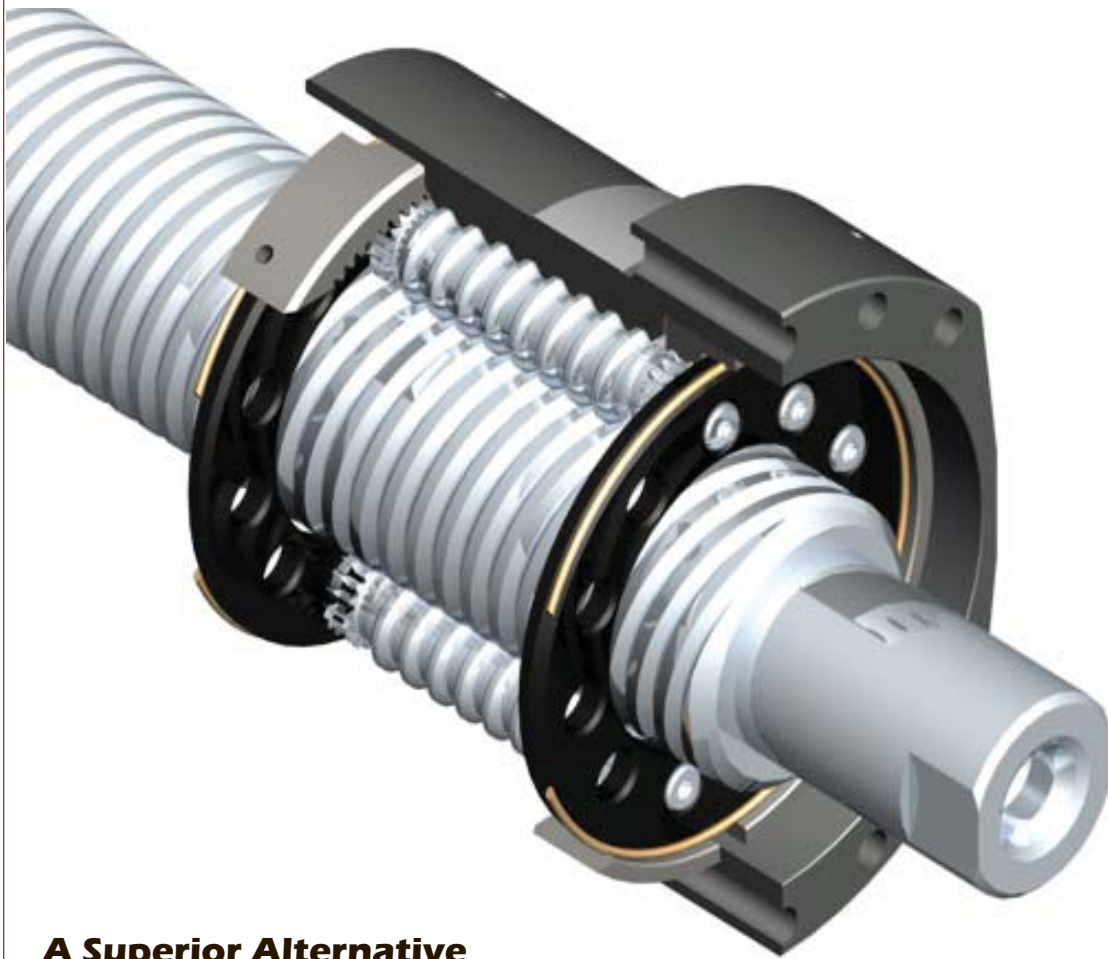# PRS Series
Planetary Roller Screws

**A Superior Alternative
to Hydraulic or Pneumatic Motion
Providing 15 Times the Life of a Ballscrew**

EXLAR

Exlar — Linear Motion Experts

Exlar Corporation is committed to providing innovative solutions to motion control problems through the use of roller screw technology. We offer a complete line of roller screw products designed to work faster, longer, smoother and more reliably than other technologies providing linear motion.

Roller Screw Advantage

A roller screw is a mechanism for converting rotary torque into linear motion, in a similar manner as acme screws or ball screws. However, unlke acme or ball screws, roller screws are capable of carrying heavy loads for thousands of hours in the most arduous conditions. This makes roller screws the ideal choice for demanding, continuous-duty environments.

• Roller screw design provides high speeds, stiffness and shock load resistance.

• Load ratings up to 779,000 lbf.

• Up to 15 times longer life than comparably sized ball screws. Ideally suited for continuous duty applications.

• Roller screws can perform at rotational speeds above 5000 rpm.

