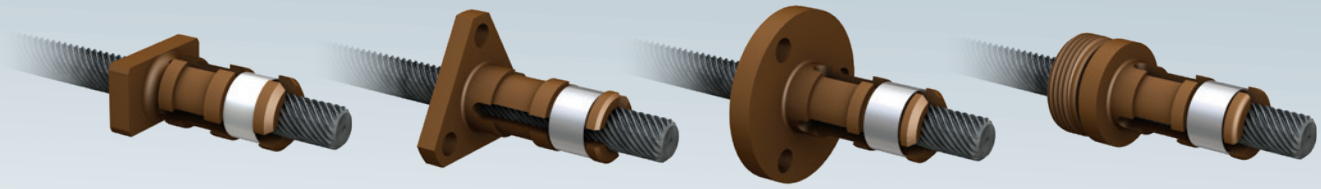
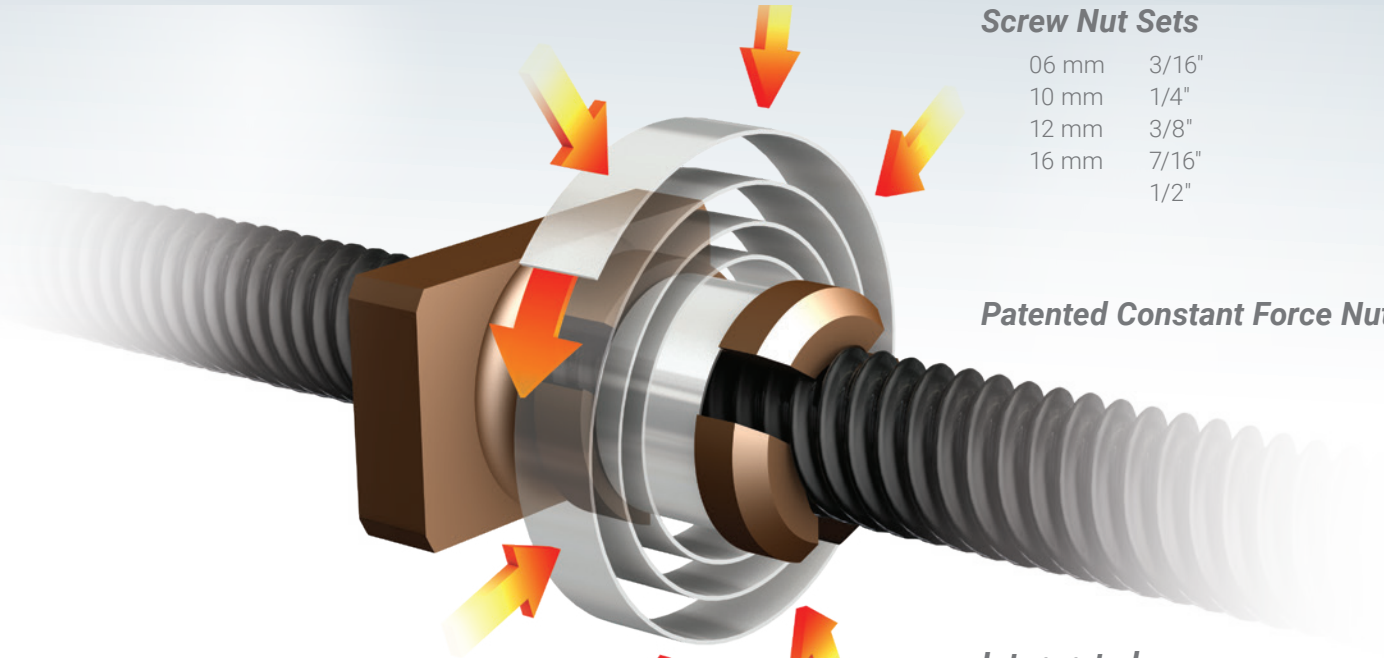
World Class Lead Screw Assemblies

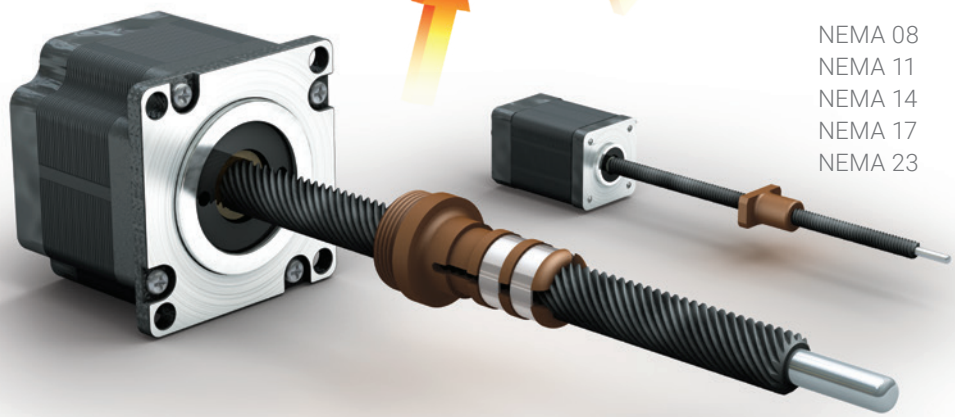


Screw Nut Sets

06 mm	3/16"
10 mm	1/4"
12 mm	3/8"
16 mm	7/16"
	1/2"



Patented Constant Force Nut



Intergrated Motor & Screws

NEMA 08
NEMA 11
NEMA 14
NEMA 17
NEMA 23

PBC Linear™

A Better Lead Screw Assembly

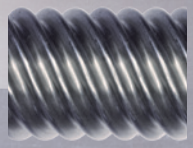
As today's technology and it's capabilities become more sophisticated, greater performance is required from the working parts of machine systems.

PBC Linear meets the need for precision linear motion, by equipping themselves with the needed resources in engineering, manufacturing, and quality metrology processes to create the optimal linear actuator.

PBC Linear has implemented this focus on precision at all three points of the integrated lead screw system; the screw, the nut, and the motor.

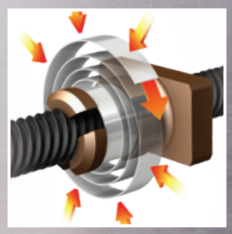
Precision CNC Thread Rolling

- Standard Precision 0.003 in/ft
- 2-3 times better than industry baseline
- 100% testing over full length of the screw



Patented Anti-Backlash Nut

- 2-4 times superior performance verses conventional coil spring designs
- Consistent pre-load over the life of the lead screw
- Maintenance free self-lubricating design

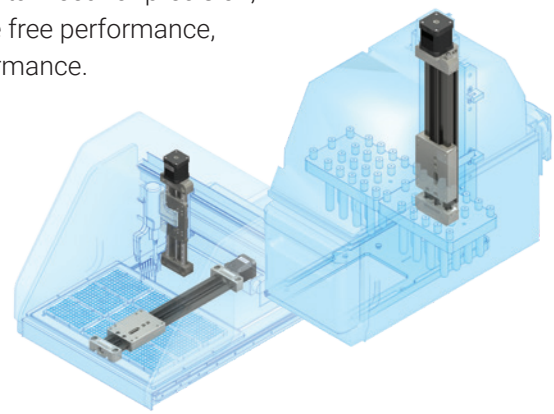


Applications

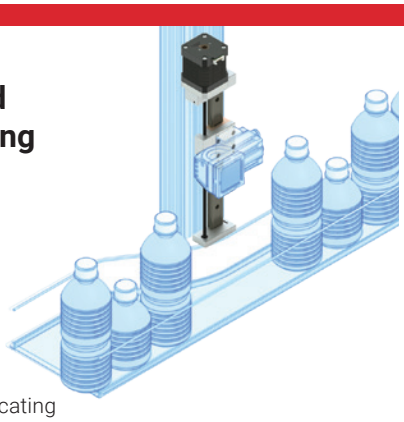
These applications have a critital need for precision, quiet opteration, maintenance free performance, and life long consistent performance.

Medical and Lab Automation

Critical applications for clinical diagnosis, blood analyzers, syringe pumps, and other dispense devices require long lasting precision.



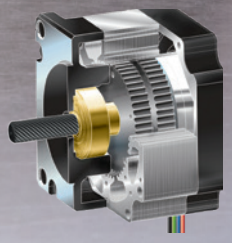
Bottling and Food Processing



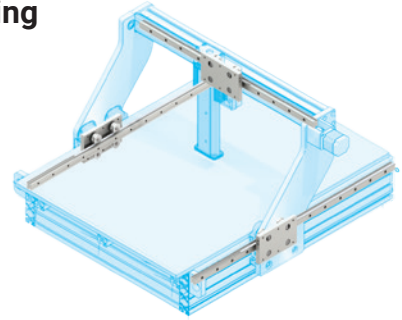
The self-lubricating polymer nuts operate without external grease and lubrication eliminating the risk of contamination making it ideal for food processing applications.

Motor Engineered for Linear Motion

- Larger bearings increase thrust capacity and life
- Preload on bearings removes axial play, reducing system backlash
- Hollow shaft concentricity ensures minimum screw runout which yields longer system life

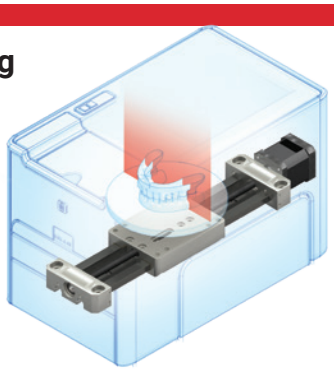


3D Printing



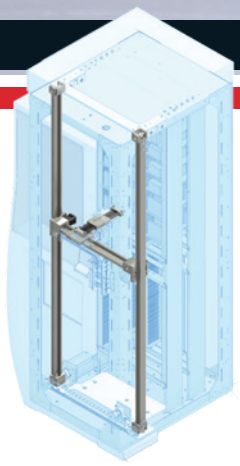
All types of 3D printing processes have benefited with increased layer resolutions and better surface finishes due to the precise metrology built into each lead screw system.

Scanning



PTFE coated screws and optimized nuts provide consistent torque characteristics over the entire length of the stroke, which is critical to clean, artifact free output in scanning applications.

Automated Retail and Kiosks



The quiet operation of no metal-to-metal moving parts fits well in retail environments, while the maintenance free self-lubrication features are ideal for remote installations.

Screws

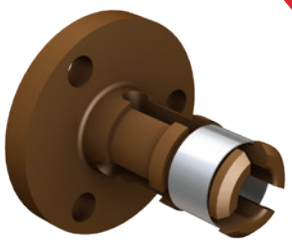
Standard Stainless Steel Threads

PTFE Coated Threads

Metric Sizes	Leads
16 mm	1, 2, 4, 5, 6, 8, 10, 12, 16, 25 mm
12 mm	1, 2, 4, 5, 6, 8, 10, 12, 16, 25 mm
10 mm	1, 2, 4, 5, 6, 8, 10, 12, 16, 25 mm
6 mm	1, 2, 4, 5, 6, 8, 10, 12 mm

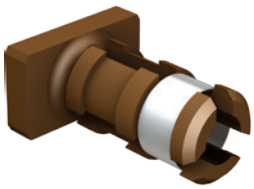
Inch Sizes	Leads
1/2"	0.25", 0.10"
7/16"	1.00"
3/8"	0.20"
1/4"	0.333"
3/16"	0.05", 0.50"

Nuts

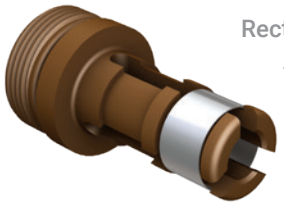


Round Constant Force Anti-Backlash Nut

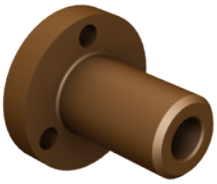
Triangle Constant Force Anti-Backlash Nut



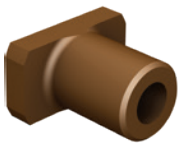
Rectangle Constant Force Anti-Backlash Nut



Threaded Constant Force Anti-Backlash Nut



Round Standard Nut

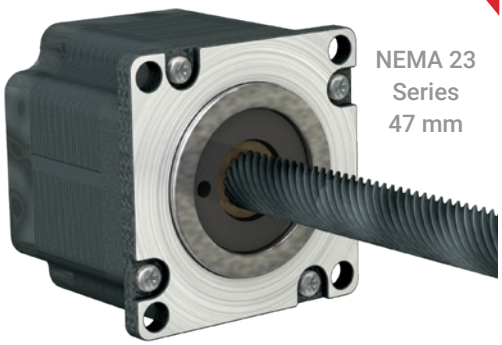


Rectangle Standard Nut

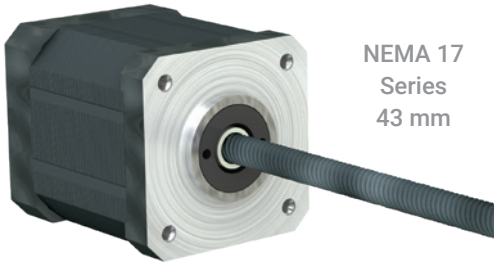
Threaded Standard Nut

Triangle Standard Nut

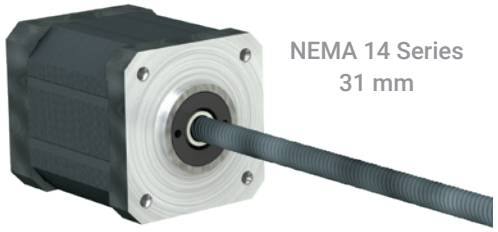
Motors



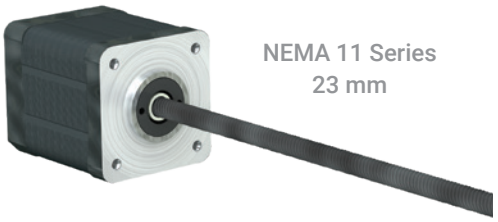
NEMA 23
Series
47 mm



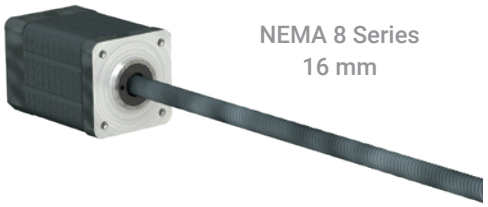
NEMA 17
Series
43 mm



NEMA 14 Series
31 mm



NEMA 11 Series
23 mm



NEMA 8 Series
16 mm

Journaled Ends

Float Journal

Float Journal with Flat

Threaded Journal

Float Journal with Keyway

Fixed Journal

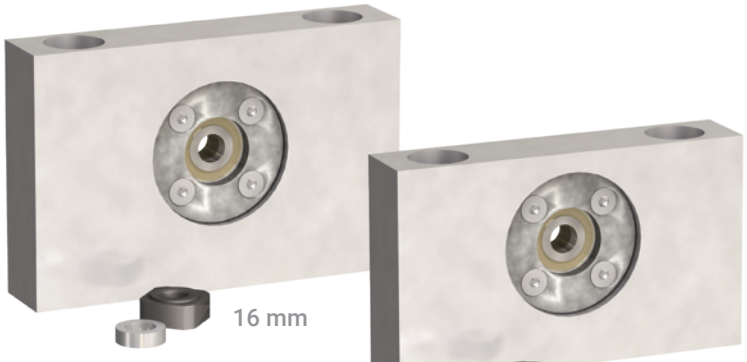
Fixed Journal with Flat

Float with Journal End

Fixed Journal with Keyway

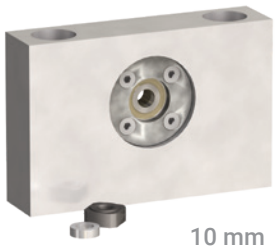
Fixed with Journal End

End Block Supports

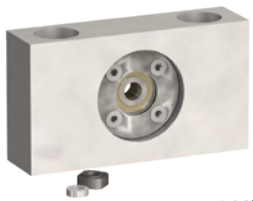


16 mm

12 mm
7/16", 1/2"



10 mm
3/8"



6 mm
1/4", 3/16"

Overview of Roll Threading Process

Manufacturing

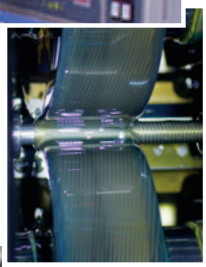
Quality In, Quality Out. 1

Quality starts in house with the OD grind of raw material.

300 series stainless steel.

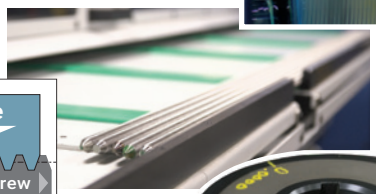
O.D. ground to < 0.0005" (12 µm).

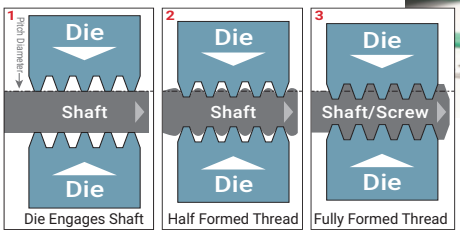
Precision German CNC Roll Threader Ensures Strong and Accurate Thread Forms 2

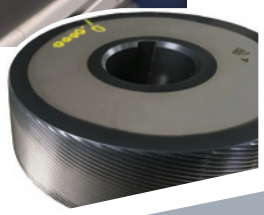


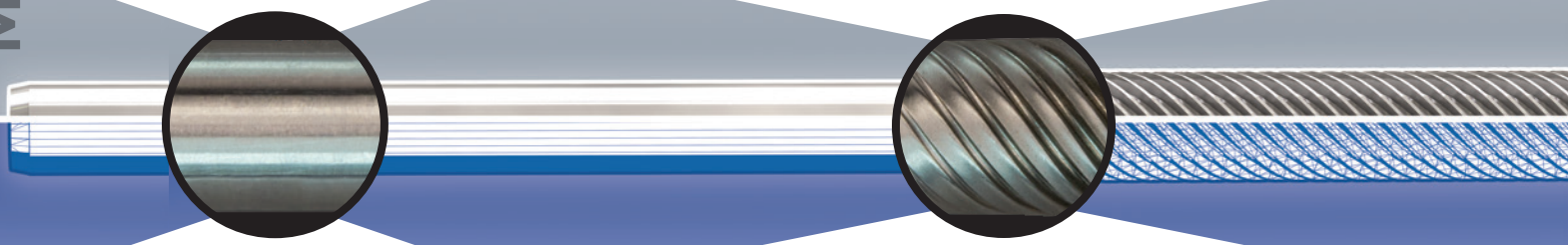
CNC controlled machinery provides precision process adjustment and control.

Automated in-fee and out-feed provide consistency over the full length of the screw stock.







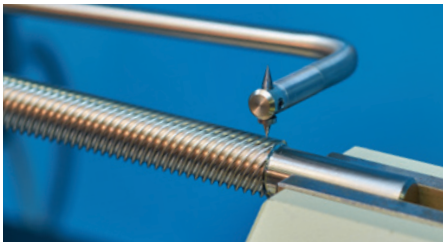


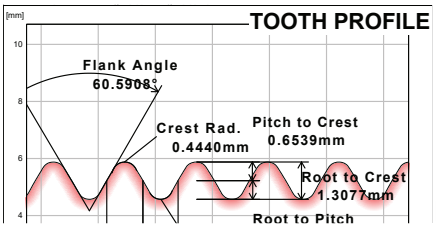
Metrology

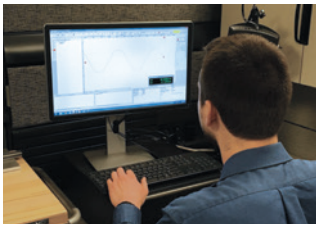
Microscopic inspections of the surface finishes occurs at each stage of the manufacturing and coating process.

Threadform inspections validate major and minor profile diameters, pitch, flank angle, etc.

Maximum screw runout is < 0.001" (24.4 µm).



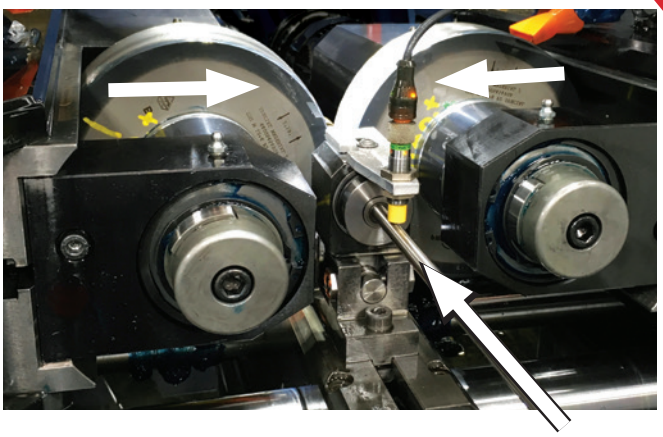




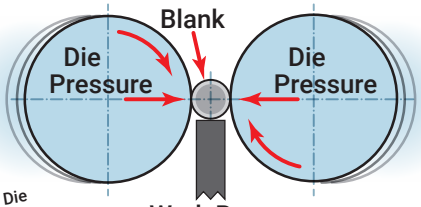
Courtesy of Steven Engineering, Inc - (800) 258-9200 - sales@steveneng.com - www.stevenengineering.com

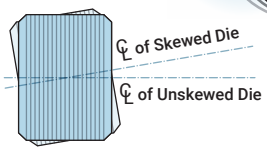
Progressive Dies Control Raw Material Flow

3



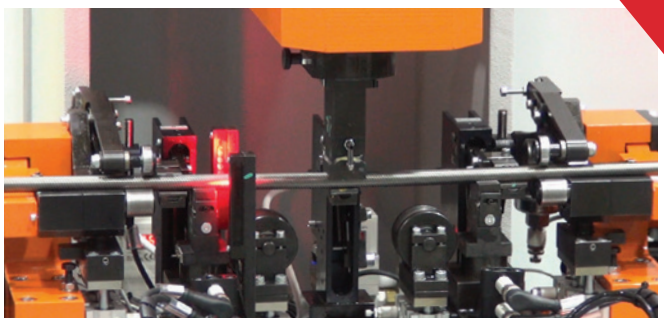
To ensure the highest level of lead accuracy, key process variables such as speed, skew, temperature, and coolant flow, are precisely monitored.



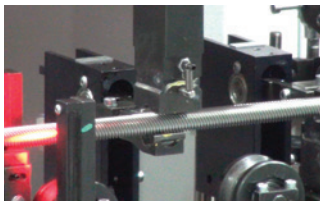


Automated Straightening Process

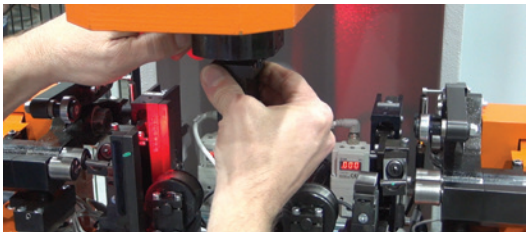
4

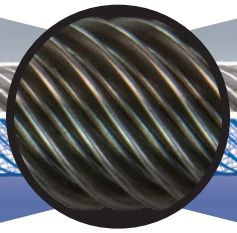


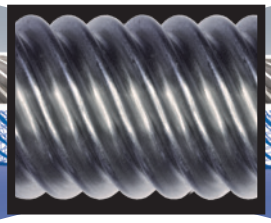
This process eliminates errors that are inherent to manual processes.



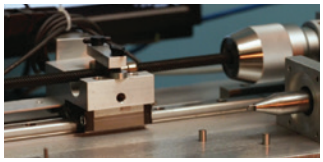
Minimizes runout which can cause vibration, noise, and premature wear.

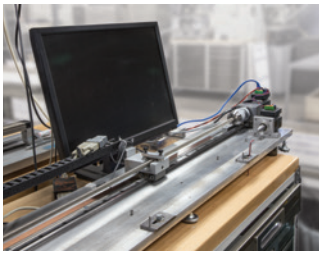






Lead accuracy of 0.003"/ft. (76 µm/300 mm), 3 times better than typical industry specifications.

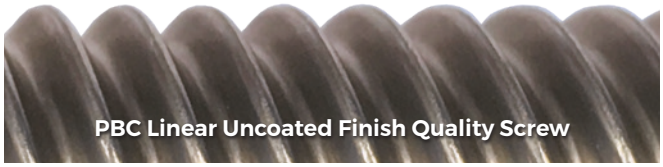




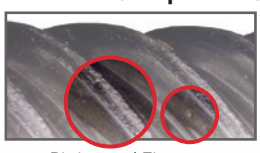
PBC Linear inspects 100% of the screw length (Up to 20,000 points over 72" compared to the competitors data point every 6 inches over the same length).

