



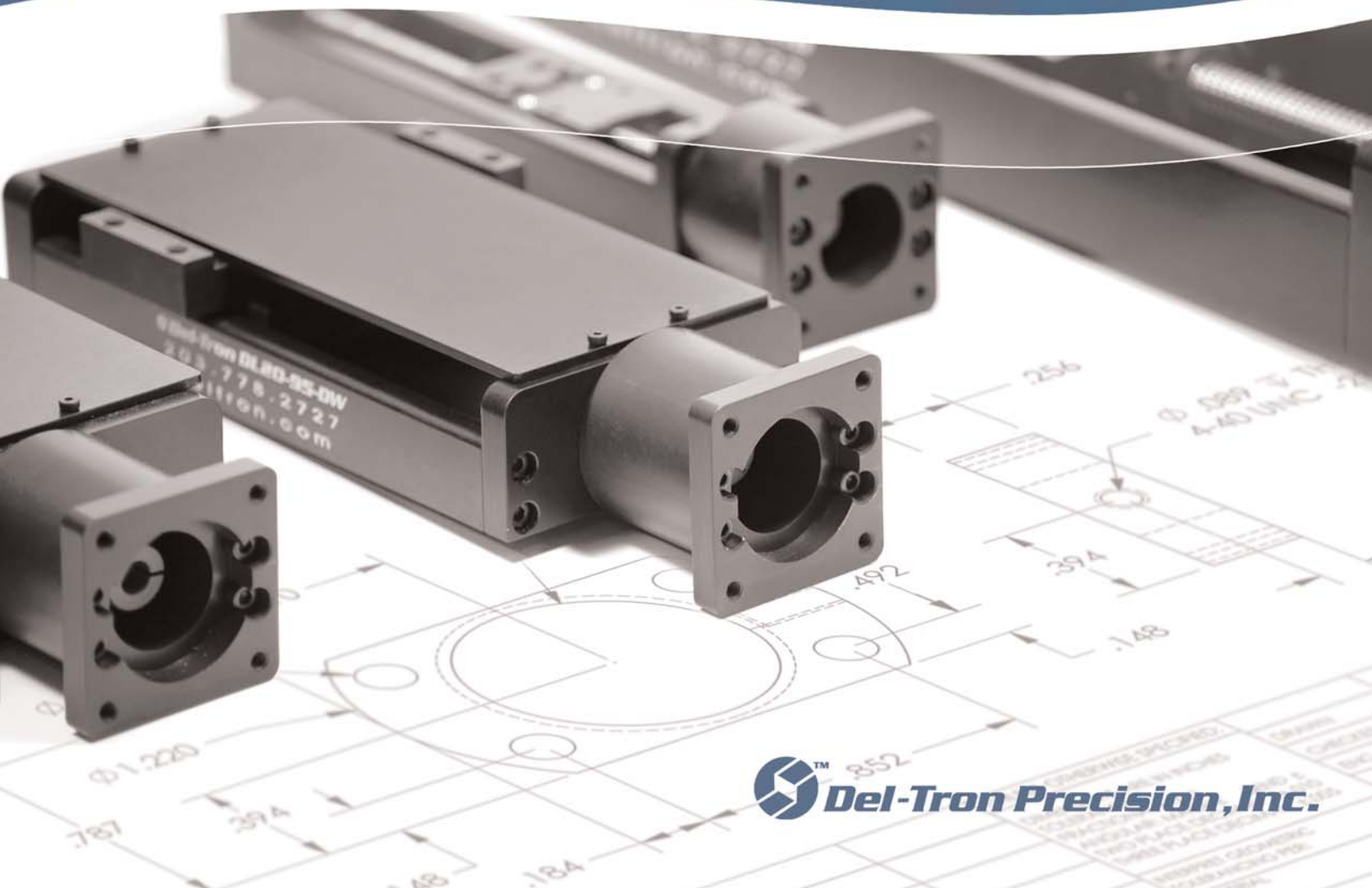
LINEAR TECHNOLOGY



DL SERIES

Linear Actuators

Ball and Lead Screw Actuated Stages



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

	DL15/DL15DW	DL20/DL20DW	DL26B/DL26BDW	DL26L/DL26LDW	DL33B/DL33BDW	DL33L/DL33LDW
Drive:	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
Motor adaptors for:	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
Coefficient of friction:	0.01	0.01	0.01	0.01	0.01	0.01
Life:	254 million mm	254 million mm	254 million mm	254 million mm	254 million mm	254 million mm
Travel:	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
Anti-friction slide:	Recirculating Slide Guide	Recirculating Slide Guide	Recirculating Slide Guide	Recirculating Slide Guide	Recirculating Slide Guide	Recirculating Slide Guide
Load Capacity:	150 Newtons	200 Newtons	600 Newtons	300 Newtons	900 Newtons	400 Newtons
Positional Repeatability:	4µm	4µm	10µm	4µm	10µm	4µm
Positioning Accuracy:	50µm	50µm	90µm	50µm	100µm	50µm
Running Parallelism:	10µm	15µm	25µm	25µm	25µm	15µm
Backlash:	zero	zero	20µm	zero	20µm	zero
Linear Speed:	100mm/sec	100mm/sec	200mm/sec	100mm/sec	200mm/sec	100mm/sec
Finish:	Black Anodized	Black Anodized	Black Anodized	Black Anodized	Black Anodized	Black Anodized
Materials:	Aluminum base and carriage	Aluminum base and carriage	Aluminum base and carriage	Aluminum base and carriage	Aluminum base and carriage	Aluminum base and carriage
Sensors:	Photo or Proximity	Photo or Proximity	Photo or Proximity	Photo or Proximity	Photo or Proximity	Photo or Proximity
Notes:	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

XXXXX	XX	XXX	XX	X	XX
Model #		Travel	Motor Adaptor		
DL15	Blank = Standard Width	DL15 only	DL15 only	Blank = No cover	Blank = No Sensors
DL20	DW = Double Wide	25 = 25mm	ST = Oriental Stepper PK223 (NEMA 11)	C = Cover	PX = Proximity Sensors SUNX 6GLF
DL26B		50 = 50mm	SV = Yaskawa SGMM Servo		PH = Photo Sensors SUNX PMY54
DL26L		75 = 75mm			
DL33B		100 = 100mm	DL20,26B/L only		
DL33L			ST = Oriental Stepper PK243 (NEMA 17)		
		DL20 only	SV = Yaskawa SGMAH Servo		
		45 = 45mm			
		95 = 95mm	DL33B/L only		
		145 = 145mm	ST = Oriental Stepper PK264 (NEMA 23)		
			SV = Yaskawa SGMPH Servo		
		DL33B/L only			
		60 = 60mm			
		110 = 110mm			
		210 = 210mm			
		310 = 310mm			
		410 = 410mm			

