psi, flow controls fully open. For vertical applications do not exceed 1/2 of the recommended payload due to the additional acceleration effect of gravity.

Specifications	DLT-06	DLT-06M
Maximum Air Pressure.....	100 psi	7 bar
Thrust Force @ 80psi/5.5 bar.....	20 lbs.	111 N
Weight (Basic Unit).....	0.53 lbs.	0.24 kg
Additional Weight Per Stroke.....	0.05 lb/in	0.88 g/mm
Cylinder Bore Diameter.....	0.563"	16 mm
Shaft Diameter.....	0.236"	6 mm
Max (M) Vertical Motion.....	5 in.-lbs.	0.6 N-m

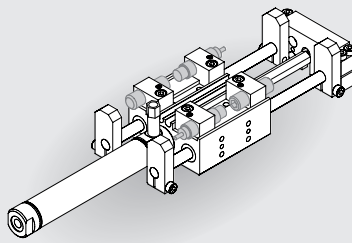
Specifications	DLT-08	DLT-08M
Maximum Air Pressure.....	100 psi	7 bar
Thrust Force @ 80psi/ 5.5 bar.....	20 lbs.	89 N
Weight (Basic Unit).....	0.88 lbs.	0.40 kg
Additional Weight Per Stroke.....	0.07 lb/in	1.43 g/mm
Cylinder Bore Diameter.....	0.563"	16 mm
Shaft Diameter.....	0.315"	8.0 mm
Max (M) Vertical Motion.....	10 in.-lbs.	1.3 N-m

Accessory Mounting Technical Data



Urethane Bumpers & Clamp Collars

- Urethane Bumpers for shock absorption and noise dampening
- Adjustable Clamp Collars for end of stroke position adjustment
- Kit contains (2) Collars and (2) Shock Pads for adjustment of travel in one direction

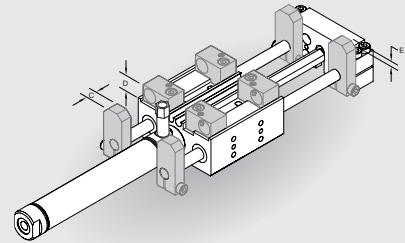


Adjustable Hard Stops

- For precision (+/- .001") end point positioning of retract position
- Allows for end stop position adjustment independent of shock absorber hard stop
- Allen wrench adjustable

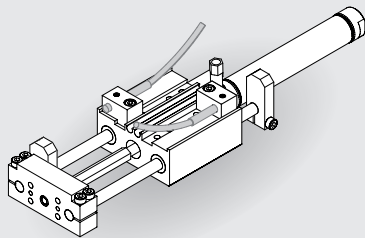
Shock Absorbers

- Full stroking piston rod
- Built-in hard stop
- Position adjustable



Universal Mounting Kit

- Kit mounts (1) Shock Absorber or (1) Adjustable Hard Stop
- Kit includes (1) Mounting Bracket, (1) Hardened Tool Steel Target and Hardware
- Target allows for unlimited retract stroke adjustment (no extend position adjustment). Fine adjustment is achieved using Adjustable Hard Stop or Shock Absorber
- Mounting Bracket keys into body for secure positioning and excellent rigidity
- Four possible mounting positions

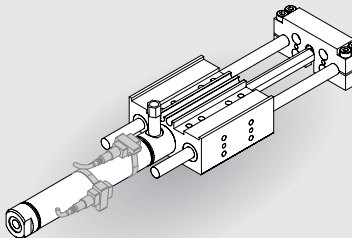


Inductive Proximity Sensors

- 4mm diameter
- Threaded quick disconnect with built-in LED output
- PNP and NPN available

Quick Disconnect Cable

- Threaded coupling with knurled head for secure electrical connections
- 2 meter cable length
- 5 meter cable length

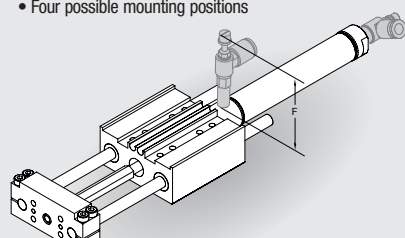


Magneto Resistive Sensors

- No mounting kit required (slot mounted)
- Threaded quick disconnect with built-in LED output
- PNP and NPN available
- Low profile

Quick Disconnect Cable

- Threaded coupling with knurled head for secure electrical connections
- 2 meter cable length
- 5 meter cable length



Flow Controls

- Thumb screw adjust with locking nut for adjusting cylinder speed
- 1/8 NPT or G1/8 pipe threads

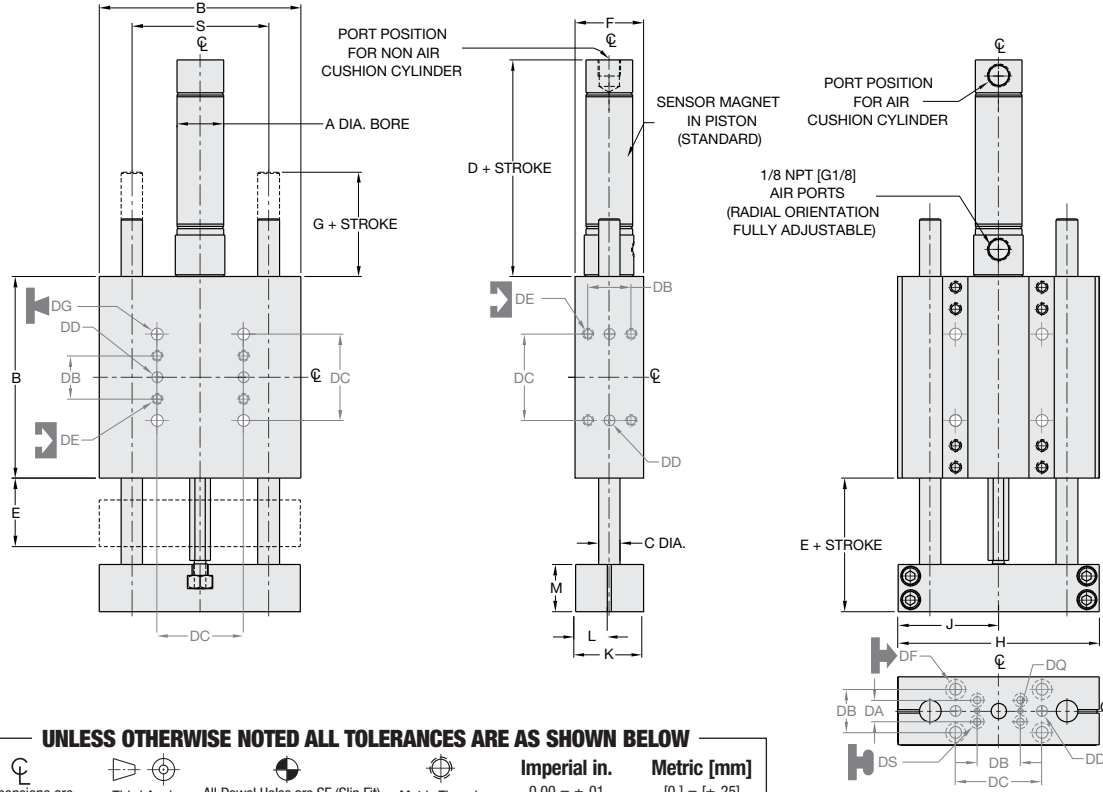
	A	B	C	D	E	F
DLT-06	.236"	.47	.250	.31	.27	1.82
DLT-08	.236"	.63	.250	.31	.27	1.82
DLT-06M	6 mm	12.0	6.4	7.9	6.9	46.2
DLT-08M	6 mm	16.0	6.4	7.9	6.9	46.2



DLT SERIES

DIRECTCONNECT™

DLT-T, A Series Product Specifications



UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

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

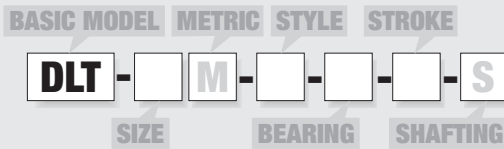
DLT SERIES

MODEL #	BORE DIA.		BODY SIZE		SHAFT DIA.		BASIC UNIT DIMENSIONS												
	A	B	C	D	E	F	G	H	J	K	L	M	S						
DLT-10	3/4	3.50	.375	2.91	1.313	1.19	.82	3.490	1.740	1.178	.584	.813	2.375						
DLT-12	1 1/16	4.00	.472	2.88	1.313	1.63	.82	3.985	1.985	1.615	.802	.813	2.750						
DLT-16	1 1/16	4.75	.630	2.88	1.375	1.63	.76	4.735	2.360	1.615	.802	.813	3.250						
DLT-10M	20	88.9	9.5	88.0	33.4	30.2	20.8	88.6	44.2	29.9	14.8	20.7	60.33						
DLT-12M	25	101.6	12.0	91.5	33.4	41.4	20.8	101.2	50.4	41.0	20.4	20.7	69.85						
DLT-16M	25	120.7	16.0	91.5	34.9	41.4	19.3	120.3	59.9	41.0	20.4	20.7	82.55						

DIRECTCONNECT DIMENSIONS
STANDARD MOUNTING PATTERN FOR ALL SIZES

	Imperial (inches)	Metric (mm)
DA	.375	9.5
DB	.750	19.1
DC	1.500	38.1
DD	.1880 X .25 DP	5 mm H7 X 6 DP
DE	#10-32 X .34 DP	M5 X 8.5 DP
DF	Clr & C'bore for #10	Clr & C'bore for M5
DG	Clr & C'bore for #10	Clr & C'bore for M5
DQ	.0940 x .078 DP	3H7 x 2 DP
DS	Clr & C'bore for #4	Clr & C'bore for M3

How to Order: Basic Unit



- SIZE** 10, 12, 16
- METRIC** M
- STYLE** T Replaceable cylinder w/o adjustable air cushions (Not avail. in metric)
A Replaceable cylinder with adjustable air cushions
- BEARING** B Linear ball bearings
C Composite bushings
- STROKE** (inches)
DLT-10 1-12 @ 1" increments
DLT-12 1-16 @ 1" increments
DLT-16 1-20 @ 1" increments
- STROKE** (mm)
DLT-10M 25, 50, 80, 100, 125, 160, 200, 250, 300
DLT-12M 25, 50, 80, 100, 125, 160, 200, 250, 300, 320, 360, 400
DLT-16M 25, 50, 80, 100, 125, 160, 200, 250, 300, 320, 360, 400, 500
- SHAFTING** S Corrosion resistant shafting

SAMPLE ORDER: DLT-10M-A-B-25

Ex: Thruster, Size 10 Metric, Replaceable Cylinder w/Adjustable Air Cushions, Linear Ball Bushings, 25mm Stroke

Accessories: (Order Separately) DLT-10M DLT-12M DLT-16M QTY/THRUSTER

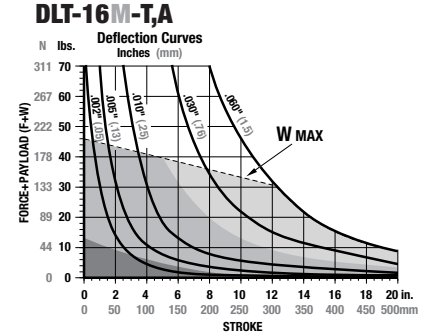
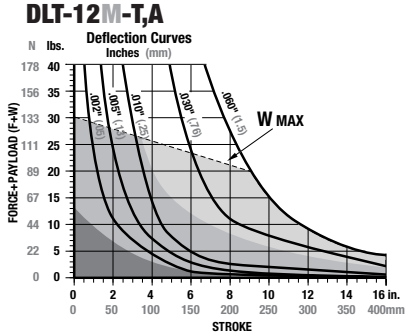
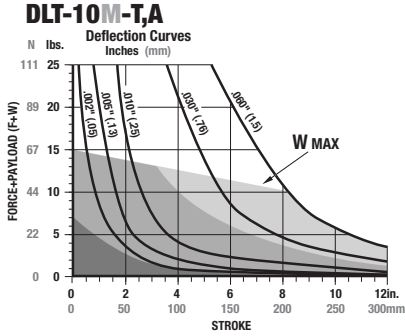
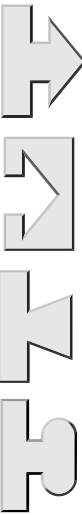
SHOCK/STOP ACCESSORIES	DLT-10M	DLT-12M	DLT-16M	QTY/THRUSTER
Universal Mounting Kit				
(Shock, Stop or Sensor)	OSAK-055	OSAK-057	OSAK-059	1, 2, 3 or 4
Urethane Bumper/Clamp Collar Kit	OSAK-056	OSAK-058	OSAK-060	1 or 2
Urethane Bumper/Clamp Collar Kit (-10M)	OSAK-065			1 or 2
Urethane Bumper/Clamp Collar Kit (-12M)		OSAK-066		1 or 2
Shock Absorber*	SHOK-028	SHOK-010	SHOK-010	1, 2, 3 or 4
Adjustable Hard Stop*	DLT-1023	DLT-1023	DLT-1023	1, 2, 3 or 4
INDUCTIVE SENSOR ACCESSORIES*				
Inductive Sensor PNP Qk. Disconnect*	OISP-011	OISP-011	OISP-011	1 or 2
Inductive Sensor NPN Qk. Disconnect*	OISN-011	OISN-011	OISN-011	1 or 2
Quick. Disconnect 2M Cable Length †	CABL-010	CABL-010	CABL-010	1 or 2
Quick. Disconnect 5M Cable Length †	CABL-013	CABL-013	CABL-013	1 or 2
MAGNETIC SENSOR ACCESSORIES**				
Magneto Resistive Sensor PNP Qk. Disc.†	OHSP-005	OHSP-005	OHSP-005	1 or 2
Magneto Resistive Sensor NPN Qk. Disc.†	OHSN-005	OHSN-005	OHSN-005	1 or 2
Quick. Disconnect 2M Cable Length †	CABL-010	CABL-010	CABL-010	1 or 2
Quick. Disconnect 5M Cable Length †	CABL-013	CABL-013	CABL-013	1 or 2
PNEUMATIC ACCESSORIES				
1/8 NPT Telescopic Airlines (up to 6")	OTAL-039	OTAL-039	OTAL-039	1, 2, 3 or 4
1/8 NPT Telescopic Airlines (up to 12")	OTAL-040	OTAL-040	OTAL-040	1, 2, 3 or 4
1/8 NPT Telescopic Airlines (up to 18")	OTAL-041	OTAL-041	OTAL-041	1, 2, 3 or 4
1/8 NPT Telescopic Airlines (up to 24")	OTAL-042	OTAL-042	OTAL-042	1, 2, 3 or 4
1/8 NPT Adjustable Flow Control	VLVF-004	VLVF-004	VLVF-004	1 or 2
G1/8 Telescopic Airlines (up to 160mm)	OTAL-045	OTAL-045	OTAL-045	1, 2, 3 or 4
G1/8 Telescopic Airlines (up to 300mm)	OTAL-046	OTAL-046	OTAL-046	1, 2, 3 or 4
G1/8 Telescopic Airlines (up to 450mm)	OTAL-047	OTAL-047	OTAL-047	1, 2, 3 or 4
G1/8 Telescopic Airlines (up to 600mm)	OTAL-048	OTAL-048	OTAL-048	1, 2, 3 or 4
G1/8 Adjustable Flow Control	VLVF-005	VLVF-005	VLVF-005	1 or 2

*Requires Universal Mounting Kit †Sensor and cable sold separately **Piston magnet standard

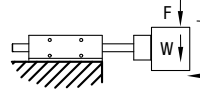
DIRECTCONNECT™



DLT-T, A Series Product Specifications



F—Externally applied force (lbs. or N)
W—Weight of payload (lbs. or N)
F+W—Total deflection force (lbs. or N)



Shock Absorbers and Flow Controls are recommended for nearly all applications
 Use **Double Shocks** in both directions Use **Single Shock** in both directions Use **Bumpers or Cushioned Cylinder**

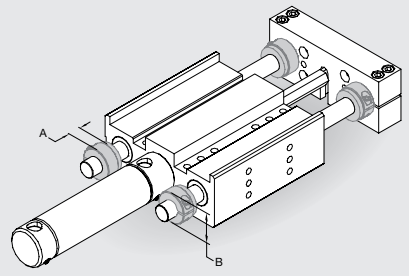
Shaded shock absorption ranges of horizontal payload (W) @ 80psi, flow controls fully open. For vertical applications do not exceed 1/2 of the recommended payload due to the additional acceleration effect of gravity.

Specifications	DLT-10	DLT-10M
Maximum Air Pressure.....	100 psi	6.9 bar
Thrust Force @ 80psi/5.5bar..	35 lbs.	173 N
Weight (Basic Unit -T, -A).....	2.12 lbs.	1.05 kg
Additional Weight per Stroke..	0.09 lbs./in.	1.2g/mm
Cylinder Bore Diameter.....	3/4"	20mm
Shaft Diameter.....	0.375"	9.5mm

Specifications	DLT-12	DLT-12M
Maximum Air Pressure.....	100 psi	6.9 bar
Thrust Force @ 80psi/5.5bar..	70 lbs.	270 N
Weight (Basic Unit -T, -A).....	3.42 lbs.	1.64 kg
Additional Weight per Stroke..	0.15 lbs./in.	2.9g/mm
Cylinder Bore Diameter.....	1-1/16"	25mm
Shaft Diameter.....	0.472"	12mm

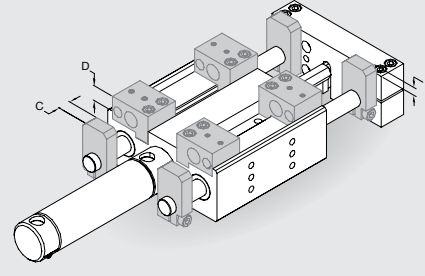
Specifications	DLT-16	DLT-16M
Maximum Air Pressure.....	100 psi	6.9 bar
Thrust Force @ 80psi/5.5bar..	70 lbs.	270 N
Weight (Basic Unit -T, -A).....	4.47 lbs.	2.11 kg
Additional Weight per Stroke..	0.23 lbs./in.	4.2g/mm
Cylinder Bore Diameter.....	1-1/16"	25mm
Shaft Diameter.....	0.630"	16mm

Accessory Mounting Technical Data



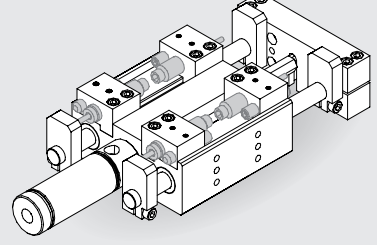
Urethane Bumpers & Clamp Collars

- Urethane Bumpers for shock absorption and noise dampening
- Adjustable Clamp Collars for end of stroke position adjustment
- Kit contains (2) Collars and (2) Shock Pads for adjustment of travel in one direction



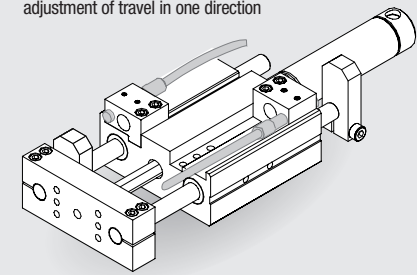
Universal Mounting Kit

- Kit mounts (1) Shock Absorber and (1) Inductive Proximity Sensor or (1) Shock and (1) Adjustable Hard Stop
- Kit includes (1) Mounting Bracket, (1) Hardened Tool Steel Target and Hardware
- Target allows for unlimited stroke adjustment. Fine adjustment is achieved using Adjustable Hard Stop or Shock Absorber
- Mounting Bracket keys into body for secure positioning and excellent rigidity
- Four possible mounting positions



Adjustable Hard Stops

- For precision (+/- .001") end point positioning
- Allows for end stop position adjustment independent of shock absorber hard stop
- Allen wrench adjustable

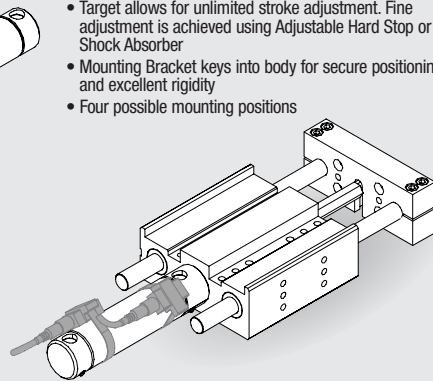


Inductive Proximity Sensors

- 8mm diameter
- Threaded Quick Disconnect with built-in LED output
- PNP and NPN available

Quick Disconnect Cable

- Threaded coupling with knurled head for secure electrical connections
- 2 meter cable length
- 5 meter cable length

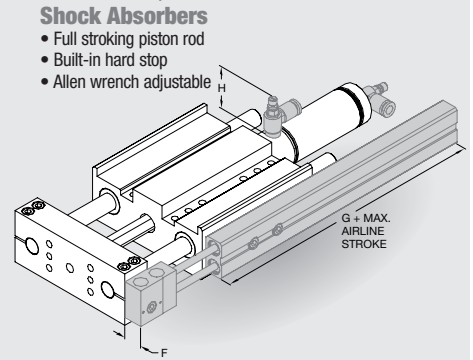


Magneto Resistive Sensors

- Quick Disconnect with built-in LED output
- Strap-on Mounting Kit included
- PNP and NPN available

Quick Disconnect Cable

- Threaded coupling with knurled head for secure electrical connections
- 2 meter cable length
- 5 meter cable length



Telescoping Airlines

- Eliminate flexing air lines
- Self aligning air tube design extends useful seal life
- Modular stackable design. Up to (4) modules can be stacked
- 1/8 NPT or G1/8 pipe threads
- (2) user air ports per module

Flow Controls

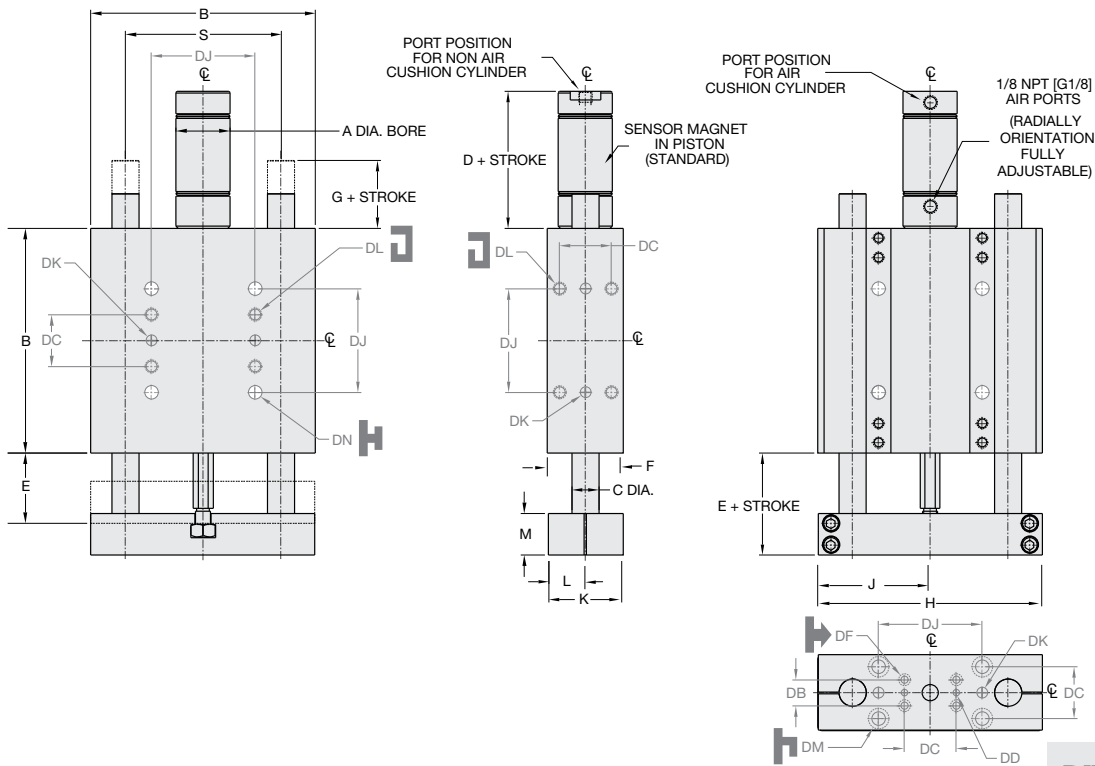
- Thumb screw adjust with locking nut for adjusting cylinder speed
- 1/8 NPT or G1/8 pipe threads

	A	B	C	D	E	F	G	H
DLT-10	.343"	.87	.375	.480	.320	.577	3.60	1.12
DLT-12	.375"	.95	.375	.450	.230	.577	3.60	1.12
DLT-16	.437"	1.31	.437	.450	.340	.577	3.60	1.12
DLT-10M	8.7mm	22.1	9.5	12.2	8.1	14.7	91.4	28.4
DLT-12M	9.5mm	23.9	9.5	11.4	5.8	14.7	91.4	28.4
DLT-16M	11.1mm	33.3	11.1	11.4	8.6	14.7	91.4	28.4

DLT SERIES

DIRECTCONNECT™

DLT-T, A Series Product Specifications



UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

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

DIRECTCONNECT

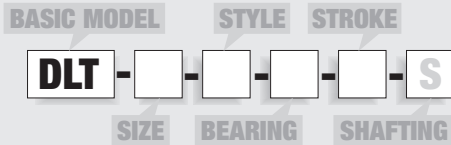
DIMENSIONS
STANDARD MOUNTING PATTERN FOR ALL SIZES

	Imperial (inches)
DB	.750
DC	1.500
DD	.1880 x .25 DP
DF	Clearance for #10
DJ	3.000
DK	.3130 x .37 DP
DL	3/8 -16 x .56 DP
DM	Clearance for 3/8
DN	Clearance for 3/8

BASIC UNIT DIMENSIONS

MODEL #	BORE DIA.		BODY SIZE		SHAFT DIA.									
	A	B	C	D	E	F	G	H	J	K	L	M	S	
DLT-20	1 1/2	6.50	.787	3.00	1.960	2.20	.960	6.480	3.230	2.180	1.080	1.210	4.500	
DLT-25	1 1/2	7.50	.984	3.00	2.170	2.20	1.170	7.480	3.730	2.180	1.080	1.420	5.250	

How to Order: Basic Unit



SIZE 20, 25

STYLE **T** Replaceable cylinder w/o adjustable air cushions
A Replaceable cylinder with adjustable air cushions

BEARING **B** Linear ball bearings
C Composite bushings

STROKE (inches)
DLT-20 **1-24** @ 1" increments
DLT-25 **1-26** @ 1" increments

SHAFTING **S** Corrosion resistant shafting

Oversized guide shafts available. Please consult factory.