Automated straightening process yields the highest straightness tolerances available in a lead screw.

Smoother finish makes for longer product life.



Competitor Screw Surfaces

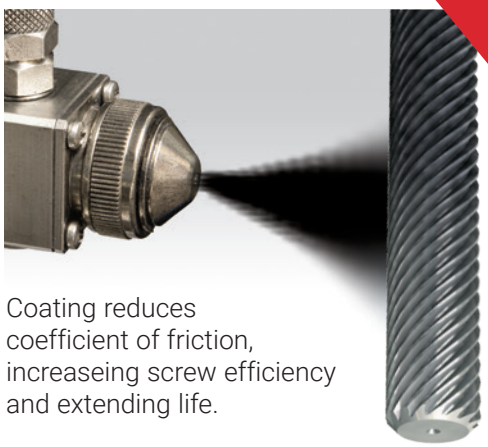


Pitting and Fissures

Surface Roughness

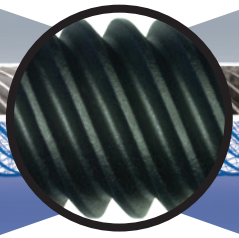
Pairing Quality with Innovation

PTFE Coating 5

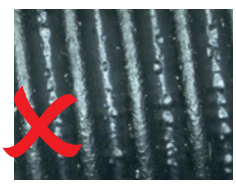


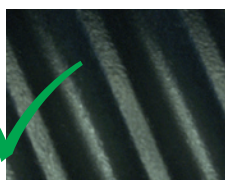
Coating reduces coefficient of friction, increaseing screw efficiency and extending life.

Developed in-house, this custom coating process and equipment increases the quality of finish and eliminates screw flaking.

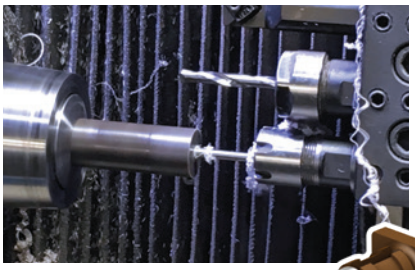


Each screw is inspected with a digital microscope to ensure there is no flaking or pitting in the coating surface.

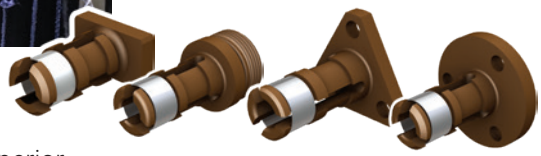




Innovative Anti-Backlash Nut 6



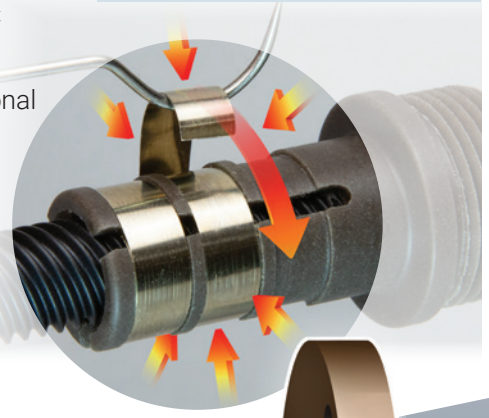
Constant Force Technology nut utilizes a spring that applies uniform radial pressure to the nut at all stages of the motion profile.

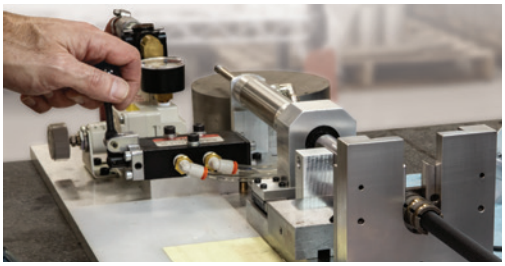


Patented Design has:

- Greater than 2 times superior backlash compensation (Confirmed by leading lab automation customer validation testing)
- Consistent preload over life (Key for system level tuning and consitent performance over life)
- 2–4 times better than traditional designs, as validated by customer testing
- Self lubricated (Special PTFE nut formulation developed from 30 plus years of plain bearing knowlege)
- Simple 2-piece design

Wide variety of optimized nut geometries
Ability to quickly customize



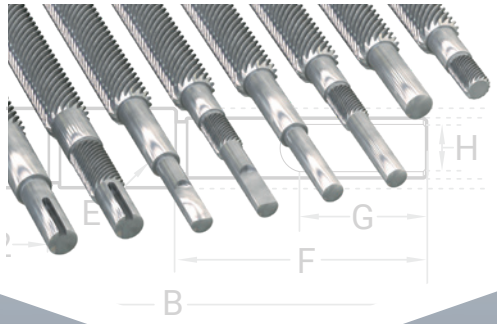


Nuts and assemblies are inspected to ensure backlash tolerances meet precise specifications .

Machined End Journals

7

Fixed, flat, keyways, and threaded journals can be machined for multiple lead screw uses. PBC Linear offers customers the ability to customize screw journals for specific applications.

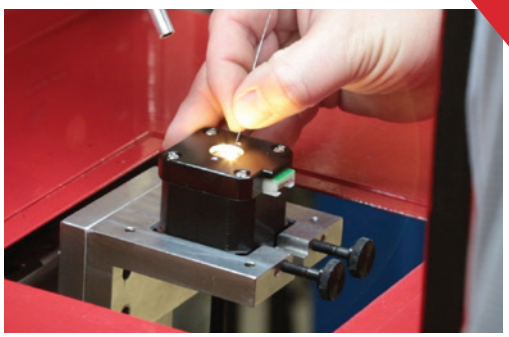


Screw journals can be ground to <0.0005" (12um).

Motor and Screw Optimization for Linear Motion

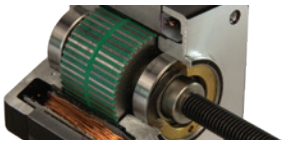
8

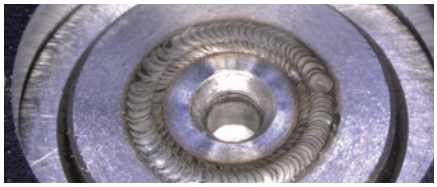
Lead screw is precision mounted and matched to a hollow shaft motor. Then I.D. laser welded to the motor. The hollow shaft concentricity minimizes runout less than 0.003" (75 µm).



Other features include:

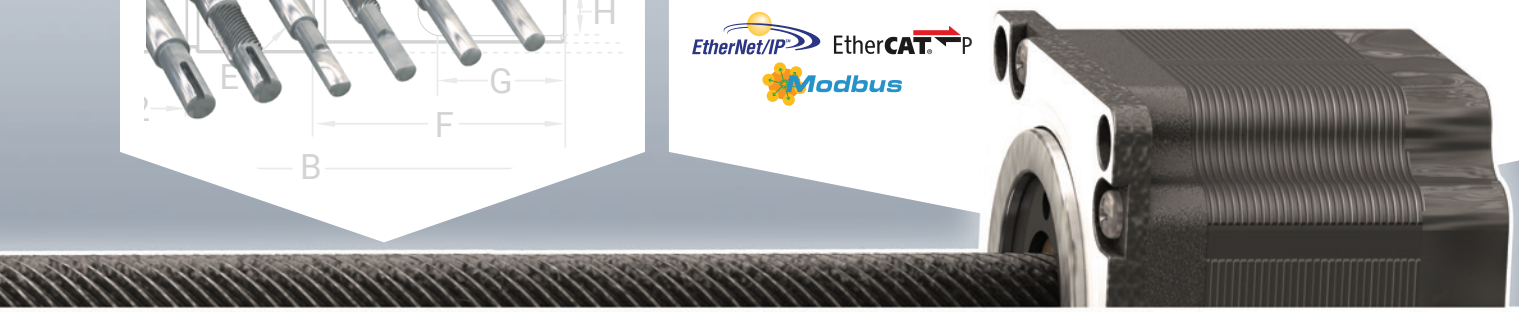
- Larger bearings that increase thrust capacity and add longer life
- Preload on bearings that removes axial play, reducing system backlash





- Optional smart motors
- Connection via...

EtherNet/IP EtherCAT P Modbus



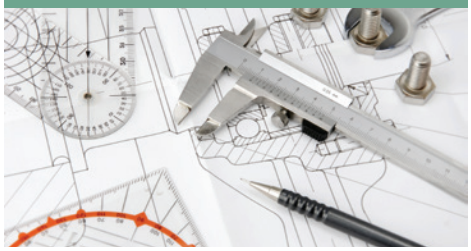
Two dedicated test labs are used to establish high performance characteristics.

One for load and life where assemblies have run in excess of 2,500 miles without failure, and one sound-proofed to analyze noise levels.

PBC Linear Partnership Model

An extension of your team, from concept through production

Conceptual Design

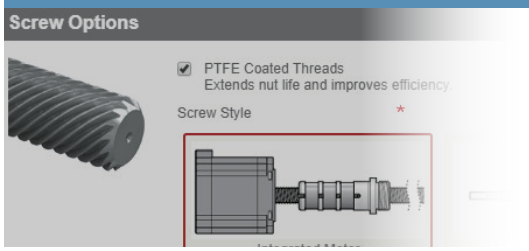


Work directly with trained staff that understand your application and develop solutions to solve your design problems.

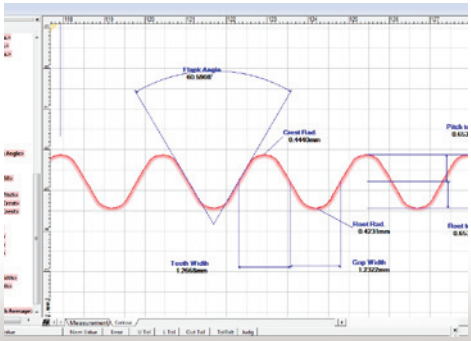
Collaborative Engineering

PBC Linear engineers have in-depth hands-on industry knowledge and experience enabling them to jointly work with you to develop solutions that meet your linear motion requirements.

Quick Turn Prototype



Standard configurations are available online for purchase. Quick availability to ship keeps your design projects on schedule.



PBC's manufacturing flexibility can deliver custom solutions designed to specific application needs.

About PBC Linear

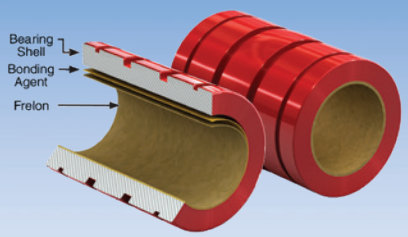
Engineering Your Linear Motion Solutions

PBC Linear introduced the Simplicity® bearing to solve common industry problems in varying environmental situations. With expanding capabilities and subject matter expertise, PBC Linear now offers a wider variety of services than ever before.

Core Competencies

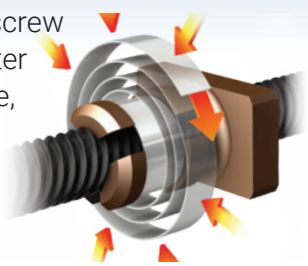
Simplicity Plain Bearings - Bonding of Polymer and Fluoropolymer to Metals

Developed and refined over 26 years, linear plain bearings excel where traditional ball bearings fail.



Anti-Backlash Lead Screw Nut

Constant Force Technology is an intuitive leap forward in nut design for lead screw applications. The result is greater consistency in performance, life, and a greater resistance to backlash.



Pilot Production

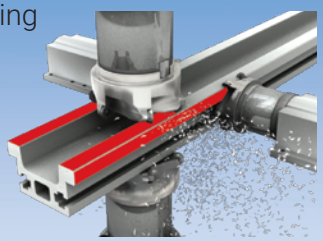
Headquartered in Roscoe, Illinois, USA with 215,000 square feet of manufacturing space, PBC Linear can produce prototypes and pilots or small production runs to help ramp up your project.

Volume Production

With fully automated CNC manufacturing equipment, PBC Linear can run 24/7 to meet your large volume production needs with on-time delivery.

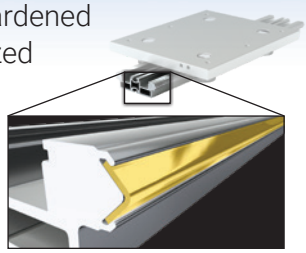
Highly accurate length rails with SIMO® process

The Simultaneous Integral Milling Operation (SIMO) qualifies the rail to tolerances that have 6x less bow, 2x less twist, and 2x better flatness.



Joining aluminum and steel together for longer rails

Integral-V rails and Redi-Rails are produced by mechanically embedding hardened steel race ways onto an anodized aluminum profile. Precise, durable, and lightweight.



Manufacturing Agility

Global Footprint

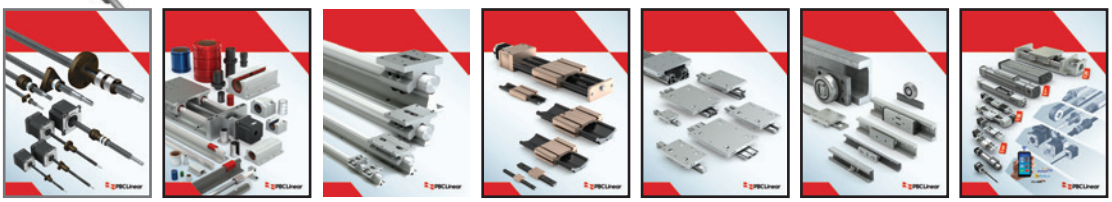
Headquartered with their main manufacturing facilities in the USA, PBC Linear also has locations in Europe, and SINO Asia, situated to support your production needs globally.

Which Technology for the Application

PBC Linear™

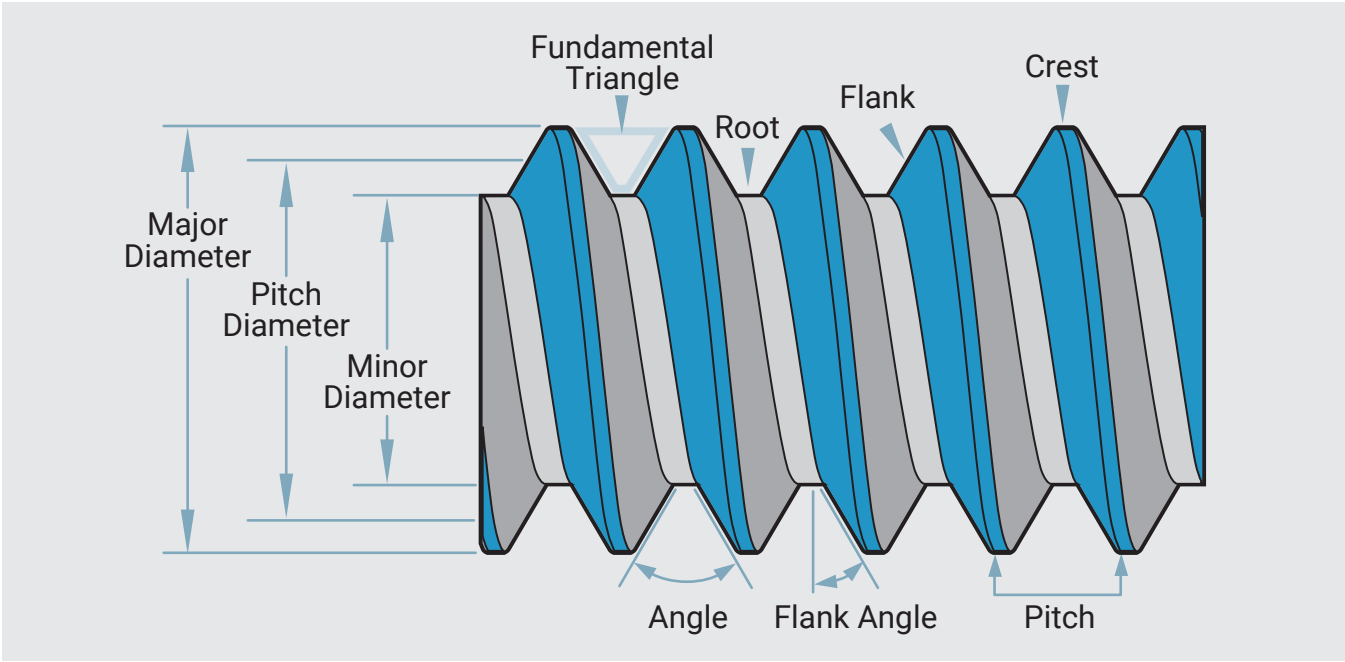
PBC Linear has a wide range of products to fit your needs

To compliment the lead screw product line, PBC offers many sliding/rolling element bearing product lines.
PBC also offers a full line of Mechatronics products for those wanting an assembled solution

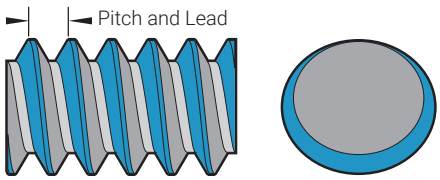


PBC Technologies	Lead Screw	Simplicity	Roller Pillow Block	Glide Surface	Integral-V	Cam Roller	Mechatronics
Inexpensive	●	●	●	●	●	●	●
Low Maintenance	●	●	●	●			●
Compact Size	●			●			●
Low Noise	●	●					●
Multiple Configurations	●	●	●	●	●	●	●
Washdown Applications	●	●		●			●
Custom Design Support	●	●	●	●	●	●	●
Moderate to High Speed	●	●	●	●	●	●	●
Vacuum and Cleanroom Applications	●	●		●			●
Food Processing	●	●	●	●			
Ease of Installation	●				●	●	●

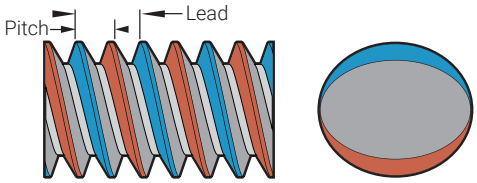
Thread Terminology



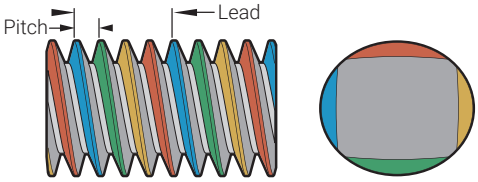
Single Start – Lead = Pitch

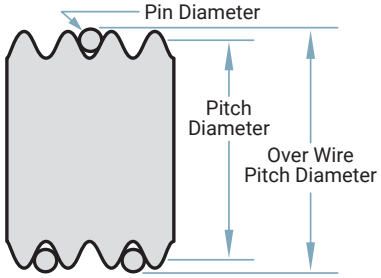


Two Start – Lead = 2 X Pitch



Four Start – Lead = 4 • Pitch





Pitch diameter is the diameter of a theoretical cylinder that passes through the threads in such a way that the distance between the thread crests and thread roots is equal. In an ideal product, these widths would each equal one-half of the thread pitch.

Lead angle is the angle made by the pitch helix, with a plane perpendicular to the axis.

Lead accuracy is the difference between the actual distance traveled verses the theoretical distance traveled based on lead.

Crests are the top of the threads.

Roots are the bottom of the threads.

Flanks are the surfaces between the crests and roots.

Pitch is the distance measured parallel to the thread axis, between corresponding points on adjacent threads.

Lead is the axial distance the nut advances in one revolution of the screw. The lead is equal to the pitch times the number of starts. Pitch • starts = lead

Flank angle is the angle between a flank and the perpendicular thread axis. Flank angles are sometimes termed "half-angle" of the thread, but this is only true when neighboring flanks have identical angles (when the threads are symmetrical).

Actual pitch diameter is determined by subtracting the pin diameter times 2 from the measurement taken across the three thread wires.

Internal thread – the minor diameter occurs at the crests while the major diameter occurs at the roots.

External thread – the minor diameter occurs at the roots while the major diameter occurs at the crests.

Lead Screws & Nuts

300 Series Stainless Steel with PTFE Coating Option

(72' length maximum avaiable on all sizes (68"–69" useable)

Diameter	6 mm	10 mm	12 mm	16 mm		3/16"	1/4"	3/8"	7/16"	1/2"
Leads										
1 mm	•	•	•	•	0.05"	•				
2 mm	•	•	•	•	0.10"					•
4 mm	•	•	•	•	0.20"			•		
5 mm	•	•	•	•	0.25"					•
6 mm	•	•	•	•	0.333"		•			
8 mm	•	•	•	•	0.50"	•				
10 mm	•	•	•	•	1.00"				•	
12 mm	•	•	•	•						
16 mm		•	•	•						
25 mm		•	•	•						

Metric Leads	Coating	Leadscrew / Nut - % Efficiency Metric Screw Diameter			
		6mm	10mm	12mm	16mm
1 mm	Coated	39	28	24	19
	Uncoated	30	21	18	14
2 mm	Coated	60	45	40	33
	Uncoated	51	36	31	25
4 mm	Coated	71	61	56	49
	Uncoated	62	52	47	40
5 mm	Coated	76	66	62	55
	Uncoated	68	57	53	45
6 mm	Coated	77	69	65	58
	Uncoated	70	61	56	49
8 mm	Coated	81	74	71	65
	Uncoated	75	66	62	56
10 mm	Coated	84	78	75	69
	Uncoated	78	71	67	61
12 mm	Coated	84	80	77	72
	Uncoated	81	74	70	64
16 mm	Coated	–	84	81	77
	Uncoated	–	78	75	70
25 mm	Coated	–	86	85	83
	Uncoated	–	83	81	77

The listed efficiencies are theoretical values calculated by assuming the coefficients of friction.

Inch Leads	Coating	Leadscrew / Nut - % Efficiency IPS Screw Diameter				
		3/16"	1/4"	3/8"	7/16"	1/2"
0.05"	Coated	51	–	–	–	–
	Uncoated	41	–	–	–	–
0.10"	Coated	–	–	–	–	44
	Uncoated	–	–	–	–	35
0.20"	Coated	–	–	66	–	–
	Uncoated	–	–	57	–	–
0.250"	Coated	–	–	–	–	65
	Uncoated	–	–	–		56
0.333"	Coated	–	82	–	–	–
	Uncoated	–	76	–	–	–
0.50"	Coated	88	–	–	–	–
	Uncoated	84	–	–	–	–
1.00"	Coated	–	–	–	87	–
	Uncoated	–	–	–	82	–

Lead accuracy: 76.2 micron/300 mm or 0.003"/ft

Diameter: 6 mm–16 mm or 3/16"–1/2"

Lead: 1 mm–25 mm or 0.05"–0.25"

Dynamic Load: Up to 1.16 kN or 260 lbs.

Backlash:

- **Constant Force Nuts** are designed to reduce or eliminate backlash. Generally, the higher the preload, the better the anti-backlash performance. Custom designs avaiable
- **Standard Nut,** 0.025–0.25 mm (0.001–0.010") Longer leads have greater backlash

Part Number Configurator

Type	Thread Dir.	Diameter and Lead	Coating	Screw Length	Nut	Left End	Right End	Special
LS	R	0000	T	0250.00	RS	111	AFN	E

Configure It Now

Type
LS - Lead Screw

Thread Direction
R - Right
L - Left (**Note:** Contact Factory)

Coating
T - PTFE
U - Uncoated

Screw Length
Inch - 0000.00
Metric - 0000
Note: Screw type selected determines if length is inch or metric.

