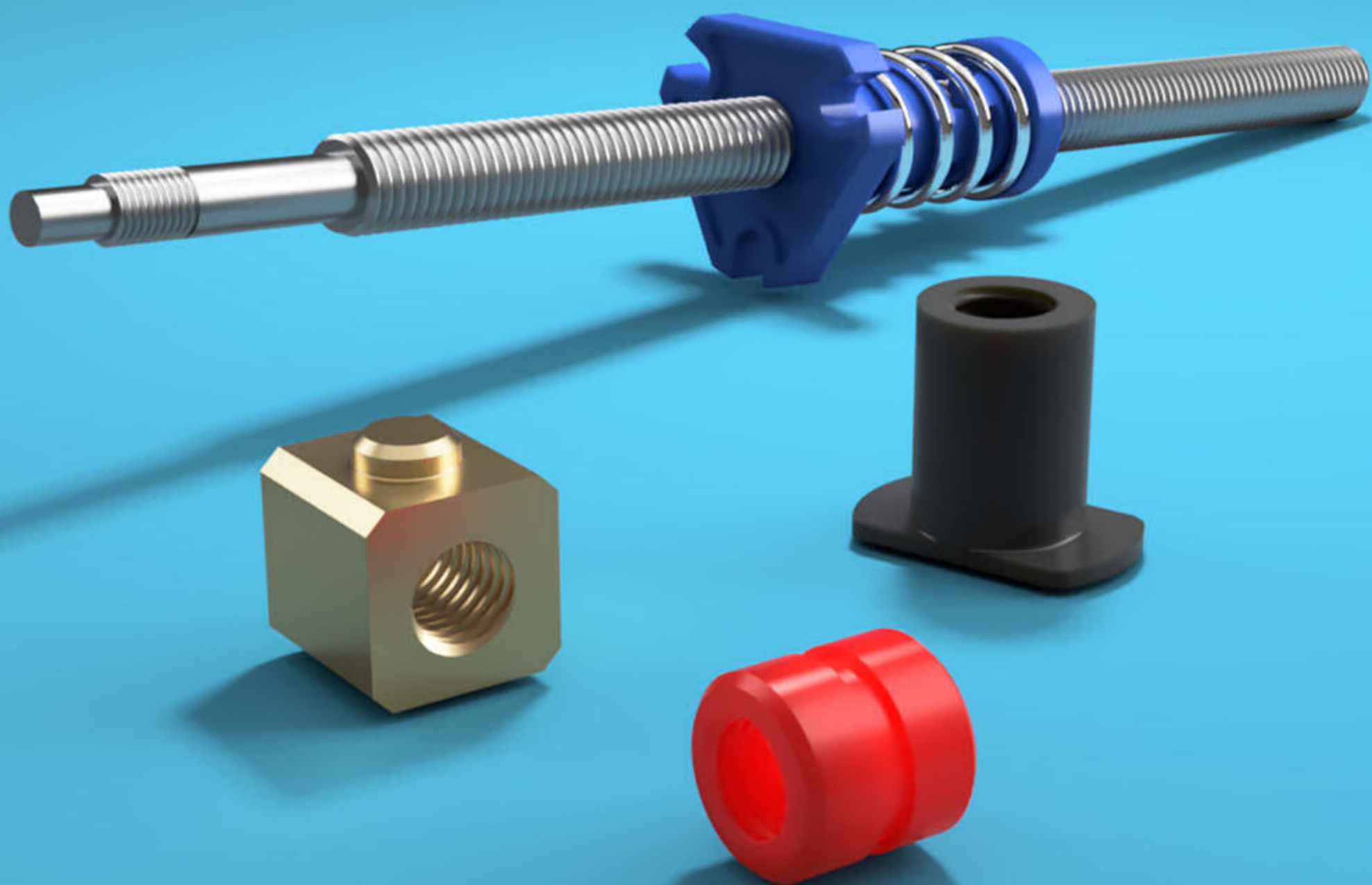


# Precision Lead Screws



**ABSSAC**

PRECISION MOTION SINCE 1982



# Precision Lead Screws & Nuts

## Features/Advantages

### Low Cost

Considerable savings when compared to ball screw assemblies.

### Variety

Large range of leads and diameters to match your requirements.

### Lubrication

Internally lubricated plastic nuts will operate without additional lubrication. However, TriGEL grease or dry film lubricant is recommended and will extend product life. See pages 13 and 14.

### Vibration and Noise

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

## 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.

### Critical Speed

Refer to critical speed chart.

### Column Loading

Refer to column loading chart.

### 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.

### Custom Capability

Option of custom components 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.

### 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. Danaher Motion 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 most Lead Screw designs.

### Length Limitations

Screw Diameter	Max Length
10 mm	1200 mm
12 - 16 mm	1800 mm
>16 mm	3600 mm

### Lead Accuracy

Standard Grade (SRA)	250 µm/300 mm
Precision Grade (SPR)	75 µm/300 mm

Assembly		Screws	Nuts**			
Maximum Temperature	Friction Coefficient	Material	Material	Tensile Strength	Water Absorption (24 HRS %)	Thermal Expansion Coefficient
82°C	0,08 - 0,14	Stainless Steel*	Acetal with PTFE	55 MPa	0,15	9,7 x 10 <sup>-5</sup> m/m/°C

\* 1.4301 (AISI 304) & 1.4305 (AISI 303) \*\* Other materials available on a custom basis.

## Useful Formulas for Lead Screw Assemblies

### TORQUE, ROTARY TO LINEAR

Driving the screw to translate the nut, or driving the nut to translate the screw.

$$\text{Torque (N-mm)} = \frac{\text{Load (N)} \times \text{Lead (mm)}}{2\pi \times \text{efficiency}}$$

### TORQUE, LINEAR TO ROTARY

Loading the nut to rotate the screw

$$\text{Torque} = \frac{\text{Load} \times \text{Lead} \times \text{Efficiency}}{2\pi}$$

### EFFICIENCY

$$\% \text{ Efficiency} = \frac{\tan(\text{helix angle})}{\tan(\text{helix angle} + \arctan f)} \times 100$$

f = coefficient of friction

As a rule, assemblies that have an efficiency of 50% or more will backdrive. See page 12 for efficiencies. Efficiencies listed in catalogue computed at 0,1 friction coefficient.



## Lead Screw Product Summary

Series	Precision Lead Screw
Lead accuracy	Standard - 250 $\mu$ m / 300 mm Precision -75 $\mu$ m / 300 mm
Diameter	10 to 24 mm
Lead	2 to 45 mm
Backlash	,02 to ,25 mm (standard nut) Zero backlash available
Dynamic Load	Up to 1550 N
Max. Static Load	Up to 6675 N
Catalogue Pages	10 to 12

## Lead Screw Product Availability

### Metric

Lead (mm)

	2	3	4	5	6	8	10	12	15	16	20	25	35	45
Dia. (mm)														
10	•	•		•	•		•				•		•	
12		•	•	•	•		•		•			•		•
16			•	•		•				•		•	•	
20			•			•		•		•	•			•
24				•										

• = stocked size

### Inch

Lead (Zoll)

Also available are our inch series lead screws.

Consult our website for further details at [www.abssac.co.uk](http://www.abssac.co.uk)

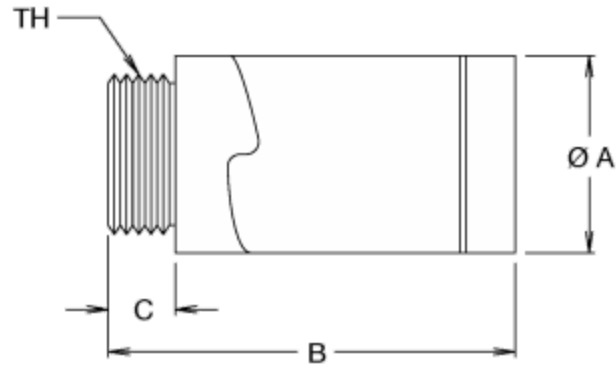
	0,050	0,063	0,083	0,100	0,125	0,167	0,200	0,250	0,375	0,500	0,800	1,000	1,200	2,000
Dia. (in)														
3/8		•	•	•	•	•	•	•	•	•		•	•	
7/16					•			•		•				
1/2		•		•			•	•		•	•	•		
5/8				•	•		•	•		•				
3/4				•	•	•	•			•		•		•
1				•	•		•	•		•		•		

**Note:** Miniature sizes also offered. Consult our website for further details at [www.abssac.co.uk](http://www.abssac.co.uk)

Custom diameters and leads per request.

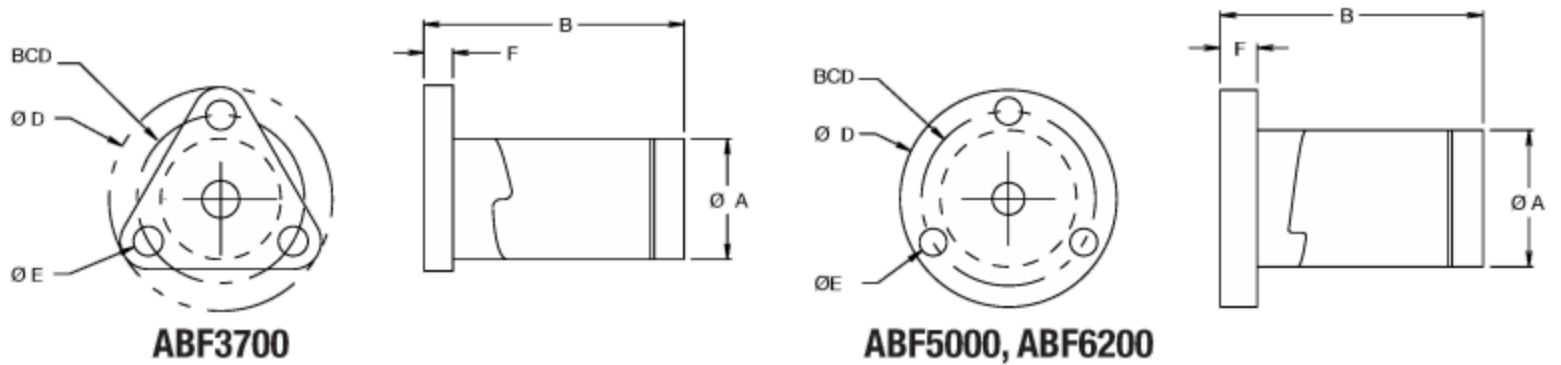


## AB Series - The Performance Leader



### Threaded Nut Type

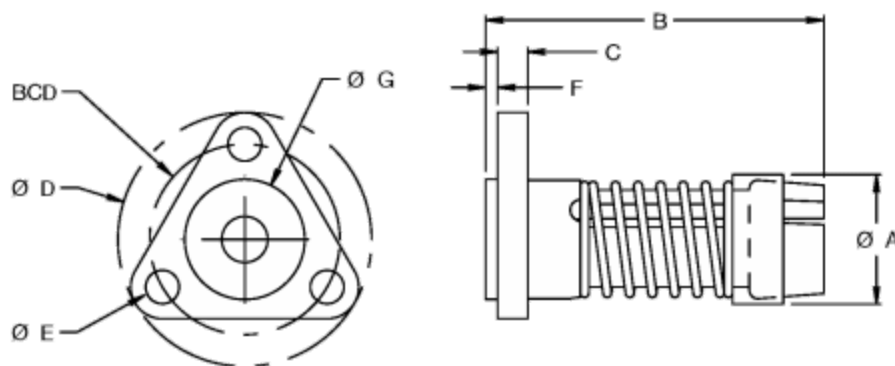
Model #	Screw Series (mm)	Also Use w/Series (inch)	Dimensions				Design Load (N)	Drag Torque	
			A (mm)	B (mm) max	C (mm)	TH (mm)		Minimum (N-mm)	Maximum (N-mm)
AB3700	10	5/16, 3/8	20,8	47,6	6,4	M16 x 1,5	100	7	21
AB5000	12	7/16, 1/2	28,4	57,2	9,5	M25 x 1,5	550	7	21
AB6200	16	5/8	35,6	66,0	12,7	M30 x 1,5	775	14	42
AB7500	20	3/4	41,4	73,7	12,7	M35 x 1,5	1100	21	71
AB10000	24	1	47,8	76,2	15,2	M40 x 1,5	1550	35	71