• Preloaded nut options for zero backlash.
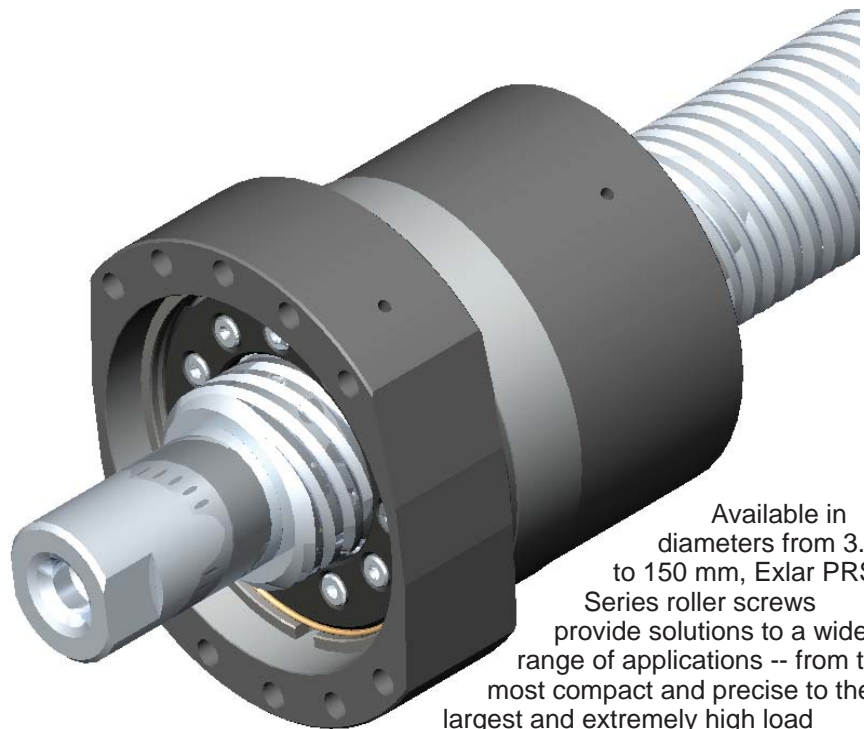
Available in diameters from 3.5 to 150 mm, Exlar PRS Series roller screws provide solutions to a wide range of applications -- from the most compact and precise to the largest and extremely high load requirements.

• Variety of flange designs.

• Many other configurations are available to meet your application requirements.

Superior Alternative to Hydraulic or Pneumatic Motion

In applications where high loads are anticipated or faster cycling is desired, Exlar's roller screw actuators provide an attractive alternative to the hydraulic or pneumatic options. Electro-mechanical units using roller screws have major advantages. They do not require a complex support system of valves, pumps, filters and sensors. Thus, Exlar units take up much less space and deliver extremely long working lives with virtually no maintenance. Hydraulic fluid leaks are non-existent. Noise levels are reduced significantly. Additionally, the flexibility of computer programmed positioning can be very desirable in many applications.

PRS Series Ground Shaft Planetary Roller Screws

Unique Design

This robust roller screw design is composed of rollers that are manufactured with precisely the same thread angle as the nut. This construction is particularly well-suited to applications that require very high loads and high speeds. This is possible because Exlar's planetary roller screw designs provide many more contact points than possible on comparably sized ball screws. The result is higher stiffness, higher load capacity and 15 times the travel life of similarly sized ball screws. The diagram, lower right, shows the number of contact points in a ball screw compared to the number of contact points in a roller screw.

Typical Applications

Planetary roller screws are used in the most critical, demanding and precise applications requiring linear motion. Roller screws offer a perfect replacement for hydraulics because of the load and cycle capability. Examples of industries and other applications for planetary roller screws are:

Medical Assembly
- Artificial Hearts
- Patient Positioning Tables
- Automated High-Force Syringes

Machine Tool
- Presses
- Broaching
- Grinding
- Dressing
- Cutting

Military
- Weapons Positioning
- Door Control
- Artillery Handling

Assembly
- Riveting
- Fastening
- Joining
- Clamping
- Part Positioning
- Weld Guns

Food and Beverage
- Volumetric Filling
- Paletizing
- Cartoning
- Sealing

Plastics, Glass and Textile
- Mold Closing
- Toggle Drives
- Eject Axes
- Transfers
- Shifting