Special
E - Encoder Ready
N - No Option

Diameter and Lead

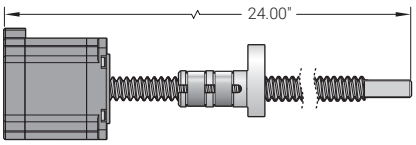
Code	Diameter	Lead
18050	3/16"	0.50"
18005	3/16"	0.05"
25033	1/4"	0.333"
37020	3/8"	0.20"
43100	7/16"	1.00"
50010	1/2"	0.10"
50025	1/2"	0.25"
0601	6 mm	1 mm
0602	6 mm	2 mm
0604	6 mm	4 mm
0605	6 mm	5 mm
0606	6 mm	6 mm
0608	6 mm	8 mm
0610	6 mm	10 mm
0612	6 mm	12 mm
1001	10 mm	1 mm
1002	10 mm	2 mm
1004	10 mm	4 mm
1005	10 mm	5 mm
1006	10 mm	6 mm
1008	10 mm	8 mm
1010	10 mm	10 mm
1012	10 mm	12 mm
1016	10 mm	16 mm
1025	10 mm	25 mm
1201	12 mm	1 mm
1202	12 mm	2 mm
1204	12 mm	4 mm
1205	12 mm	5 mm
1206	12 mm	6 mm
1208	12 mm	8 mm
1210	12 mm	10 mm
1212	12 mm	12 mm
1216	12 mm	16 mm
1225	12 mm	25 mm
1601	16 mm	1 mm
1602	16 mm	2 mm
1604	16 mm	4 mm
1605	16 mm	5 mm
1606	16 mm	6 mm
1608	16 mm	8 mm
1610	16 mm	10 mm
1612	16 mm	12 mm
1616	16 mm	16 mm
1625	16 mm	25 mm

Lead Screw Standard Nuts	
RS	Round
TS	Triangle
US	Threaded
VS	Rectangle

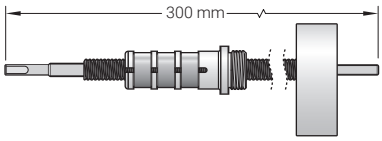
Lead Screw Anti-Backlash Nuts	
RCF	Round
TCF	Triangle
UCF	Threaded
VCF	Rectangle

Sample Part Numbers

Left **Right**



LSR50025T-024.00-TCF-231-THR-N



LSR1012U-0300-UCF-CFN-BFB-N

Left End Only	
080	Nema 8 (16 mm) (Requires a 3/16", 1/4" or 6 mm screw) Note: Not available with encoder ready option.
111	Nema 11 (23 mm) (Requires a 3/16", 1/4" or 6 mm screw)
140	Nema 14 (31 mm) (Requires a 3/16", 1/4", 6 mm or 10 mm screw)
171	Nema 17 (43 mm), Single Stack (Requires a 1/4", 3/8", 6 mm, 10 mm or 12 mm screw)
172	Nema 17 (43 mm), Double Stack (Requires a 1/4", 3/8", 6 mm, 10 mm or 12 mm screw)
231	Nema 23 (47 mm), Single Stack (Requires a 3/8", 7/16" 1/2" 10 mm, 12 mm or 16 mm screw)
232	Nema 23 (47 mm), Double Stack (Requires a 3/8", 7/16" 1/2" 10 mm, 12 mm or 16 mm screw)
23P	Nema 23 (47 mm), Power Plus (Requires a 3/8", 7/16" 1/2" 10 mm, 12 mm or 16 mm screw)

Left and/or Right Ends	
AFN	Bearing Support Only, Float
ALN	Bearing Support Only, Fixed
BFN	Bearing Support & Journal, Float
BLN	Bearing Support & Journal, Fixed
CFN	Bearing Support & Journal with Keyway, Float*
CLN	Bearing Support & Journal with Keyway, Fixed*
AFB	Bearing Support Only, Float, with Bearing Block
ALB	Bearing Support Only, Fixed, with Bearing Block
BFB	Bearing Support & Journal, Float, with Bearing Block
BLB	Bearing Support & Journal, Fixed, with Bearing Block
CFB	Bearing Support & Journal With Keyway, Float, with Bearing Block*
CLB	Bearing Support & Journal With Keyway, Fixed, with Bearing Block*
THR	Threaded
NNN	None

* Keyways will be flat or a keyway based on screw diameter, see page 18
Flat for 6 mm, 10 mm, 3/16", 1/4", 3/8" diameters
Keyway for 12 mm, 16 mm, 7/16", 1/2" diameters

Lead Screw Configuration Factors

Sizing a Lead Screw and Stepper Motor

The theoretical torque required to drive a load with a lead screw is:

$$Torque_{Drive} = \frac{Load \times Lead}{2\,\pi \times Screw\ Efficiency}$$

where lead screw efficiencies are given on page 4.

To properly use the above formula, a customer first needs to estimate the total axial load that must be driven by the lead screw system. The estimated total load should include all mass loads, acceleration loads, system friction loads, and the nut drag load. Friction loads of an actuator or a bearing and rail system must be accounted for – especially if plane bearings or bushings are used. Nut drag loads are listed in the charts on pages 11-17.

Next, a customer can make a table of the estimated total loads at the important speeds of the application and use the above formula to calculate the estimated theoretical motor torque for each combination of lead screw diameter and lead of interest.

Having estimated the required motor torques and knowing the speeds of the application, a customer can check the motor torque-speed curves on pages 31 - 36 of the catalog to determine what stepper motor should be used. Note that it is common practice to ensure that a stepper motor can produce 1.5 - 2.0 times the torque required at all the speeds of an application. The multiplier of 1.5 - 2.0 helps compensate for variations in motor torque, friction, small misalignments, and other factors not generally accounted for in estimates of total load.

Backdriving of a Lead Screw

If the efficiency of a lead screw and nut is high enough, the lead screw can back-drive when an axial thrust force is applied to the nut. Generally, back-driving will not occur if the screw lead is less than 1/3 the diameter of an uncoated lead screw or 1/4 the diameter of a coated lead screw. Application of lubricant to a lead screw can lower the coefficient of friction of the lead screw & nut system and cause the ability to back-drive. A screw & nut system that experiences vibration will back-drive at a lower efficiency than a similar screw & nut system that does not experience vibration.

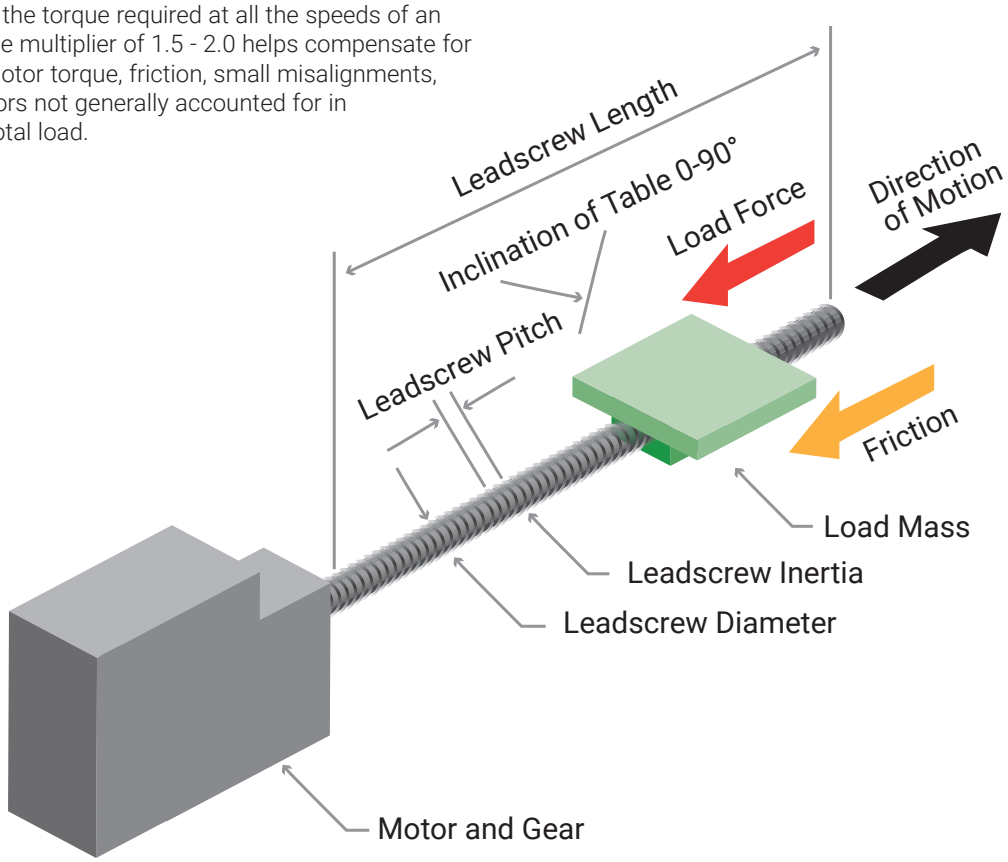
The theoretical brake torque required to hold a load is:

$$Torque_{Holding} = \frac{Load \times Lead \times Screw\ Efficiency}{2\,\pi}$$

where lead screw efficiencies are given on page 4.

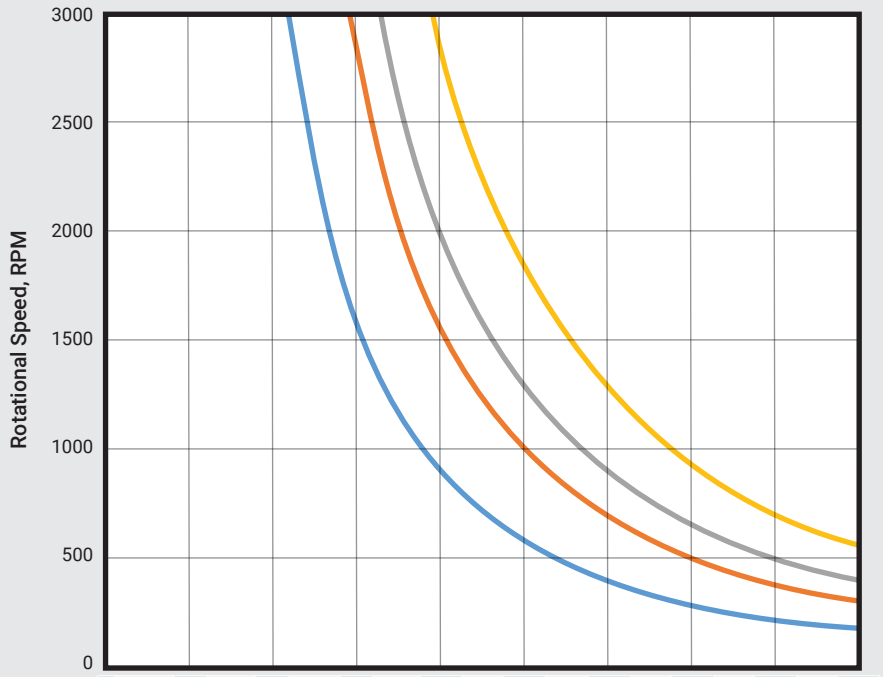
Other System Factors

Customers should also check that the lead screw's 80% critical speed limit, the maximum compressive column loading of the lead screw, and the PV derated nut load capacity are not exceeded per the charts on pages 8, 9, and 10.
If a customer has questions, PBC Linear's Application Engineers should be contacted for assistance.



Lead Screw Speed Charts

80% Critical Speed – Metric



Fixed-Free	0	100	200	300	400	500	600	700	800	900
Simple-Simple	0	168	337	505	674	842	1010	1080	1350	1520
Fixed-Simple	0	210	420	631	841	1050	1260	1470	1680	1890
Fixed-Fixed	0	253	507	760	1010	1270	1520	1770	2030	2280

Maximum Length (mm) between Bearings

- Dia. 6 mm
- Dia. 10 mm
- Dia. 12 mm
- Dia. 16 mm

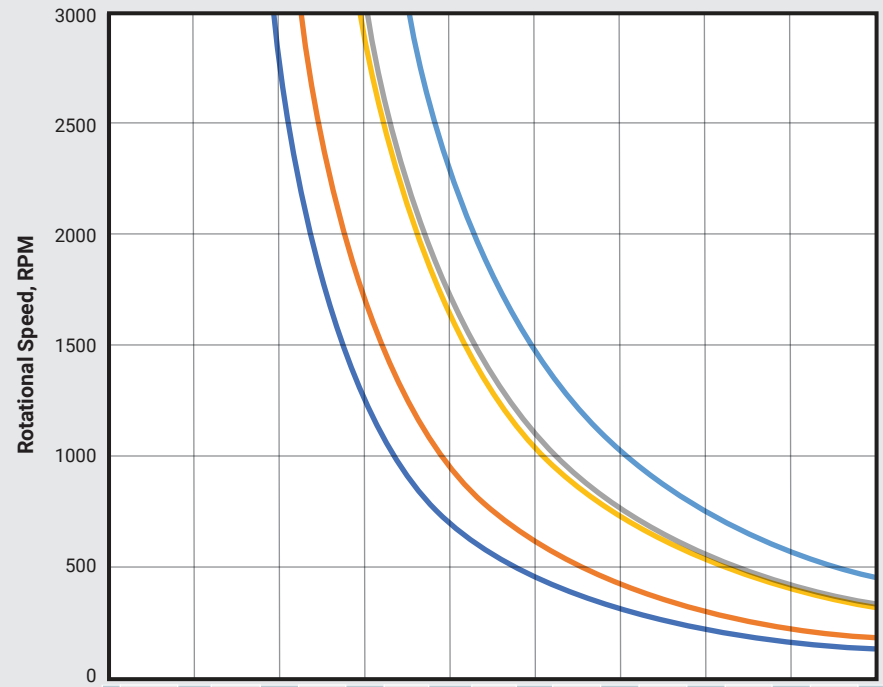
PBC Recommends:

Lead screws should be sized to operate at or below 80% of the critical speed. Critical speed is the lowest rotational speed at which the screw shaft is in resonance.

Several factors help to determine critical speed including:

- Screw diameter
- Length between bearing supports
- Type of bearing supports used

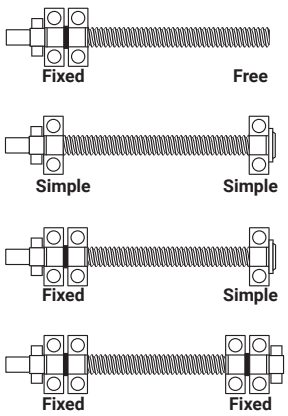
80% Critical Speed – IPS



Fixed-Free	0	4	8	12	16	20	24	28	32	36
Simple-Simple	0	6.7	13.3	20	26.7	33.3	40	46.7	53.5	60
Fixed-Simple	0	8.1	16.2	24.2	32.3	40.4	48.5	56.6	64.7	72.7
Fixed-Fixed	0	10	20	30	40	50	60	70	80	90

Maximum Length (inches) between Bearings

- Dia. 3/16 inch
- Dia. 1/4 inch
- Dia. 3/8 inch
- Dia. 7/16 inch
- Dia. 1/2 inch



Lead Screw Load Charts

- 6 mm x (5, 12 mm)
- 6 mm x 2 mm
- 6 mm x (1,4,6,8,10 mm)
- 10 mm x (5,25 mm)
- 10 mm x (2,4,6,8,10,12,16 mm)
- 10 mm x 1 mm
- 12 mm x (5,10,25 mm)
- 12 mm x (2,4,6,8,12,16 mm)
- 12 mm x 1 mm
- 16 mm x (5,10,25 mm)
- 16 mm x (2,4,6,8,12,16 mm)
- 16 mm x 1 mm

PBC Recommends:

Lead screws should be loaded in axial compression to levels below their maximum column loading.

Exceeding the maximum column loading can result in instability due to screw bending or buckling. These charts limit the screw slenderness ratios based on the type of screw support selected:

25 = Fixed - Free

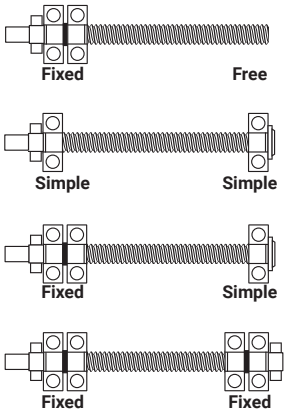
50 = Simple - Simple

70 = Fixed - Simple

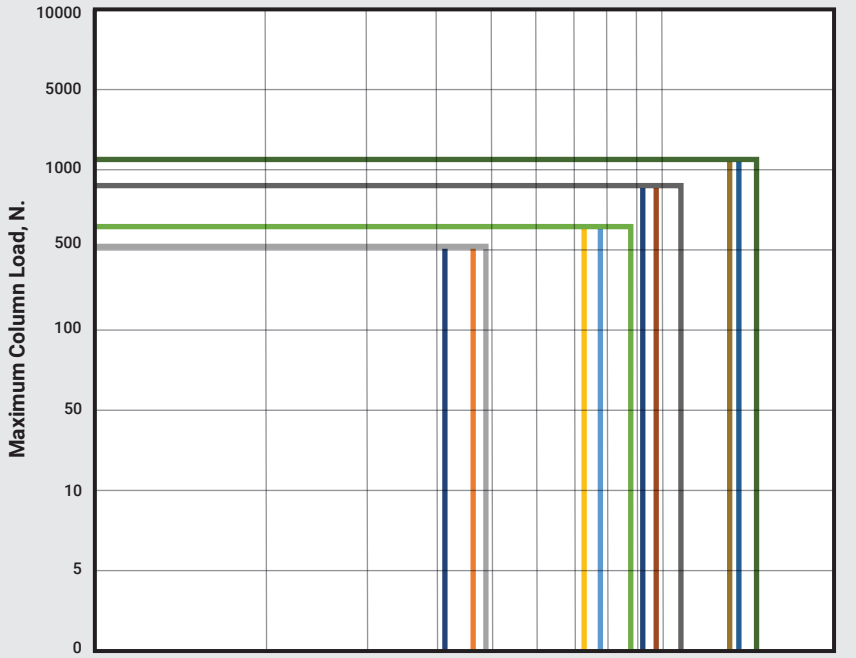
100 Fixed - Fixed

Please consult PBC if your application exceeds these limits

- 3/16 x 0.5 inch
- 3/16 x 0.05 inch
- 1/4 x 0.333 inch
- 3/8 x 0.200 inch
- 7/16 x 0.125 inch
- 1/2 x 0.100 inch and 0.250 inch



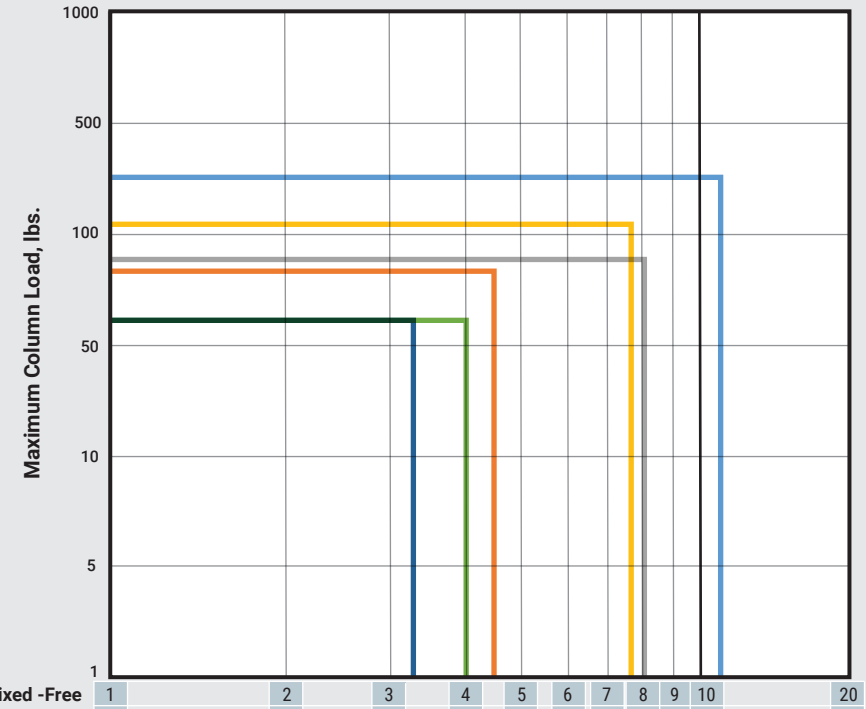
Maximum Column Loading – Metric



Fixed-Free	25	51	76	102	127	152	178	203	254	508
Simple-Simple	51	102	152	203	254	305	356	406	508	1016
Fixed-Simple	72	127	178	254	330	406	483	559	711	1448
Fixed-Fixed	102	203	305	406	508	610	711	813	1016	2032

Maximum Length (mm) between Bearings

Maximum Column Loading – IPS Units

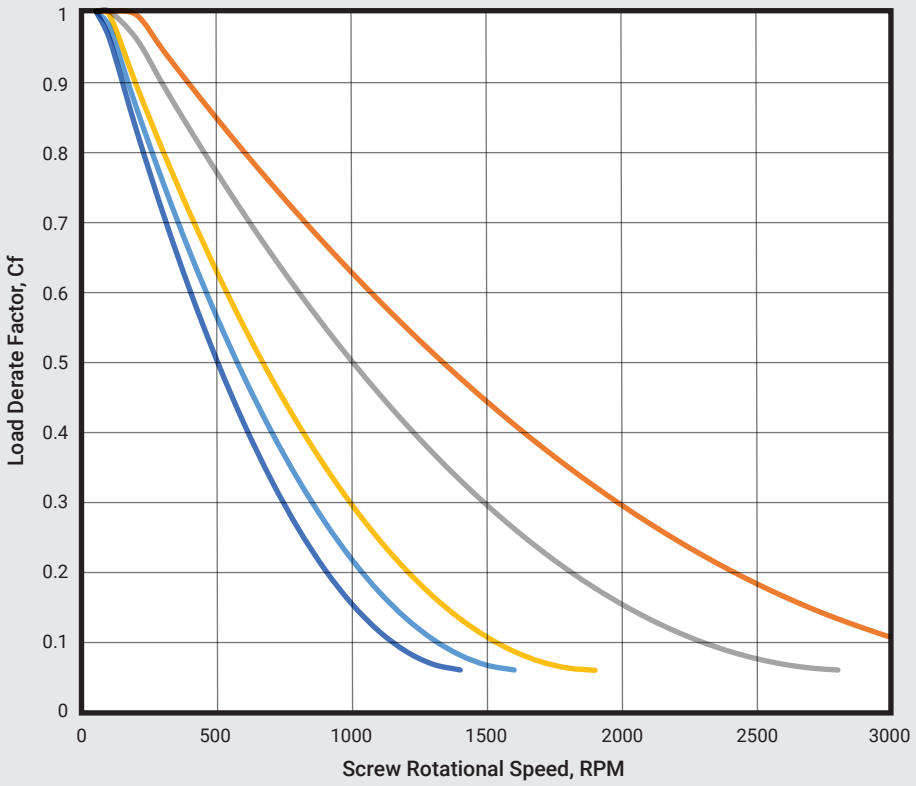


Fixed -Free	1	2	3	4	5	6	7	8	9	10	20
Simple-Simple	2	4	6	8	10	12	14	16	18	20	40
Fixed-Simple	2.8	5.7	8.5	11.3	14.1	17	20	23	25.5	28	57
Fixed-Fixed	4	8	12	16	20	24	28	32	36	40	80

Maximum Length (inches) between Bearings

Lead Screw PV Load Derate Charts

PBC Load Derate Factor for Inch Lead Screw Nuts



MAX Nut Load = Cf x Nut Dynamic Load Rating

Please note that the PV limit of the nut is dependent on the duty of the application and other factors so these curves are a guideline. If your application will operate near or beyond the shown curves, please contact PBC Linear for support.

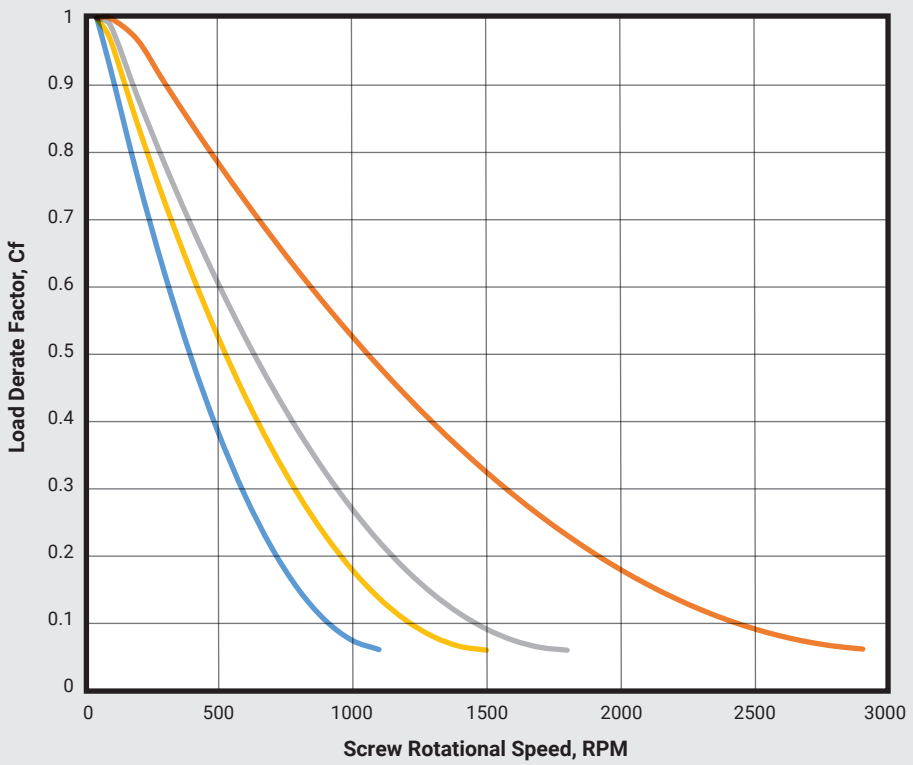
- .188 inch Dia Screw
- .250 inch Dia Screw
- .375 inch Dia Screw
- .438 inch Dia Screw
- 0.500 inch Dia Screw

PBC Recommends:

When determining if a lead screw nut has adequate load capacity for an application, multiply the maximum nut load capacity by the speed dependent factor listed on this page to determine the actual load capacity of the nut at the desired operating speed.