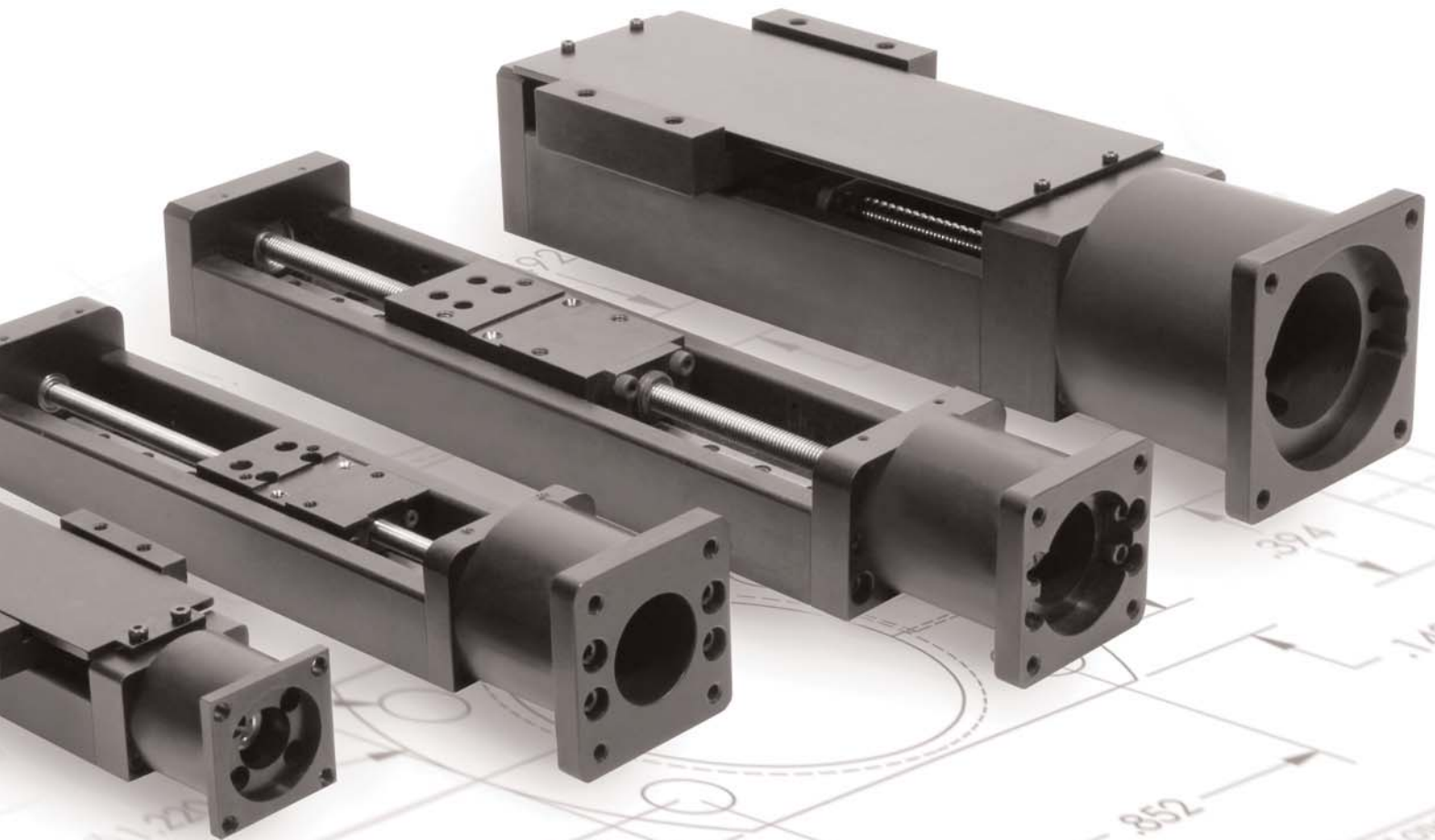


DL Linear Actuators

Ball and Lead Screw Actuated Stages

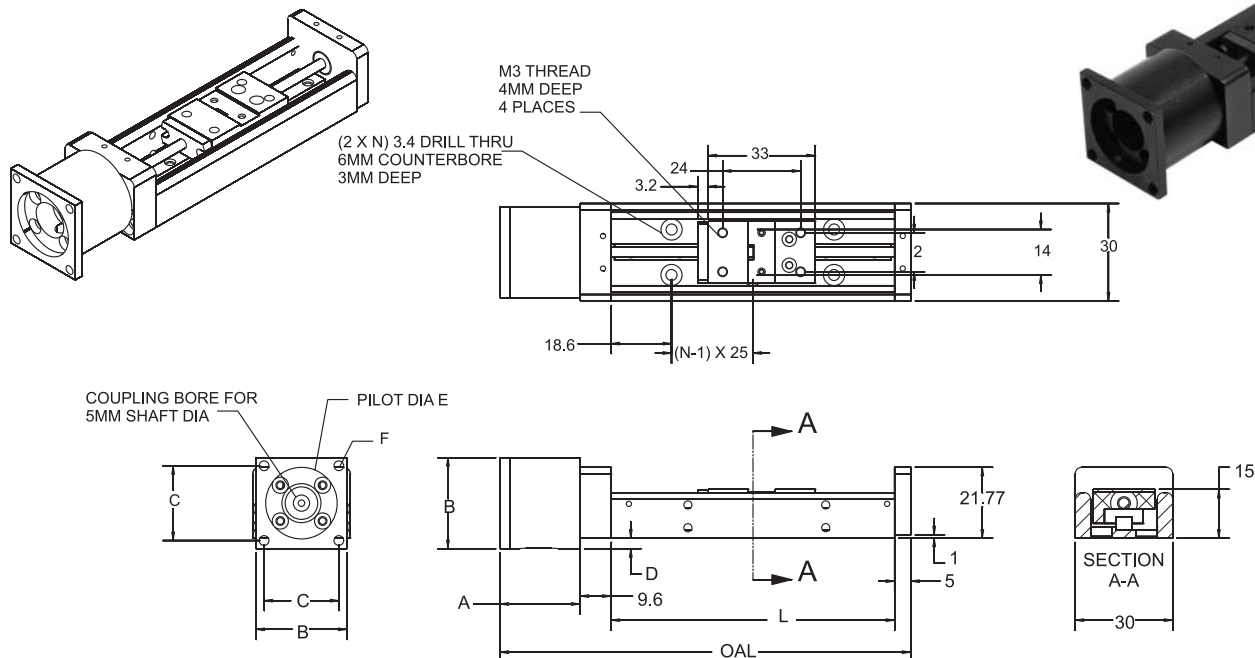
DL Series

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

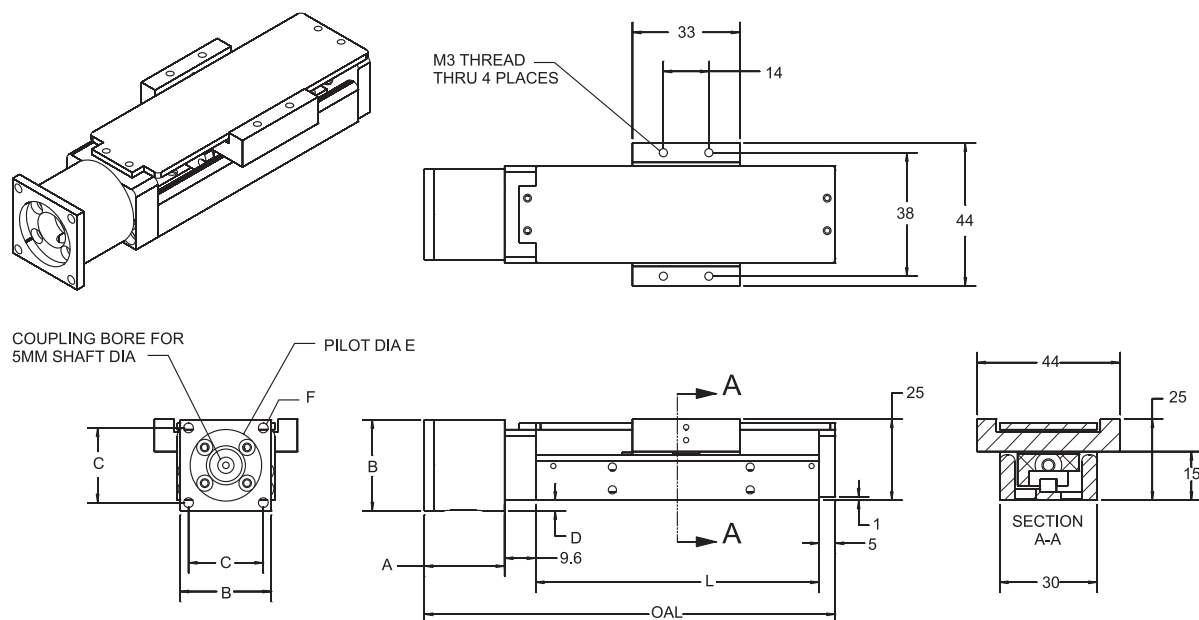


DL 15

DL 15 All units are in mm



DL 15 With Cover

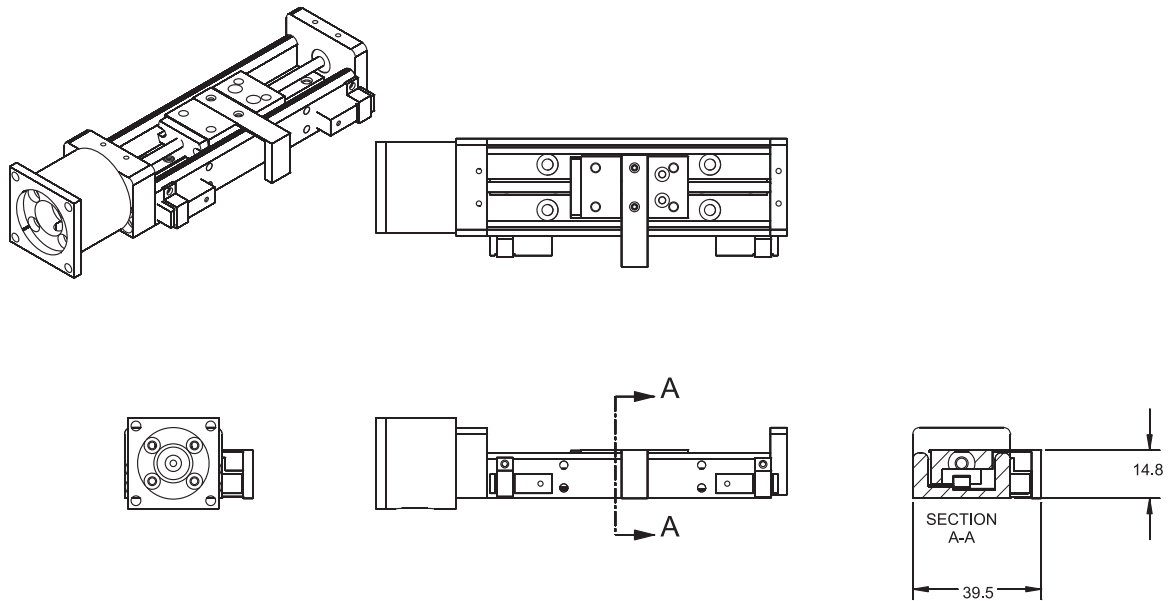


Motor Options

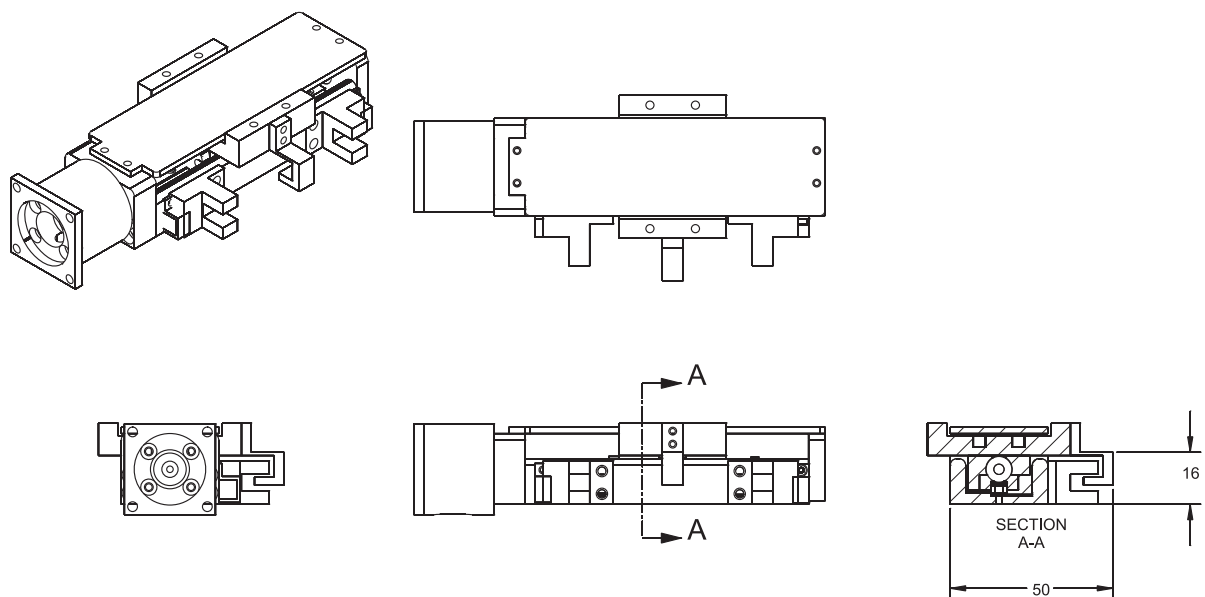
Travel	STEPPER MOTOR (ST)										SERVO MOTOR (SV)						
	OAL	L	N	A	B	C	D	E	F		OAL	A	B	C	D	E	F
25	101.2	62	2								102.2						
50	126.2	87	3	24.7	28	23	3.2	22	3 THRU		127.2	25.6	25	19.8	1.7	20	3.5 THRU
75	151.2	112	4								152.2						
100	176.2	137	5								177.2						

DL 15 (continued)

DL 15 With PX Proximity Sensors

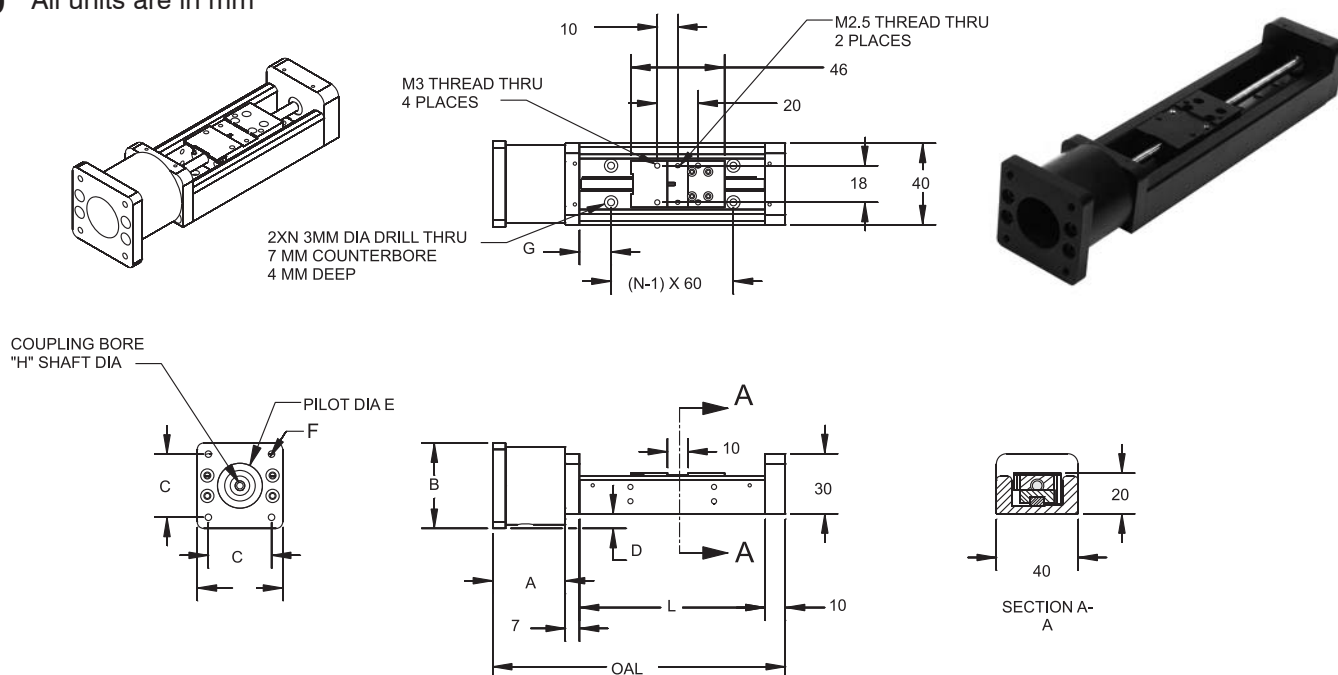


DL 15 With PH Photo Sensors

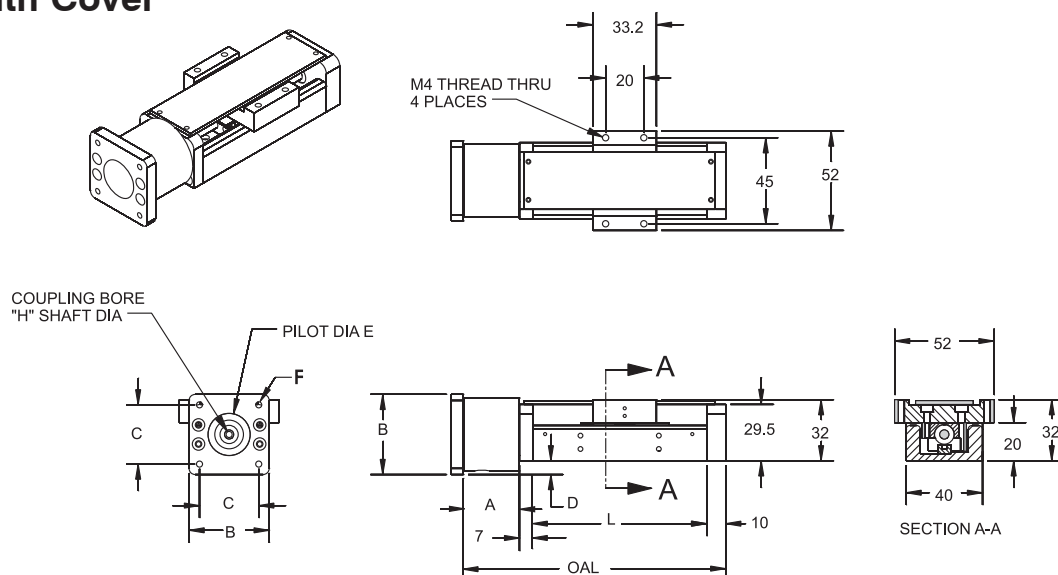


DL 20

DL 20 All units are in mm



DL 20 With Cover



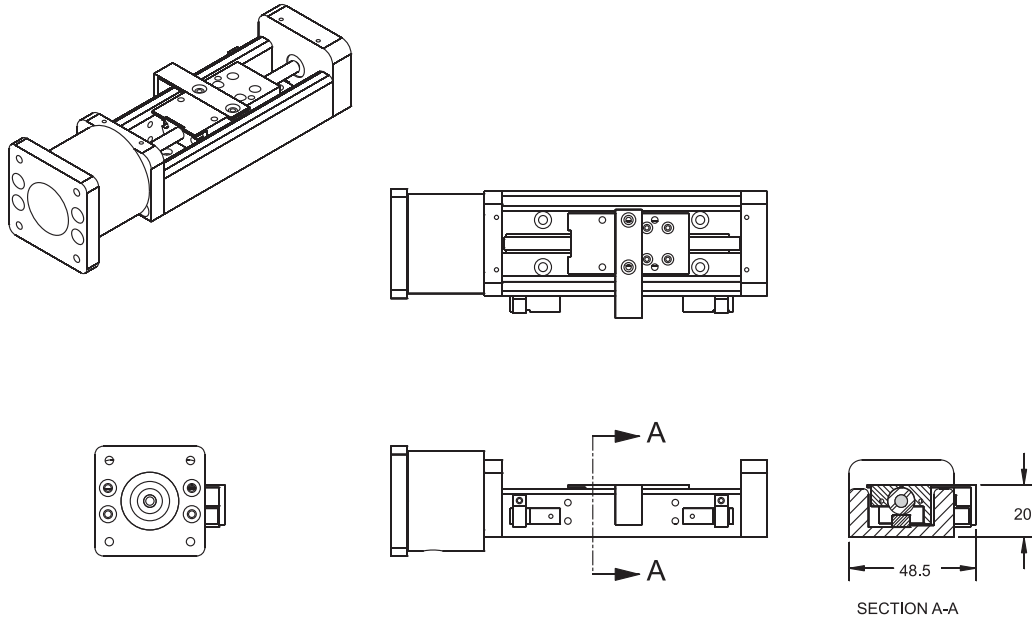
Motor Options

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							

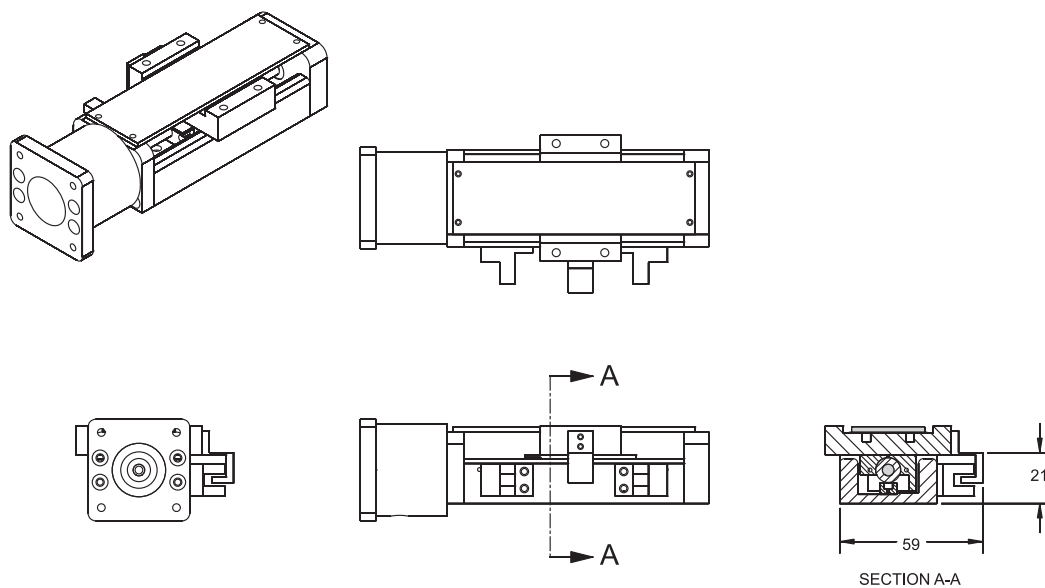
SERVO MOTOR											
Travel	OAL	L	N	G	A	B	C	D	E	F	H
45	148.8	91	2	15.5							
95	198.8	141	3	10.5	40.8	42	32.5	7.1	30	M4 THREAD	6
145	248.8	191	3	35.5							

DL 20 (continued)