PRS Series Standard Features

- Ground screw for high-precision applications
- Non-recirculating rollers
- Available to tolerance classes G1, G3, G4 and G5
- Single, split (preloaded) and double (preloaded) nuts are available
- Three standard nut flanges (no flange, end flange, center flange) are available
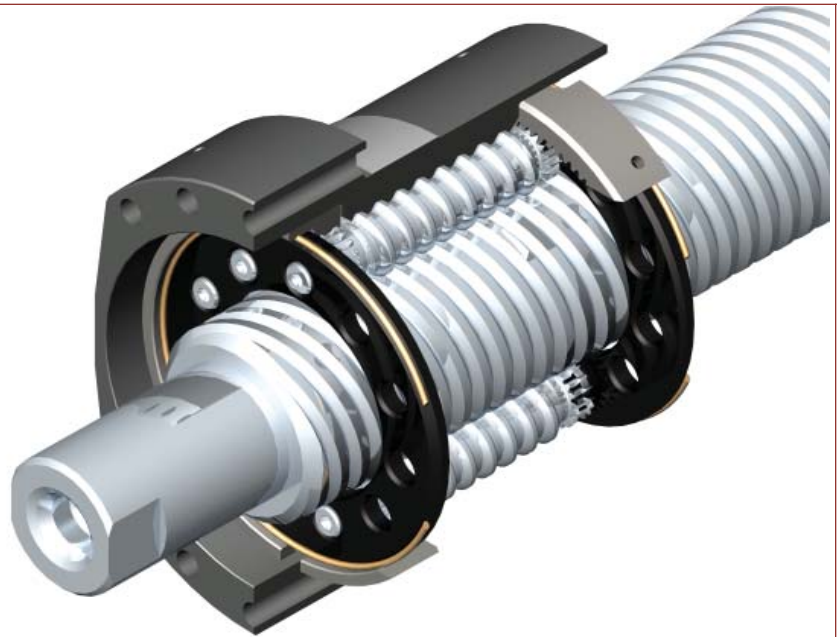
Compare a similar size ball screw to Exlar's planetary roller screw design as seen below and see many more contact points on the roller screw. This results in higher load-carrying capacity and improved stiffness.
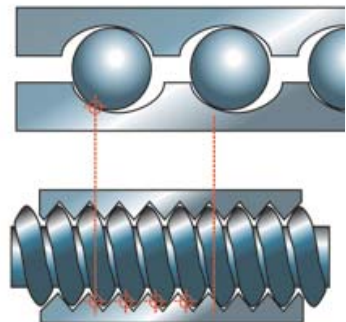
In addition to the standard features listed above and the sizes listed in the table on page 5, Exlar can design a custom roller screw specifically tailored to your application. Please contact Exlar's Engineering Department for more information.

Lead Accuracy

Exlar roller screws are grouped in tolerance classes according to DIN 69051, part 3. These manufacturing tolerances are expressed as lead errors per distance of linear travel, as shown right.

Tolerance Class	Lead Accuracy
G1	0.006 mm/300mm (0.00024 in/ft)
G3	0.012 mm/300 mm (0.00048 in/ft)
G4	0.020 mm/300 mm (0.00080 in/ft)
G5	0.024 mm/300 mm (0.00096 in/ft)

Lubrication

Exlar roller screws can be used with either grease or oil lubrication.

Grease Lubrication

Bearing greases of KP (DIN 51825, part 3) consistency factor of 2 should be used. Optional wipers can be installed on each end of the nut to protect it from contamination in dirty environments. Grease lubrication intervals depend on screw size and operating conditions. Exlar's Applications Engineering Department can provide grease lubrication recommendations for any application conditions.

Oil Lubrication

If oil lubrication is desired, a high performance gear oil with an EP additive is recommended. The oil lubrication rate is dependent on the screw diameter, number of rollers, and the amount of heat dissipated; oil consumption will generally range from about 1 to 30 ml/hr.

Immersion oil lubrication can also be used. In this case, the oil level must be such that the bottom-most roller is fully submerged in oil.

Nut and Flange Types

Exlar roller screws are available with three standard nut types, as described below:

Single Nuts

Exlar single nut roller screws are ideal for applications where maximum life and minimal backlash are required. The single nuts have backlash limits of 0.01 - 0.03 mm (0004 - 0.001 inches).
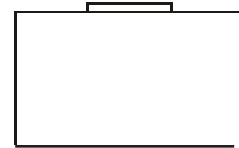
Split (preloaded) Nuts

Split nuts are designed to eliminate backlash entirely. The split nuts are preloaded by clamping the two halves of the nut together, spaced by a precision ground washer. They are preloaded at the factory to 5% of dynamic load rating, unless otherwise specified by the customer.
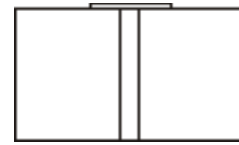
Double Nuts

Double nuts provide the high load rating and lifetime advantages of single nuts along with the zero-backlash attributes of split nuts.
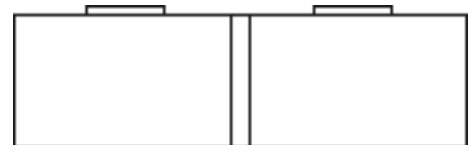
A double nut consists of two single nuts preloaded against each other, clamped together and spaced by a precision ground washer. The two single nuts are also preloaded to 5% of the dynamic load rating.

