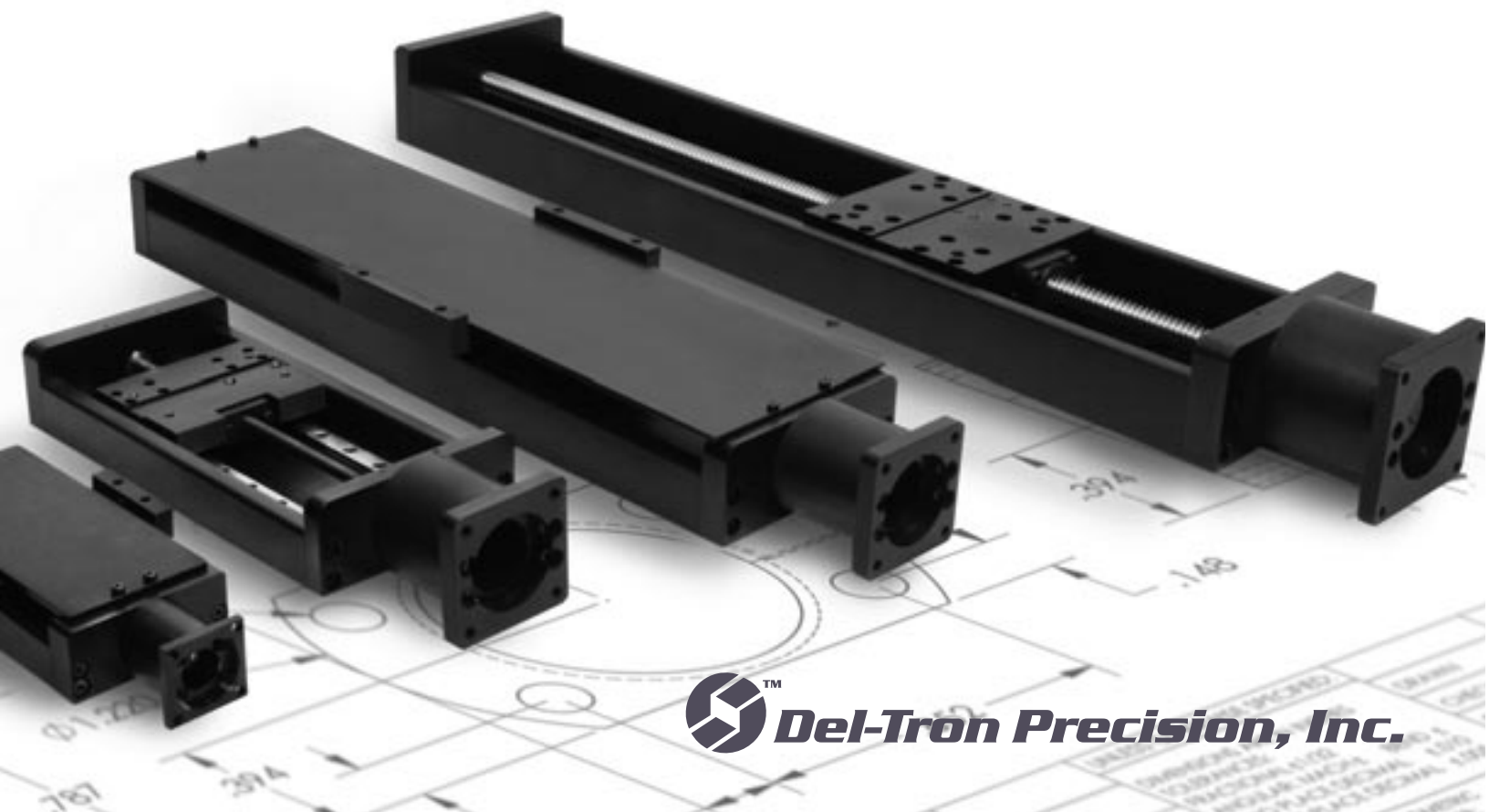


# Precision Linear Motion Components

## DL Series **Linear Actuators**

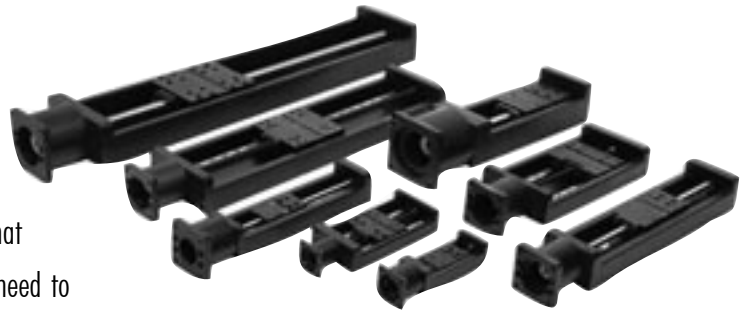
Ball and Lead Screw Actuated Stages



 **Del-Tron Precision, Inc.**

# DL / DL DW SERIES

Del-Tron DL series linear actuators offer the benefits of a space-saving design, fast and simple assembly, long life, and a competitive price. The rigid enclosed aluminum box structure provides a compact envelope that incorporates the linear bearing and drive mechanism. Integrating all components into a single unit that includes the motor mount, saves assembly time and eliminates the need to source additional parts. Del-Tron's DL linear actuators are competitively priced and will outlast unsupported and unenclosed bearing drive assemblies.



Del-Tron's integrated design offers low friction and high accuracy in a compact, lightweight package. DL series linear actuators are available in travel lengths up to 410 millimeters. They feature an integrated anti-friction slide or slides and are actuated with a ball screw or Teflon coated lead screw drive mechanism. These integrated recirculating slide guides provide friction-free movement and have a coefficient of friction of only 0.01. Our DW series (double wide) is engineered to create a wider mounting platform while still maintaining the same low profile height as our standard width DL actuators. This double wide design is ideal for applications that need a greater carriage mounting area or where axial play must be minimized.

The anti-backlash lead screw nut is spring-loaded to ensure positive movement when changing direction. The units offer straight-line accuracy of less than 2 microns and repeatability of less than 1 micron. They deliver 254 million mm of travel at their full load rating.

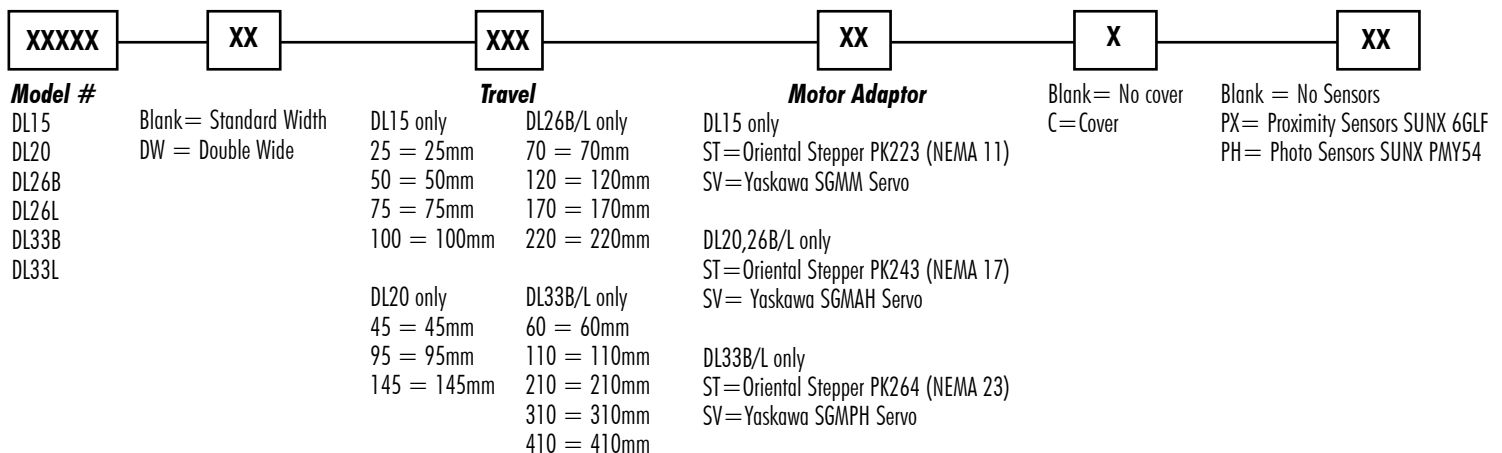
Options for Del-Tron DL series linear actuators include an Oriental PK223, PK243 or PK264 stepper motor, or a Yaskawa SGMM, SGMAH or SGMPH servomotor. Mounts are available for other styles of motors. Photoelectric or proximity position sensors are available. An anti-dust containment cover protects moving components while also preventing particulate emissions. Load capacities range from 150 newtons to 900 newtons.

Del-Tron can provide special leads, diameters, couplings, motor mounts, and vary the size, type and travel of slides on request. Del-Tron's website offers access to 3D CAD drawings which may be downloaded into the user's CAD system in a number of native CAD formats. Life and moment load calculators are also available to determine the suitability of a particular linear bearing for the intended application.

# DL Specifications

	<b>DL15/DL15DW</b>	<b>DL20/DL20DW</b>	<b>DL26B/DL26BDW</b>	<b>DL26L/DL26LDW</b>	<b>DL33B/DL33BDW</b>	<b>DL33L/DL33LDW</b>
<b>Drive:</b>	Teflon Coated lead screw 3.17mm dia with 1mm lead	Teflon Coated lead screw 4.8mm dia with 1mm lead	Ball screw 6mm dia with 1mm lead	Teflon coated lead screw 6.35mm dia with 1mm lead	Ball screw 8mm dia with 5mm lead	Teflon coated lead screw 9.53mm dia with 5mm lead
<b>Motor adaptors for:</b>	Stepper: Oriental PK223 Servo: Yaskawa SGMM	Stepper: Oriental PK243 Servo: Yaskawa SGMAH	Stepper: Oriental PK243 Servo: Yaskawa SGMAH	Stepper: Oriental PK243 Servo: Yaskawa SGMAH	Stepper: Oriental PK264 Servo: Yaskawa SGMPH	Stepper: Oriental PK264 Servo: Yaskawa SGMPH
<b>Coefficient of friction:</b>	0.01	0.01	0.01	0.01	0.01	0.01
<b>Life:</b>	254 million mm	254 million mm	254 million mm	254 million mm	254 million mm	254 million mm
<b>Travel:</b>	25, 50, 75 and 100mm	45, 95, and 145mm	70, 120, 170 and 220mm	70, 120, 170 and 220mm	60, 110, 210, 310 and 410mm	60, 110, 210, 310 and 410mm
<b>Anti-friction slide:</b>	Recirculating Slide Guide	Recirculating Slide Guide	Recirculating Slide Guide	Recirculating Slide Guide	Recirculating Slide Guide	Recirculating Slide Guide
<b>Load Capacity:</b>	150 Newtons	200 Newtons	600 Newtons	300 Newtons	900 Newtons	400 Newtons
<b>Positional Repeatability:</b>	4µm	4µm	10µm	4µm	10µm	4µm
<b>Positioning Accuracy:</b>	50µm	50µm	90µm	50µm	100µm	50µm
<b>Running Parallelism:</b>	10µm	15µm	25µm	25µm	25µm	15µm
<b>Backlash:</b>	zero	zero	20µm	zero	20µm	zero
<b>Linear Speed:</b>	100mm/sec	100mm/sec	200mm/sec	100mm/sec	200mm/sec	100mm/sec
<b>Finish:</b>	Black Anodized	Black Anodized	Black Anodized	Black Anodized	Black Anodized	Black Anodized
<b>Materials:</b>	Aluminum base and carriage	Aluminum base and carriage	Aluminum base and carriage	Aluminum base and carriage	Aluminum base and carriage	Aluminum base and carriage
<b>Sensors:</b>	Photo or Proximity	Photo or Proximity	Photo or Proximity	Photo or Proximity	Photo or Proximity	Photo or Proximity
<b>Notes:</b>	Other leads available upon request.	Other leads available upon request. No lubrication required.	Other leads available upon request. Lubricate with grease/oil before use.	Other leads available upon request. No lubrication required.	Other leads available upon request. Lubricate with grease/oil before use.	Other leads available upon request. No lubrication required.

