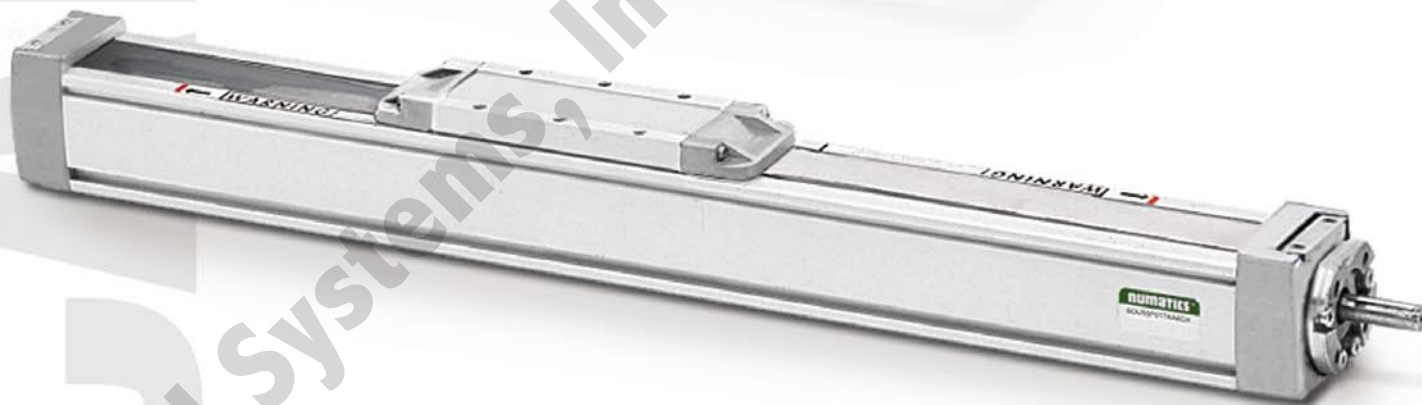


electrical actuators

SDU Series

Screw Drive Unit



numatics®

SDU Series Screw Drive Unit 3-6

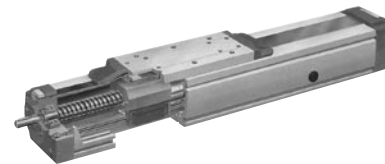
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Screw Drive Unit

The ball screw drive provides precise positioning and high load carrying capability. High stiffness and repeatability characterize the ball screw drive. Stroke lengths to 19.7 feet are standard.

Thrust loads up to 1100 lbs. (Square rail model shown above)

Suitable for mounting in any position horizontal, vertical, inverted or on an incline.

Low torque required to drive the load due to high efficiency ball screw drive.

Linear bearings provide low stick slip for precise positioning and ease of moving load.

Magnetic cover strip protects the ball guides from contaminants and effectively seals the profile from the environment.

Low profile saddle.

Tensioning station on cover strip helps eliminate stretching of the strip to extend life.

T-slots for mounting feet or limit switches.

Ball screw support allows higher speeds with longer stroke actuators.

Mounting feet are modular for ease of installation.

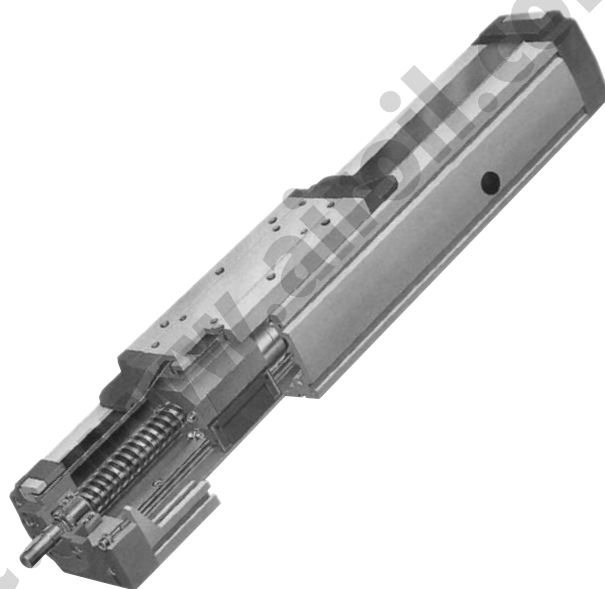
Motor mounting for all NEMA standard 23, 34 and 42 frame motors.

Rodless design allows the load to be mounted directly to the carriage, eliminates the need for support bearings and reduces overall length of the unit.

NEMA standard gearheads mount directly to the unit.