Operating at higher loads will result in accelerated nut wear.

PBC Load Derate Factor for Metric Lead Screw Nuts

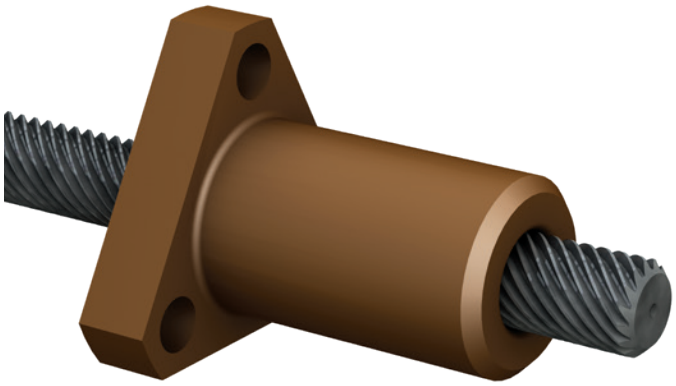


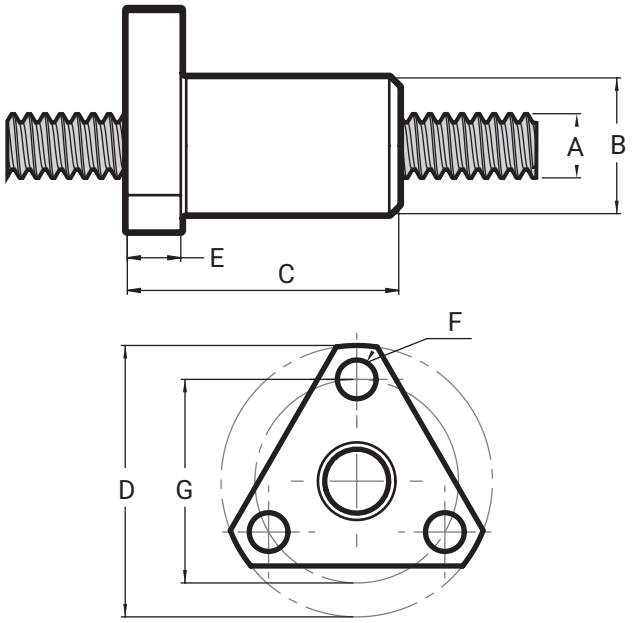
MAX Nut Load = Cf x Nut Dynamic Load Rating

Please note that the PV limit of the nut is dependent on the duty of the application and other factors so these curves are a guideline. If your application will operate near or beyond the shown curves, please contact PBC Linear for support.

- 6 mm Dia Screw
- 10 mm Dia Screw
- 12 mm Dia Screw
- 16 mm Dia Screw

Triangle Nut Standard





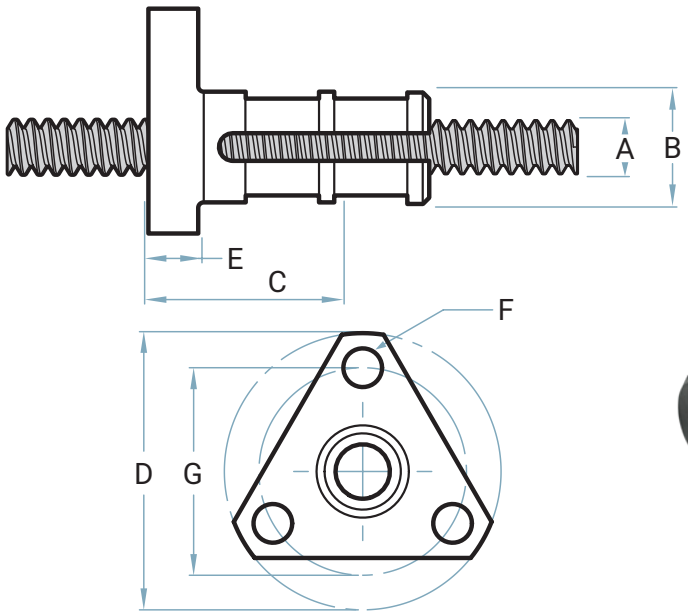
	A Screw Dia (mm)	B Nut Dia. (mm)	C Nut Length (mm)	D Flange Dia. (mm)	E Flange Thickness (mm)	F Mounting Hole Dia.(mm)	G Bolt Circle Dia. (mm)	Drag Torque (Nm)	Dynamic Load (N)
Metric Screws	**6 mm**	12.7	22.2	25.4	4.8	3.6	19.1	Free Wheeling	334 N
	10 mm	15.9	25.4	38.1	4.8	5.1	28.6	Free Wheeling	445 N
	12 mm	19.1	38.1	44.5	6.4	5.6	35.7	Free Wheeling	778 N
	16 mm	22.2	38.1	54.0	6.4	5.6	44.5	Free Wheeling	1,160 N

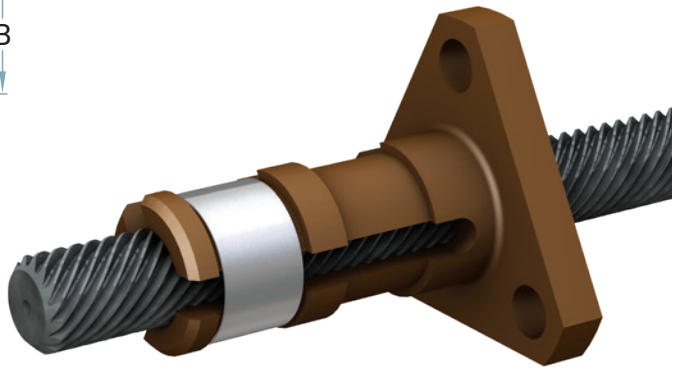
	A Screw Dia (in)	B Nut Dia. (in)	C Nut Length (in)	D Flange Dia. (in)	E Flange Thickness (in)	F Mounting Hole Dia.(in)	G Bolt Circle Dia. (in)	Drag Torque (oz-in)	Dynamic Load (lb)
Inch Screws	**3/16"**	0.35	0.63	0.81	0.13	0.12	0.600	Free Wheeling	45
	1/4"	0.50	0.88	1.00	0.19	0.14	0.750	Free Wheeling	75
	3/8"	0.63	1.00	1.50	0.19	0.20	1.125	Free Wheeling	85
	7/16"	0.75	1.50	1.62	0.20	0.20	1.250	Free Wheeling	125
	1/2"	0.75	1.50	1.75	0.22	0.22	1.406	Free Wheeling	200

Screw Dia (mm)	Metric Leads • Part Numbers									
	1 mm	2 mm	4 mm	5 mm	6 mm	8 mm	10 mm	12 mm	16 mm	25 mm
6 mm	LNR0601TS	LNR0602TS	LNR0604TS	LNR0605TS	LNR0606TS	LNR0608TS	LNR0610TS	LNR0612TS	–	–
10 mm	LNR1001TS	LNR1002TS	LNR1004TS	LNR1005TS	LNR1006TS	LNR1008TS	LNR1010TS	LNR1012TS	LNR1016TS	LNR1025TS
12 mm	LNR1201TS	LNR1202TS	LNR1204TS	LNR1205TS	LNR1206TS	LNR1208TS	LNR1210TS	LNR1212TS	LNR1216TS	LNR1225TS
16 mm	LNR1601TS	LNR1602TS	LNR1604TS	LNR1605TS	LNR1606TS	LNR1608TS	LNR1610TS	LNR1612TS	LNR1616TS	LNR1625TS

Screw Dia (mm)	Inch Leads • Part Numbers	
	Lead	Standard
3/16"	**0.05"**	LNR18005TS
	0.50"	LNR18050TS
1/4"	**0.333"**	LNR25033TS
3/8"	**0.20"**	LNR37020TS
7/16"	**1.00"**	LNR43100TS
1/2"	**0.10"**	LNR50010TS
	0.25"	LNR50025TS

Triangle Constant Force Anti-Backlash Nut





Anti-backlash*

	A Screw Dia (mm)	B Nut Dia. (mm)	C Nut Length (mm)	D Flange Dia. (mm)	E Flange Thickness (mm)	F Mounting Hole Dia.(mm)	G Bolt Circle Dia. (mm)	Drag Torque** (Nm)	Dynamic Load (N)
Metric Screws	**6 mm**	10.2	22.2	25.4	4.1	3.6	19.1	.0134–.0164	302 N
	10 mm	15.9	38.1	38.1	4.8	5.1	28.6	.0197–.0240	400 N
	12 mm	16.9	44.5	44.5	6.4	5.6	35.7	.0211–.0264	703 N
	16 mm	20.3	49.5	54.0	6.4	5.6	44.5	.0250–.0310	1,040 N
	A Screw Dia (in)	**B Nut Dia. (in)**	**C Nut Length (in)**	**D Flange Dia. (in)**	**E Flange Thickness (in)**	**F Mounting Hole Dia.(in)**	**G Bolt Circle Dia. (in)**	**Drag Torque** (oz-in)**	**Dynamic Load (lb)**
Inch Screws	**3/16"**	0.35	0.88	0.81	0.13	0.12	0.600	1.45–1.88	41
	1/4"	0.41	0.88	1.00	0.19	0.14	0.750	2.37–2.90	68
	3/8"	0.61	1.50	1.50	0.19	0.20	1.125	3.00–3.84	77
	7/16"	0.64	1.62	1.62	0.22	0.20	1.250	3.60–4.40	112
	1/2"	0.69	1.75	1.75	0.25	0.22	1.406	4.00–5.00	180

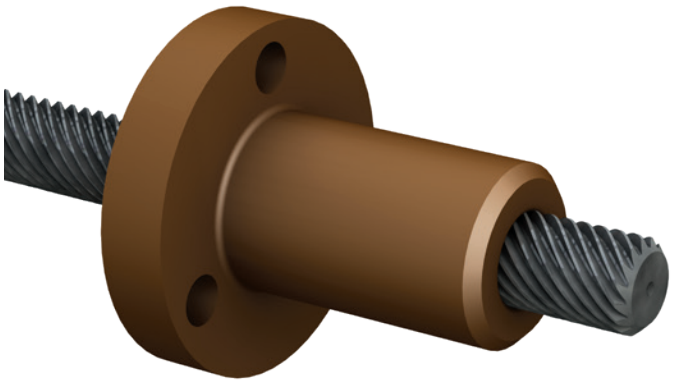
Leads	Metric Diameters • Part Numbers			
	6 mm	10 mm	12 mm	16 mm
1 mm	LNR0601TCF-ASY	LNR1001TCF-ASY	LNR1201TCF-ASY	LNR1601TCF-ASY
2 mm	LNR0602TCF-ASY	LNR1002TCF-ASY	LNR1202TCF-ASY	LNR1602TCF-ASY
4 mm	LNR0604TCF-ASY	LNR1004TCF-ASY	LNR1204TCF-ASY	LNR1604TCF-ASY
5 mm	LNR0605TCF-ASY	LNR1005TCF-ASY	LNR1205TCF-ASY	LNR1605TCF-ASY
6 mm	LNR0606TCF-ASY	LNR1006TCF-ASY	LNR1206TCF-ASY	LNR1606TCF-ASY
8 mm	LNR0608TCF-ASY	LNR1008TCF-ASY	LNR1208TCF-ASY	LNR1608TCF-ASY
10 mm	LNR0610TCF-ASY	LNR1010TCF-ASY	LNR1210TCF-ASY	LNR1610TCF-ASY
12 mm	LNR0612TCF-ASY	LNR1012TCF-ASY	LNR1212TCF-ASY	LNR1612TCF-ASY
16 mm	–	LNR1016TCF-ASY	LNR1216TCF-ASY	LNR1616TCF-ASY
25 mm	–	LNR1025TCF-ASY	LNR1225TCF-ASY	LNR1625TCF-ASY

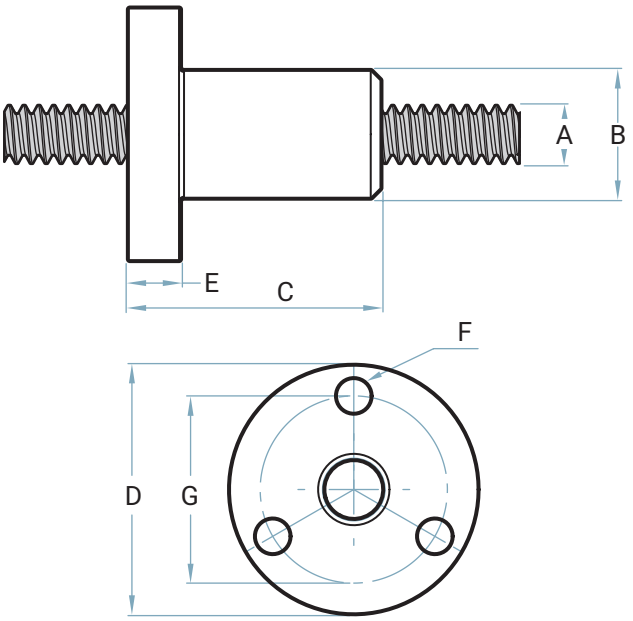
Screw Dia (mm)	Inch Part Numbers	
	Lead	Constant Force
3/16"	**0.05"**	LNR18005TCF
	0.50"	LNR18050TCF
1/4"	**0.333"**	LNR25033TCF
3/8"	**0.20"**	LNR37020TCF
7/16"	**1.00"**	LNR43100TCF
1/2"	**0.10"**	LNR50010TCF
	0.25"	LNR50025TCF

* Nut will have between 1 to 3 band slots. Band slots may not contain bands depending on drag torque required.

** Standard drag torque is factory set to the median number shown. For custom drag torque please contact a PBC Applications Engineer.

Round Nut Standard





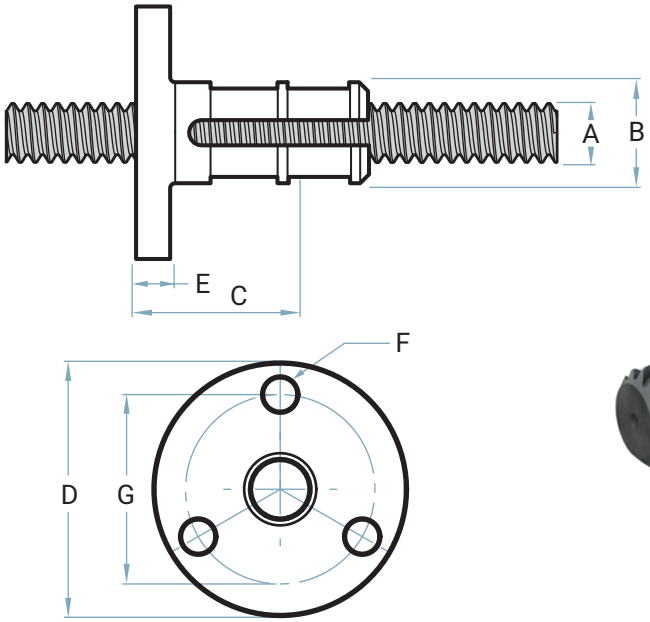
	A Screw Dia (mm)	B Nut Dia. (mm)	C Nut Length (mm)	D Flange Dia. (mm)	E Flange Thickness (mm)	F Mounting Hole Dia.(mm)	G Bolt Circle Dia. (mm)	Drag Torque (Nm)	Dynamic Load (N)
Metric Screws	6 mm	12.7	22.2	25.4	4.8	3.6	19.1	Free Wheeling	334 N
	10 mm	15.9	25.4	38.1	4.8	5.1	28.6	Free Wheeling	445 N
	12 mm	19.1	38.1	44.5	6.4	5.6	35.7	Free Wheeling	778 N
	16 mm	22.2	38.1	54.0	6.4	5.6	44.5	Free Wheeling	1,160 N

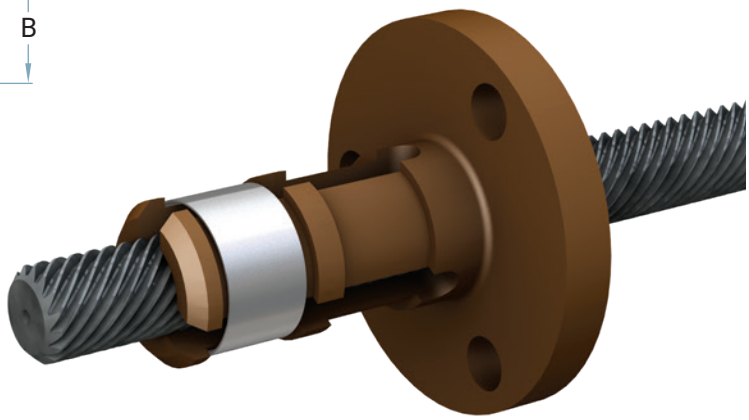
	A Screw Dia (in)	B Nut Dia. (in)	C Nut Length (in)	D Flange Dia. (in)	E Flange Thickness (in)	F Mounting Hole Dia.(in)	G Bolt Circle Dia. (in)	Drag Torque (oz-in)	Dynamic Load (lb)
Inch Screws	3/16"	0.35	0.63	0.81	0.13	0.12	0.600	Free Wheeling	45
	1/4"	0.50	0.88	1.00	0.19	0.14	0.750	Free Wheeling	75
	3/8"	0.63	1.00	1.50	0.19	0.20	1.125	Free Wheeling	85
	7/16"	0.75	1.50	1.62	0.22	0.20	1.250	Free Wheeling	125
	1/2"	0.75	1.50	1.75	0.25	0.22	1.406	Free Wheeling	200

Screw Dia (mm)	Metric Leads • Part Numbers									
	1 mm	2 mm	4 mm	5 mm	6 mm	8 mm	10 mm	12 mm	16 mm	25 mm
6 mm	LNR0601RS	LNR0602RS	LNR0604RS	LNR0605RS	LNR0606RS	LNR0608RS	LNR0610RS	LNR0612RS	–	–
10 mm	LNR1001RS	LNR1002RS	LNR1004RS	LNR1005RS	LNR1006RS	LNR1008RS	LNR1010RS	LNR1012RS	LNR1016RS	LNR1025RS
12 mm	LNR1201RS	LNR1202RS	LNR1204RS	LNR1205RS	LNR1206RS	LNR1208RS	LNR1210RS	LNR1212RS	LNR1216RS	LNR1225RS
16 mm	LNR1601RS	LNR1602RS	LNR1604RS	LNR1605RS	LNR1606RS	LNR1608RS	LNR1610RS	LNR1612RS	LNR1616RS	LNR1625RS

Screw Dia (mm)	Inch Leads • Part Numbers	
	Lead	Standard
3/16"	0.05"	LNR18005RS
	0.50"	LNR18050RS
1/4"	0.333"	LNR25033RS
3/8"	0.20"	LNR37020RS
7/16"	1.00"	LNR43100RS
1/2"	0.10"	LNR50010RS
	0.25"	LNR50025RS

Round Constant Force Anti-Backlash Nut





Anti-backlash*

Metric Screws

A Screw Dia (mm)	B Nut Dia. (mm)	C Nut Length (mm)	D Flange Dia. (mm)	E Flange Thickness (mm)	F Mounting Hole Dia.(mm)	G Bolt Circle Dia. (mm)	Drag Torque** (Nm)	Dynamic Load (N)
6 mm	10.2	22.2	25.4	4.8	3.6	19.1	.0134–.0164	302 N
10 mm	15.9	38.1	38.1	4.8	5.1	28.6	.0197–.0240	400 N
12 mm	16.9	44.5	44.5	6.4	5.6	35.7	.0211–.0264	703 N
16 mm	20.3	49.5	54.0	6.4	5.6	44.5	.0250–.0310	1,040 N

Inch Screws

A Screw Dia (in)	B Nut Dia. (in)	C Nut Length (in)	D Flange Dia. (in)	E Flange Thickness (in)	F Mounting Hole Dia.(in)	G Bolt Circle Dia. (in)	Drag Torque** (oz-in)	Dynamic Load (lb)
3/16"	0.35	0.88	0.81	0.13	0.12	0.600	1.45–1.88	41
1/4"	0.41	0.88	1.00	0.19	0.14	0.750	2.37–2.90	68
3/8"	0.61	1.50	1.50	0.19	0.20	1.125	3.00–3.84	77
7/16"	0.64	1.62	1.62	0.22	0.20	1.250	3.60–4.40	112
1/2"	0.69	1.75	1.75	0.25	0.22	1.406	4.00–5.00	180

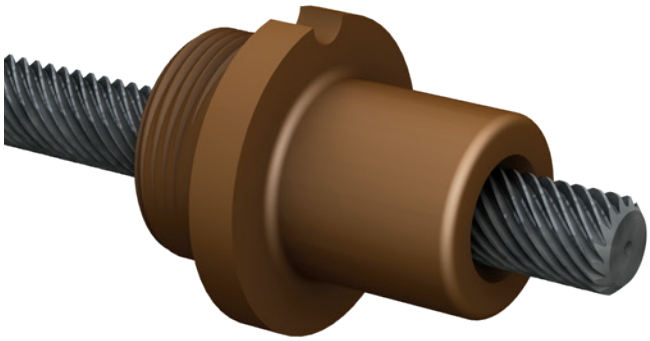
Leads	Metric Diameters • Part Numbers			
	6 mm	10 mm	12 mm	16 mm
1 mm	LNR0601RCF-ASY	LNR1001RCF-ASY	LNR1201RCF-ASY	LNR1601RCF-ASY
2 mm	LNR0602RCF-ASY	LNR1002RCF-ASY	LNR1202RCF-ASY	LNR1602RCF-ASY
4 mm	LNR0604RCF-ASY	LNR1004RCF-ASY	LNR1204RCF-ASY	LNR1604RCF-ASY
5 mm	LNR0605RCF-ASY	LNR1005RCF-ASY	LNR1205RCF-ASY	LNR1605RCF-ASY
6 mm	LNR0606RCF-ASY	LNR1006RCF-ASY	LNR1206RCF-ASY	LNR1606RCF-ASY
8 mm	LNR0608RCF-ASY	LNR1008RCF-ASY	LNR1208RCF-ASY	LNR1608RCF-ASY
10 mm	LNR0610RCF-ASY	LNR1010RCF-ASY	LNR1210RCF-ASY	LNR1610RCF-ASY
12 mm	LNR0612RCF-ASY	LNR1012RCF-ASY	LNR1212RCF-ASY	LNR1612RCF-ASY
16 mm	–	LNR1016RCF-ASY	LNR1216RCF-ASY	LNR1616RCF-ASY
25 mm	–	LNR1025RCF-ASY	LNR1225RCF-ASY	LNR1625RCF-ASY

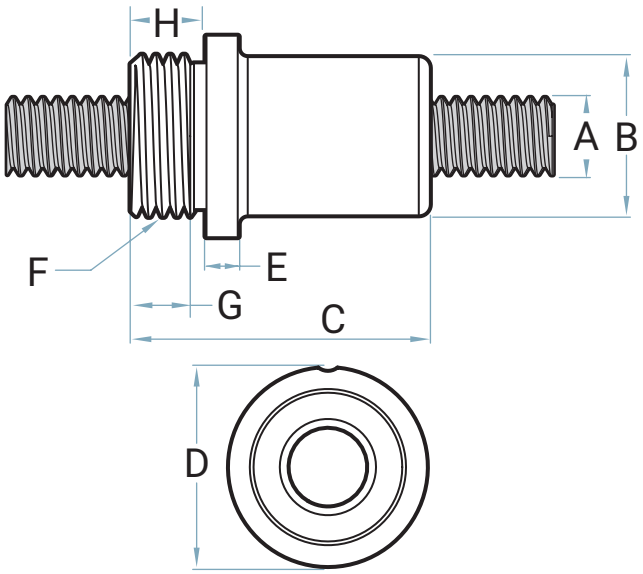
Screw Dia (mm)	Inch Part Numbers	
	Lead	Constant Force
3/16"	**0.05"**	LNR18005RCF
	0.50"	LNR18050RCF
1/4"	**0.333"**	LNR25033RCF
3/8"	**0.20"**	LNR37020RCF
7/16"	**1.00"**	LNR43100RCF
1/2"	**0.10"**	LNR50010RCF
	0.25"	LNR50025RCF

* Nut will have between 1 to 3 band slots. Band slots may not contain bands depending on drag torque required.