## Nomenclature

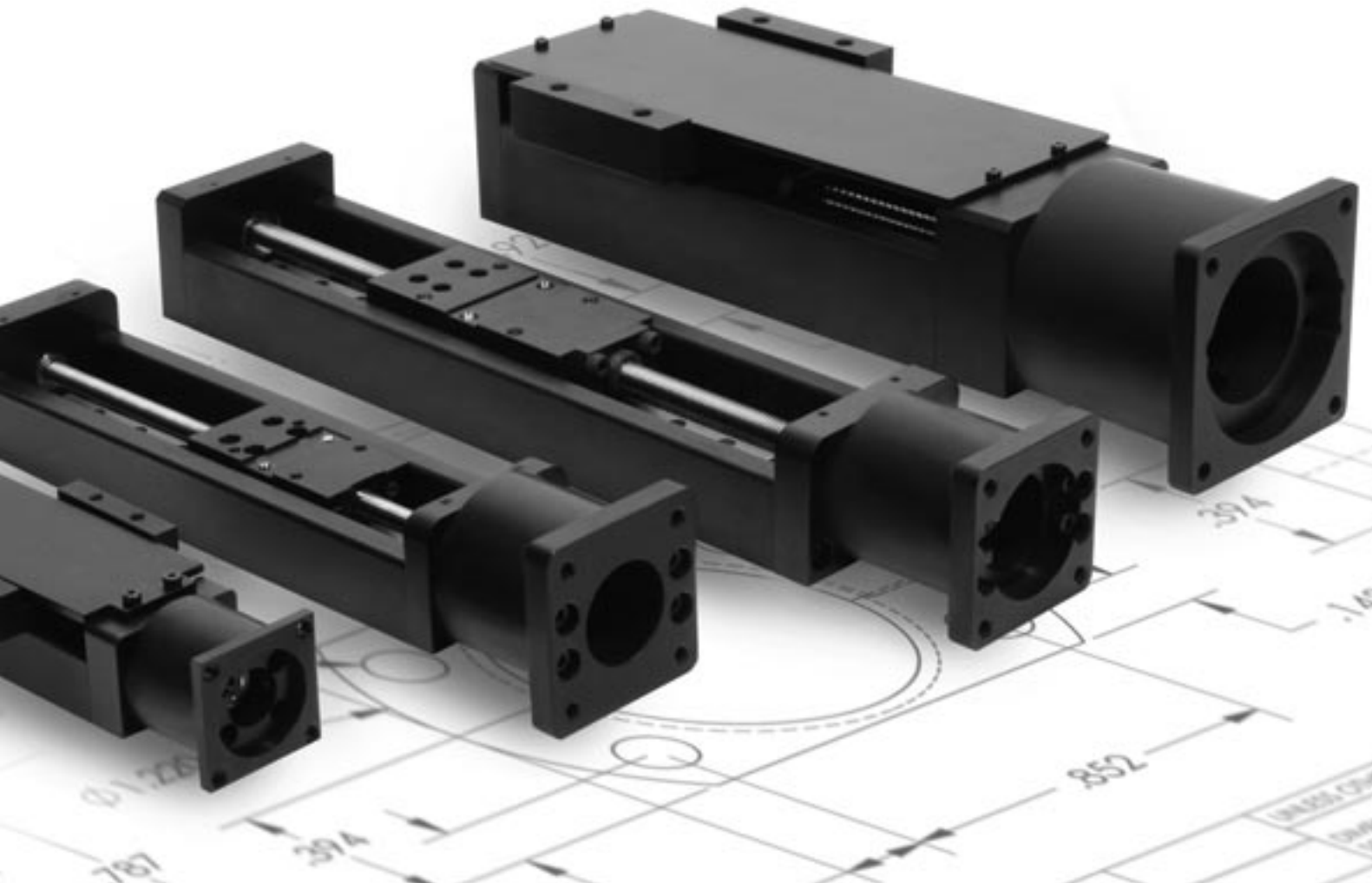


# DL Linear Actuators

Ball and Lead Screw Actuated Stages

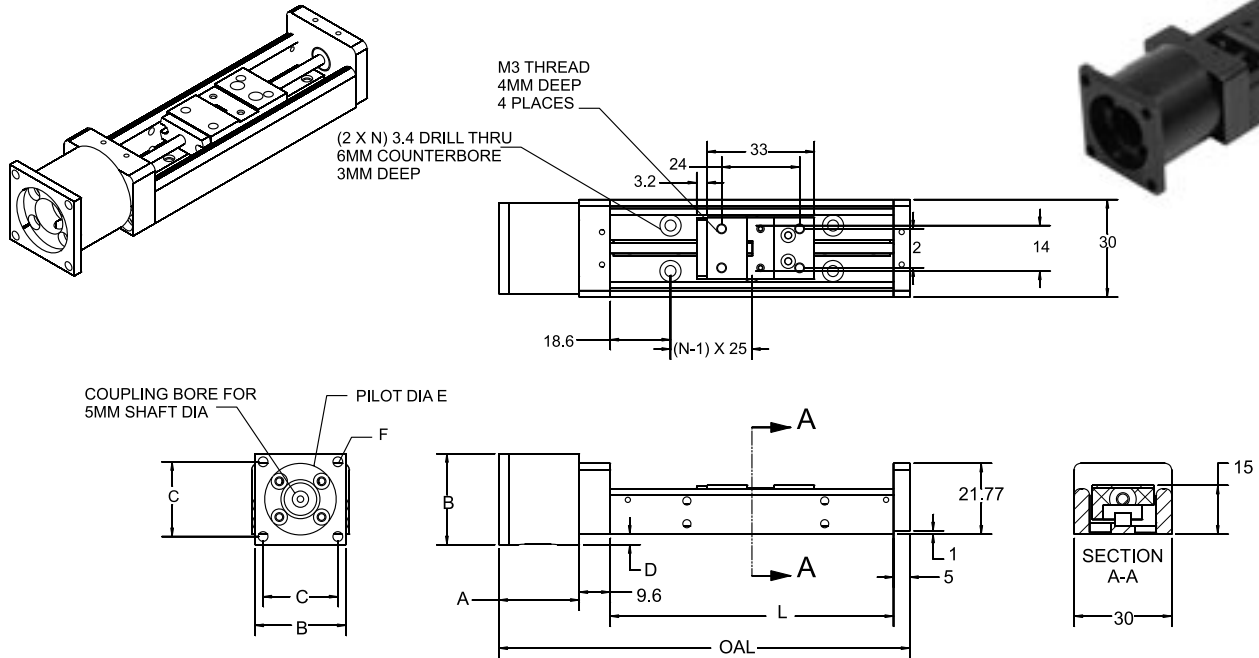
## DL Series

Compact:	Space saving design
Simple assembly:	Standard mounting holes
Low cost:	To purchase and operate
Contaminant resistant:	Enclosed, covered rigid box structure
Non corrosive:	Aluminum and Stainless steel materials

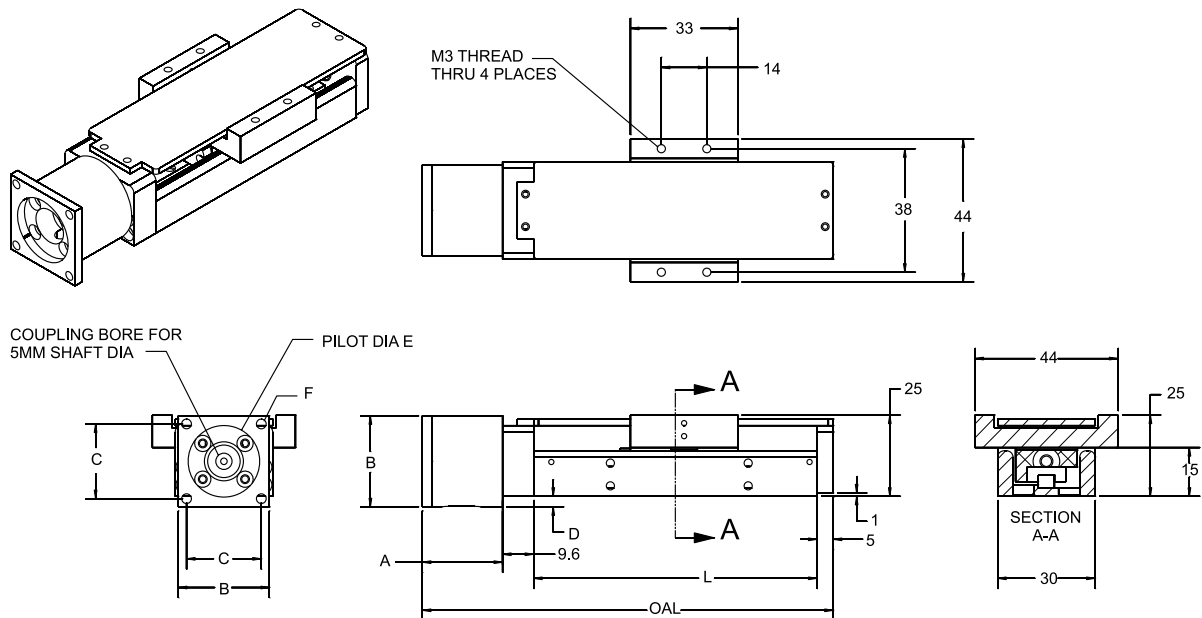


# DL 15

**DL 15** All units are in mm



## DL 15 With Cover

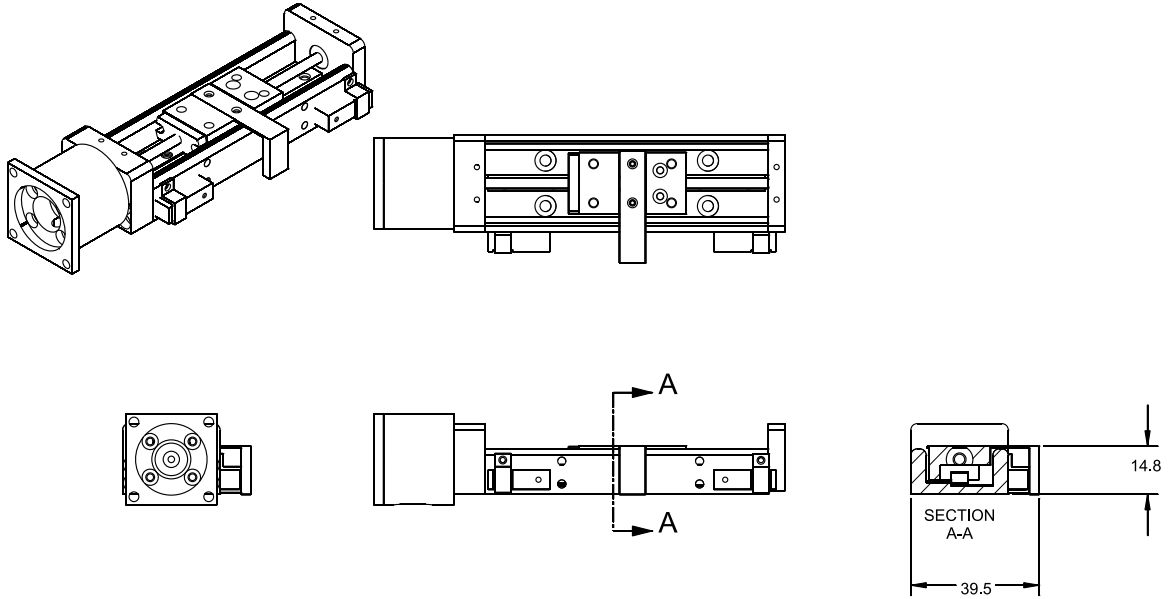


## Motor Options

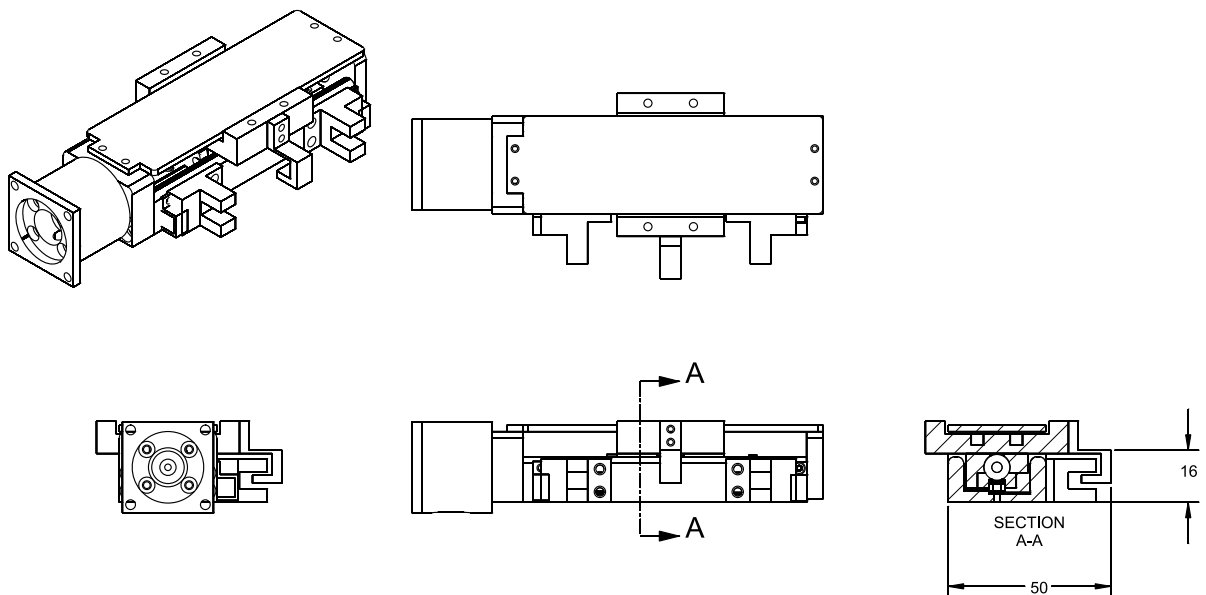
Travel	STEPPER MOTOR (ST)									SERVO MOTOR (SV)						
	OAL	L	N	A	B	C	D	E	F	OAL	A	B	C	D	E	F
25	101.2	62	2							102.2						
50	126.2	87	3	24.7	28	23	3.2	22	3 THRU	127.2	25.6	25	19.8	1.7	20	3.5 THRU
75	151.2	112	4							152.2						
100	176.2	137	5							177.2						