Optional NuMate™ mounting pattern is available.

Custom designs such as dual carriage units, special motor mounts and special carriage attachments are available.



How to Order

SDU 55 P 060 B B 6 D X

Series
55
75
100

Carriage Support
P = Prism Guided
B = Ball / Rail Guided

Stroke
001 to 236 Inches

Mounting Brackets
A = 2 Brackets
B = 3 Brackets
C = 4 Brackets
D = 5 Brackets
E = 6 Brackets
X = No Brackets

Motor Mounting
A = NEMA 23
B = NEMA 34
C = NEMA 42
X = No Mount

NuMate Interface
A = "A" Mount
B = "B" Mount
C = "C" Mount
D = "D" Mount
E = "E" Mount
X = No Mount

Sensing Position
A = Single Position Extended
B = Single Position Retract
C = Two Position
D = No Sensing
E = Three Position
F = Four Position

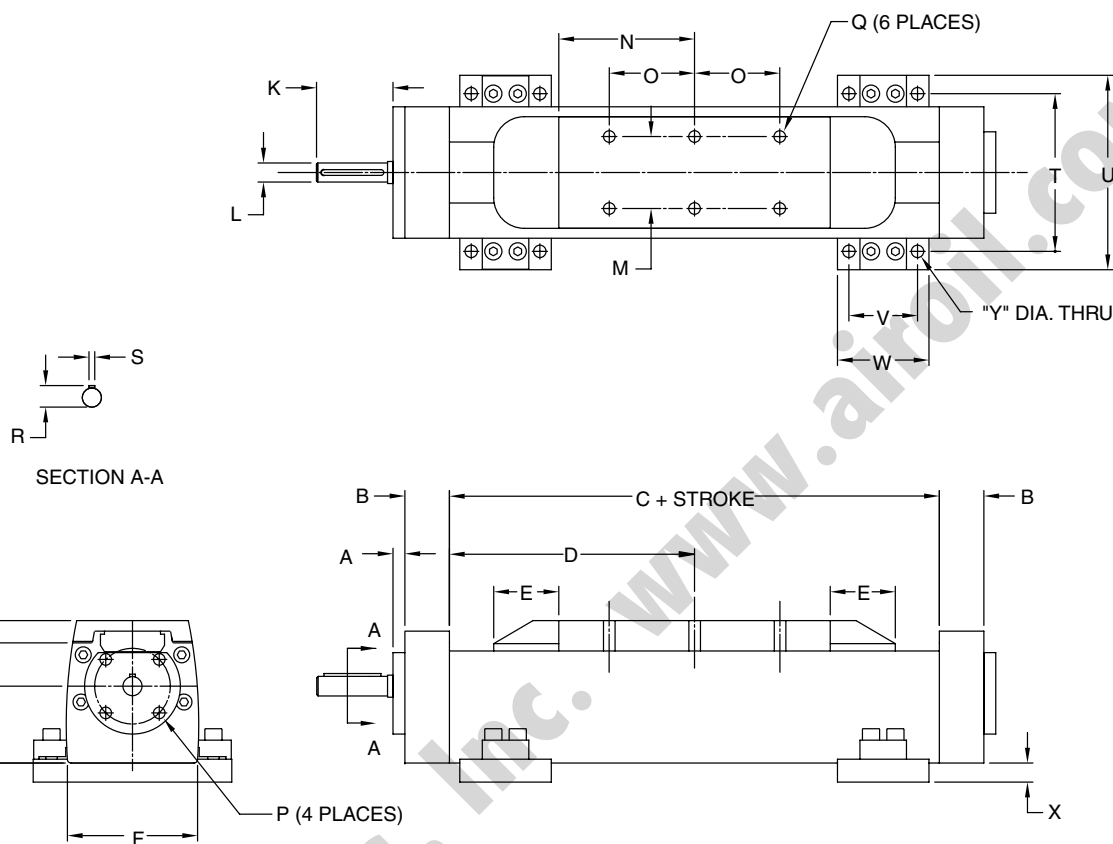
Sensing Type
Standard Cord Set
1 = Hall Effect - PNP (sourcing)
2 = Hall Effect - NPN (sinking)
3 = Reed Switch
6 = No Sensing
Quick Disconnect Cord Set
Z = Hall Effect - PNP (sourcing)
Y = Hall Effect - NPN (sinking)
X = Reed Switch



