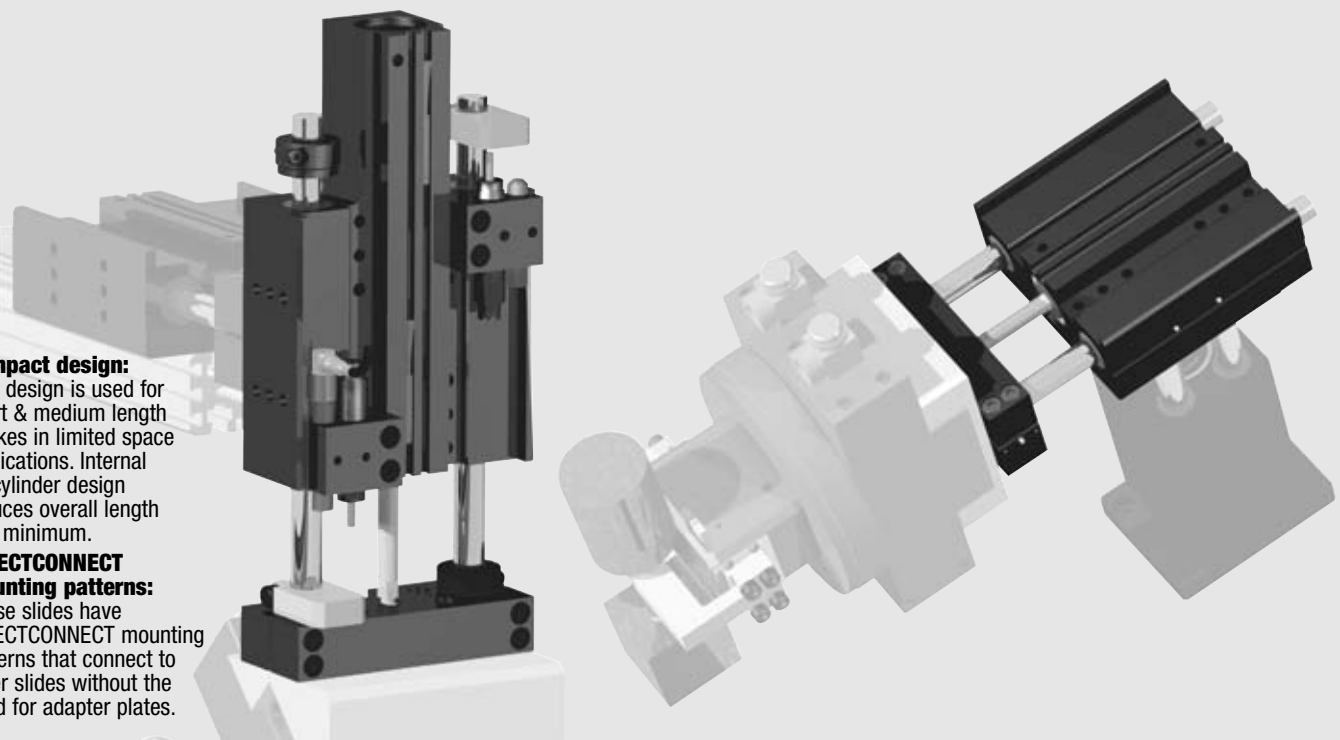


Internally Powered Thruster Slide

DLT SERIES
4.40

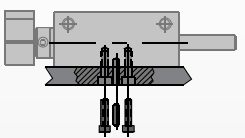


Compact design:
This design is used for short & medium length strokes in limited space applications. Internal air cylinder design reduces overall length to a minimum.

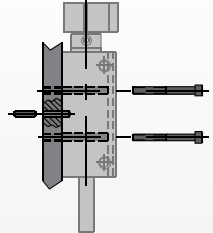
DIRECTCONNECT mounting patterns:
These slides have DIRECTCONNECT mounting patterns that connect to other slides without the need for adapter plates.

Mounting Information:

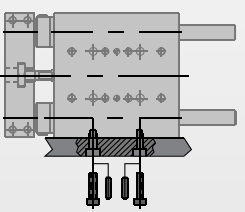
Mounts and operates in any orientation



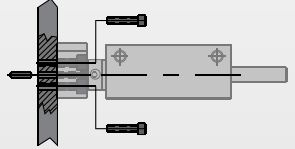
Body can be mounted from the back using the directconnect pattern of threaded mounting and dowel pin holes



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	Imperial	Metric
Pressure Operating Range*	40-100 psi	3-7 bar
Cylinder Type	Double Acting	
Dynamic Seals	Internally Lubricated Buna-N	
Valve Required to Operate	4-way, 2-position	

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

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

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

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

Aircraft Quality Aluminum

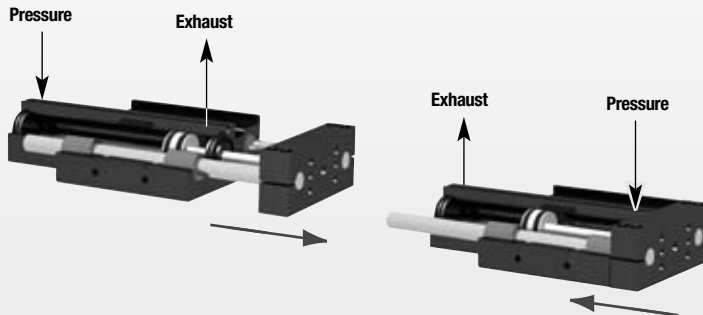
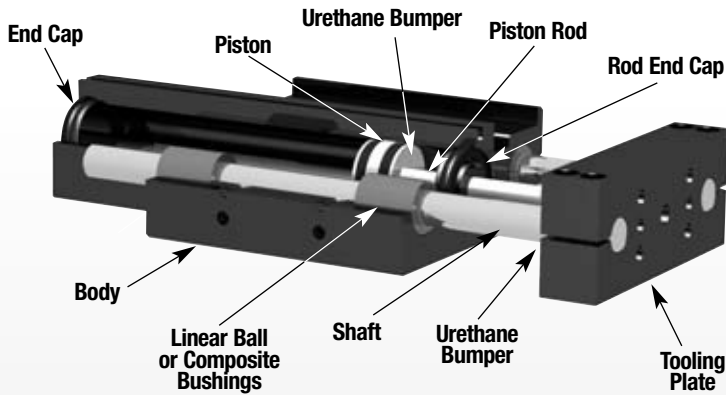
Seal Option