DL 20 With PX Proximity Sensors

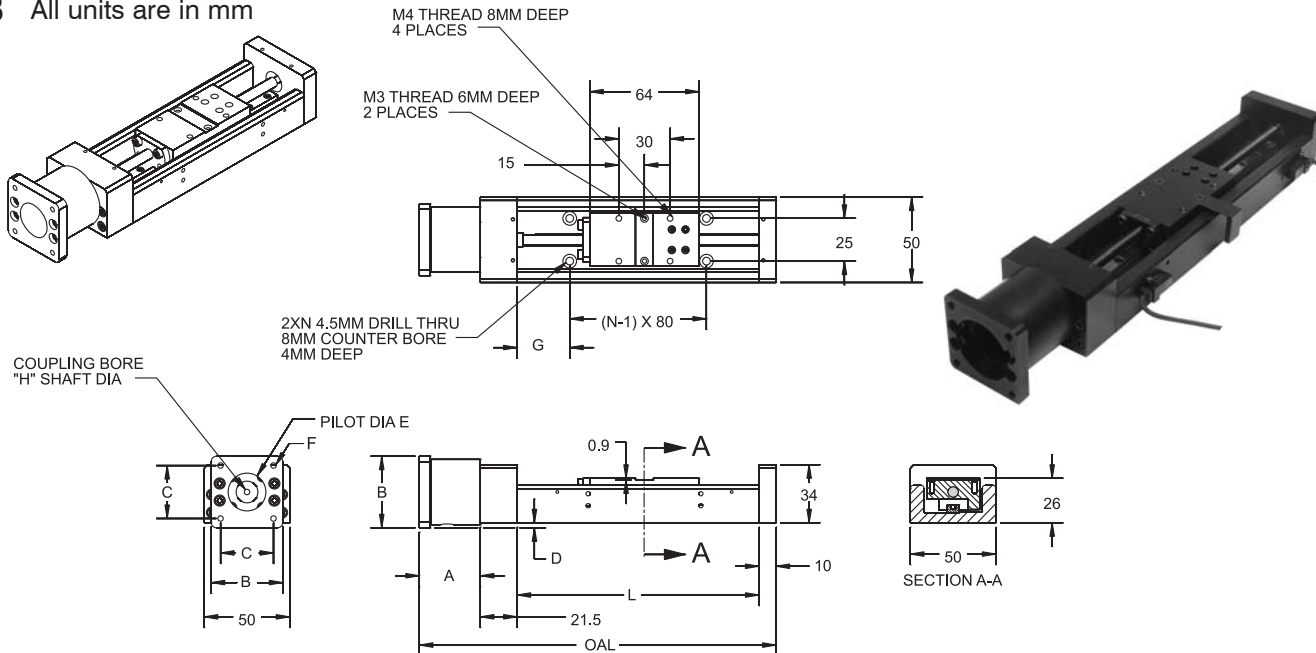


DL 20 With PH Photo Sensors

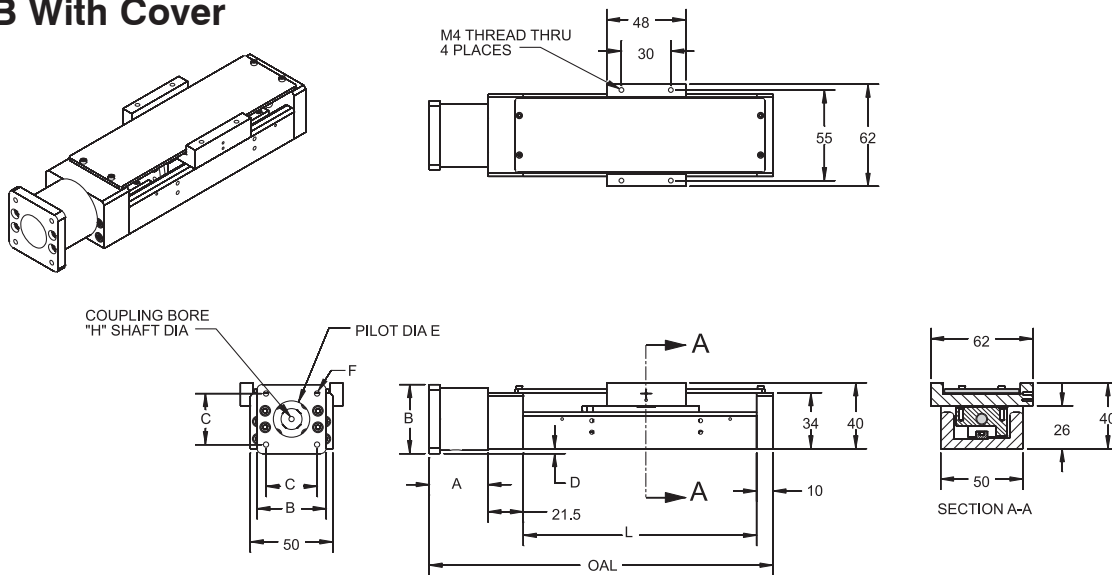


DL 26B

DL 26B All units are in mm



DL 26B With Cover



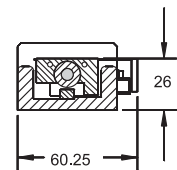
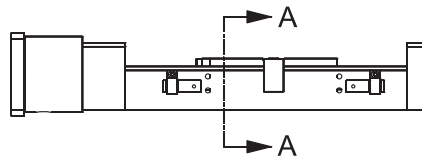
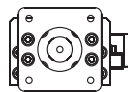
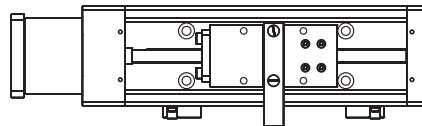
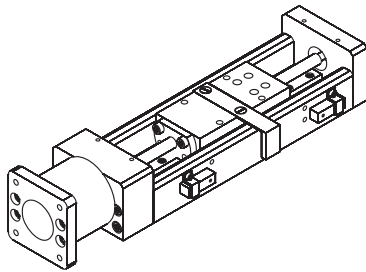
Motor Options

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							

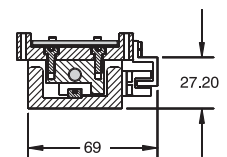
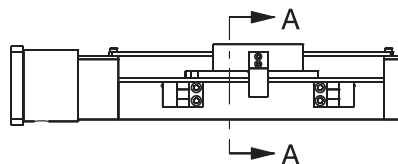
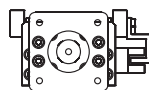
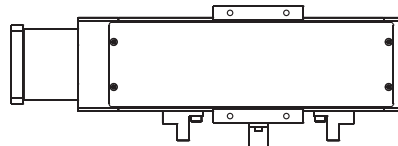
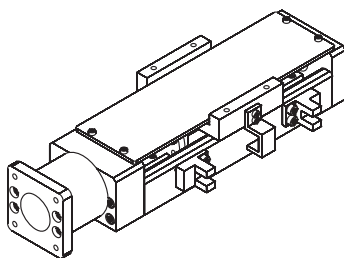
DL 26B (continued)

DL 26B With PX Proximity Sensors



SECTION A-A

DL 26B With PH Photo Sensors

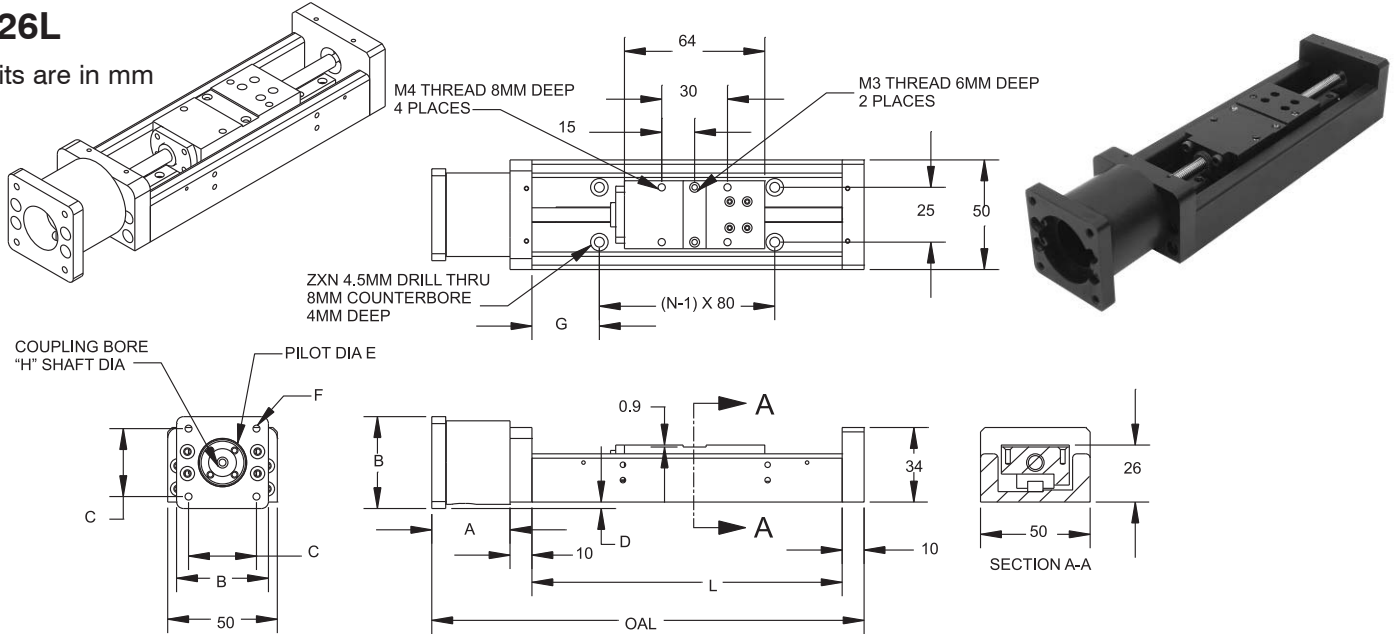


SECTION A-A

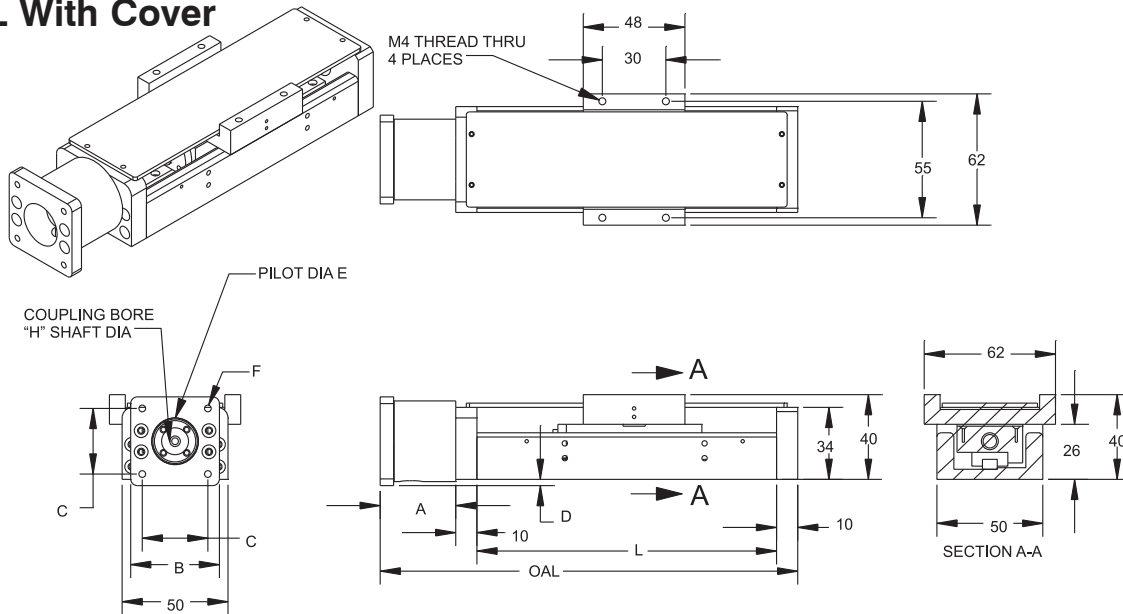
DL 26L

DL 26L

All units are in mm



DL 26L With Cover



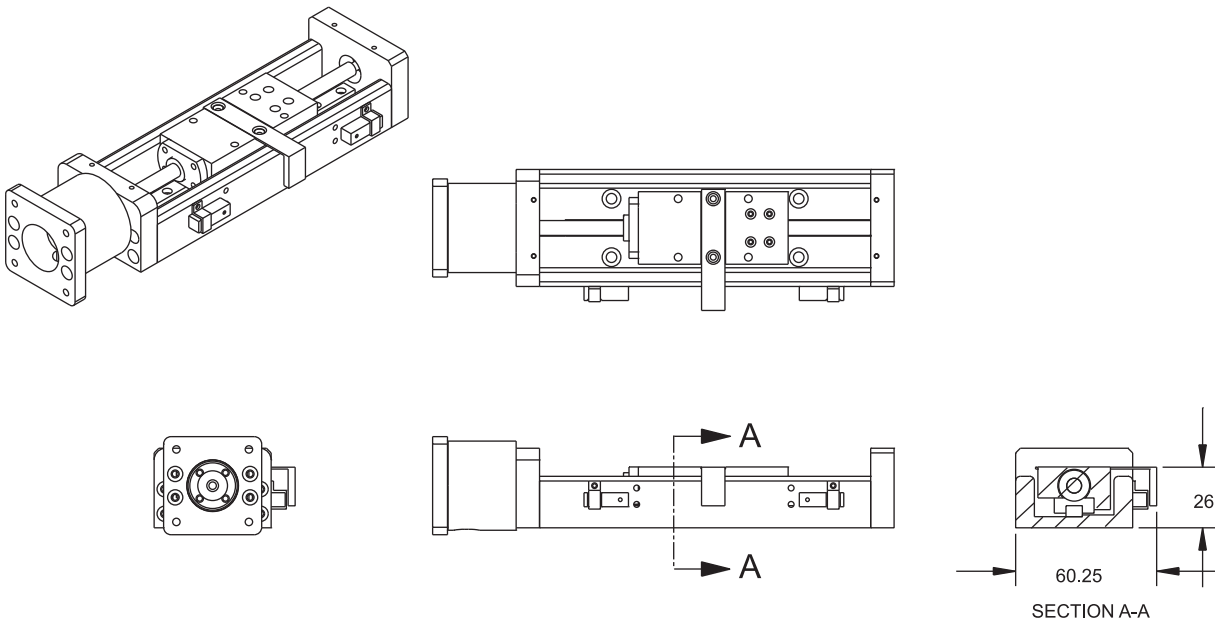
Motor Options

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							

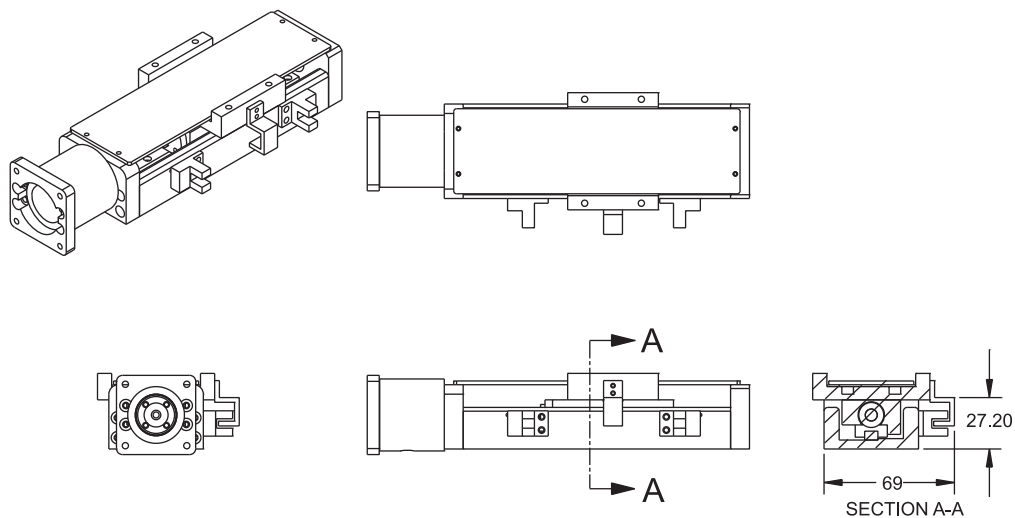
SERVO MOTOR											
Travel	OAL	L	N	G	A	B	C	D	E	F	H
70	202.3	141.5	2	30.75							
120	252.3	191.5	3	15.75	40.8	42	32.5	3	22	M4 THREAD	6
170	302.3	241.5	3	40.75							
220	352.3	291.5	4	25.75							

DL 26L (continued)