SDU Series Screw Drive Unit

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SDU Dimensions



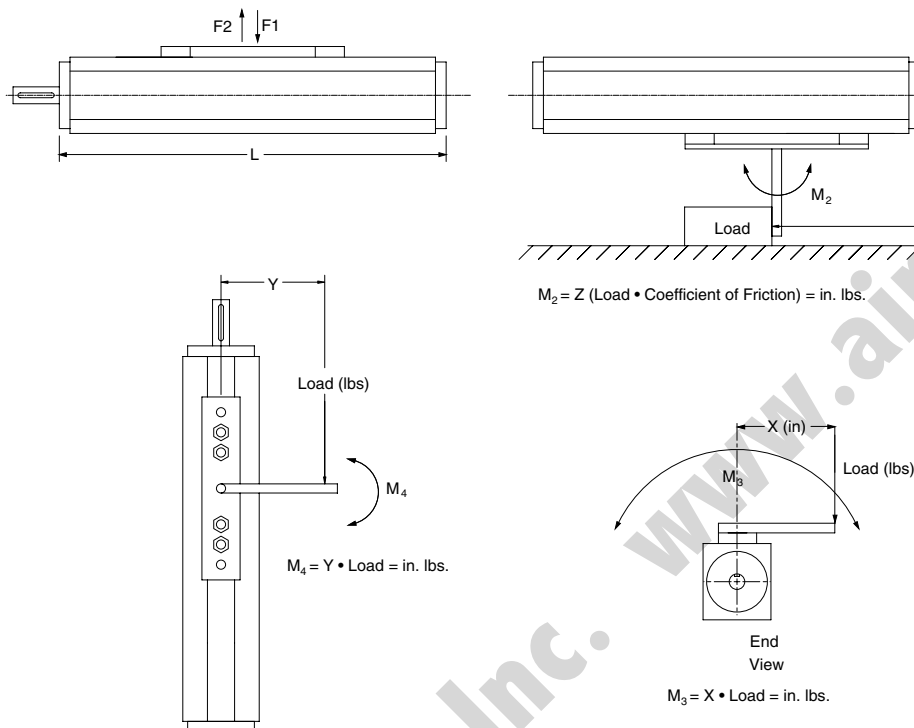
	SDU 55	SDU 75	SDU 100
A	0.35 (9.0)	0.43 (11.0)	0.39 (10.0)
B	1.14 (29.0)	1.26 (32.0)	1.46 (37.0)
C	11.66 + STROKE	12.93 + STROKE	16.06 + STROKE
D	5.83 (148.0)	6.45 (164.0)	8.04 (204.0)
E	1.30 (33.0)	1.46 (37.0)	2.13 (54.0)
F	2.28 (58.0)	3.39 (86.0)	4.25 (108.0)
G	1.26 (32.0)	1.85 (47.0)	2.52 (64.0)
H	2.17 (55.0)	2.95 (75.0)	3.94 (100.0)
J	0.55 (14.0)	0.69 (17.5)	0.73 (18.5)
K	1.18 (30.0)	2.70 (68.5)	2.50 (63.5)
L	0.43 (11.1)	0.62 (15.8)	0.62 (15.8)
M	1.61 (41.0)	2.36 (60.0)	2.36 (60.0)
N	2.32 (59.0)	2.83 (72.0)	4.45 (113.0)
O	1.50 (38.0)	2.09 (53.0)	2.80 (71.0)
P	10-32 HELI-COIL	1/4-20 HELI-COIL	5/16-18 HELI-COIL
Q	10-32 HELI-COIL	5/16-18 HELI-COIL	3/8-16 HELI-COIL
R	0.478 (12.5)	0.706 (18.0)	0.706 (18.0)
S	0.125 (4.0)	0.188 (5.0)	0.188 (5.0)
T	3.00 (76.2)	4.00 (101.5)	5.175 (131.4)
U	3.74 (95.0)	5.00 (127.0)	6.375 (161.9)
V	1.50 (38.0)	2.00 (50.8)	2.25 (57.2)
W	2.00 (50.8)	2.75 (70.0)	3.00 (76.2)
X	0.375 (9.5)	0.50 (12.7)	0.625 (15.9)
Y	0.28 (7.1)	0.34 (8.7)	0.40 (10.3)

(mm)

SDU SERIES STROKE	SDU 55	SDU 75	SDU 100
REQUIRED SCREW SUPPORTS			
1" to 48"	2	2	2
49" to 84"	3	3	3
85" to 132"	4	4	3
133" to 180"	5	5	4
181" to 240"	6	6	5