Viton® or self-lubricating Buna-N dynamic seals

Precision Ground Shafting

Case hardened to RC60-65. Corrosion resistant optional

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
-08M

See Page 4.42



-10M (shown)
-12M
-16M

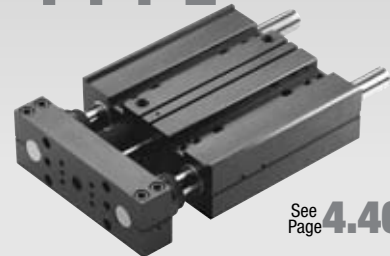
See Page 4.44



Style-E Short Body Thruster

Size -20M (shown)
-25M

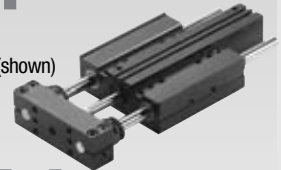
See Page 4.46



Style-L Long Body Thruster

Size -06M
-08M

See Page 4.48



-10M (shown)
-12M
-16M

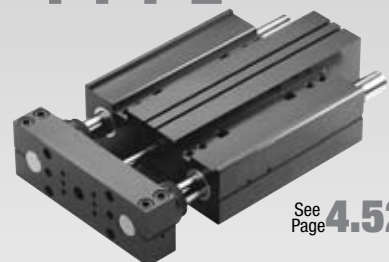
See Page 4.50



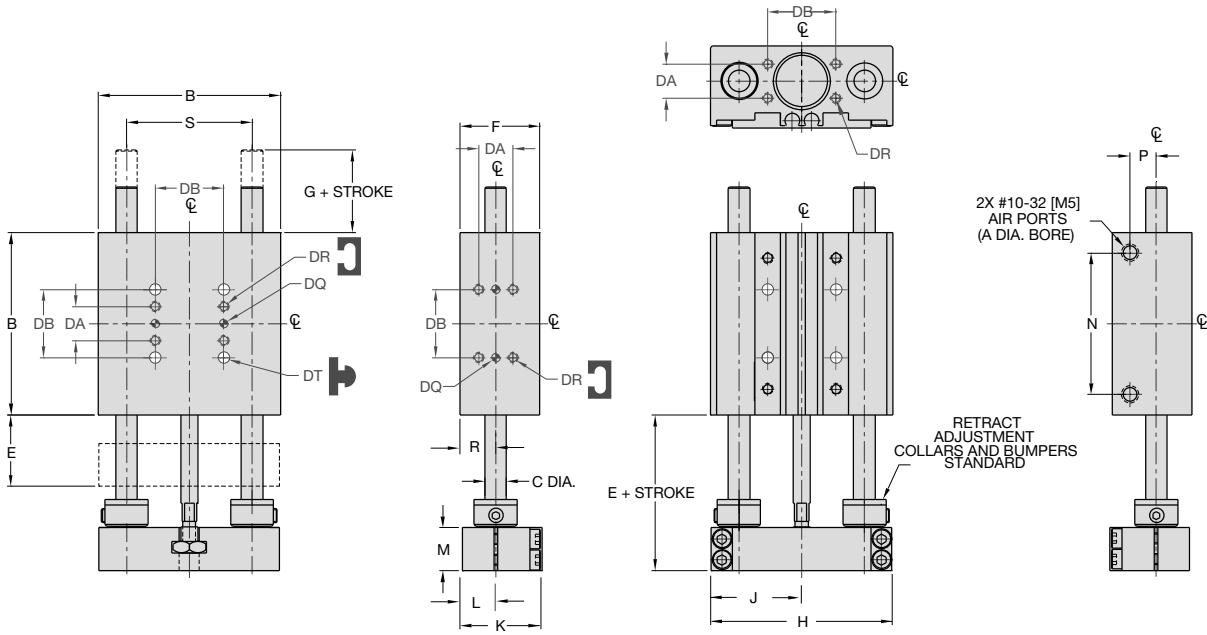
Style-L Long Body Thruster

Size -20M (shown)
-25M

See Page 4.52



SHORT BODY THRUSTER DLT-06M, 08M -E BUILT-IN REPAIRABLE CYLINDER



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]

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

BASIC UNIT DIMENSIONS

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 BEARING VITON® SEALS

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

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

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

Accessories: (Order Separately)

SHOCK/STOP ACCESSORIES

Accessory	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†

Accessory	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**

Accessory	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

Accessory	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

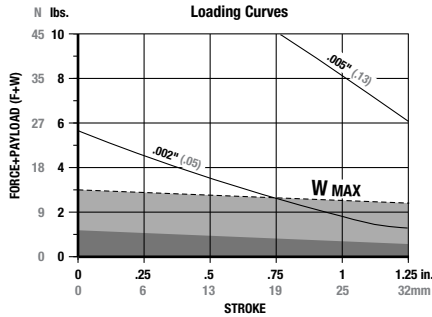
*Requires Universal Mounting Kit †Sensor and cable sold separately **Piston magnet standard



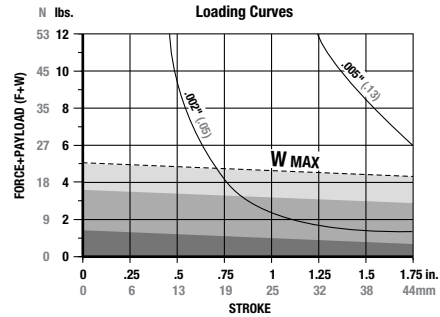
SHORT BODY THRUSTER DLT -06M, 08M -E BUILT-IN REPAIRABLE CYLINDER



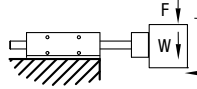
DLT-06M-E



DLT-08M-E



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

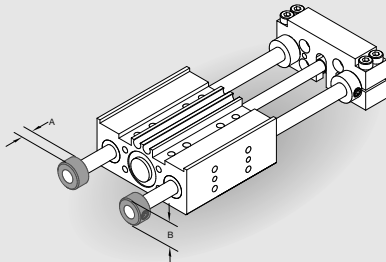
Use **Double Shocks** in both directions Use **Single Shock** in both directions Use **Bumpers or Cushioned Cylinder**

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

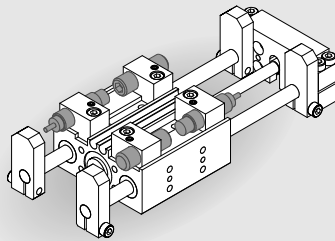
Specifications	DLT-08	DLT-08M
Maximum Air Pressure	100 psi	7 bar
Thrust Force @ 80psi/5.5 bar.....	20 lbs.	89 N
Weight (Basic Unit).....	0.65 lbs.	0.30 kg
Cylinder Bore Diameter.....	0.563"	14.3 mm
Shaft Diameter.....	0.315"	8 mm
Max (M) Vertical Motion.....	10 in.-lbs.	1.1 N-m

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)

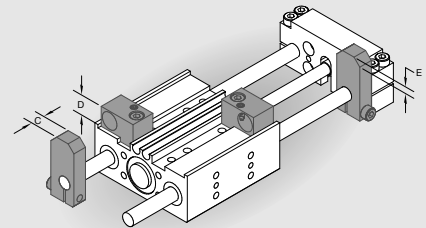


Adjustable Hard Stops

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

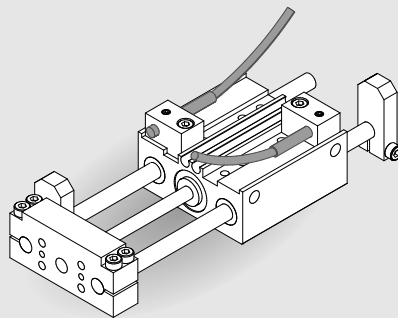
Shock Absorbers

- 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

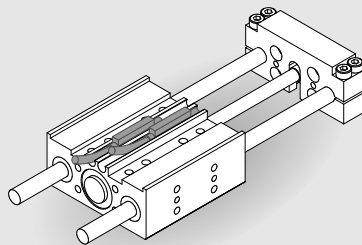


Inductive Proximity Sensors

- 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

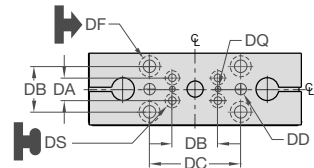
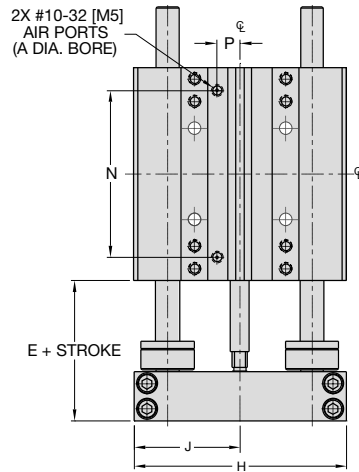
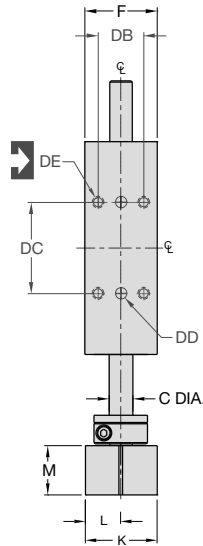
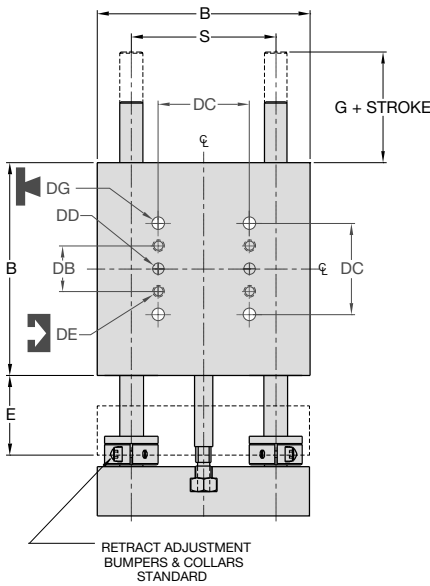
	A	B	C	D	E
DLT-06	.236"	.470	.250	.310	.270
DLT-08	.236"	.630	.250	.310	.270
DLT-06M	6mm	12.0	6.4	7.9	6.9
DLT-08M	6mm	16.0	6.4	7.9	6.9