DL 26L With PX Proximity Sensors



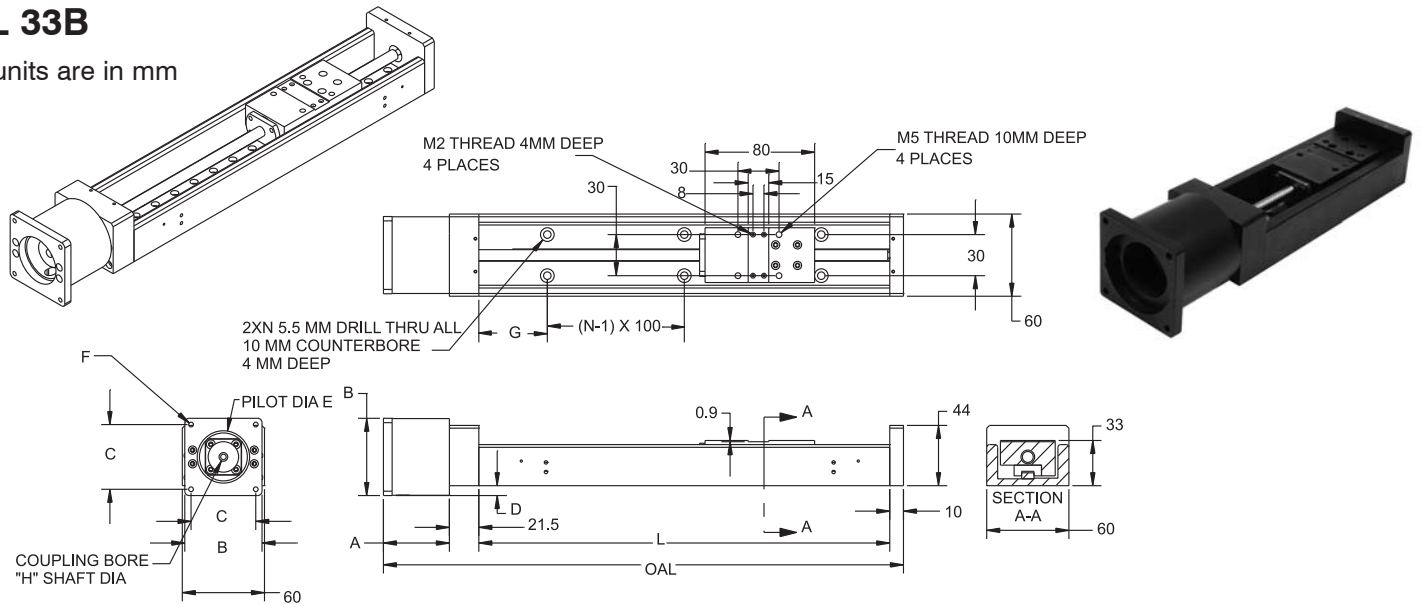
DL 26L With PH Photo Sensors



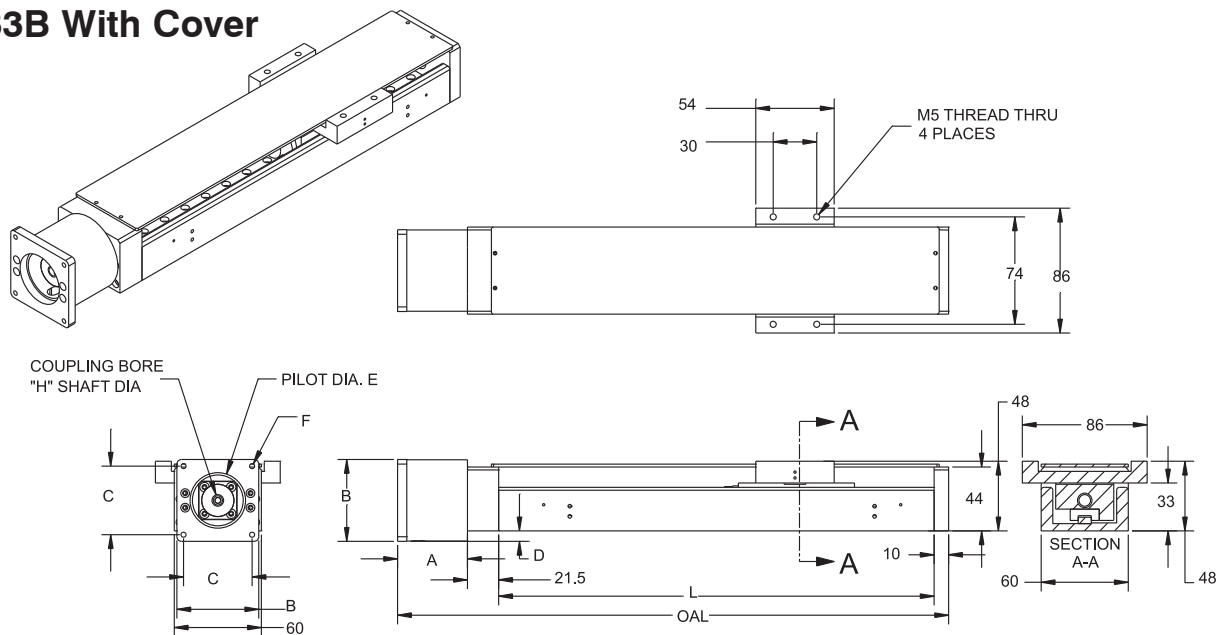
DL 33B

DL 33B

All units are in mm



DL 33B With Cover



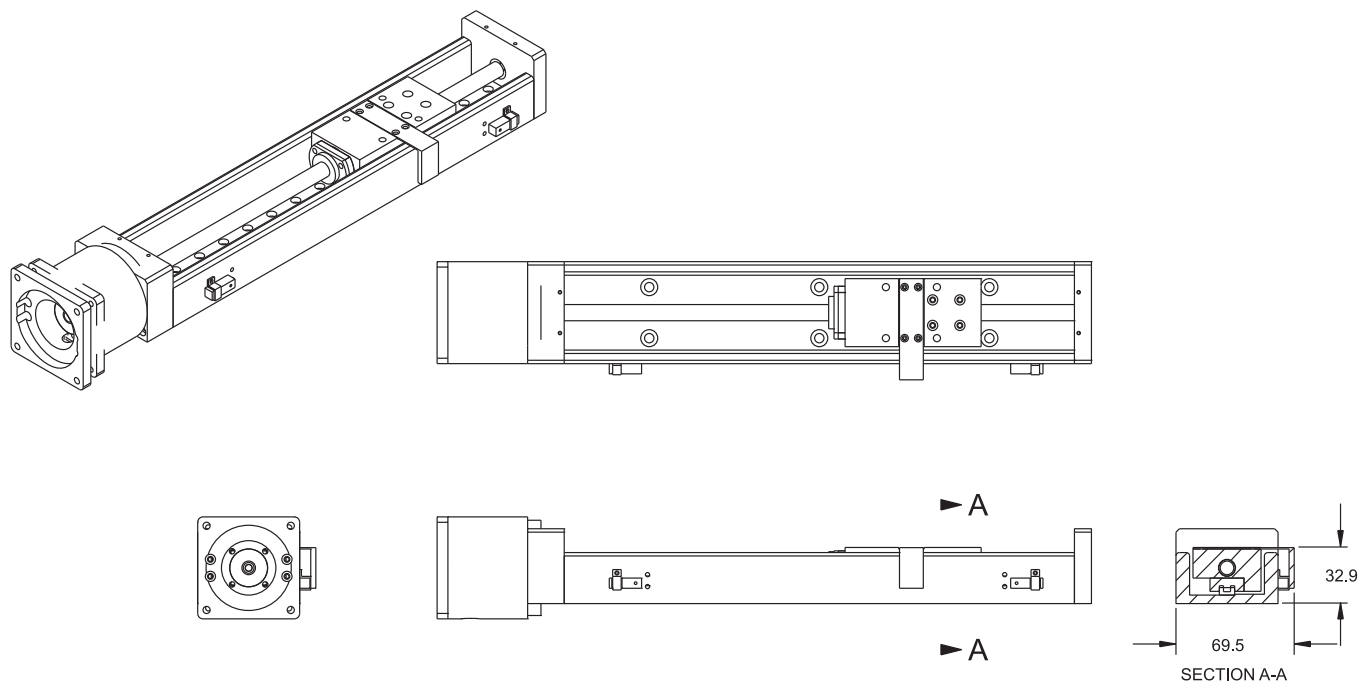
Motor Options

Travel	OAL	L	N	G	STEPPER MOTOR		C	D	E	F	H
					A	B					
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							

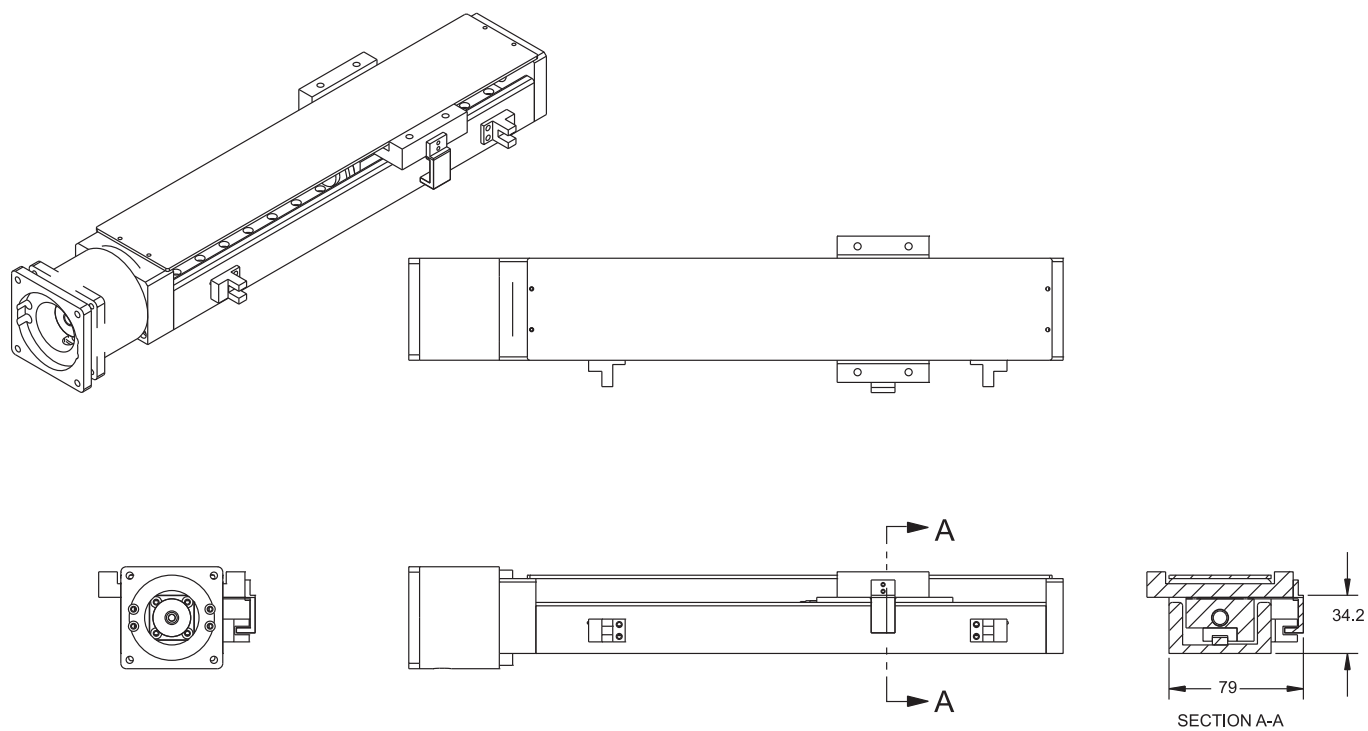
Travel	OAL	L	N	G	SERVO MOTOR		C	D	E	F	H
					A	B					
60	234.7	150	2	25							
110	284.7	200	2	50	53.2	60	49.5	8.9	50.1	M5 THREAD	8
210	384.7	300	3	50							
310	484.7	400	4	50							
410	584.7	500	5	50							

DL 33B (continued)

DL 33B With PX Proximity Sensors



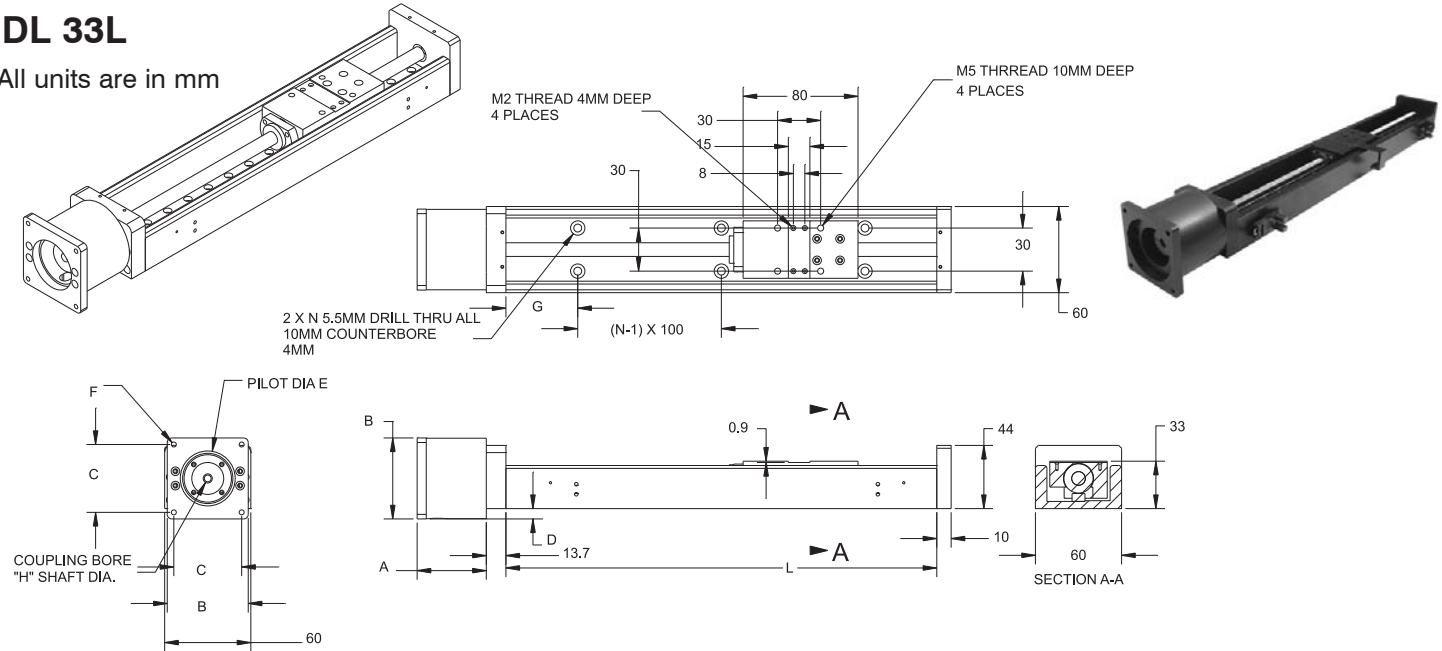
DL 33B With PH Photo Sensors



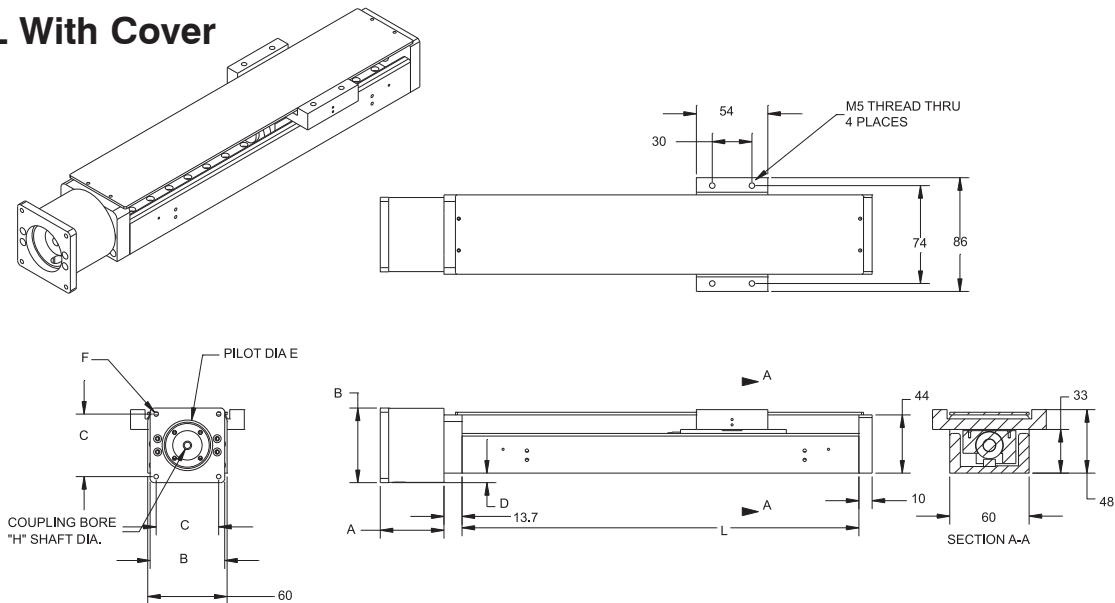
DL 33L

DL 33L

All units are in mm



DL 33L With Cover



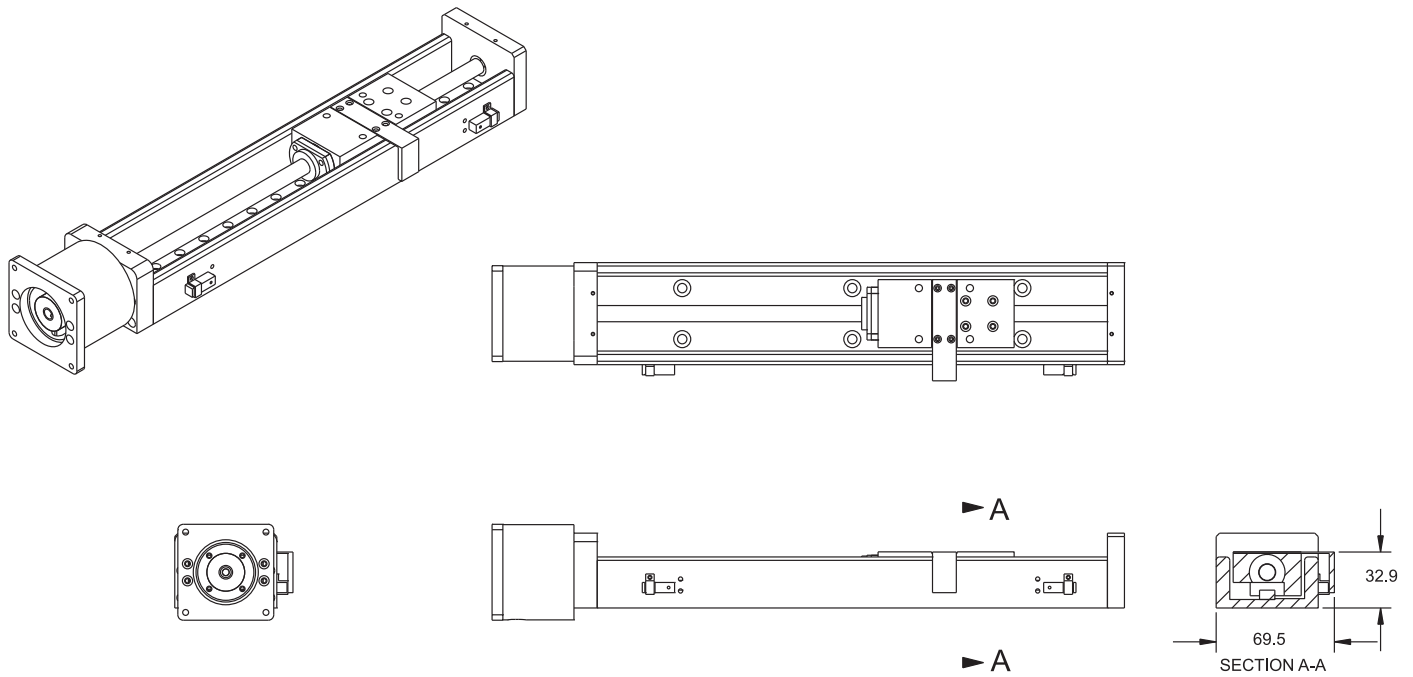
Motor Options

Travel	OAL	L	N	G	STEPPER MOTOR		C	D	E	F	H
					A	B					
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							