# DL 15 (continued)

## DL 15 With PX Proximity Sensors

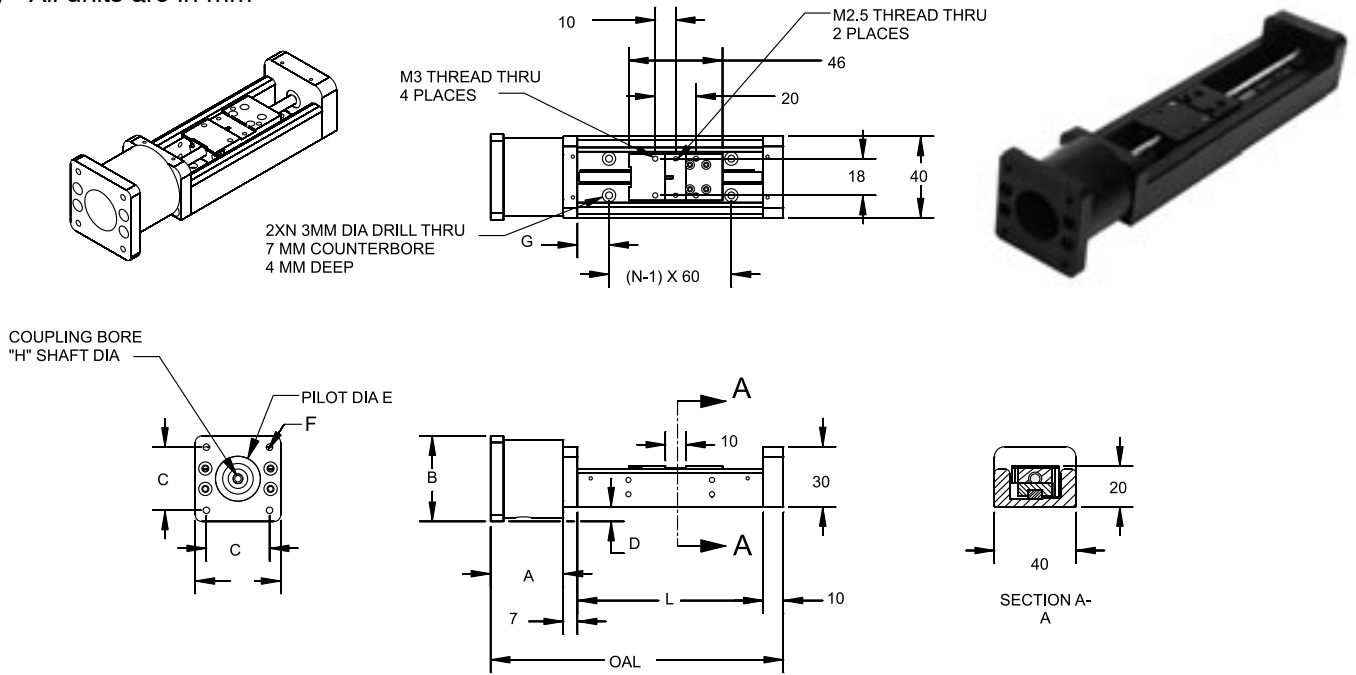


## DL 15 With PH Photo Sensors

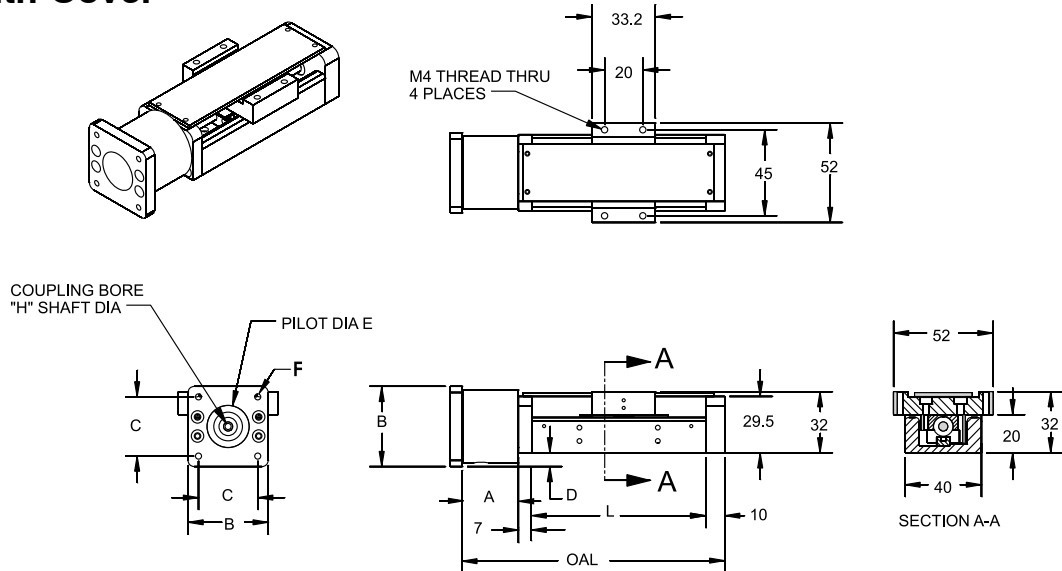


# DL 20

DL 20 All units are in mm



## DL 20 With Cover



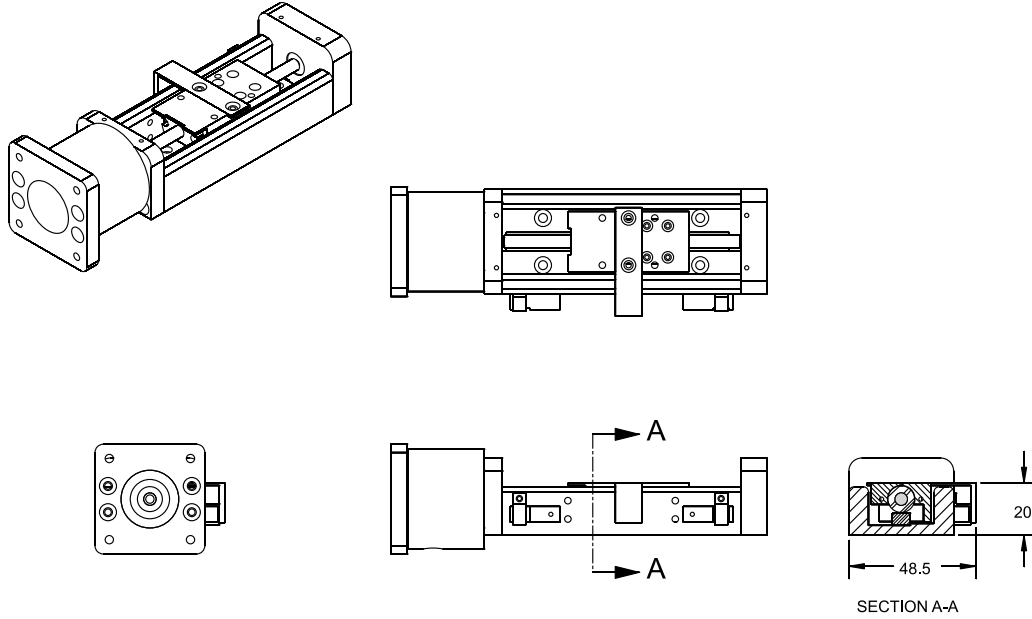
## Motor Options

STEPPER MOTOR											
Travel	OAL	L	N	G	A	B	C	D	E	F	H
45	143.7	91	2	15.5							
95	193.7	141	3	10.5	35.7	42	31	7.1	22	3.2 THRU	5
145	243.7	191	3	35.5							

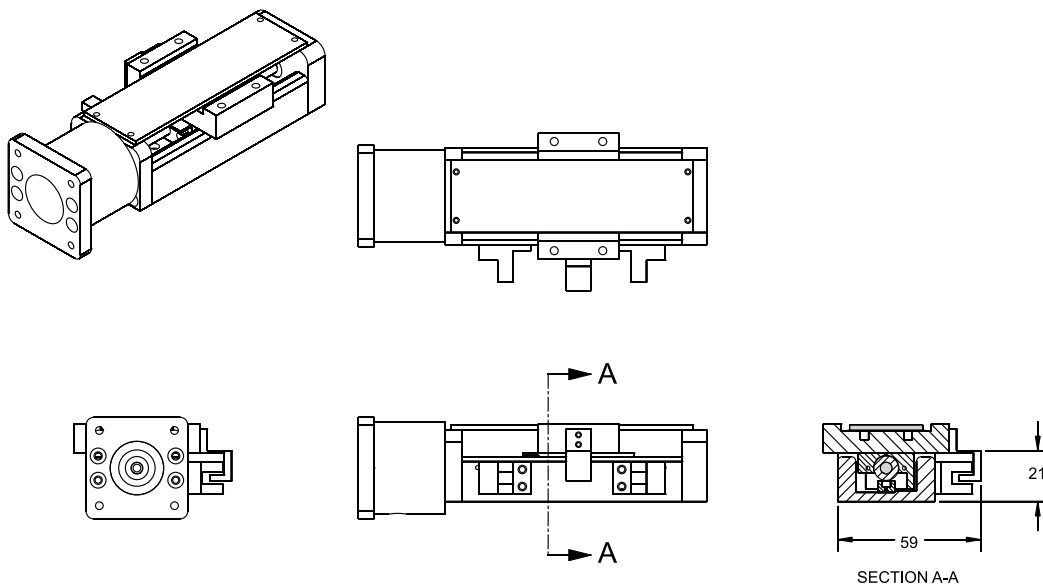
SERVO MOTOR											
Travel	OAL	L	N	G	A	B	C	D	E	F	H
45	148.8	91	2	15.5							
95	198.8	141	3	10.5	40.8	42	32.5	7.1	30	M4 THREAD	6
145	248.8	191	3	35.5							

# DL 20 (continued)

## DL 20 With PX Proximity Sensors



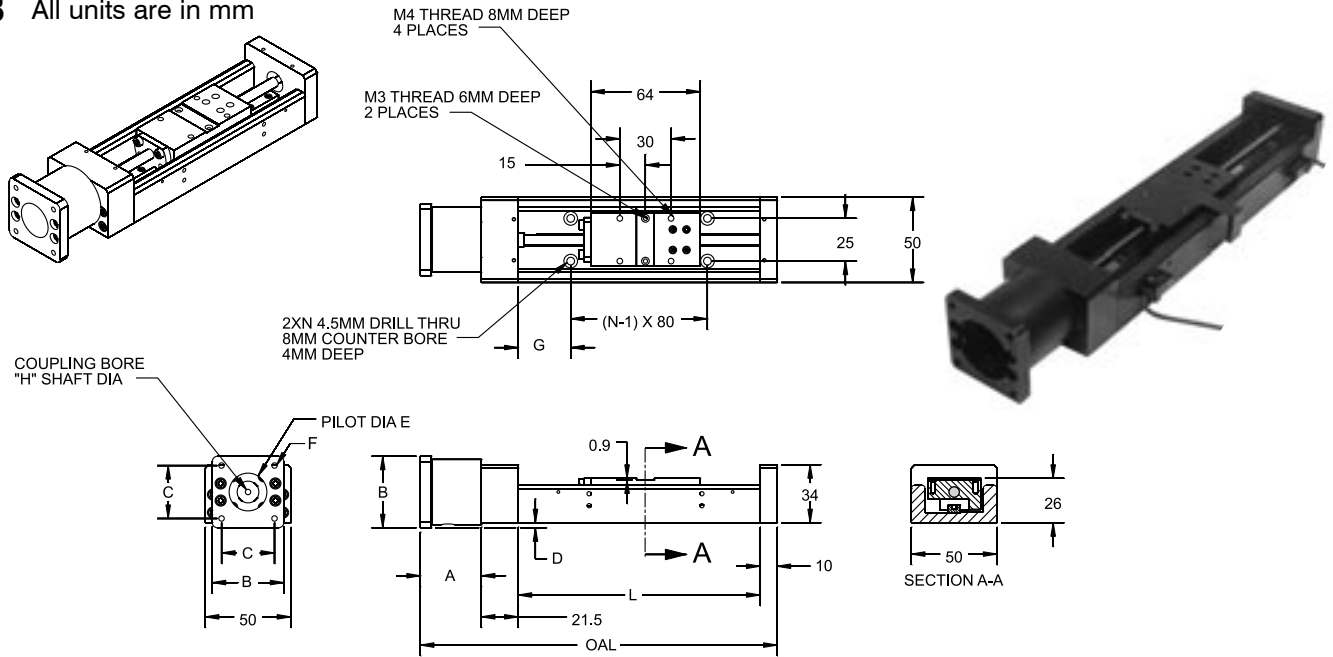
## DL 20 With PH Photo Sensors



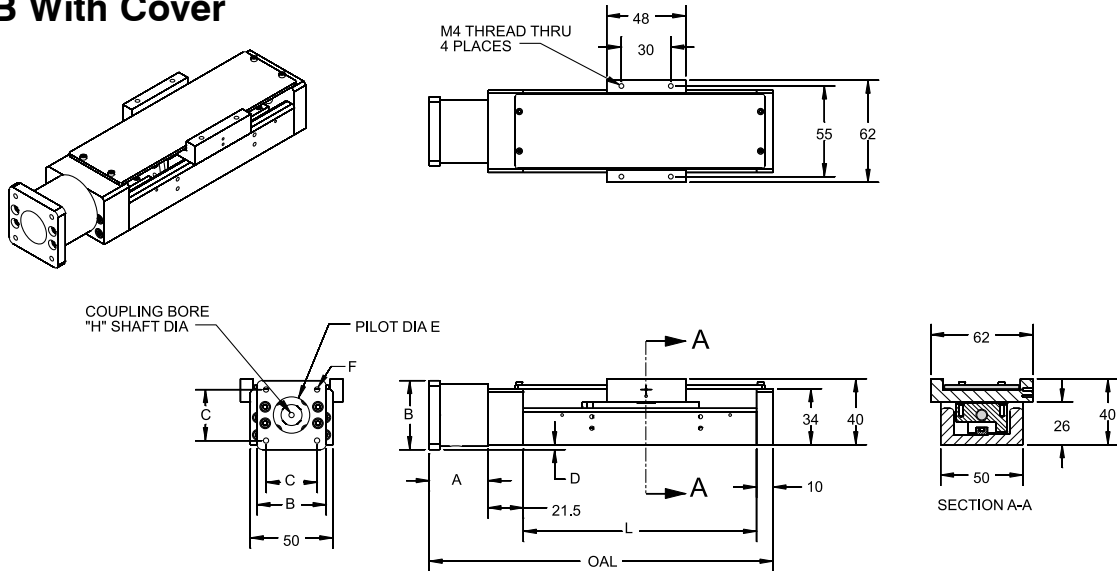


# DL 26B

**DL 26B** All units are in mm



## DL 26B With Cover



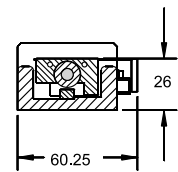
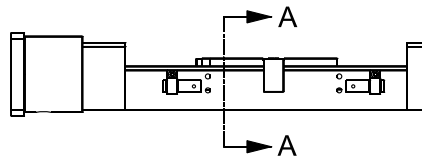
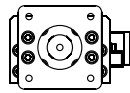
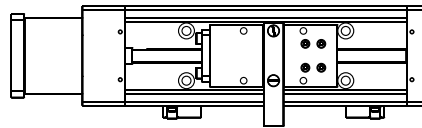
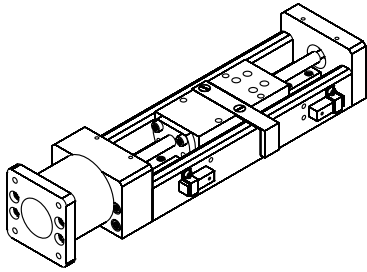
## Motor Options

STEPPER MOTOR											
Travel	OAL	L	N	G	A	B	C	D	E	F	H
70	208.7	141.5	2	30.75							
120	258.7	191.5	3	15.75	35.7	42	31	3	22	3.2 THRU	5
170	308.7	241.5	3	40.75							
220	358.7	291.5	4	25.75							

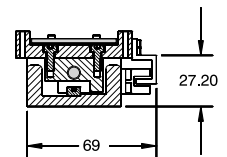
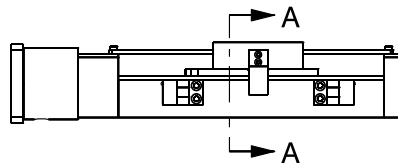
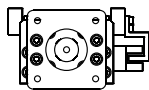
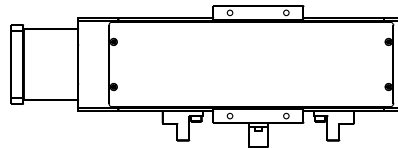
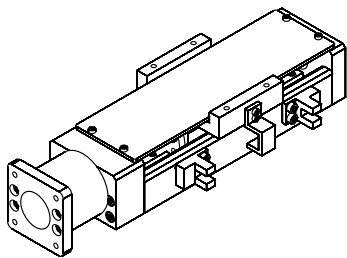
SERVO MOTOR											
Travel	OAL	L	N	G	A	B	C	D	E	F	H
70	213.8	141.5	2	30.75							
120	263.8	191.5	3	15.75	40.8	42	32.5	3	30	M4 THREAD	6
170	313.8	241.5	3	40.75							
220	363.8	291.5	4	25.75							