### Flange Nut Type

Model #	Screw Series (mm)	Also Use w/Series (inch)	Dimensions						Design Load (N)	Drag Torque	
			A (mm)	B (mm) max	D (mm)	E (mm)	F (mm)	BCD (mm)		Minimum (N-mm)	Maximum (N-mm)
ABF3700	10	5/16, 3/8	20,8	47,6	38,1	5,1	5,1	28,6	100	7	21
ABF5000	12	7/16, 1/2	28,4	57,2	44,5	5,6	7,6	35,5	550	7	21
ABF6200	16	5/8	35,6	66,0	54,1	5,6	12,7	42,9	775	14	42

## AFT3700 - The OEM Solution

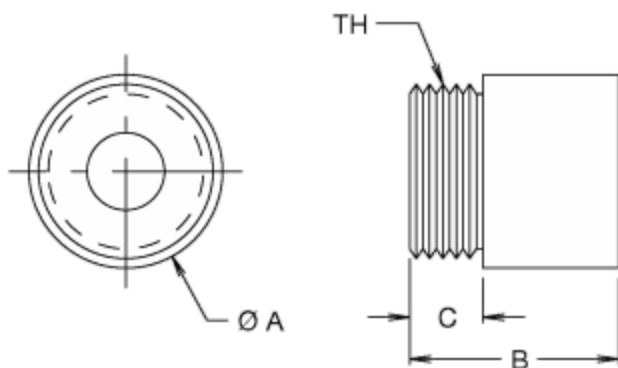


### Flange Nut Type

Model #	Screw Series (mm)	Also Use w/Series (inch)	Dimensions								Design Load (N)	Drag Torque	
			A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)	G (mm)	BCD (mm)		Minimum (N-mm)	Maximum (N-mm)
ABFT3700	10	3/8, 7/16	19,6	50,8	5,1	38,1	5,1	1,5	18,0	28,6	45	14	35



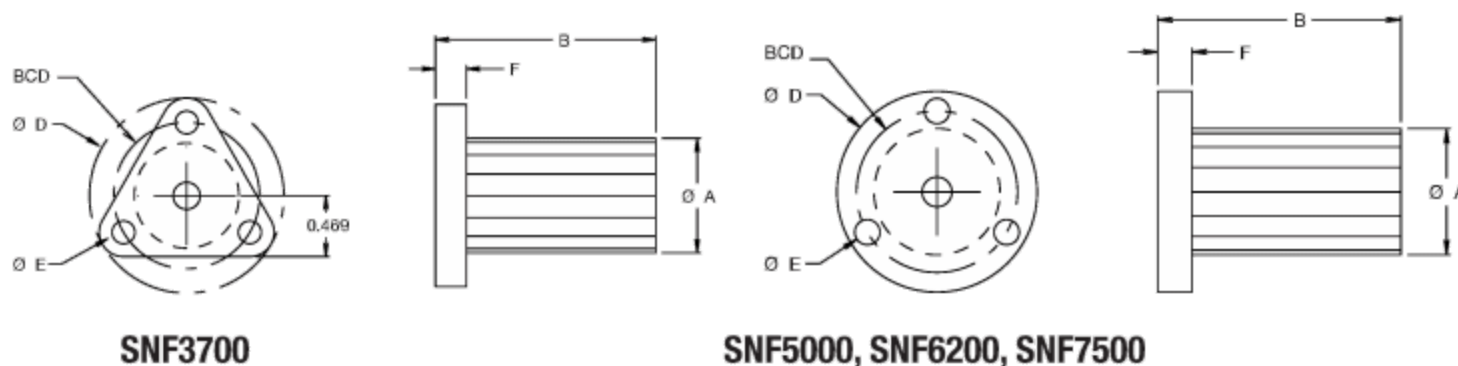
## SN Series - Compact Thread Mount Style



### Threaded Nut Type

Model #	Screw Series (mm)	Also Use w/Series (inch)	Dimensions				Design Load (N)	Max Static Load (N)	Drag Torque
			A (mm)	B (mm)	C (mm)	TH (mm)			
SN3700	10	5/16, 3/8	19,1	19,1	6,4	M16 x 1,5	310	1550	No Preload
SN5000	12, 16	7/16, 1/2	25,4	25,4	9,5	M22 x 1,5	445	2225	
SN1000	20, 24	3/4, 1	38,1	38,1	12,7	M35 x 1,5	1335	6675	

## MTS Series - Easy Mount Flange Style



### Flange Nut Type

Model #	Screw Series (mm)	Also Use w/Series (inch)	Dimensions						Design Load (N)	Drag Torque
			A (mm)	B (mm)	D (mm)	E (mm)	F (mm)	BCD (mm)		
SNF3700	10	3/8, 7/16	18,0	38,1	38,1	5,1	5,1	28,6	325	No Preload
SNF5000	12	1/2	19,1	38,1	38,1	5,1	6,4	28,6	550	
SNF6200	16	5/8	22,4	41,4	38,1	5,1	7,6	30,2	775	
SNF7500	20	3/4	28,6	44,5	50,8	5,1	7,6	36,5	1200	

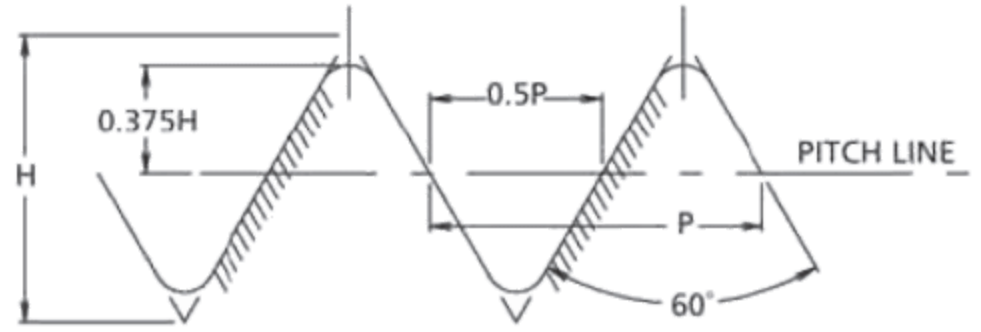
**Note:** Design load is the recommended maximum operating load with lubrication at room temperature, 50% duty cycle, and 500 RPM. Increasing the RPM will decrease the maximum allowable operating load. At 1,000 RPM, the operating load is approximately 1/2 of the rated design load.



# VEE THREAD SCREWS

Burnished Finish  
303 Stainless Steel

- Some sizes available in 1018 Steel
- Matching Supernuts and Left Hand Screws on special request
- Lead Accuracy is .015 in/ft



Diameter	Lead	Size	Part No.	Recommended Bearing
6 mm	1 mm	6 x 1	SV6x1	4mm
1/4 "	0.0125	1/4-80	SV2580	4mm
	0.0208	1/4-48	SV2548	
	0.025	1/4-40	SV2540	
	0.0278	1/4-36	SV2536	
	0.0313	1/4-32	SV2532	
	0.0357	1/4-28	SV2528	
	0.0417	1/4-24	SV2524	
	0.050	1/4-20	SV2520	
3/8 "	0.025	3/8-40	SV3740	4 or 6mm
	0.0313	3/8-32	SV3732	
	0.0417	3/8-24	SV3724	
	0.050	3/8-20	SV3720	
	0.0625	3/8-16	SV3716	
	0.0833	3/8-12	SV3712	
1/2 "	0.025	1/2-40	SV5040	6 or 8mm
	0.0333	1/2-30	SV5030	
	0.050	1/2-20	SV5020	
	0.0625	1/2-16	SV5016	
	0.0769	1/2-13	SV5013	

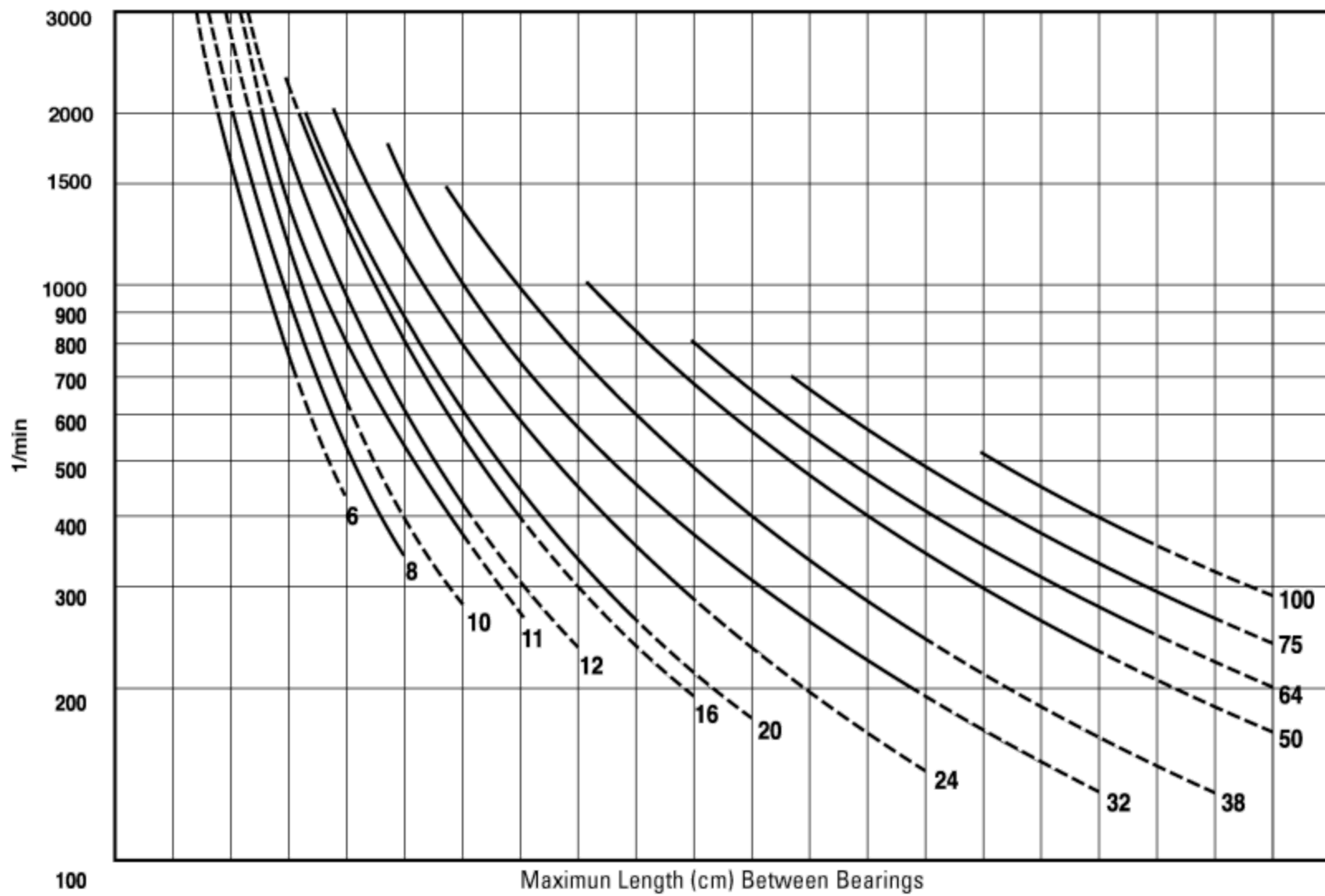
All dimensions in inches unless specified otherwise.



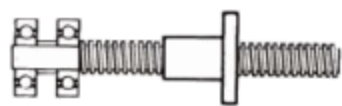
# Critical Speed Limits Chart

Every screw shaft has a rotational speed limit. That is the point at which the rotational speed sets up excessive vibration. This critical point is modified by the type of end bearing support used. To use this chart, determine the required RPM and the maximum length between bearing supports. Next, select one of the four types of end support shown below. The critical speed limit can be found by locating the point at which the RPM (horizontal lines) intersects with the unsupported screw length (vertical lines) as modified by the type of supports select below. We recommend operating at no more than 80% of the critical speed limit.