** Standard drag torque is factory set to the median number shown. For custom drag torque please contact a PBC Applications Engineer.

Threaded Nut Standard





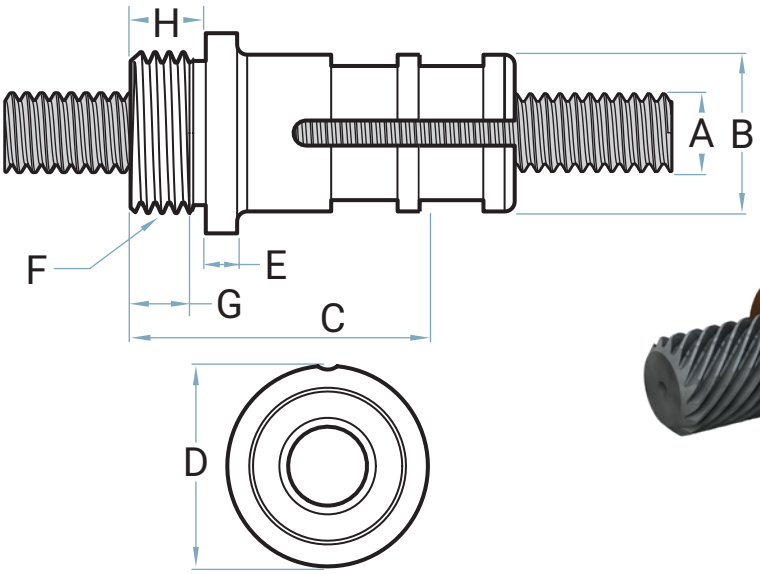
	A Screw Dia (mm)	B Nut Dia. (mm)	C Nut Length (mm)	D Flange Dia. (mm)	E Flange Thickness (mm)	F Thread	G Thread Length (mm)	H End Length (mm)	Drag Torque (Nm)	Dynamic Load (N)
Metric Screws	6 mm	12.7	22.2	20.3	3.2	M14x1.5	4.8	4.8	Free Wheeling	334 N
	10 mm	15.9	25.4	25.4	3.2	M18x1.5	6.4	7.6	Free Wheeling	445 N
	12 mm	19.1	38.1	31.8	3.2	M24x2	9.5	10.8	Free Wheeling	778 N
	16 mm	22.2	38.1	31.8	3.2	M24x2	9.5	10.8	Free Wheeling	1,160 N

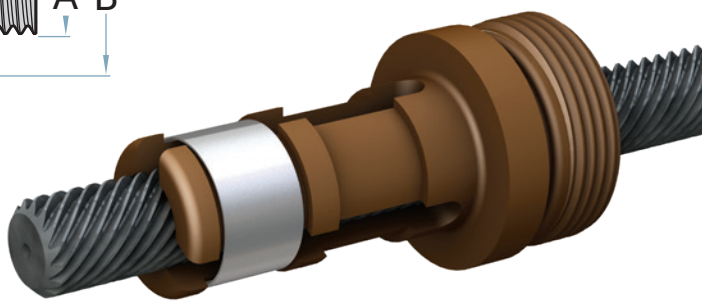
	A Screw Dia (in)	B Nut Dia. (in)	C Nut Length (in)	D Flange Dia. (in)	E Flange Thickness (in)	F Thread	G Thread Length (mm)	H End Length (mm)	Drag Torque (oz-in)	Dynamic Load (lb)
Inch Screws	3/16"	0.35	0.88	0.60	0.13	1/2"-20	0.190	0.247	Free Wheeling	45
	1/4"	0.50	0.88	0.80	0.13	9/16"-18	0.190	0.247	Free Wheeling	75
	3/8"	0.63	1.00	1.00	0.13	5/8"-18	0.250	0.300	Free Wheeling	85
	7/16"	0.75	1.50	1.25	0.13	13/16"-16	0.375	0.425	Free Wheeling	125
	1/2"	0.75	1.50	1.25	0.13	15/16"-16	0.375	0.425	Free Wheeling	200

Screw Dia (mm)	Metric Leads • Part Numbers									
	1 mm	2 mm	4 mm	5 mm	6 mm	8 mm	10 mm	12 mm	16 mm	25 mm
6 mm	LNR0601US	LNR0602US	LNR0604US	LNR0605US	LNR0606US	LNR0608US	LNR0610US	LNR0612US	–	–
10 mm	LNR1001US	LNR1002US	LNR1004US	LNR1005US	LNR1006US	LNR1008US	LNR1010US	LNR1012US	LNR1016US	LNR1025US
12 mm	LNR1201US	LNR1202US	LNR1204US	LNR1205US	LNR1206US	LNR1208US	LNR1210US	LNR1212US	LNR1216US	LNR1225US
16 mm	LNR1601US	LNR1602US	LNR1604US	LNR1605US	LNR1606US	LNR1608US	LNR1610US	LNR1612US	LNR1616US	LNR1625US

Screw Dia (mm)	Inch Leads • Part Numbers	
	Lead	Standard
3/16"	0.05"	LNR18005US
	0.50"	LNR18050US
1/4"	0.333"	LNR25033US
3/8"	0.20"	LNR37020US
7/16"	1.00"	LNR43100US
1/2"	0.10"	LNR50010US
	0.25"	LNR50025US

Threaded Constant Force Anti-Backlash Nut





Anti-backlash*

	A Screw Dia (mm)	B Nut Dia. (mm)	C Nut Length (mm)	D Flange Dia. (mm)	E Flange Thickness (mm)	F Thread	G Thread Length (mm)	H End Length (mm)	Drag Torque** (Nm)	Dynamic Load (N)
Metric Screws	**6 mm**	10.2	27.5	20.3	3.175	M14x1.5	4.8	4.8	0.0134–0.0164	302 N
	10 mm	15.9	44.5	25.4	3.175	M18x1.5	6.4	7.6	0.0197–0.0240	400 N
	12 mm	16.9	44.5	31.8	3.175	M24X2	9.5	10.8	0.0211–0.0264	703 N
	16 mm	20.3	49.5	31.8	3.175	M24x2	9.5	10.8	0.0250–0.0310	1,040 N

	A Screw Dia (in)	B Nut Dia. (in)	C Nut Length (in)	D Flange Dia. (in)	E Flange Thickness (in)	F Thread	G Thread Length (mm)	H End Length (in)	Drag Torque** (oz-in)	Dynamic Load (lb)
Inch Screws	**3/16"**	0.35	1.08	0.60	0.13	1/2"-20	0.190	0.247	1.45–1.88	41
	1/4"	0.41	1.08	0.80	0.13	9/16"-18	0.190	0.247	2.37–2.90	68
	3/8"	0.61	1.75	1.00	0.13	5/8"-18	0.250	0.300	3.00–3.84	77
	7/16"	0.64	1.75	1.25	0.13	13/16"-16	0.375	0.425	3.60–4.40	112
	1/2"	0.69	1.95	1.25	0.13	15/16"-16	0.375	0.425	4.00–5.00	180

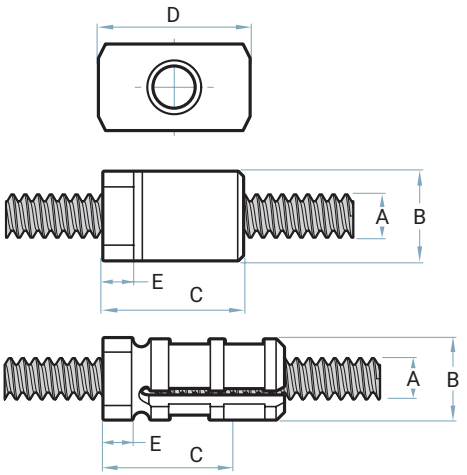
Leads	Metric Diameters • Part Numbers			
	6 mm	10 mm	12 mm	16 mm
1 mm	LNR0601UCF-ASY	LNR1001UCF-ASY	LNR1201UCF-ASY	LNR1601UCF-ASY
2 mm	LNR0602UCF-ASY	LNR1002UCF-ASY	LNR1202UCF-ASY	LNR1602UCF-ASY
4 mm	LNR0604UCF-ASY	LNR1004UCF-ASY	LNR1204UCF-ASY	LNR1604UCF-ASY
5 mm	LNR0605UCF-ASY	LNR1005UCF-ASY	LNR1205UCF-ASY	LNR1605UCF-ASY
6 mm	LNR0606UCF-ASY	LNR1006UCF-ASY	LNR1206UCF-ASY	LNR1606UCF-ASY
8 mm	LNR0608UCF-ASY	LNR1008UCF-ASY	LNR1208UCF-ASY	LNR1608UCF-ASY
10 mm	LNR0610UCF-ASY	LNR1010UCF-ASY	LNR1210UCF-ASY	LNR1610UCF-ASY
12 mm	LNR0612UCF-ASY	LNR1012UCF-ASY	LNR1212UCF-ASY	LNR1612UCF-ASY
16 mm	–	LNR1016UCF-ASY	LNR1216UCF-ASY	LNR1616UCF-ASY
25 mm	–	LNR1025UCF-ASY	LNR1225UCF-ASY	LNR1625UCF-ASY

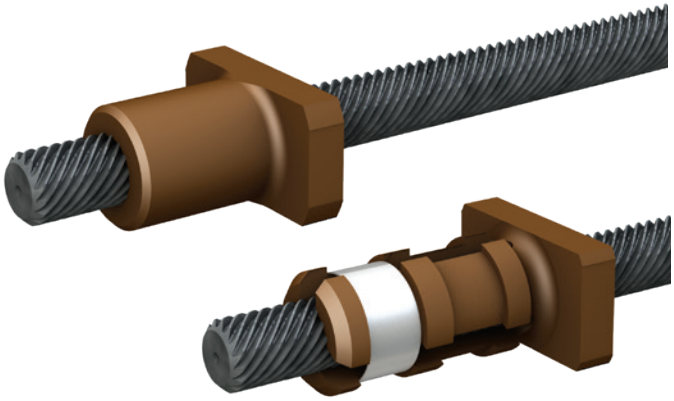
Screw Dia (mm)	Inch Part Numbers	
	Lead	Constant Force
3/16"	**0.05"**	LNR18005UCF
	0.50"	LNR18050UCF
1/4"	**0.333"**	LNR25033UCF
3/8"	**0.20"**	LNR37020UCF
7/16"	**1.00"**	LNR43100UCF
1/2"	**0.10"**	LNR50010UCF
	0.25"	LNR50025UCF

***** Nut will have between 1 to 3 band slots. Band slots may not contain bands depending on drag torque required.

****** Standard drag torque is factory set to the median number shown. For custom drag torque please contact a PBC Applications Engineer.

Rectangle Standard & Constant Force Anti-Backlash Nut





Anti-backlash*

Metric Screws

A Screw Dia (mm)	B Nut Dia. (mm)		C Nut Length (mm)		D Flange Dia. (mm)	E Flange Thickness (mm)	Drag Torque** (Nm)		Dynamic Load (N)	
	Standard	Constant Force	Standard	Constant Force	Both	Both	Standard	Constant Force	Standard	Constant Force
6 mm	12.7	10.2	22.2	22.2	17.8	3.4	Free Wheeling	.0134–.0164	334 N	302 N
10 mm	15.9	15.9	25.4	38.1	22.0	5.1	Free Wheeling	.0197–.0240	445 N	400 N
12 mm	19.1	16.9	38.1	41.3	30.5	5.1	Free Wheeling	.0211–.0264	778 N	703 N
16 mm	22.2	20.3	38.1	49.5	38.1	5.1	Free Wheeling	.0250–.0310	1,160 N	1,040 N

Inch Screws

A Screw Dia (in)	B Nut Dia. (in)		C Nut Length (in)		D Flange Dia. (in)	E Flange Thickness (in)	Drag Torque** (oz-in)		Dynamic Load (lb)	
	Standard	Constant Force	Standard	Constant Force	Both	Both	Standard	Constant Force	Standard	Constant Force
3/16"	0.35	0.35	0.63	0.88	0.62	0.09	Free Wheeling	1.45–1.88	45	41
1/4"	0.50	0.41	0.88	0.88	0.70	0.14	Free Wheeling	2.37–2.90	75	68
3/8"	0.63	0.61	1.00	1.50	0.87	0.20	Free Wheeling	3.00–3.84	85	77
7/16"	0.75	0.64	1.30	1.63	1.20	0.20	Free Wheeling	3.60–4.40	125	112
1/2"	0.75	0.69	1.50	1.75	1.20	0.20	Free Wheeling	4.00–5.00	200	180

Leads		Metric Diameters • Part Numbers			
		6 mm	10 mm	12 mm	16 mm
1 mm	Standard	LNR0601VS	LNR1001VS	LNR1201VS	LNR1601VS
	Constant Force	LNR0601VCF-ASY	LNR1001VCF-ASY	LNR1201VCF-ASY	LNR1601VCF-ASY
2 mm	Standard	LNR0602VS	LNR1002VS	LNR1202VS	LNR1602US
	Constant Force	LNR0602VCF-ASY	LNR1002VCF-ASY	LNR1202VCF-ASY	LNR1602UCF-ASY
4 mm	Standard	LNR0604VS	LNR1004VS	LNR1204VS	LNR1604VS
	Constant Force	LNR0604VCF-ASY	LNR1004VCF-ASY	LNR1204VCF-ASY	LNR1604VCF-ASY
5 mm	Standard	LNR0605VS	LNR1005VS	LNR1205VS	LNR1605VS
	Constant Force	LNR0605VCF-ASY	LNR1005VCF-ASY	LNR1205VCF-ASY	LNR1605VCF-ASY
6 mm	Standard	LNR0606VS	LNR1006VS	LNR1206VS	LNR1606VS
	Constant Force	LNR0606VCF-ASY	LNR1006VCF-ASY	LNR1206VCF-ASY	LNR1606VCF-ASY
8 mm	Standard	LNR0608VS	LNR1008VS	LNR1208VS	LNR1608VS
	Constant Force	LNR0608VCF-ASY	LNR1008VCF-ASY	LNR1208VCF-ASY	LNR1608VCF-ASY
10 mm	Standard	LNR0610VS	LNR1010VS	LNR1210VS	LNR1610VS
	Constant Force	LNR0610VCF-ASY	LNR1010VCF-ASY	LNR1210VCF-ASY	LNR1610VCF-ASY
12 mm	Standard	LNR0612VS	LNR1012VS	LNR1212VS	LNR1612VS
	Constant Force	LNR0612VCF-ASY	LNR1012VCF-ASY	LNR1212VCF-ASY	LNR1612VCF-ASY
16 mm	Standard	–	LNR1016VS	LNR1216VS	LNR1616VS
	Constant Force		LNR1016VCF-ASY	LNR1216VCF-ASY	LNR1616VCF-ASY
25 mm	Standard	–	LNR1025VS	LNR1225VS	LNR1625VS
	Constant Force		LNR1025VCF-ASY	LNR1225VCF-ASY	LNR1625VCF-ASY

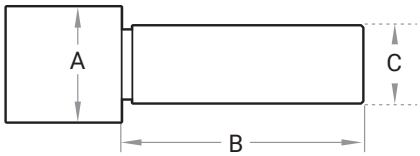
Screw Dia (mm)	Inch Part Numbers		
	Lead	Standard	Constant Force
3/16"	**0.05"**	LNR18005VS	LNR18005VCF
	0.50"	LNR18050VS	LNR18050VCF
1/4"	**0.333"**	LNR25033VS	LNR25033VCF
3/8"	**0.20"**	LNR37020VS	LNR37020VCF
7/16"	**1.00"**	LNR43100VS	LNR43100VCF
1/2"	**0.10"**	LNR50010VS	LNR50010VCF
	0.25"	LNR50025VS	LNR50025VCF

* Nut will have between 1 to 3 band slots. Band slots may not contain bands depending on drag torque required.

** Standard drag torque is factory set to the median number shown. For custom drag torque please contact a PBC Applications Engineer.

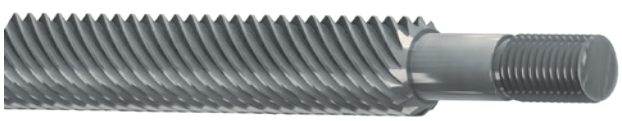
Machined Ends

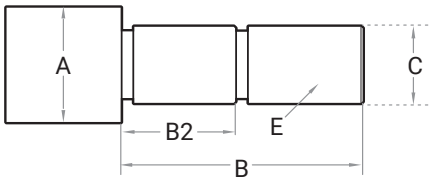
Float Journal



Threaded Journaled

Fixed Journaled

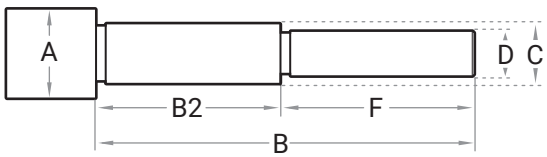




	A	B		C	
		Float	Threaded	Float	Threaded
Metric Screws	6 mm	15.24 mm	20.00 mm	4.98 mm	M5 x 0.80–6g
	10 mm	15.75 mm	20.00 mm	5.97 mm	M6 x 1.00–6g
	12 mm	20.32 mm	25.00 mm	9.98 mm	M10 x 1.50–6g
	16 mm	21.34 mm	25.00 mm	11.97 mm	M12 x 1.75–6g
Inch Screws	3/16"	0.600"	0.787"	0.157"	M4 x 0.70–6g
	1/4"	0.600"	0.787"	0.197"	M5 x 0.80–6g
	3/8"	0.600"	0.787"	0.235"	M6 x 1.00–6g
	7/16"	0.800"	0.984"	0.393"	M10 x 1.50–6g
	1/2"	0.800"	0.984"	0.393"	M10 x 1.50–6g

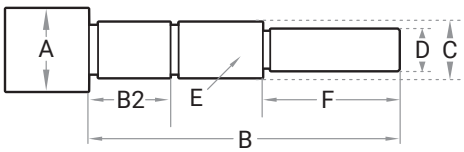
	A	B	B2	C	E
Metric Screws	6 mm	22.86 mm	10.00 mm	4.98 mm	M5 x 0.80–6g
	10 mm	22.86 mm	9.00 mm	5.97 mm	M6 x 1.00–6g
	12 mm	33.27 mm	14.22 mm	9.97 mm	M10 x 1.50–6g
	16 mm	36.88 mm	15.90 mm	11.97 mm	M12 x 1.75–6g
Inch Screws	3/16"	0.900"	0.315"	0.157"	M4 x 0.70–6g
	1/4"	0.900"	0.394"	0.196"	M5 x 0.80–6g
	3/8"	0.900"	0.354"	0.235"	M6 x 1.00–6g
	7/16"	1.310"	0.560"	0.393"	M10 x 1.50–6g
	1/2"	1.310"	0.560"	0.393"	M10 x 1.50–6g

Float with Journaled End



	A	B	B2	C	D	F
Metric Screws	6 mm	25.40 mm	15.24 mm	4.98 mm	4.00 mm	10.16 mm
	10 mm	30.86 mm	15.24 mm	5.97 mm	4.00 mm	15.62 mm
	12 mm	36.32 mm	20.32 mm	9.97 mm	8.00 mm	16.00 mm
	16 mm	37.08 mm	20.70 mm	11.97 mm	10.00 mm	16.38 mm
Inch Screws	3/16"	1.000"	0.600"	0.157"	0.125"	0.400"
	1/4"	1.000"	0.600"	0.197"	0.125"	0.400"
	3/8"	1.215"	0.600"	0.235"	0.188"	0.615"
	7/16"	1.430"	0.800"	0.393"	0.313"	0.630"
	1/2"	1.430"	0.800"	0.393"	0.313"	0.630"

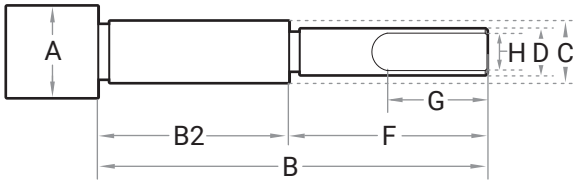
Fixed with Journaled End



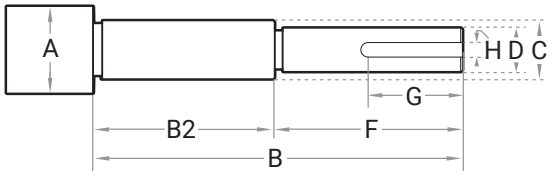
	A	B	B2	C	D	E	F
Metric Screws	6 mm	34.85 mm	10.00 mm	4.98 mm	4.00 mm	M5 x 0.80–6g	12.37 mm
	10 mm	38.10 mm	9.00 mm	5.97 mm	4.00 mm	M6 x 1.00–6g	15.24 mm
	12 mm	48.90 mm	14.22 mm	9.97 mm	8.00 mm	M10 x 1.50–6g	16.00 mm
	16 mm	50.80 mm	15.90 mm	11.97 mm	10.00 mm	M12 x 1.75–6g	16.54 mm
Inch Screws	3/16"	1.372"	0.315"	0.157"	0.125"	M4 x 0.70–6g	0.487
	1/4"	1.372"	0.394"	0.197"	0.125"	M5 x 0.80–6g	0.487"
	3/8"	1.500"	0.354"	0.235"	0.188"	M6 x 1.00–6g	0.600"
	7/16"	1.926"	0.560"	0.393"	0.313"	M10 x 1.50–6g	0.630"
	1/2"	1.926"	0.560"	0.393"	0.313"	M10 x 1.50–6g	0.630"

Machined Ends

Float Journal with Flat (for 6 mm, 10 mm, 3/16", 1/4", 3/8" screws)

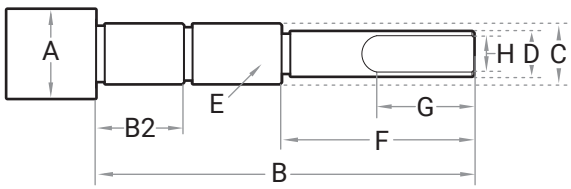


Float Journal with Keyway (for 12 mm, 16 mm, 7/16", 1/2" screws)

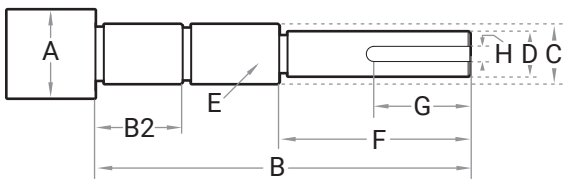


	A	B	B2	C	D	F	G	H
Metric Screws	6 mm	25.40 mm	15.24 mm	4.98 mm	4.00 mm	10.16 mm	7.26 mm	Flat
	10 mm	30.86 mm	15.24 mm	5.97 mm	4.00 mm	15.62 mm	9.53 mm	Flat
	12 mm	36.32 mm	20.32 mm	9.97 mm	8.00 mm	16.00 mm	12.70 mm	3 mm Keyway
	16 mm	37.08 mm	20.70 mm	11.97 mm	10.00 mm	16.38 mm	12.70 mm	3 mm Keyway
Inch Screws	3/16"	1.000"	0.600"	0.157"	0.125"	0.400"	0.286"	Flat
	1/4"	1.000"	0.600"	0.197"	0.125"	0.400"	0.286"	Flat
	3/8"	1.215"	0.600"	0.235"	0.188"	0.615"	0.375"	Flat
	7/16"	1.430"	0.800"	0.393"	0.313"	0.630"	0.500"	0.125" Keyway
	1/2"	1.430"	0.800"	0.393"	0.313"	0.630"	0.500"	0.125" Keyway