DLT SERIES

4.43

DIRECTCONNECT™

SHORT BODY THRUSTER DLT -10M, 12M, 16M -E BUILT-IN REPAIRABLE CYLINDER



UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

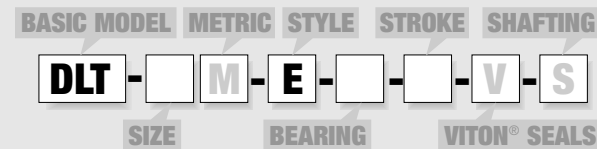
Dimensions are symmetrical about centerline	Third Angle Projection	All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or (±.013mm)
	Imperial in.	Metric [mm]
Metric Threads Course Pitch	0.00 = ±.01 0.000 = ±.005 0.0000 = ±.0005	[0.] = [±.25] [0.0] = [±.13] [0.00] = [±.013]

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

MODEL #	BORE DIA.		BODY SIZE		SHAFT SIZE									
	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

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

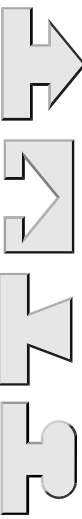
1/8 NPT Telescopic Airlines (up to 2")	OTAL-037	OTAL-037	OTAL-037	1,2,3 or 4
1/8 NPT Telescopic Airlines (up to 3")	OTAL-038	OTAL-038	OTAL-038	1,2,3 or 4
#10-32 Adjustable Flow Control	VLVF-007	VLVF-007	VLVF-007	1 or 2
G1/8 Telescopic Airlines (up to 50mm)	OTAL-043	OTAL-043	OTAL-043	1,2,3 or 4
G1/8 Telescopic 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 4.44 DIRECTCONNECT™



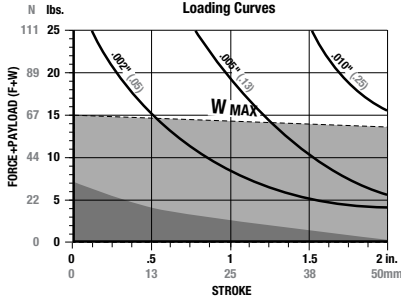
SHORT BODY THRUSTER DLT-10M, 12M, 16M - BUILT-IN REPAIRABLE CYLINDER



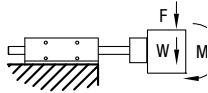
DLT SERIES
4.45

DIRECTCONNECT™

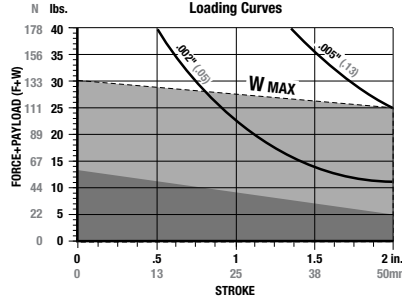
DLT-10M-E



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



DLT-12M-E



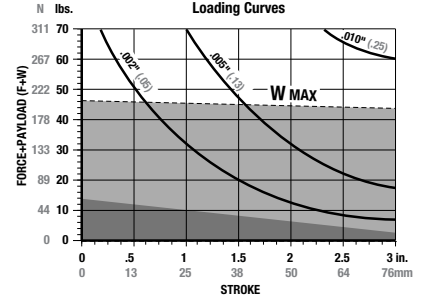
Shock Absorbers and Flow Controls are recommended for nearly all applications

(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.

DLT-16M-E

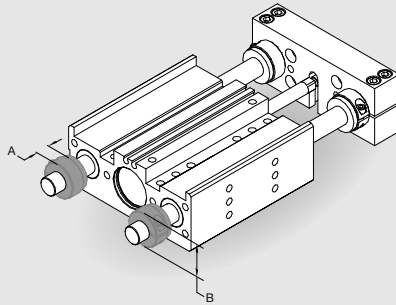


Specifications	DLT-10	DLT-10M
Maximum Air Pressure.....	100 psi	6.9 bar
Thrust Force @ 80psi/5.5bar .	35 lbs.	155 N
Weight (Basic Unit)	1.87 lbs.	.84 kg
Additional Weight per Stroke ..	0.08 lbs./in.	1.5g/mm
Cylinder Bore Diameter	3/4"	19mm
Shaft Diameter	0.375"	9.5mm

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

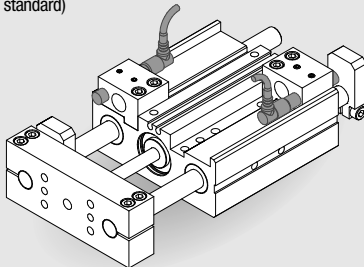
Specifications	DLT-16	DLT-16M
Maximum Air Pressure.....	100 psi	6.9 bar
Thrust Force @ 80psi/5.5bar .	62 lbs.	275 N
Weight (Basic Unit)	4.56 lbs.	2.07 kg
Additional Weight per Stroke ..	0.20 lbs./in.	3.5g/mm
Cylinder Bore Diameter	1"	25mm
Shaft Diameter	0.630"	16mm

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)