PRS SERIES PLANETARY ROLLER SCREW SPECIFICATIONS

Screw Diameter mm	Lead[1] mm	Split Nut		Single and Double Nut	
		Dynamic Load Rating kN (lbf)	Static Load Rating kN (lbf)	Dynamic Load Rating kN (lbf)	Static Load Rating kN (lbf)
3.5	1	5.2 (1,169)	3.2 (719)	8.3 (1,866)	6.5 (1,461)
5	1	6.5 (1,461)	3.9 (877)	10.3 (2,316)	7.8 (1,754)
8	1	7.2 (1,619)	5.4 (1,214)	11.5 (2,585)	10.7 (2,405)
	2	5.8 (1,303)	5.7 (1,281)	9.2 (2,068)	11.4 (2,563)
	3	4.7 (1,057)	5.5 (1,236)	7.5 (1,686)	11.0 (2,473)
	4	4.2 (944)	5.6 (1,259)	6.7 (1,506)	11.1 (2,495)
	5	3.7 (832)	5.3 (1,191)	5.8 (1,304)	10.7 (2,405)
12	1	12.0 (2,698)	8.6 (1,933)	19.0 (4,271)	17.2 (3,867)
	2	8.1 (1,821)	9.0 (2,023)	12.8 (2,878)	18.0 (4,047)
	4	6.3 (1,416)	8.9 (2,001)	10.0 (2,248)	17.8 (4,002)
	5	6.6 (1,484)	9.1 (2,046)	10.5 (2,360)	18.1 (4,069)
15	2	12.2 (2,743)	13.2 (2,967)	19.3 (4,339)	26.3 (5,912)
	4	10.0 (2,248)	13.8 (3,102)	15.9 (3,574)	27.6 (6,205)
	5	9.4 (2,113)	13.9 (3,125)	15.0 (3,372)	27.8 (6,250)
20	2	30.1 (6,767)	29.8 (6,699)	47.8 (10,746)	59.7 (13,421)
	4	25.3 (5,688)	32.2 (7,239)	40.2 (9,037)	64.3 (14,455)
	5	23.4 (5,261)	32.0 (7,194)	37.1 (8,340)	64.0 (14,388)
	10	27.0 (6,070)	30.9 (6,947)	42.9 (9,644)	61.9 (13,916)
23	2	34.3 (7,711)	33.6 (7,554)	54.4 (12,230)	67.2 (15,107)
	4	29.1 (6,542)	36.8 (8,273)	46.2 (10,386)	73.5 (16,523)
	5	26.9 (6,047)	36.8 (8,273)	42.7 (9,599)	73.5 (16,523)
	10	31.7 (7,126)	36.2 (8,138)	50.3 (11,307)	72.4 (16,276)
27	2	55.3 (12,432)	51.7 (11,623)	87.8 (19,783)	103.5 (23,268)
	4	46.9 (10,544)	57.1 (12,837)	74.5 (16,748)	114.2 (25,673)
	5	44.3 (9,959)	58.2 (13,083)	70.3 (15,804)	116.4 (26,168)
	10	60.3 (13,556)	58.7 (13,196)	95.7 (21,514)	117.4 (26,393)
30	4	61.0 (13,713)	72.7 (16,344)	96.9 (21,784)	145.4 (32,687)
	5	57.2 (12,859)	73.8 (16,591)	90.7 (20,390)	147.5 (33,159)
	10	55.5 (12,477)	75.3 (16,928)	88.1 (19,806)	150.6 (33,856)
	20	67.2 (15,107)	76.9 (17,287)	106.7 (23,987)	153.8 (34,575)
36	5	56.0 (12,589)	73.7 (16,568)	88.9 (19,986)	147.4 (33,137)
	10	44.7 (10,049)	74.9 (16,838)	70.9 (15,939)	149.8 (33,676)
39	5	94.6 (21,267)	117.6 (26,438)	150.2 (33,766)	235.2 (52,875)
	10	78.3 (17,603)	123.7 (27,809)	124.4 (27,966)	247.4 (55,618)
48	5	153.5 (34,508)	209.2 (47,030)	243.6 (54,763)	418.4 (94,060)
	6	148.7 (33,429)	215.8 (48,514)	236.1 (53,077)	431.7 (97,050)
	10	130.2 (29,270)	221.8 (49,863)	206.6 (46,446)	443.6 (99,725)
	12	137.1 (30,821)	224.0 (50,357)	217.6 (48,918)	447.9 (100,692)
60	6	162.3 (36,486)	237.5 (53,392)	257.7 (57,933)	474.9 (106,761)
	10	145.6 (32,732)	252.3 (56,719)	231.1 (51,953)	504.7 (113,461)
	12	139.4 (31,338)	255.4 (57,416)	221.3 (49,750)	510.8 (114,832)
	30	179.2 (40,286)	265.3 (59,642)	284.5 (63,958)	530.5 (119,261)
80	6	--	--	399.8 (89,879)	738.9 (116,111)
	8	--	--	375.3 (84,371)	771.9 (173,530)
	10	--	--	384.8 (86,506)	942.1 (211,793)
	12	--	--	374.0 (84,079)	968.5 (217,728)
	30	--	--	426.9 (95,970)	954.6 (214,603)
100	20	--	--	829.0 (186,367)	2,609 (586,527)
	24	--	--	793.0 (178,274)	1,891 (425,114)
	30	--	--	814.0 (182,995)	1,923 (432,307)
120	20	--	--	1,042.0 (234,251)	3,466 (779,188)
	25	--	--	986.0 (221,662)	3,535 (794,670)
	30	--	--	818.0 (183,894)	2,577 (579,333)
150	24	--	--	856.0 (192,436)	2,638 (593,046)