Fixed Journal with Flat (for 6 mm, 10 mm, 3/16", 1/4", 3/8" screws)

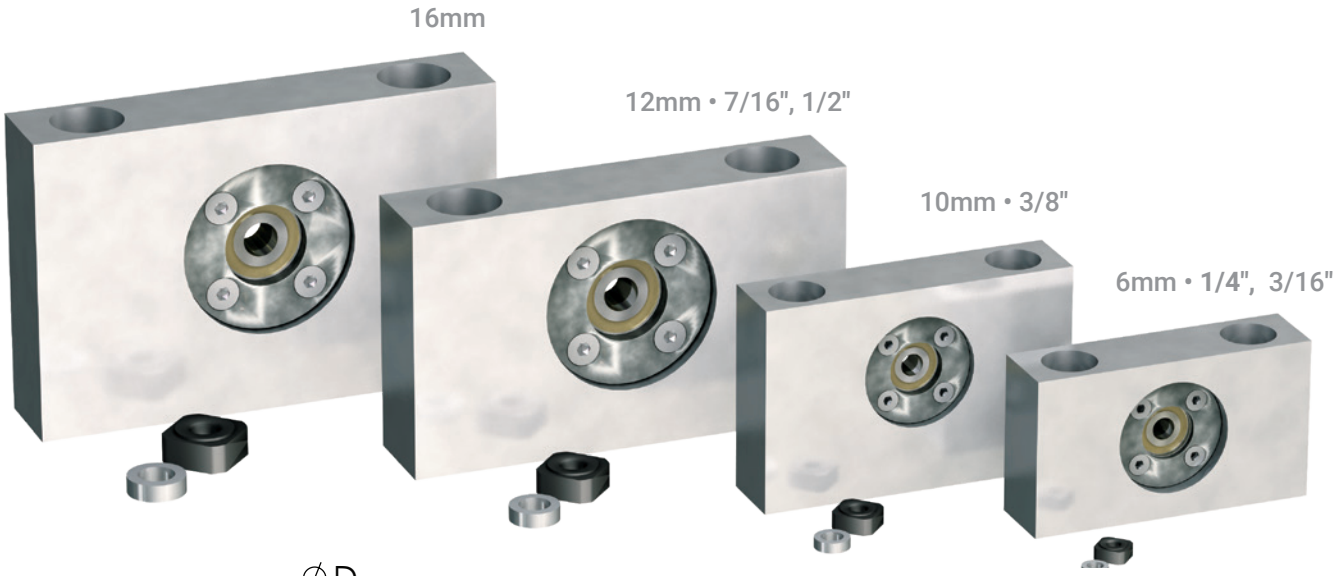


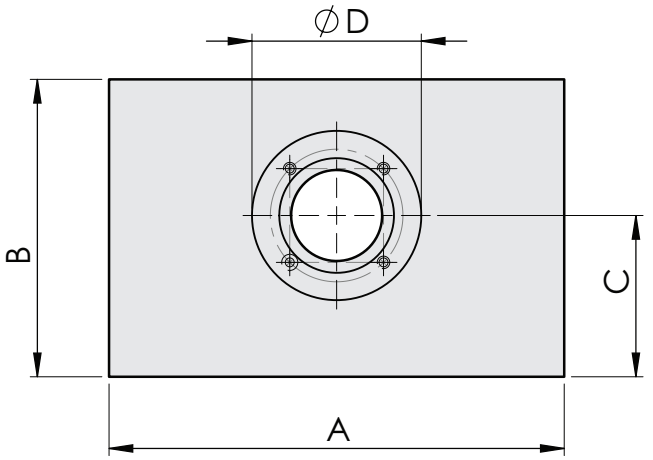
Fixed Journal with Keyway (for 12 mm, 16 mm, 7/16", 1/2" screws)

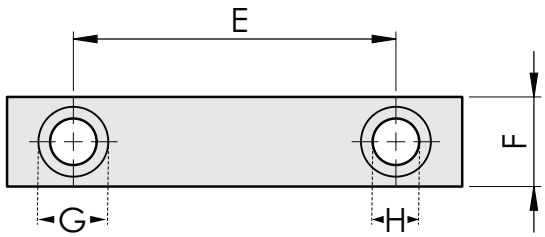


	A	B	B2	C	D	E	F	G	H
Metric Screws	6 mm	34.85 mm	10.00 mm	4.98 mm	4.00 mm	M5 x 0.80–6g	12.37mm	7.26 mm	Flat
	10 mm	38.10 mm	9.00 mm	5.97 mm	4.00 mm	M6 x 1.00–6g	15.24 mm	9.53 mm	Flat
	12 mm	48.90 mm	14.22 mm	9.97 mm	8.00 mm	M10 x 1.50–6g	16.00 mm	12.70 mm	3 mm Keyway
	16 mm	50.80 mm	15.90 mm	11.97 mm	10.00 mm	M12 x 1.75–6g	16.54 mm	12.70 mm	3 mm Keyway
Inch Screws	3/16"	1.372"	0.315"	0.157"	0.125"	M4 x 0.70–6g	0.487"	0.286"	Flat
	1/4"	1.372"	0.394"	0.197"	0.125"	M5 x 0.80–6g	0.487"	0.286"	Flat
	3/8"	1.500"	0.354"	0.235	0.188"	M6 x 1.00–6g	0.600"	0.375"	Flat
	7/16"	1.925"	0.560"	0.393"	0.313"	M10 x 1.50–6g	0.630"	0.500"	0.125" Keyway
	1/2"	1.925"	0.560"	0.393"	0.313"	M10 x 1.50–6g	0.630"	0.500"	0.125" Keyway

Bearing Supports







	For Screw Dia.	Fixed P/N	A mm	B mm	C mm	D mm	E mm	F mm	G External mm	H* Internal mm
Metric Screws	6 mm	LSFEB-06	76	43	22	30.25	50.0	20	14.5	8.8
	10 mm	LSFEB-10	85	56	33	30.25	60.0	20	14.5	8.8
	12 mm	LSFEB-12	120	70	40	47.25	82.5	25	19.5	13.0
	16 mm	LSFEB-16	127	83	45	47.25	90.0	25	19.5	13.0
Inch Screws	3/16"	LSFEB-05	76	43	22	30.25	50.0	20	14.5	8.8
	1/4"	LSFEB-06	76	43	22	30.25	50.0	20	14.5	8.8
	3/8"	LSFEB-10	85	56	33	30.25	60.0	20	14.5	8.8
	7/16"	LSFEB-12	120	70	40	47.25	82.5	25	19.5	13.0
	1/2"	LSFEB-12	120	70	40	47.25	82.5	25	19.5	13.0

***** Recommended metric screws for 16 mm and 12 mm block mounting holes is the Socket head cap screw of M12-1.75 and for 10 mm and 06 mm is the of M8-1.25
Note: Contact factory for custom size options.

Lead Screw Motors

Why use a PBC Lead Screw Motor?

Cost reduction

Fusing the motor and screw together eliminates the need for a motor mount and coupling. This also reduces setup time.

Improved performance

Factor alignment of the motor and screw means direct out of the box precision.

Variety

Many choices of nut styles and technologies including Constant Force, to cover almost every application need.

Multiple standard machining and plating choices helps get what is needed quickly and easily.

Support & Customs

Not finding what you need or need a custom solution? PBC has your engineering support covered! Phone: 1-888-389-6266 or pbc_applicationsengineering@pbclinear.com

PBC Linear lead screw motor products are designed based on the know-how technology of hybrid step motors, lead screw and nuts. The NEMA Series lead screw motors provide high torque, high precision, and high efficiency to fit the application needs of designers. The combination of lead screw motor styles, sizes, lead-screws and nuts, gives the freedom to use motors of different form factors to exactly fit in the application. And, it provides the best performance with any drive and power supply.

- Four frame Sizes, 11, 14, 17, 23
- Multiple motor lengths and special PowerPlus motors, provide more than 10 different motor sizes
- Integrate any lead screw from PBC Linear
- Each frame size motor has 3-11 different standard lead screws
- Each frame size motor has different selections of nuts

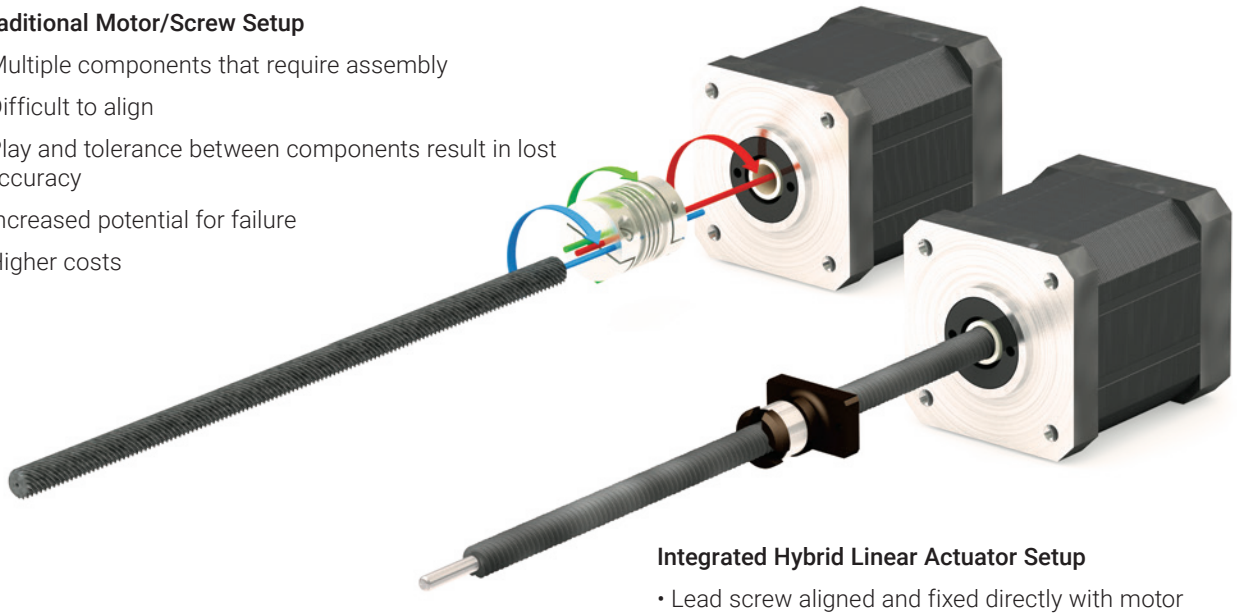
PBC Linear has committed to product innovation design and technical improvement, with excellent product quality,application technology, fast and flexible services,which provide customers with high level motion control solutions.

Hybrid Linear Actuator Selection Chart

Motor Frame	Screw Sizes								
	3/16"	6mm	1/4"	3/8"	10mm	7/16"	12mm	1/2"	16mm
NEMA 8	●	●	●						
NEMA 11	●	●	●						
NEMA 14	●	●	●	●	●				
NEMA 17, Single Stack		●	●	●	●	●	●	●	
NEMA 17, Double Stack		●	●	●	●	●	●	●	
NEMA 23, Single Stack				●	●	●	●	●	●
NEMA 23, Double Stack				●	●	●	●	●	●
NEMA 23, Power Plus				●	●	●	●	●	●

Traditional Motor/Screw Setup

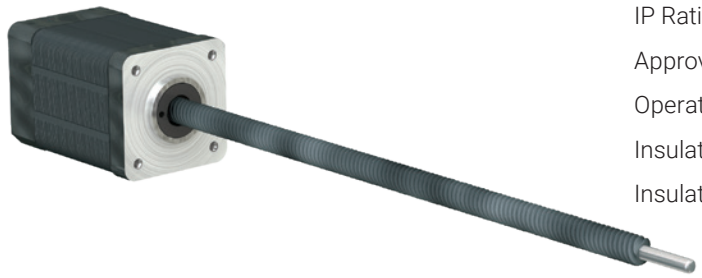
- Multiple components that require assembly
- Difficult to align
- Play and tolerance between components result in lost accuracy
- Increased potential for failure
- Higher costs



Integrated Hybrid Linear Actuator Setup

- Lead screw aligned and fixed directly with motor
- Fewer components
- Greater accuracy
- More reliable
- Higher rigidity
- Greater value

NEMA 8 Series



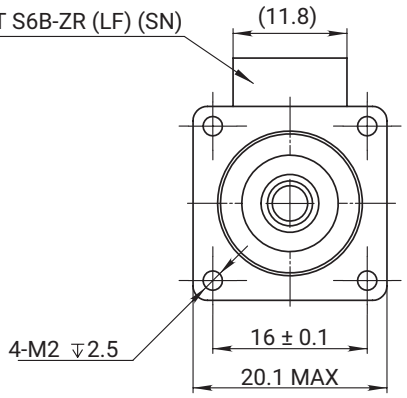
Phases 2
Steps/Revolution 200
Step Accuracy ..... ±5%
IP Rating 40
Approvals ..... RoHS
Operating Temp. ..... -20°C–+50°C
Insulation Class ..... B (130°C)
Insulation Resistance ..... 100 MegOhms

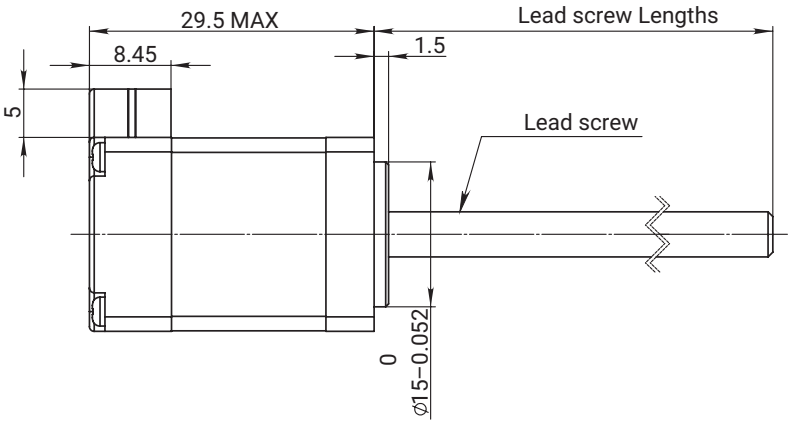
Step Motor - 4 Lead Bi-Polar

Motor Style	Motor Body Length (mm)	Electrical Connection	Rated Current (Amps)	Winding	
				Ohms	mH
				±10% at 20°C	Typical
NEMA 8	29.5	Plug In Connector	0.4	13.9	4

NEMA 8 Series

Connector
Part Number:
JST S6B-ZR (LF) (SN)



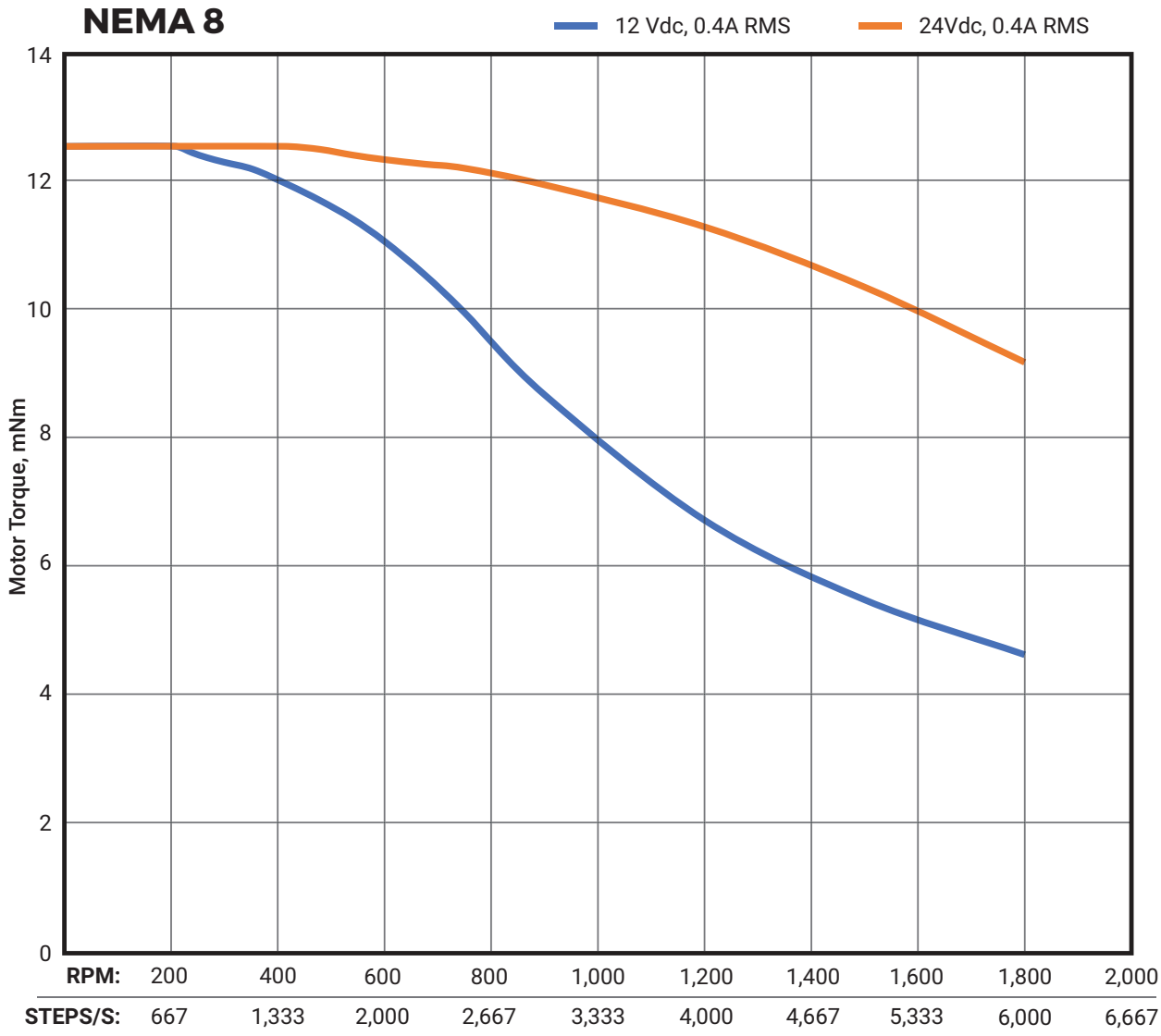


Lead Screw Style for NEMA 8 Series

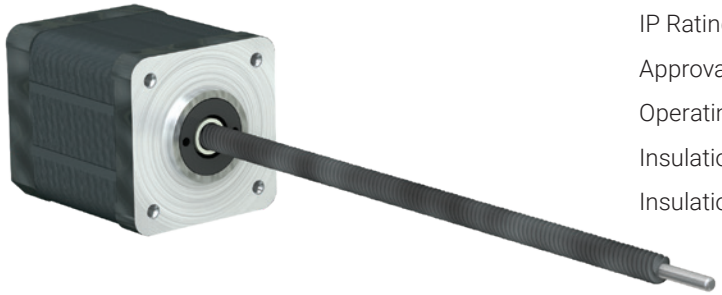
Lead Screw Style	External Diameter	Lead	Travel Per 1.8° Step
0601	6mm	1mm	.005"
0602	6mm	2mm	.010mm
0604	6mm	4mm	.020mm
0605	6mm	5mm	.025mm
18050	3/16"	.50"	.0004"
18005	3/16"	.05"	.0003"

Lead Screw Style	External Diameter	Lead	Travel Per 1.8° Step
0606	6mm	6mm	.030mm
0608	6mm	8mm	.040mm
0610	6mm	10mm	.050mm
0612	6mm	12mm	.060mm
25033	1/4"	.333"	.002"

Speed-Torque Curves



NEMA 11 Series

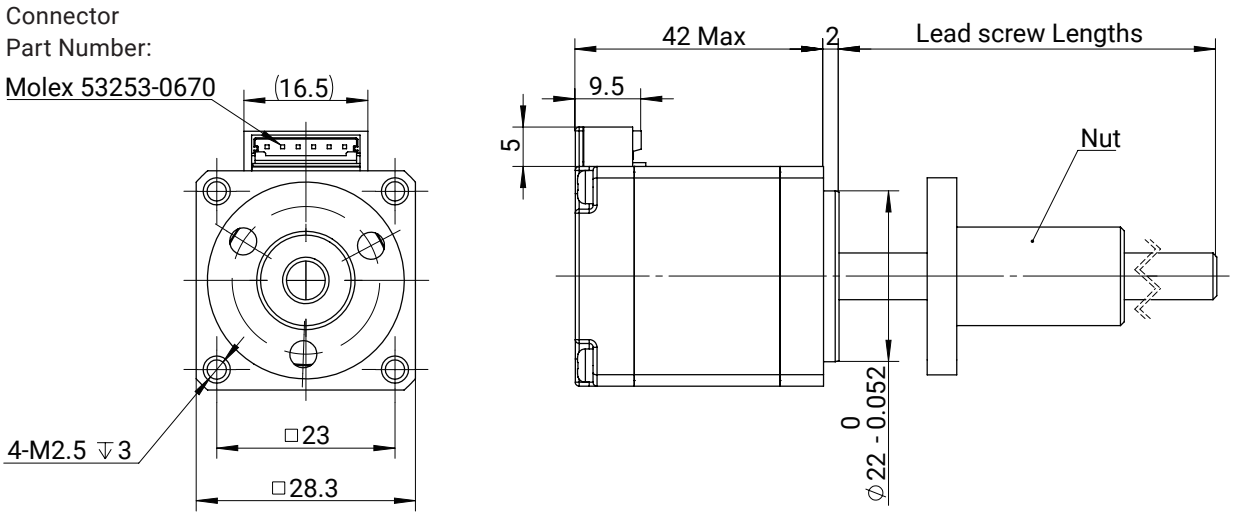


Phases 2
Steps/Revolution 200
Step Accuracy ..... ±5%
IP Rating 40
Approvals ..... RoHS
Operating Temp. ..... -20°C–+50°C
Insulation Class ..... B (130°C)
Insulation Resistance ..... 100 MegOhms

Step Motor - 4 Lead Bi-Polar

Motor Style	Motor Body Length (mm)	Electrical Connection	Rated Current (Amps)	Winding	
				Ohms	mH
				±10% at 20°C	Typical
NEMA 11	32	Plug In Connector	1	2.7	2.5