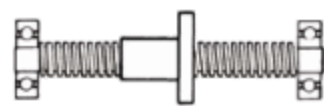
**Warning: Curves for the screw diameters shown are based on the smallest root (minor) diameter of the standard screws within the nominal size range and truncated at the maximum ball nut rotational speed. DO NOT EXCEED this RPM regardless of screw length.**



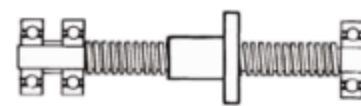
<b>Fixed Free</b>	150	300	460	610	760	910	1070	1220	1370	1520	1680	1830	1980	2130	2290	2440	2590	2740	3050	3200
<b>Simple Simple</b>	250	510	760	1020	1270	1520	1780	2030	2290	2540	2790	3050	3300	3560	3810	4060	4320	4570	4830	5080
<b>Fixed Simple</b>	300	610	910	1220	1550	1850	2160	2460	2770	3070	3380	3910	4010	4320	4620	4930	5230	5540	5840	6150
<b>Fixed Fixed</b>	380	760	1140	1520	1910	2290	2670	3020	3400	3780	4170	4550	4930	5310	5690	6070	6450	6830	7210	7570



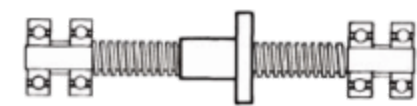
Fixed Free



Simple Simple



Fixed Simple



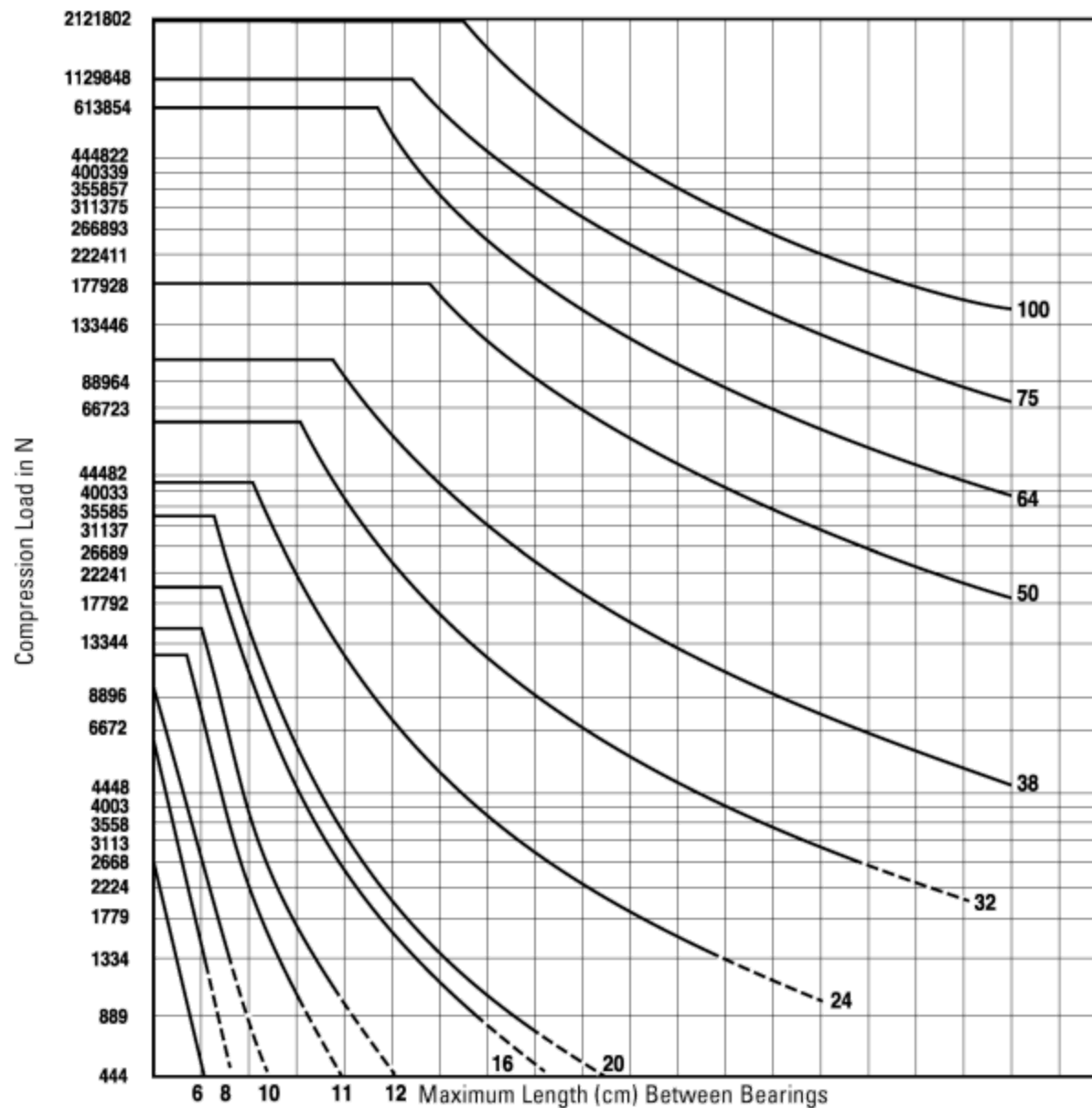
Fixed Fixed



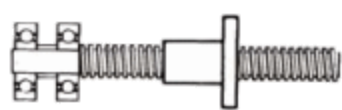
# Column Loading Capacities Chart

Use the chart below to determine the Maximum Compression Load for Screw Shaft. Usually, screws operated in tension can handle loads up to the rated capacity of the nut, providing the screw length is within standard lengths. End supports have an effect on the load capacity of screws. The four standard variations are shown below with corresponding rating adjustments. Find the point of intersecting lines of load (horizontal) and length (vertical) to determine the minimum safe diameter of screw. If loads fall into dotted lines, consult factory.

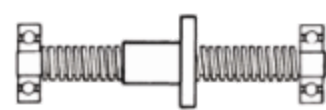
**Warning: DO NOT EXCEED nut capacity. Curves for the screw diameters shown are based on the smallest root (minor) diameter of the standard screws within the nominal size range.**



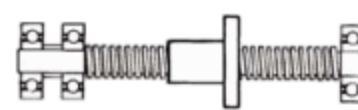
<b>Fixed Free</b>	130	250	380	510	640	760	890	1020	1140	1270	1400	1520	1650	1780	1910	2030	2160	2290	2410
<b>Simple Simple</b>	250	510	760	1020	1270	1520	1780	2030	2290	2540	2790	3050	3300	3560	3810	4060	4320	4570	4830
<b>Fixed Simple</b>	360	710	1070	1450	1800	2160	2510	2870	3230	3580	3960	4320	4670	5030	5380	5740	6100	6480	6860
<b>Fixed Fixed</b>	510	1020	1520	2030	2540	3050	3560	4060	4570	5080	5590	6100	6600	7110	7620	8130	8640	9140	9650



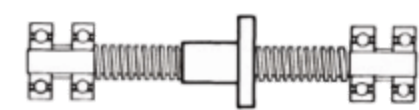
Fixed Free



Simple Simple



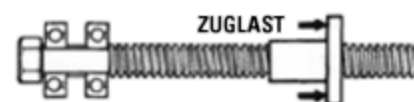
Fixed Simple



Fixed Fixed



Compression (Column) Load

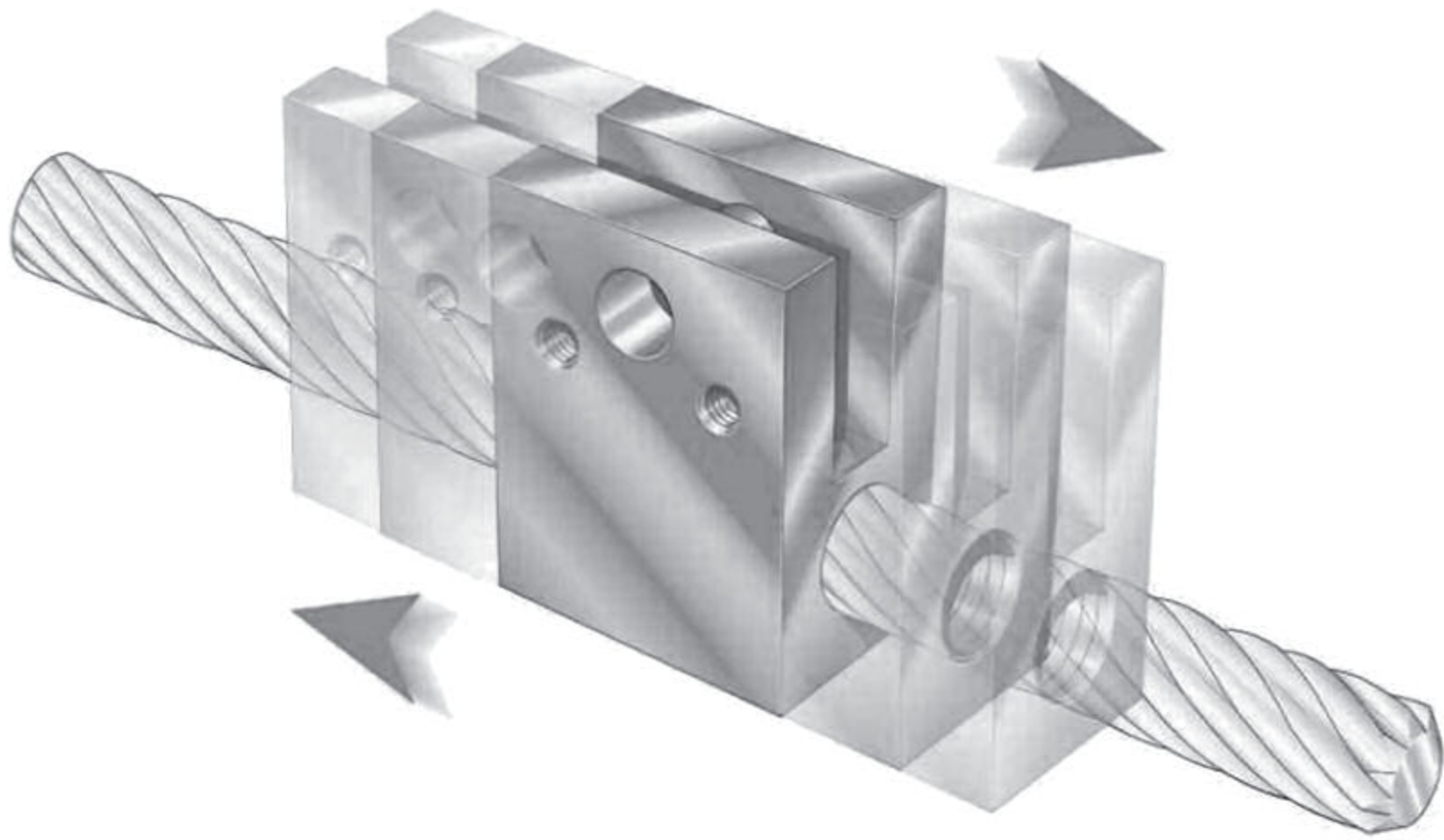


Tension (Pulling) Load

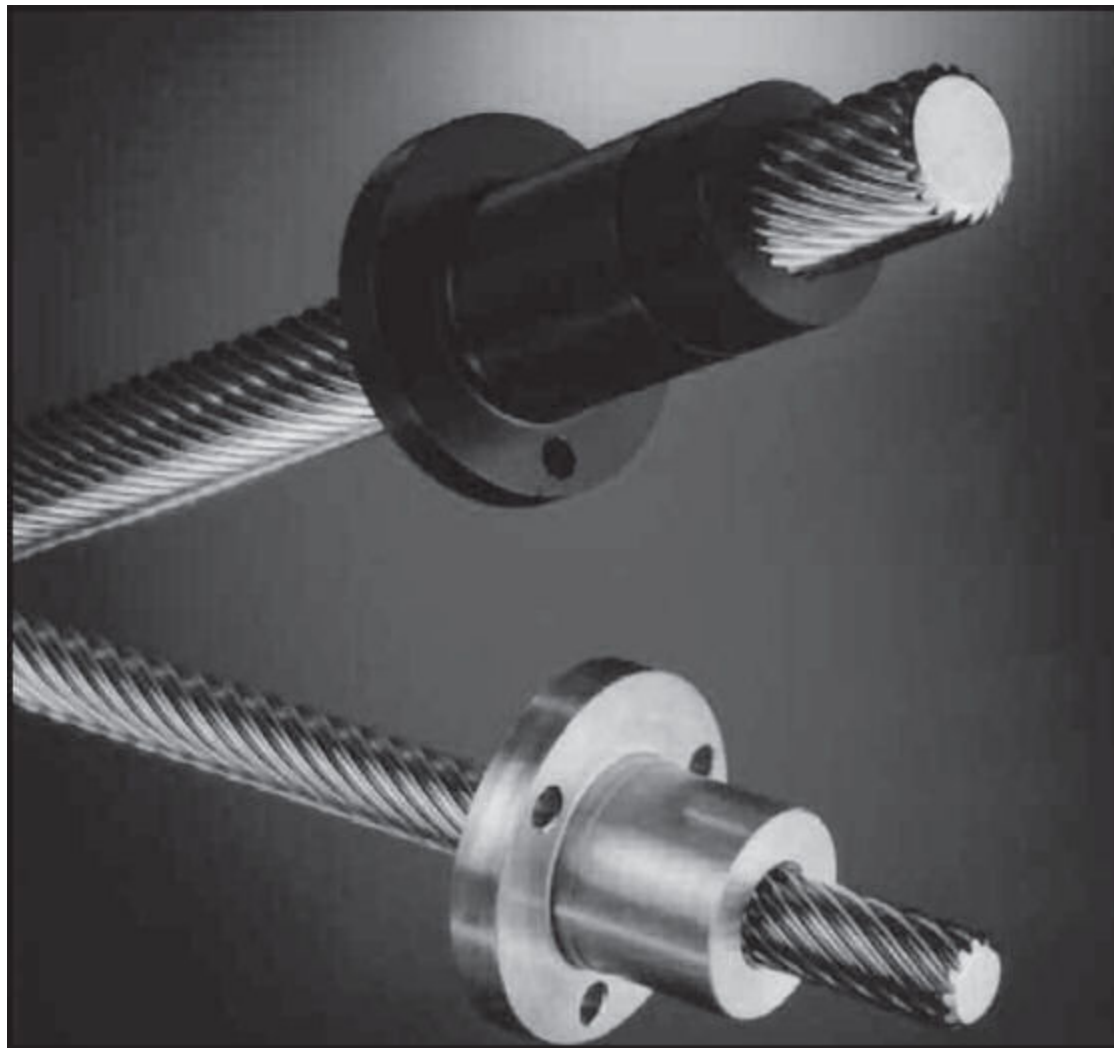




# HIGH HELIX LEAD SCREWS



Custom nut designs are available on all screw formats.