[1] Other custom leads may be available. Consult Exlar Applications Engineering for details.
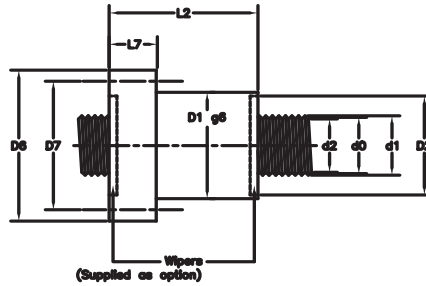
Dimensions
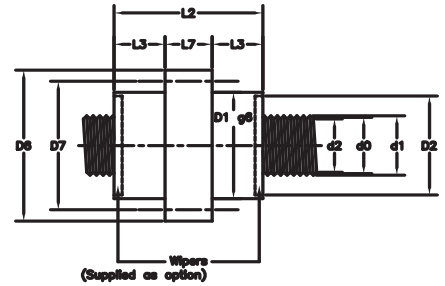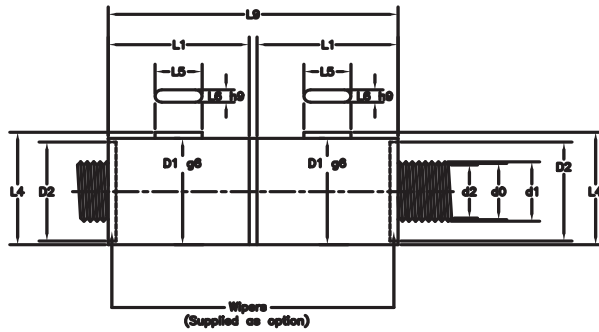
Single Nut

Cylindrical Nut with Key
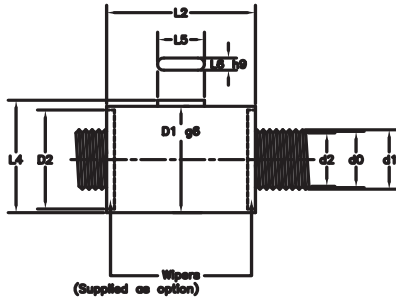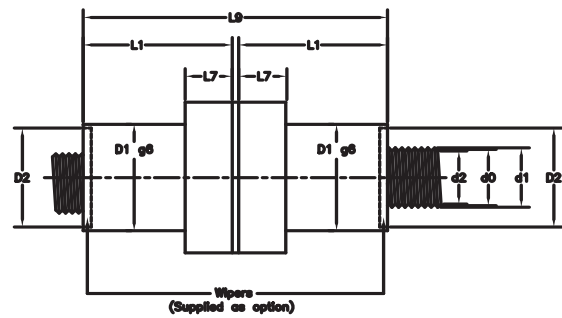

End Flange

Center Flange

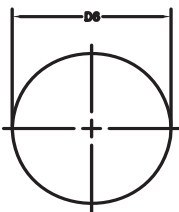## Double Nut

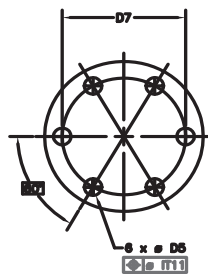### Cylindrical Nut with Key

Center Flange
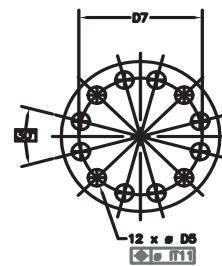

Flange Hole Patterns

Standard Flange Dia.