NEMA 11 Series

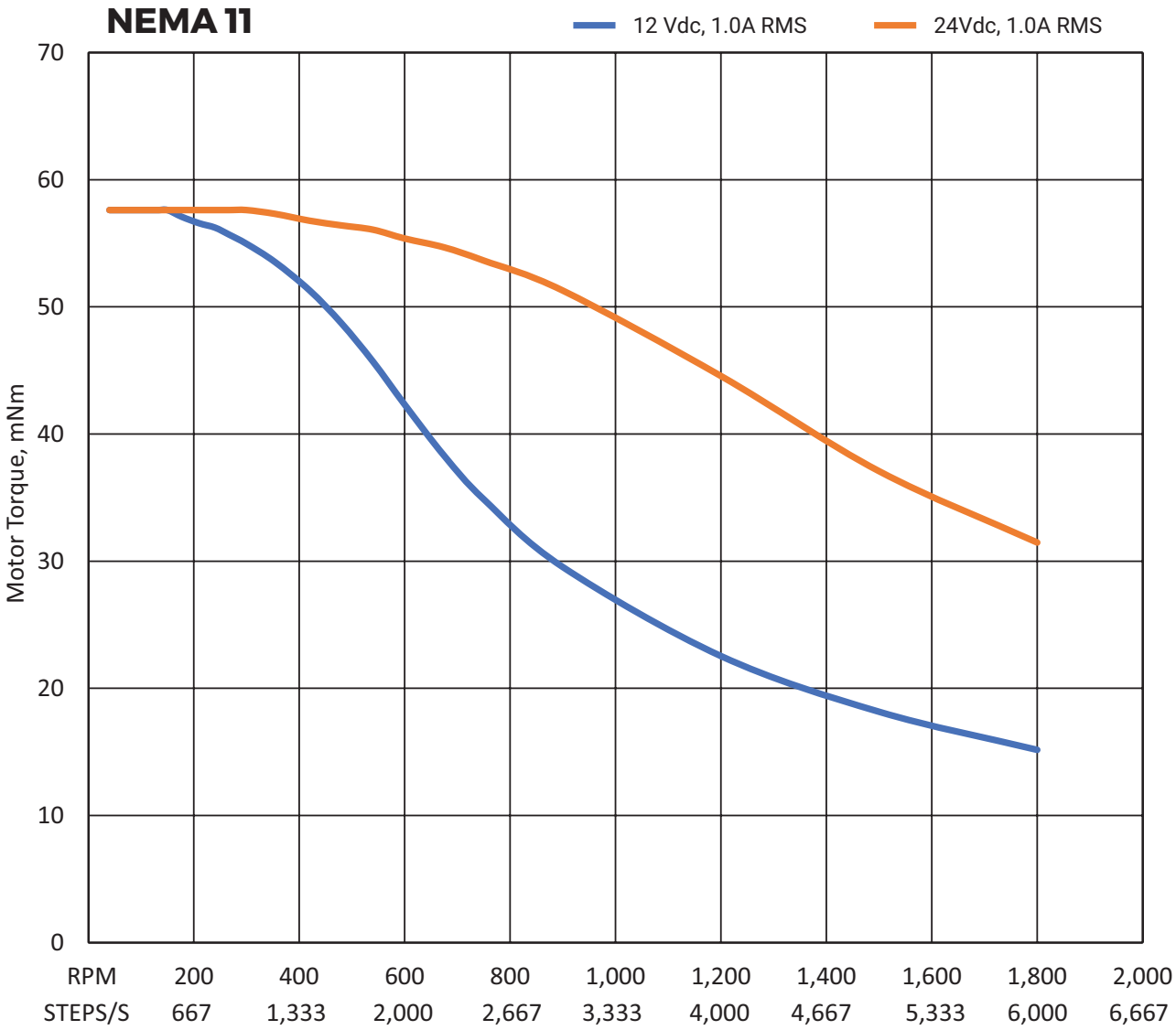


Lead Screw Style for NEMA 11 Series

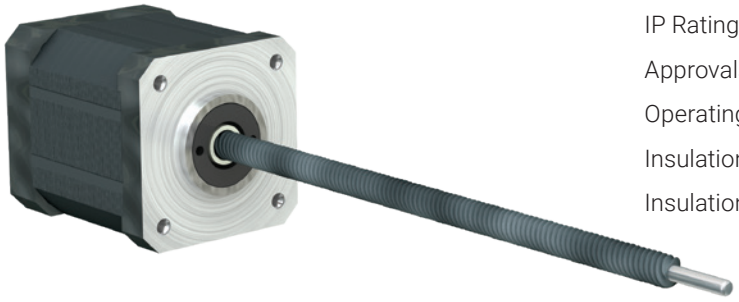
Lead Screw Style	External Diameter	Lead	Travel Per 1.8° Step
0601	6mm	1mm	.005"
0602	6mm	2mm	.010mm
0604	6mm	4mm	.020mm
0605	6mm	5mm	.025mm

Lead Screw Style	External Diameter	Lead	Travel Per 1.8° Step
0606	6mm	6mm	.030mm
0608	6mm	8mm	.040mm
0610	6mm	10mm	.050mm
0612	6mm	12mm	.060mm
25033	1/4"	.333"	.002"

Speed-Torque Curves



NEMA 14 Series



Phases 2
Steps/Revolution 200
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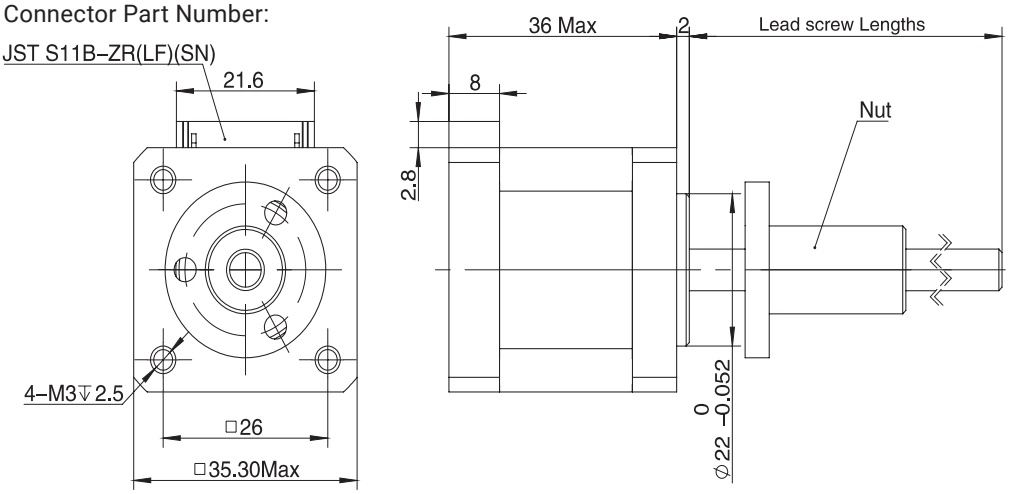
Operating Temp. ..... -20°C–+50°C
Insulation Class ..... B (130°C)
Insulation Resistance ..... 100 MegOhms

Step Motor - 4 Lead Bi-Polar

Motor Style	Motor Body Length (mm)	Electrical Connection	Rated Current (Amps)	Winding	
				Ohms	mH
				±10% at 20°C	Typical
NEMA 143	36	Plug In Connector	1.5	1.61	2.5

NEMA 14

Connector Part Number:
JST S11B–ZR(LF)(SN)

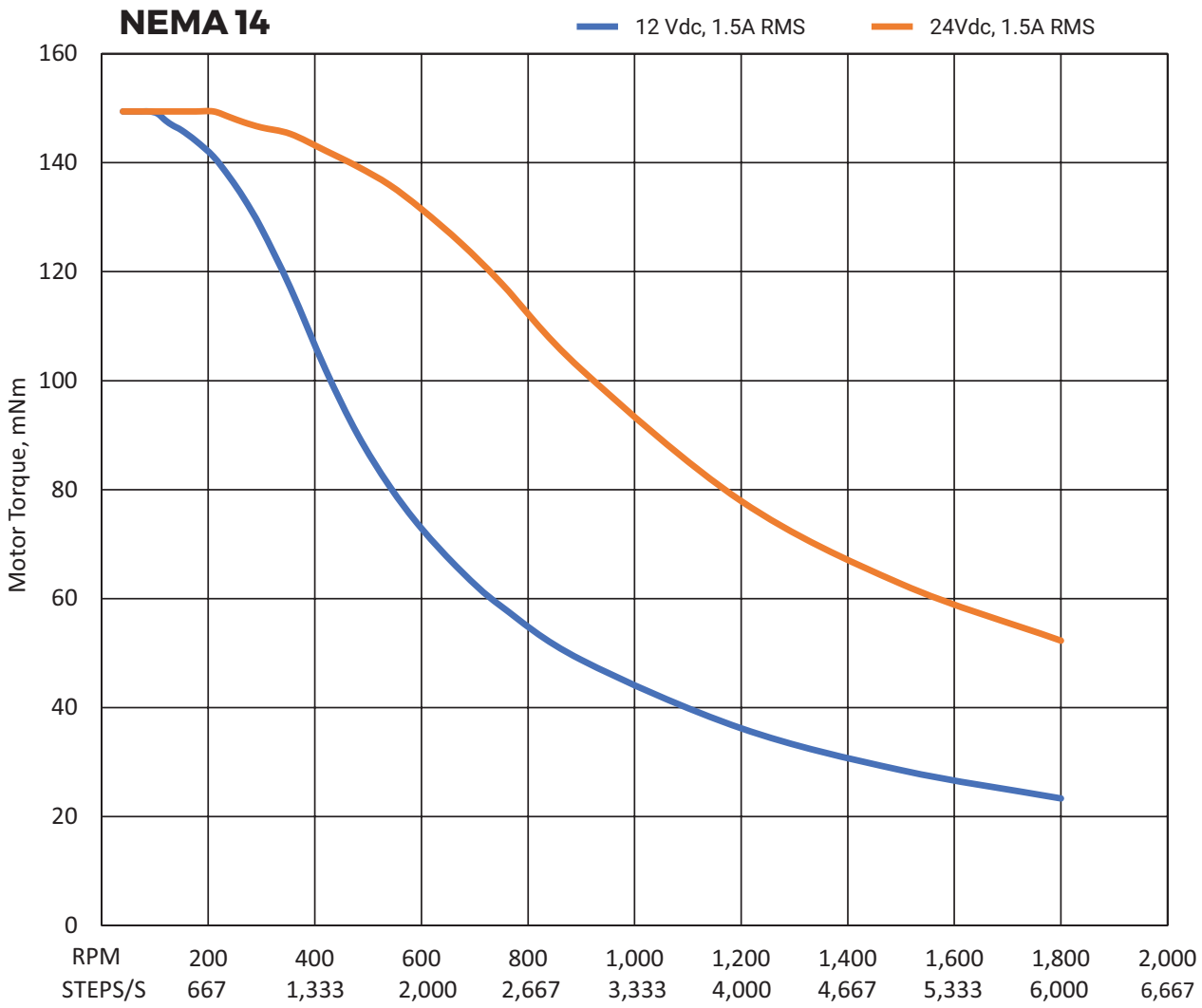


Lead Screw Style for NEMA 14 Series

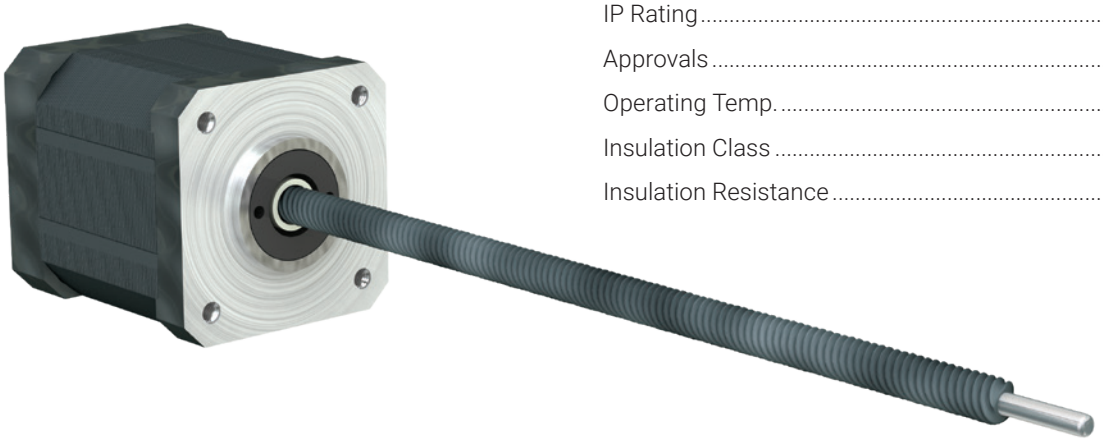
Lead Screw Style	External Diameter	Lead	Travel Per 1.8° Step
0601	6mm	1mm	0.005"mm
0602	6mm	2mm	.010mm
0604	6mm	4mm	.020mm
0605	6mm	5mm	.025mm
0606	6mm	6mm	.030mm
0608	6mm	8mm	.040mm
0610	6mm	10mm	.050mm
0612	6mm	12mm	.060mm
25033	1/4"	.333"	.002"

Lead Screw Style	External Diameter	Lead	Travel Per 1.8° Step
1002	10mm	2mm	.010mm
1004	10mm	4mm	.020mm
1005	10mm	5mm	.025mm
1006	10mm	6mm	.030mm
1008	10mm	8mm	.040mm
1010	10mm	10mm	.050mm
1012	10mm	12mm	.060mm
1016	10mm	16mm	.080mm
1025	10mm	25mm	.125mm

Speed-Torque Curves



NEMA 17 Series



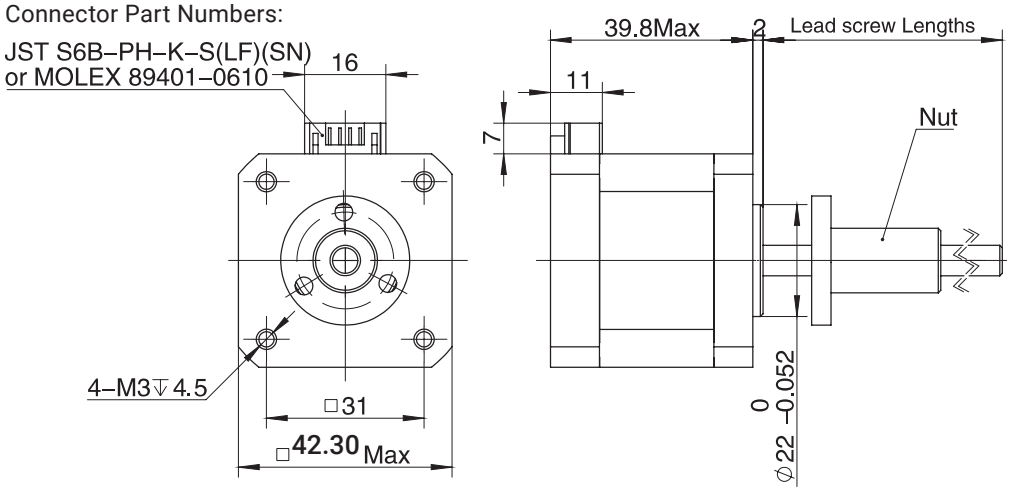
Phases	2
Steps/Revolution	200
Step Accuracy	±5%
IP Rating	40
Approvals	RoHS
Operating Temp.	-20°C–+50°C
Insulation Class	B (130°C)
Insulation Resistance	100 MegOhms

Step Motor - 4 Lead Bi-Polar

Motor Style	Motor Body Length (mm)	Electrical Connection	Rated Current (Amps)	Winding	
				Ohms	mH
				±10% at 20°C	Typical
NEMA 17 Single Stack	39.8	Plug In Connector	2	1.04	2.73
NEMA 17 Double Stack	48.3	Plug In Connector	2	1.30	2.90

NEMA 17
Single Stack

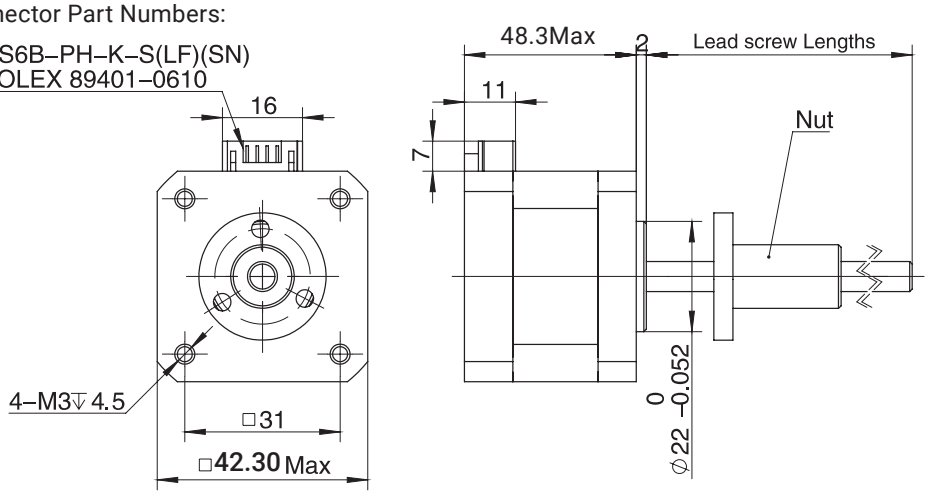
Connector Part Numbers:
JST S6B–PH–K–S(LF)(SN)
or MOLEX 89401–0610



NEMA 17
Double Stack

Connector Part Numbers:

JST S6B–PH–K–S(LF)(SN)
or MOLEX 89401–0610

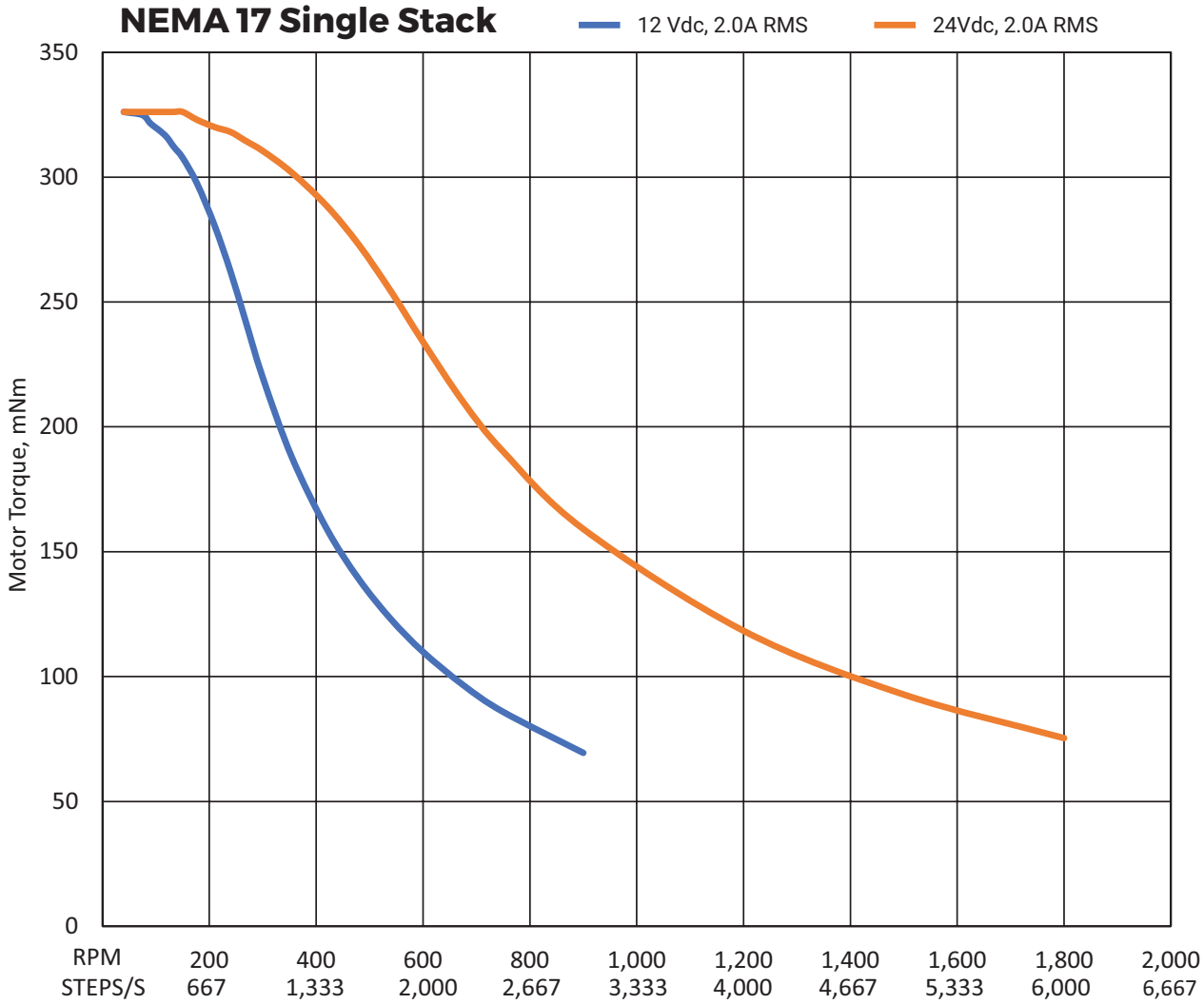


Lead Screw Style for NEMA 17 Series

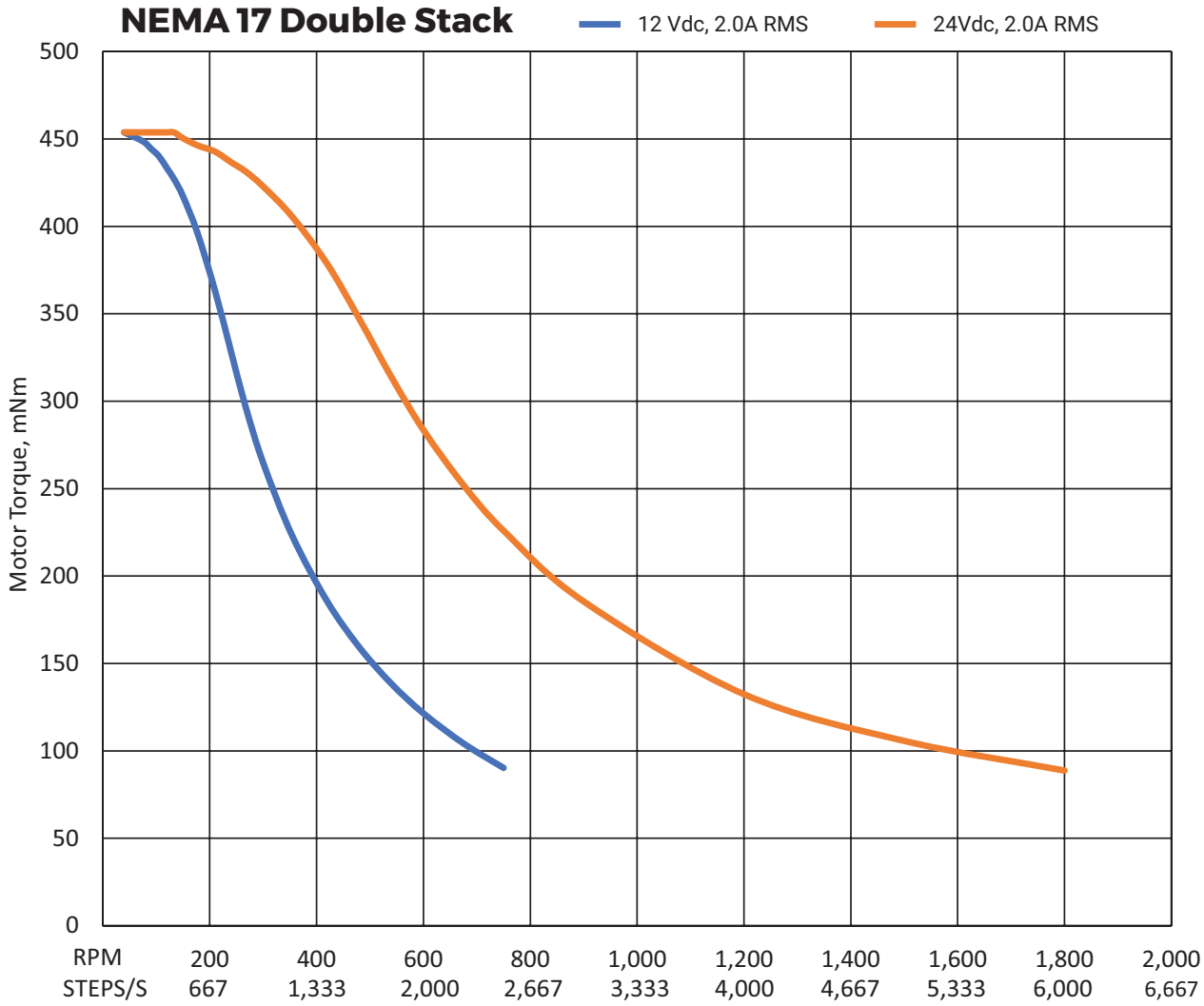
Lead Screw Style	External Diameter	Lead	Travel Per 1.8° Step
0601	6mm	1mm	.005"mm
0602	6mm	2mm	.010mm
0604	6mm	4mm	.020mm
0605	6mm	5mm	.025mm
0606	6mm	6mm	.030mm
0608	6mm	8mm	.040mm
0610	6mm	10mm	.050mm
0612	6mm	12mm	.060mm
25033	1/4"	.333"	.002"
37020	3/8"	.2"	.001"
1001	10mm	1mm	.005mm
1002	10mm	2mm	.010mm
1004	10mm	4mm	.020mm
1005	10mm	5mm	.025mm
1006	10mm	6mm	.030mm
1008	10mm	8mm	.040mm