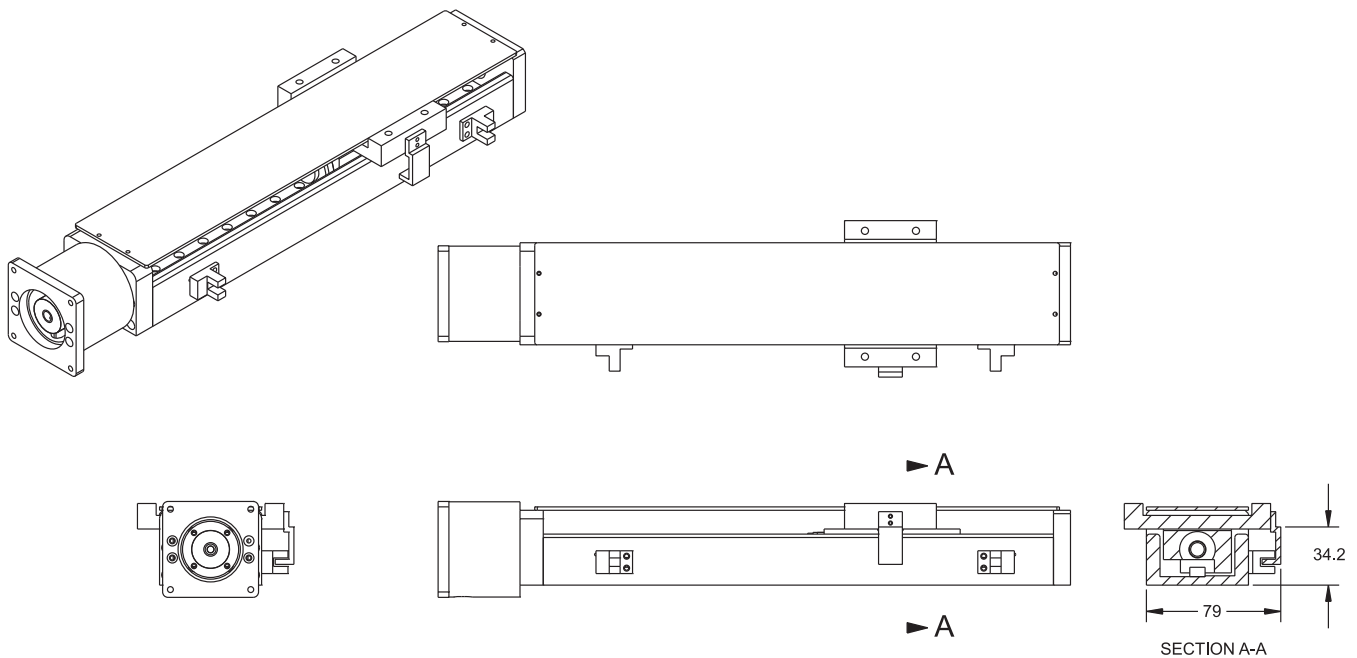
Travel	OAL	L	N	G	SERVO MOTOR		C	D	E	F	H
					A	B					
60	226.9	150	2	25							
110	276.9	200	2	50	53.2	60	49.5	8.9	50.1	M5 THREAD	8
210	376.9	300	3	50							
310	476.9	400	4	50							
410	576.9	500	5	50							

DL 33L (continued)

DL 33L With PX Proximity Sensors



DL 33L With PH Photo Sensors



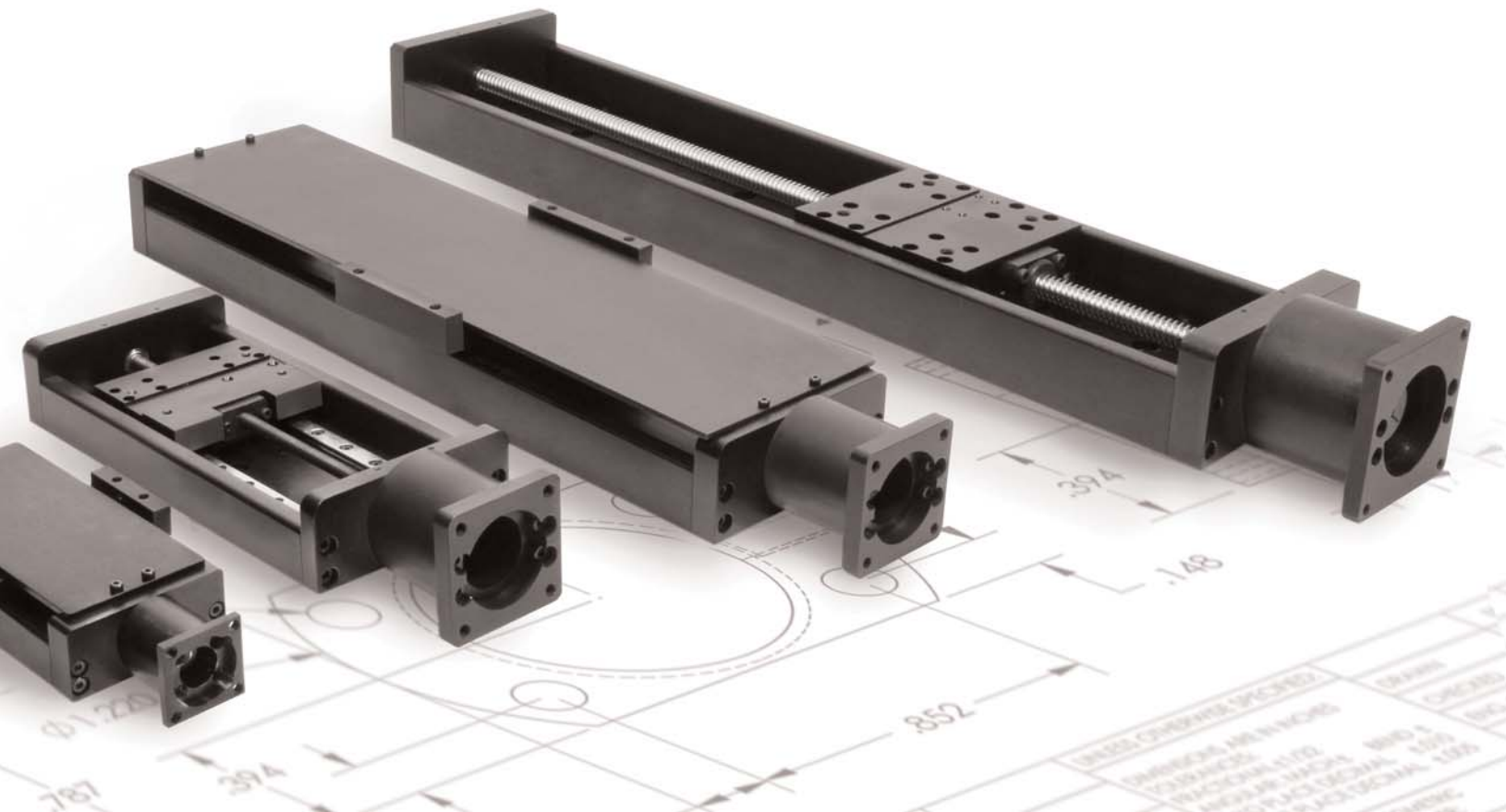


DL DW Linear Actuators

Ball and Lead Screw Actuated Stages

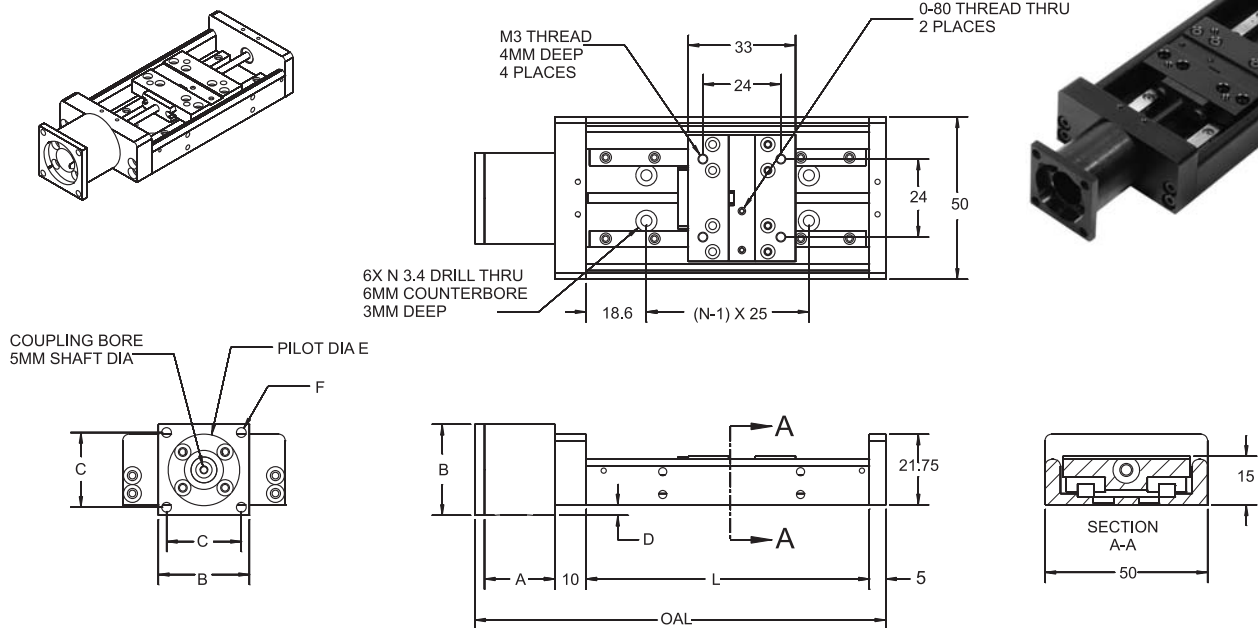
DL DW Series

Compact:	Low profile space saving design
Wide mountin platform:	Reduces axial play
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

