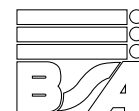


ANTI-BACKLASH SUPERNUTS™



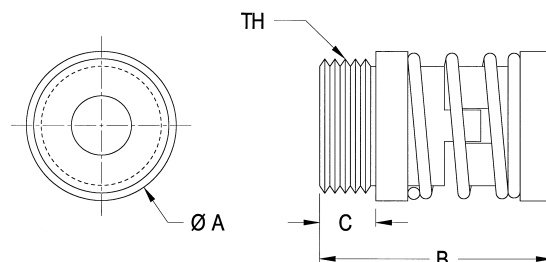
SNAB THREAD MOUNT STYLE

Our SNAB Model has the greatest design flexibility allowing anti-backlash assemblies through 1" diameters. All SNAB's are made from our internally lubricated Acetal providing excellent lubricity and very low wear.

FLANGES

3/16" to 1/4"	F25
5/16" to 10mm	F37

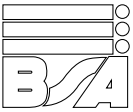
For more information see page 8-7.



SNAB* 3/16" TO 10MM DIAMETER

DIA.	LEAD	PART No.	SUPERNUT DIMENSIONS					PRELOAD FORCE (LBS)	DESIGN LOAD	MAX. STATIC LOAD	EFFICIENCY %	DRAG TORQUE (OZ-IN)
			A	B (MIN)	B (MAX)	C	TH					
3/16"	0.050	SNAB1820X	0.625	1.125	1.250	0.187	9/16-18	1 - 3	10 lbs	150 lbs	49	2 - 4
1/4"	0.050	SNAB2520X	0.625	1.125	1.250	0.187	9/16-18	1 - 3	25 lbs	225 lbs	41	2 - 4
	0.063	SNAB2516X									48	
	0.250	SNAB4-2516X									76	
	0.500	SNAB7-2514X									81	
5/16"	0.083	SNAB3112X	0.750	1.160	1.340	0.250	5/8-18	2 - 5	50 lbs	350 lbs	49	2 - 4
	0.167	SNAB2-3112X									65	
	0.250	SNAB2-3108X									72	
	0.500	SNAB4-3108X									80	
3/8"	0.063	SNAB3716X	0.750	1.160	1.340	0.250	5/8-18	2 - 5	70 lbs	350 lbs	36	2 - 4
	2mm	SNAB37x2M									42	
	0.083	SNAB3712X									44	
	0.100	SNAB3710X									49	
	0.125	SNAB3708X									53	
	0.167	SNAB2-3712X									60	
	0.200	SNAB2-3710X									65	
	0.250	SNAB2-3708X									68	
	0.375	SNAB4-3711X									75	
	0.500	SNAB4-3708X									79	
	1.000	SNAB5-3705X	0.720	1.750	2.000						82	
	1.200	SNAB5-3704X									82	
10mm	2mm	SNAB10x2M	0.750	1.160	1.340	0.250	5/8-18	2 - 5	70 lbs	350 lbs	41	2 - 4
	3mm	SNAB10x3M									53	
	6mm	SNAB4-10x1.5M									67	
	20mm	SNAB6-10x3.3M									81	

*SNAB nuts are only as axially stiff as the spring force in one direction.



ANTI-BACKLASH SUPERNUTS™



FLANGES

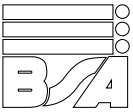
7/16" to 16mm	F50
3/4" to 1"	F100

For more information see page 8-7.

SNAB* 7/16" TO 1" DIAMETER

DIA.	LEAD	PART NO.	SUPERNUT DIMENSIONS					PRELOAD FORCE (LBS)	DESIGN LOAD	MAX. STATIC LOAD	EFFICIENCY %	DRAG TORQUE (OZ-IN)
			A	B (MIN)	B (MAX)	C	TH					
7/16"	0.125	SNAB2-4316X	1.000	1.700	2.000	0.375	15/16-16	4 - 9	100 lbs	500 lbs	55	3 - 5
	0.250	SNAB2-4308X									65	
	0.500	SNAB4-4308X									76	
12mm	5mm	SNAB2-12x2.5M	1.000	1.700	2.000	0.375	15/16-16	4 - 9	100 lbs	500 lbs	59	3 - 5
	10mm	SNAB4-12x2.5M									73	
1/2"	0.0625	SNAB5016	1.000	1.700	2.000	0.375	15/16-16	4 - 9	150 lbs	750 lbs	30	5 - 8
	0.100	SNAB5010X									41	
	0.200	SNAB2-5010X									57	
	0.250	SNAB2-5008X									62	
	0.500	SNAB4-5008X									75	
	0.800	SNAB8-5010X									80	
	1.000	SNAB8-5008X									81	
5/8"	0.100	SNAB6210X	1.000	1.700	2.000	0.375	15/16-16	4 - 9	160 lbs	800 lbs	35	7 - 10
	0.125	SNAB6208X									40	
	4mm	SNAB62x4M									46	
	0.200	SNAB2-6210X									51	
	0.250	SNAB2-6208X									57	
	0.500	SNAB4-6208X									71	
16mm	4mm	SNAB16x4M	1.000	1.700	2.000	0.375	15/16-16	4 - 9	160 lbs	800 lbs	47	7 - 10
3/4"	0.100	SNAB7510X	1.750	2.500	3.000	0.600	1 9/16-18	10 - 20	300 lbs	1500 lbs	31	15 - 20
	0.125	SNAB7508X									36	
	0.167	SNAB7506X									44	
	0.200	SNAB7505X									49	
	0.500	SNAB5-7510X									69	
	1.000	SNAB8-7508X									79	
	2.000	SNAB10-7505X									82	
20mm	4mm	SNAB20x4M	1.750	2.500	3.000	0.600	1 9/16-18	10 - 20	300 lbs	1500 lbs	41	15 - 20
24mm	5mm	SNAB24x5M	1.750	2.500	3.000	0.600	1 9/16-18	10 - 20	300 lbs	1500 lbs	42	15 - 20
1"	0.100	SNAB1010X	1.750	2.500	3.000	0.600	1 9/16-18	10 - 20	400 lbs	2000 lbs	25	15 - 20
	0.125	SNAB1008X									29	
	0.200	SNAB1005X									41	
	0.250	SNAB1004X									47	
	0.500	SNAB5-1010X									61	
	1.000	SNAB5-1005X									74	

*SNAB nuts are only as axially stiff as the spring force in one direction.



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

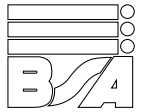
MATERIAL PROPERTIES

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**.