Custom strokes available. Please consult factory.

SAMPLE ORDER: DLT-20-A-B-8

Ex: Thruster, Size 20, Replaceable Cylinder w/Adjustable Air Cushions, Linear Ball Bushings, 8 inch Stroke

Accessories: (Order Separately)

SHOCK/STOP ACCESSORIES

	DLT-20	DLT-25	QTY/THRUSTER
Universal Mounting Kit (Shock, Stop or Sensor)	OSAK-061	OSAK-063	1,2,3 or 4
Urethane Bumper/Clamp Collar Kit	OSAK-062	OSAK-064	1 or 2
Shock Absorber (adjustable dampening)*	SHOK-029	SHOK-029	1,2,3 or 4
Adjustable Hard Stop*	DLT-1023	DLT-1023	1,2,3 or 4

INDUCTIVE SENSOR ACCESSORIES[†]

Inductive Sensor PNP Qk. Disconnect*	OISP-011	OISP-011	1 or 2
Inductive Sensor NPN Qk. Disconnect*	OISN-011	OISN-011	1 or 2
Quick. Disconnect 2M Cable Length †	CABL-010	CABL-010	1 or 2
Quick. Disconnect 5M Cable Length †	CABL-013	CABL-013	1 or 2

MAGNETIC SENSOR ACCESSORIES^{††}

Magneto Resistive Sensor PNP Qk. Disc.†	OHSP-005	OHSP-005	1 or 2
Magneto Resistive Sensor NPN Qk. Disc.†	OHSN-005	OHSN-005	1 or 2
Quick. Disconnect 2M Cable Length †	CABL-010	CABL-010	1 or 2
Quick. Disconnect 5M Cable Length †	CABL-013	CABL-013	1 or 2

PNEUMATIC ACCESSORIES

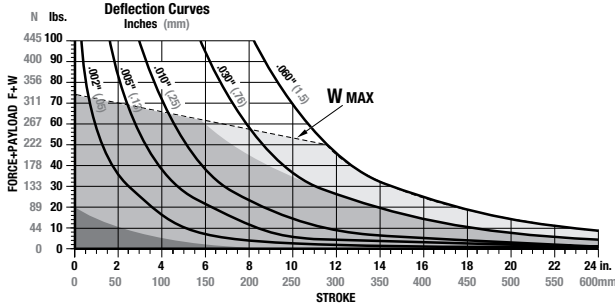
1/8 NPT Telescopic Airlines (up to 6")	OTAL-039	OTAL-039	1,2,3 or 4
1/8 NPT Telescopic Airlines (up to 12")	OTAL-040	OTAL-040	1,2,3 or 4
1/8 NPT Telescopic Airlines (up to 18")	OTAL-041	OTAL-041	1,2,3 or 4
1/8 NPT Telescopic Airlines (up to 24")	OTAL-042	OTAL-042	1,2,3 or 4
1/8 NPT Adjustable Flow Control	VLVF-004	VLVF-004	1 or 2

*Requires Universal Mounting Kit †Sensor and cable sold separately ††Piston magnet standard

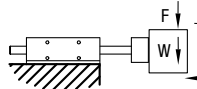


DLT-T, A Series Product Specifications

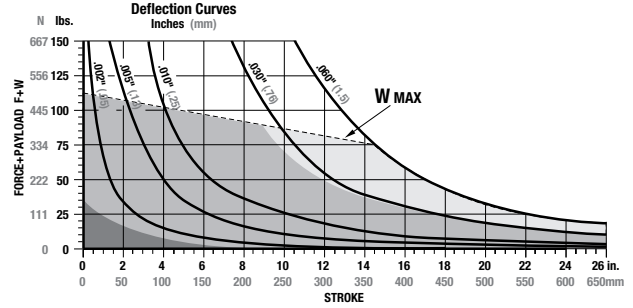
DLT-20-T, A, U



F=Externally applied force (lbs. or N)
 W=Weight of payload (lbs. or N)
 F+W=Total deflection force (lbs. or N)



DLT-25-T, A, U



Shock Absorbers and Flow Controls are recommended for nearly all applications

Use **Double Shocks** in both directions Use **Single Shock** in both directions Use **Bumpers or Cushioned Cylinder**

Shaded shock absorption ranges of horizontal payload (W) @ 80psi, flow controls fully open. For vertical applications do not exceed 1/2 of the recommended payload due to the additional acceleration effect of gravity.

Specifications

DLT-20

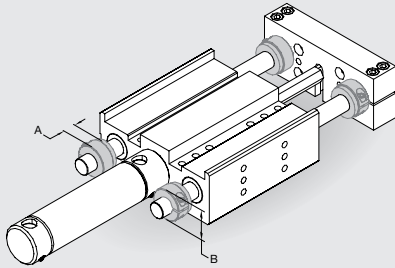
Maximum Air Pressure	100 psi
Thrust Force @ 80psi/5.5bar.....	140 lbs.
Weight (Basic Unit -T, -A)	12.7 lbs.
Additional Weight per Stroke	0.38 lbs./in.
Cylinder Bore Diameter.....	1-1/2"
Shaft Diameter.....	0.787"

Specifications

DLT-25

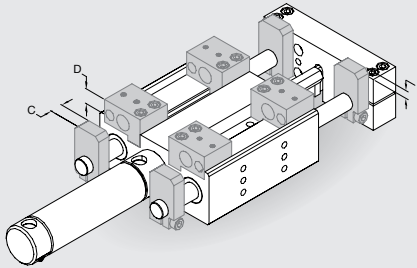
Maximum Air Pressure	100 psi
Thrust Force @ 80psi/5.5bar.....	140 lbs.
Weight (Basic Unit -T, -A)	17.6 lbs.
Additional Weight per Stroke	0.53 lbs./in.
Cylinder Bore Diameter	1-1/2"
Shaft Diameter	0.984"

Accessory Mounting Technical Data



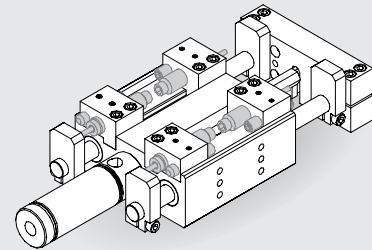
Urethane Bumpers & Clamp Collars

- Urethane Bumpers for shock absorption and noise dampening
- Adjustable Clamp Collars for end of stroke position adjustment
- Kit contains (2) Collars and (2) Shock Pads for adjustment of travel in one direction



Universal Mounting Kit

- Kit mounts (1) Shock Absorber and (1) Inductive Proximity Sensor or (1) Shock and (1) Adjustable Hard Stop
- Kit includes Mounting Bracket, Hardened Tool Steel Target and Hardware
- Target allows for unlimited stroke adjustment. Fine adjustment is achieved using Adjustable Hard Stop or Shock Absorber
- Mounting Bracket keys into body for secure positioning and excellent rigidity
- Four possible mounting positions

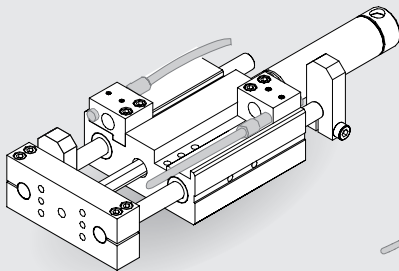


Adjustable Hard Stops

- For precision (+/- .001") end point positioning
- Allows for end stop position adjustment independent of shock absorber hard stop
- Allen wrench adjustable

Shock Absorbers

- Full stroking piston rod
- Built-in hard stop
- Position adjustable
- Adjustable dampening

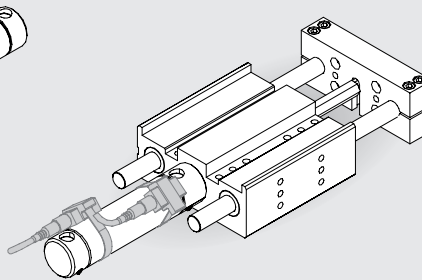


Inductive Proximity Sensors

- 8mm diameter
- Threaded Quick Disconnect with built-in LED output
- PNP and NPN available

Quick Disconnect Cable

- Threaded coupling with knurled head for secure electrical connections
- 2 meter cable length
- 5 meter cable length

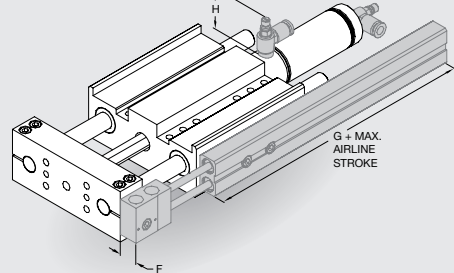


Magneto Resistive Sensors

- Quick Disconnect with built-in LED output
- Strap-on Mounting Kit included
- PNP and NPN available

Straight Quick Disconnect Cable

- Threaded coupling with knurled head for secure electrical connections
- 2 meter cable length
- 5 meter cable length



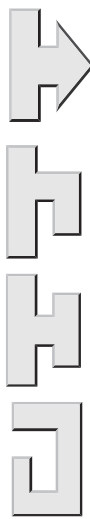
Telescoping Airlines

- Eliminate flexing air lines
- Self aligning air tube design extends useful seal life
- Modular stackable design. Up to (4) modules can be stacked
- 1/8 NPT or G1/8 pipe threads
- (2) user air ports per module

Flow Controls

- Thumb screw adjust with locking nut for adjusting cylinder speed
- 1/8 NPT or G1/8 pipe threads

	A	B	C	E	F	G	H
DLT-20	.500"	1.50	.500	.67	.577	3.60	1.12
DLT-25	.500"	1.75	.500	.67	.577	3.60	1.12

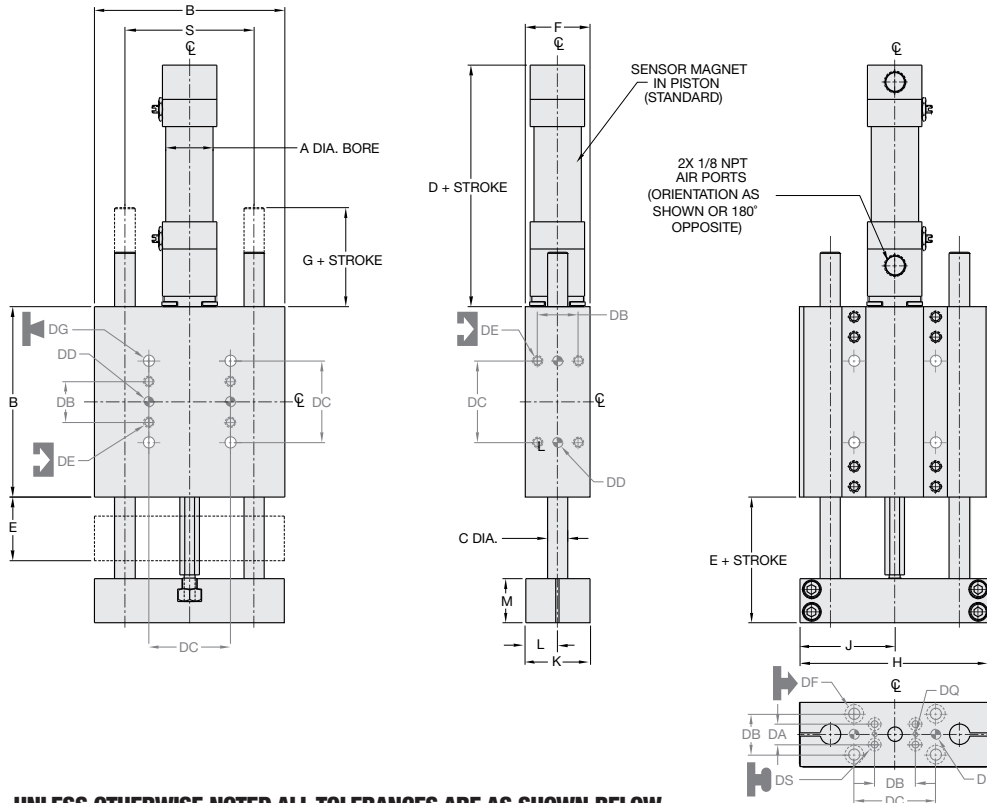


DLT SERIES

DIRECTCONNECT™



DLT-N, U Series Product Specifications



UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

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

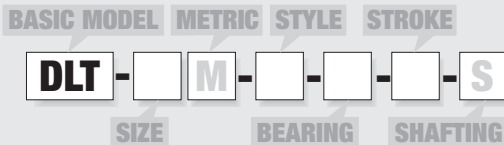
MODEL #	BORE DIA.		BODY SIZE		SHAFT DIA.		BASIC UNIT DIMENSIONS						
	A	B	C	D	E	F	G	H	J	K	L	M	S
DLT-10	3/4	3.50	.375	3.44	1.313	1.19	.82	3.490	1.740	1.178	.584	.813	2.375
DLT-12	1 1/8	4.00	.472	3.44	1.313	1.63	.82	3.985	1.985	1.615	.802	.813	2.750
DLT-16	1 1/8	4.75	.630	3.44	1.375	1.63	.76	4.735	2.360	1.615	.802	.813	3.250

DIRECTCONNECT

DIMENSIONS STANDARD MOUNTING PATTERN FOR ALL SIZES

	Imperial (inches)
DA	.375
DB	.750
DC	1.500
DD	.1880 x .25 DP
DE	#10-32 x .34 DP
DF	Clearance for #10
DG	Clearance for #10
DQ	.0940 x .078 DP
DS	Clr & C'bore for #4

How to Order: Basic Unit



SIZE 10, 12, 16

STYLE **N** Repairable NFPA cylinder w/fixed air cushions (Not available in Metric)
U Non-powered unit (Without cylinder. NFPA cylinder mounting kits available)

BEARING **B** Linear ball bearings
C Composite bushings

Oversized guide shafts available. Please consult factory.

Custom strokes available. Please consult factory.

STROKE (inches)
 DLT-10 **1-12** @ 1" increments
 DLT-12 **1-16** @ 1" increments
 DLT-16 **1-20** @ 1" increments

STROKE (mm)
 DLT-10M **25, 50, 80, 100, 125, 160, 200, 250, 300**
 DLT-12M **25, 50, 80, 100, 125, 160, 200, 250, 300, 320, 360, 400**
 DLT-16M **25, 50, 80, 100, 125, 160, 200, 250, 300, 320, 360, 400, 500**

SHAFTING **S** Sample resistant shafting

SAMPLE ORDER: DLT-10-N-B-6

Ex: Thruster, Size 10, Repairable Cylinder w/Fixed Air Cushions, Linear Ball Bushings, 6 Inch Stroke

Accessories:

(Order Separately) DLT-10 DLT-12 DLT-16 QTY/THRUSTER

SHOCK/STOP ACCESSORIES

Universal Mounting Kit (Shock, Stop or Sensor)	OSAK-055	OSAK-057	OSAK-059	1, 2, 3 or 4
Urethane Bumper/Clamp Collar Kit	OSAK-056	OSAK-058	OSAK-060	1 or 2
Urethane Bumper/Clamp Collar Kit (-10M)	OSAK-065			1 or 2
Urethane Bumper/Clamp Collar Kit (-12M)		OSAK-066		1 or 2
Shock Absorber*	SHOK-028	SHOK-010	SHOK-010	1, 2, 3 or 4
Adjustable Hard Stop*	DLT-1023	DLT-1023	DLT-1023	1, 2, 3 or 4

INDUCTIVE SENSOR ACCESSORIES*

Inductive Sensor PNP Qk. Disconnect*	OISP-011	OISP-011	OISP-011	1 or 2
Inductive Sensor NPN Qk. Disconnect*	OISN-011	OISN-011	OISN-011	1 or 2
Quick. Disconnect 2M Cable Length †	CABL-010	CABL-010	CABL-010	1 or 2
Quick. Disconnect 5M Cable Length †	CABL-013	CABL-013	CABL-013	1 or 2

MAGNETIC SENSOR ACCESSORIES**

Magneto Resistive Sensor PNP Qk. Disc.†	OHSP-005	OHSP-005	OHSP-005	1 or 2
Magneto Resistive Sensor NPN Qk. Disc.†	OHSN-005	OHSN-005	OHSN-005	1 or 2
Quick. Disconnect 2M Cable Length †	CABL-010	CABL-010	CABL-010	1 or 2
Quick. Disconnect 5M Cable Length †	CABL-013	CABL-013	CABL-013	1 or 2

PNEUMATIC ACCESSORIES

NFPA Cylinder Mounting Kit (-U only)	ODLT-001	ODLT-002	ODLT-002	1
1/8 NPT Telescopic Airlines (up to 6")	OTAL-039	OTAL-039	OTAL-039	1, 2, 3 or 4
1/8 NPT Telescopic Airlines (up to 12")	OTAL-040	OTAL-040	OTAL-040	1, 2, 3 or 4
1/8 NPT Telescopic Airlines (up to 18")	OTAL-041	OTAL-041	OTAL-041	1, 2, 3 or 4
1/8 NPT Telescopic Airlines (up to 24")	OTAL-042	OTAL-042	OTAL-042	1, 2, 3 or 4
1/8 NPT Adjustable Flow Control	VLVF-004	VLVF-004	VLVF-004	1 or 2

*Requires Universal Mounting Kit †Sensor and cable sold separately **Piston magnet standard

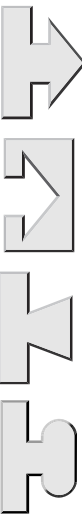


DLT SERIES

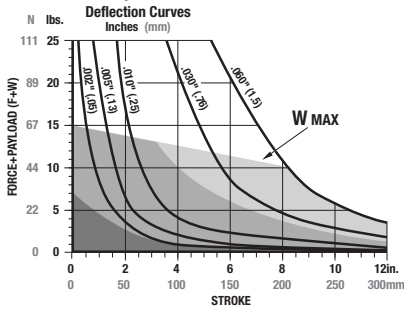
DIRECTCONNECT™



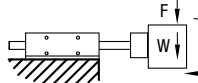
DLT-N, U Series Product Specifications



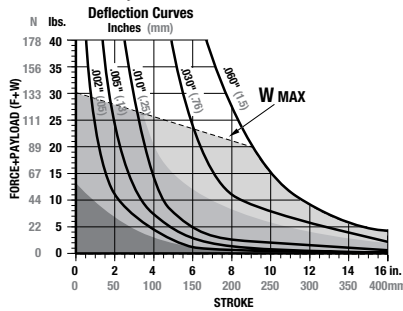
DLT-10-N, U



F=Externally applied force (lbs. or N)
 W=Weight of payload (lbs. or N)
 F+W=Total deflection force (lbs. or N)



DLT-12-N, U



Shock Absorbers and Flow Controls are recommended for nearly all applications

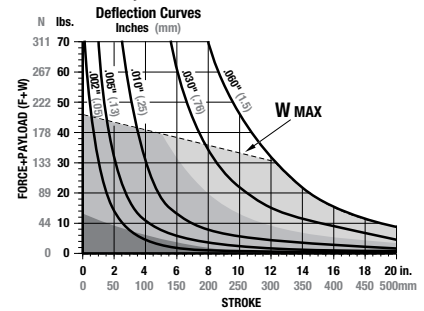
Use **Double Shocks** in both directions

Use **Single Shock** in both directions

Use **Bumpers or Cushioned Cylinder**

Shaded shock absorption ranges of horizontal payload (W) @ 80psi, flow controls fully open. For vertical applications do not exceed 1/2 of the recommended payload due to the additional acceleration effect of gravity.