Type 1

Type 2
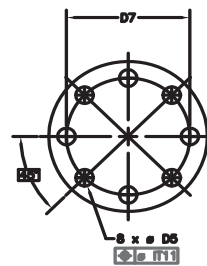
Type 3

Dimensions

Dia/Lead mm	do	d1	d2	D1	D2	D5	D6	D7	L1[1]	L1[2]	L2	L3	L4	L5	L6	L7	L8	L9[3]	L9[4]
3.5 x 1	3.5	3.62	3.35	15	13.5	4.8	35	25	31	41	41	14	16	10	2	13	24	64	84
5 x 1	4.5	4.62	4.35	19	17	4.8	39	29	31	41	41	14	20.3	10	3	13	24	64	84
8 x 1	8	8.09	7.89	21	19	4.8	41	31	31	41	41	14	22.3	10	3	13	24	64	84
8 x 2	8	8.17	7.76	21	19	4.8	41	31	31	41	41	14	22.3	10	3	13	24	64	84
8 x 3	8	8.24	7.63	21	19	4.8	41	31	31	41	41	14	22.3	10	3	13	24	64	84
8 x 4	8	8.30	7.49	21	19	4.8	41	31	31	41	41	14	22.3	10	3	13	24	64	84
8 x 5	8	8.35	7.33	21	19	4.8	41	31	31	41	41	14	22.3	10	3	13	24	64	84
12 x 1	12	12.09	11.89	30	28	4.8	50	40	31	41	41	14	31.3	10	3	13	32	64	84
12 x 2	12	12.14	11.81	26	23	4.8	46	36	31	41	41	14	27.3	10	3	13	28	64	84
12 x 4	12	12.25	11.65	26	23	4.8	46	36	31	41	41	14	27.3	10	3	13	28	64	84
12 x 5	12	12.32	11.56	26	23	4.8	46	36	31	41	41	14	27.3	10	3	13	28	64	84
15 x 2	15	15.14	15.81	34	30	5.8	56	45	35	51	51	16.5	35.7	14	4	18	36	72	104
15 x 4	15	15.25	15.65	34	30	5.8	56	45	35	51	51	16.5	35.7	14	4	18	36	72	104
15 x 5	15	15.32	15.56	34	30	5.8	56	45	35	51	51	16.5	35.7	14	4	18	36	72	104
20 x 2	19.5	19.65	19.32	42	39	5.8	64	53	55	65	65	22.5	43.7	20	4	20	44	112	132
20 x 4	19.5	19.80	19.15	42	39	5.8	64	53	55	65	65	22.5	43.7	20	4	20	44	112	132
20 x 5	19.5	19.83	19.02	42	39	5.8	64	53	55	65	65	22.5	43.7	20	4	20	44	112	132
20 x 10	19.5	20.04	18.62	42	39	5.8	64	53	55	65	65	22.5	43.7	20	4	20	44	112	132
23 x 2	22.5	22.65	22.32	45	42	7	67	56	55	65	65	22.5	46.7	20	4	20	47	112	132
23 x 4	22.5	22.79	22.15	45	42	7	67	56	55	65	65	22.5	46.7	20	4	20	47	112	132
23 x 5	22.5	22.87	22.06	45	42	7	67	56	55	65	65	22.5	46.7	20	4	20	47	112	132
23 x 10	22.5	23.12	21.62	45	42	7	67	56	55	65	65	22.5	46.7	20	4	20	47	112	132
27 x 2	27	27.14	26.82	53	50	7	83	68	65	79	79	23.5	55.2	20	5	22	55	132	160
27 x 4	27	27.29	26.65	53	50	7	83	68	65	79	79	23.5	55.2	20	5	22	55	132	160
30 x 4	30	30.29	29.65	62	58	9	92	77	71	85	85	29	64.7	20	6	27	64	144	172
30 x 5	30	30.37	29.56	62	58	9	92	77	71	85	85	29	64.7	20	6	27	64	144	172
30 x 20	30	31.05	27.81	62	58	9	92	77	71	85	85	29	64.7	20	6	27	64	144	172
36 x 5	36	36.37	35.56	74	68	9	110	92	70	84	84	29.5	76.7	28	6	25	76	142	170
36 x 10	36	36.65	35.12	74	68	9	110	92	70	84	84	29.5	76.7	28	6	25	76	142	170
39 x 5	39	39.35	38.54	80	72	11	116	98	90	100	100	37.5	82.7	28	6	25	82	182	202
39 x 10	39	39.74	38.12	80	72	11	116	98	90	100	100	37.5	82.7	28	6	25	82	182	202
48 x 5	48	48.30	47.63	86	80	11	122	104	113	127	127	46	88.7	45	6	35	88	228	256
48 x 6	48	48.35	47.54	86	80	11	122	104	113	127	127	46	88.7	45	6	35	88	228	256
48 x 10	48	48.56	47.21	86	80	11	122	104	113	127	127	46	88.7	45	6	35	88	228	256
48 x 12	48	48.66	47.04	86	80	11	122	104	113	127	127	46	88.7	45	6	35	88	228	256
60 x 6	60	60.37	59.56	110	100	13.5	150	130	106	124	124	47	113.2	40	8	30	112	214	251
60 x 10	60	60.61	59.27	110	100	13.5	150	130	106	124	124	47	113.2	40	8	30	112	214	251
60 x 12	60	60.67	59.05	110	100	13.5	150	130	106	124	124	47	113.2	40	8	30	112	214	251
80 x 6	80	80.37	79.56	138	130	13.5	180	160	130	158	158	61.5	141.7	50	10	35	140	--	--
80 x 8	80	80.49	79.41	138	130	13.5	180	160	130	158	158	61.5	141.7	50	10	35	140	--	--
80 x 10	80	80.61	79.27	138	130	13.5	180	160	130	158	158	61.5	141.7	50	10	35	140	--	--
80 x 12	80	80.74	79.12	138	130	13.5	180	160	130	158	158	61.5	141.7	50	10	35	140	--	--
80 x 30	80	81.53	77.48	138	130	13.5	180	160	130	158	158	61.5	141.7	50	10	35	140	--	--
100 x 20	99	100.35	97.11	200	186	17.5	275	240	260	281	281	115.5	203	63	10	50	202	--	--
100 x 24	100	101.32	98.08	185	172	17.5	260	225	230	260	260	105	188	63	10	50	187	--	--
100 x 30	100	101.60	97.55	185	172	17.5	260	225	230	260	260	105	188	63	10	50	187	--	--
120 x 20	120	121.37	118.13	240	220	17.5	280	260	280	300	300	122.5	243	100	10	55	242	--	--
120 x 25	120	121.68	117.63	240	220	17.5	280	260	280	300	300	122.5	243	100	10	55	242	--	--
120 x 30	120	121.64	117.59	240	200	17.5	260	240	230	260	260	80	223	100	10	50	242	--	--
150 x 24	150	151.36	148.60	240	220	17.5	280	260	220	250	250	75	244	100	16	50	242	--	--