Screw leads up to 200mm can be supplied.



# HIGH HELIX LEAD SCREWS

The revolutionary high helix lead screws can offer leads of up to 6 x the diameter of the screw. This provides high linear speeds at a low rotational speeds or efficient conversion of linear to rotary movement.

Screws can be manufactured from Steel, Stainless Steel and Aluminium whilst the associated nuts are available in wear resistant thermoplastic and Bronze for higher loads or temperature.

## TYPICAL APPLICATIONS INCLUDE:

- Automatic Doors, Gates or Windows
- Packaging Machines
- Medical devices

When choosing a High helix lead screw for your application you should consider the following:

## ACCURACY:

Standard Lead Accuracy: 0.21mm / 300mm  
Precision Lead Accuracy: 0.10mm / 300mm

## TEMPERATURE:

P.O.M. (Plastic) Nuts: - 40 ° to + 60 ° C  
Bronze Nuts: - 40 ° to + 200 ° C

## DUTY CYCLE:

10% at rated load with lubrication and P.O.M. nut

## LUBRICATION:

Lubrication intervals are dependent on application. In many cases, a single lubrication with the correct Grease or Oil will be sufficient with a P.O.M. nut. Bronze nuts require a reapplication of lubricant on a regular basis.

Basic Calculation for Max Speed depending on Load  $F_{per} = C_0 \cdot f_L$  [ N ]

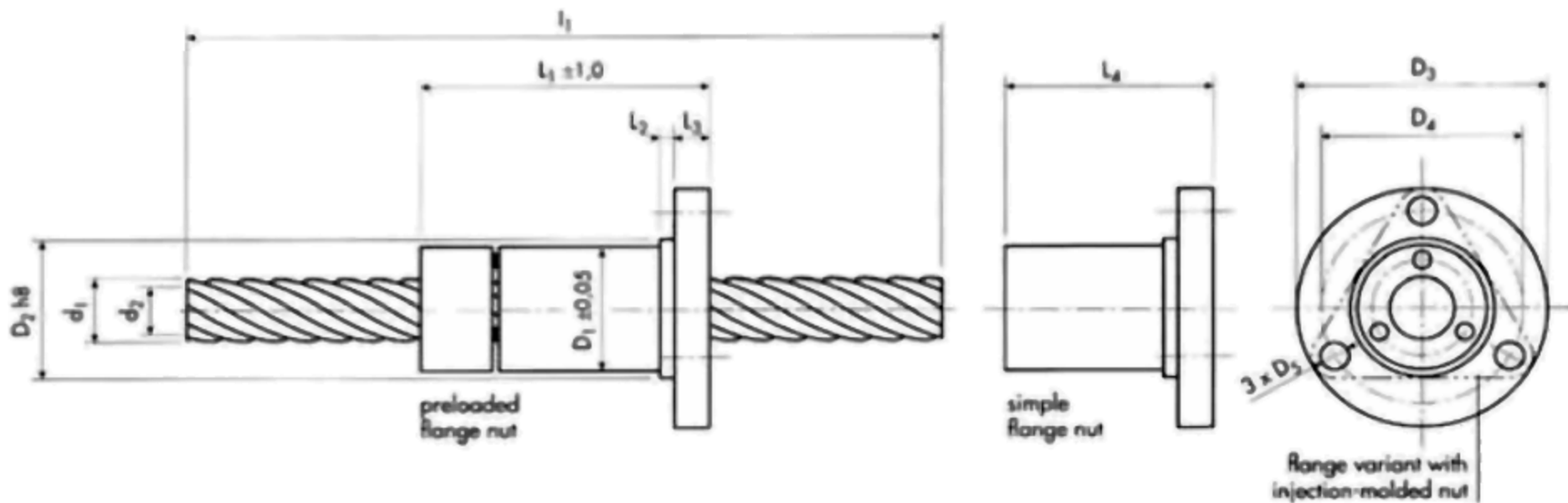
$C_0$  = Static Load Rate [ N ]

$f_L$  = Load Factor [ - ] for P.O.M. Nut

Circumferential Speed $V_c$ [M / min]	Load Factor $f_L$ [ - ]
5	0.95
10	0.75
20	0.45
30	0.37
40	0.12
50	0.08



# HIGH HELIX SCREW WITH STANDARD THREAD

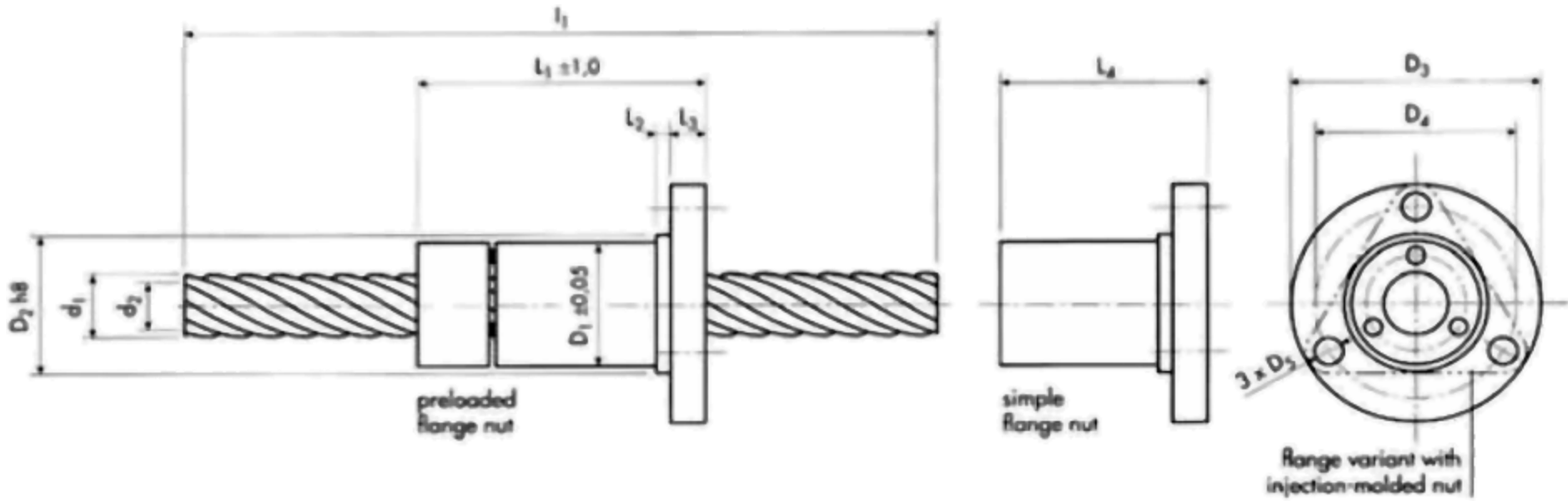


**Materials** Screw: Steel (including stainless) Nut: POM or Bronze

Do/p mm	Dimensions mm													Load Ratings Co (N) for POM
	Screw					Nut								
d1 mm	d2	p	i	D1 ±0.05	D2 h8	D3	D4	D5	L1 POM/Bronze	L2	L3	L4 POM/Bronze		
8/10	8.2	5.5	10	4	23.5	24	42	32	4.2	38/31	3	5	25/18	800
10/12 *	10.0	7.1	12	4	23.5	24	42	32	4.2	38/31	3	5	25/18	1200
12/15 *	12.2	9.2	15	5	23.5	24	42	32	4.2	38/31	3	5	25/18	1400
12/25	11.9	8.0	25	5	23.5	24	42	32	4.2	38/31	3	5	25/18	1500
10/50 *	10.0	7.4	50	10	25.5	26	46	36	5.1	58/46	3	7	42/30	1250
11/60	11.7	9.1	60	12	25.5	26	46	36	5.1	58/46	3	7	42/30	1500
13/20	13.3	8.8	20	4	25.5	26	46	36	5.1	58/46	3	7	42/30	1300
13/70	13.5	10.9	70	14	25.5	26	46	36	5.1	58/46	3	7	42/30	1750
14/8	14.0	9.8	8	2	25.5	26	46	36	5.1	58/46	3	7	42/30	900
14/18 *	14.3	11.4	8	6	25.5	26	46	36	5.1	58/46	3	7	42/30	1600
14/30	13.9	10.1	18	6	25.5	26	46	36	5.1	58/46	3	7	42/30	1750
15/20	15.2	12.5	20	8	29.5	30	49	39	5.1	58/46	3	7	42/30	1600
15/80 *	15.2	12.6	80	16	29.5	30	49	39	5.1	58/46	3	7	42/30	2000
16/21	16.5	13.6	21	7	29.5	30	49	39	5.1	58/46	3	7	42/30	1800
16/25	16.0	11.5	25	5	29.5	30	49	39	5.1	58/46	3	7	42/30	1550
16/35	15.9	12.1	35	7	29.5	30	49	39	5.1	58/46	3	7	42/30	2000
16/90 *	17.0	14.3	90	18	29.5	30	49	39	5.1	58/46	3	7	42/30	2250
18/16	18.0	14.3	16	4	29.5	30	49	39	5.1	58/46	3	7	42/30	1100
18/24 *	18.7	15.7	24	8	29.5	30	49	39	5.1	58/46	3	7	42/30	2000
18/40	17.9	14.1	40	8	29.5	30	49	39	5.1	58/46	3	7	42/30	2250
18/100 *	18.8	16.2	100	20	29.5	30	49	39	5.1	58/46	3	7	42/30	2500
19/30	18.8	14.2	30	6	29.5	30	49	39	5.1	58/46	3	7	42/30	1800

**Data:** Do nominal screw diameter (mm) d2 core diameter (mm) po nominal pitch (mm) p effective pitch (mm) l number of threads (-)  
L1 screw length as per customer specs (mm); stock length: 3000mm  
Co static load rate for non-preloaded POM nuts (N); bronze nuts must be used for higher load rates.  
(load rates for bronze nuts = 1.3 x load rates of POM nuts)  
\* available with right-handed and left-handed thread