DLT-16-N, U

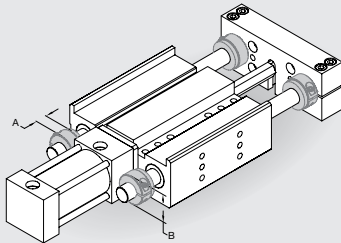


Specifications	DLT-10
Maximum Air Pressure	100 psi
Thrust Force @ 80psi/5.5bar	35 lbs.
Weight (Basic Unit -N)	2.2 lbs.
Additional Weight per Stroke	00.08 lbs./in.
Cylinder Bore Diameter	3/4"
Shaft Diameter	0.375"

Specifications	DLT-12
Maximum Air Pressure	100 psi
Thrust Force @ 80psi/5.5bar	79 lbs.
Weight (Basic Unit -N)	3.5 lbs.
Additional Weight per Stroke	0.16 lbs./in.
Cylinder Bore Diameter	1-1/8"
Shaft Diameter	0.472"

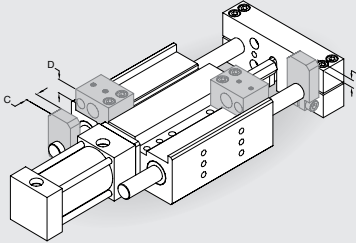
Specifications	DLT-16
Maximum Air Pressure	100 psi
Thrust Force @ 80psi/5.5bar	79 lbs.
Weight (Basic Unit -N)	4.5 lbs.
Additional Weight per Stroke	0.24 lbs./in.
Cylinder Bore Diameter	1-1/8"
Shaft Diameter	0.630"

Accessory Mounting Technical Data



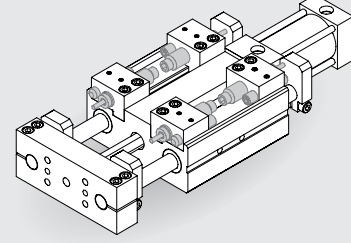
Urethane Bumpers & Clamp Collars

- Urethane Bumpers for shock absorption and noise dampening
- Adjustable Clamp Collars for end of stroke position adjustment
- Kit contains (2) Collars and (2) Shock Pads for adjustment of travel in one direction



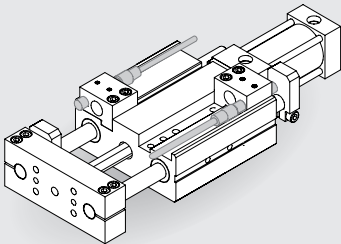
Universal Mounting Kit

- Kit mounts (1) Shock Absorber and (1) Inductive Proximity Sensor or (1) Shock and (1) Adjustable Hard Stop
- Kit includes (1) Mounting Bracket, (1) Hardened Tool Steel Target and Hardware
- Target allows for unlimited stroke adjustment. Fine adjustment is achieved using Adjustable Hard Stop or Shock Absorber
- Mounting Bracket keys into body for secure positioning and excellent rigidity
- Four possible mounting positions



Adjustable Hard Stops

- For precision (+/- .001") end point positioning
 - Allows for end stop position adjustment independent of shock absorber hard stop
 - Allen wrench adjustable
- Shock Absorbers**
- Full stroking piston rod
 - Built-in hard stop
 - Allen wrench adjustable

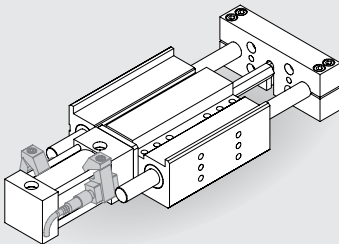
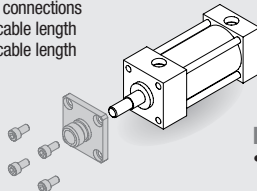


Inductive Proximity Sensors

- 8mm diameter
- Threaded Quick Disconnect with built-in LED output
- PNP and NPN available

Quick Disconnect Cable

- Threaded coupling with knurled head for secure electrical connections
- 2 meter cable length
- 5 meter cable length

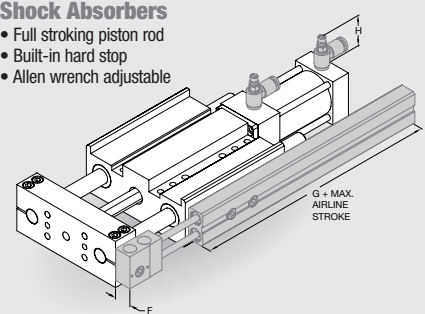


Magneto Resistive Sensors

- Quick Disconnect with built-in LED output
- Clamp-on Mounting Kit included
- PNP and NPN available

Straight Quick Disconnect Cable

- Threaded coupling with knurled head for secure electrical connections
- 2 meter cable length
- 5 meter cable length



Telescoping Airlines

- Eliminate flexing air lines
- Self aligning air tube design extends useful seal life
- Modular stackable design. Up to (4) modules can be stacked.
- 1/8 NPT pipe threads
- (2) user air ports per module

Flow Controls

- Thumb screw adjust with locking nut for adjusting cylinder speed
- 1/8 NPT pipe threads

	A	B	C	D	E	F	G	H
DLT-10	.343"	.87	.375	.480	.320	.577	3.60	1.12
DLT-12	.375"	.95	.375	.450	.230	.577	3.60	1.12
DLT-16	.437"	1.31	.437	.450	.340	.577	3.60	1.12
DLT-10M	8.7mm	22.1	9.5	12.2	8.1	14.7	91.4	28.4
DLT-12M	9.5mm	23.9	9.5	11.4	5.8	14.7	91.4	28.4
DLT-16M	11.1mm	33.3	11.1	11.4	8.6	14.7	91.4	28.4

NFPA Cylinder Mounting Kit

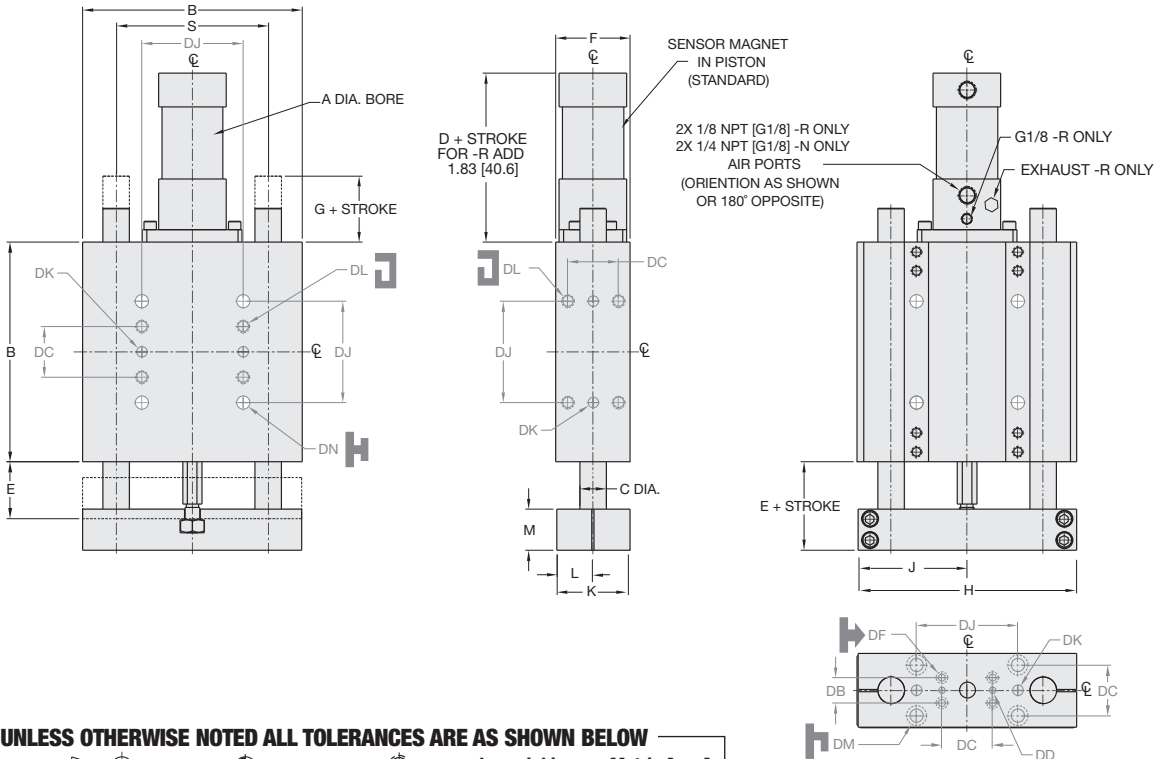
- Used to mount standard face mounted NFPA cylinders to non-powered units (-U)

DLT SERIES

DIRECTCONNECT™



DLT-N, R, U Series Product Specifications



UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

Table with 5 columns: Dimension symbol, Imperial in. tolerance, Metric [mm] tolerance, and notes on dimensions and tolerances.

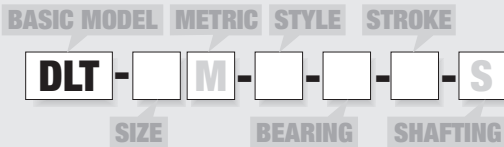
DIRECT CONNECT DIMENSIONS STANDARD MOUNTING PATTERN FOR ALL SIZES

Table listing dimensions for DB, DC, DD, DF, DJ, DK, DL, DM, and DN in both Imperial (inches) and Metric (mm).

DLT SERIES

BASIC UNIT DIMENSIONS table with columns for MODEL #, BORE DIA. -N, BORE DIA. -R, BODY SIZE, SHAFT DIA., and dimensions D, E, F, G, H, J, K, L, M, S.

How to Order: Basic Unit



- SIZE 20, 25
METRIC M
STYLE N Repairable NFPA/VDMA cylinder w/adjustable air cushions
BEARING B Linear ball bearings
STROKE (inches) DLT-20 1-24 @ 1" increments
STROKE (mm) DLT-20M 25, 50, 80, 100, 125, 160, 200, 250, 300, 320, 360, 400, 500
SHAFTING S Corrosion resistant shafting

Accessories: (Order Separately)

Table listing accessories for SHOCK/STOP, INDUCTIVE SENSOR, MAGNETIC SENSOR, and PNEUMATIC categories, with columns for DLT-20M, DLT-25M, and QTY/THRUSTER.

SAMPLE ORDER: DLT-20-N-B-12

Ex: Thruster, Size 20, Repairable NFPA Cylinder w/Adjustable Air Cushions, Linear Ball Bushings, 12 Inch Stroke

*Requires Universal Mounting Kit †Sensor and cable sold separately. **Piston magnet standard

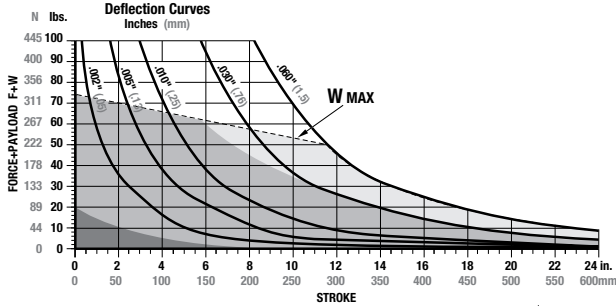
DIRECTCONNECT™



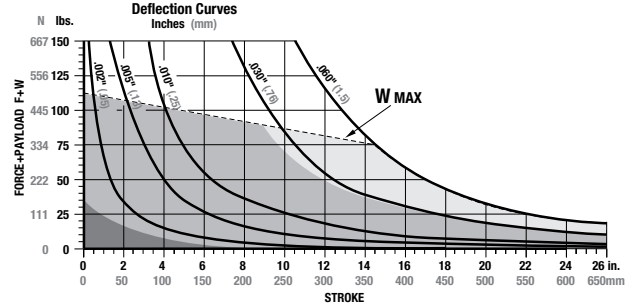
DLT-N, R, U Series Product Specifications



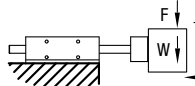
DLT-20M-N, R, U



DLT-25M-N, R, U



F=Externally applied force (lbs. or N)
 W=Weight of payload (lbs. or N)
 F+W=Total deflection force (lbs. or N)



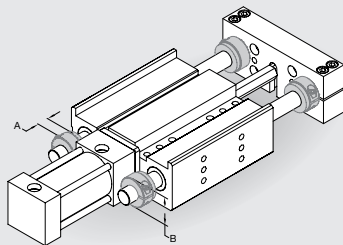
Shock Absorbers and Flow Controls are recommended for nearly all applications

Use **Double Shocks** in both directions Use **Single Shock** in both directions Use **Bumpers or Cushioned Cylinder**
 Shaded shock absorption ranges of horizontal payload (W) @ 80psi, flow controls fully open. For vertical applications do not exceed 1/2 of the recommended payload due to the additional acceleration effect of gravity.

Specifications	DLT-20	DLT-20M
Maximum Air Pressure.....	100 psi	6.9 bar
Thrust Force @ 80psi/5.5bar.....	140 lbs.	443N
Weight (Basic Unit -N, -R).....	14.3 lbs.	6.3 kg
Additional Weight per Stroke -N, -R	0.53 lbs./in.	7.9g/mm
Cylinder Bore Diameter -N	1-1/2"	32mm
Cylinder Bore Diameter -R	32mm	32mm
Shaft Diameter.....	0.787"	20mm
Min. Air Pressure to Release Cylinder Lock -R	60 psi	4 bar
Holding Force of Locking Mechanism -R	123 psi	550N

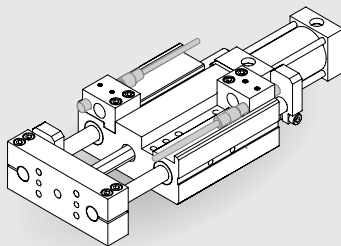
Specifications	DLT-25	DLT-25M
Maximum Air Pressure.....	100 psi	6.9 bar
Thrust Force @ 80psi/5.5bar.....	140 lbs.	443N
Weight (Basic Unit -N, -R).....	19.2 lbs.	8.5 kg
Additional Weight per Stroke -N, -R	0.68 lbs./in.	10.7g/mm
Cylinder Bore Diameter -N	1-1/2"	32mm
Cylinder Bore Diameter -R	32mm	32mm
Shaft Diameter.....	0.984"	25mm
Min. Air Pressure to Release Cylinder Lock -R	60 psi	4 bar
Holding Force of Locking Mechanism -R	123 psi	550N

Accessory Mounting Technical Data



Urethane Bumpers & Clamp Collars

- Urethane Bumpers for shock absorption and noise dampening
- Adjustable Clamp Collars for end of stroke position adjustment
- Kit contains (2) Collars and (2) Shock Pads for adjustment of travel in one direction

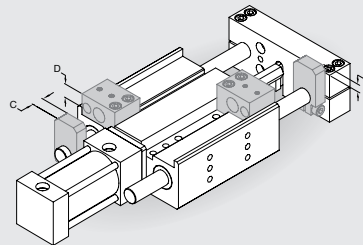
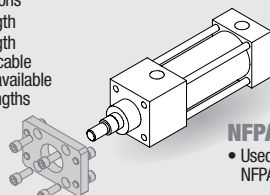


Inductive Proximity Sensors

- 8mm diameter
- Threaded Quick Disconnect with built-in LED output
- PNP and NPN available

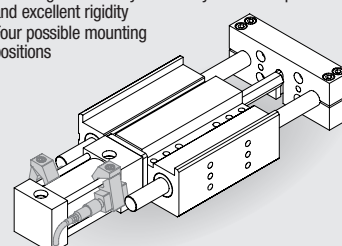
Quick Disconnect Cable

- Threaded coupling with knurled head for secure electrical connections
- 2 meter cable length
- 5 meter cable length
- Quick disconnect cable extensions cords available in 1 or 2 meter lengths



Universal Mounting Kit

- Kit mounts (1) Shock Absorber and (1) Inductive Proximity Sensor or (1) Shock and (1) Adjustable Hard Stop
- Kit includes (1) Mounting Bracket, (1) Hardened Tool Steel Target and Hardware
- Target allows for unlimited stroke adjustment. Fine adjustment is achieved using Adjustable Hard Stop or Shock Absorber
- Mounting Bracket keys into body for secure positioning and excellent rigidity
- Four possible mounting positions



Magneto Resistive Sensors

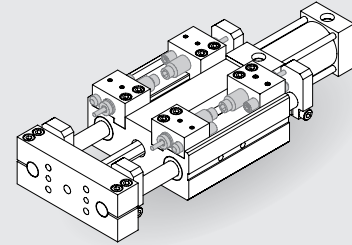
- Quick Disconnect with built-in LED output
- Clamp-on Mounting Kit included
- PNP and NPN available

Straight Quick Disconnect Cable

- Threaded coupling with knurled head for secure electrical connections
- 2 meter cable length
- 5 meter cable length
- Quick disconnect cable extensions cords available in 1 or 2 meter lengths

NFPA/VDMA Cylinder Mounting Kit

- Used to mount standard sleeve-nut face mounted NFPA and VDMA cylinders to non-powered units

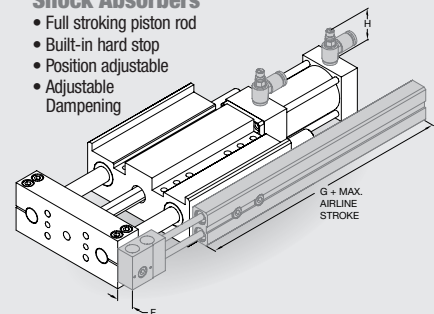


Adjustable Hard Stops

- For precision (+/- .001") end point positioning
- Allows for end stop position adjustment independent of shock absorber hard stop
- Allen wrench adjustable

Shock Absorbers

- Full stroking piston rod
- Built-in hard stop
- Position adjustable
- Adjustable Dampening



Telescoping Airlines

- Eliminate flexing air lines
- Self aligning air tube design extends useful seal life
- Modular stackable design. Up to (4) modules can be stacked
- 1/8 NPT or G1/8 pipe threads
- (2) user air ports per module

Flow Controls

- Thumb screw adjust with locking nut for adjusting cylinder speed
- 1/4 NPT, G1/8 pipe threads or 1/8 NPT

	A	B	C	E	F	G	H
DLT-20	.500"	1.50	.500	.67	.577	3.60	1.38
DLT-25	.500"	1.75	.500	.67	.577	3.60	1.38
DLT-20M	12.7mm	38.1	12.7	17.0	14.7	91.4	35.1
DLT-25M	12.7mm	44.5	12.7	17.0	14.7	91.4	35.1

DLT SERIES

DIRECTCONNECT™

DLM Modular Direct Connect Rail Slide

DLM SERIES

NO ADAPTER PLATES!

- **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 Magnetostrictive 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.

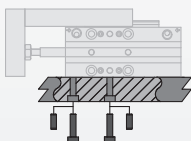
Mounting Information:

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



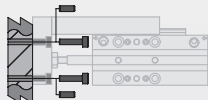
Body can be mounted from the bottom using the DIRECTCONNECT™ pattern of tapped and dowel holes.



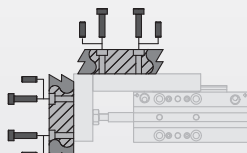
Body can be mounted from the back using the DIRECTCONNECT™ pattern of tapped and dowel holes.



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
4-way, 2-position

Metric
1.4-7 bar

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.

DIRECTCONNECT™



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 air port 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

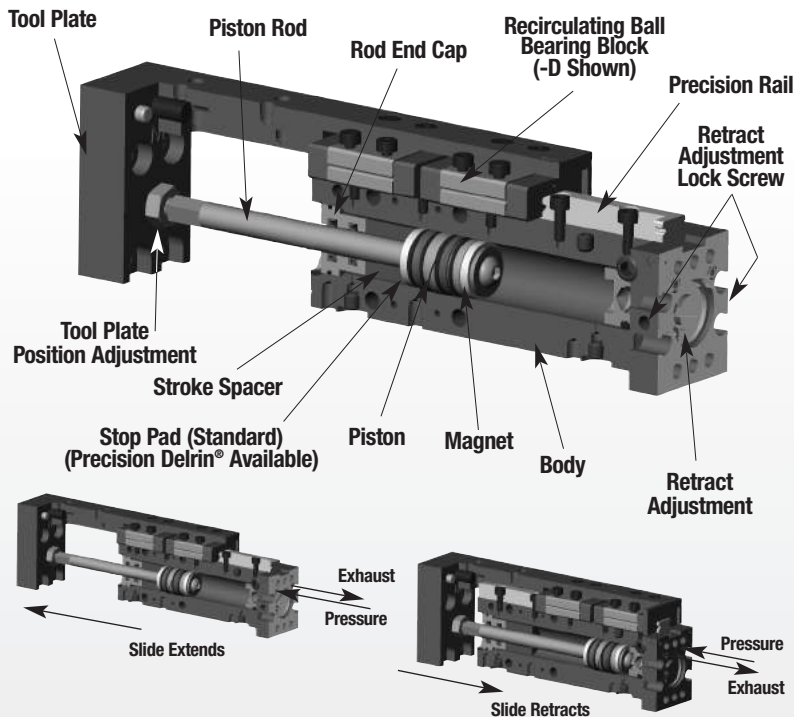
Thru-Body Mounting
C'bored holes for socket head cap screw on both sides

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

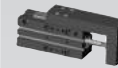


- A double acting piston slides within the body bore when pressure is applied.
- The piston is coupled to the tool plate with the piston rod.
- The tool plate is connected to the ball rail slide block which is guided by the precision rail.
- The stops are internal and attached to the piston and piston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

Designed, manufactured and assembled in the USA

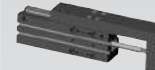
Style -DLM Mini Ball Rail Slide

Size -07M-12



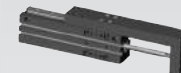
Style:	07M-12	
Max. Stroke:	0.50 in.	12 mm
Weight:	0.28 lbs.	0.13 Kg
Thrust Force:	15 lbs.	66.7 N
Max Payload:	1.0 lb.	0.45 kg

Size -07M-25



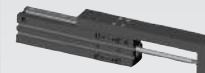
Style:	07M-25	
Max. Stroke:	1.00 in.	25 mm
Weight:	0.35 lbs.	0.16 Kg
Thrust Force:	15 lbs.	66.7 N
Max Payload:	1.0 lb.	0.45 kg

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 4.64-4.71

Style -DLM Mini Ball Rail Slide

Size -09M-25



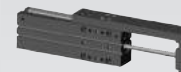
Style:	09M-25	
Max. Stroke:	1.00 in.	25 mm
Weight:	1.08 lbs.	0.49 Kg
Thrust Force:	31 lbs.	138 N
Max Payload:	2.0 lb.	0.91 kg

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 4.72-4.79

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

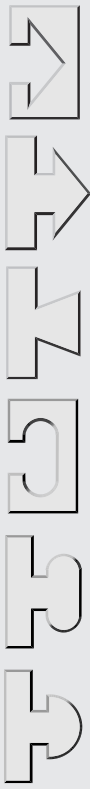
Size -12M-100



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

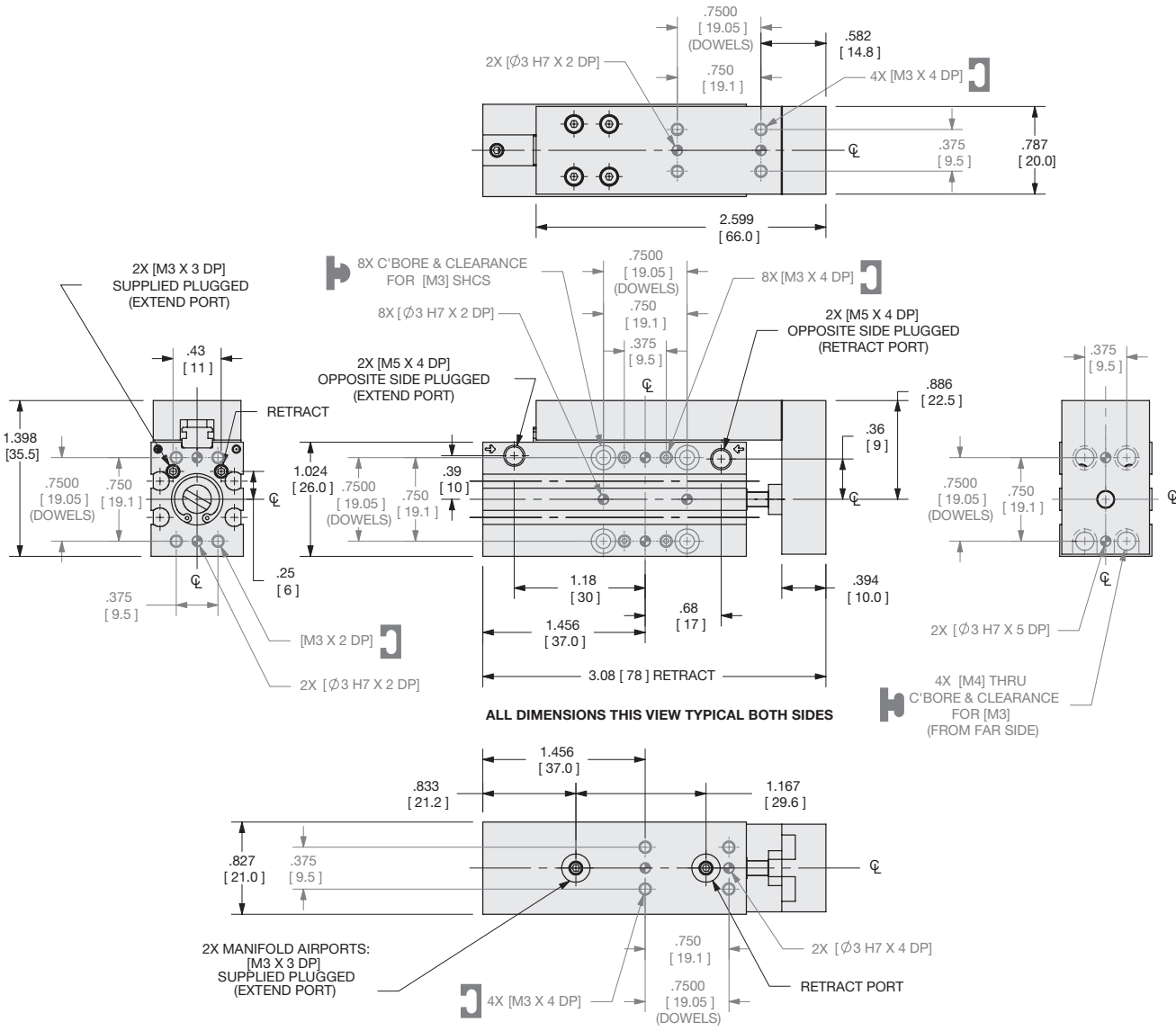


See Pages 4.80-4.87





DLM-07M-12 Product Specifications



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

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-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