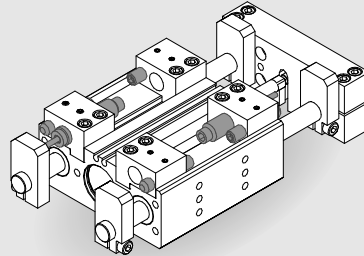


Inductive Proximity Sensors

- 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

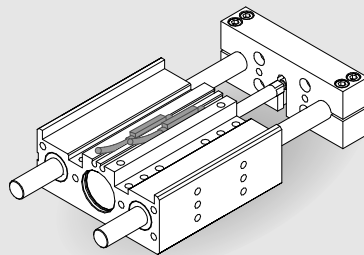


Adjustable Hard Stops

- 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

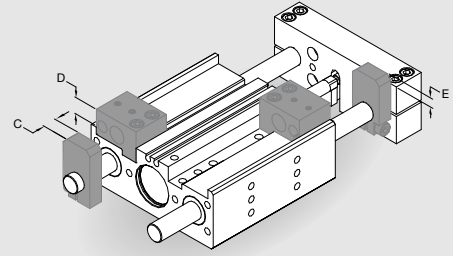


Magneto Resistive Sensors

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

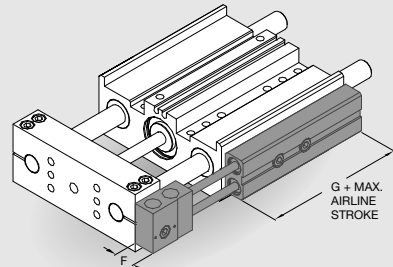
Quick Disconnect Cable

- 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

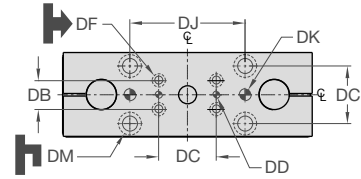
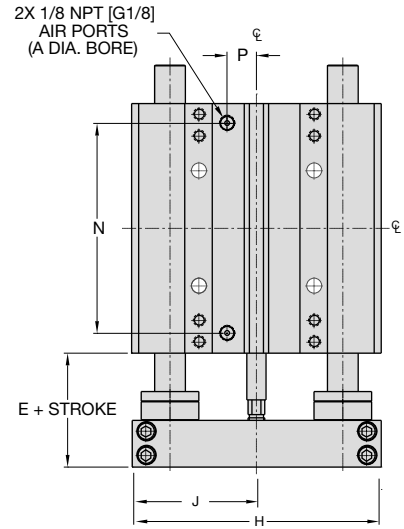
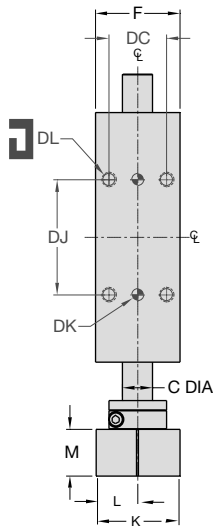
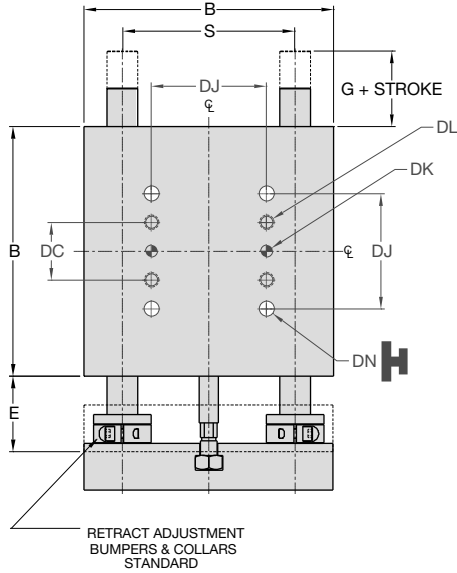


Telescoping Airlines

- 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

SHORT BODY THRUSTER DLT-20M, 25M -E BUILT-IN REPAIRABLE CYLINDER



UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

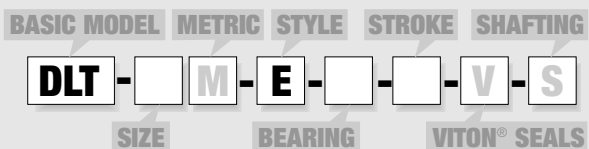
	Dimensions are symmetrical about centerline		Third Angle Projection		All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or [±.013mm]
	Metric Threads Course Pitch	Imperial in.	0.00 = ±.01 0.000 = ±.005 0.0000 = ±.0005	Metric [mm]	[0.] = [±.25] [0.0] = [±.13] [0.00] = [±.013]

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.			BASIC UNIT DIMENSIONS									
	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



- 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
- STROKE** (mm)
DLT-20M 25, 50, 75, 100
DLT-25M 25, 50, 75, 100, 125
- VITON®** V Viton® seals
- SHAFTING** S Corrosion resistant shafting

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

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

Accessories: (Order Separately)

	DLT-20M	DLT-25M	QTY/THRUSTER
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

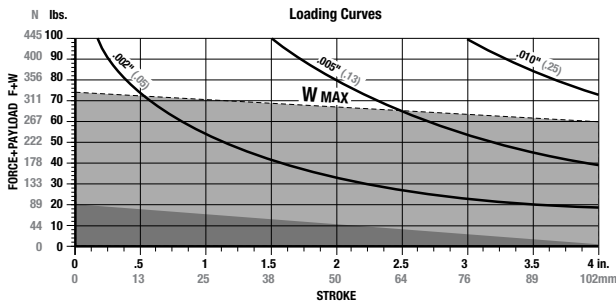
DLT SERIES 4.46 DIRECTCONNECT



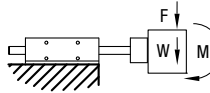
SHORT BODY THRUSTER DLT-20M, 25M -E BUILT-IN REPAIRABLE CYLINDER



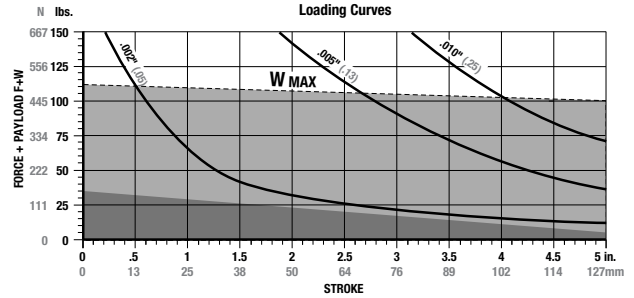
DLT-20M-E



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

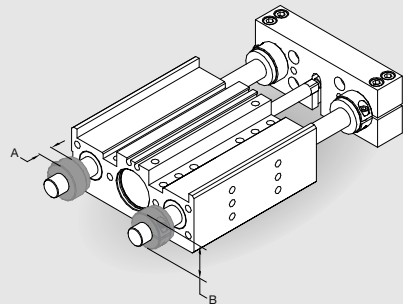
(W) in this range use **Urethane Bumpers**

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

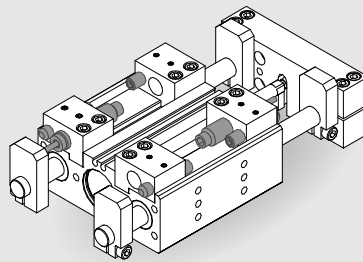
Specifications	DLT-25	DLT-25M
Maximum Air Pressure	100 psi	6.9 bar
Thrust Force @ 80psi/5.5bar	140 lbs.	622 N
Weight (Basic Unit)	16.4 lbs.	7.42 kg
Additional Weight per Stroke	0.47 lbs./in.	8.4g/mm
Cylinder Bore Diameter	1-1/2"	38mm
Shaft Diameter	0.984"	25mm

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)