# HIGH HELIX SCREW WITH STANDARD THREAD

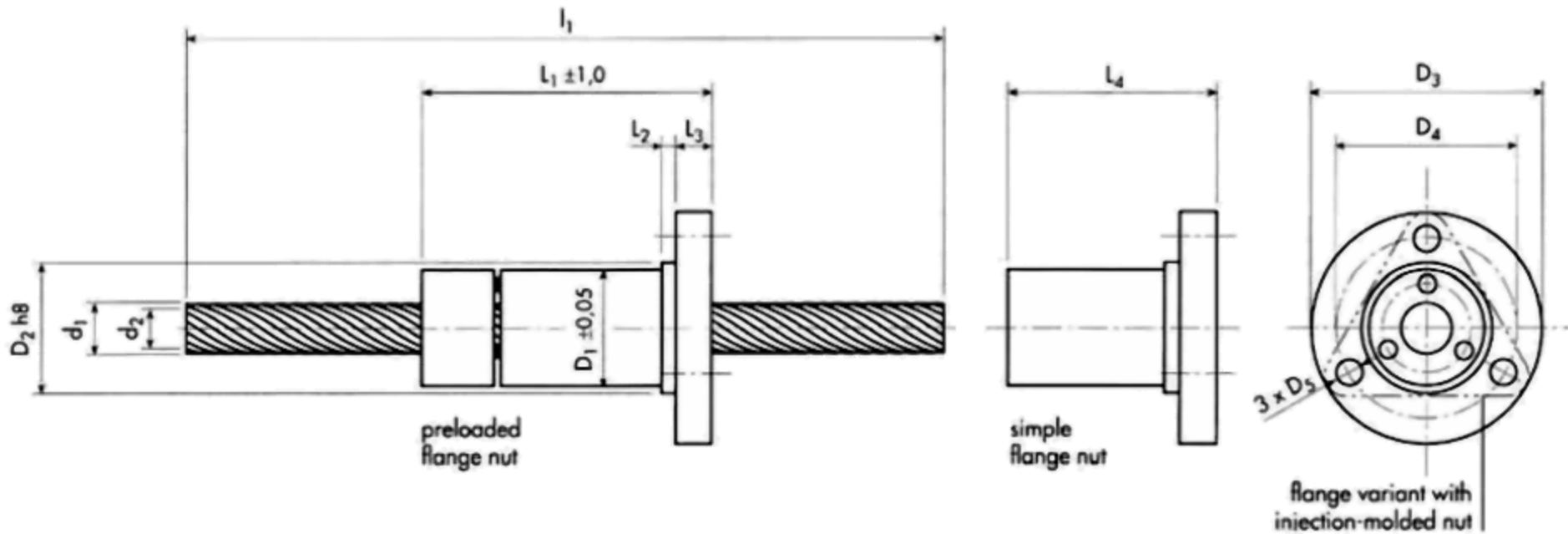


**Materials** Screw: Steel (including stainless) Nut: POM or Bronze

Do/p mm	Dimensions mm													Load Ratings Co (N) for POM
	Screw					Nut								
d1 mm	d2	p	i	D1 ±0.05	D2 h8	D3	D4	D5	L1 POM/Bronze	L2	L3	L4 POM/Bronze		
20/12	20.0	15.8	12	3	35.5	36	59	47	6.2	64/50	5	8	46/32	1200
20/45	20.0	16.1	45	9	35.5	36	59	47	6.2	64/50	5	8	46/32	2500
21/27*	20.8	17.9	27	9	35.5	36	59	47	6.2	64/50	5	8	46/32	2200
21/35	21.5	17.0	35	7	35.5	36	59	47	6.2	64/50	5	8	46/32	2050
22/20	22.0	18.3	20	5	35.5	36	59	47	6.2	64/50	5	8	46/32	1400
22/50	22.0	18.1	50	10	35.5	36	59	47	6.2	64/50	5	8	46/32	2750
23/30*	23.0	20.0	30	10	35.5	36	59	47	6.2	64/50	5	8	46/32	2400
24/40	24.3	19.8	40	8	35.5	36	59	47	6.2	64/50	5	8	46/32	2300
24/55	24.0	20.1	55	11	35.5	36	59	47	6.2	64/50	5	8	46/32	3000
26/16	26.0	21.8	16	4	41.5	42	64	53	6.2	71/56	5	8	50/35	1400
26/24	26.0	22.3	24	6	41.5	42	64	53	6.2	71/56	5	8	50/35	2000
26/60	26.0	22.2	60	12	41.5	42	64	53	6.2	71/56	5	8	50/35	3250
27/45	27.0	22.5	45	9	41.5	42	64	53	6.2	71/56	5	8	50/35	2550
28/65	28.0	24.2	65	13	41.5	42	64	53	6.2	71/56	5	8	50/35	3500
30/28	30.0	26.5	28	7	41.5	42	64	53	6.2	71/56	5	8	50/35	2000
30/50	29.8	25.3	50	10	41.5	42	64	53	6.2	71/56	5	8	50/35	2800
30/70	30.0	26.2	70	14	41.5	42	64	53	6.2	71/56	5	8	50/35	3750
32/20	32.0	27.8	20	5	49.5	50	80	65	9.0	-/-	10	12	70/50	2000
32/75	32.0	28.2	75	15	49.5	50	80	65	9.0	-/-	10	12	70/50	4000
34/32	34.0	30.5	32	8	49.5	50	80	65	9.0	-/-	10	12	70/50	2300
34/80	34.0	30.2	80	16	49.5	50	80	65	9.0	-/-	10	12	70/50	4250
36/200	36.0	33.4	200	40	49.5	50	80	65	9.0	-/-	10	12	70/50	4500

**Data:** Do nominal screw diameter (mm) d2 core diameter (mm) po nominal pitch (mm) p effective pitch (mm) l number of threads (-)  
L1 screw length as per customer specs (mm); stock length: 3000mm  
Co static load rate for non-preloaded POM nuts (N); bronze nuts must be used for higher load rates.  
(load rates for bronze nuts = 1.3 x load rates of POM nuts)  
\* available with right-handed and left-handed thread

# HIGH HELIX WITH FINE-PITCH THREAD



## Materials

Screw: Steel (including stainless) or hard-anodised Aluminium

Nut: POM or Bronze (only with screws made of Steel)

Do/p mm	Dimensions mm													Load Ratings Co (N) for POM
	Screw				Nut									
	d1	d2	p	i	D1 ±0.05	D2 h8	D3	D4	D5	L1 POM/Bronze	L2	L3	L4 POM/Bronze	
5/5	5.4	3.6	5.0	4	20.5	21	38	29	4.2	38/31	3	5	25/18	300
5/20*	6.0	5.0	20.0	16	20.5	21	38	29	4.2	38/31	3	5	25/18	300
6/25	7.4	6.3	25.0	20	20.5	21	38	29	4.2	38/31	3	5	25/18	400
7.5/7.5	7.7	5.9	7.5	6	20.5	21	38	29	4.2	38/31	3	5	25/18	450
8/30*	8.6	7.5	30.0	24	20.5	21	38	29	4.2	38/31	3	5	25/18	500
10/10	10.0	8.2	10.0	8	23.5	24	42	32	4.2	38/31	3	5	25/18	600
10/35*	10.1	8.9	35.0	28	23.5	24	42	32	4.2	38/31	3	5	25/18	600
11/40*	11.5	10.2	40.0	32	23.5	24	42	32	4.2	38/31	3	5	25/18	700
12/45*	12.8	11.4	45.0	36	23.5	24	42	32	4.2	38/31	3	5	25/18	800
12.5/12.5	12.3	10.4	12.5	10	23.5	24	42	32	4.2	38/31	3	5	25/18	750

### Data:

Do nominal screw diameter (mm)

d2 core diameter (mm)

po nominal pitch (mm)

p effective pitch (mm)

i number of threads (-)

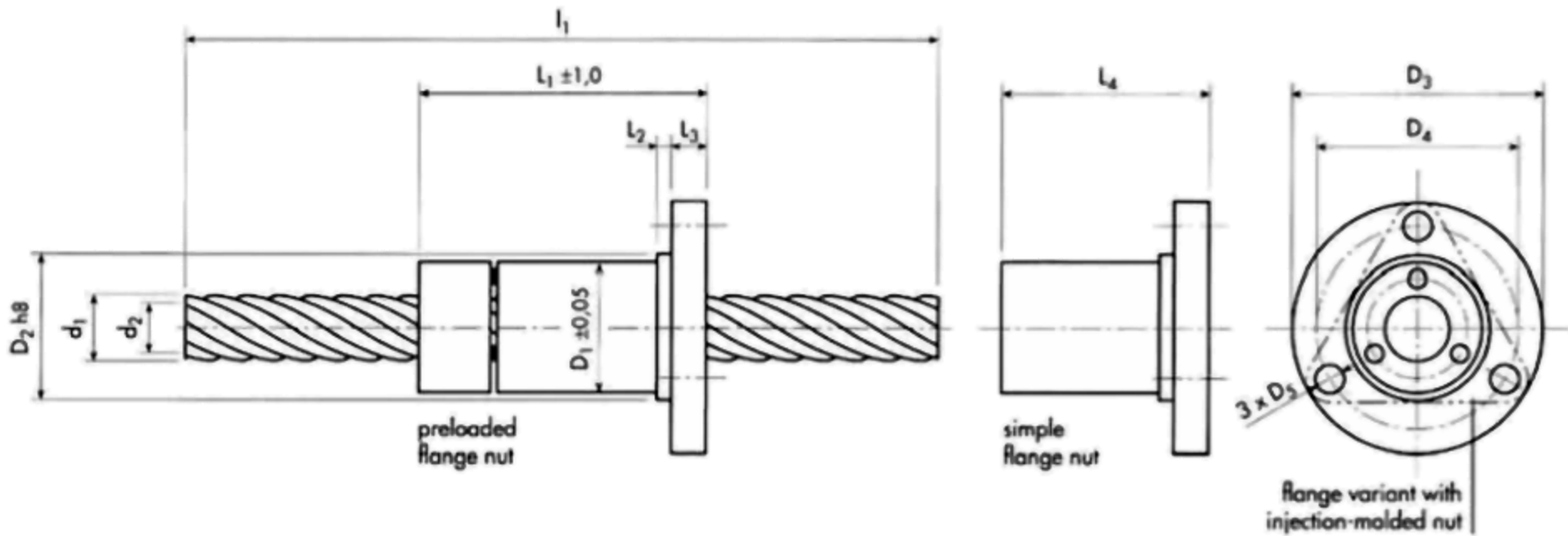
L1 screw length as per customer specs (mm); stock length: 3000mm

Co static load rate for non-preloaded POM nuts (N); bronze nuts must be used for higher load rates.

(load rates for bronze nuts = 1.3 x load rates of POM nuts)

\* available with right-handed and left-handed thread

# HIGH HELIX WITH INCH THREAD



## Materials

Screw: Steel (including stainless)

Nut: POM or Bronze

Do/p mm	Dimensions mm													Load Ratings Co (N) for POM
	Screw					Nut								
	d1	d2	p	i	D1 ±0.05	D2 h8	D3	D4	D5	L1 POM/Bronze	L2	L3	L4 POM/Bronze	
9.7/25.4	9.7	6.4	25.40	5	23.5	24	42	32	4.2	38/31	3	5	25/18	1200
11.2/30.5*	11.2	8.0	30.48	6	23.5	24	42	32	4.2	38/31	3	5	25/18	1400
12.8/35.6*	12.8	9.6	35.56	7	23.5	24	42	32	4.2	38/31	3	5	25/18	1600
14.3/40.6*	14.4	11.2	40.64	8	25.5	26	46	36	5.1	58/46	3	7	42/30	1800
16.0/45.7*	16.0	12.8	45.72	9	29.5	30	49	39	5.1	58/46	3	7	42/30	2000
17.6/50.8*	17.6	14.4	50.80	10	29.5	30	49	39	5.1	58/46	3	7	42/30	2200
25.7/76.2*	25.7	24.0	76.20	15	41.5	42	64	53	6.2	71/56	5	8	50/35	2800

### Data:

Do nominal screw diameter (mm)

d2 core diameter (mm)

po nominal pitch (mm)

p effective pitch (mm)

i number of threads (-)

L1 screw length as per customer specs (mm); stock length: 3000mm

Co static load rate for non-preloaded POM nuts (N); bronze nuts must be used for higher load rates.

(load rates for bronze nuts = 1.3 x load rates of POM nuts)

\* available with right-handed and left-handed thread

Other dimensions, tolerances and designs - in particular special screw diameters and higher/lower pitch plus special nut designs and materials - are available on request.