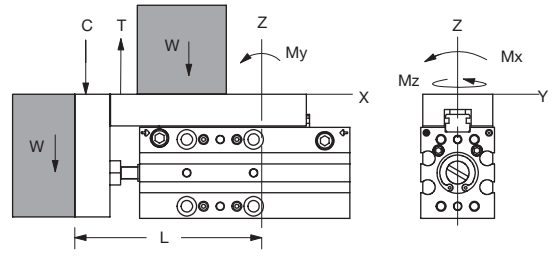
SAMPLE ORDER: DLM-07M-12-10-P
 Ex: DLM-07M Mini Ball Rail Slide, -12 Body Size, 10mm Stroke, Precision Stops



DLM-07M-12 Product Specifications



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 \varnothing	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	

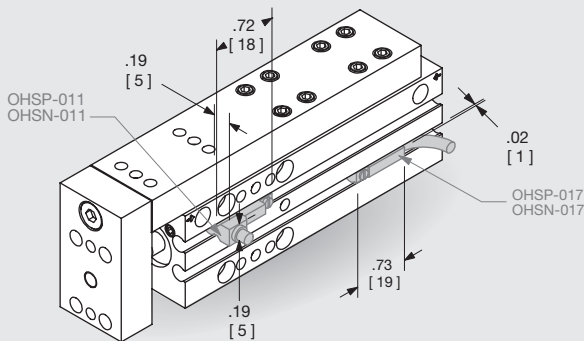


Flow Controls are recommended for nearly all applications

Loading Capacity

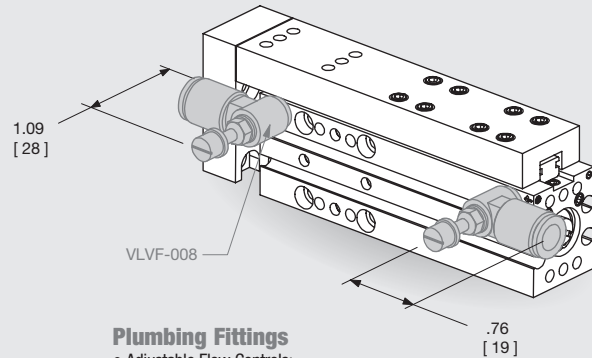
	Static	Dynamic
DLM-07M-12		
Maximum Tensile T	110 lbs. [490 N]	67 lbs. [301 N]
Maximum Compressive C	110 lbs. [490 N]	67 lbs. [301 N]
Maximum Moment M_x	45 in.-lbs. [5.1 Nm]	27 in.-lbs. [3.1 Nm]
Maximum Moment M_y	28 in.-lbs. [3.2 Nm]	16 in.-lbs. [1.9 Nm]
Maximum Moment M_z	28 in.-lbs. [3.2 Nm]	16 in.-lbs.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

Accessory Mounting Technical Data



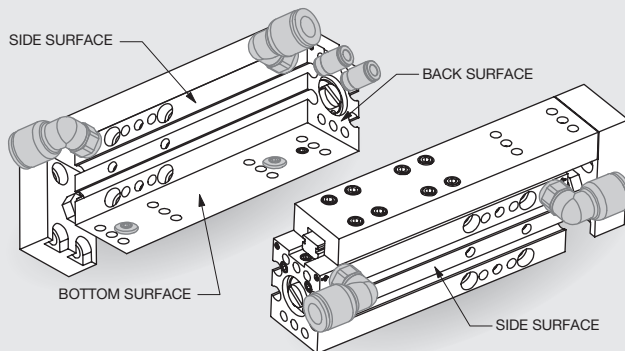
Sensors

- 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)



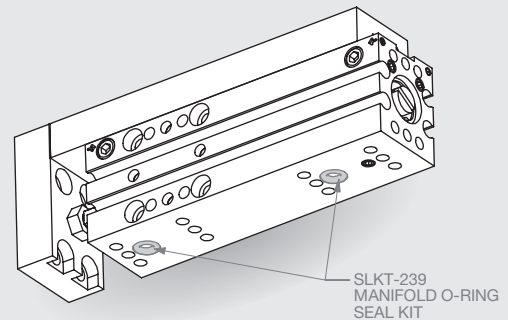
Plumbing Fittings

- 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

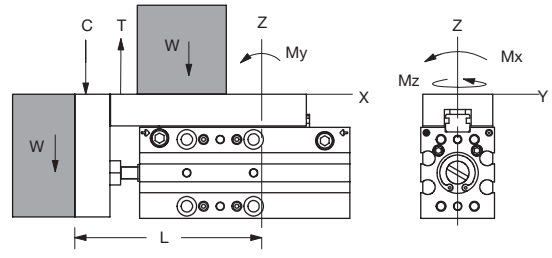
DLM SERIES

DIRECTCONNECT™

DLM-07M-25 Product Specifications



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 \varnothing	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	

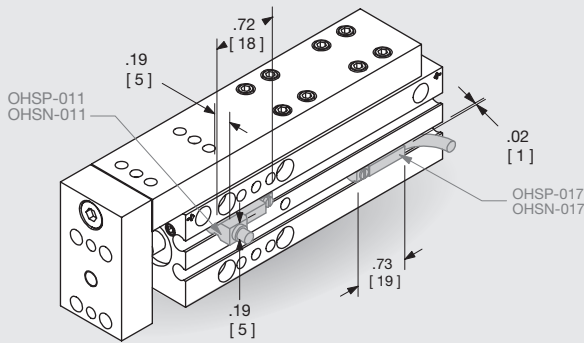


Flow Controls are recommended for nearly all applications

Loading Capacity

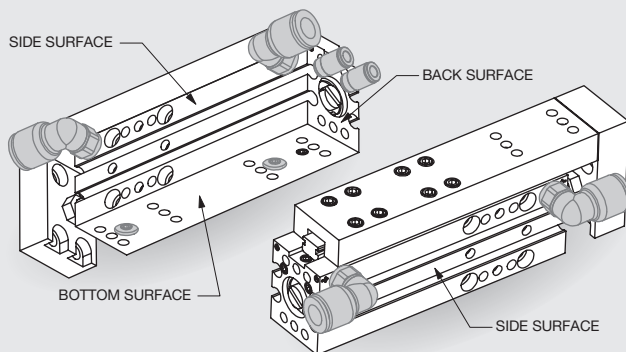
	Static	Dynamic
DLM-07M-25		
Maximum Tensile T	110 lbs. [490 N]	67 lbs. [301 N]
Maximum Compressive C	110 lbs. [490 N]	67 lbs. [301 N]
Maximum Moment M_x	45 in.-lbs. [5.1 Nm]	27 in.-lbs. [3.1 Nm]
Maximum Moment M_y	28 in.-lbs. [3.2 Nm]	16 in.-lbs. [1.9 Nm]
Maximum Moment M_z	28 in.-lbs. [3.2 Nm]	16 in.-lbs. [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



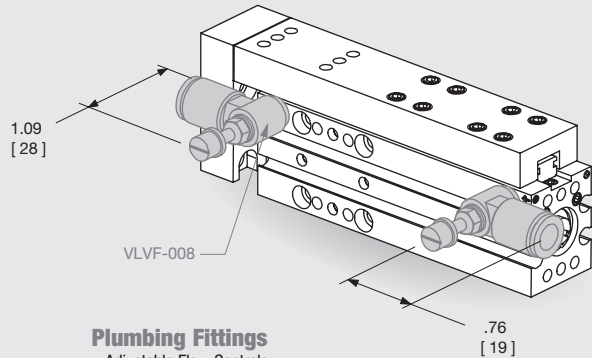
Sensors

- 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)



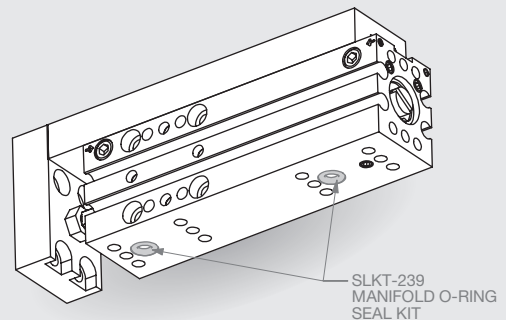
Multiple Air Port Locations

- 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

DLM SERIES

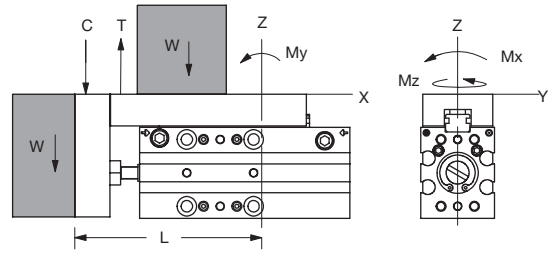
DIRECTCONNECT™



DLM-07M-38 Product Specifications



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 \varnothing	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

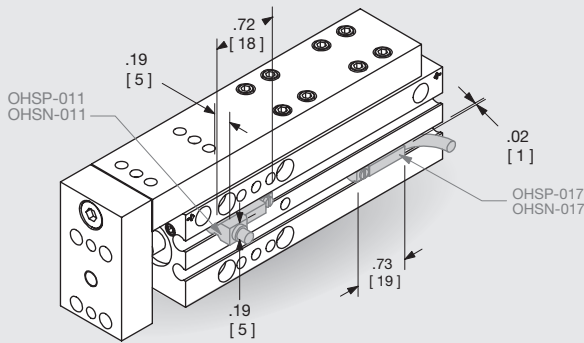
Loading Capacity

	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

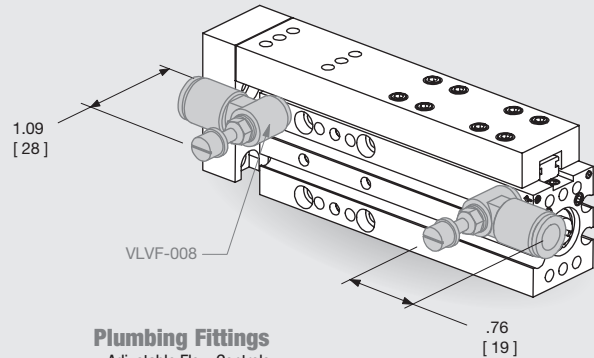
Maximum Tensile T	220 lbs. [980 N]	135 lbs. [602 N]
Maximum Compressive C	220 lbs. [980 N]	135 lbs. [602 N]
Maximum Moment M_x	90 in.-lbs. [10.2 Nm]	54 in.-lbs. [6.2 Nm]
Maximum Moment M_y	56 in.-lbs. [6.4 Nm]	33 in.-lbs. [3.8 Nm]
Maximum Moment M_z	56 in.-lbs. [6.4 Nm]	33 in.-lbs. [3.8 Nm]
Distance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

Accessory Mounting Technical Data



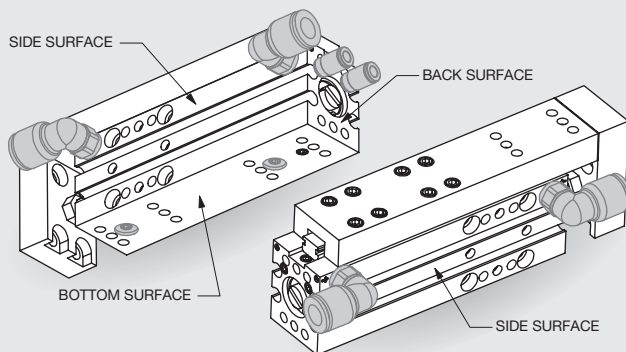
Sensors

- 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)



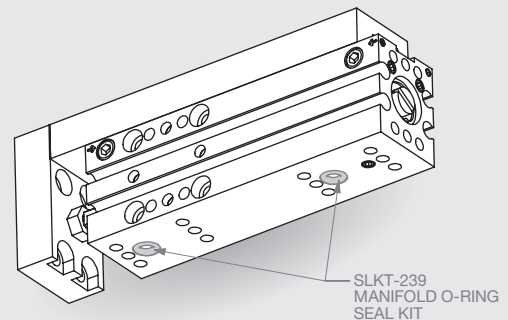
Plumbing Fittings

- 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

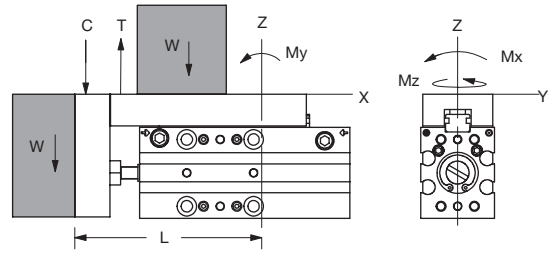
DLM SERIES

DIRECTCONNECT™

DLM-07M-50 Product Specifications



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 \varnothing	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

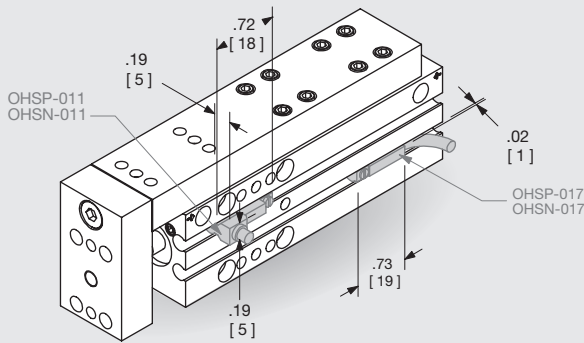
Loading Capacity

	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

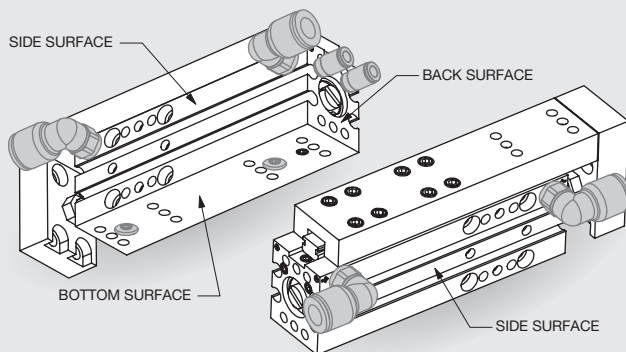
Maximum Tensile T	220 lbs. [980 N]	135 lbs. [602 N]
Maximum Compressive C	220 lbs. [980 N]	135 lbs. [602 N]
Maximum Moment M_x	90 in.-lbs. [10.2 Nm]	54 in.-lbs. [6.2 Nm]
Maximum Moment M_y	56 in.-lbs. [6.4 Nm]	33 in.-lbs. [3.8 Nm]
Maximum Moment M_z	56 in.-lbs. [6.4 Nm]	33 in.-lbs. [3.8 Nm]
Distance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

Accessory Mounting Technical Data



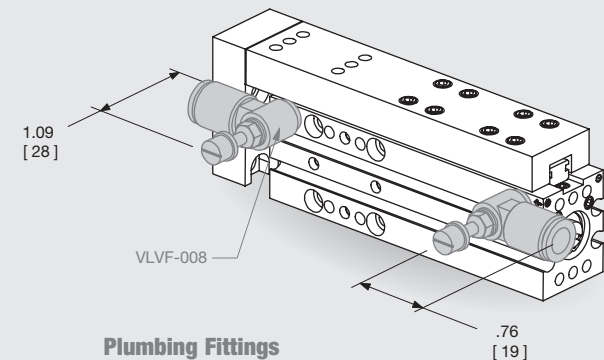
Sensors

- 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)



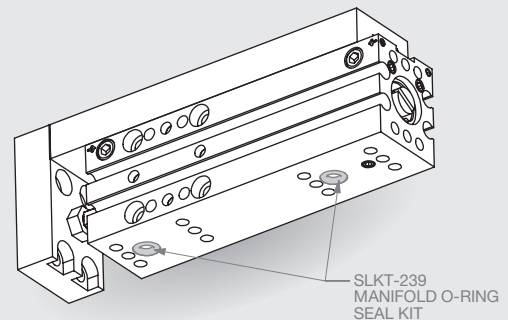
Multiple Air Port Locations

- 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



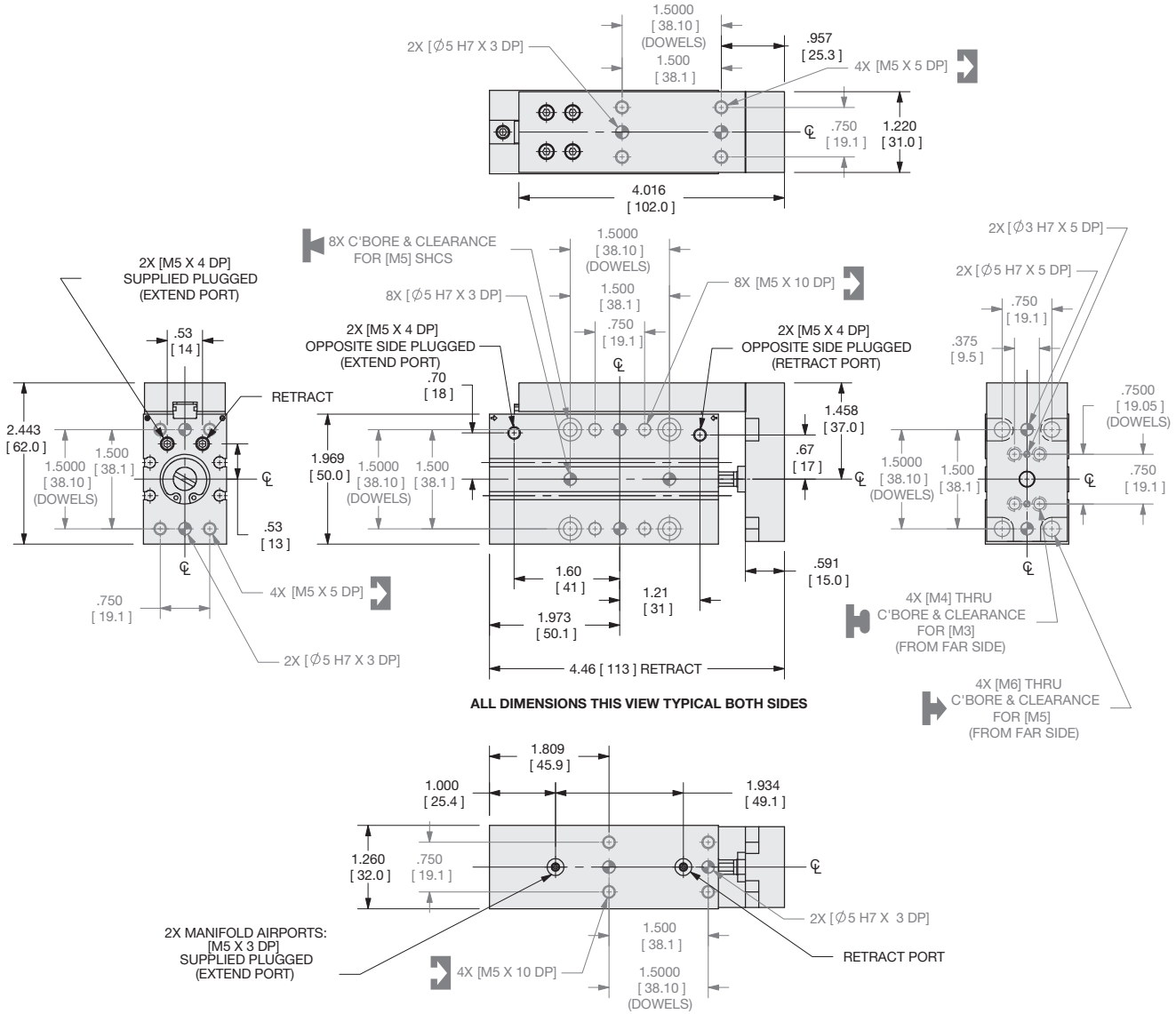
Manifold O-ring Seals

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

DLM SERIES

DIRECTCONNECT™

DLM-09M-25 Product Specifications



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-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

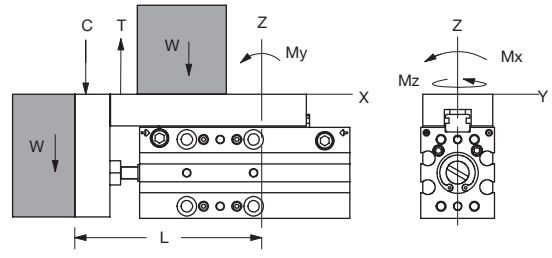


DLM SERIES

DIRECTCONNECT™

DLM-09M-25 Product Specifications

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 \varnothing	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	

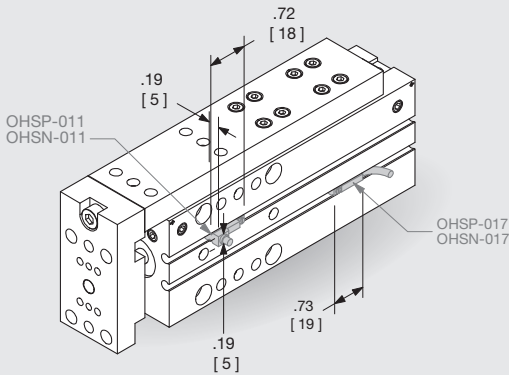


Flow Controls are recommended for nearly all applications

Loading Capacity

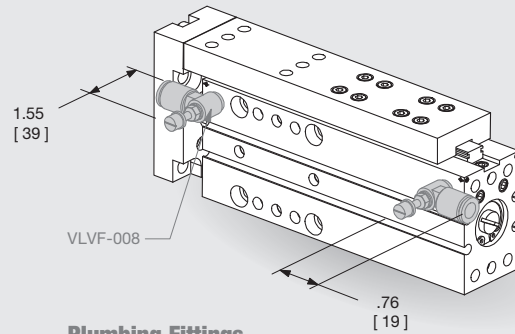
	Static	Dynamic
DLM-09M-25		
Maximum Tensile T	165 lbs. [735 N]	92 lbs. [413 N]
Maximum Compressive C	165 lbs. [735 N]	92 lbs. [413 N]
Maximum Moment M_x	84 in.-lbs. [9.6 Nm]	47 in.-lbs. [5.4 Nm]
Maximum Moment M_y	56 in.-lbs. [6.4 Nm]	31 in.-lbs. [3.6 Nm]
Maximum Moment M_z	56 in.-lbs. [6.4 Nm]	31 in.-lbs.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

Accessory Mounting Technical Data



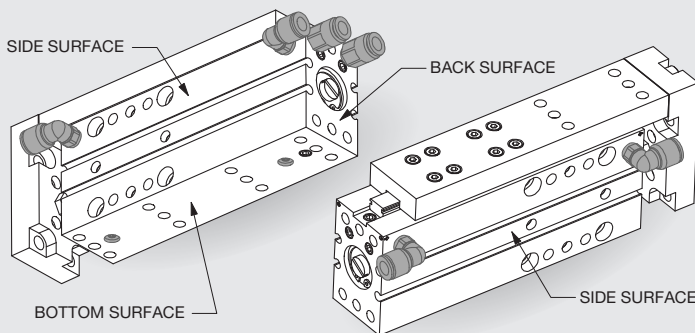
Sensors

- 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)