(1) Without wipers
(2) With wipers
(3) overall length of nut for double-nut configuration without wipers
(4) Overall length of nut for double-nut configuration with wipers

Design Guidelines

Lifetime

The expected life of a roller screw is expressed as the linear travel distance that 90% of the screws are expected to meet or exceed before experiencing metal fatigue. The mathematical formula that defines this value is:

Single (Non-preloaded) Nut:

$$L_{10} = \left(\frac{C}{F}\right)^3 \times S$$

Where:
L_{10} = Travel life in millions of inches (mm)
C = Dynamic load rating, lbs (N)
F = Cubic mean applied load, lbs IN)
S = Lead, in (mm)

Preloaded (split) Nut:

$$L_{10} = \left(L_{10(1)}^{-10/9} + L_{10(2)}^{-10/9}\right)^{-9/10}$$

Where:
L_{10} = Travel life in millions of inches (mm)
$L_{10(1)}$ = Expected travel life in the extended direction, as determined by the single nut lifetime equation
$L_{10(2)}$ = Expected travel life in the retract direction, as determined by the single nut lifetime equation

Note: L_{10} calculated travel life is an estimate of the travel life expected form the planetary roller screw with a 90% probability and is not a guarantee. Probability above 90% requires further derating. Consult Exlar Applications Engineering Department for details.

Critical Speed

The critical speed of a roller screw is dependent on the length of the screw and the type of bearing supporting the screw. The rotational speed of the roller screw should always be maintained below the critical speed, which is determined by the following relationship:

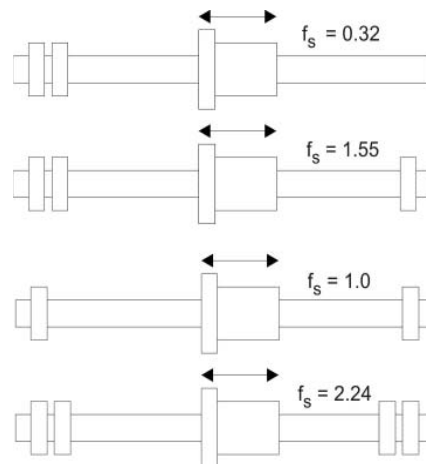$$n_{crit} = \frac{86.4 \times 10^6 \, d_o f_s}{l^2}$$

Where:
n_{crit} = critical rotational speed under zero axial load, rpm
d_o = Screw diameter, mm

f_s = Support bearing factor, from the figures below

l = Length of the screw, mm

Critical speeds are also reduced by compressive axial loads and increased by tensile loading. Consult Exlar's Applications Engineering Department for more information.

Mechanical Speed Limit

In addition to being dependent on screw length and mounting configuration, roller screw nut speeds also have a mechanical speed limit that must not be exceeded. These maximum speeds are dependent on screw diameter and lubrication method, and are calculated from the equations in the table below.

Maximum Mechanical Nut Speed RPM	
Lubrication Method	Nut Type RV
Oil	140,000 / d_o
Grease	90,000 / d_o

Design Guidelines

Buckling Force

Buckling of a roller screw can occur when the compressive load on the screw shaft becomes too great. Like critical speeds, the buckling force is a function of the screw length, diameter and the type of bearing supporting the screw. When sizing a roller screw, the application's maximum applied compressive load must be less than the buckling force. This buckling force is determined by:
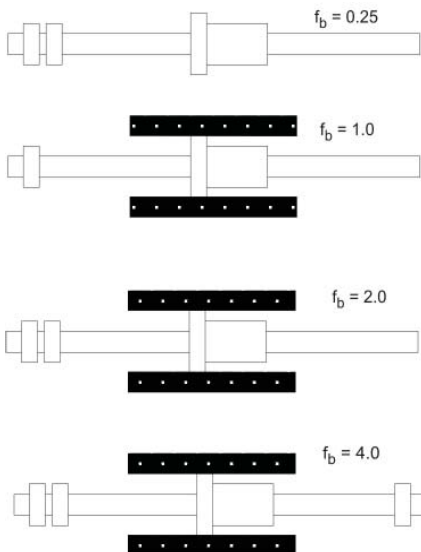
$$F_b = \frac{81.3\, f_b d_o{}^4}{l^2}$$

where:

F_b = Buckling force, kN

f_b = Buckling force bearing factor, from the figures below

d_o = Screw diameter, mm

l = Length of the screw, mm

$f_b = 0.25$

$f_b = 1.0$

$f_b = 2.0$

$f_b = 4.0$

Torque

In order to size the appropriate motor for a given application, the required torque must be calculated. These numbers are then compared against the torque ratings of the motor/drive that will be used to control the roller screw's velocity and position. The load torque and the acceleration torque must both be less than the proposed motor's torque rating.