# DL 26B (continued)

## DL 26B With PX Proximity Sensors



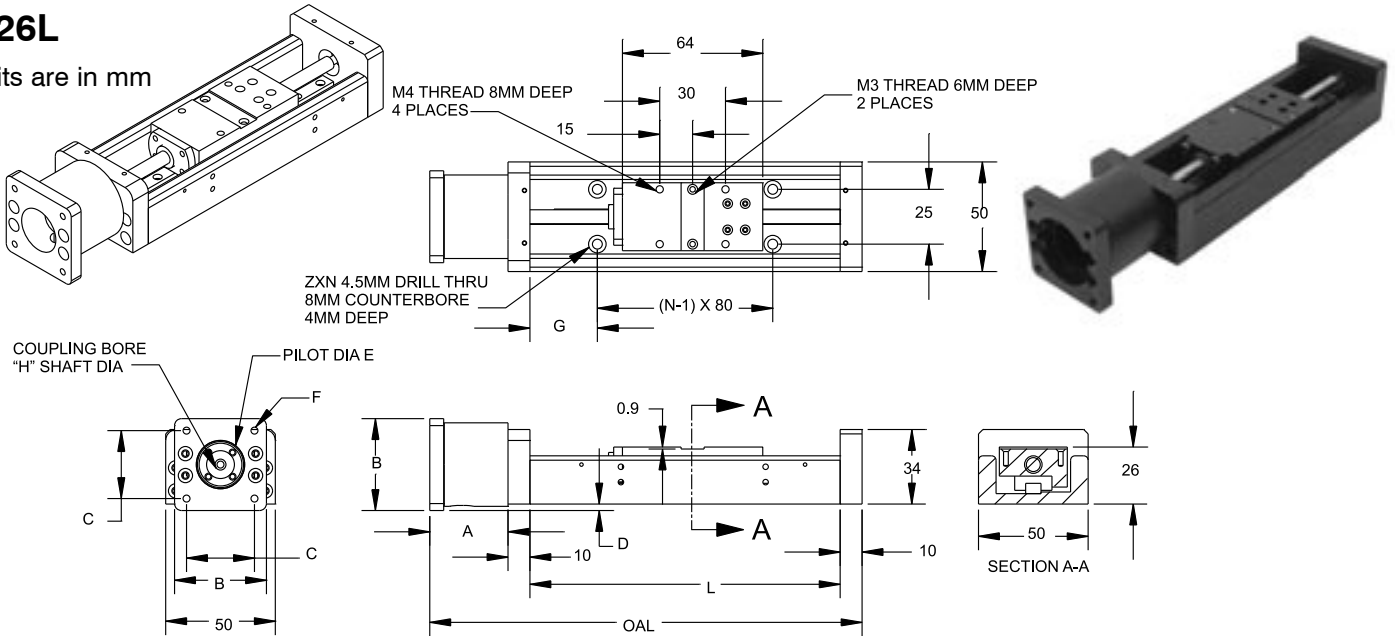
## DL 26B With PH Photo Sensors



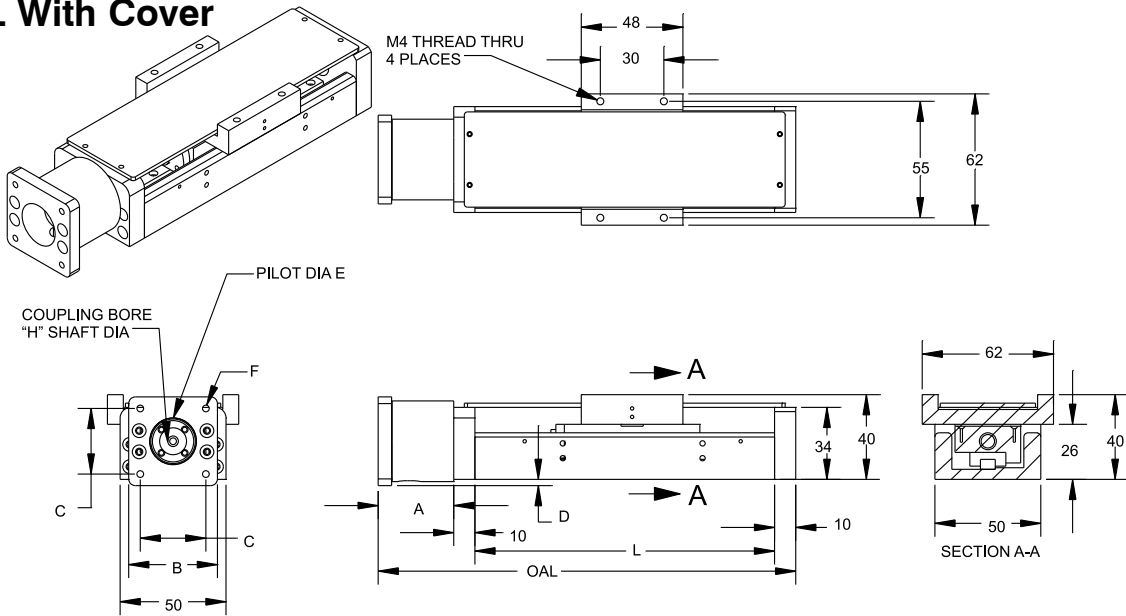
# DL 26L

## DL 26L

All units are in mm



## DL 26L With Cover



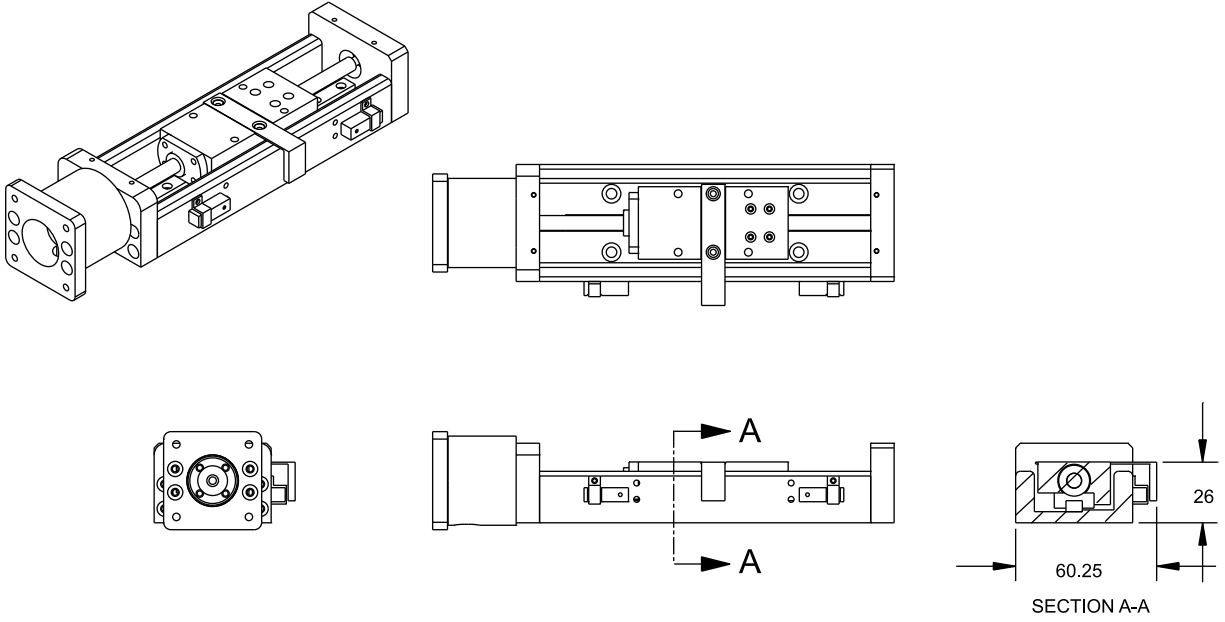
## Motor Options

STEPPER MOTOR											
Travel	OAL	L	N	G	A	B	C	D	E	F	H
70	197.2	141.5	2	30.75							
120	247.2	191.5	3	15.75	35.7	42	31	3	22	3.2 THRU	5
170	297.2	241.5	3	40.75							
220	347.2	291.5	4	25.75							

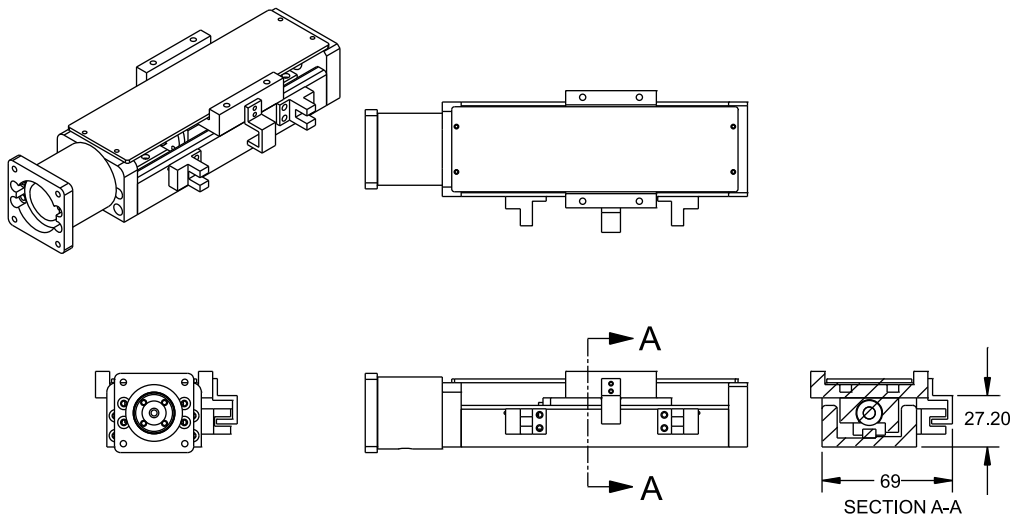
SERVO MOTOR											
Travel	OAL	L	N	G	A	B	C	D	E	F	H
70	202.3	141.5	2	30.75							
120	252.3	191.5	3	15.75	40.8	42	32.5	3	22	M4 THREAD	6
170	302.3	241.5	3	40.75							
220	352.3	291.5	4	25.75							

# DL 26L (continued)

## DL 26L With PX Proximity Sensors



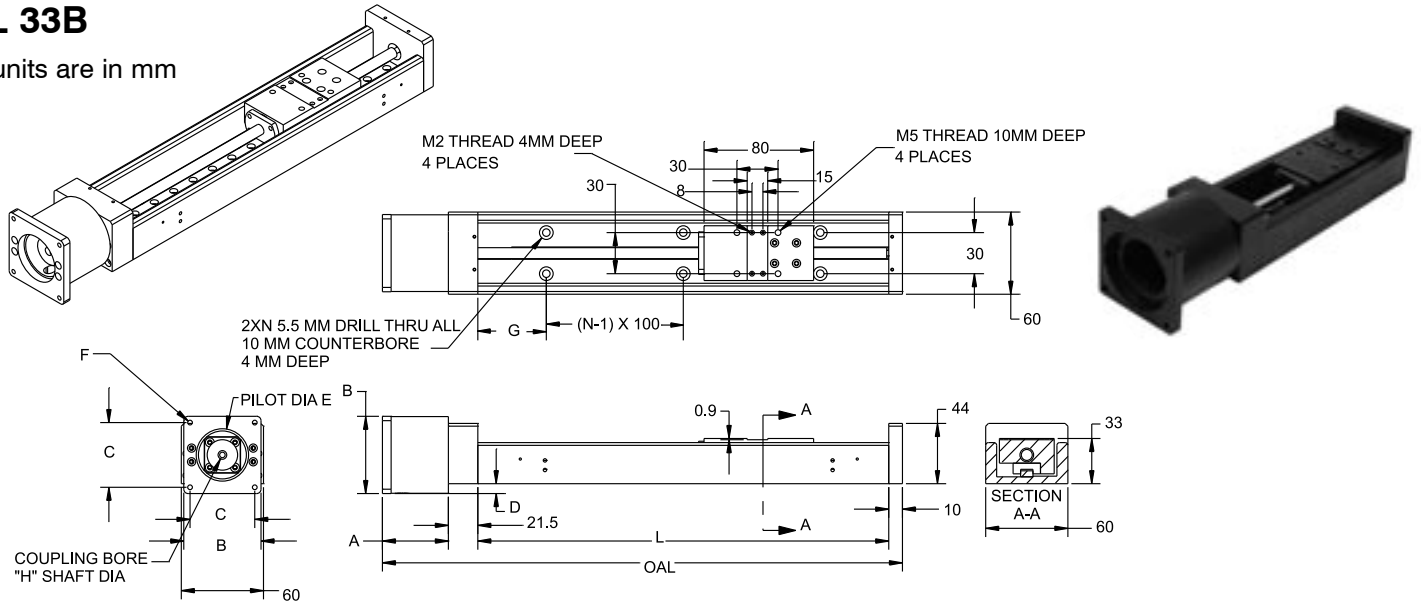
## DL 26L With PH Photo Sensors



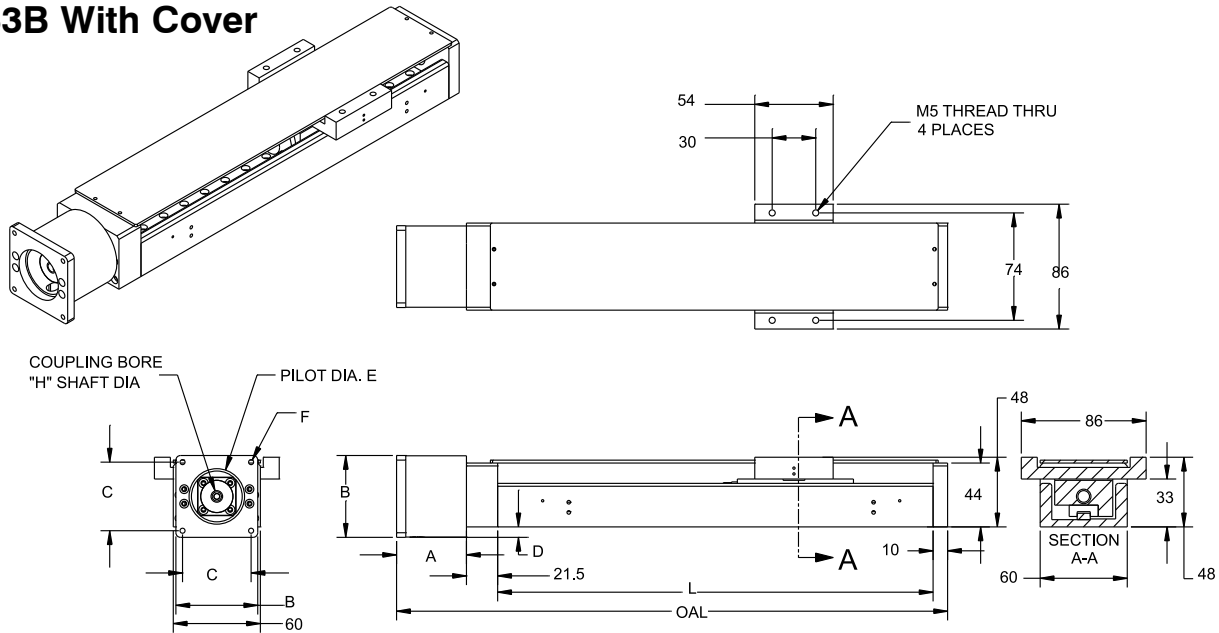
# DL 33B

## DL 33B

All units are in mm



## DL 33B With Cover



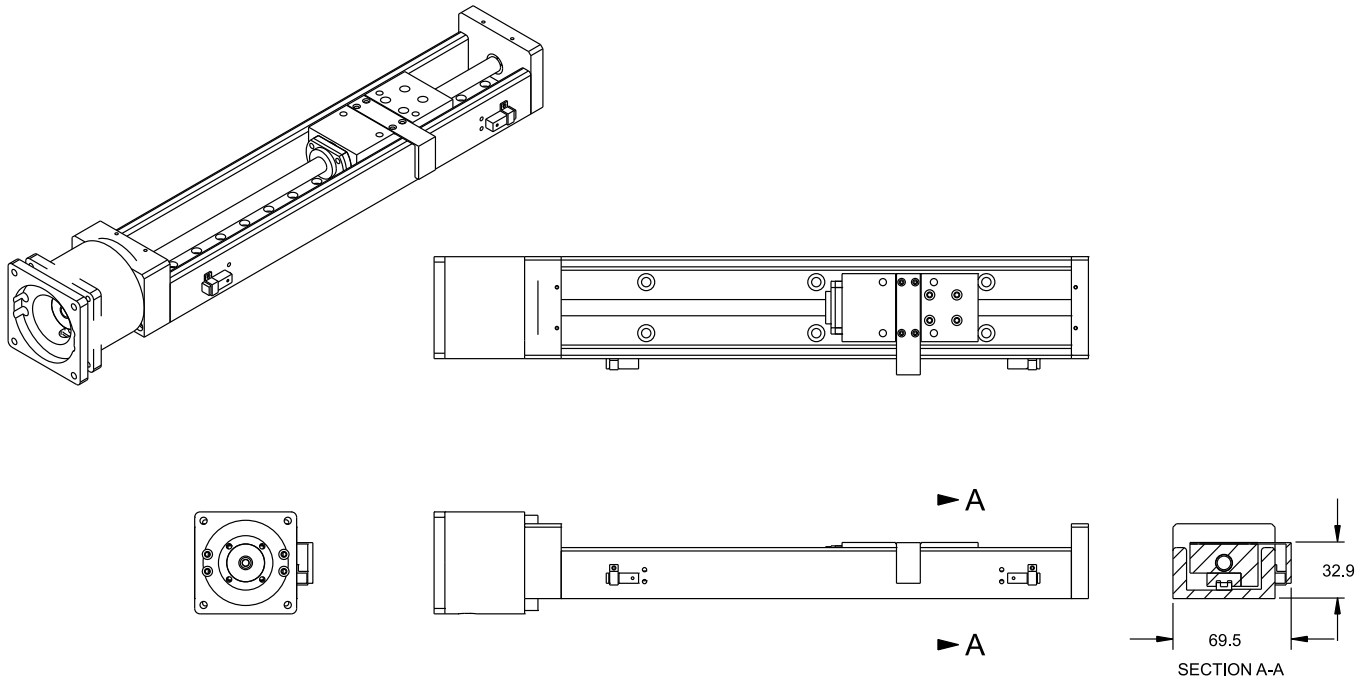
## Motor Options

Travel	OAL	L	N	G	STEPPER MOTOR							
					A	B	C	D	E	F	H	
60	229.6	150	2	25								
110	279.6	200	2	50	48.1	56.4	47.2	7.2	38.2	8-32 THREAD	6.35(.250")	
210	379.6	300	3	50								
310	479.6	400	4	50								
410	579.6	500	5	50								