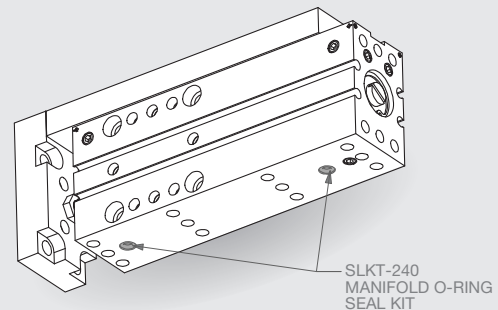
Plumbing Fittings

- 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



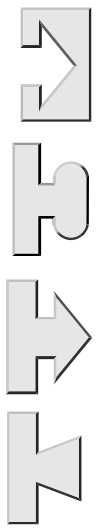
Multiple Air Port Locations

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



Manifold O-ring Seals

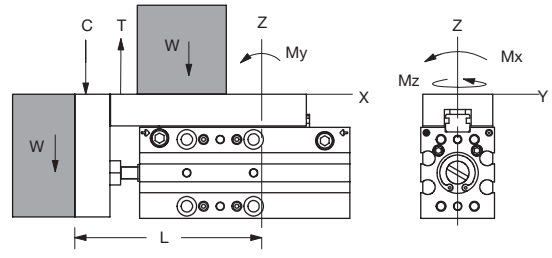
- Available in Seal Kit
- Kit is supplied with all seals, plugs & wrenches needed



DLM-09M-50 Product Specifications



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 \varnothing	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	

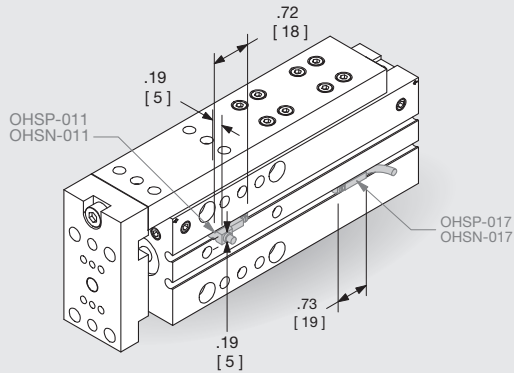


Flow Controls are recommended for nearly all applications

Loading Capacity

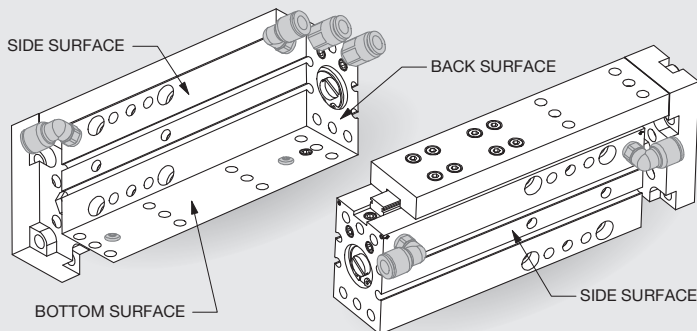
	Static	Dynamic
DLM-09M-50		
Maximum Tensile T	165 lbs. [735 N]	92 lbs. [413 N]
Maximum Compressive C	165 lbs. [735 N]	92 lbs. [413 N]
Maximum Moment M_x	84 in.-lbs. [9.6 Nm]	47 in.-lbs. [5.4 Nm]
Maximum Moment M_y	56 in.-lbs. [6.4 Nm]	31 in.-lbs. [3.6 Nm]
Maximum Moment M_z	56 in.-lbs. [6.4 Nm]	31 in.-lbs.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



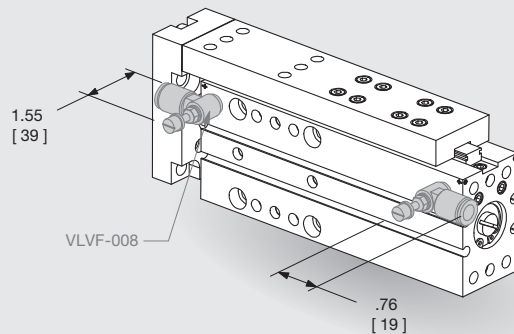
Sensors

- 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)



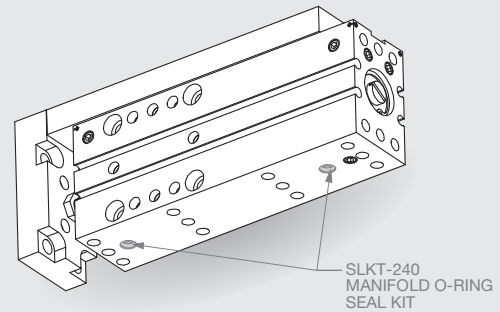
Multiple Air Port Locations

- 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

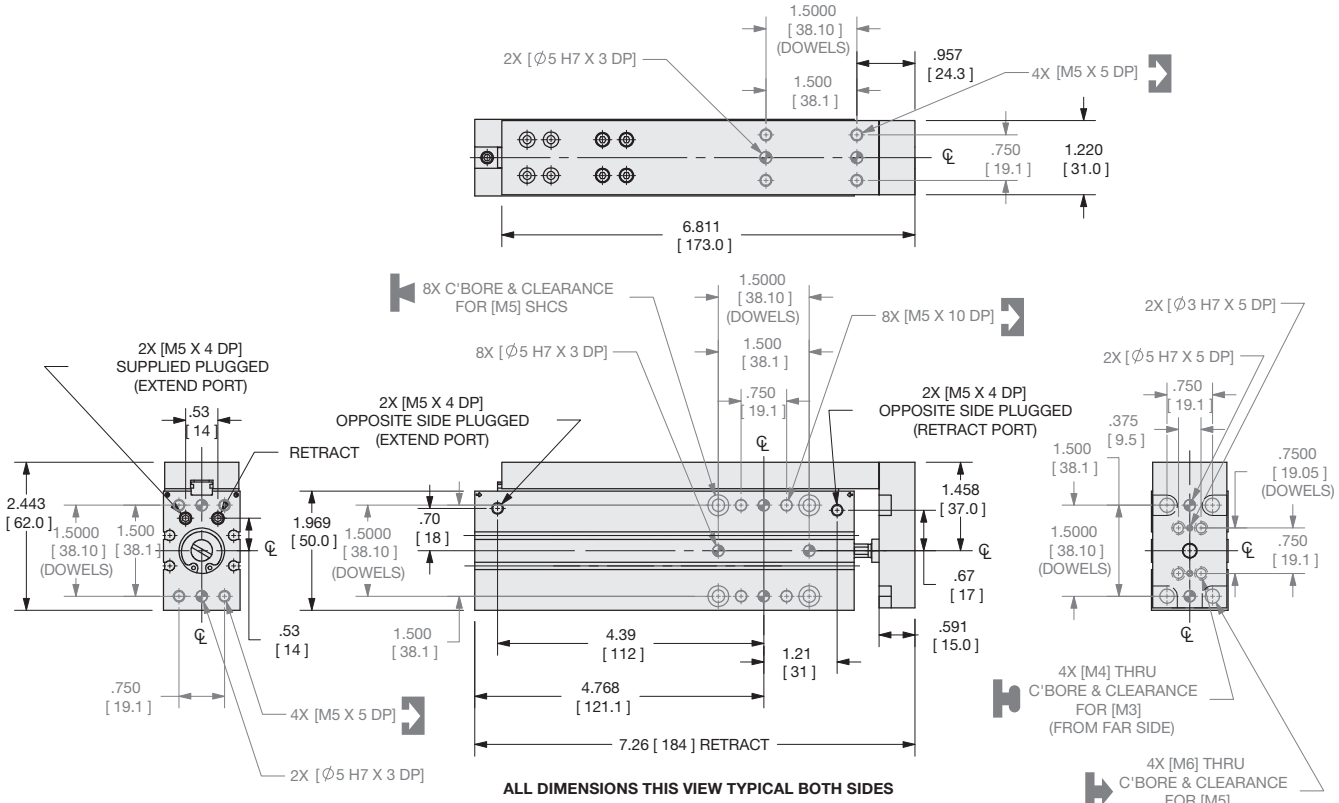
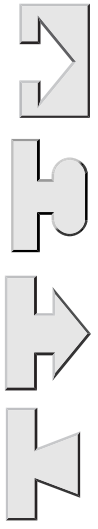
- Available in Seal Kit
- Kit is supplied with all seals, plugs & wrenches needed

DLM SERIES

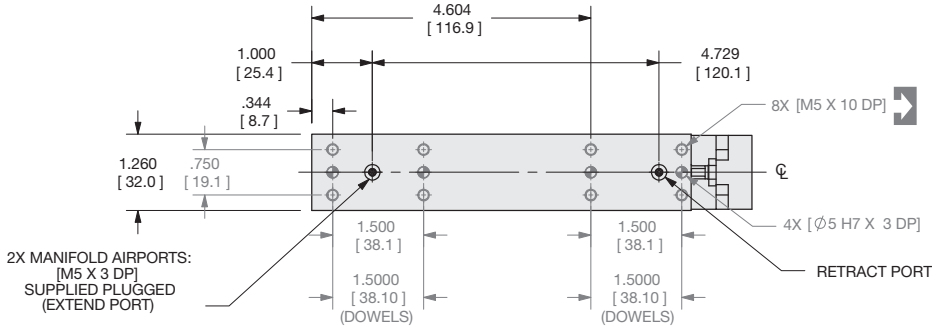
DIRECTCONNECT™



DLM-09M-75 Product Specifications



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 - **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	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

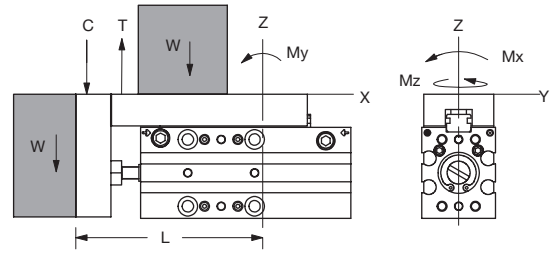
SAMPLE ORDER: DLM-09M-75-75-D-P

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



DLM-09M-75 Product Specifications

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 \varnothing	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

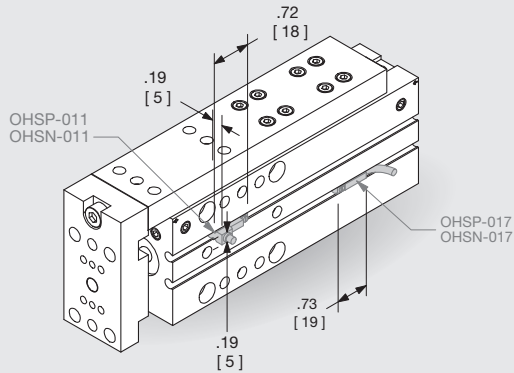
Loading Capacity

	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

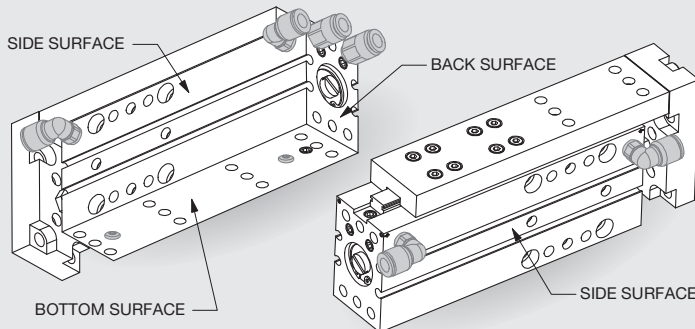
Maximum Tensile T	330 lbs. [1470 N]	185 lbs. [826 N]
Maximum Compressive C	330 lbs. [1470 N]	185 lbs. [826 N]
Maximum Moment M_x	169 in.-lbs. [19.2 Nm]	95 in.-lbs. [10.8 Nm]
Maximum Moment M_y	113 in.-lbs. [12.8 Nm]	63 in.-lbs. [7.2 Nm]
Maximum Moment M_z	113 in.-lbs. [12.8 Nm]	63 in.-lbs. [7.2 Nm]
Distance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

Accessory Mounting Technical Data



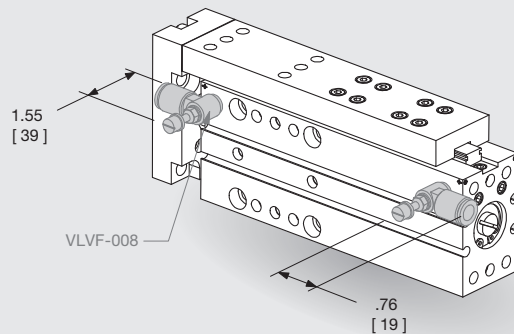
Sensors

- 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)



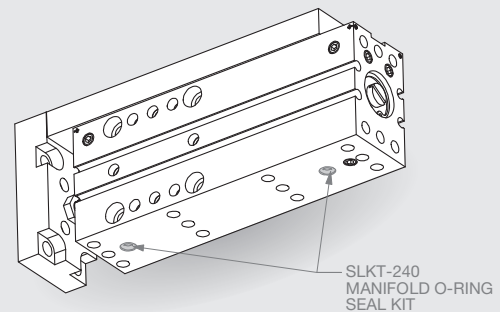
Multiple Air Port Locations

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



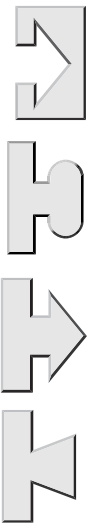
Plumbing Fittings

- 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

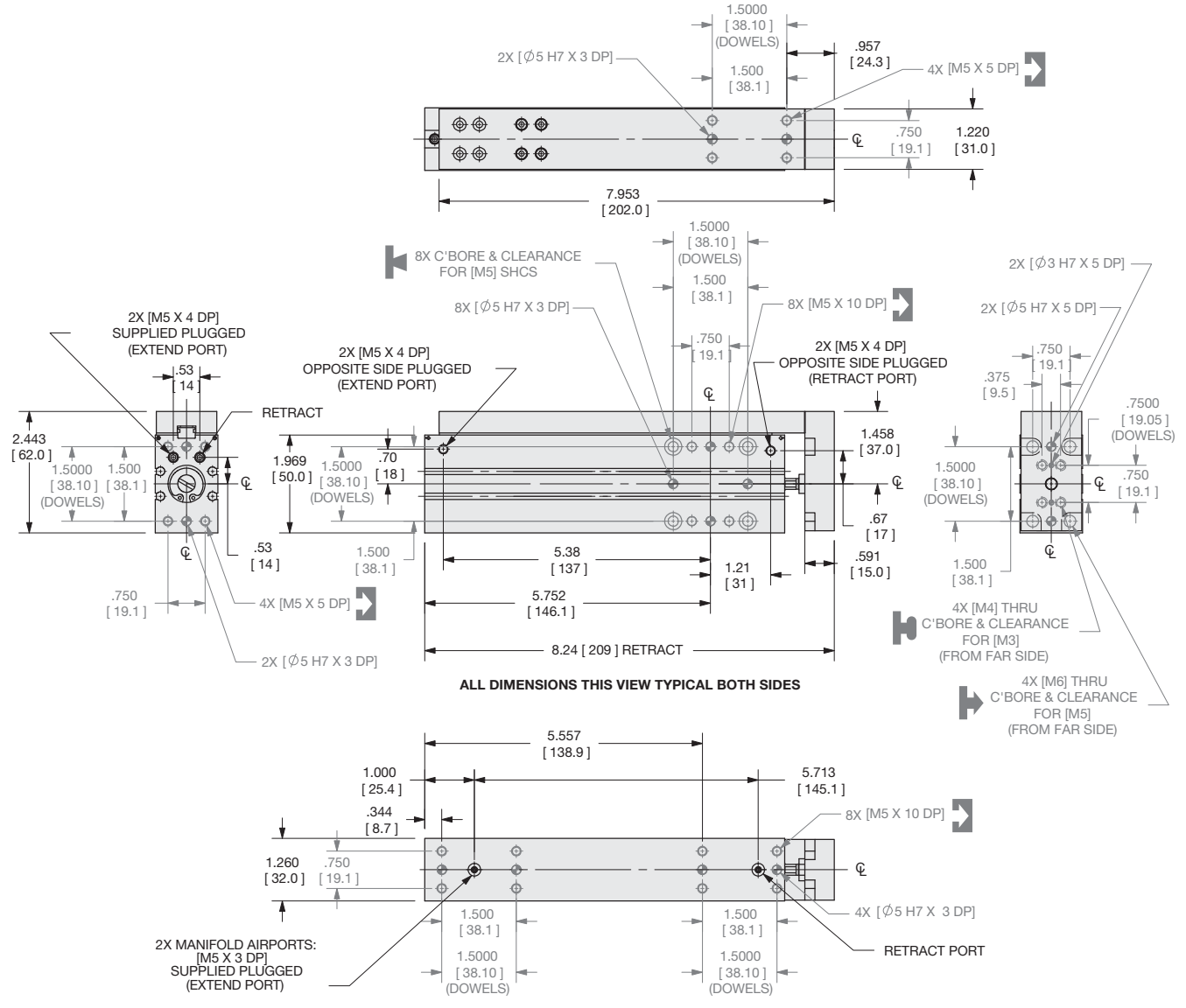


DLM-09M-100 Product Specifications

DLM SERIES

DLM SERIES

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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-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	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-100-85-D-P

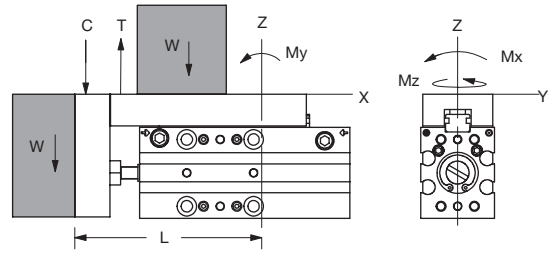
Ex: DLM-09M Mini Ball Rail Slide, -100 Body Size, 85mm Stroke, Double Ball Bearings, Precision Stops



DLM-09M-100 Product Specifications



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 \varnothing	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

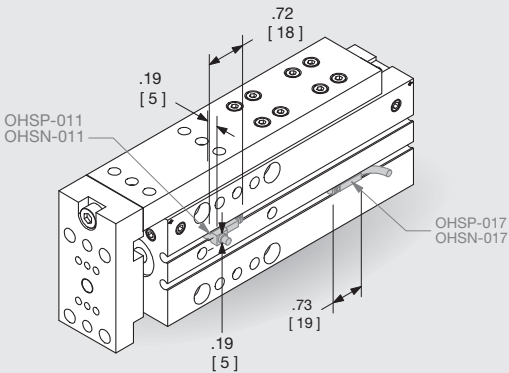
Loading Capacity

	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

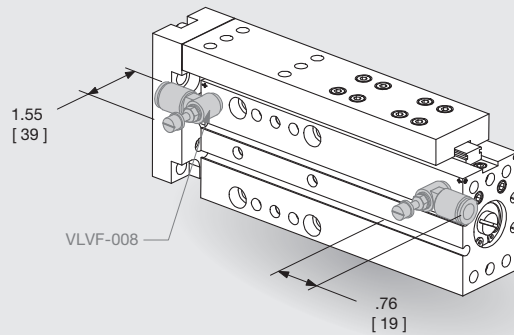
Maximum Tensile T	330 lbs. [1470 N]	185 lbs. [826 N]
Maximum Compressive C	330 lbs. [1470 N]	185 lbs. [826 N]
Maximum Moment M_x	169 in.-lbs. [19.2 Nm]	95 in.-lbs. [10.8 Nm]
Maximum Moment M_y	113 in.-lbs. [12.8 Nm]	63 in.-lbs. [7.2 Nm]
Maximum Moment M_z	113 in.-lbs. [12.8 Nm]	63 in.-lbs. [7.2 Nm]
Distance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

Accessory Mounting Technical Data



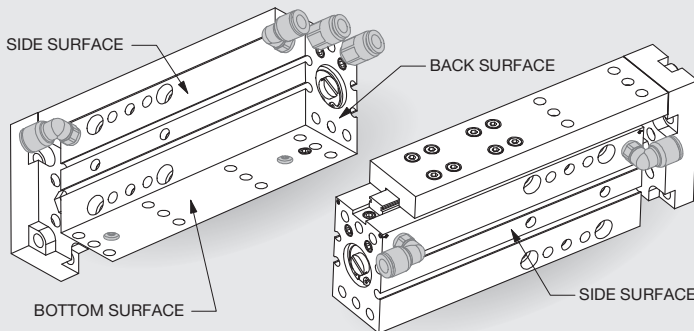
Sensors

- 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)



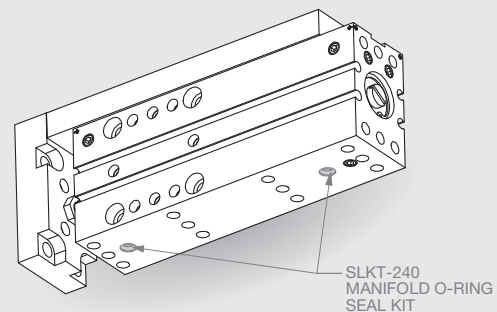
Plumbing Fittings

- 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



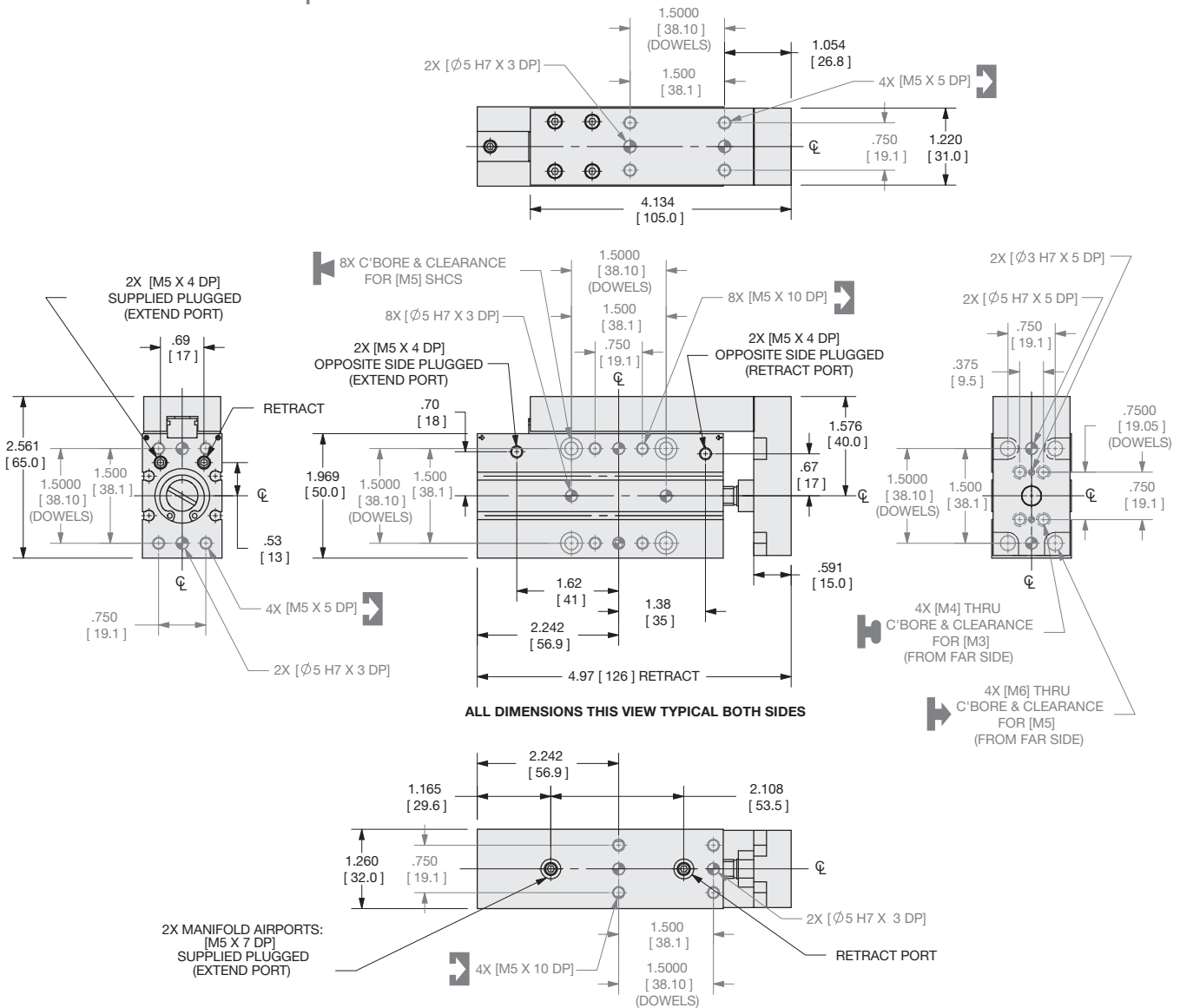
Manifold O-ring Seals

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

DLM SERIES

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DLM-12M-25 Product Specifications