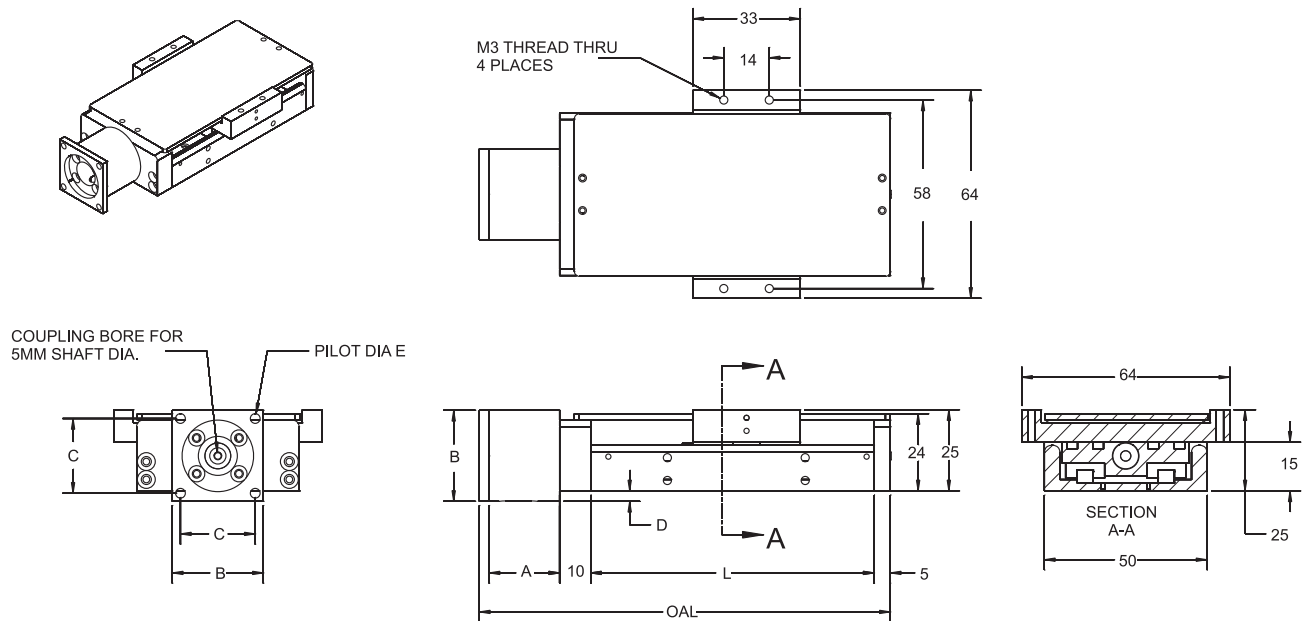


DL 15 DW

DL 15 DW All units are in mm



DL 15 DW With Cover

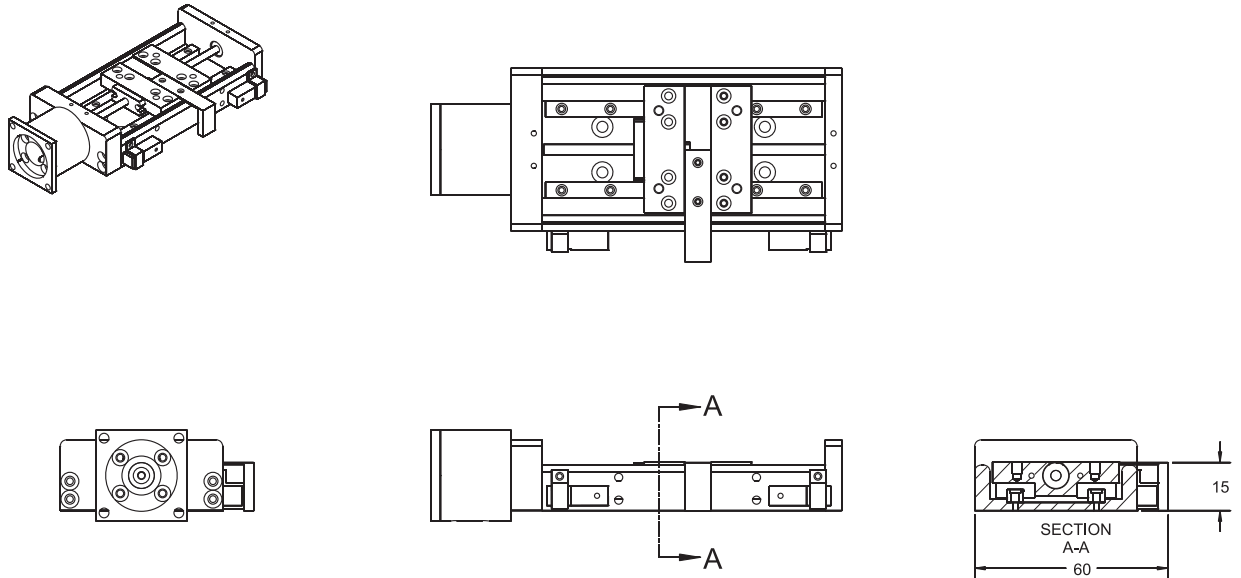


Motor Options

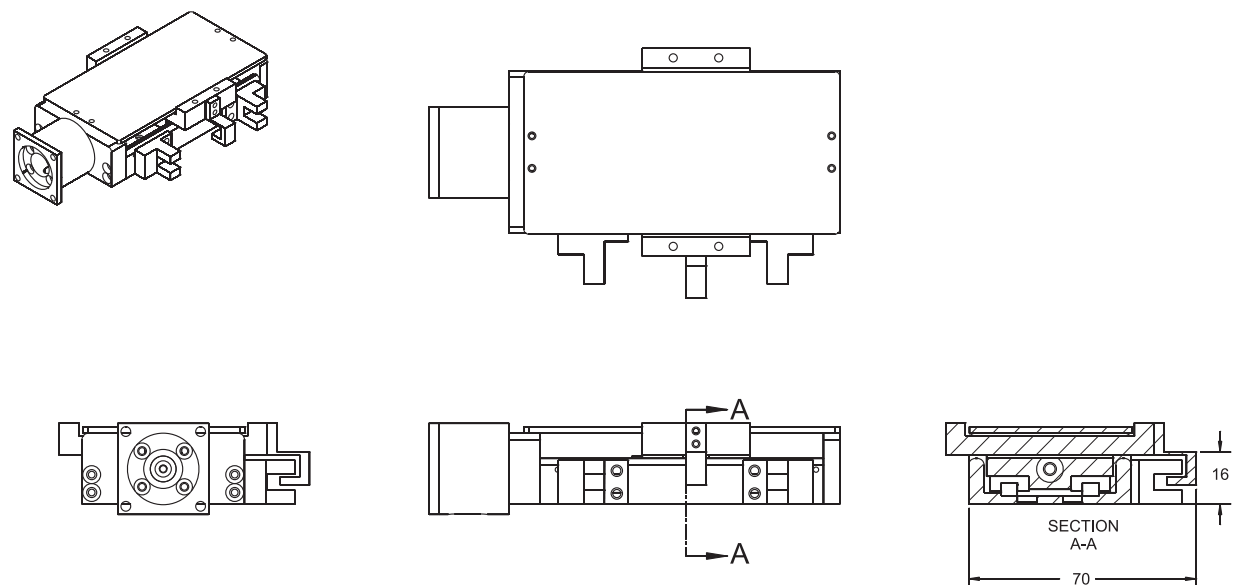
STEPPER MOTOR (ST)										SERVO MOTOR (SV)						
Travel	OAL	L	N	A	B	C	D	E	F	OAL	A	B	C	D	E	F
25	101.2	62	2							102.2						
50	126.2	87	3	24.7	28	23	3.2	22	3 THRU	127.2	25.6	25	19.8	1.7	20	3.5 THRU
75	151.2	112	4							152.2						
100	176.2	137	5							177.2						

DL 15 DW (continued)

DL 15 DW With PX Proximity Sensors

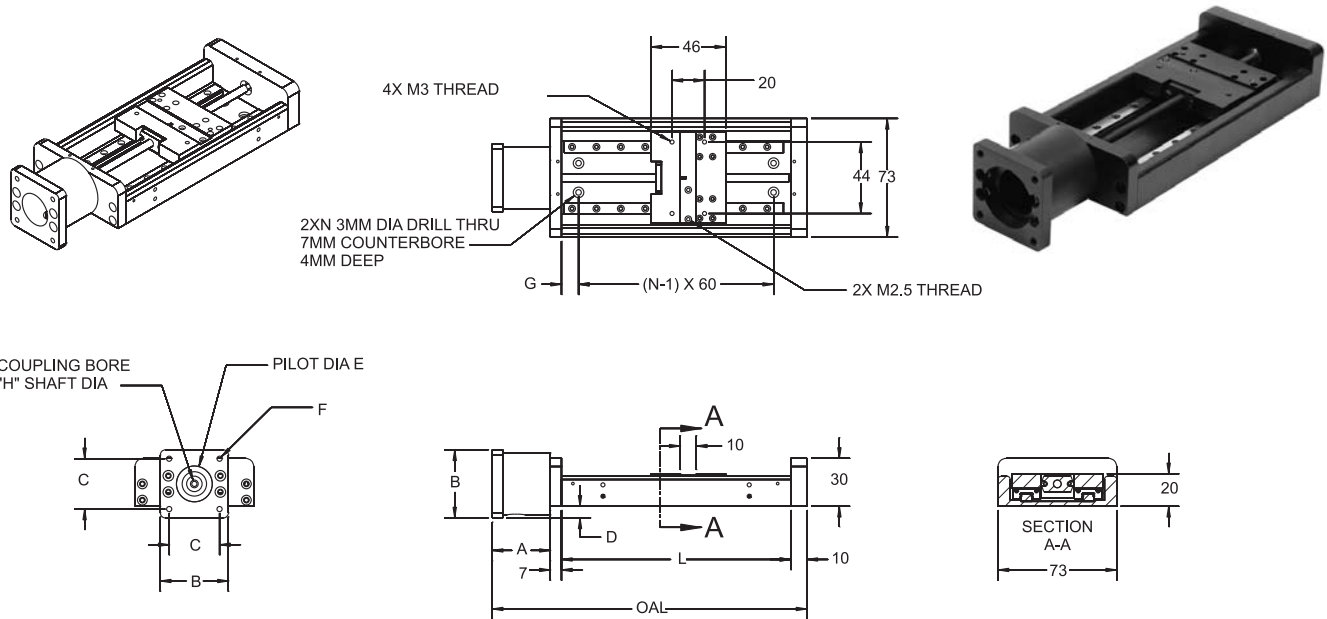


DL 15 DW With PH Photo Sensors

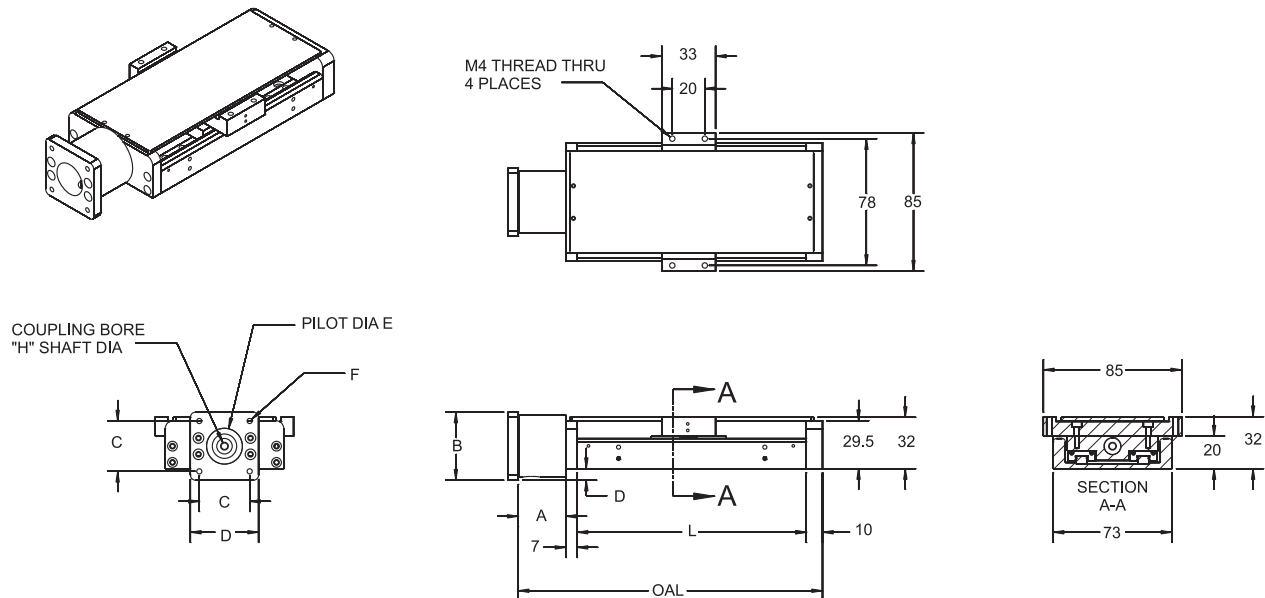


DL 20 DW

DL 20 DW All units are in mm



DL 20 DW With Cover



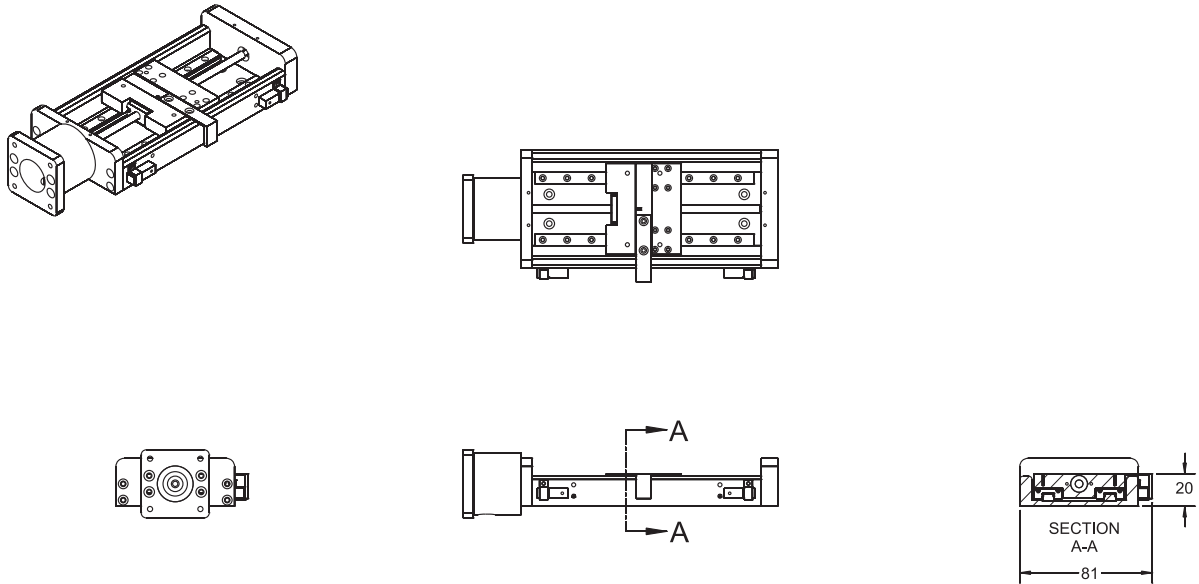
Motor Options

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							

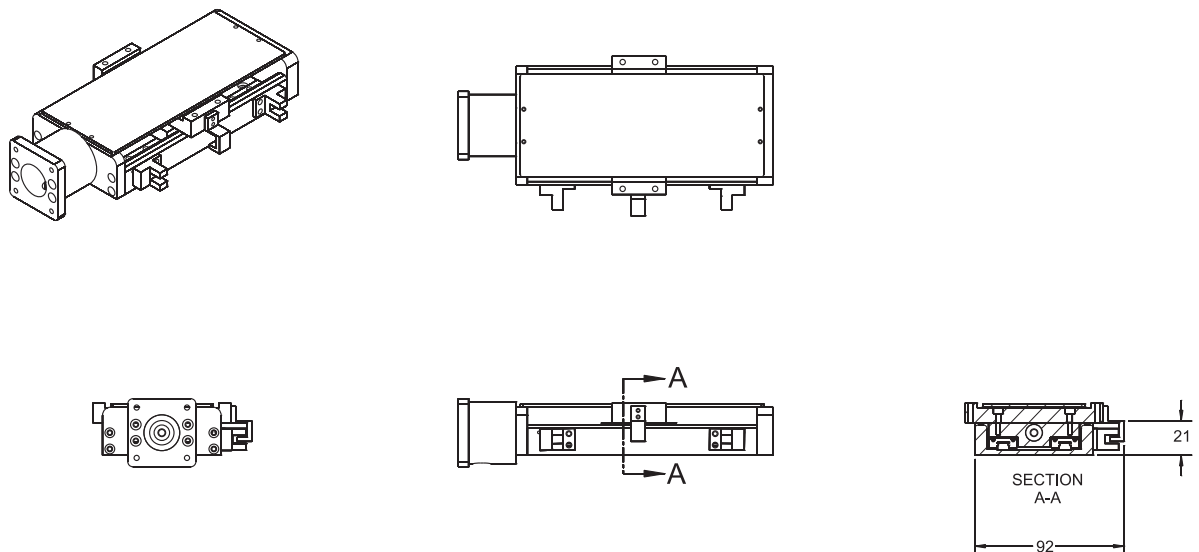
SERVO MOTOR											
Travel	OAL	L	N	G	A	B	C	D	E	F	H
45	148.8	91	2	15.5							
95	198.8	141	3	10.5	40.8	42	32.5	7.1	30	M4 THREAD	6
145	248.8	191	3	35.5							

DL 20 DW (continued)