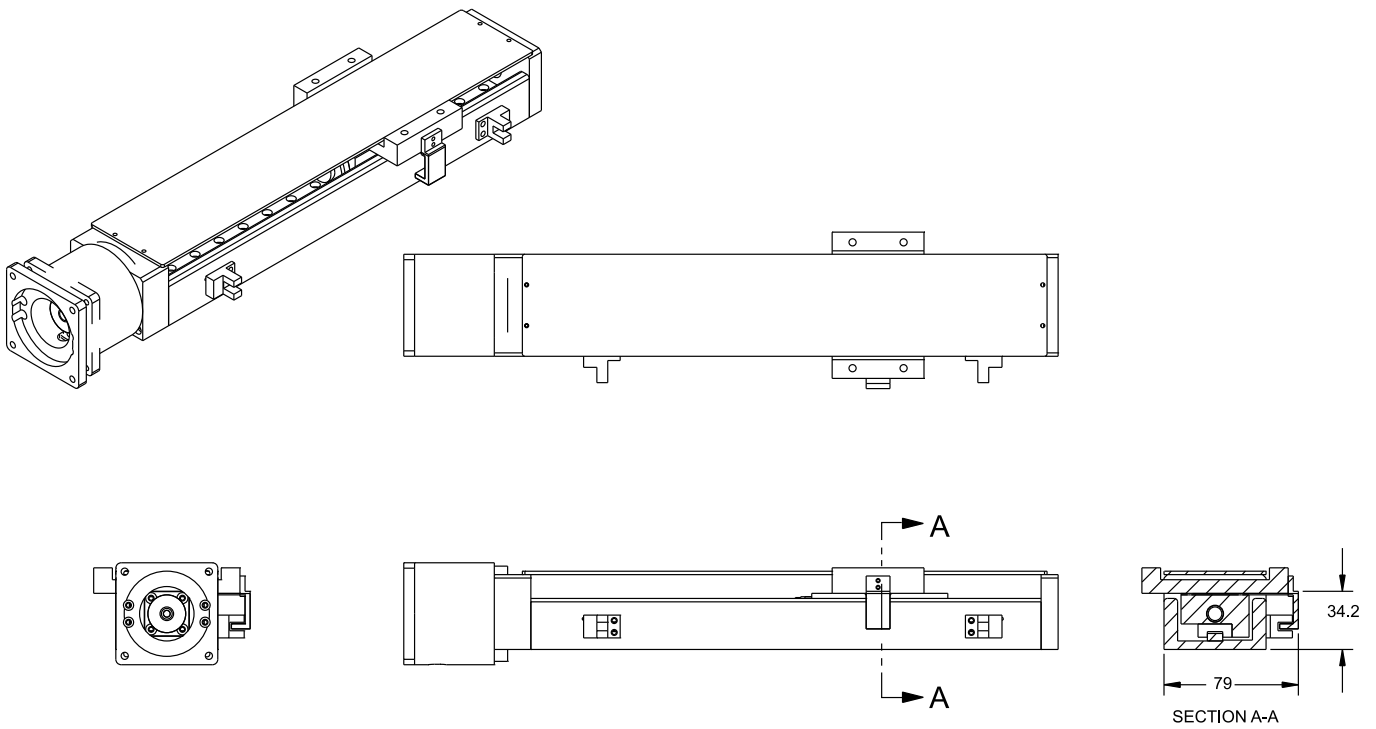
Travel	OAL	L	N	G	SERVO MOTOR						
					A	B	C	D	E	F	H
60	234.7	150	2	25							
110	284.7	200	2	50	53.2	60	49.5	8.9	50.1	M5 THREAD	8
210	384.7	300	3	50							
310	484.7	400	4	50							
410	584.7	500	5	50							

# DL 33B (continued)

## DL 33B With PX Proximity Sensors



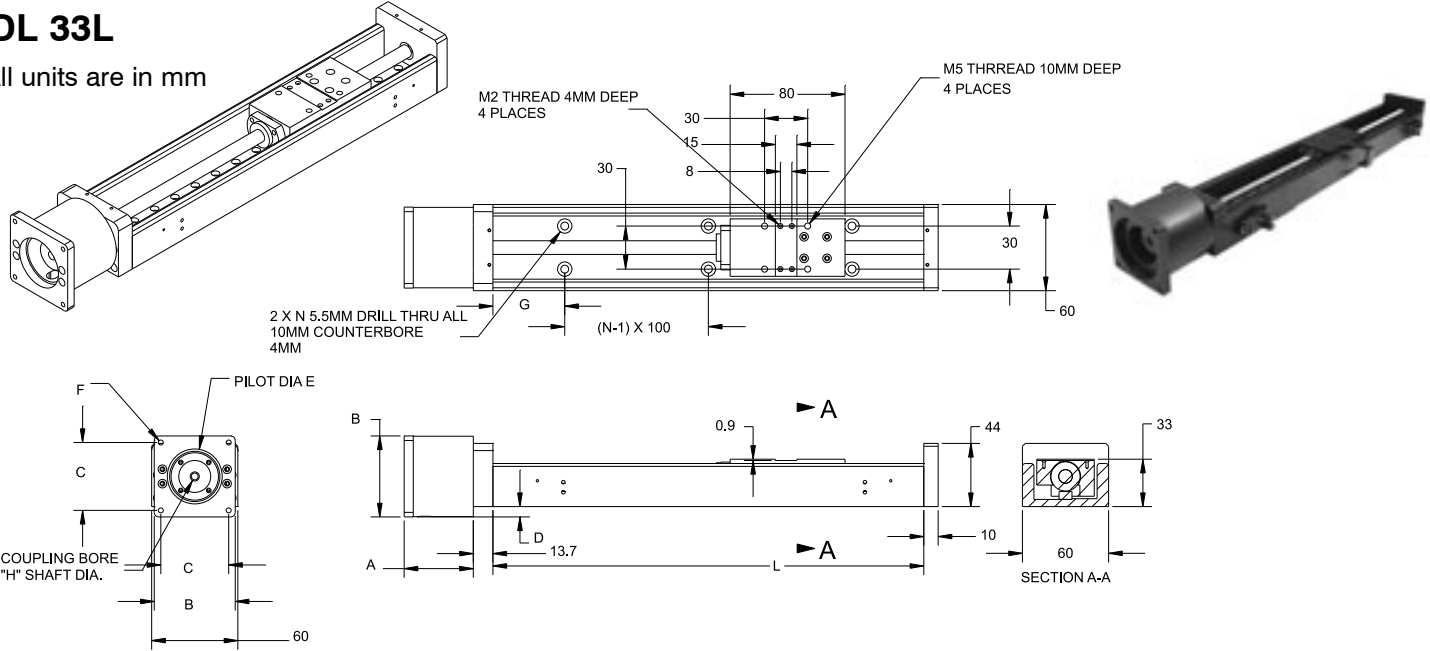
## DL 33B With PH Photo Sensors



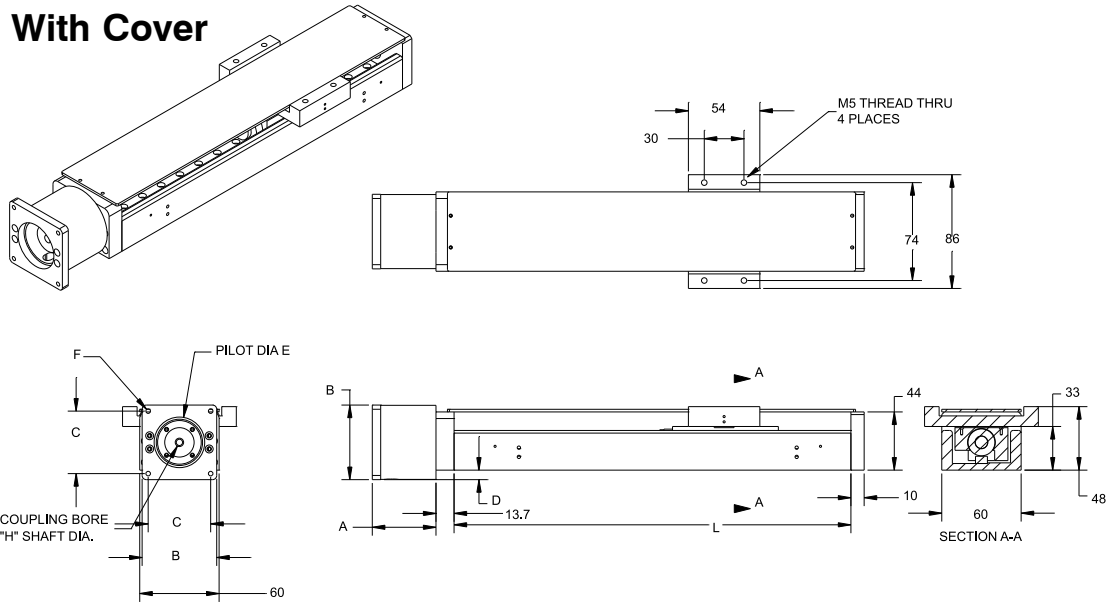
# DL 33L

## DL 33L

All units are in mm



## DL 33L With Cover



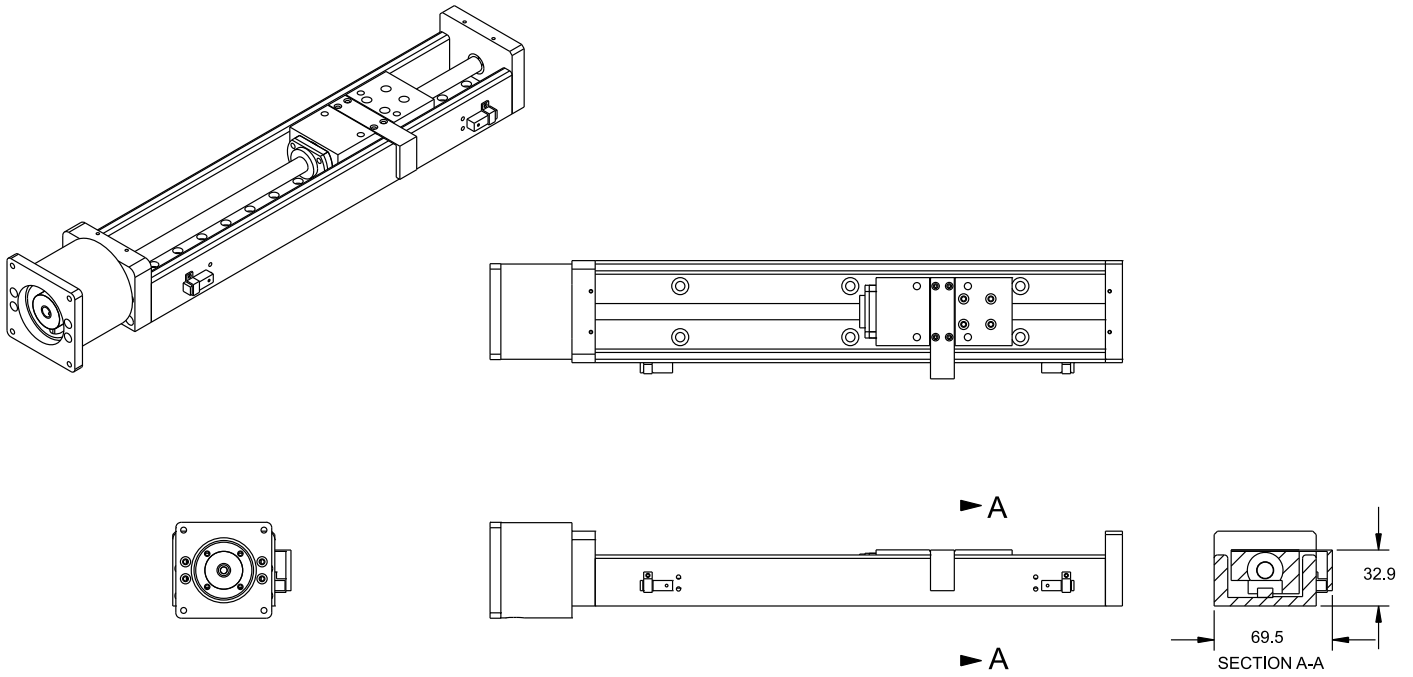
## Motor Options

Travel	OAL	L	N	G	STEPPER MOTOR							
					A	B	C	D	E	F	H	
60	221.8	150	2	25								
110	271.8	200	2	50	48.1	56.4	47.2	7.2	38.2	8-32 THREAD	6.35(.250")	
210	371.8	300	3	50								
310	471.8	400	4	50								
410	571.8	500	5	50								

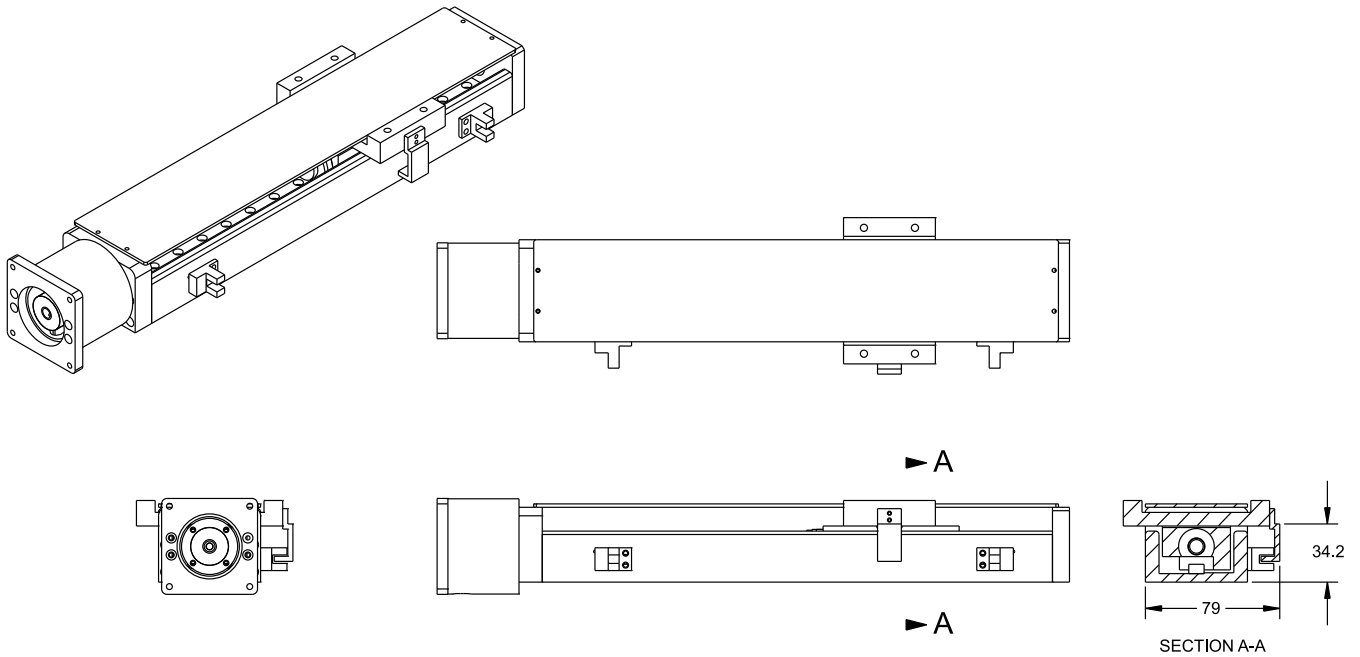
Travel	OAL	L	N	G	SERVO MOTOR							
					A	B	C	D	E	F	H	
60	226.9	150	2	25								
110	276.9	200	2	50	53.2	60	49.5	8.9	50.1	M5 THREAD	8	
210	376.9	300	3	50								
310	476.9	400	4	50								
410	576.9	500	5	50								