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-12M - 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*	OHS-P-017	1-4
NPN Magneto Resistive Sensor with Quick Disconnect*	OHS-N-017	1-4
PNP Magneto Resistive Sensor 90° Barrel (with Qk. Disc)*	OHS-P-011	1-4
NPN Magneto Resistive Sensor 90° Barrel (with Qk. Disc.)*	OHS-N-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-25-20-P

Ex: DLM-12M Mini Ball Rail Slide, -25 Body Size, 20mm Stroke, Precision Stops

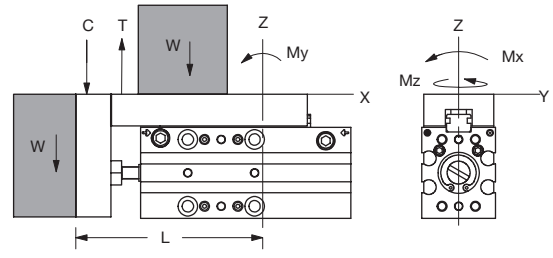
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DLM SERIES



DLM-12M-25 Product Specifications

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 \varnothing	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	

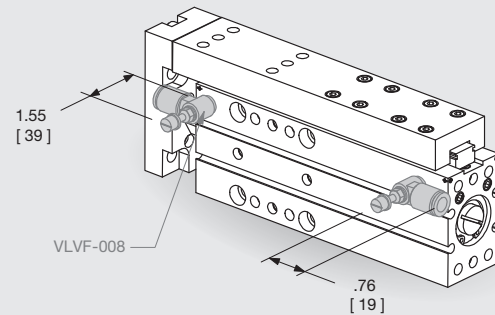
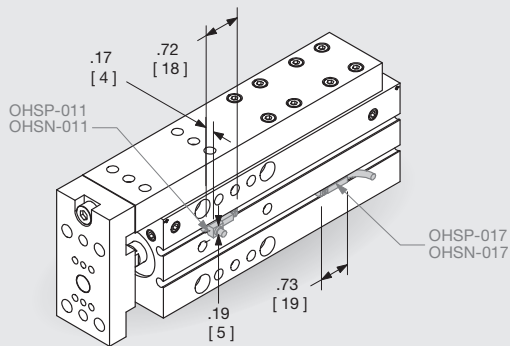


Flow Controls are recommended for nearly all applications

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

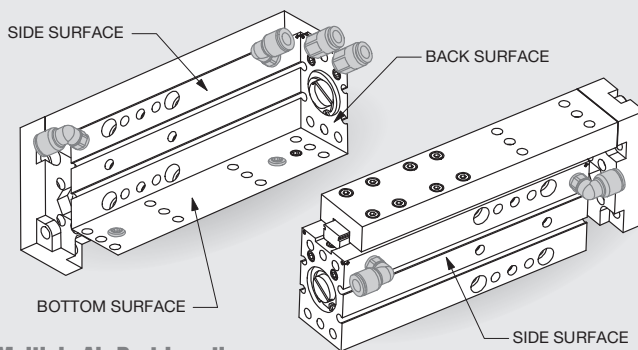


Sensors

- 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)

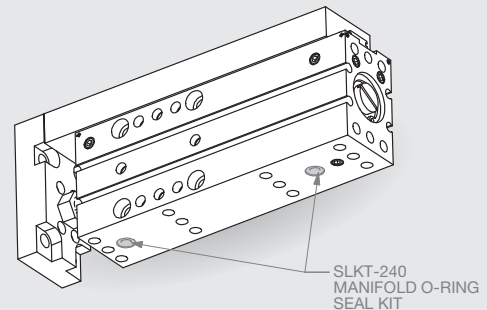
Plumbing Fittings

- 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

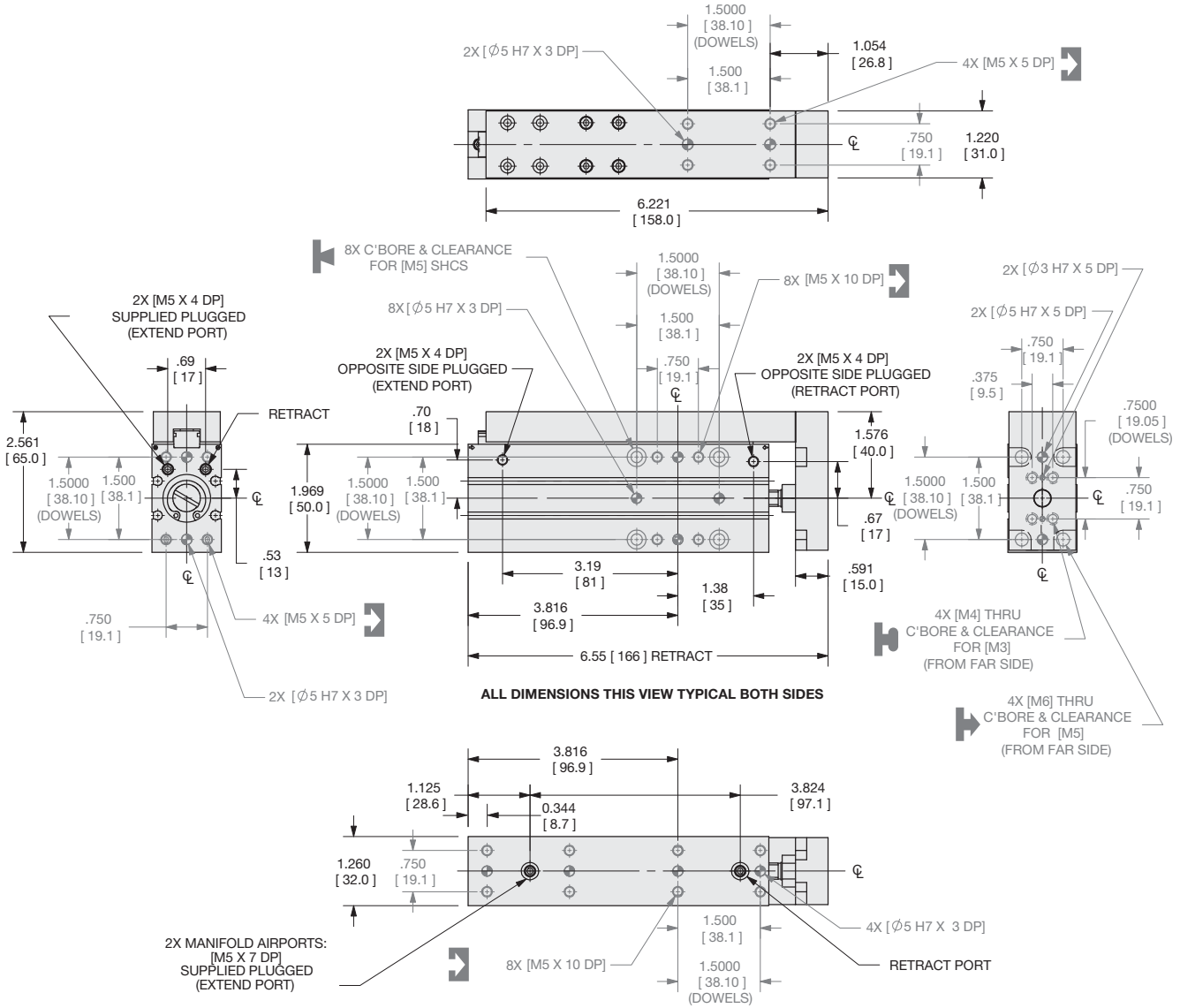


Manifold O-ring Seals

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



DLM-12M-50 Product Specifications



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-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



DLM SERIES

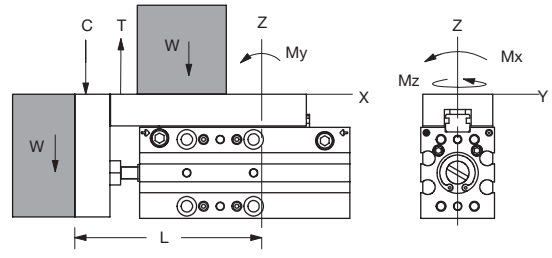
DIRECTCONNECT™



DLM-12M-50 Product Specifications



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 \varnothing	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

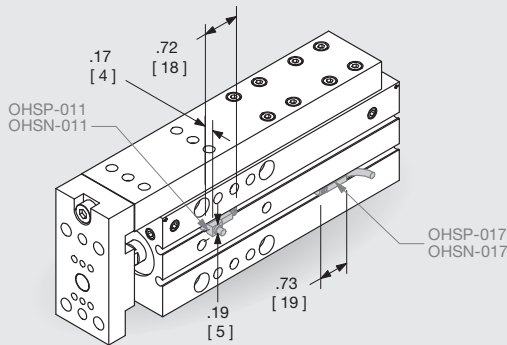
Loading Capacity

	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

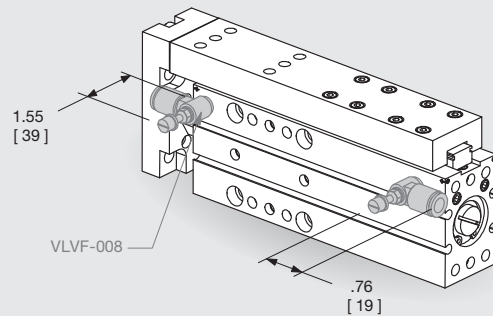
Maximum Tensile T	546 lbs. [2429 N]	363 lbs. [1617 N]
Maximum Compressive C	546 lbs. [2429 N]	363 lbs. [1617 N]
Maximum Moment M_x	364 in.-lbs. [41.2 Nm]	95 in.-lbs. [27.4 Nm]
Maximum Moment M_y	208 in.-lbs. [23.6 Nm]	139 in.-lbs. [15.8 Nm]
Maximum Moment M_z	208 in.-lbs. [23.6 Nm]	139 in.-lbs. [15.8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

Accessory Mounting Technical Data



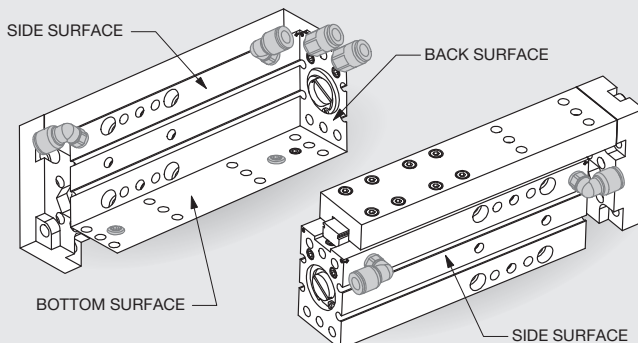
Sensors

- 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)



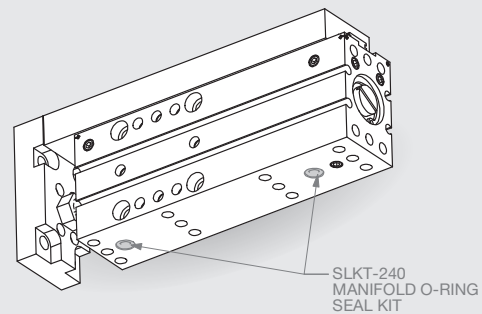
Plumbing Fittings

- 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

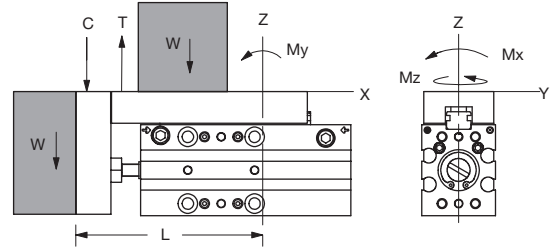
DLM SERIES

DIRECTCONNECT™

DLM-12M-75 Product Specifications



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 \varnothing	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

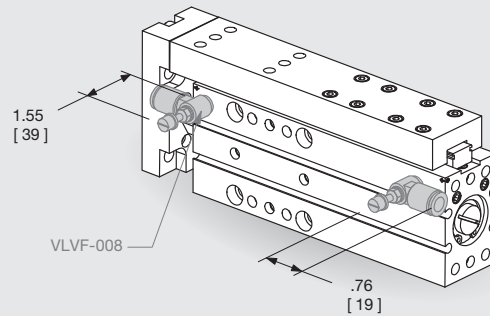
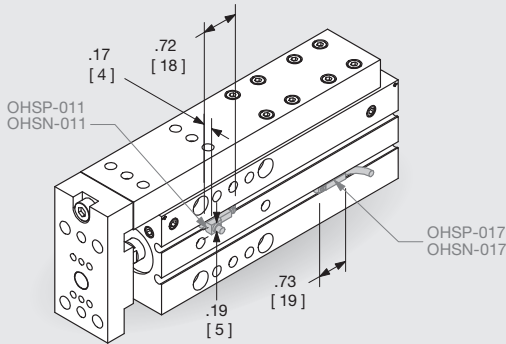
Loading Capacity

	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

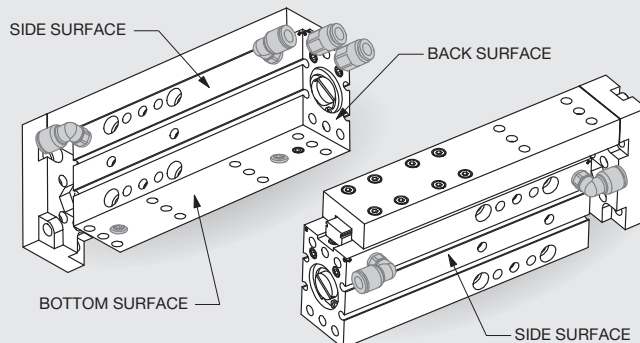


Sensors

- 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)

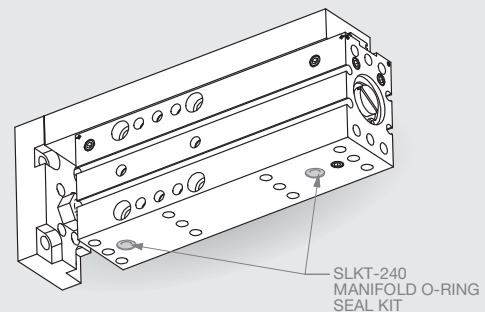
Plumbing Fittings

- 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



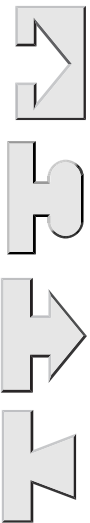
Manifold O-ring Seals

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

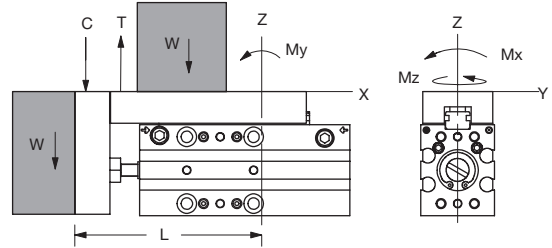
DLM SERIES

DIRECTCONNECT™

DLM-12M-100 Product Specifications



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 \varnothing	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

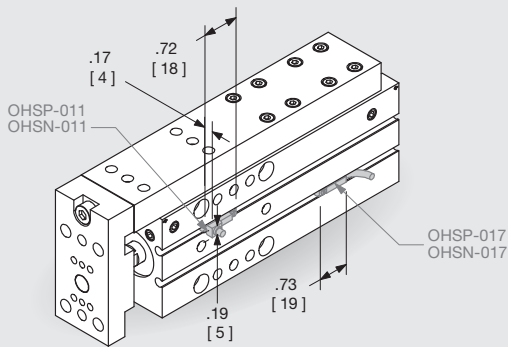
Loading Capacity

	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

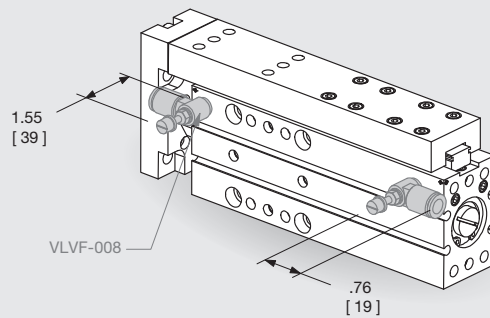
Maximum Tensile T	546 lbs. [2429 N]	363 lbs. [1617 N]
Maximum Compressive C	546 lbs. [2429 N]	363 lbs. [1617 N]
Maximum Moment M_x	364 in.-lbs. [41.2 Nm]	242 in.-lbs. [27.4 Nm]
Maximum Moment M_y	208 in.-lbs. [23.6 Nm]	139 in.-lbs. [15.8 Nm]
Maximum Moment M_z	208 in.-lbs. [23.6 Nm]	139 in.-lbs. [15.8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

Accessory Mounting Technical Data



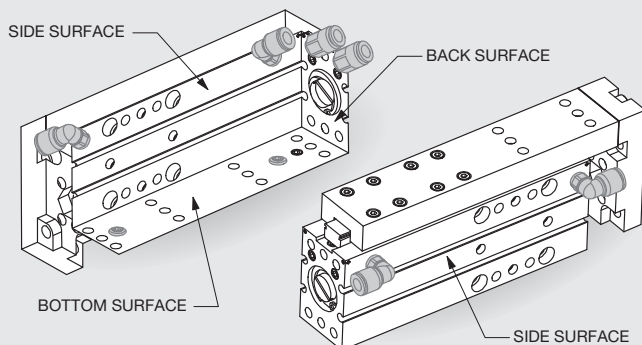
Sensors

- 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)



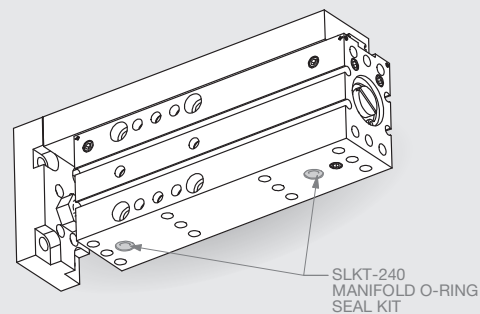
Plumbing Fittings

- 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

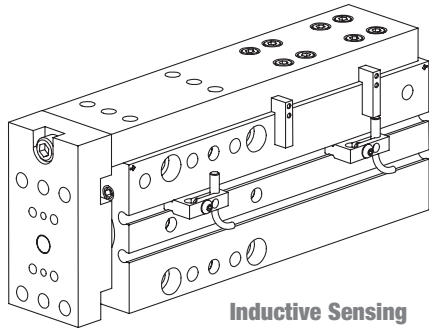
DLM SERIES

DIRECTCONNECT™

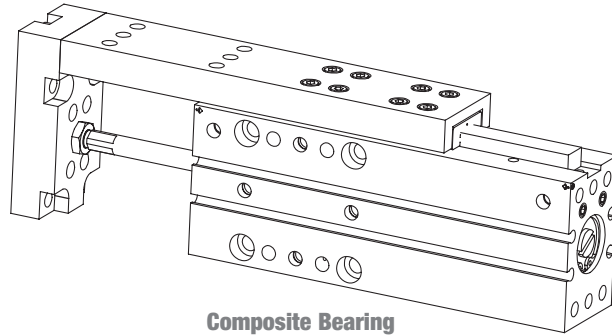
DLM Series Specials

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

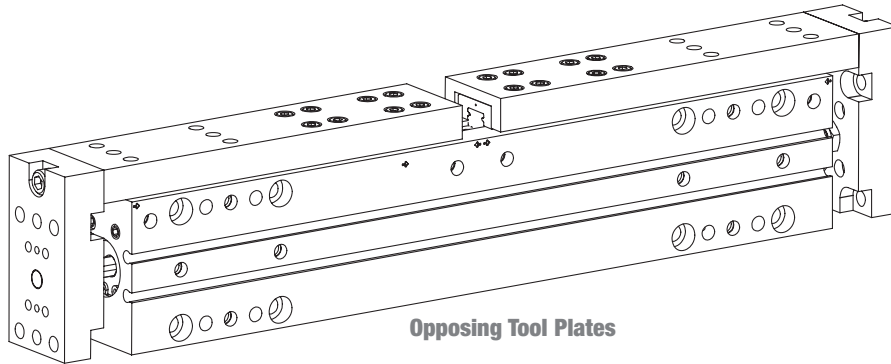
Drawings are for concept only.
Contact Robohand Tech Support
with project requirements.



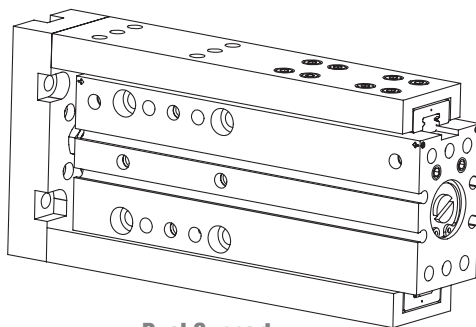
Inductive Sensing



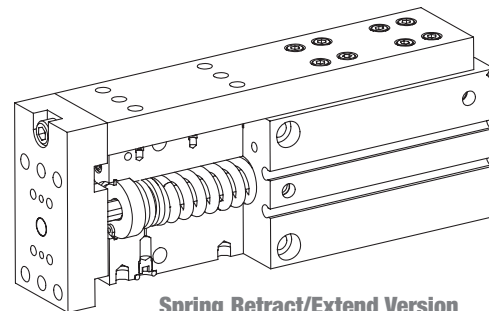
**Composite Bearing
Versions**



Opposing Tool Plates



Dual Support



Spring Retract/Extend Version

MPS Precision Miniature Rail Slide

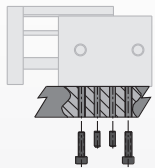
- Precision applications:**
 Preloaded Dual-“V” roller bearings eliminate side play for excellent part position repeatability. Linear accuracy is within .0001" per inch of travel.
- Small parts handling:**
 The small size of this slide allows it's use in tight spaces. Payload can be attached to either the tooling plate or the slide rail.

MPS SERIES

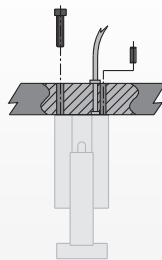
Mounting Information:

Slides can be mounted & operated in any orientation.

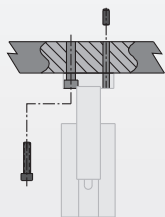
Warning! Protect bearings from falling debris.



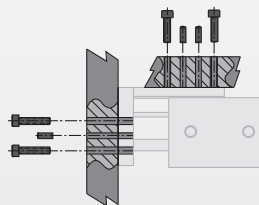
Body mounts on bottom or end with screws and locates with slip fit dowel pin holes for accuracy.



Body can be manifold end mounted.



Payload mounts to tooling plate from behind using counter bores for screws and slip fit dowel pins for location.



Payload can also mount to the tool plate from the front or to the slide with tapped holes for screws and slip fit dowel pins for location.