DL 20 DW With PX Proximity Sensors

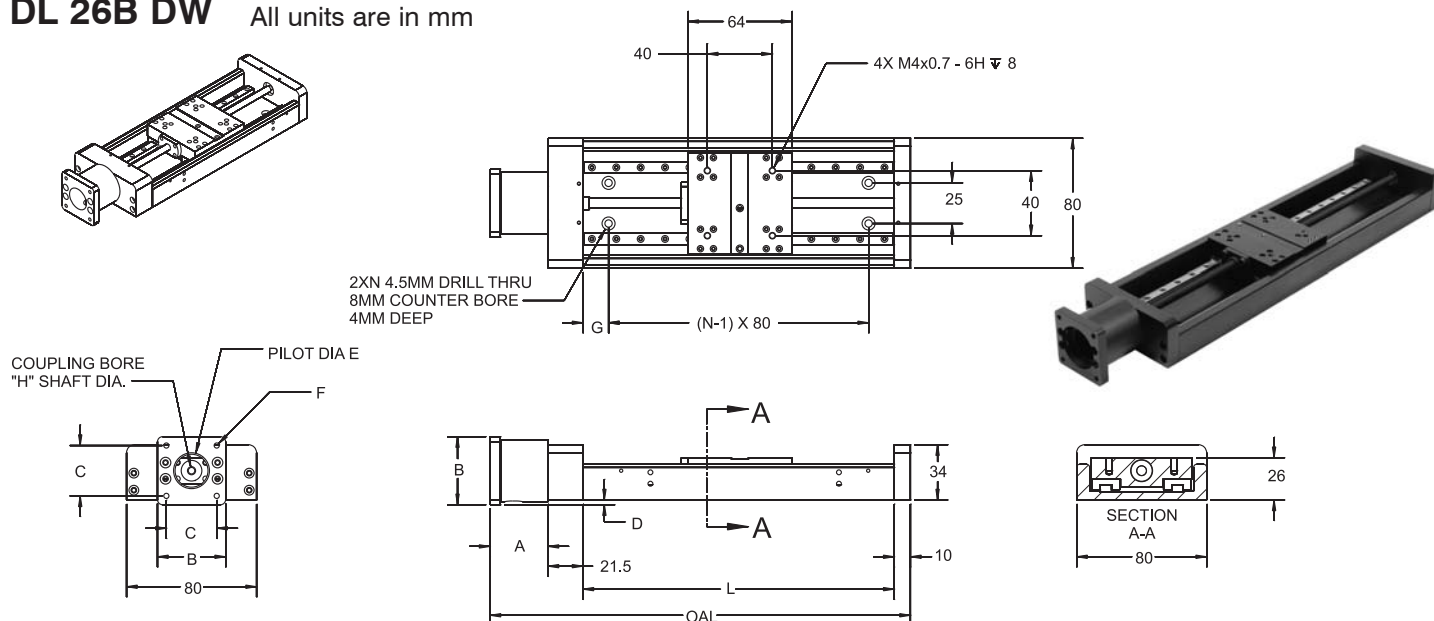


DL 20 DW With PH Photo Sensors

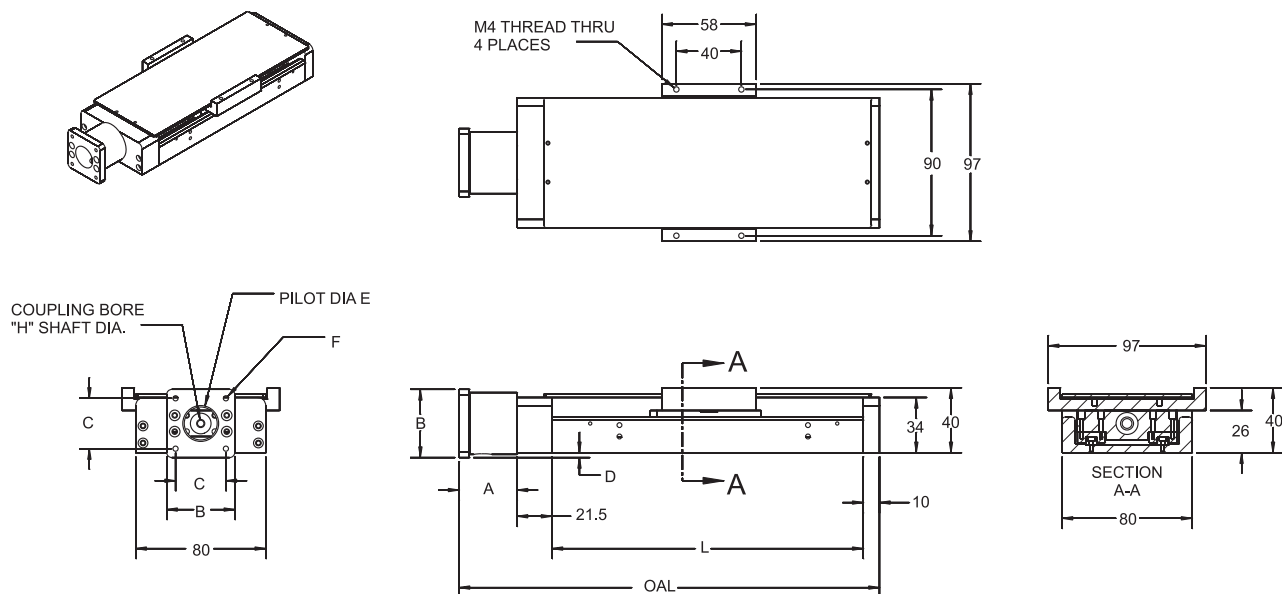


DL 26B DW

DL 26B DW All units are in mm



DL 26B DW With Cover



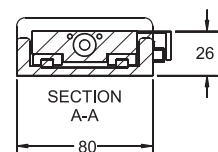
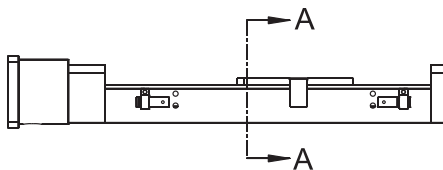
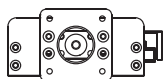
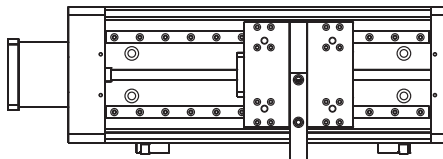
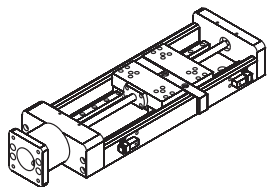
Motor Options

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							

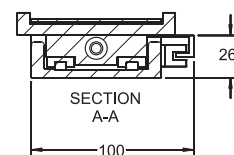
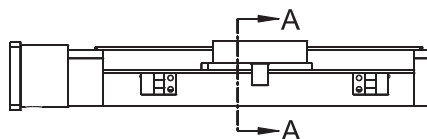
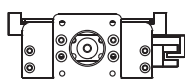
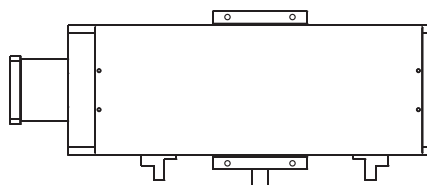
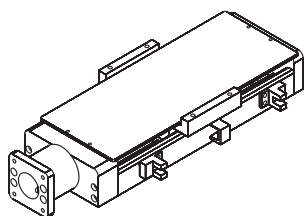
SERVO MOTOR											
Travel	OAL	L	N	G	A	B	C	D	E	F	H
70	213.8	141.5	2	30.75							
120	263.8	191.5	3	15.75	40.8	42	32.5	3	30	M4 THREAD	6
170	313.8	241.5	3	40.75							
220	363.8	291.5	4	25.75							

DL 26B DW (continued)

DL 26B DW With PX Proximity Sensors



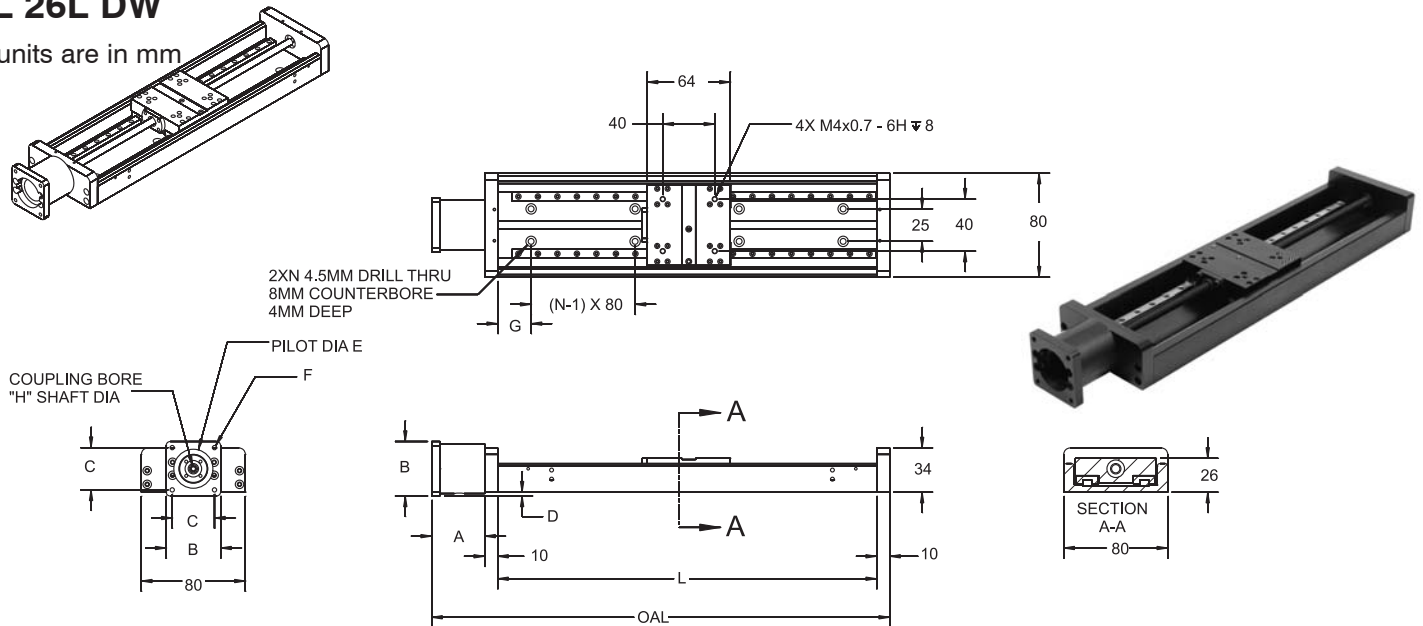
DL 26B DW With PH Photo Sensors



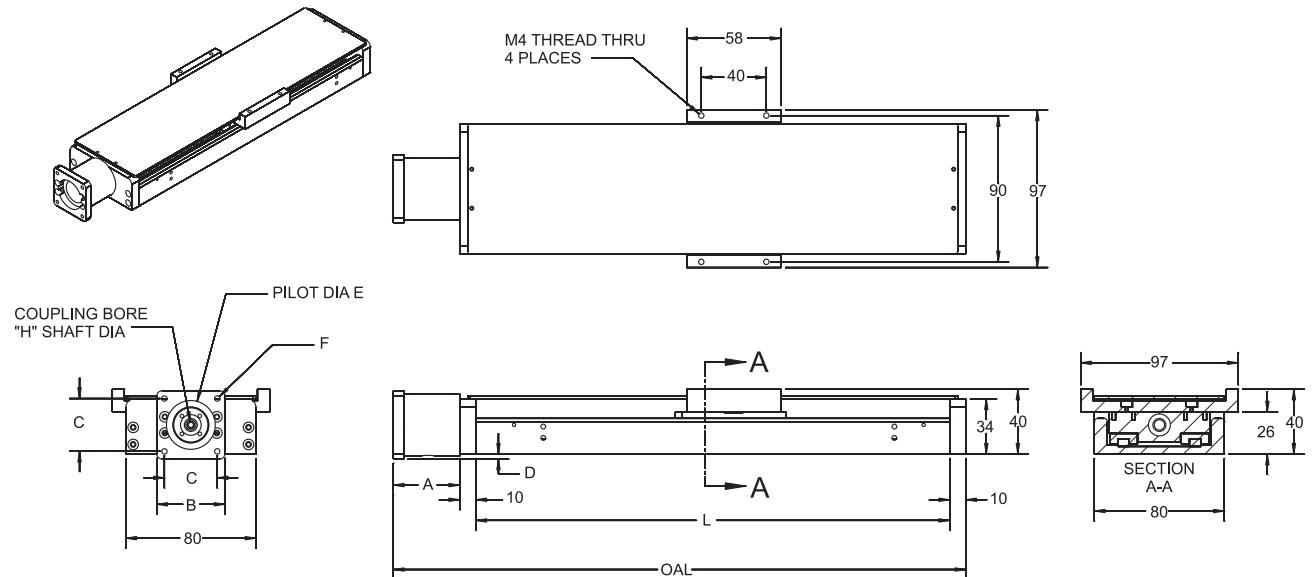
DL 26L DW

DL 26L DW

All units are in mm



DL 26L DW With Cover



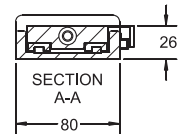
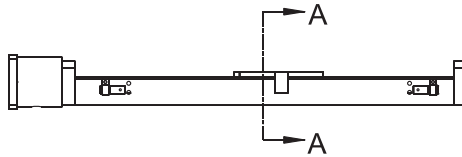
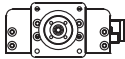
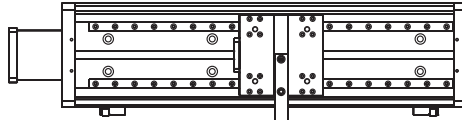
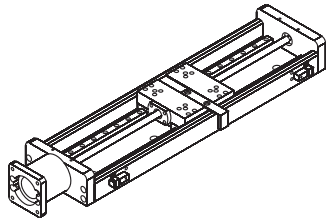
Motor Options

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								

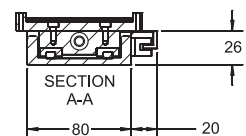
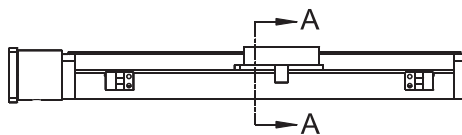
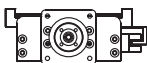
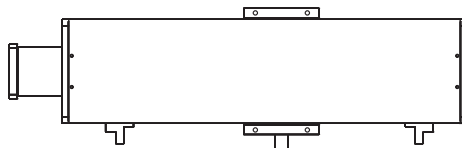
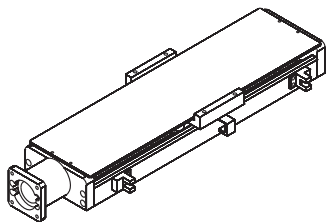
SERVO MOTOR												
Travel	OAL	L	N	G	A	B	C	D	E	F	H	
70	202.3	141.5	2	30.75								
120	252.3	191.5	3	15.75	40.8	42	32.5	3	22	M4 THREAD	6	
170	302.3	241.5	3	40.75								
220	352.3	291.5	4	25.75								

DL 26L DW (continued)