# DL 33L (continued)

## DL 33L With PX Proximity Sensors



## DL 33L With PH Photo Sensors





# DL DW Linear Actuators

Ball and Lead Screw Actuated Stages

## DL DW Series

Compact:

Wide mountin platform:

Simple assembly:

Low cost:

Non corrosive:

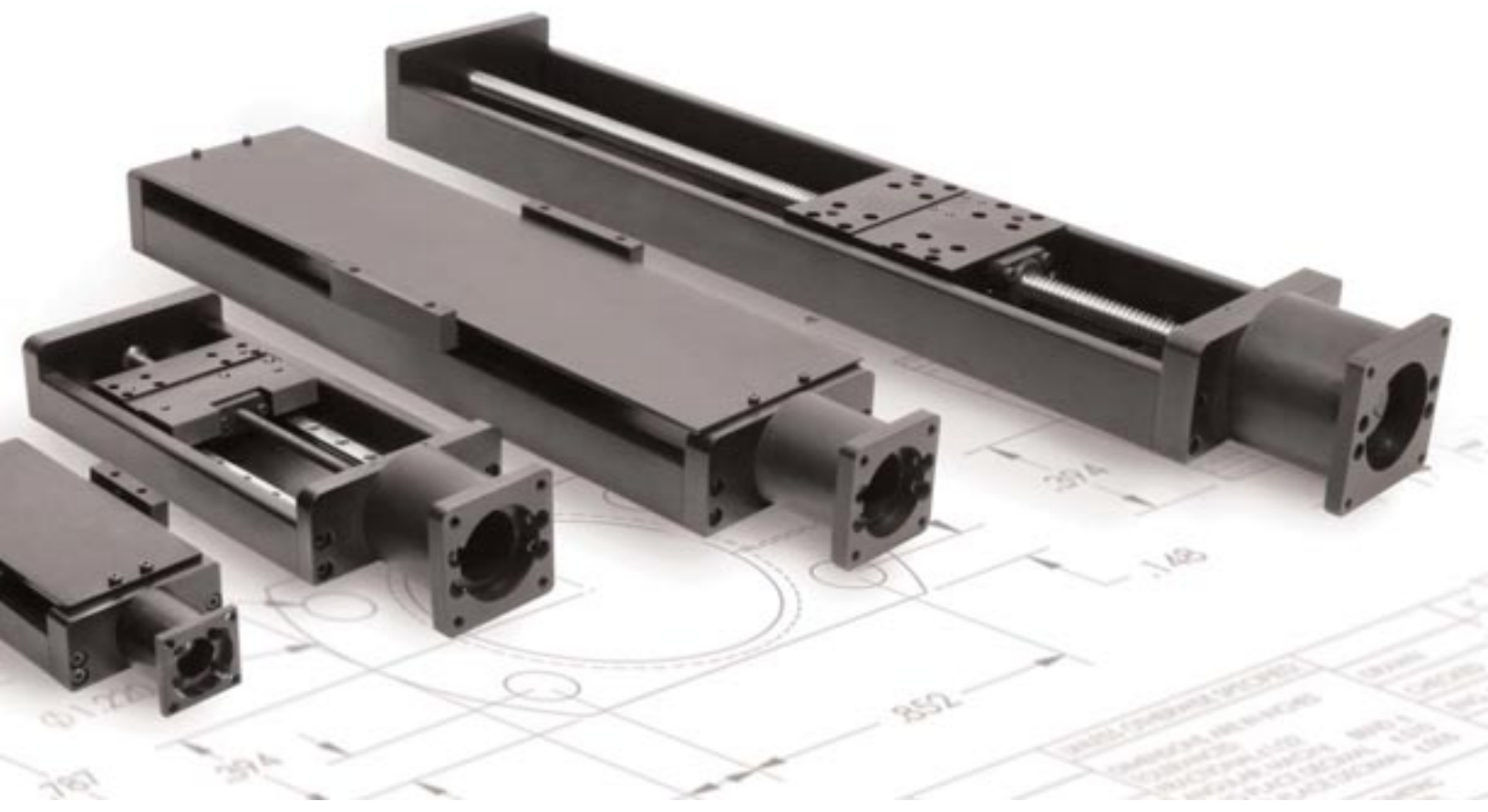
Low profile space saving design

Reduces axial play

Standard mounting holes

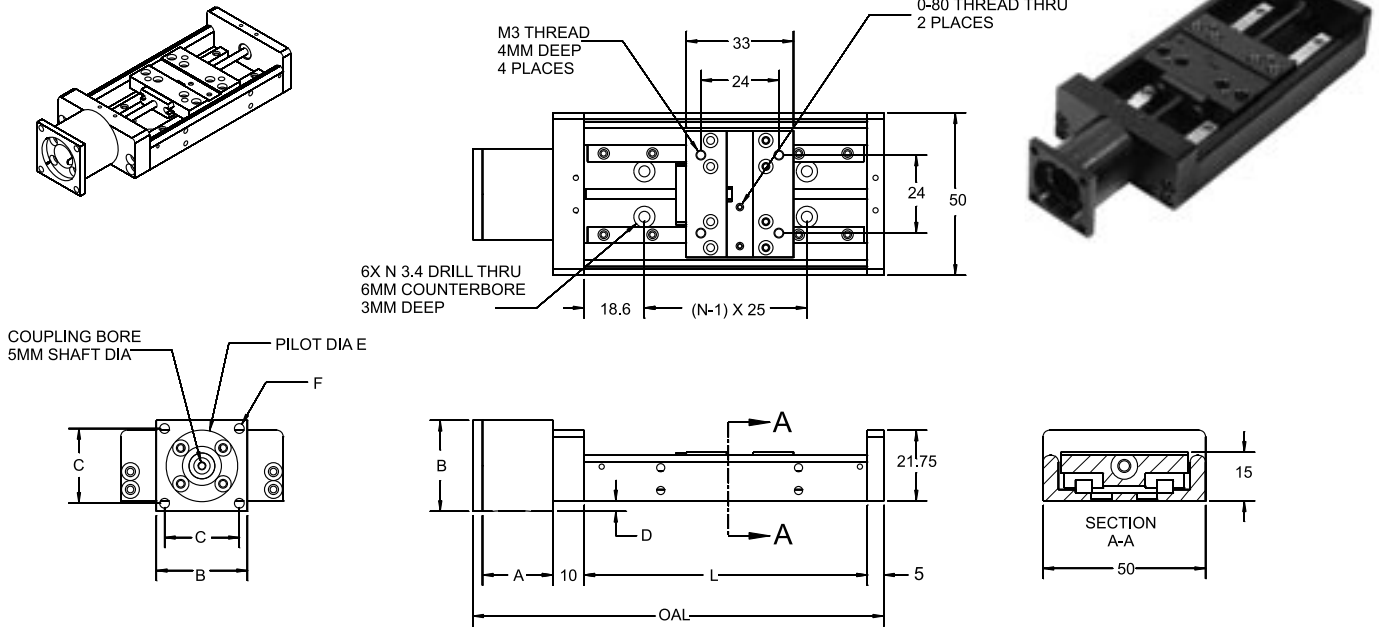
To purchase and operate

Aluminum and Stainless steel materials

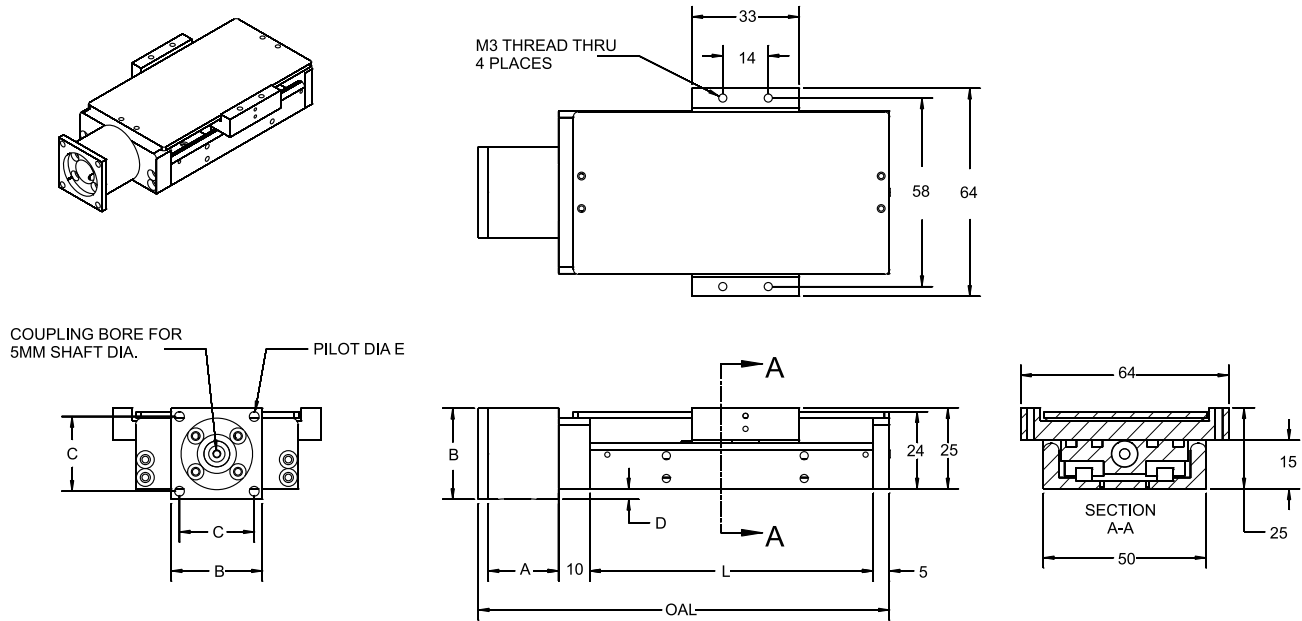


# DL 15 DW

**DL 15 DW** All units are in mm



## DL 15 DW With Cover

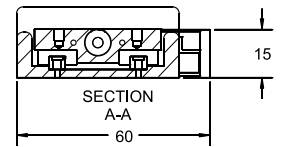
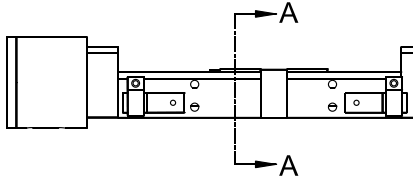
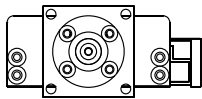
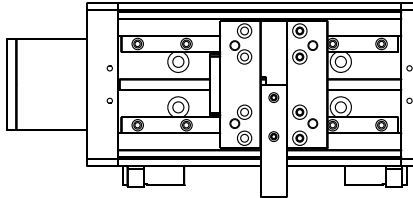
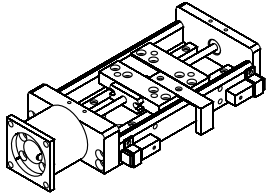


## Motor Options

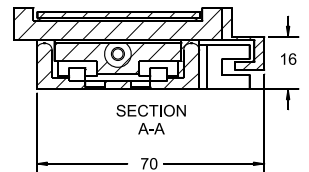
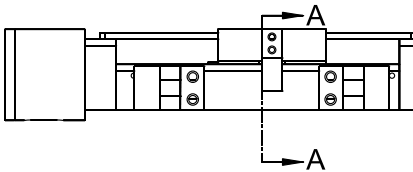
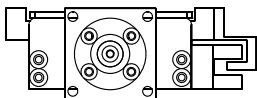
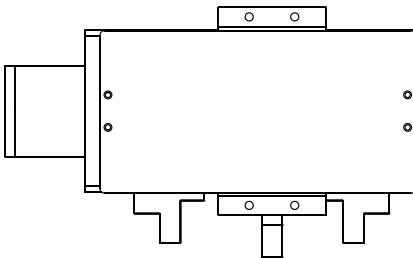
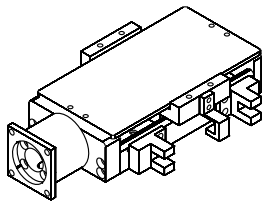
Travel	STEPPER MOTOR (ST)										SERVO MOTOR (SV)						
	OAL	L	N	A	B	C	D	E	F	OAL	A	B	C	D	E	F	
25	101.2	62	2								102.2						
50	126.2	87	3	24.7	28	23	3.2	22	3 THRU		127.2	25.6	25	19.8	1.7	20	3.5 THRU
75	151.2	112	4								152.2						
100	176.2	137	5								177.2						

# DL 15 DW (continued)

## DL 15 DW With PX Proximity Sensors

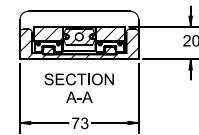
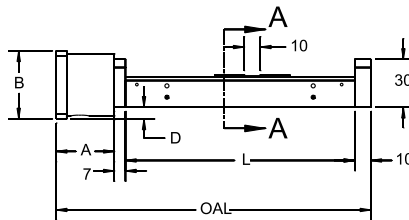
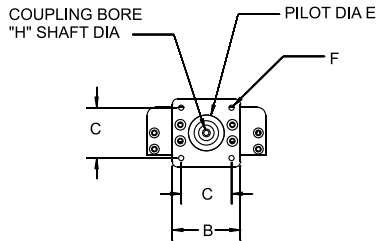
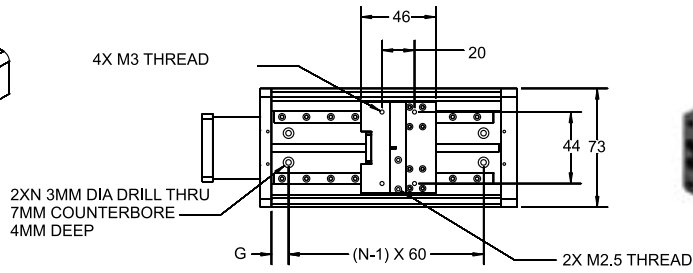
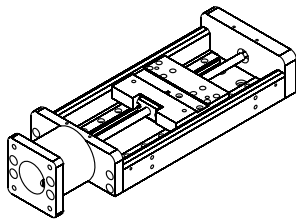


## DL 15 DW With PH Photo Sensors

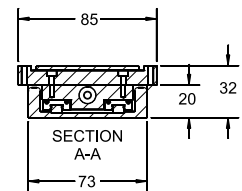
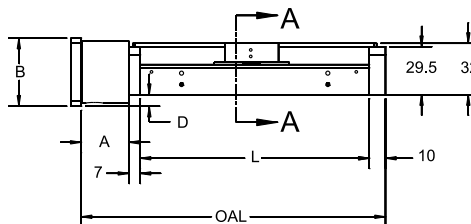
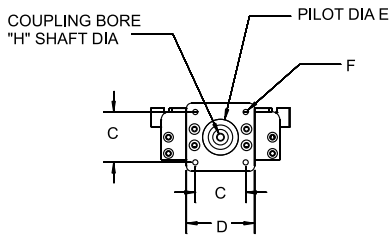
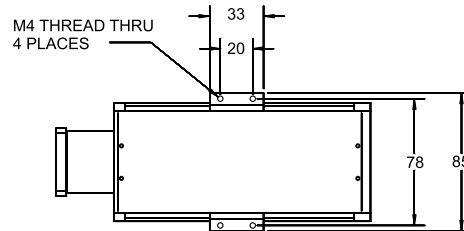
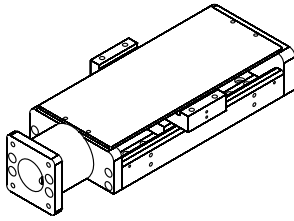