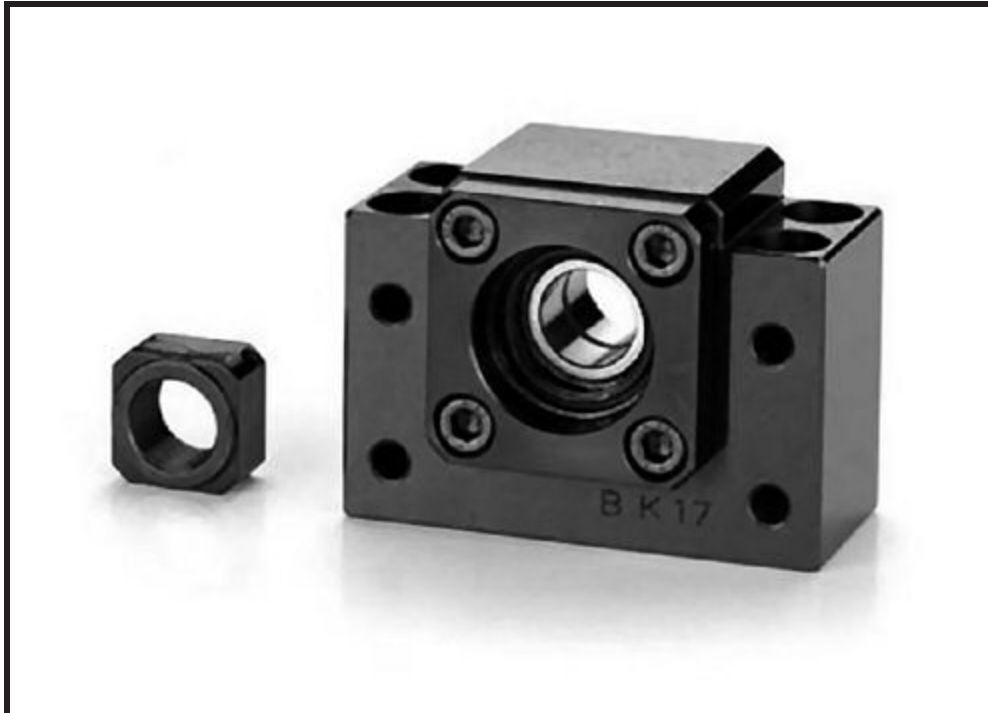
More exotic pieces such as the High Helix 8/600 with an 8mm screw diameter and 600mm pitch are also available.



## LEAD SCREW & BALL SCREW SUPPORT SYSTEMS

IDEAL COMPANION FOR TRANSPORT LEAD SCREWS AND BALL SCREWS.  
FIXED TYPES CAN BE USED BOTH ENDS FOR EXTRA LOAD CAPACITY.

ALL TYPES FROM SIZE 10 TO SIZE 40 FROM STOCK.



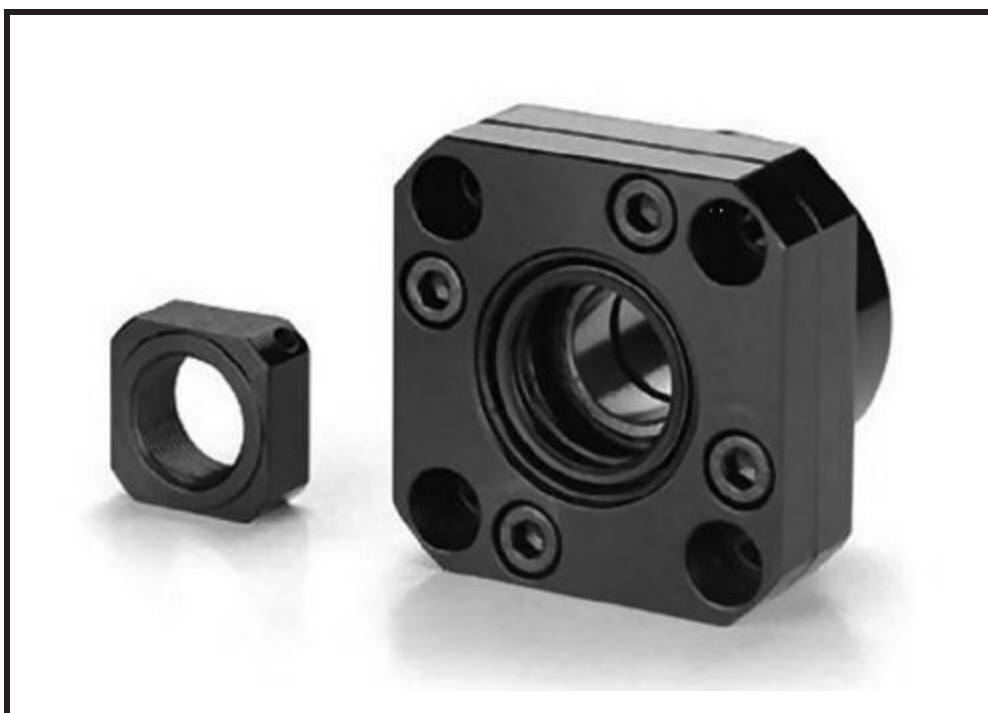
### BK (FIXED) PEDESTAL TYPE

With paired precision a/c bearings  
for drive end mounting



### BF (SIMPLE) PEDESTAL TYPE

With single row radial bearing for  
non drive end mounting



### FK (FIXED) FLANGE TYPE

With paired precision a/c bearings  
for drive end mounting



### FF (SIMPLE) FLANGE TYPE

With single row radial bearing for  
non drive end mounting

SCREW ENDS MACHINED TO SUIT THESE AND OTHER BEARING TYPES.

ALL TYPES OF MACHINED SCREW END FEATURES AVAILABLE.

**Please enquire for dimensional and performance information.**



## INDEX

1. Support Unit BK (fixed-side rectangular type)
2. Support Unit BF (supported-side rectangular type)
3. Support Unit FK (fixed-side round type)
4. Support Unit FF (supported-side rectangular type)
5. Type of support units and applicable ball screw diameters
6. Recommended shaft end shape (fixed-side) for BK support units types
7. Recommended shaft end shape (fixed-side) for support units types FK, EK and AK
8. Recommended shaft end shape (supported-side) for support units types FF, EF, BF and AF
9. Ballscrew support unit equivalent interchangeable for major manufacturer
10. Reference of axial load of fixed-side type support units

## USEAGE NOTES

- Do not disassemble the Support Unit of EK, BK, FK and AK.
- The Bearing of EK, BK, FK and AK are filled-upwith grease.
- When inserting a screwshaft into Support Unit, take care to prevent peeling the oil-seal lip.
- After inserting the fixed-side Support Unit, lock the lock nut using the set piece and hexagon socket-head setscrew.
- Customers special size orders are also available.



## SUPPORT UNIT BK (fixed-side rectangular type)

Order Cooling	Model No.	Surface Treatment	Applicable ballscrew accuracy grade	Bearing
BK10_C7	BK10	Black Oxide	C7	7000A P0
BK10_C5			C5	
BK10_C3			C3	7000A P5
BK10_C7N		Electroless Nickel Plating	C7	7000A P0
BK10_C5N			C5	
BK10_C3N			C3	7000A P5
BK12_C7	BK12	Black Oxide	C7	7001A P0
BK12_C5			C5	
BK12_C3			C3	7001A P5
BK12_C7N		Electroless Nickel Plating	C7	7001A P0
BK12_C5N			C5	
BK12_C3N			C3	7001A P5
BK15_C7	BK15	Black Oxide	C7	7002A P0
BK15_C5			C5	
BK15_C3			C3	7002A P5
BK15_C7N		Electroless Nickel Plating	C7	7002A P0
BK15_C5N			C5	
BK15_C3N			C3	7002A P5
BK17_C7	BK17	Black Oxide	C7	7203A P0
BK17_C5			C5	
BK17_C3			C3	7203A P5
BK17_C7N		Electroless Nickel Plating	C7	7203A P0
BK17_C5N			C5	
BK17_C3N			C3	7203A P5
BK20_C7	BK20	Black Oxide	C7	7004A P0
BK20_C5			C5	
BK20_C3			C3	7004A P5
BK20_C7N		Electroless Nickel Plating	C7	7004A P0
BK20_C5N			C5	
BK20_C3N			C3	7004A P5



Black Oxide  
(Application : General case)



Electroless Nickel Plating  
(Application : Clean room)

**NOTE**

1. (Bearings are no Preload for C7 type support units, and Max. Axial clearance is 0.018mm)
2. (Bearings make Preload for C5 type support units, and Axial clearance is 0mm)
3. (All of bearings use Japan's brand bearings)

## SUPPORT UNIT BK (fixed-side rectangular type)

Order Cooling	Model No.	Surface Treatment	Applicable ballscrew accuracy grade	Bearing	
BK25_C7	BK25	Black Oxide	C7	7205A P0	
BK25B_C7			C7	7205B P0	
BK25_C5			C5	7205A P0	
BK25B_C5			C5	7205B P0	
BK25_C3			C3	7205A P5	
BK25_C7N			Electroless Nickel Plating	C7	7205A P0
BK25B_C7N		C7		7205B P0	
BK25_C5N		C5		7205A P0	
BK25B_C5N		C5		7205B P0	
BK25_C3N		C3		7205A P5	
BK30_C7		BK30		Black Oxide	C7
BK30B_C7			C7		7206B P0
BK30_C5	C5		7206A P0		
BK30B_C5	C5		7206B P0		
BK30_C3	C3		7206A P5		
BK30_C7N	Electroless Nickel Plating		C7		7206A P0
BK30B_C7N			C7	7206B P0	
BK30_C5N			C5	7206A P0	
BK30B_C5N			C5	7206B P0	
BK30_C3N			C3	7206A P5	
BK35_C7			BK35	Black Oxide	C7
BK35_C5	C5				7207B P5
BK35_C3	C3	7207B P5			
BK35_C7N	Electroless Nickel Plating	C7		7207B P0	
BK35_C5N		C5		7207B P5	
BK35_C3N		C3		7207B P5	
BK40_C7	BK40	Black Oxide	C7	7208B P0	
BK40_C5			C5	7208B P5	
BK40_C3			C3	7208B P5	
BK40_C7N		Electroless Nickel Plating	C7	7208B P0	
BK40_C5N			C5	7208B P5	
BK40_C3N			C3	7208B P5	



Black Oxide  
(Application : General case)



Electroless Nickel Plating  
(Application : Clean room)

**NOTE**

1. (Bearings are no Preload for C7 type support units, and Max. Axial clearance is 0.018mm)
2. (Bearings make Preload for C5 type support units, and Axial clearance is 0mm)
3. (All of bearings use Japan's brand bearings)



## SUPPORT UNIT BF (Supported-side rectangular type)

Order Cooling	Model No.	Surface Treatment	Applicable ballscrew accuracy grade	Bearing
BF10_C7	BF10	Black Oxide	C7	608ZZ
BF10_C3			C3 C5	608ZZ
BF10_C7N		Electroless Nickel Plating	C7	608DD
BF10_C3N			C3 C5	608DD
BF12_C7	BF12	Black Oxide	C7	6000ZZ
BF12_C3			C3 C5	6000ZZ
BF12_C7N		Electroless Nickel Plating	C7	6000DDU
BF12_C3N			C3 C5	6000DDU
BF15_C7	BF15	Black Oxide	C7	6002ZZ
BF15_C3			C3 C5	6002ZZ
BF15_C7N		Electroless Nickel Plating	C7	6002DDU
BF15_C3N			C3 C5	6002DDU
BF17_C7	BF17	Black Oxide	C7	6203ZZ
BF17_C3			C3 C5	6203ZZ
BF17_C7N		Electroless Nickel Plating	C7	6203DDU
BF17_C3N			C3 C5	6203DDU
BF20_C7	BF20	Black Oxide	C7	6004ZZ
BF20_C3			C3 C5	6004ZZ
BF20_C7N		Electroless Nickel Plating	C7	6004DDU
BF20_C3N			C3 C5	6004DDU
BF25_C7	BF25	Black Oxide	C7	6205ZZ
BF25_C3			C3 C5	6205ZZ
BF25_C7N		Electroless Nickel Plating	C7	6205DDU
BF25_C3N			C3 C5	6205DDU
BF30_C7	BF30	Black Oxide	C7	6206ZZ
BF30_C3			C3 C5	6206ZZ
BF30_C7N		Electroless Nickel Plating	C7	6206DDU
BF30_C3N			C3 C5	6206DDU
BF35_C7	BF35	Black Oxide	C7	6207ZZ
BF35_C3			C3 C5	6207ZZ
BF35_C7N		Electroless Nickel Plating	C7	6207DDU
BF35_C3N			C3 C5	6207DDU
BF40_C7	BF40	Black Oxide	C7	6208ZZ
BF40_C3			C3 C5	6208ZZ
BF40_C7N		Electroless Nickel Plating	C7	6208DDU
BF40_C3N			C3 C5	6208DDU



Black Oxide  
(Application : General case)



Electroless Nickel Plating  
(Application : Clean room)

### NOTE

1. (Bearings are no Preload for C7 type support units, and Max. Axial clearance is 0.018mm)
2. (Bearings make Preload for C5 type support units, and Axial clearance is 0mm)
3. (All of bearings use Japan's brand bearings)