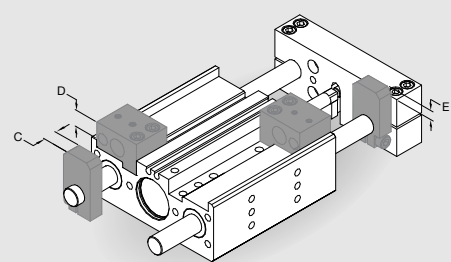


Adjustable Hard Stops

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

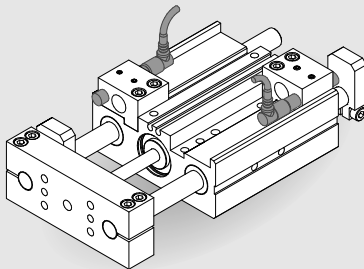
Shock Absorbers

- 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

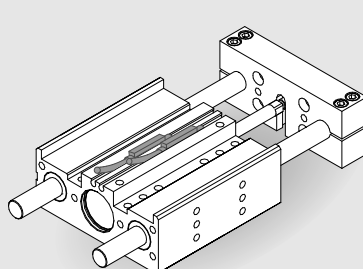


Inductive Proximity Sensors

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

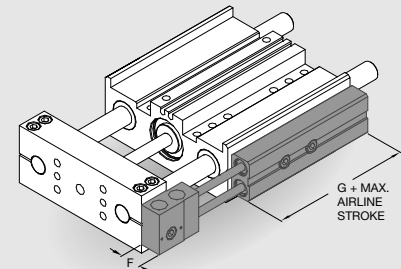
Quick Disconnect Cable

- 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

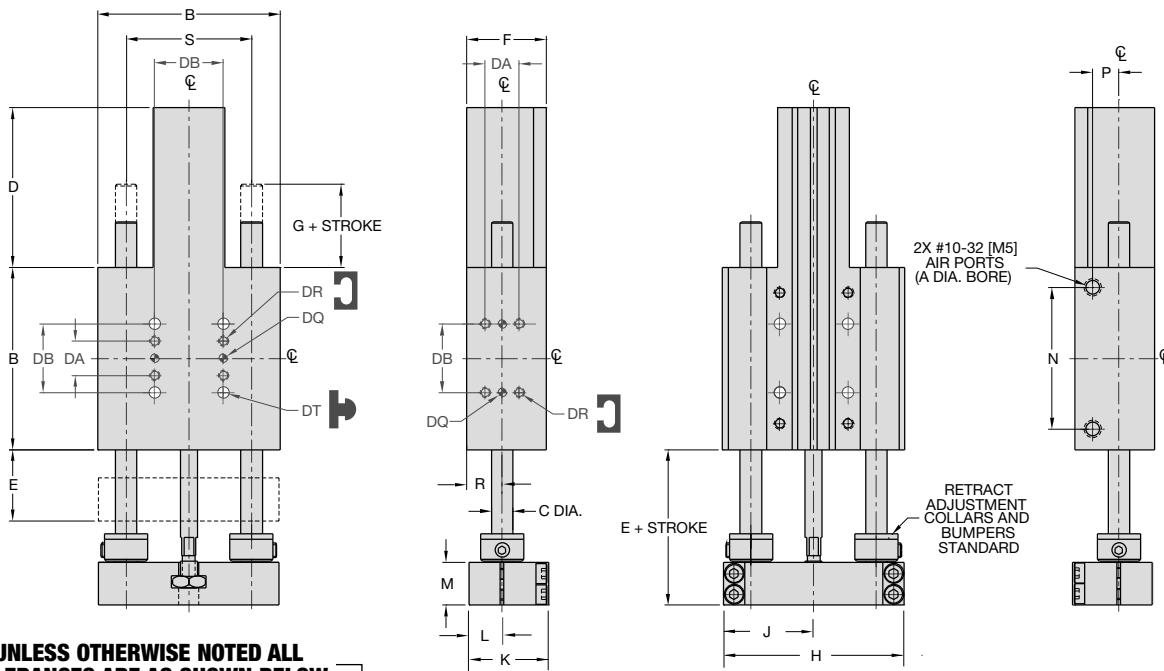
	A	B	C	D	E	F	G
DLT-20	.500"	1.50	.500	.92	.67	.577	3.60
DLT-25	.500"	1.75	.500	.92	.67	.577	3.60
DLT-20M	12.7mm	38.1	12.7	22.4	17.0	14.7	91.4
DLT-25M	12.7mm	44.5	12.7	22.4	17.0	14.7	91.4

DLT SERIES

4.47

DIRECTCONNECT™

LONG BODY THRUSTER DLT-06M, 08M -L BUILT-IN REPAIRABLE CYLINDER



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

4.48

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	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

How to Order: Basic Unit



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**

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

Custom strokes available.
Please consult factory.

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

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

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

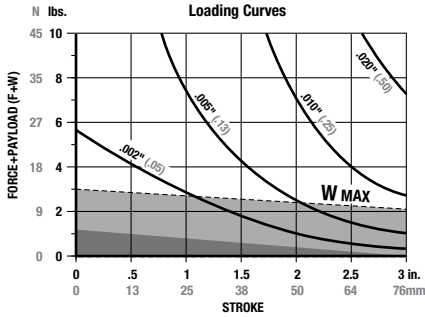
DIRECTCONNECT™



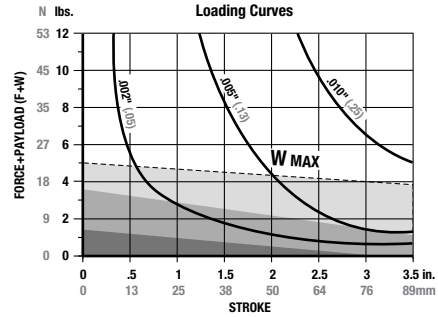
LONG BODY THRUSTER DLT -06M, 08M -L BUILT-IN REPAIRABLE CYLINDER



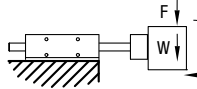
DLT-06M-L



DLT-08M-L



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

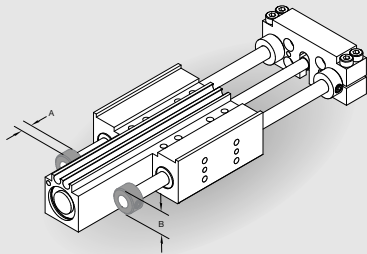
Use **Double Shocks** in both directions Use **Single Shock** in both directions Use **Bumpers or Cushioned Cylinder**

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

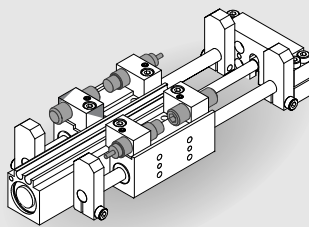
Specifications	DLT-08	DLT-08M
Maximum Air Pressure	100 psi	7 bar
Thrust Force @ 80psi/5.5bar	20 lbs.	89 N
Weight (Basic Unit)	0.96 lbs.	0.44 kg
Cylinder Bore Diameter	0.563"	14.3 mm
Shaft Diameter	0.315"	8.0 mm
Max (M) Vertical Motion	10 in.-lbs.	1.3 N-m

Accessory Mounting Technical Data



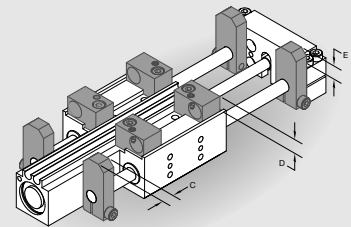
Urethane Bumpers & Clamp Collars

- 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)



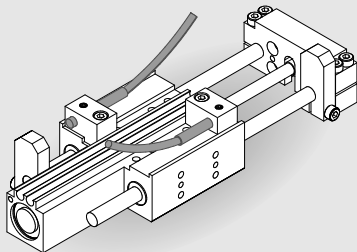
Adjustable Hard Stops

- 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

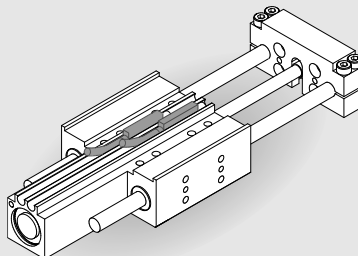


Inductive Proximity Sensors

- 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

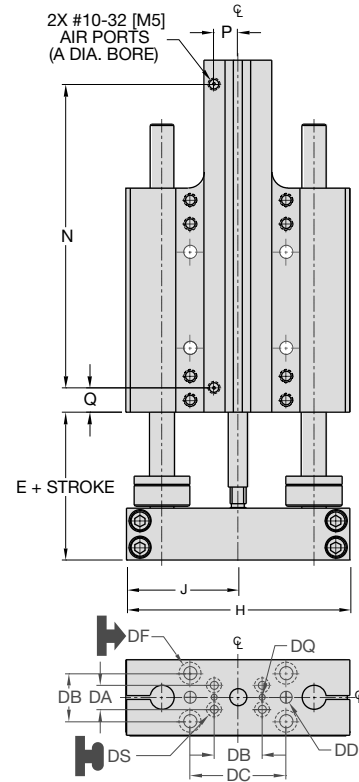
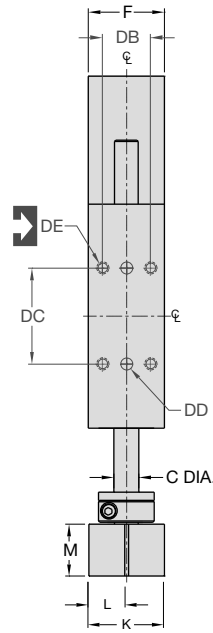
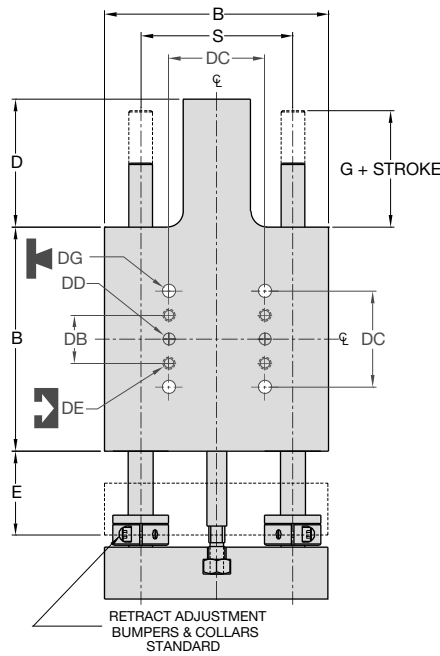
Quick Disconnect Cable