# DL 20 DW

DL 20 DW All units are in mm



## DL 20 DW With Cover



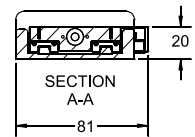
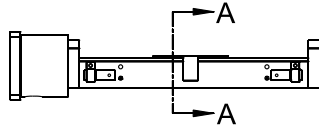
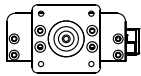
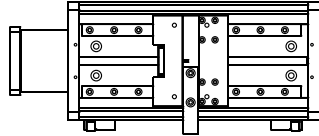
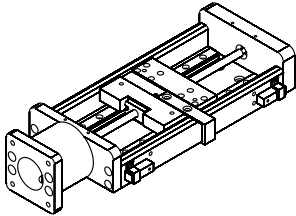
## Motor Options

Travel	STEPPER MOTOR										
	OAL	L	N	G	A	B	C	D	E	F	H
45	143.7	91	2	15.5							
95	193.7	141	3	10.5	35.7	42	31	7.1	22	3.2 THRU	5
145	243.7	191	3	35.5							

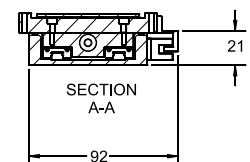
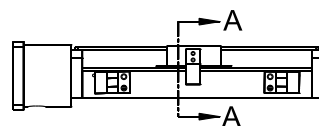
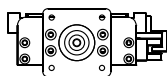
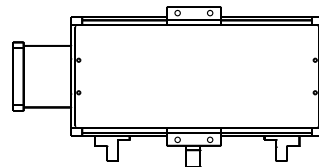
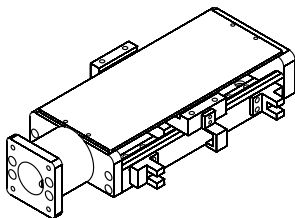
Travel	SERVO MOTOR										
	OAL	L	N	G	A	B	C	D	E	F	H
45	148.8	91	2	15.5							
95	198.8	141	3	10.5	40.8	42	32.5	7.1	30	M4 THREAD	6
145	248.8	191	3	35.5							

# DL 20 DW (continued)

## DL 20 DW With PX Proximity Sensors

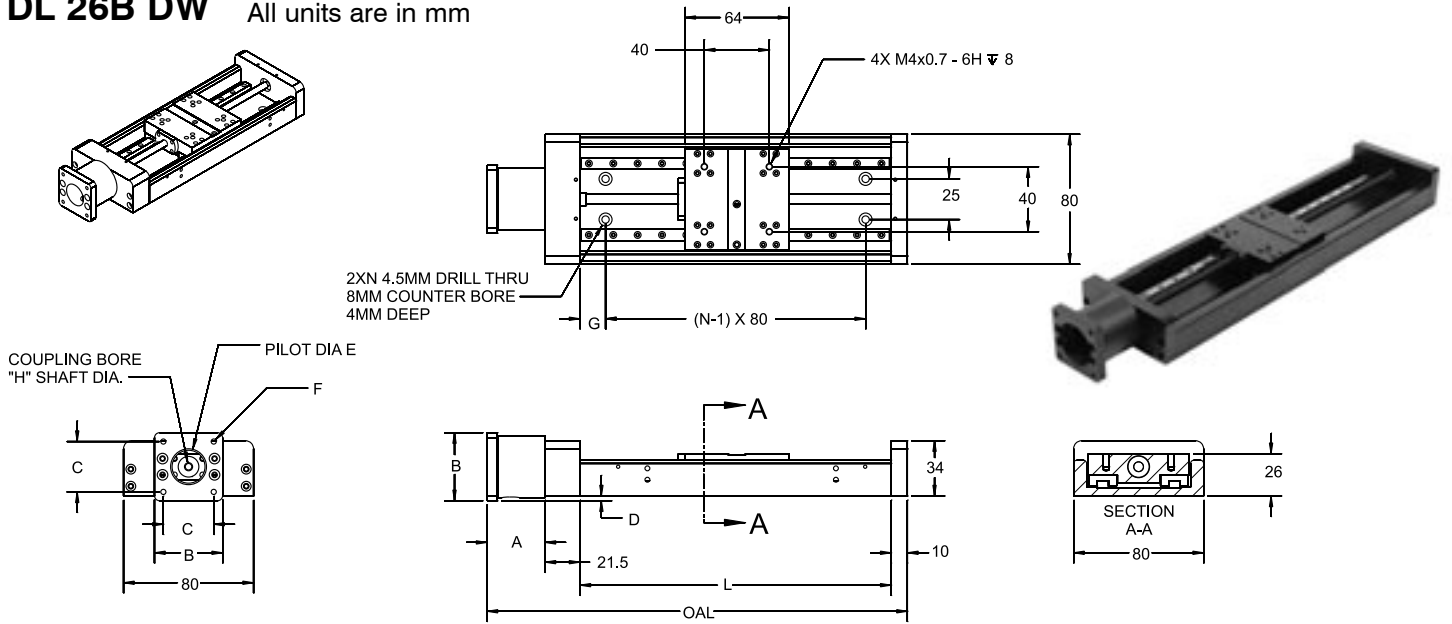


## DL 20 DW With PH Photo Sensors

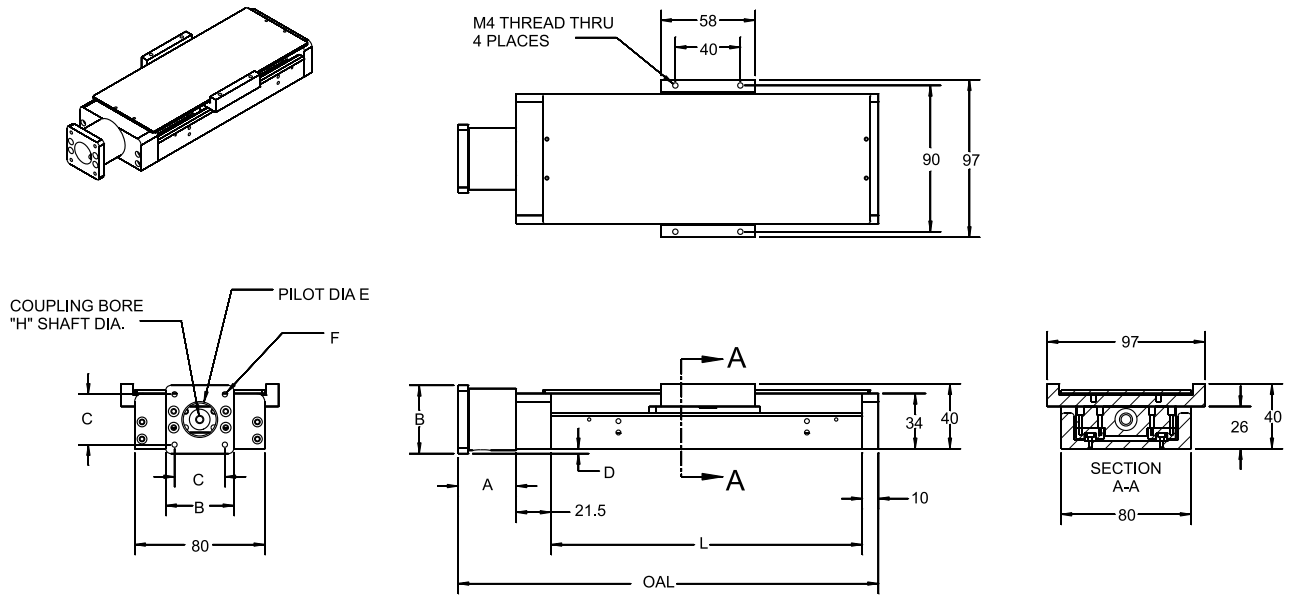


# DL 26B DW

**DL 26B DW** All units are in mm



## DL 26B DW With Cover



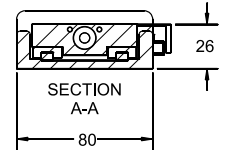
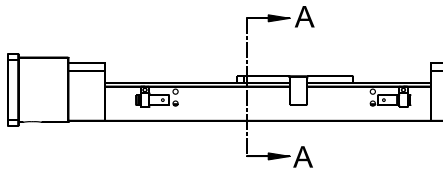
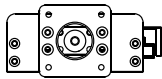
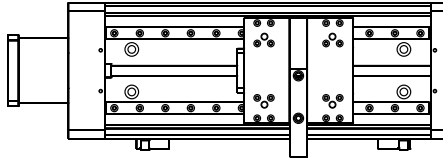
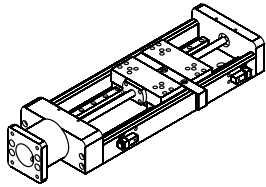
## Motor Options

STEPPER MOTOR											
Travel	OAL	L	N	G	A	B	C	D	E	F	H
70	208.7	141.5	2	30.75							
120	258.7	191.5	3	15.75	35.7	42	31	3	22	3.2 THRU	5
170	308.7	241.5	3	40.75							
220	358.7	291.5	4	25.75							

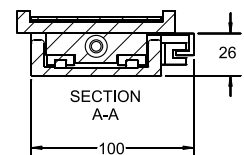
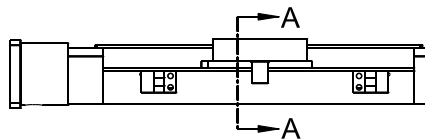
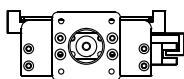
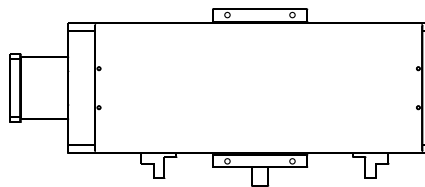
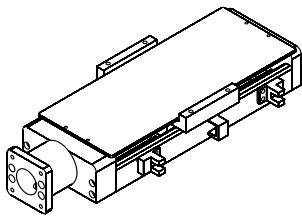
SERVO MOTOR											
Travel	OAL	L	N	G	A	B	C	D	E	F	H
70	213.8	141.5	2	30.75							
120	263.8	191.5	3	15.75	40.8	42	32.5	3	30	M4 THREAD	6
170	313.8	241.5	3	40.75							
220	363.8	291.5	4	25.75							

# DL 26B DW (continued)

## DL 26B DW With PX Proximity Sensors



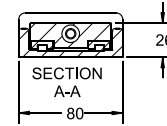
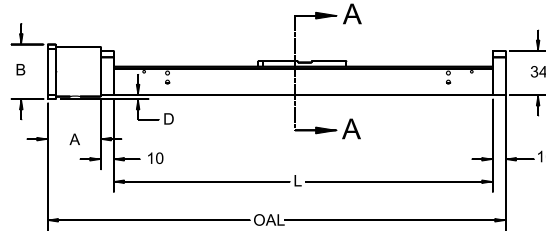
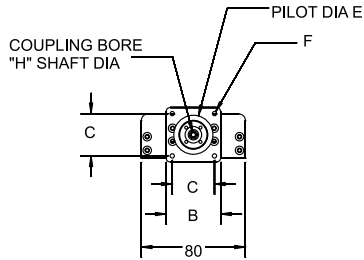
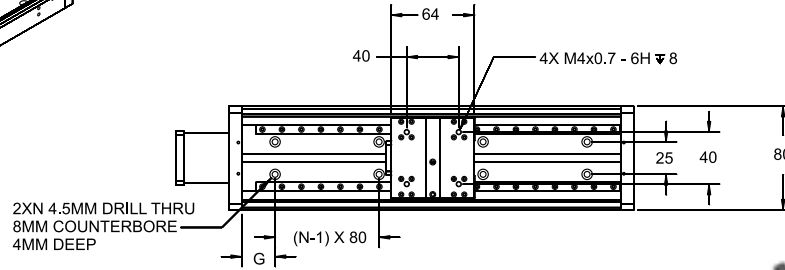
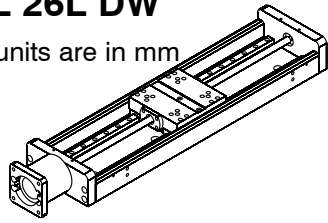
## DL 26B DW With PH Photo Sensors



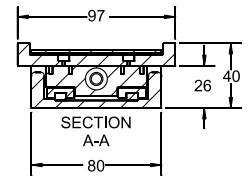
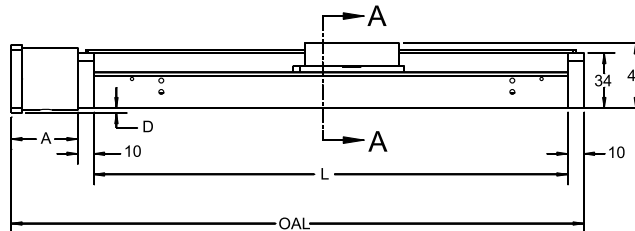
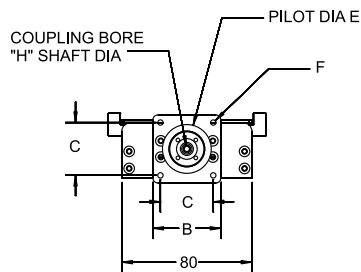
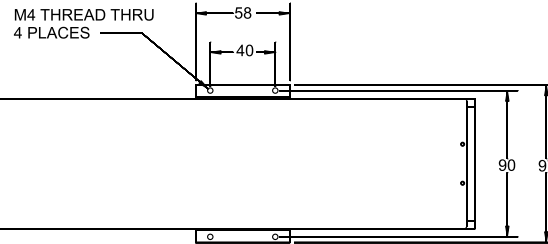
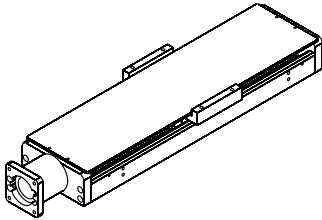
# DL 26L DW

## DL 26L DW

All units are in mm



## DL 26L DW With Cover



## Motor Options

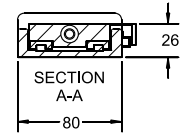
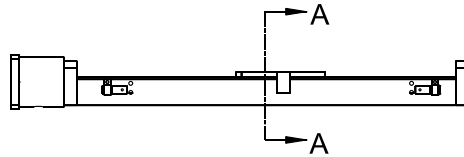
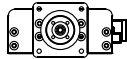
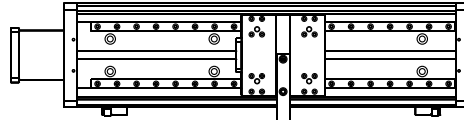
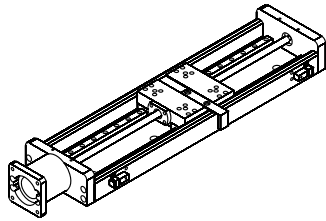
STEPPER MOTOR											
Travel	OAL	L	N	G	A	B	C	D	E	F	H
70	197.2	141.5	2	30.75							
120	247.2	191.5	3	15.75	35.7	42	31	3	22	3.2 THRU	5
170	297.2	241.5	3	40.75							
220	347.2	291.5	4	25.75							