## SUPPORT UNIT FK (fixed-side round type)

Order Cooling	Model No.	Surface Treatment	Applicable ballscrew accuracy grade	Bearing
FK05_C7	FK05	Black Oxide	C7	605
FK05_C7N		Electroless Nickel Plating	C7	605
FK06_C7	FK06	Black Oxide	C7	606
FK06_C5			C5	706A P0
FK06_C3			C3	706A P5
FK06_C7N		Electroless Nickel Plating	C7	606
FK06_C5N			C5	706A P0
FK06_C3N			C3	706A P5
FK08_C7	FK08	Black Oxide	C7	608
FK08_C5			C5	708A P0
FK08_C3			C3	708A P5
FK08_C7N		Electroless Nickel Plating	C7	608
FK08_C5N			C5	708A P0
FK08_C3N			C3	708A P5
FK10_C7	FK10	Black Oxide	C7	7000A P0
FK10_C5			C5	7000A P0
FK10_C3			C3	7000A P5
FK10_C7N		Electroless Nickel Plating	C7	7000A P0
FK10_C5N			C5	7000A P0
FK10_C3N			C3	7000A P5
FK12_C7	FK12	Black Oxide	C7	7001A P0
FK12_C5			C5	7001A P0
FK12_C3			C3	7001A P5
FK12_C7N		Electroless Nickel Plating	C7	7001A P0
FK12_C5N			C5	7001A P0
FK12_C3N			C3	7001A P5
FK15_C7	FK15	Black Oxide	C7	7002A P0
FK15_C5			C5	7002A P0
FK15_C3			C3	7002A P5
FK15_C7N		Electroless Nickel Plating	C7	7002A P0
FK15_C5N			C5	7002A P0
FK15_C3N			C3	7002A P5



Black Oxide  
(Application : General case)



Electroless Nickel Plating  
(Application : Clean room)

**NOTE**

1. (Bearings are no Preload for C7 type support units, and Max. Axial clearance is 0.018mm)
2. (Bearings make Preload for C5 type support units, and Axial clearance is 0mm)
3. (All of bearings use Japan's brand bearings)



## SUPPORT UNIT FK (fixed-side round type)

Order Cooling	Model No.	Surface Treatment	Applicable ballscrew accuracy grade	Bearing	
FK17_C7	FK17	Black Oxide	C7	7203A P0	
FK17_C5			C5	7203A P0	
FK17_C3			C3	7203A P5	
FK17_C7N		Electroless Nickel Plating	C7	7203A P0	
FK17_C5N			C5	7203A P0	
FK17_C3N			C3	7203A P5	
FK20_C7	FK20	Black Oxide	C7	7204A P0	
FK20B_C7			C7	7204B P0	
FK20_C5			C5	7204A P0	
FK20B_C5			C5	7204B P0	
FK20_C3			C3	7204A P5	
FK20_C7N			Electroless Nickel Plating	C7	7204A P0
FK20B_C7N		C7		7204B P0	
FK20_C5N		C5		7204A P0	
FK20B_C5N		C5		7204B P0	
FK20_C3N		C3		7204A P5	
FK25_C7		FK25		Black Oxide	C7
FK25B_C7			C7		7205B P0
FK25_C5	C5		7205A P0		
FK25B_C5	C5		7205B P0		
FK25_C3	C3		7205A P5		
FK25_C7N	Electroless Nickel Plating		C7		7205A P0
FK25B_C7N			C7	7205B P0	
FK25_C5N			C5	7205A P0	
FK25B_C5N			C5	7205B P0	
FK25_C3N			C3	7205A P5	
FK30_C7			FK30	Black Oxide	C7
FK30B_C7	C7				7206B P0
FK30_C5	C5	7206A P0			
FK30B_C5	C5	7206B P0			
FK30_C3	C3	7206A P5			
FK30_C7N	Electroless Nickel Plating	C7			7206A P0
FK30B_C7N		C7		7206B P0	
FK30_C5N		C5		7206A P0	
FK30B_C5N		C5		7206B P0	
FK30_C3N		C3		7206A P5	



Black Oxide  
(Application : General case)



Electroless Nickel Plating  
(Application : Clean room)

**NOTE**

1. (Bearings are no Preload for C7 type support units, and Max. Axial clearance is 0.018mm)
2. (Bearings make Preload for C5 type support units, and Axial clearance is 0mm)
3. (All of bearings use Japan's brand bearings)



## SUPPORT UNIT FF (Supported-side round type)

Order Cooling	Model No.	Surface Treatment	Applicable ballscrew accuracy grade	Bearing
FF06_C7	FF06	Black Oxide	C7	606ZZ
FF06_C3			C3 C5	606ZZ
FF06_C7N		Electroless Nickel Plating	C7	606VV
FF06_C3N			C3 C5	606VV
FF10_C7	FF10	Black Oxide	C7	608ZZ
FF10_C3			C3 C5	608ZZ
FF10_C7N		Electroless Nickel Plating	C7	608DD
FF10_C3N			C3 C5	608DD
FF12_C7	FF12	Black Oxide	C7	6000ZZ
FF12_C3			C3 C5	6000ZZ
FF12_C7N		Electroless Nickel Plating	C7	6000DDU
FF12_C3N			C3 C5	6000DDU
FF15_C7	FF15	Black Oxide	C7	6002ZZ
FF15_C3			C3 C5	6002ZZ
FF15_C7N		Electroless Nickel Plating	C7	6002DDU
FF15_C3N			C3 C5	6002DDU
FF17_C7	FF17	Black Oxide	C7	6203ZZ
FF17_C3			C3 C5	6203ZZ
FF17_C7N		Electroless Nickel Plating	C7	6203DDU
FF17_C3N			C3 C5	6203DDU
FF20_C7	FF20	Black Oxide	C7	6204ZZ
FF20_C3			C3 C5	6204ZZ
FF20_C7N		Electroless Nickel Plating	C7	6204DDU
FF20_C3N			C3 C5	6204DDU
FF25_C7	FF25	Black Oxide	C7	6205ZZ
FF25_C3			C3 C5	6205ZZ
FF25_C7N		Electroless Nickel Plating	C7	6205DDU
FF25_C3N			C3 C5	6205DDU
FF30_C7	FF30	Black Oxide	C7	6206ZZ
FF30_C3			C3 C5	6206ZZ
FF30_C7N		Electroless Nickel Plating	C7	6206DDU
FF30_C3N			C3 C5	6206DDU



Black Oxide  
(Application : General case)



Electroless Nickel Plating  
(Application : Clean room)

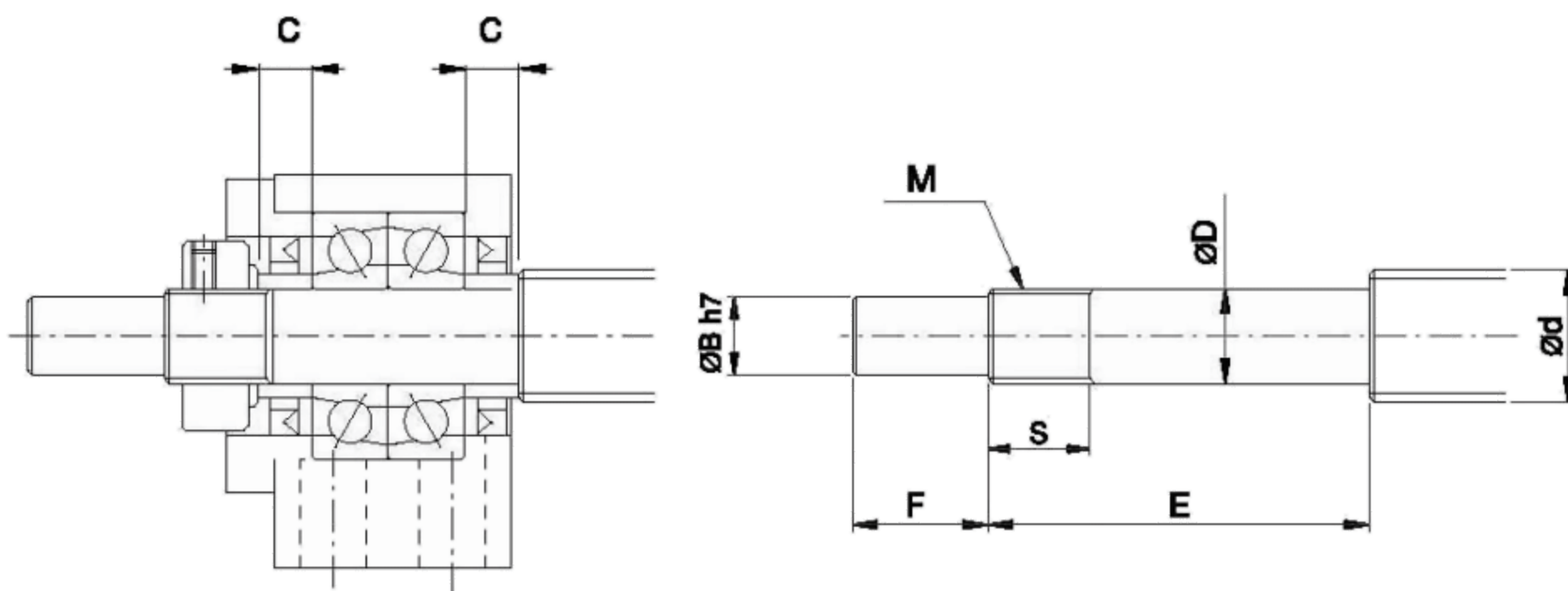
**NOTE**

1. (Bearings are no Preload for C7 type support units, and Max. Axial clearance is 0.018mm)
2. (Bearings make Preload for C5 type support units, and Axial clearance is 0mm)
3. (All of bearings use Japan's brand bearings)

## TYPE OF SUPPORT UNITS AND APPLICABLE BALL SCREW DIAMETERS

(mm) Fixed-side support unit ID (mm)	Fixed-side support unit applicable model	Supported-side support unit ID (mm)	Supported-side support unit applicable model	Applicable Ball Screw OD (mm)
5	EK05	-	-	ø6
	FK05			
6	EK06	6	EF06	ø8
	FK06		FF06	
8	EK08	6	EF08	ø10
	FK08		FF06	
10	EK10	8	EF10	ø10, ø12, ø14
	FK10		FF10	
	BK10		BF10	
	AK10		AF10	
12	EK12	10	EF12	ø14, ø15, ø16
	FK12		FF12	
	BK12		BF12	
	AK12		AF12	
15	EK15	15	EF15	ø20
	FK15		FF15	
	BK15		BF15	
	AK15		AF15	
17	BK17	17	BF17	ø20, ø25
	FK17		FF17	
20	EK20	20	EF20	ø25, ø28
	FK20		FF20	
	BK20		BF20	
	AK20		AF20	
25	FK25	25	FF25	ø32, ø36
	BK25		BF25	
30	FK30	30	FF30	ø40, ø45
	BK30		BF30	
35	BK35	35	BF35	ø45
40	BK40	40	BF40	ø50