SDU Technical Specifications



DESCRIPTION	SDU 55	SDU 55B	SDU 75	SDU 75B	SDU 100	SDU 100B
Maximum Stroke	9.8 feet	9.8 feet	16.4 feet	16.4 feet	19.7 feet	19.7 feet
Maximum Thrust Load	450 lbs.	450 lbs.	562 lbs.	562 lbs.	1124 lbs.	1124 lbs.
Accuracy	±0.005	±0.005	±0.005	±0.005	±0.005	±0.005
Repeatability	±0.004	±0.002	±0.004	±0.002	±0.004	±0.004
Carriage Weight	2.43 lbs.	2.43 lbs.	4.4 lbs.	4.4 lbs.	4.85 lbs.	4.85 lbs.
Radial Load	106 lbs.	106 lbs.	265 lbs.	265 lbs.	398 lbs.	398 lbs.
Torsional Load	45 ft.-lbs.	45 ft.-lbs.	134 ft.-lbs.	134 ft.-lbs.	224 ft.-lbs.	224 ft.-lbs.
Screw Diameter	0.630 in.	0.630 in.	0.787 in.	0.787 in.	0.984 in.	0.984 in.
Screw Lead	0.787 in.	0.787 in.	0.787 in.	0.787 in.	0.984 in.	0.984 in.
Base Unit Weight	10.8 lbs.	11.6 lbs.	17.6 lbs.	21.7 lbs.	38.6 lbs.	43.7 lbs.
Adder/In. of Stroke	0.3 lbs.	0.3 lbs.	0.5 lbs.	0.6 lbs.	0.8 lbs.	0.95 lbs.
Operating Temp.	0 to 158F	0 to 158F	0 to 158F	0 to 158F	0 to 158F	0 to 158F

OVERALL LENGTH (L-DIMENSION)

0 Screw Supports	Stroke + 14.39	Stroke + 14.39	Stroke + 15.98	Stroke + 15.98	Stroke + 19.13	Stroke + 19.53
1 Screw Support	N/A	N/A	Stroke + 20.00	Stroke + 19.45	Stroke + 20.39	Stroke + 21.58
2 Screw Supports	N/A	N/A	Stroke + 24.02	Stroke + 23.39	Stroke + 24.33	Stroke + 25.51

MAXIMUM LOAD CAPACITIES

F1	88 lbs.	198 lbs.	319 lbs.	440 lbs.	660 lbs.	1100 lbs.
F2	56 lbs.	127 lbs.	230 lbs.	282 lbs.	475 lbs.	704 lbs.
M2	203 in. lbs.	424 in. lbs.	708 in. lbs.	1150 in. lbs.	2433 in. lbs.	3540 in. lbs.
M3	79 in. lbs.	44 in. lbs.	398 in. lbs.	159 in. lbs.	1062 in. lbs.	477 in. lbs.
M4	79 in. lbs.	44 in. lbs.	398 in. lbs.	159 in. lbs.	1062 in. lbs.	477 in. lbs.



SDU Series Screw Drive Unit

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Application Request for Belt and Screw Driven Products

Company: _____

Your Name: _____

Phone: _____ Fax: _____

Ref: _____ Date: _____

ANALYSIS

Stroke (inches) _____

Required repeatability: ☐ +/- 0.005 inch ☐ +/- 0.012 inch

Actuator Orientation: ☐ Horizontal ☐ Check if Saddle is face DOWN Degree of Incline _____

☐ Vertical

Note: Belt Drive Product is not recommended for Vertical Applications

Load (pounds) _____ Opposing Force (pounds): _____

Check one of the following:

Load is pushed by Actuator: ☐

What supports load? _____ What is the coefficient of bearing used? _____

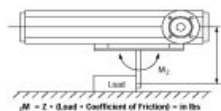
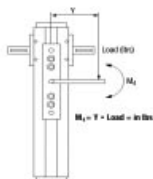
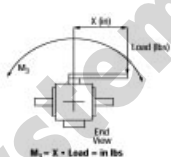
Load is supported by Actuator: ☐

Moment Loading – Select one of the following:

There is a Moment Condition ☐

Arm (inches) _____ Force (lbs) _____

Circle Moment Condition:



A Moment Load does not occur in my application ☐

Speed/Cycle Time

Advise the following:

Move Distance: _____ inches

Velocity*: _____ in/sec

Acceleration*: _____ in/sec/sec

Time*: _____ second(s)

Acceleration*: _____

Velocity*: _____

Time*: _____

* Requires move distance & at least one of these inputs

Multiple Stops: ☐

*Provide move distance and at least one input for EACH stop.

Motor Controller Package Required ☐

Encoder/Closed Loop ☐

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