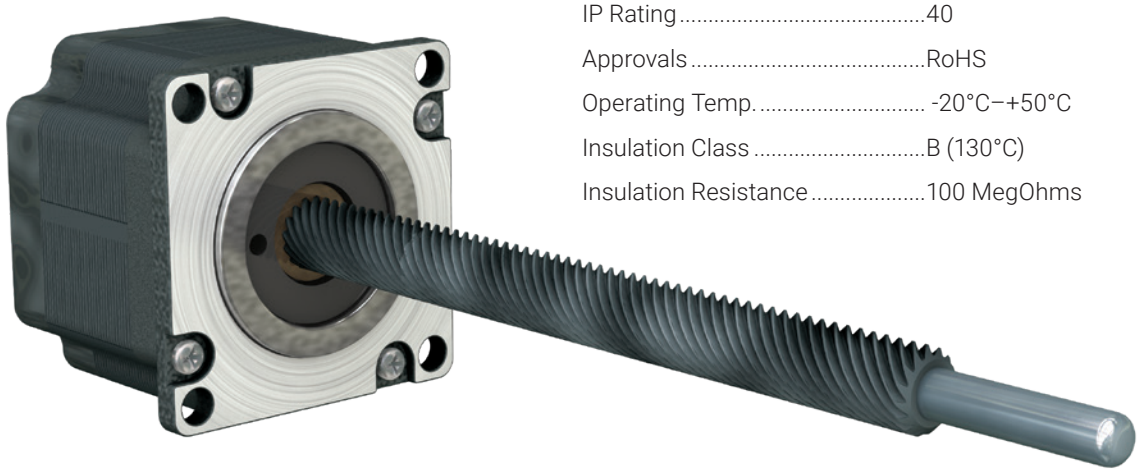
Lead Screw Style	External Diameter	Lead	Travel Per 1.8° Step
1010	10mm	10mm	.050mm
1012	10mm	12mm	.060mm
1016	10mm	16mm	.080mm
1025	10mm	25mm	.125mm
43100	7/16"	1"	.005"
1201	12mm	1mm	.005mm
1202	12mm	2mm	.010mm
1204	12mm	4mm	.020mm
1205	12mm	5mm	.025mm
1206	12mm	6mm	.030mm
1208	12mm	8mm	.040mm
1210	12mm	10mm	.050mm
1212	12mm	12mm	.060mm
1216	12mm	16mm	.080mm
1225	12mm	25mm	.125mm
50025	1/2"	.25"	.0013"

Speed-Torque Curves



Speed-Torque Curves





Phases.....2
Steps/Revolution.....200
Step Accuracy.....±5%
IP Rating.....40
Approvals.....RoHS
Operating Temp. ..... -20°C–+50°C
Insulation Class .....B (130°C)
Insulation Resistance.....100 MegOhms

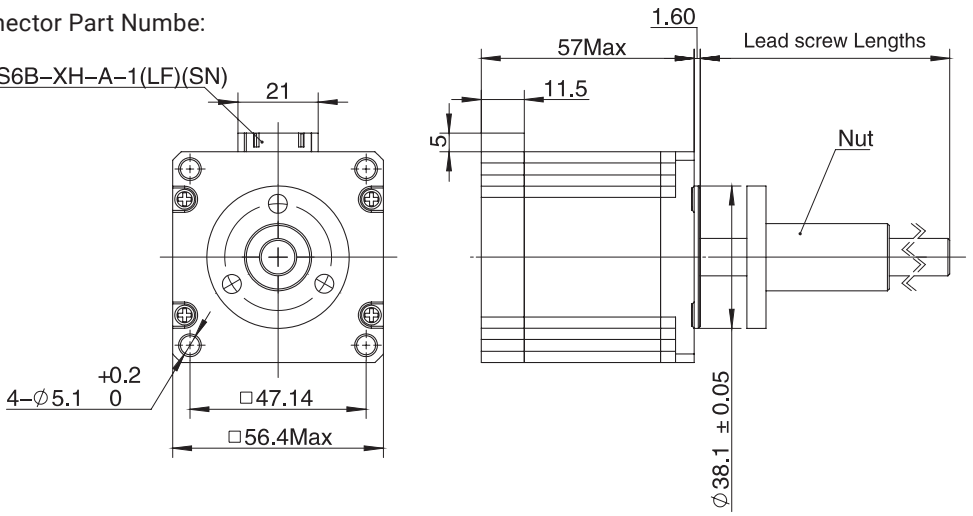
Step Motor - 4 Lead Bi-Polar

Motor Style	Motor Body Length (mm)	Electrical Connection	Rated Current (Amps)	Winding		Note
				Ohms	mH	
				±10% at 20°C	Typical	
NEMA 23 Single Stack	57	Plug In Connector	2.2	1.6	7.2	Standard
NEMA 23 Double Stack	79	Plug In Connector	3	1.1	5	Standard
NEMA 23 Power Plus	79	Plug In Connector	3	1.1	3.7	PowerPlus

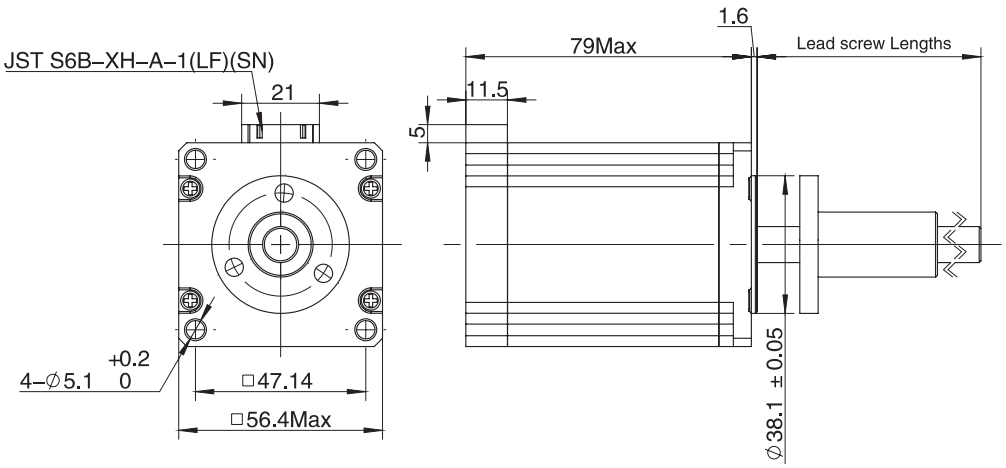
NEMA 23
Single Stack

Connector Part Numbe:

JST S6B–XH–A–1(LF)(SN)



NEMA 23
Double Stack
and Power Plus

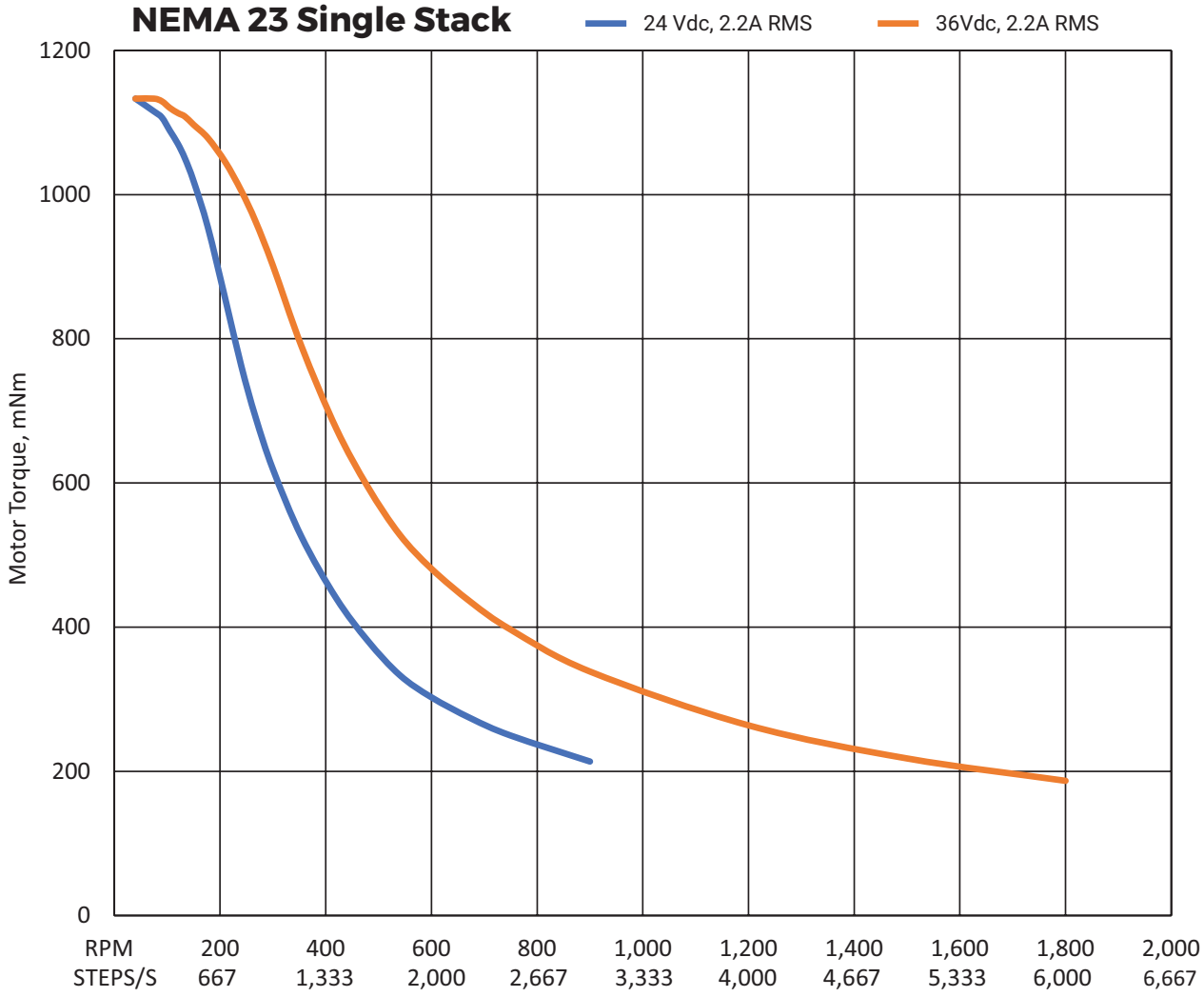


Lead Screw Style for NEMA 23 Series

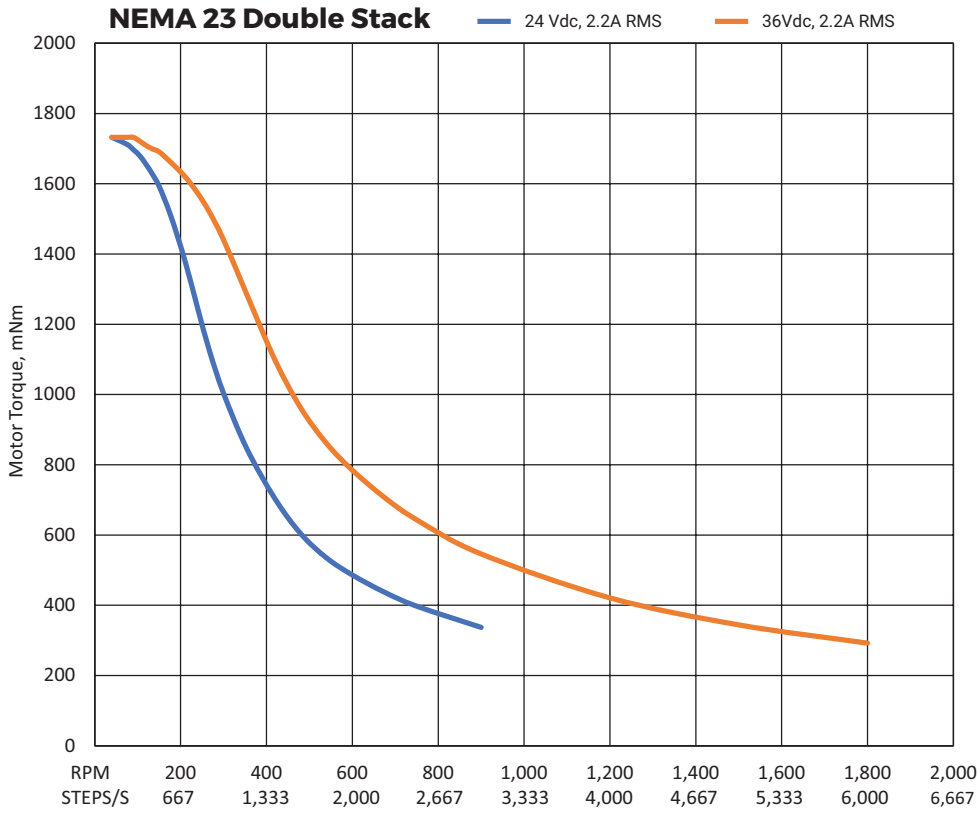
Lead Screw Style	External Diameter	Lead	Travel Per 1.8° Step
37020	3/8"	.2"	.001"
1001	10mm	1mm	.005mm
1002	10mm	2mm	.010mm
1004	10mm	4mm	.020mm
1005	10mm	5mm	.025mm
1006	10mm	6mm	.030mm
1008	10mm	8mm	.040mm
1010	10mm	10mm	.050mm
1012	10mm	12mm	.060mm
1016	10mm	16mm	.080mm
1025	10mm	25mm	.125mm
43100	7/16"	1"	.005"
1201	12mm	1mm	.005mm
1202	12mm	2mm	.010mm
1204	12mm	4mm	.020mm
1205	12mm	5mm	.025mm

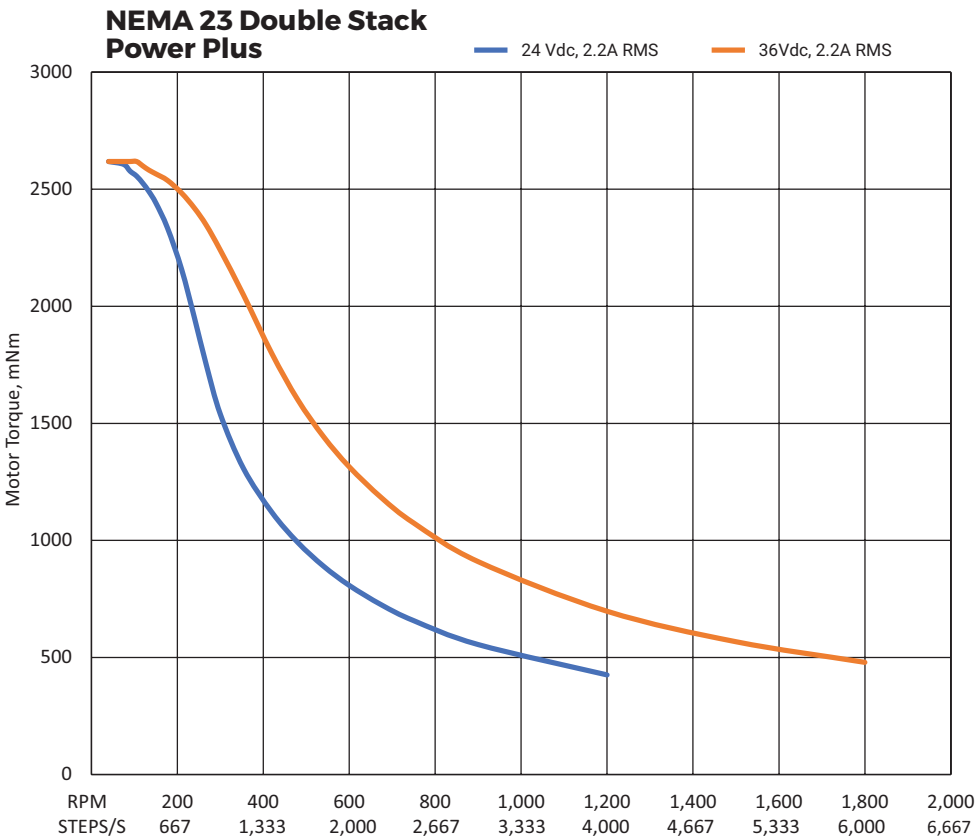
Lead Screw Style	External Diameter	Lead	Travel Per 1.8° Step
1206	12mm	6mm	.030mm
1208	12mm	8mm	.040mm
1210	12mm	10mm	.050mm
1212	12mm	12mm	.060mm
1216	12mm	16mm	.080mm
1225	12mm	25mm	.125mm
50025	1/2"	.25"	.0013"
1601	16mm	1mm	.005mm
1602	16mm	2mm	.010mm
1604	16mm	4mm	.020mm
1605	16mm	5mm	.025mm
1606	16mm	6mm	.030mm
1608	16mm	8mm	.040mm
1610	16mm	10mm	.050mm
1612	16mm	12mm	.060mm
1616	16mm	16mm	.080mm
1625	16mm	25mm	.125mm

Speed-Torque Curves

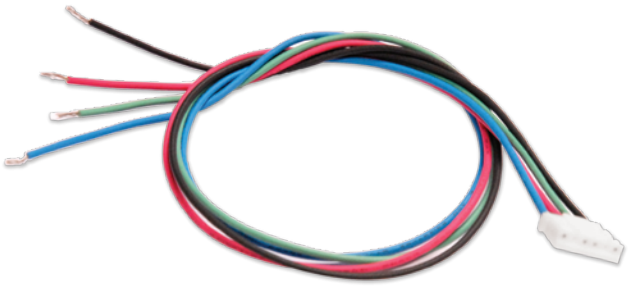


Speed-Torque Curves



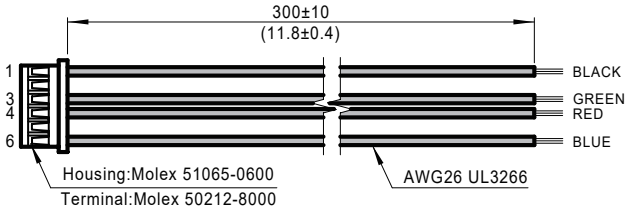


Wiring Harnesses



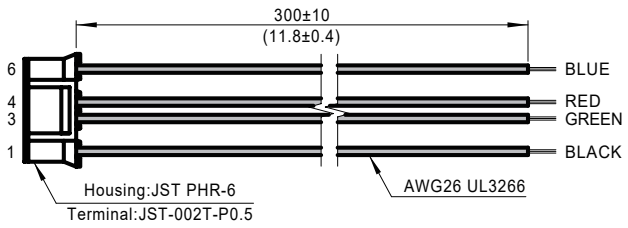
NEMA 11 Series

4 Lead Part Number 4634 1402 04190



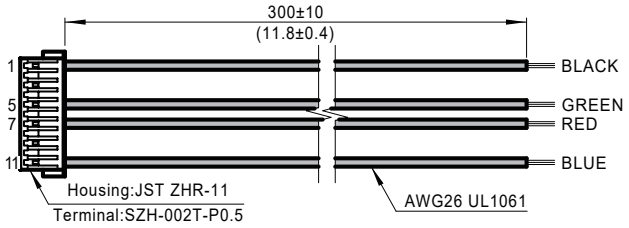
NEMA 17 Series

4 Lead Part Number 4634 1402 00723



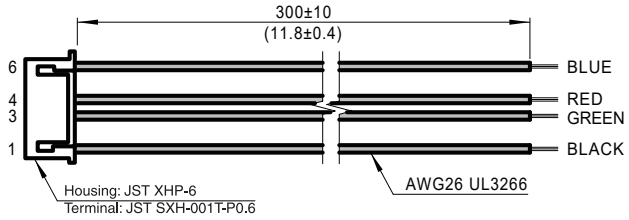
NEMA 14 Series

4 Lead Part Number 4634 1402 02846



NEMA 23 Series

4 Lead Part Number 4634 1402 01891



Wiring Diagram

Bipolar, Full Step

Step	Phase 1		Phase 2	
	A	C	B	D
1	+	–	+	–
2	–	+	+	–
3	–	+	–	+
4	+	–	–	+

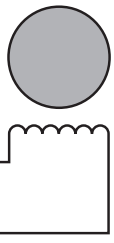
CW

CCW

CW & CCW rotation when seen from flange side of the motor.

4 Lead (bipolar)

Connector Pin#		
Motor Size		
8, 11, 17, 23	14	
1	1	A
3	5	C
4	7	B
6	11	D



Part Number Configurator

Type	Thread Dir.	Diameter and Lead	Coating	Screw Length	Nut	Left End	Right End	Special
LS	R	0000	T	0250.00	RS	111	AFN	E

Configure

It Now

Type
LS - Lead Screw

Thread Direction
R - Right
L - Left (**Note:** Contact Factory)

Coating
T - PTFE
U - Uncoated

Screw Length
Inch - 0000.00
Metric - 0000
Note: Screw type selected determines if length is inch or metric.

Special
E - Encoder Ready
N - No Option

Diameter and Lead

Code	Diameter	Lead
18050	3/16"	.50"
18005	3/16"	.05"
25033	1/4"	.333"
37020	3/8"	.20"
43100	7/16"	1.00"
50025	1/2"	.25"
0601	6 mm	1 mm
0602	6 mm	2 mm
0604	6 mm	4 mm
0605	6 mm	5 mm
0606	6 mm	6 mm
0608	6 mm	8 mm
0610	6 mm	10 mm
0612	6 mm	12 mm
1001	10 mm	1 mm
1002	10 mm	2 mm
1004	10 mm	4 mm
1005	10 mm	5 mm
1006	10 mm	6 mm
1008	10 mm	8 mm
1010	10 mm	10 mm
1012	10 mm	12 mm
1016	10 mm	16 mm
1025	10 mm	25 mm
1201	12 mm	1 mm
1202	12 mm	2 mm
1204	12 mm	4 mm
1205	12 mm	5 mm
1206	12 mm	6 mm
1208	12 mm	8 mm
1210	12 mm	10 mm
1212	12 mm	12 mm
1216	12 mm	16 mm
1225	12 mm	25 mm
1601	16 mm	1 mm
1602	16 mm	2 mm
1604	16 mm	4 mm
1605	16 mm	5 mm
1606	16 mm	6 mm
1608	16 mm	8 mm
1610	16 mm	10 mm
1612	16 mm	12 mm
1616	16 mm	16 mm
1625	16 mm	25 mm

Lead Screw Standard Nuts

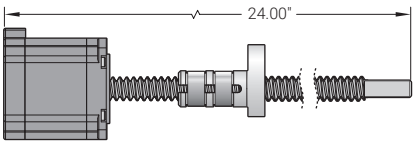
RS	Round
TS	Triangle
US	Threaded
VS	Rectangle

Lead Screw Anti-Backlash Nuts

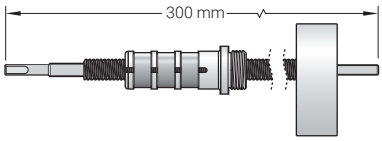
RCF	Round
TCF	Triangle
UCF	Threaded
VCF	Rectangle

Sample Part Numbers

Left **Right**



LSR50025T-024.00-TCF-231-THR-N



LSR1012U-0300-UCF-CFN-BFB-N

Left End Only

080	Nema 8 (16 mm) (Requires a 3/16", 1/4" or 6 mm screw) Note: Not available with encoder ready option.
111	Nema 11 (23 mm) (Requires a 3/16", 1/4" or 6 mm screw)
140	Nema 14 (31 mm) (Requires a 3/16", 1/4", 6 mm or 10 mm screw)
171	Nema 17 (43 mm), Single Stack (Requires a 1/4", 3/8", 6 mm, 10 mm or 12 mm screw)
172	Nema 17 (43 mm), Double Stack (Requires a 1/4", 3/8", 6 mm, 10 mm or 12 mm screw)
231	Nema 23 (47 mm), Single Stack (Requires a 3/8", 7/16" 1/2" 10 mm, 12 mm or 16 mm screw)
232	Nema 23 (47 mm), Double Stack (Requires a 3/8", 7/16" 1/2" 10 mm, 12 mm or 16 mm screw)
23P	Nema 23 (47 mm), Power Plus (Requires a 3/8", 7/16" 1/2" 10 mm, 12 mm or 16 mm screw)

Left and/or Right Ends

AFN	Bearing Support Only, Float
ALN	Bearing Support Only, Fixed
BFN	Bearing Support & Journal, Float
BLN	Bearing Support & Journal, Fixed
CFN	Bearing Support & Journal with Keyway, Float*
CLN	Bearing Support & Journal with Keyway, Fixed*
AFB	Bearing Support Only, Float, with Bearing Block
ALB	Bearing Support Only, Fixed, with Bearing Block
BFB	Bearing Support & Journal, Float, with Bearing Block
BLB	Bearing Support & Journal, Fixed, with Bearing Block
CFB	Bearing Support & Journal With Keyway, Float, with Bearing Block*
CLB	Bearing Support & Journal With Keyway, Fixed, with Bearing Block*
THR	Threaded
NNN	None

* Keyways will be flat or a keyway based on screw diameter, see page 18
Flat for 6 mm, 10 mm, 3/16", 1/4", 3/8" diameters
Keyway for 12 mm, 16 mm, 7/16", 1/2" diameters

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