- 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



LONG BODY THRUSTER DLT -10M, 12M, 16M -L BUILT-IN REPAIRABLE CYLINDER



UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

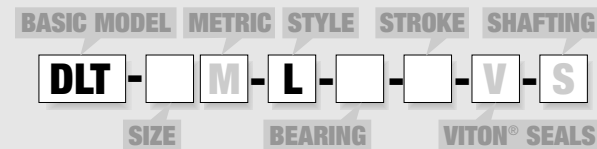
	Dimensions are symmetrical about centerline		Third Angle Projection		All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or [±.013mm]
	Metric Threads Course Pitch	Imperial in.	Metric [mm]		
		0.00 = ±.01	[0.] = [±.25]		
		0.000 = ±.005	[0.0] = [±.13]		
		0.0000 = ±.0005	[0.00] = [±.013]		

DIRECTCONNECT DIMENSIONS STANDARD MOUNTING PATTERN FOR ALL SIZES

	Imperial (inches)	Metric (mm)
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

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

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
- 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

Custom strokes available.
Please consult factory.

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

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

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

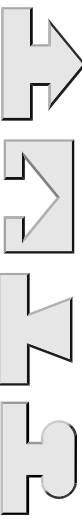
Please see back cover for DE-STA-CO Global Locations. www.destaco.com

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DLT SERIES 4.50 DIRECTCONNECT™

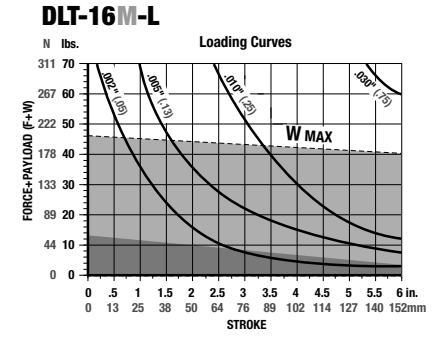
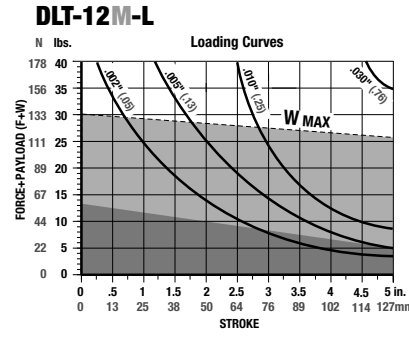
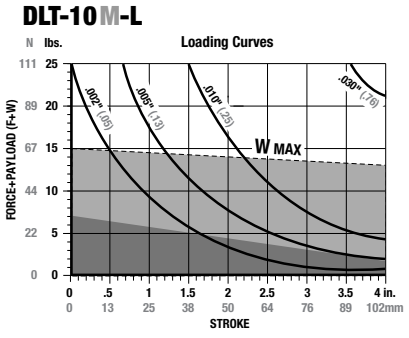


LONG BODY THRUSTER DLT-10M, 12M, 16M -L BUILT-IN REPAIRABLE CYLINDER

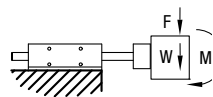


DLT SERIES
4.51

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**

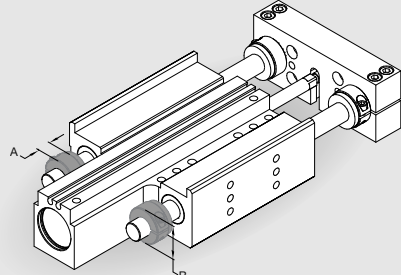
Shaded shock absorption ranges of horizontal payload (W) @ 80psi, flow controls fully open. For vertical applications do not exceed 1/2 of the recommended payload due to the additional acceleration effect of gravity.

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

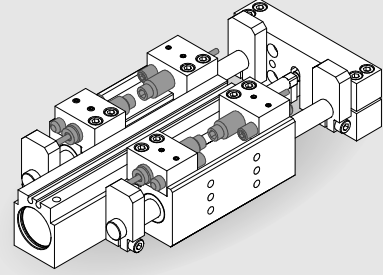
Specifications	DLT-12	DLT-12M
Maximum Air Pressure	100 psi	6.9 bar
Thrust Force @ 80psi/5.5bar	62 lbs.	275 N
Weight (Basic Unit)	3.21 lbs.	1.46 kg
Additional Weight per Stroke	0.12 lbs./in. 2.2g/mm	
Cylinder Bore Diameter	1"	25mm
Shaft Diameter	0.472"	12mm

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

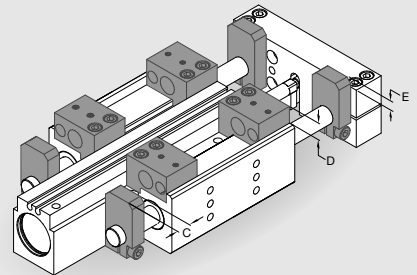
Accessory Mounting Technical Data



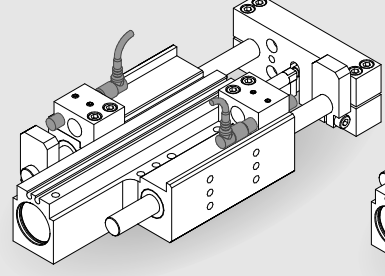
- ### Urethane Bumpers & Clamp Collars
- Urethane Bumpers for shock absorption and noise dampening
 - Adjustable Clamp Collars for end of stroke position adjustment
 - Kit contains (2) Collars and (2) Shock Pads for adjustment of travel in one direction
 - (1) Kit required for extend (kit for retract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



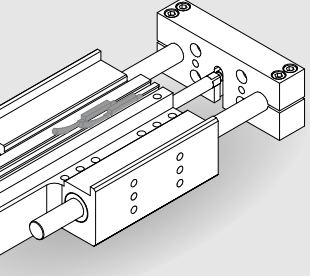
- ### Adjustable Hard Stops
- For precision (+/- .001") end point positioning
 - Allows for end stop position adjustment independent of shock absorber hard stop
 - Allen wrench adjustable
- ### Shock Absorbers
- Full stroking piston rod
 - Built-in hard stop
 - Allen wrench adjustable



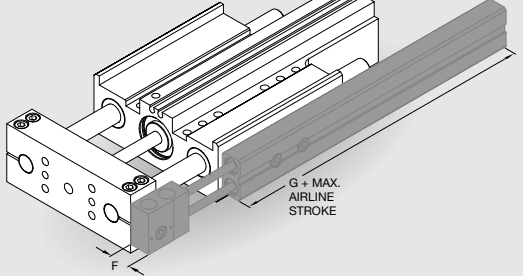
- ### Universal Mounting Kit
- Kit mounts (1) Shock Absorber and (1) Inductive Proximity Sensor or (1) Shock and (1) Adjustable Hard Stop
 - Kit includes (1) Mounting Bracket, (1) Hardened Tool Steel Target and Hardware
 - Target allows for unlimited stroke adjustment. Fine adjustment is achieved using 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