SERVO MOTOR											
Travel	OAL	L	N	G	A	B	C	D	E	F	H
70	202.3	141.5	2	30.75							
120	252.3	191.5	3	15.75	40.8	42	32.5	3	22	M4 THREAD	6
170	302.3	241.5	3	40.75							
220	352.3	291.5	4	25.75							

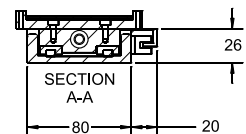
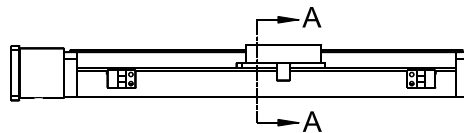
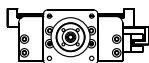
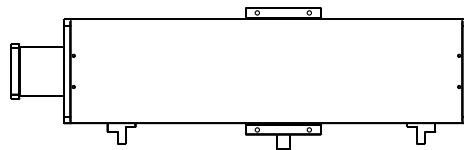
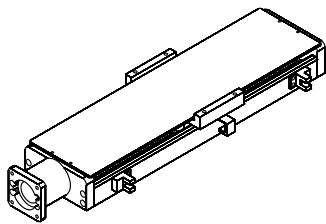


# DL 26L DW (continued)

## DL 26L DW With PX Proximity Sensors



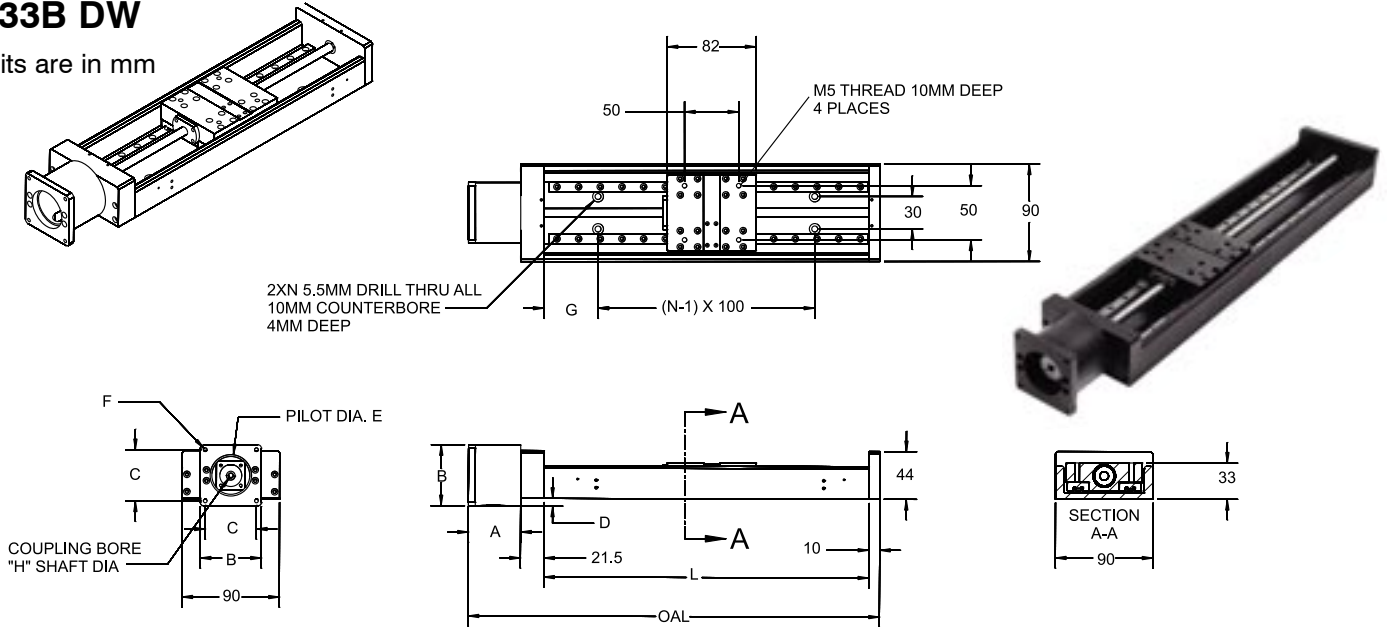
## DL 26L DW With PH Photo Sensors



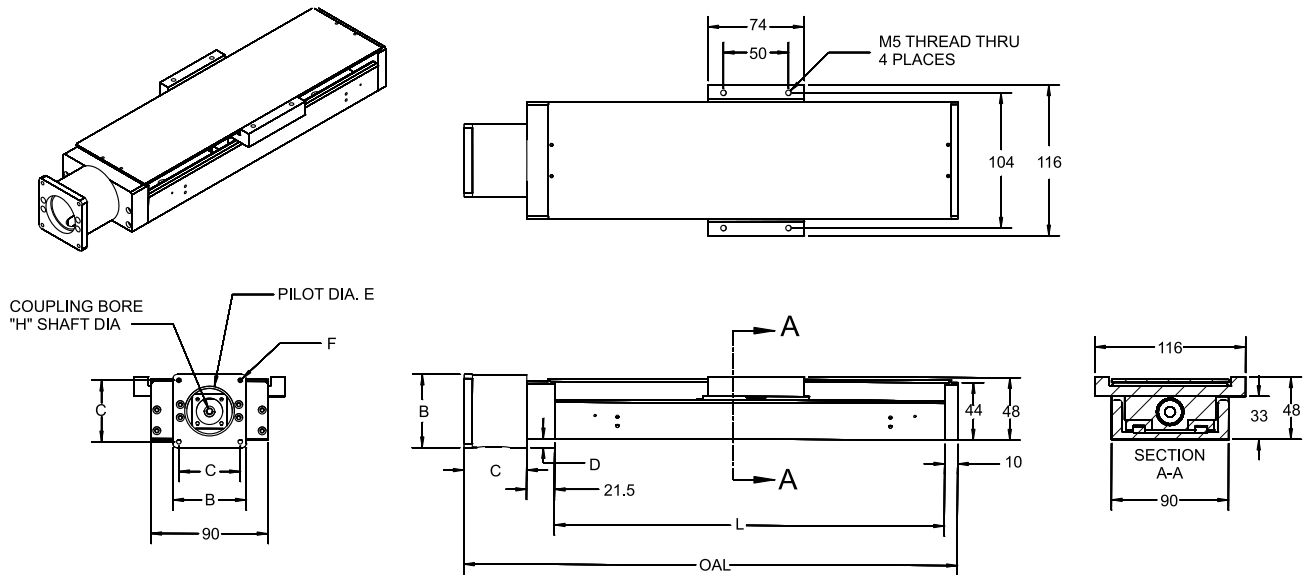
# DL 33B DW

## DL 33B DW

All units are in mm



## DL 33B DW With Cover



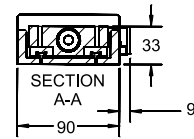
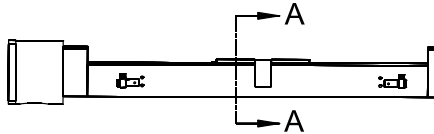
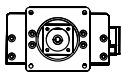
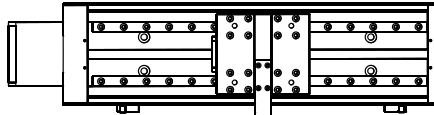
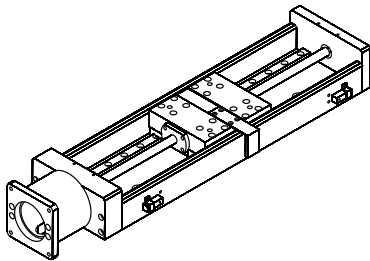
## Motor Options

Travel	STEPPER MOTOR										
	OAL	L	N	G	A	B	C	D	E	F	H
60	229.6	150	2	25							
110	279.6	200	2	50	48.1	56.4	47.2	7.2	38.2	8-32 THREAD	6.35(.250")
210	379.6	300	3	50							
310	479.6	400	4	50							
410	579.6	500	5	50							

Travel	SERVO MOTOR										
	OAL	L	N	G	A	B	C	D	E	F	H
60	234.7	150	2	25							
110	284.7	200	2	50	53.2	60	49.5	8.9	50.1	M5 THREAD	8
210	384.7	300	3	50							
310	484.7	400	4	50							
410	584.7	500	5	50							

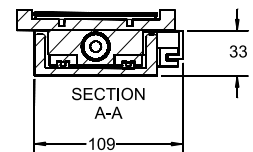
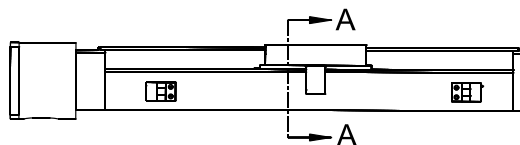
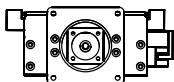
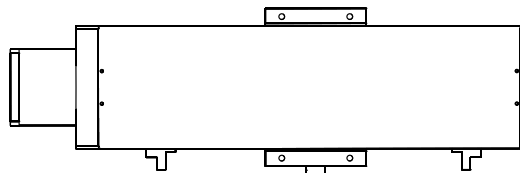
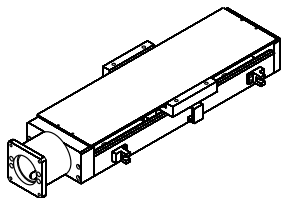
# DL 33B DW (continued)

## DL 33B DW With PX Proximity Sensors



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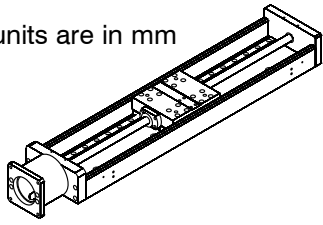
## DL 33B DW With PH Photo Sensors



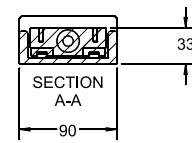
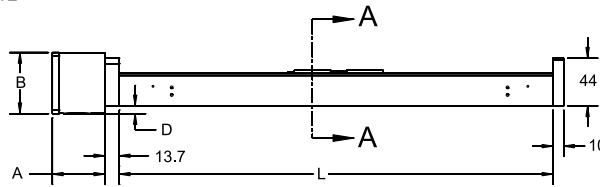
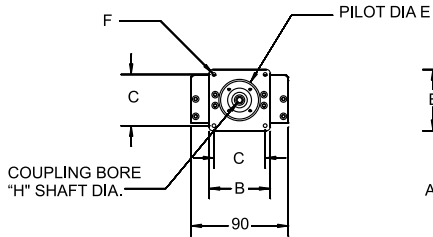
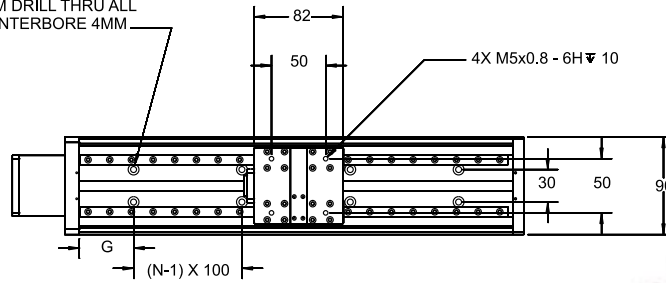
# DL 33L DW

## DL 33L DW

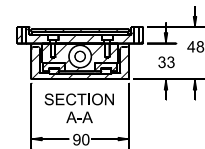
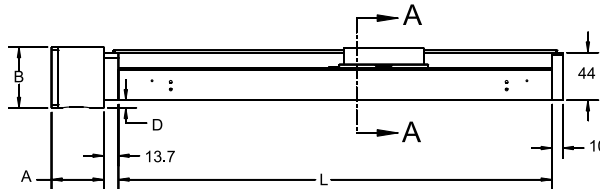
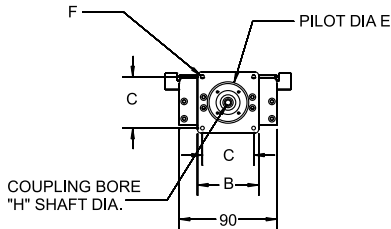
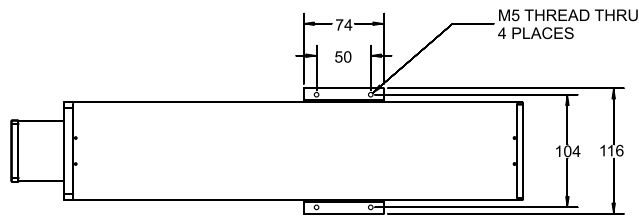
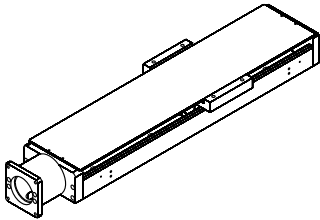
All units are in mm



2 X N 5.5MM DRILL THRU ALL  
10MM COUNTERBORE 4MM



## DL 33L DW With Cover



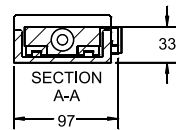
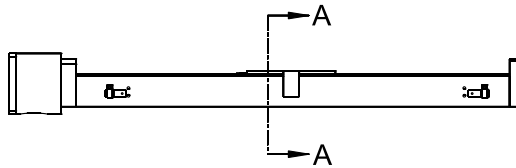
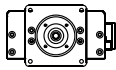
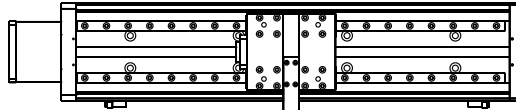
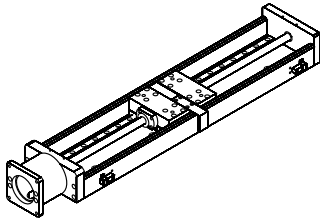
## Motor Options

Travel	OAL	L	N	G	STEPPER MOTOR							
					A	B	C	D	E	F	H	
60	221.8	150	2	25								
110	271.8	200	2	50	48.1	56.4	47.2	7.2	38.2	8-32 THREAD	6.35(.250")	
210	371.8	300	3	50								
310	471.8	400	4	50								
410	571.8	500	5	50								

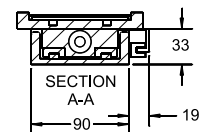
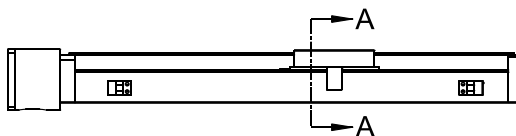
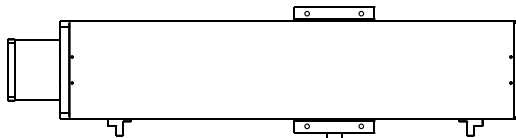
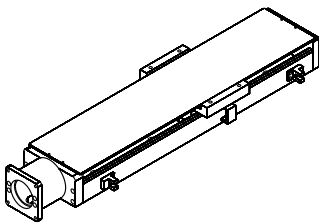
Travel	OAL	L	N	G	SERVO MOTOR						
					A	B	C	D	E	F	H
60	226.9	150	2	25							
110	276.9	200	2	50	53.2	60	49.5	8.9	50.1	M5 THREAD	8
210	376.9	300	3	50							
310	476.9	400	4	50							
410	576.9	500	5	50							

# DL 33L DW (continued)

## DL 33L DW With PX Proximity Sensors



## DL 33L DW With PH Photo Sensors





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