Technical Specifications:

Pneumatic Specifications

Pressure Operating Range
 Cylinder Type
 Dynamic Seals
 Valve Required to Operate

Imperial	Metric
20-100 psi	1.5-7 bar
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)
 Viton® Seals (optional)

-30°~180° F	-35°~80° C
-20°~250° F	-30°~120° C

Maintenance Specifications†

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

5 million cycles
 10+ million cycles*
 Yes
 Yes

Application Restrictions

- Dirty or gritty environments
- Machining operations generating chips
- Environments with loose particulate

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

Product Features

One Piece Body
One piece aluminum body

Quality Components
The body and slide are hard-coat anodized 6061 with Teflon® impregnation

Adjustable Stops
Adjustable stops for both extend and retract positions

Access Hole
For adjusting extend stop screw

Misalignment Coupling
Misalignment coupling on piston rod minimizes seal wear

Self Lubricating Seals
Self lubricating dynamic seals (Buna-N only)

Built-in Sensor Magnet

Built-in magnet for use with hall effect position sensing

Dowel Holes
Slip fit dowel pin holes in body bottom & back, and on tooling plate and on the slide

Pre-Loaded Bearings

Bearings are preloaded for maximum support and zero side play

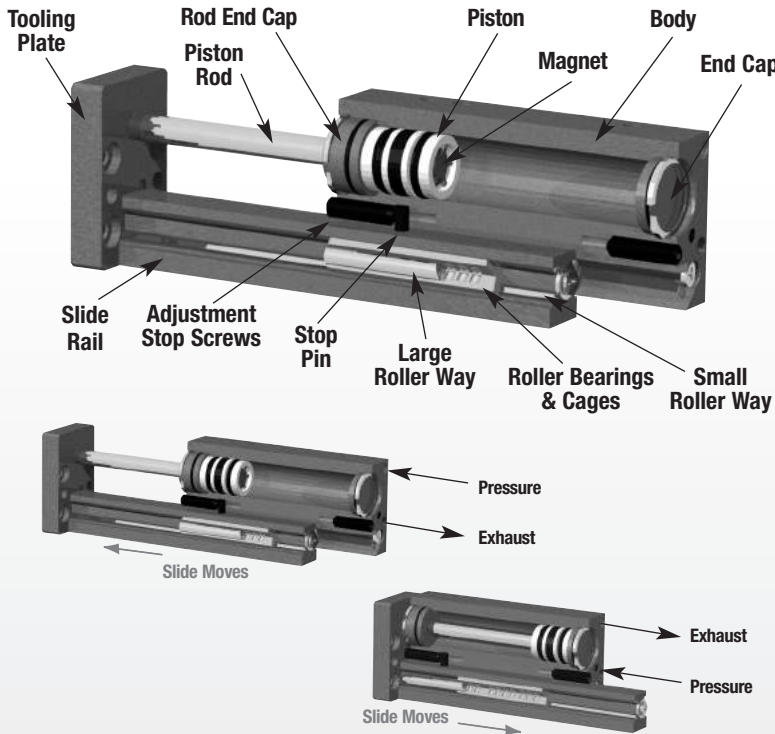
Patented Dual-“V” Roller Bearings
“Dual-V” roller bearings provide low friction rolling motion

Sensors

Reads position of slide (Sold Separately-See “How to Order” Section for more info)

Air Ports
Air ports on side and back

Operating Principle



- A double acting piston slides inside the body when pressure is applied.
- The piston is coupled to the tooling plate with the piston rod.
- The tooling plate is connected to the slide rail which is guided in the body by preloaded roller bearings.
- The stop pin in the slide stops the slide rail and tooling plate against the position adjustable stop screws.

U.S. Patent # 5,529,359
Designed and manufactured in the USA

Style-MPS Miniature Slide

Size 1M-1

Style:	1-1	1-1M
Stroke:	0.5 in.	13 mm
Weight:	0.18 lbs.	0.08 Kg
Payload:	0.30 lbs.	0.14 Kg



See Page **4.92**

Style-MPS Miniature Slide

Size 1M-2

Style:	1-2	1-2M
Stroke:	1.0 in.	25 mm
Weight:	0.22 lbs.	0.10 Kg
Payload:	0.70 lbs.	0.32 Kg



See Page **4.93**

Style-MPS Miniature Slide

Size 1M-3

Style:	1-3	1-3M
Stroke:	1.5 in.	38 mm
Weight:	0.28 lbs.	0.13 Kg
Payload:	1.00 lbs.	0.45 Kg



See Page **4.94**

Style-MPS Miniature Slide

Size 1M-4

Style:	1-4	1-4M
Stroke:	2.0 in.	51 mm
Weight:	0.32 lbs.	0.14 Kg
Payload:	1.30 lbs.	0.59 Kg



See Page **4.95**

Style-MPS Miniature Slide

Size 2M-1

Style:	2-1	2-1M
Stroke:	0.5 in.	13 mm
Weight:	0.26 lbs.	0.12 Kg
Payload:	0.50 lbs.	0.23 Kg



See Page **4.96**

Style-MPS Miniature Slide

Size 2M-2

Style:	2-2	2-2M
Stroke:	1.0 in.	25 mm
Weight:	0.32 lbs.	0.14 Kg
Payload:	1.00 lbs.	0.45 Kg



See Page **4.97**

Style-MPS Miniature Slide

Size 2M-3

Style:	2-3	2-3M
Stroke:	1.5 in.	38 mm
Weight:	0.40 lbs.	0.18 Kg
Payload:	2.00 lbs.	0.91 Kg

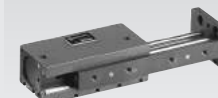


See Page **4.98**

Style-MPS Miniature Slide

Size 2M-4

Style:	2-4	2-4M
Stroke:	2.0 in.	51 mm
Weight:	0.46 lbs.	0.21 Kg
Payload:	3.00 lbs.	1.36 Kg

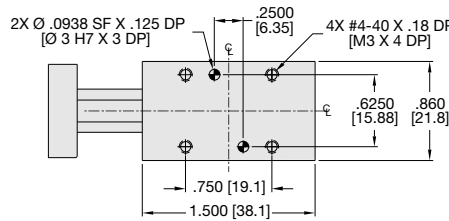
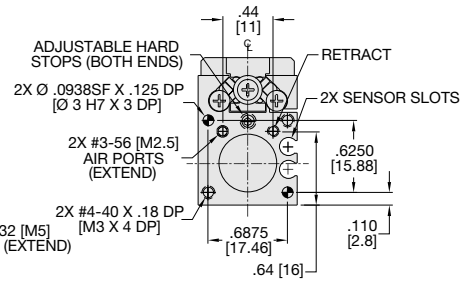
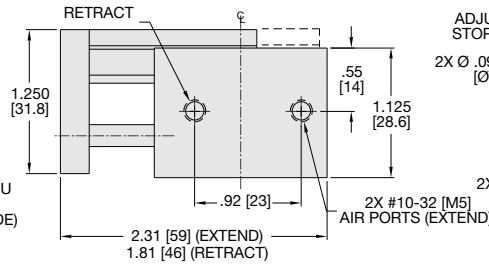
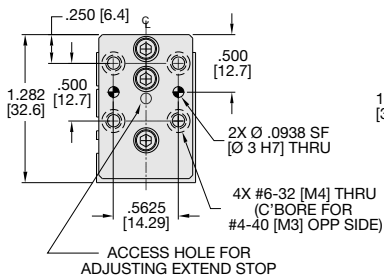
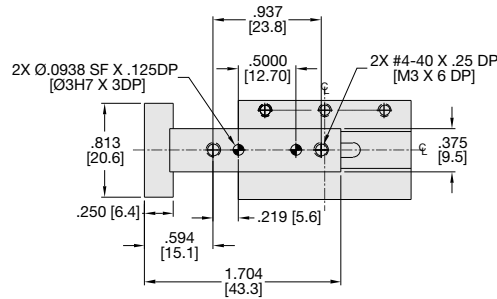


See Page **4.99**

MPS-1-1 Product Specifications

Specifications

	MPS-1-1	MPS-1M-1
Thrust Force F @ 100 psi, 7 bar ...	15 lbs.	67 N
Max. Stroke.....	0.5 in.	13 mm
Stroke Adjustability (Each End).....	.12 in.	3 mm
Weight.....	0.18 lbs.	0.08 Kg
Maximum Payload W	0.30 lbs.	0.14 Kg
Pressure Range.....	20-100 psi	1.5-7 bar
Cylinder Bore \emptyset	0.438 in.	11.1 mm
Temperature Range		
Standard Seals.....	-30°~180° F	-35°~80° C
Viton® Seals.....	-20°~250° F	-30°~120° C
Actuation Time.....	0.10 sec.	0.10 sec.
Linear Accuracy per in. of travel.....	±0.0001 in.	±0.003 mm
Repeatability.....	±0.0010 in.	±0.03 mm
Valve required to actuate.....	4-way, 2-position	



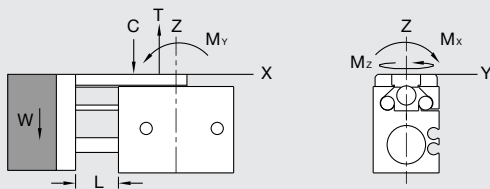
UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

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

MPS SERIES

Loading Information

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



WARNING: Flow Controls recommended for most applications.

BASIC MODEL METRIC VITON® SEALS

MPS-1 M - 1 - V

Loading Capacity	Static		Dynamic	
	Imperial	Metric	Imperial	Metric
Maximum Tensile T	25 lbs.	111 N	10 lbs.	44 N
Maximum Compressive C	25 lbs.	111 N	10 lbs.	44 N
Maximum Moment M_x	30 in.-lbs.	3.4 Nm	15 in.-lbs.	1.7 Nm
Maximum Moment M_y	20 in.-lbs.	2.3 Nm	10 in.-lbs.	1.1 Nm
Maximum Moment M_z	20 in.-lbs.	2.3 Nm	10 in.-lbs.	1.1 Nm
Maximum Payload W			.30 lbs.	.14 Kg

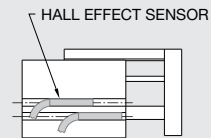
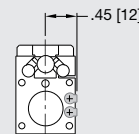
SENSOR ACCESSORIES

	ORDER #	QTY/UNIT
4 mm NPN Hall Effect Sensor with Quick Disconnect*	OHSN-006	1 or 2
4 mm PNP Hall Effect Sensor with Quick Disconnect*	OHSP-006	1 or 2
Quick Disconnect 2M Cable Length*	CABL-010	1 or 2
Quick Disconnect 5M Cable Length*	CABL-013	1 or 2

PNEUMATIC ACCESSORIES

	ORDER #	QTY/UNIT
#10-32 Adjustable Flow Control	VLVF-007	1 or 2
M5 Adjustable Flow Control	VLVF-008	1 or 2
#3-56 [M2.5] Barbed Fitting	PLFT-005	2
Standard Seal Repair Kit	SLKT-090	1
Viton® Seal Repair Kit	SLKT-090V	1

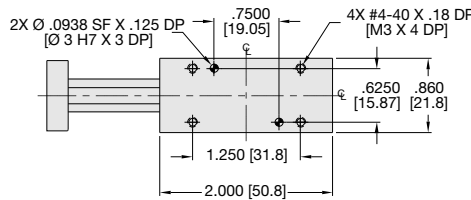
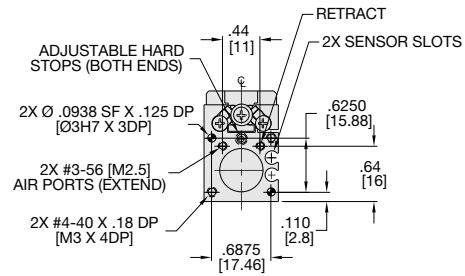
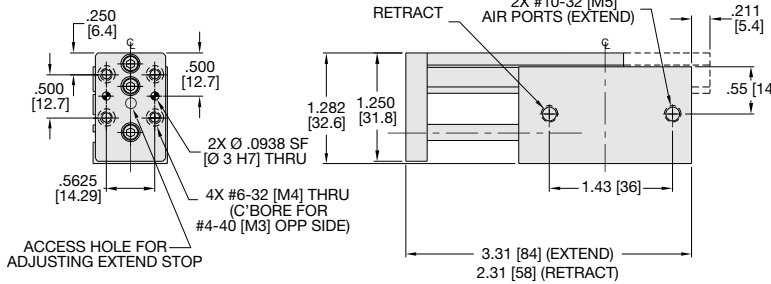
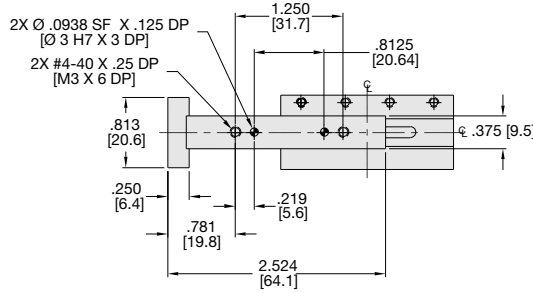
*Sensor and cable sold separately.





MPS-1-2 Product Specifications

Specifications	MPS-1-2	MPS-1M-2
Thrust Force F @ 100 psi, 7 bar ...	15 lbs.	67 N
Max Stroke.....	1.0 in.	25 mm
Stroke Adjustability (Each End) .....	.12 in.	3 mm
Weight.....	0.22 lbs.	0.10 Kg
Maximum Payload W	0.70 lbs.	0.32 Kg
Pressure Range.....	20-100 psi	1.5-7 bar
Cylinder Bore \varnothing	0.438 in.	11.1 mm
Temperature Range		
Standard Seals.....	-30°~180° F	-35°~80° C
Viton® Seals	-20°~250° F	-30°~120° C
Actuation Time	0.11 sec.	0.11 sec.
Linear Accuracy Per In. of Travel....	±0.0001 in.	±0.003 mm
Repeatability	±0.0010 in.	±0.03 mm
Valve required to actuate	4-way, 2-position	



UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

\varnothing Dimensions are symmetrical about centerline

\triangle Third Angle Projection

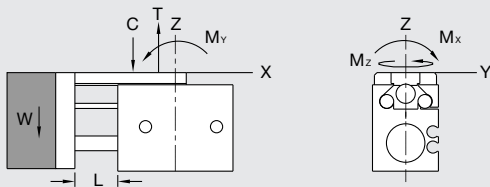
\oplus All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or ±.013mm

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

MPS SERIES

Loading Information

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



WARNING: Flow Controls recommended for most applications.

BASIC MODEL METRIC VITON® SEALS

MPS-1 M - 2 - V

Loading Capacity

	Static		Dynamic	
	Imperial	Metric	Imperial	Metric
Maximum Tensile T	35 lbs.	156 N	15 lbs.	67 N
Maximum Compressive C	35 lbs.	156 N	15 lbs.	67 N
Maximum Moment M_x	40 in.-lbs.	4.5 Nm	20 in.-lbs.	2.3 Nm
Maximum Moment M_y	30 in.-lbs.	3.4 Nm	15 in.-lbs.	1.7 Nm
Maximum Moment M_z	30 in.-lbs.	3.4 Nm	15 in.-lbs.	1.7 Nm
Maximum Payload W			.70 lbs.	.32 Kg

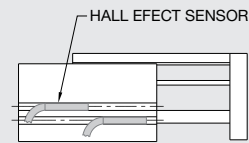
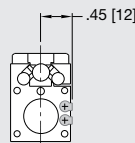
SENSOR ACCESSORIES

	ORDER #	QTY/UNIT
NPN Hall Effect Sensor with Quick Disconnect*	OHSN-006	1 or 2
PNP Hall Effect Sensor with Quick Disconnect*	OHSP-006	1 or 2
Quick Disconnect 2M Cable Length*	CABL-010	1 or 2
Quick Disconnect 5M Cable Length*	CABL-013	1 or 2

PNEUMATIC ACCESSORIES

#10-32 Adjustable Flow Control	VLVF-007	1 or 2
M5 Adjustable Flow Control	VLVF-008	1 or 2
#3-56 [M2.5] Barbed Fitting	PLFT-005	2
Standard Seal Repair Kit	SLKT-090	1
Viton® Seal Repair Kit	SLKT-09V	1

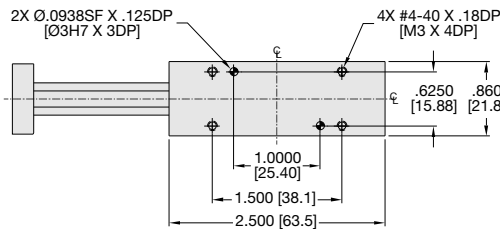
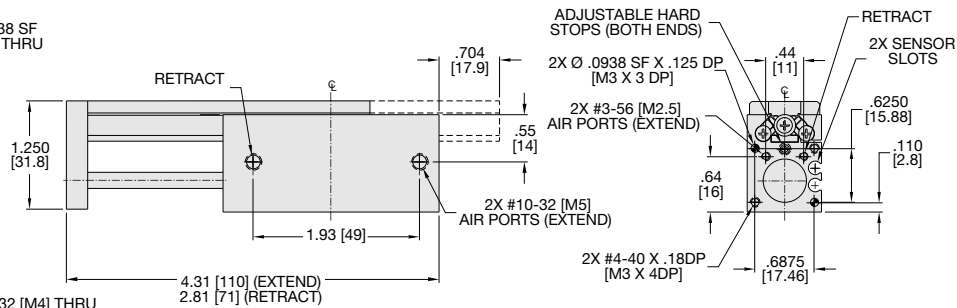
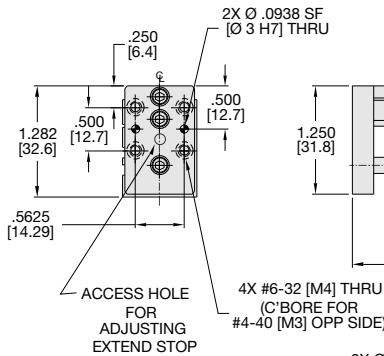
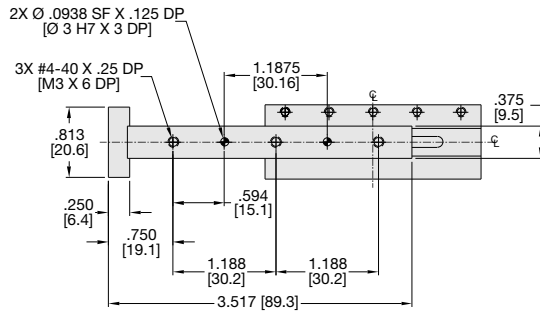
*Sensor and cable sold separately.



MPS-1-3 Product Specifications

Specifications

	MPS-1-3	MPS-1M-3
Thrust Force F @ 100 psi, 7 bar ...	15 lbs.	67 N
Max Stroke.....	1.5 in.	38 mm
Stroke Adjustability (Each End).....	.25 in.	6 mm
Weight.....	0.28 lbs.	0.13 Kg
Maximum Payload W	1.00 lbs.	0.45 Kg
Pressure Range.....	20-100 psi	1.5-7 bar
Cylinder Bore \varnothing	0.438 in.	11.1 mm
Temperature Range		
Standard Seals.....	-30°~180° F	-35°~80° C
Viton® Seals.....	-20°~250° F	-30°~120° C
Actuation Time.....	0.13 sec.	0.13 sec.
Linear Accuracy Per In. of Travel....	±0.0001 in.	±0.003 mm
Repeatability.....	±0.0010 in.	±0.03 mm
Valve required to actuate.....	4-way, 2-position	



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]

MPS SERIES

Loading Information

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

WARNING: Flow Controls recommended for most applications.

BASIC MODEL METRIC VITON® SEALS

MPS-1 **M** - **3** - **V**

Loading Capacity	Static		Dynamic	
	Imperial	Metric	Imperial	Metric
Maximum Tensile T	50 lbs.	222 N	20 lbs.	89 N
Maximum Compressive C	50 lbs.	222 N	20 lbs.	89 N
Maximum Moment M_x	60 in.-lbs.	6.8 Nm	30 in.-lbs.	3.4 Nm
Maximum Moment M_y	40 in.-lbs.	4.5 Nm	20 in.-lbs.	2.3 Nm
Maximum Moment M_z	40 in.-lbs.	4.5 Nm	20 in.-lbs.	2.3 Nm
Maximum Payload W			1.0 lbs.	.45 Kg

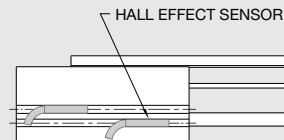
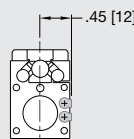
SENSOR ACCESSORIES

	ORDER #	QTY/UNIT
NPN Hall Effect Sensor with Quick Disconnect*	OHSN-006	1 or 2
PNP Hall Effect Sensor with Quick Disconnect*	OHSP-006	1 or 2
Quick Disconnect 2M Cable Length*	CABL-010	1 or 2
Quick Disconnect 5M Cable Length*	CABL-013	1 or 2

PNEUMATIC ACCESSORIES

	ORDER #	QTY/UNIT
#10-32 Adjustable Flow Control	VLVF-007	1 or 2
M5 Adjustable Flow Control	VLVF-008	1 or 2
#3-56 [M2.5] Barbed Fitting	PLFT-005	2
Standard Seal Repair Kit	SLKT-090	1
Viton® Seal Repair Kit	SLKT-090V	1

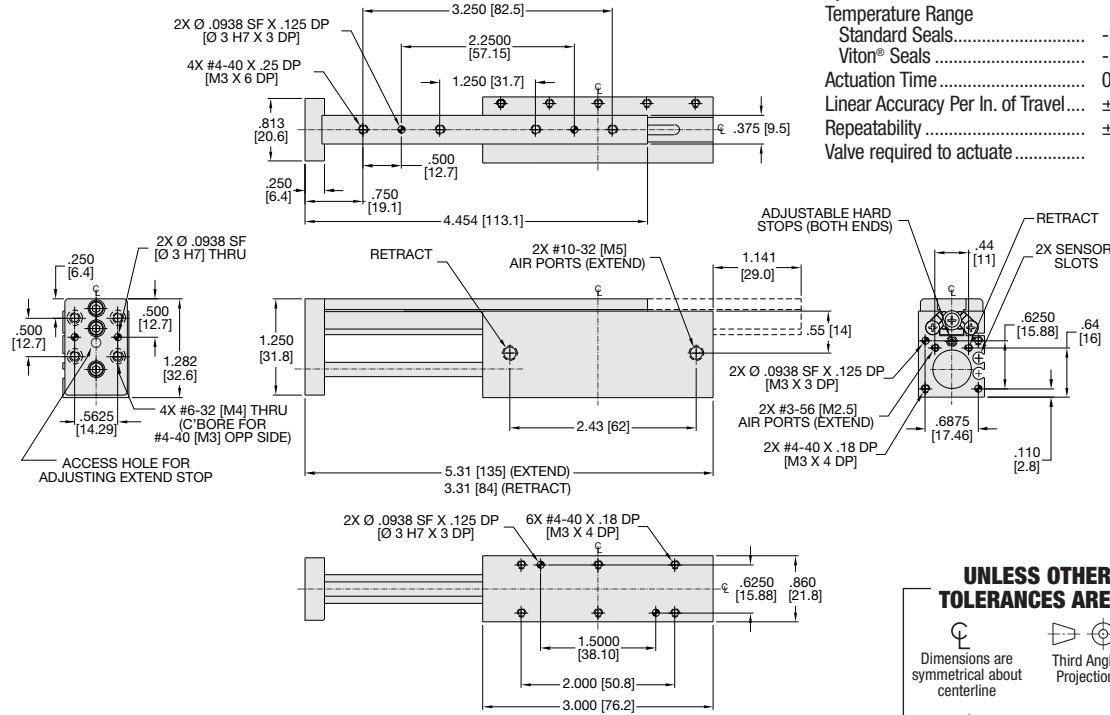
*Sensor and cable sold separately.





MPS-1-4 Product Specifications

Specifications	MPS-1-4	MPS-1M-4
Thrust Force F @ 100 psi, 7 bar ...	15 lbs.	67 N
Max Stroke.....	2.0 in.	51 mm
Stroke Adjustability (Each End) .....	.25	6 mm
Weight.....	0.32 lbs.	0.14 Kg
Maximum Payload W	1.30 lbs.	0.59 Kg
Pressure Range.....	20-100 psi	1.5-7 bar
Cylinder Bore \varnothing	0.438 in.	11.1 mm
Temperature Range		
Standard Seals.....	-30°~180° F	-35°~80° C
Viton® Seals	-20°~250° F	-30°~120° C
Actuation Time	0.14 sec.	0.14 sec.
Linear Accuracy Per In. of Travel....	±0.0001 in.	±0.003 mm
Repeatability	±0.0010 in.	±0.03 mm
Valve required to actuate	4-way, 2-position	



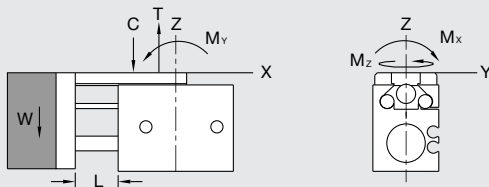
UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

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

MPS SERIES

Loading Information

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



WARNING: Flow Controls recommended for most applications.