Under Load:

$$\lambda = \frac{SF}{2\,\pi\,\eta}$$

Where:
λ = Torque, lbf-in (Nm)
F = Applied load, lbf (N)
S = Screw lead, in (m)
η = Screw efficiency (71 - 90%)

Under Acceleration:

$$\lambda = (I_1 + I_m)\,\alpha$$

Where:
λ = Torque, lbf-in (Nm)
I_1 = Reflected inertia due to load, as defined in the equation below, in-lb-s^2 (N-m-s^2)
I_m = Inertia of proposed motor's armature; obtain from motor specifications, in-lb-s^2 (N-m-s^2)
α = Acceleration of the motor, rad/S^2

Where:

$$I_1 = \frac{(S/2\pi)^2\, m}{g}$$

I_1 = Reflected inertia due to load, in-lb-s^2 (N-m-s^2)
S = Screw lead, in (m)
m = Mass of the applied load, lb (N)
g = Gravitational constant, 384 in/s^2 (9.75 m/s^2)

Linear Speed

The linear speed of the follower (nut) is a function of the rotational speed of the shaft and the lead of the roller screw. The linear speed of a follower is calculated by:

$$V - nS$$

Where:
V = Linear velocity, in/s (mm/s)
N = Follower rotational speed, rev/s
S = Screw lead, in (mm)

Design Guidelines

Sample Calculation
• Application Information

• Cubic Mean Load = 500 lbf (2225 N)

• Max speed = 6 in/sec (152 mm/sec)

• Min time to max speed = 0.1 sec

• Stroke length = 18 in (457 mm)

• Required lifetime = 5 million inches (127 million mm)

Proposed PRS roller screw with the following specifications:

• Diameter = 0.79 in (20 mm)

• Lead = 0.1969 in (5 mm)

• Dynamic load rating = 7120 lb (31.7 kN)

• Non preloaded

• Screw supported by 2 bearings on one side; none on the other

• Nut performs no guidance function

Lifetime

$$L_{10} = \left(\frac{7120}{500}\right)^3 \; 0.1969 = \; 568 \text{ million inches of travel}$$

Critical Speed
The application rotational speed must be less than both the critical and mechanical speed limits.

The application's rotational speed is determined from the linear speed equation:

$$n = \left(\frac{152}{5}\right) \; 60 = 1824 \text{ rpm}$$

Using fs = 0.32 from the figures on page 7, the critical speed is:

$$n_{crit} = \frac{86.4E6 \times 20 \times 0.32}{457^2} = 2648 \text{ rpm}$$

The mechanical speed limit, with oil cooling, is:

$$\frac{140,000}{20} = 7,000 \text{ rpm}$$

Buckling Force
The applied load of 500 lbf must be below the force required to buckle the screw. In this case $f_b = 0.25$:

$$F_b = \frac{81.3 \times 0.25 \times 20^4}{457^2} = 15.6 \text{kN} = 3500 \text{ lbs}$$

Torque
Under load, the required torque is:

I = 0.1969 x 500/2 x 3.14 x 0.75 = 20.89 lbf-in

An Exlar SLM090 motor with a continuous torque rating of 30 lbf-in may be appropriate. To determine if the proposed motor can accommodate the inertial load under acceleration (assume I_m for the SLM090 servo motor is 0.00058 in-lb-s^2; a = 1884 rad/sec^2), use the reflected inertia equation:

$$I_1 = \frac{(0.1969/2\pi)^2 \; 500}{384} = 0.0013 \text{ in-lb-s}^2;$$

then $\lambda = (0.00058 + 0.0013) \; 1884 = 3.54 \text{ in-lbs}$

From the above calculations, the proposed roller screw with an SLM090 motor from Exlar will be acceptable under both constant velocity and acceleration for the given application conditions.

PRS Series Roller Screw Ordering Information

AAA-BCDE-FFF-GGHI-JJJJ-KKKK-00000	
AAA = Roller Screw Type	**G = Screw Lead**
PRS = Ground thread, stationary rollers	Specify in mm from the specifications table on page 5
B = Nut Type	**H = Lead Direction**
1 = Single nut	R = Right hand thread
2 = Split (preloaded) nut	**I = Lead Accuracy**
3 = Double nut	1 = G1
C = Nut Flange Style	3 = G3
N = Standard nut; no flange	4 = G4
E = Standard nut; end flange	5 = G5
C = Standard nut; center flange	See page 4 for lead accuracy definitions
X = Non-standard nuts	**JJJJ = Screw Length**
D = Flang Hole Pattern	Total screw length in millimeters
0 = no flange	**KKKK = Threaded Length**
1 = Type 1	Total threaded length in millimeters
2 = Type 2	**00000 = Part Number**
3 = Type 3	Factory assigned part number for specific roller screw configuration
X = Special	
E = Wipers	
O = No Wipers	
W = Wipers installed at both nut ends	
F = Screw Diameter	
Specify in mm from the specifications table on page 5	

The Company - Headquartered in suburban Minneapolis, Minnesota, Exlar serves a global customer base with an extensive standard product line and complete engineering support for custom actuator applications.

Exlar supports a large network of sales representatives in North America. To find your local dealer, visit our website at www.exlar.com or call our headquarters at 952-368-3434. For assistance outside North America, please contact Exlar direct or one of our worldwide partners listed below.

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