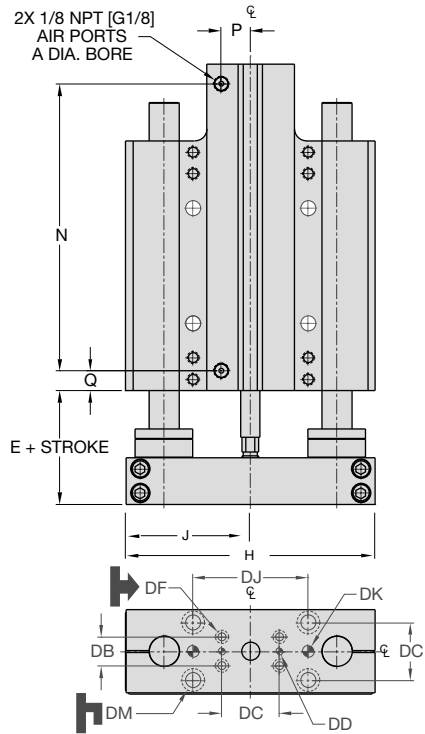
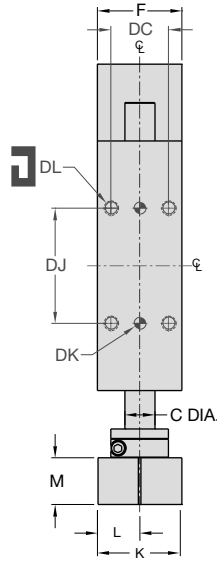
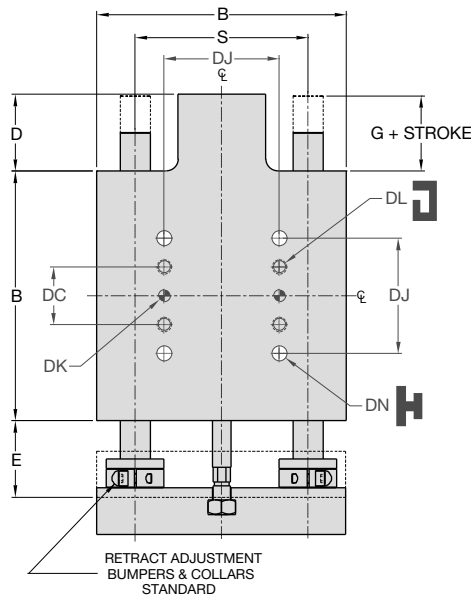
- ### Quick Disconnect Cable
- Threaded coupling with knurled head for secure electrical connections
 - 2 meter cable length
 - 5 meter cable length

	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

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

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LONG BODY THRUSTER DLT-20M, 25M -L BUILT-IN REPAIRABLE CYLINDER



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	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	

How to Order: Basic Unit

BASIC MODEL METRIC STYLE STROKE SHAFTING

DLT - **M** - **L** - **V** - **S**

SIZE **BEARING** **VITON® SEALS**

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

DIRECTCONNECT™

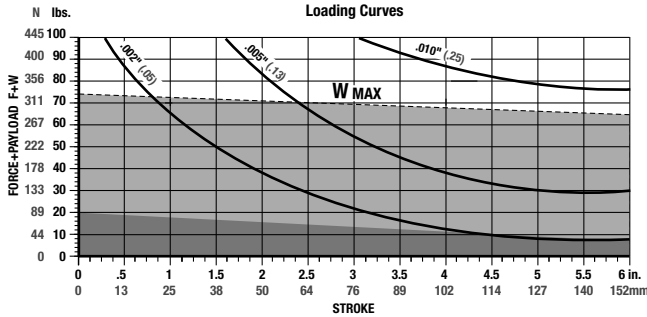
DLT SERIES
4.52



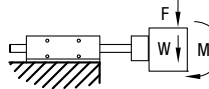
LONG BODY THRUSTER DLT -20M, 25M -L BUILT-IN REPAIRABLE CYLINDER



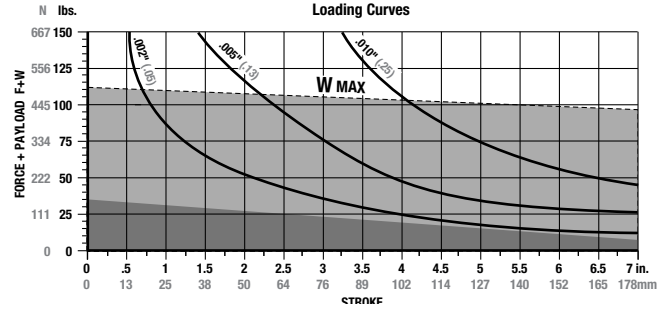
DLT-20M-L



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

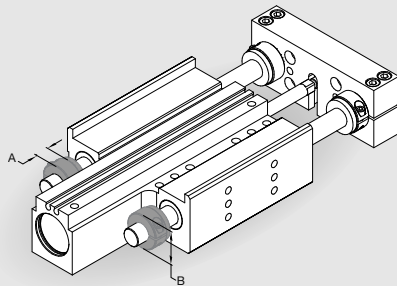
(W) in this range use **Urethane Bumpers**

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

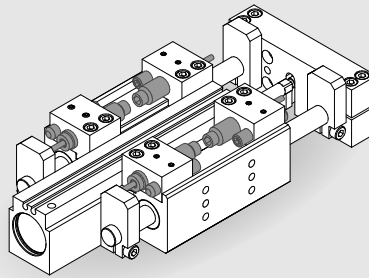
Specifications	DLT-25	DLT-25M
Maximum Air Pressure	100 psi	6.9 bar
Thrust Force @ 80psi/5.5bar	140 lbs.	622 N
Weight (Basic Unit)	17.4 lbs.	7.9 kg
Additional Weight per Stroke	0.47 lbs./in.	8.4g/mm
Cylinder Bore Diameter	1-1/2"	38mm
Shaft Diameter	0.984"	25mm

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)