DL 26L DW With PX Proximity Sensors



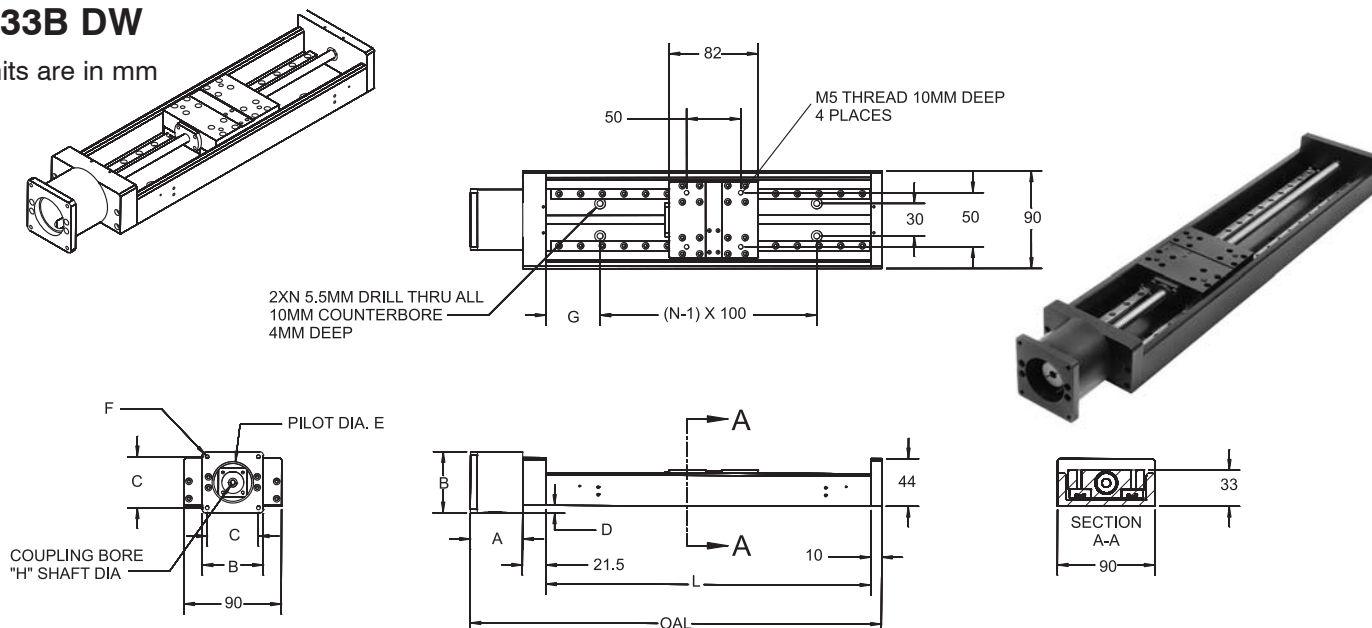
DL 26L DW With PH Photo Sensors



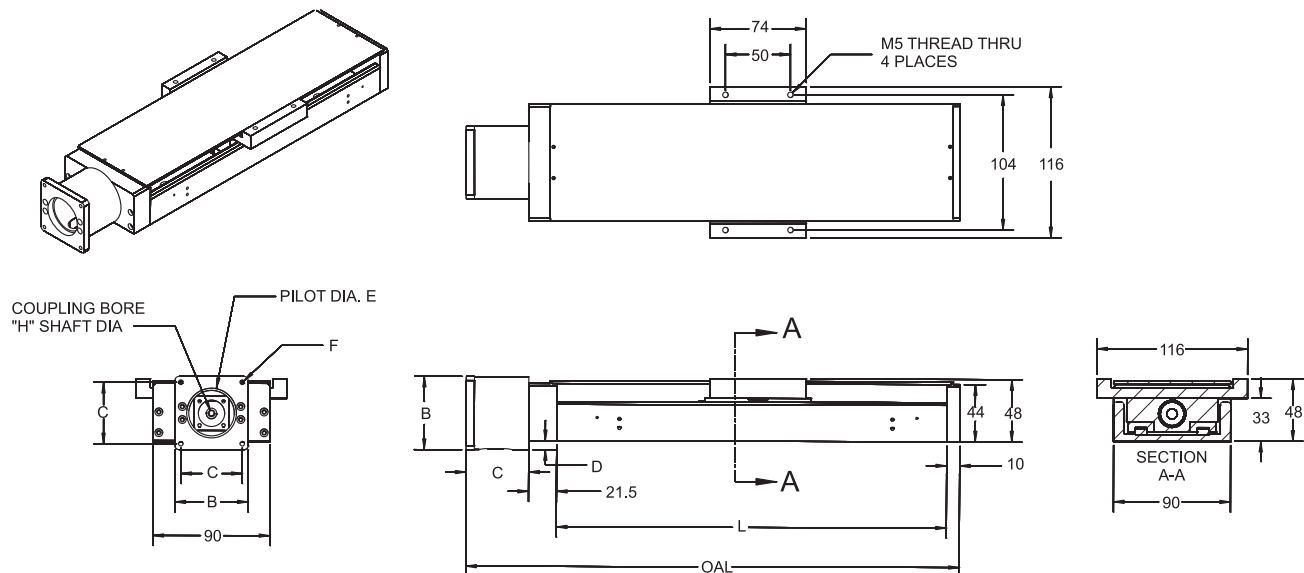
DL 33B DW

DL 33B DW

All units are in mm



DL 33B DW With Cover



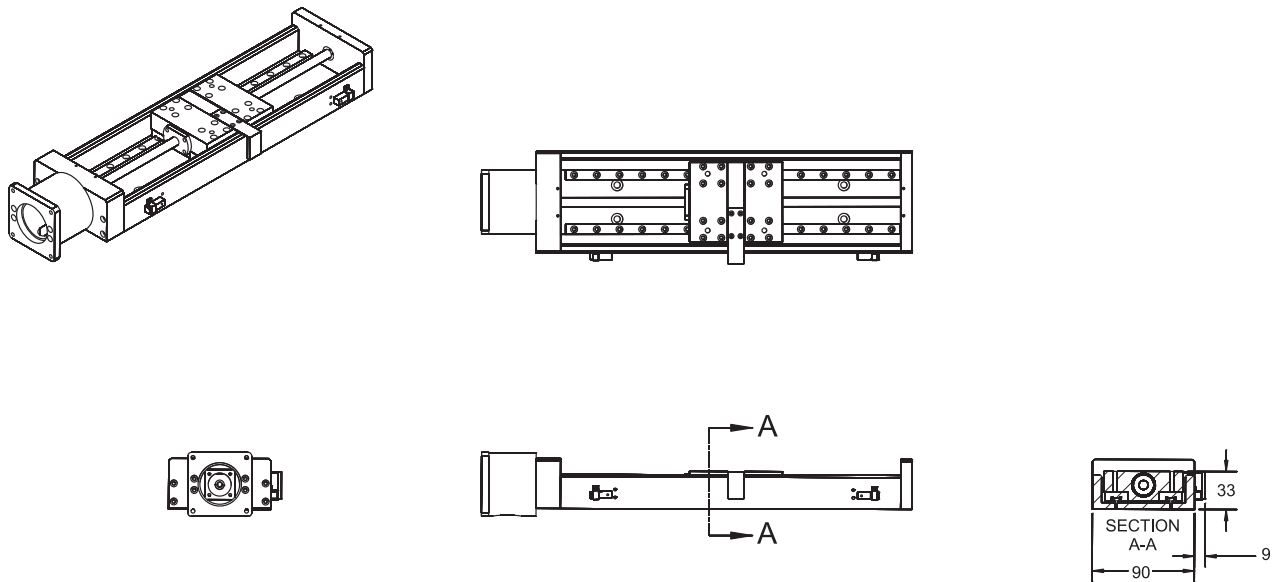
Motor Options

Travel	OAL	L	N	G	STEPPER MOTOR		C	D	E	F	H
					A	B					
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							

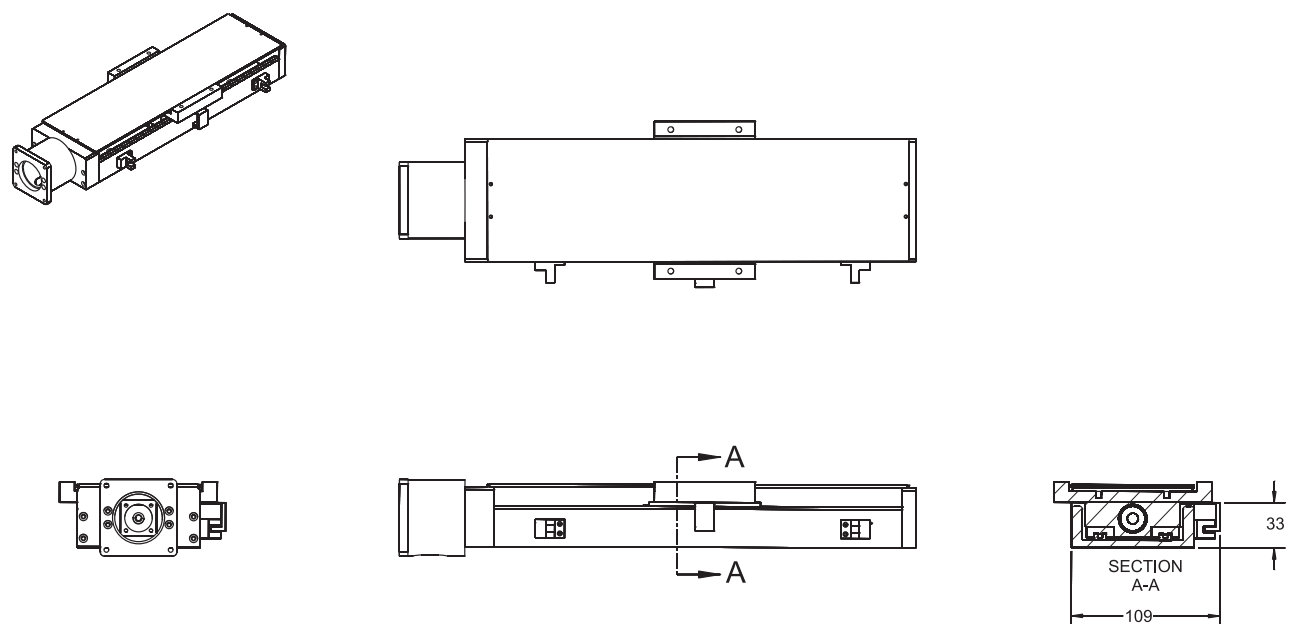
Travel	OAL	L	N	G	SERVO MOTOR		C	D	E	F	H
					A	B					
60	234.7	150	2	25							
110	284.7	200	2	50	53.2	60	49.5	8.9	50.1	M5 THREAD	8
210	384.7	300	3	50							
310	484.7	400	4	50							
410	584.7	500	5	50							

DL 33B DW (continued)

DL 33B DW With PX Proximity Sensors



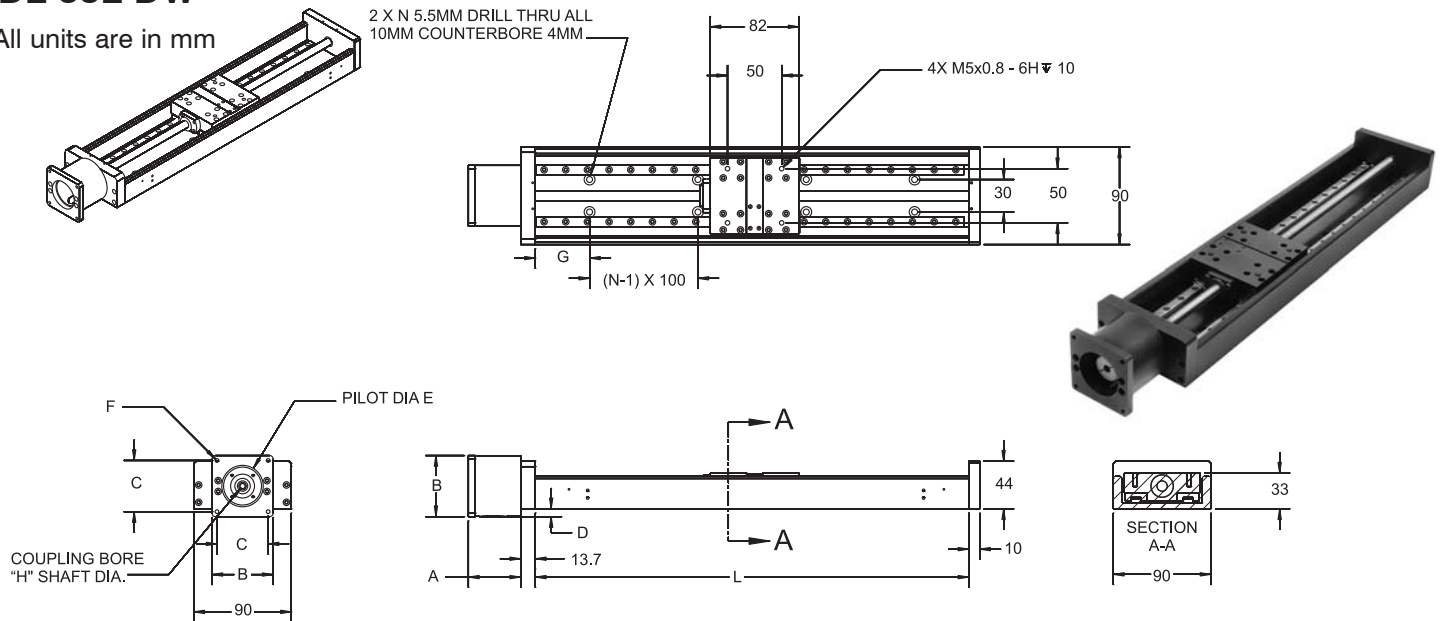
DL 33B DW With PH Photo Sensors



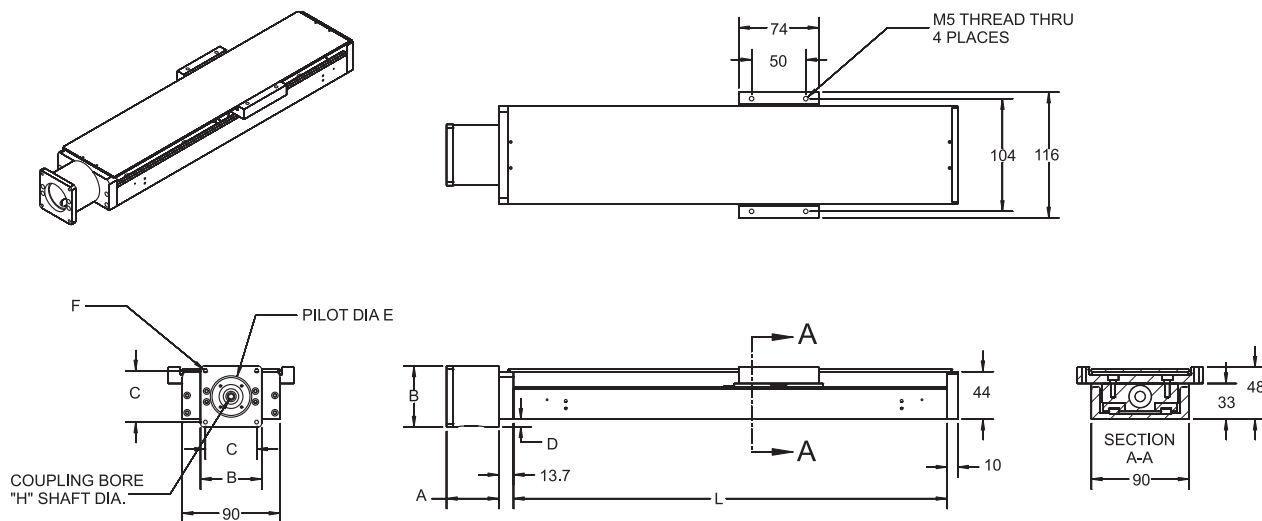
DL 33L DW

DL 33L DW

All units are in mm



DL 33L DW With Cover



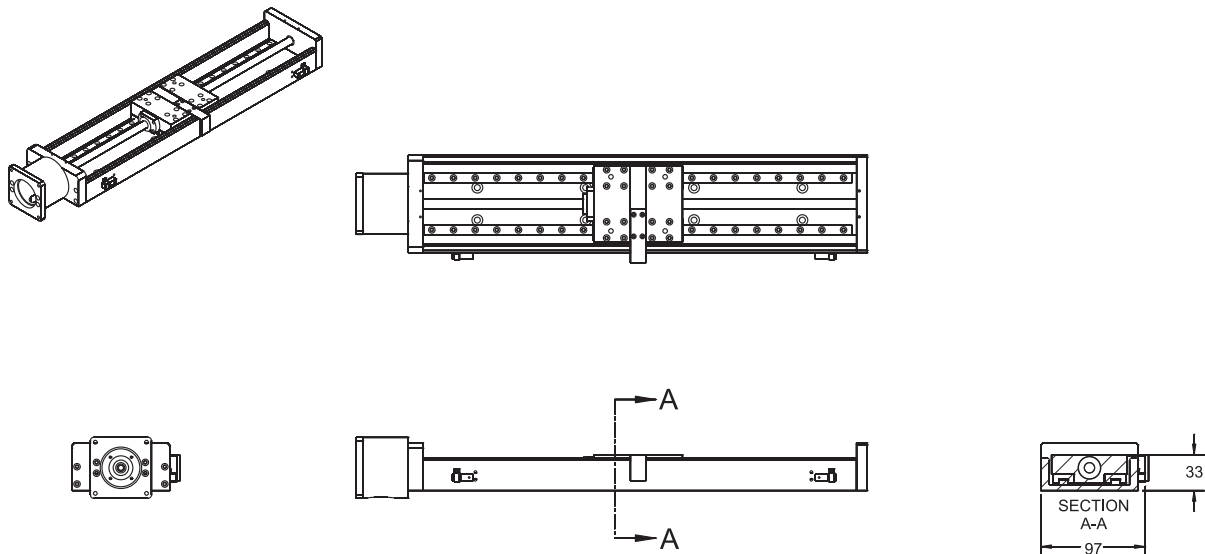
Motor Options

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

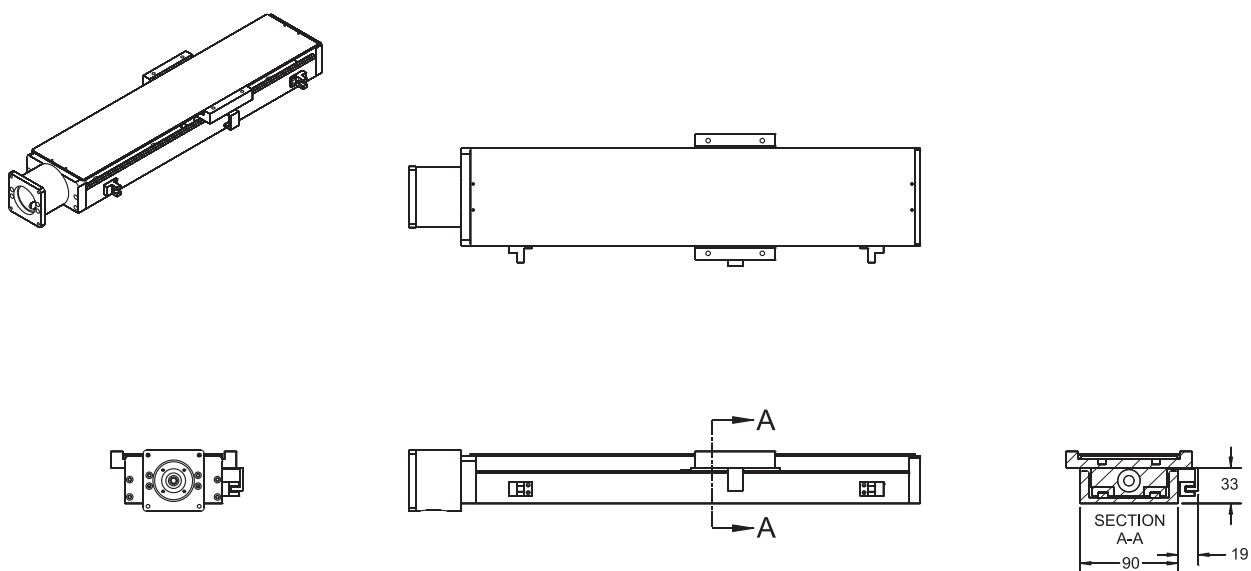
Travel	OAL	L	N	G	SERVO MOTOR		C	D	E	F	H
					A	B					
60	226.9	150	2	25	53.2	60	49.5	8.9	50.1	M5 THREAD	8
110	276.9	200	2	50							
210	376.9	300	3	50							
310	476.9	400	4	50							
410	576.9	500	5	50							

DL 33L DW (continued)

DL 33L DW With PX Proximity Sensors



DL 33L DW With PH Photo Sensors





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