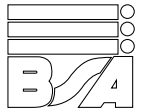
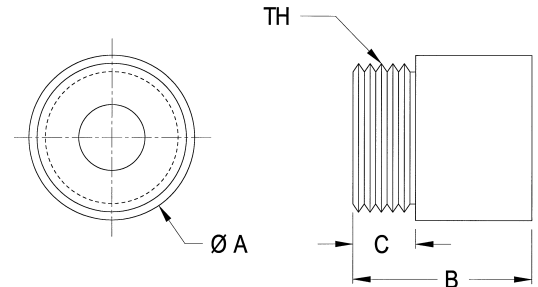


BRONZE NUTS



FOR ACME SCREWS, THREAD MOUNT STYLE

For standard bronze nuts Ball Screws and Actuators uses SAE 660 bearing bronze which provides excellent load carrying ability, good wear resistance and is less susceptible to damage from impact and shock loading. Custom bronzes can be selected if required.



MATERIAL PROPERTIES

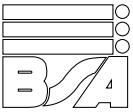
MAXIMUM TEMPERATURE	FRICTION COEFFICIENT	MATERIAL*	TENSILE STRENGTH
max. 250°F	0.2 to 0.3	660 SAE	35,000 psi

*Other materials available on a custom basis.

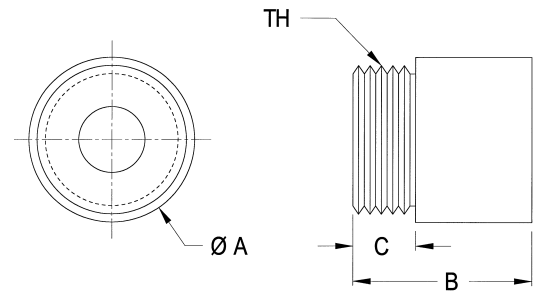
1/4" TO 5/8" DIAMETER

DIA.	LEAD	NUT PART NO. FOR R.H. SCREWS	NUT PART NO. FOR L.H. SCREWS	BRONZE NUT DIMENSIONS				FITS FLANGE No. (PAGE 8-7)	DESIGN LOAD†	MAXIMUM STATIC LOAD	TORQUE TO RAISE 1 POUND (IN-OZ)
				A	B	C	TH				
1/4	.050	BN2520	BN2520L	.625	.625	.187	9/16-18	F25	110 lbs	550 lbs	.41
	.0625	BN2516	—								.43
	.250	BN4-2516	—								1.0
3/8	.0625	BN3716	—	.750	.750	.250	5/8-18	F37	300 lbs	1,500 lbs	.61
	.0833	BN3712	BN3712L								.64
	.100	BN3710	BN3710L								.67
	.125	BN3708S	—								.76
	.167	BN2-3712S	—								.86
1/2	.100	BN5010	BN5010L	1.00	1.00	.375	15/16-16	F50	620 lbs	3,100 lbs	.83
	.200	BN2-5010	—								1.10
5/8	.100	BN6210	BN6210L	1.00	1.00	.375	15/16-16	F50	860 lbs	4,300 lbs	.99
	.125	BN6208S	—								1.06
	.200	BN2-6210	—								1.26

†Load ratings based on using BS&A grease. See page 8-4.



BRONZE NUTS

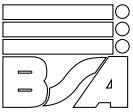


**FOR ACME SCREWS,
THREAD MOUNT STYLE
3/4" TO 3" DIAMETER**

DIA.	LEAD	NUT PART NO. FOR R.H. SCREWS	NUT PART NO. FOR L.H. SCREWS	BRONZE NUT DIMENSIONS				FITS FLANGE No. (PAGE 8-7)	DESIGN LOAD†	MAXIMUM STATIC LOAD	TORQUE TO RAISE 1 POUND (IN-OZ)
				A	B	C	TH				
3/4	.100	BN7510	BN7510L	1.50	1.50	.500	1 3/8-16	F75	1,500 lbs	7,500 lbs	1.15
	.125	BN7508	—								1.21
	.167	BN7506	BN7506L								1.28
	.200	BN7505	BN7505L								1.35
1	.100	BN1010	—	1.50	1.50	.500	1 3/8-16	F75	1,900 lbs	9,500 lbs	1.47
	.125	BN1008	—								1.52
	.200	BN1005	—								1.67
	.250	BN1004	—								1.76
	.500	BN5-1010	—								2.55
	1.00	BN10-1010	—								3.91
1 1/4	.200	BN1205*	—	1.75	1.75	.625	1 9/16-18	R1004-3	3,000 lbs	15,000 lbs	1.99
	.250	BN1204*	—								2.09
1 1/2	.200	BN1505*	—	2.25	2.25	.530	1.967-18	R54-3	4,600 lbs	23,000 lbs	2.31
	.250	BN1504*	—								2.41
	.375	BN1503*	—								2.56
	.500	BN2-1504*	—								3.08
2	.250	BN2004*	—	2.75	3.50	.780	2.548-18	R50-3	8,000 lbs	40,000 lbs	3.04
2 1/4	.250	BN2204*	—	3.37	3.00	1.56	3.137-12	R2202-3	12,800 lbs	64,000 lbs	3.70
2 1/2	.250	BN2504*	—	3.37	3.00	1.56	3.137-12	R2202-3	16,000 lbs	80,000 lbs	3.90
2 3/4	.250	BN2704*	—	4.00	4.00	1.75	3.625-12	R2501-3	20,000 lbs	100,000 lbs	4.20
3	.250	BN3004*	—	4.00	4.00	1.75	3.625-12	R2501-3	23,000 lbs	115,000 lbs	4.50

†Load ratings based on using BS&A grease. See page 8-4.