BASIC MODEL METRIC VITON® SEALS

MPS-1 M - 4 - V

Loading Capacity	Static		Dynamic	
	Imperial	Metric	Imperial	Metric
Maximum Tensile T	70 lbs.	311 N	25 lbs.	111 N
Maximum Compressive C	70 lbs.	311 N	25 lbs.	111 N
Maximum Moment M_x	80 in.-lbs.	9.0 Nm	40 in.-lbs.	4.5 Nm
Maximum Moment M_y	50 in.-lbs.	5.7 Nm	25 in.-lbs.	2.8 Nm
Maximum Moment M_z	50 in.-lbs.	5.7 Nm	25 in.-lbs.	2.8 Nm
Maximum Payload W			1.3 lbs.	.59 Kg

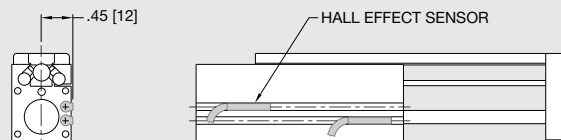
SENSOR ACCESSORIES

	ORDER #	QTY/UNIT
NPN Hall Effect Sensor with Quick Disconnect*	OHSN-006	1 or 2
PNP Hall Effect Sensor with Quick Disconnect*	OHSP-006	1 or 2
Quick Disconnect 2M Cable Length*	CABL-010	1 or 2
Quick Disconnect 5M Cable Length*	CABL-013	1 or 2

PNEUMATIC ACCESSORIES

#10-32 Adjustable Flow Control	VLVF-007	1 or 2
M5 Adjustable Flow Control	VLVF-008	1 or 2
#3-56 [M2.5] Barbed Fitting	PLFT-005	2
Standard Seal Repair Kit	SLKT-090	1
Viton® Seal Repair Kit	SLKT-09V	1

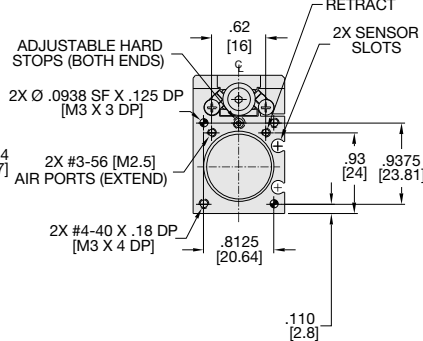
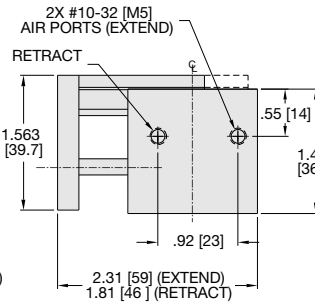
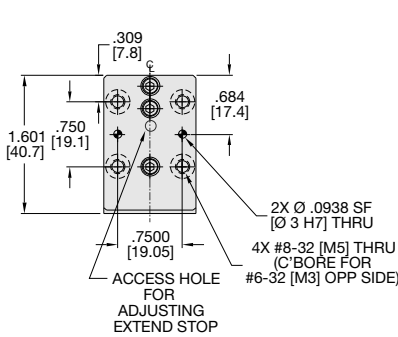
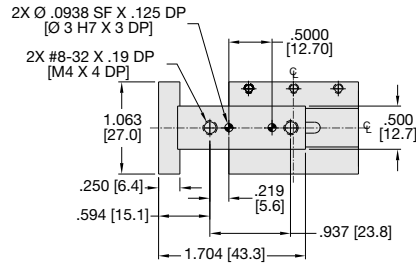
*Sensor and cable sold separately.



MPS-2-1 Product Specifications

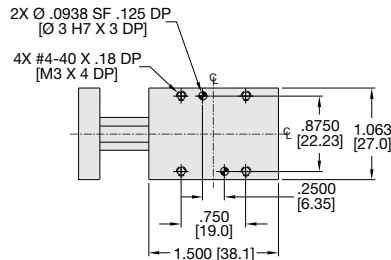
Specifications

	MPS-2-1	MPS-2M-1
Thrust Force F @ 100 psi, 7 bar ...	44 lbs.	196 N
Max Stroke.....	0.5 in.	13 mm
Stroke Adjustability (Each End) .....	.12 in.	3 mm
Weight.....	0.26 lbs.	0.12 Kg
Maximum Payload W	0.50 lbs.	0.23 Kg
Pressure Range.....	20-100 psi	1.5-7 bar
Cylinder Bore ϕ	0.750 in.	19.1 mm
Temperature Range		
Standard Seals.....	-30°~180° F	-35°~80° C
Viton® Seals	-20°~250° F	-30°~120° C
Actuation Time	0.12 sec.	0.12 sec.
Linear Accuracy Per In. of Travel....	±0.0001 in.	±0.003 mm
Repeatability	±0.0010 in.	±0.03 mm
Valve required to actuate.....	4-way, 2-position	



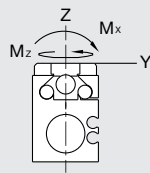
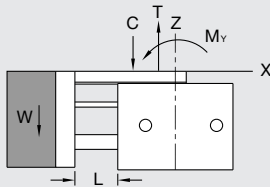
UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

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]



MPS SERIES

Loading Information



Loading Capacity

	Static		Dynamic	
	Imperial	Metric	Imperial	Metric
Maximum Tensile T	25 lbs.	111 N	10 lbs.	44 N
Maximum Compressive C	25 lbs.	111 N	10 lbs.	44 N
Maximum Moment M_x	30 in.-lbs.	3.4 Nm	15 in.-lbs.	1.7 Nm
Maximum Moment M_y	20 in.-lbs.	2.3 Nm	10 in.-lbs.	1.1 Nm
Maximum Moment M_z	20 in.-lbs.	2.3 Nm	10 in.-lbs.	1.1 Nm
Maximum Payload W			.50 lbs.	.23 Kg

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

WARNING: Flow Controls recommended for most applications.

BASIC MODEL METRIC VITON® SEALS

MPS-2 M - 1 - V

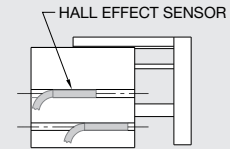
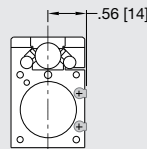
SENSOR ACCESSORIES

	ORDER #	QTY/UNIT
NPN Hall Effect Sensor with Quick Disconnect*	OHSN-006	1 or 2
PNP Hall Effect Sensor with Quick Disconnect*	OHSP-006	1 or 2
Quick Disconnect 2M Cable Length*	CABL-010	1 or 2
Quick Disconnect 5M Cable Length*	CABL-013	1 or 2

PNEUMATIC ACCESSORIES

	ORDER #	QTY/UNIT
#10-32 Adjustable Flow Control	VLVF-007	1 or 2
M5 Adjustable Flow Control	VLVF-008	1 or 2
#3-56 [M2.5] Barbed Fitting	PLFT-005	2
Standard Seal Repair Kit	SLKT-091	1
Viton® Seal Repair Kit	SLKT-091V	1

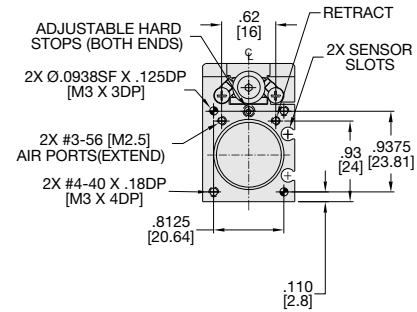
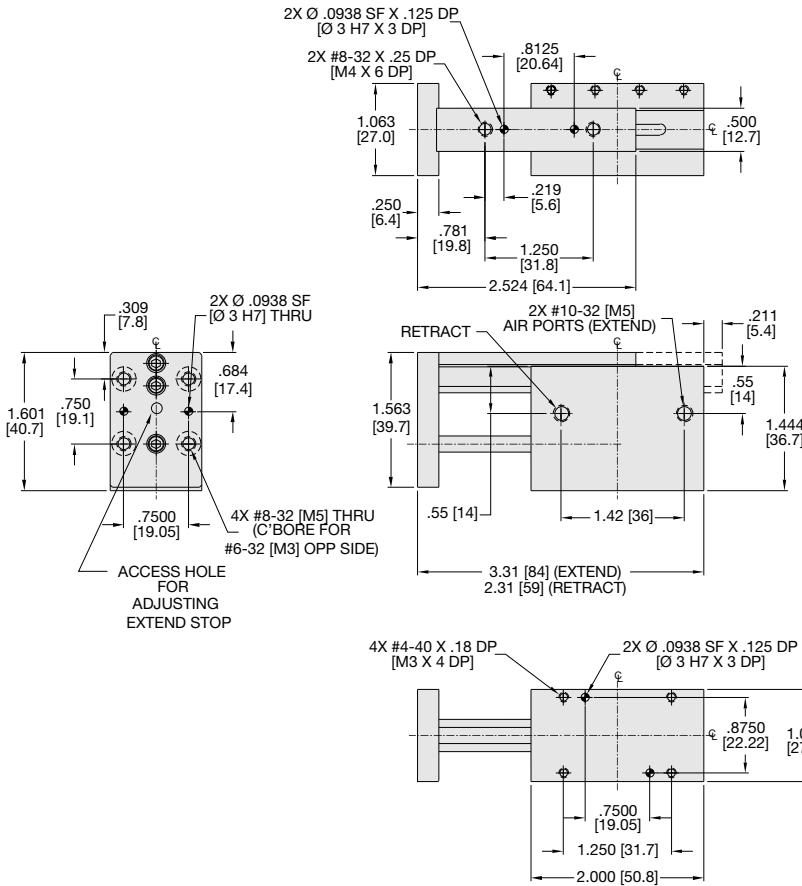
*Sensor and cable sold separately.





MPS-2-2 Product Specifications

Specifications	MPS-2-2	MPS-2M-2
Thrust Force F @ 100 psi, 7 bar ...	44 lbs.	196 N
Max Stroke.....	1.0 in.	25 mm
Stroke Adjustability (Each End) .....	.12 in.	3 mm
Weight.....	0.32 lbs.	0.14 Kg
Maximum Payload W	1.00 lbs.	0.45 Kg
Pressure Range.....	20-100 psi	1.5-7 bar
Cylinder Bore \emptyset	0.750 in.	19.1 mm
Temperature Range		
Standard Seals.....	-30°~180° F	-35°~80° C
Viton® Seals	-20°~250° F	-30°~120° C
Actuation Time	0.16 sec.	0.16 sec.
Linear Accuracy Per In. of Travel....	±0.0001 in.	±0.003 mm
Repeatability	±0.0010 in.	±0.03 mm
Valve required to actuate	4-way, 2-position	



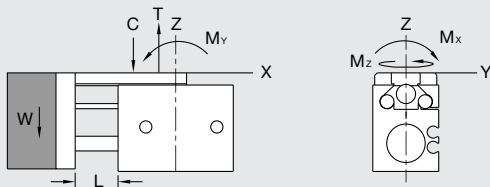
UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

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]

MPS SERIES

Loading Information

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



WARNING: Flow Controls recommended for most applications.

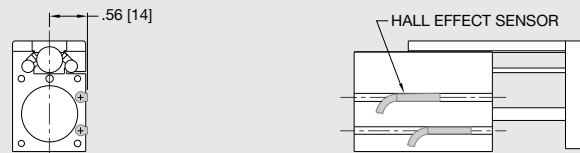
BASIC MODEL METRIC VITON® SEALS

MPS-2 M - 2 - V

Loading Capacity	Static		Dynamic	
	Imperial	Metric	Imperial	Metric
Maximum Tensile T	35 lbs.	156 N	15 lbs.	67 N
Maximum Compressive C	35 lbs.	156 N	15 lbs.	67 N
Maximum Moment M_x	40 in.-lbs.	4.5 Nm	20 in.-lbs.	2.3 Nm
Maximum Moment M_y	30 in.-lbs.	3.4 Nm	15 in.-lbs.	1.7 Nm
Maximum Moment M_z	30 in.-lbs.	3.4 Nm	15 in.-lbs.	1.7 Nm
Maximum Payload W			1.0 lbs.	.45 Kg

SENSOR ACCESSORIES	ORDER #	QTY/UNIT
NPN Hall Effect Sensor with Quick Disconnect*	OHSN-006	1 or 2
PNP Hall Effect Sensor with Quick Disconnect*	OHSP-006	1 or 2
Quick Disconnect 2M Cable Length*	CABL-010	1 or 2
Quick Disconnect 5M Cable Length*	CABL-013	1 or 2
PNEUMATIC ACCESSORIES		
#10-32 Adjustable Flow Control	VLVF-007	1 or 2
M5 Adjustable Flow Control	VLVF-008	1 or 2
#3-56 [M2.5] Barbed Fitting	PLFT-005	2
Standard Seal Repair Kit	SLKT-091	1
Viton® Seal Repair Kit	SLKT-091V	1

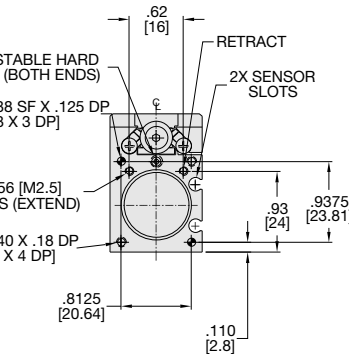
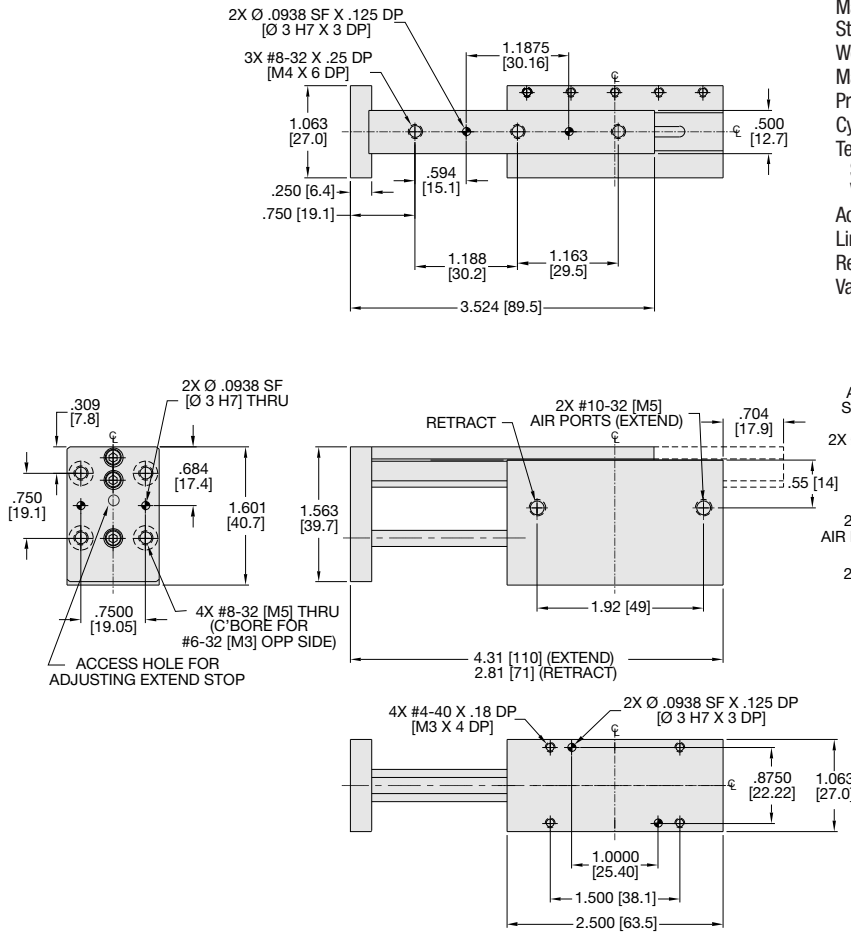
*Sensor and cable sold separately.



MPS-2-3 Product Specifications

Specifications

	MPS-2-3	MPS-2M-3
Thrust Force F @ 100 psi, 7 bar ...	44 lbs.	196 N
Max Stroke.....	1.5 in.	38 mm
Stroke Adjustability (Each End) .....	.25 in.	6 mm
Weight.....	0.40 lbs.	0.18 Kg
Maximum Payload W	2.00 lbs.	0.91 Kg
Pressure Range.....	20-100 psi	1.5-7 bar
Cylinder Bore \varnothing	0.750 in.	19.1 mm
Temperature Range		
Standard Seals.....	-30°~180° F	-35°~80° C
Viton® Seals	-20°~250° F	-30°~120° C
Actuation Time	0.19 sec.	0.19 sec.
Linear Accuracy Per In. of Travel....	±0.0001 in.	±0.003 mm
Repeatability	±0.0010 in.	±0.03 mm
Valve required to actuate	4-way, 2-position	



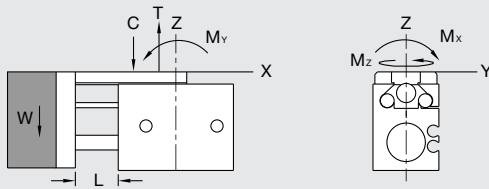
UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

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

MPS SERIES

Loading Information

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



WARNING: Flow Controls recommended for most applications.

BASIC MODEL METRIC VITON® SEALS

MPS-2 M - 3 - V

Loading Capacity	Static		Dynamic	
	Imperial	Metric	Imperial	Metric
Maximum Tensile T	50 lbs.	222 N	20 lbs.	89 N
Maximum Compressive C	50 lbs.	222 N	20 lbs.	89 N
Maximum Moment M_x	60 in.-lbs.	6.8 Nm	30 in.-lbs.	3.4 Nm
Maximum Moment M_y	40 in.-lbs.	4.5 Nm	20 in.-lbs.	2.3 Nm
Maximum Moment M_z	40 in.-lbs.	4.5 Nm	20 in.-lbs.	2.3 Nm
Maximum Payload W			2.0 lbs.	.91 Kg

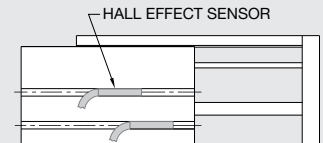
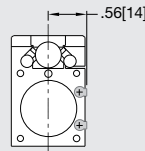
SENSOR ACCESSORIES

	ORDER #	QTY/UNIT
NPN Hall Effect Sensor with Quick Disconnect*	OHSN-006	1 or 2
PNP Hall Effect Sensor with Quick Disconnect*	OHSP-006	1 or 2
Quick Disconnect 2M Cable Length*	CABL-010	1 or 2
Quick Disconnect 5M Cable Length*	CABL-013	1 or 2

PNEUMATIC ACCESSORIES

#10-32 Adjustable Flow Control	VLVF-007	1 or 2
M5 Adjustable Flow Control	VLVF-008	1 or 2
#3-56 [M2.5] Barbed Fitting	PLFT-005	2
Standard Seal Repair Kit	SLKT-091	1
Viton® Seal Repair Kit	SLKT-091V	1

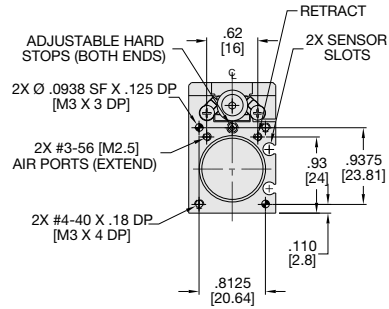
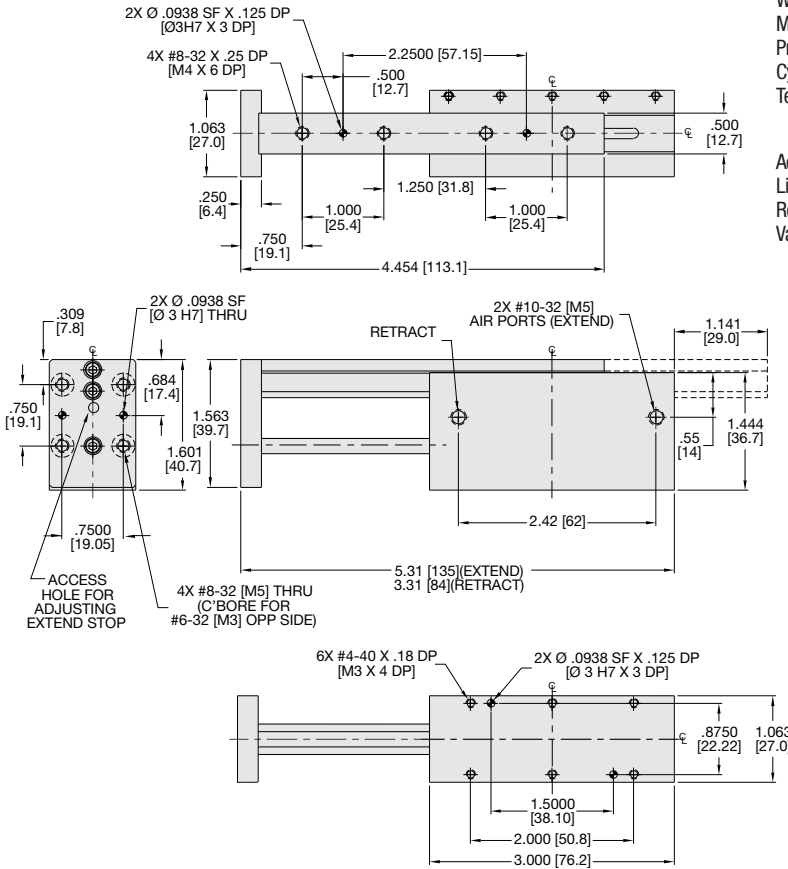
*Sensor and cable sold separately.





MPS-2-4 Product Specifications

Specifications	MPS-2-4	MPS-2M-4
Thrust Force F @ 100 psi, 7 bar ...	44 lbs.	196 N
Max Stroke.....	2.0 in.	51 mm
Stroke Adjustability (Each End) .....	.25 in.	6 mm
Weight.....	0.46 lbs.	0.21 Kg
Maximum Payload W	3.00 lbs.	1.36 Kg
Pressure Range.....	20-100 psi	1.5-7 bar
Cylinder Bore \emptyset	0.750 in.	19.1 mm
Temperature Range		
Standard Seals.....	-30°~180° F	-35°~80° C
Viton® Seals	-20°~250° F	-30°~120° C
Actuation Time	0.24 sec.	0.24 sec.
Linear Accuracy Per In. of Travel ...	±0.0001 in.	±0.005 mm
Repeatability	±0.0010 in.	±0.03 mm
Valve required to actuate	4-way, 2-position	



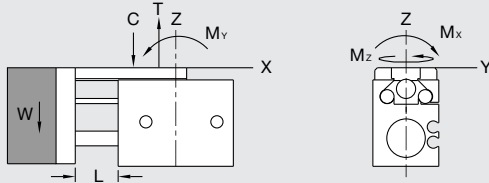
UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

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

MPS SERIES

Loading Information

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



WARNING: Flow Controls recommended for most applications.

BASIC MODEL METRIC VITON® SEALS

MPS-2 M - 4 - V

Loading Capacity	Static		Dynamic	
	Imperial	Metric	Imperial	Metric
Maximum Tensile T	70 lbs.	311 N	25 lbs.	111 N
Maximum Compressive C	70 lbs.	311 N	25 lbs.	111 N
Maximum Moment M_x	80 in.-lbs.	9.0 Nm	40 in.-lbs.	4.5 Nm
Maximum Moment M_y	50 in.-lbs.	5.7 Nm	25 in.-lbs.	2.8 Nm
Maximum Moment M_z	50 in.-lbs.	5.7 Nm	25 in.-lbs.	2.8 Nm
Maximum Payload W			3.0 lbs.	.6 Kg

SENSOR ACCESSORIES

	ORDER #	QTY/UNIT
NPN Hall Effect Sensor with Quick Disconnect*	OHSN-006	1 or 2
PNP Hall Effect Sensor with Quick Disconnect*	OHSP-006	1 or 2
Quick Disconnect 2M Cable Length*	CABL-010	1 or 2
Quick Disconnect 5M Cable Length*	CABL-013	1 or 2

PNEUMATIC ACCESSORIES

	ORDER #	QTY/UNIT
#10-32 Adjustable Flow Control	VLVF-007	1 or 2
M5 Adjustable Flow Control	VLVF-008	1 or 2
#3-56 [M2.5] Barbed Fitting	PLFT-005	2
Standard Seal Repair Kit	SLKT-091	1
Viton® Seal Repair Kit	SLKT-091V	1

*Sensor and cable sold separately.