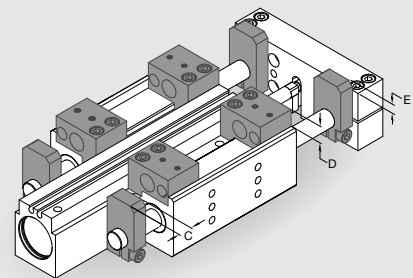


Adjustable Hard Stops

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

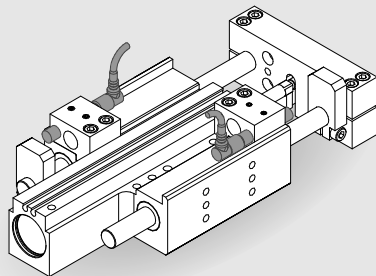
Shock Absorbers

- 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

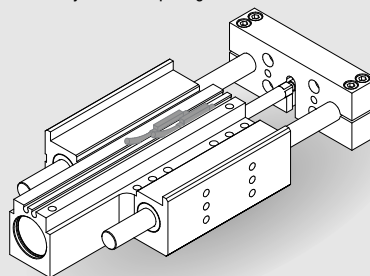


Inductive Proximity Sensors

- 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

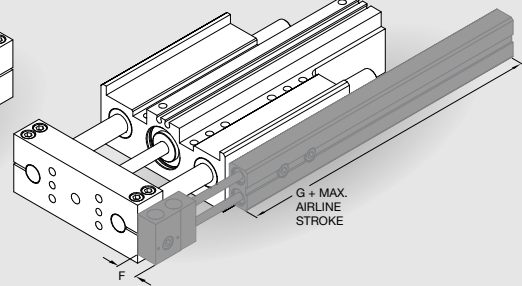


Magneto Resistive Sensors

- 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

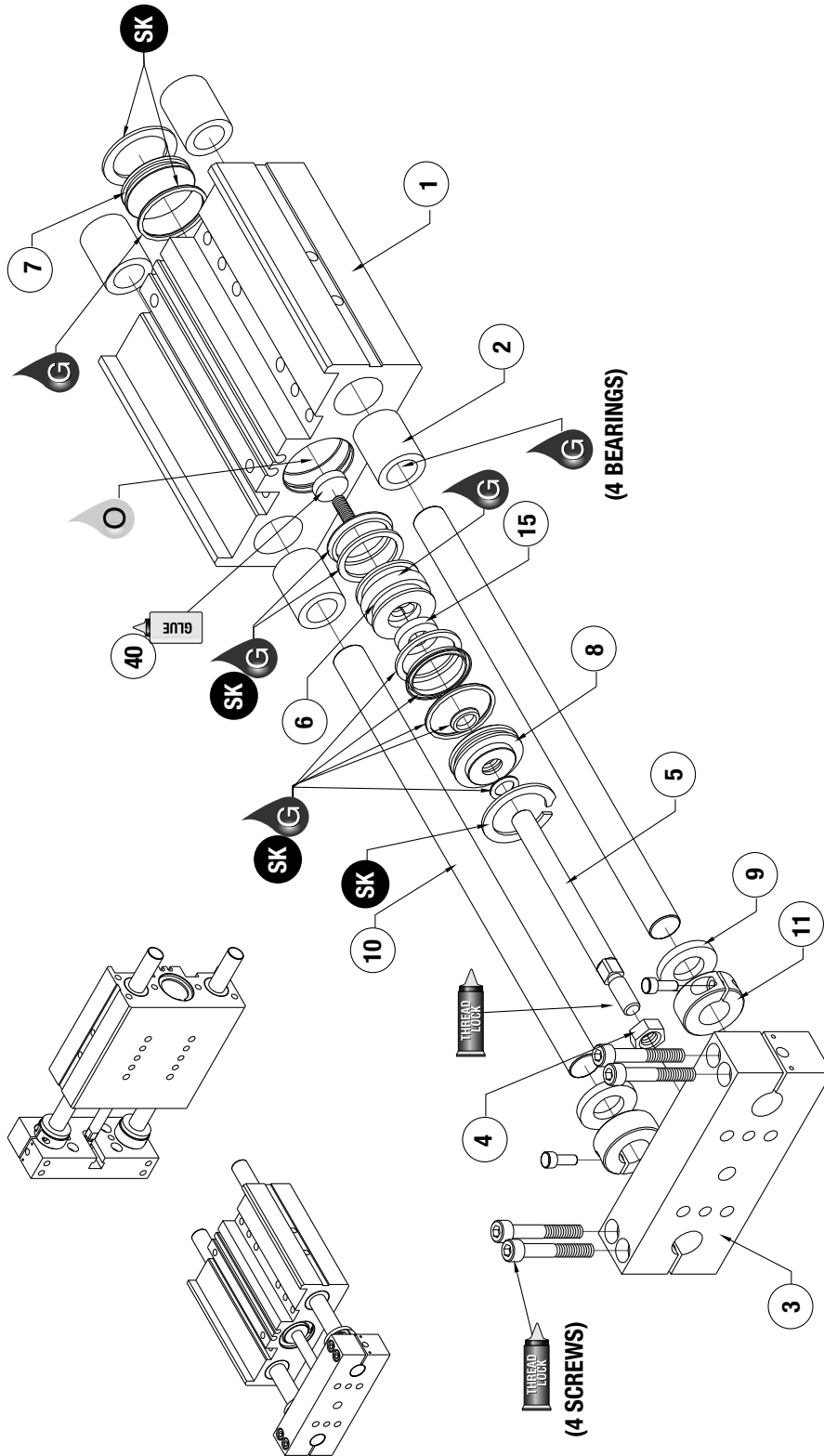
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DIRECTCONNECT™

DLT-B, E, L Series Exploded View



A J ROBEY COMPANY



Item Qty Name

Item	Qty	Name
01	1	Body
02	4	Bushing
03	1	Tooling Plate
04	1	Nut, Stover
05	1	Piston Rod
06	1	Piston
07	1	Cap, Plug End
08	1	Cap, Rod End
09	2	Shock Pad,Urethane
10	1	Guide Shaft
11	2	Collar, Split
15	1	Shock Pad, Urethane
40	1	Magnet

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

Assembly Procedure

- 1) Lubricate and install seals.
- 2) Attach piston to piston shaft.
- 3) Install magnet on piston.
- 4) Install plug endcap and retaining ring into body.
- 5) Attach piston, piston shaft, and rod end cap to body and install retainer ring.
- 6) Install bearings and shafts into body.
- 7) Attach shock pads and clamp collars to rod end of shafts.
- 8) Install tool plate on rod end of shafts, and attach cylinder rod to plate.
- 9) Adjust clamp collars and fasten them in desired position.

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

DLT-B, E, L
SERIES
MAINTENANCE

4.54



Seal Kit Items



Thread Locker



Krytox™ Lubricant



Lightweight Machine Oil



Teflon® Based Grease



Super Bonder



Third Angle Projection

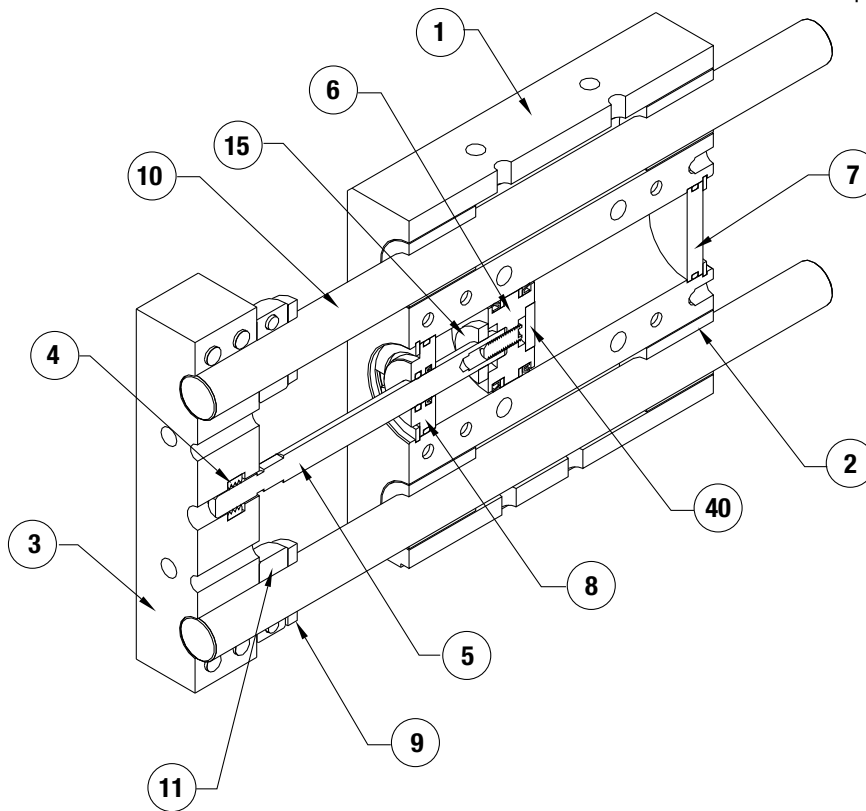
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Item	Qty	Name
01	1	Body
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40	1	Magnet

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

NOTE: For accessory mounting, see product data sheets



DLT-B, E, L
SERIES
MAINTENANCE
4.55

<p>SK Seal Kit Items</p>	<p>THREAD LOCK Thread Locker</p>	<p>KRYTOX Lubricant</p>	<p>Lightweight Machine Oil</p>	<p>Teflon® Based Grease</p>	<p>GLUE Super Bonder</p>	<p>Third Angle Projection</p>
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