*Non-stock item



PRECISION LEAD SCREWS & SUPERNUTS™



FEATURES/ADVANTAGES

LOW COST

Considerable savings when compared to ball screw assemblies.

VARIETY

Largest range of leads and diameters 3/16" to 4" to match your requirements.

LUBRICATION

Internally lubricated plastic nuts will operate without lubrication. However, additional lubrication or PTFE coating of the screw is recommended. See page 8-4.

VIBRATION AND NOISE

No ball recirculating vibration and often less audible noise compared to ball screws.

CUSTOM

Option of custom designs to fit into your design envelope.

NON-CORROSIVE*

Stainless Steel and internally lubricated Acetal.

ENVIRONMENT

Less susceptible to particulate contamination compared to ball screws.

LIGHTWEIGHT

Less mass to move.

DESIGN CONSIDERATIONS

LOAD

Supernuts provide a cost effective solution for moderate to light loads. For vertical applications, anti backlash supernuts should be mounted with thread/flange on the bottom.

CANTILEVERED LOADS

Cantilevered loads that might cause a moment on the nut will cause premature failure. Refer to Precision Linear Rails for our complete line-up of linear guides or our stage selection in **Section 4**, **Section 5** and **Section 6** for a complete linear motion solution.

COLUMN LOADING

Refer to column loading chart on page 9-3.

CRITICAL SPEED

Refer to critical speed chart on page 9-2.

SELF-LOCKING

Lead screws can be self locking at low leads. Generally, the lead of the screw should be more than 1/3 of the diameter to satisfactorily backdrive.

TEMPERATURE

Ambient and friction generated heat are the primary causes of premature plastic nut failure. Observe the temperature limits below and discuss your design with our application engineers for continuous duty, high load and high speed applications. BS&A recommends bronze nuts for very high temperature environments or can aid in your selection of high temperature plastic for a custom assembly.

EFFICIENCY

Except at very high leads, efficiency increases as lead increases. Although the internally lubricated Acetal provides excellent lubricity, Ball Screw Assemblies remain significantly more efficient than any Acme design.

LENGTH LIMITATIONS

3/16" to 1/4"	3'
5/16" to 10mm	4'
7/16" to 5/8"	6'
> 5/8"	12'

LEAD ACCURACY

Standard Grade (SRA)	.010 in/ft
Precision Grade (SPR)	.003 in/ft

MATERIAL PROPERTIES

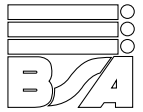
ASSEMBLY		SCREWS	NUTS**			
MAXIMUM TEMPERATURE	FRICTION COEFFICIENT	MATERIAL	MATERIAL	TENSILE STRENGTH	WATER ABSORPTION (24 HRS %)	THERMAL EXPANSION COEFFICIENT
180°F	0.08–0.14	Stainless Steel*	Acetal with PTFE	8,000 psi	0.15	5.4 x 10 ⁻⁵ in/in/°F

*Other materials available on a custom basis.

**Plastic nuts only. See bronze nut section for information on our bronze nut products, page 2-18.



OVERVIEW



PRECISION LEAD SCREWS & SUPERNUTS™



Rolled Acme lead screws are an excellent economical solution for your linear motion requirements. For over 15 years Ball Screws and Actuators has manufactured the highest quality lead screw assemblies. Our precision rolling machines ensure accurate positioning to 0.003 in/ft and our PTFE coating process produces assemblies that have less drag torque and last longer.

Ball Screws and Actuators provides a large array of standard plastic nut assemblies in anti-backlash or standard Supernut™ designs. For significantly higher loads, standard bronze nuts are available. BS&A also provides engineering design services to aid in your custom design requirements producing a lead—screw assembly to your specifications.

With the introduction of our new unique patent pending Zero-Backlash designs, BS&A provides assemblies with high axial stiffness, zero backlash and the absolute minimum drag torque to reduce motor requirements. These designs produce products that cost less, perform better and last longer. Both automatically adjust for wear insuring zero backlash for the life of the nut.

Our large selection of standard plastic nut assemblies all use an internally lubricated Acetal providing excellent lubricity and wear resistance with or without lubrication. For bronze nuts, BS&A uses SAE 660 bearing bronze which provides high load capacity with good PV performance.

BS&A offers end machining to your specification or can provide you with stock bearing mount, motor mount or complete stage assemblies as shown in **Section 4**.