# RECOMMENDED SHAFT END SHAPE (Fixed-side) FOR BK SUPPORT UNITS TYPES



**Type BK**

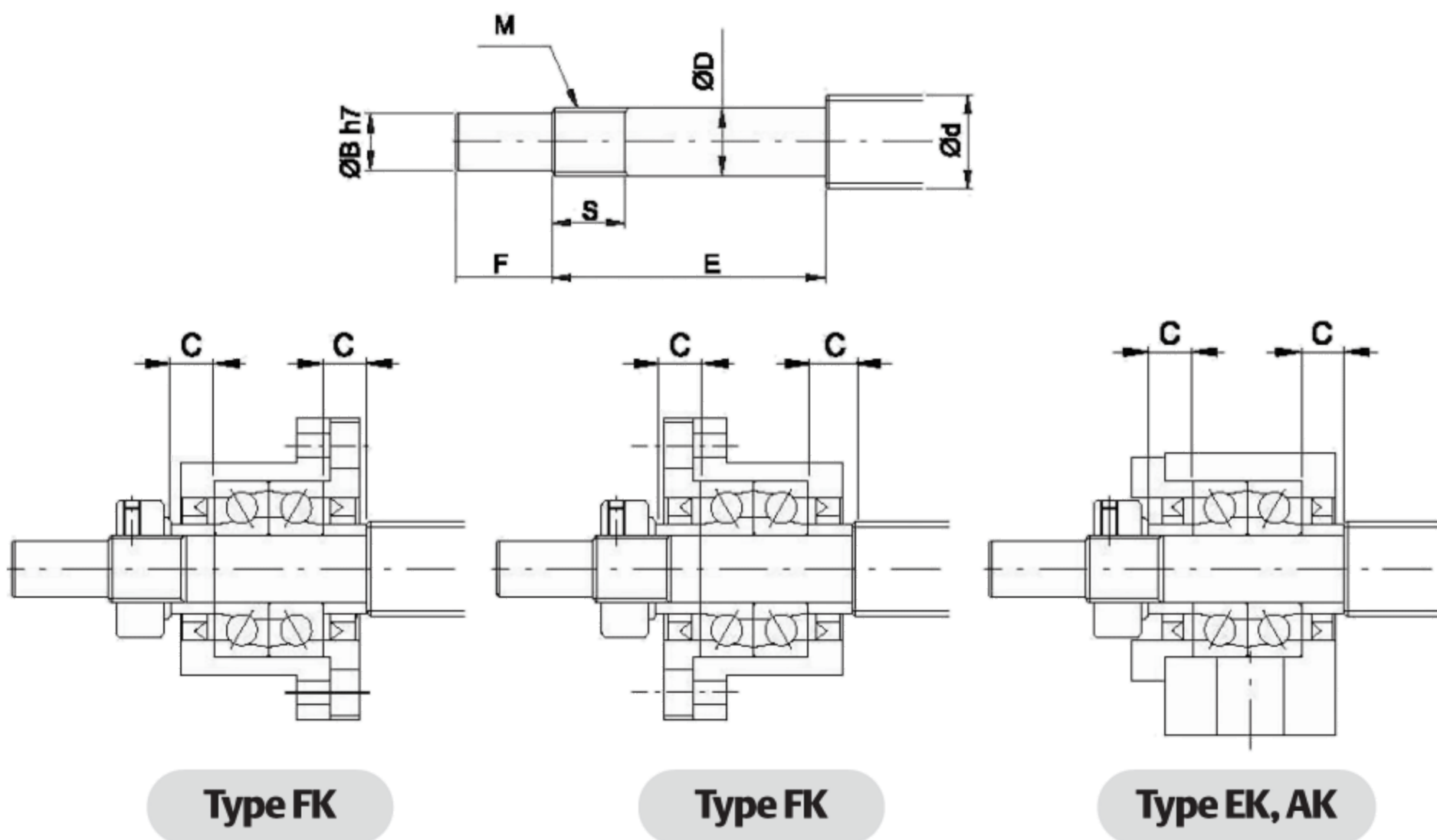
Units : mm

Support unit model No.	Ballscrew shaft OD	Shaft support portion OD			Metric screw thread		Metric screw thread			
Type BK	d	D			B	E	F	M	S	C
BK10	12/14/15	10	-0.005	-0.012	8	36	15	M10x1	16	5.5
BK12	14/15/16	12	-0.005	-0.012	10	36	15	M12x1	14	5.5
BK15	18/20	15	-0.005	-0.014	12	40	20	M15x1	12	6
BK17	20/25	17	-0.005	-0.014	15	53	23	M17x1	17	7
BK20	25/28	20	-0.005	-0.014	17	53	25	M20x1	15	8
BK25	32/36	25	-0.005	-0.014	20	65	30	M25x1.5	18	9
BK30	36/40	30	-0.005	-0.015	25	72	38	M30x1.5	25	9
BK35	45	35	-0.005	-0.015	30	81	45	M35x1.5	28	12
BK40	50	40	-0.005	-0.015	35	93	50	M40x1.5	35	15





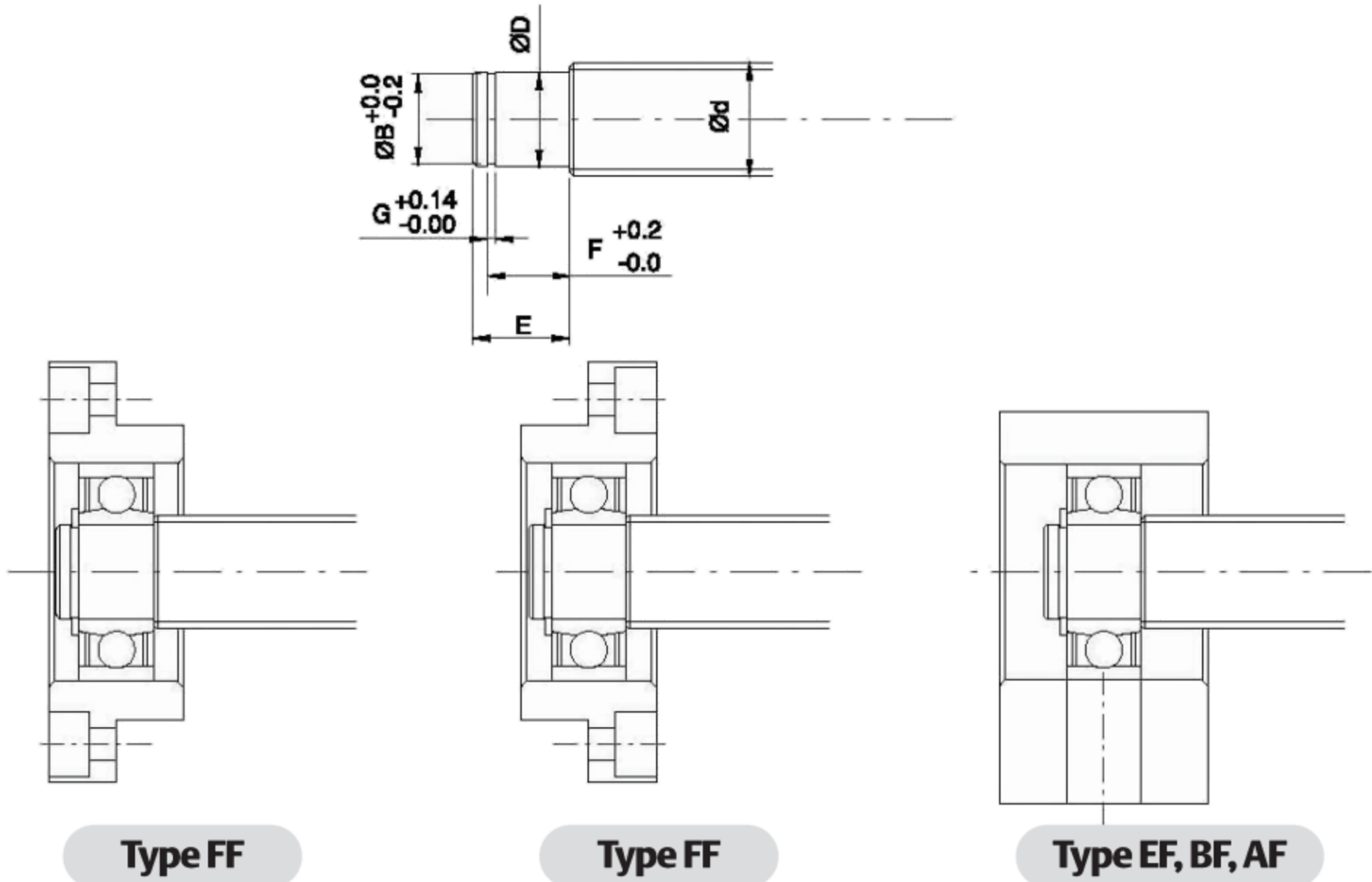
# RECOMMENDED SHAFT END SHAPE (Fixed-side) FOR SUPPORT UNITS TYPES FK, EK AND AK



Units : mm

Support unit model No.			Ballscrew shaft OD	Shaft support portion OD			Metric screw thread		Metric screw thread		
Type FK	Type EK	Type AK	d	D			M	S	C		
				B	E	F					
FK05	EK05	-	8	5	-0.005 -0.012	4	25	6	M5x0.5	7	3.5
FK06	EK06	-	8	6	-0.005 -0.012	4	28	8	M6x0.75	8	5
FK08	EK08	-	10/12	8	-0.005 -0.012	6	32	9	M8x1	10	5.5
FK10	EK10	AK10	12/14/15	10	-0.005 -0.012	8	36	15	M10x1	11	5.5
FK12	EK12	AK12	14/15/16	12	-0.005 -0.012	10	36	15	M12x1	11	5.5
FK15	EK15	AK15	18/20	15	-0.005 -0.014	12	47	20	M15x1	13	10
FK17	-	-	20/25	17	-0.005 -0.014	15	58	23	M17x1	15	10
FK20	EK20	AK20	25/28/30	20	-0.005 -0.014	17	62	25	M20x1	17	11
FK25	-	-	30/32/36	25	-0.005 -0.014	20	76	30	M25x1.5	20	15
FK30	-	-	36/40	30	-0.005 -0.015	25	72	38	M30x1.5	25	9

# RECOMMENDED SHAFT END SHAPE (Supported-side) FOR SUPPORT UNITS TYPES FF, EF, BF AND AF



Units : mm

Support unit model No.				Ballscrew shaft OD	Shaft support portion OD		E	B	F	G
Type FF	Type EF	Type BF	Type AF	d	D					
FF06	EF06	-	-	8	6	-0.005 -0.012	9	5.7	6.8	0.8
-	EF08	-	-	10	6	-0.005 -0.012	9	5.7	6.8	0.8
FF10	EF10	BF10	AF10	12/14/15	8	-0.005 -0.012	10	7.6	7.9	0.9
FF12	EF12	BF12	AF12	14/15/16	10	-0.005 -0.012	11	9.6	9.15	1.15
FF15	EF15	BF15	AF15	18/20	15	-0.005 -0.014	13	14.3	10.15	1.15
FF17	-	BF17	-	20/25	17	-0.005 -0.014	16	16.2	13.15	1.15
FF20	EF20	(BF20) Note	AF20	25/28/30	20	-0.005 -0.014	19 (16)	19	15.35 (13.35)	1.35
FF25	-	BF25	-	30/32/36	25	-0.005 -0.014	20	23.9	16.35	1.35
FF30	-	BF30	-	36/40	30	-0.005 -0.015	21	28.6	17.75	1.75
-	-	BF35	-	40/45	35	-0.005 -0.015	22	33	18.75	1.75
-	-	BF40	-	50	40	-0.005 -0.015	23	38	19.75	1.95

# BALLSCREW SUPPORT UNIT EQUIVALENT INTERCHANGEABLE FOR MAJOR MANUFACTURER

<b>SYK &amp; THK</b>	<b>SYK &amp; THK</b>	<b>KURODA</b>	<b>NSK</b>	<b>SYK &amp; THK</b>	<b>KURODA</b>	<b>NSK</b>
BK10	EK05	-	-	FK05	-	-
BK12	EK06	BUK-6	WBK06-01A	FK06	-	WBK06-11
BK15	EK08	BUK-8F	WBK08-01A	FK08	BUM-8	WBK08-11
BK17	EK10	-	-	FK10	BUM-10	WBK10-11
BK20	EK12	-	-	FK12	BUM-12	WBK12-11
BK25	EK15	-	-	FK15	BUM-15	WBK15-11
BK30	EK20	-	-	FK17	-	-
BK35				FK20	BUM-20	WBK20-11
BK40	EF06	-	-	FK25	BUM-25	WBK25-11
	EF08	BUK-6S	WBK08S-01	FK30	-	-
BF10	EF10	-	-			
BF12	EF12	-	-	FF06	-	-
BF15	EF15	-	-	FF10	-	-
BF17	EF20	-	-	FF12	-	-
BF20				FF15	-	-
BF25	<b>SYK &amp; THK</b>	<b>KURODA</b>	<b>NSK</b>	FF17	-	-
BF30	AK10	BUK-10F	WBK10-01A	FF20	-	-
BF35	AK12	BUK-12F	WBK12-01A	FF25	-	-
BF40	AK15	BUK-15F	WBK15-01A	FF30	-	-
	BK17	-	WBK17-01A			
	AK20	BUK-20F	WBK20-01A			
	-	BUK-25F	WBK25-01A			
	AF10	BUK-8S	WBK10S-01			
	AF12	BUK-10S	WBK12S-01			
	AF15	BUK-15S	WBK15S-01			
	BF17	-	WBK17S-01			
	AF20	BUK-20S	WBK20S-01			
	-	BUK-25S	WBK25S-01			



## REFERENCE OF AXIAL LOAD OF FIXED-SIDE TYPE SUPPORT UNITS

Model No.		Bearing	Static Load (Kgf)	Allowable Axial Load (Kgf)	Limiting RPM (RPM)
FK06	EK06	706	106	53	
FK08	EK08	708	148	74	
BK10	AK10	7000A	266	133	16800
FK10	EK10				
BK12	AK12	7001A	305	153	15400
FK12	EK12				
BK15	AK15	7002A	350	175	13300
FK15	EK15				
BK17	FK17	7203A	610	305	11200
		7203B	565	363	7700
BK20		7004A	670	335	10500
	AK20	7204A	845	423	9100
FK20	EK20	7204B	780	501	6650
BK25	FK25	7205A	1050	525	8400
		7205B	960	617	5950
BK30	FK30	7206A	1510	755	7000
		7206B	1380	887	4970
BK35		7207B	1870	1202	4200
BK40		7208B	2340	1504	3710



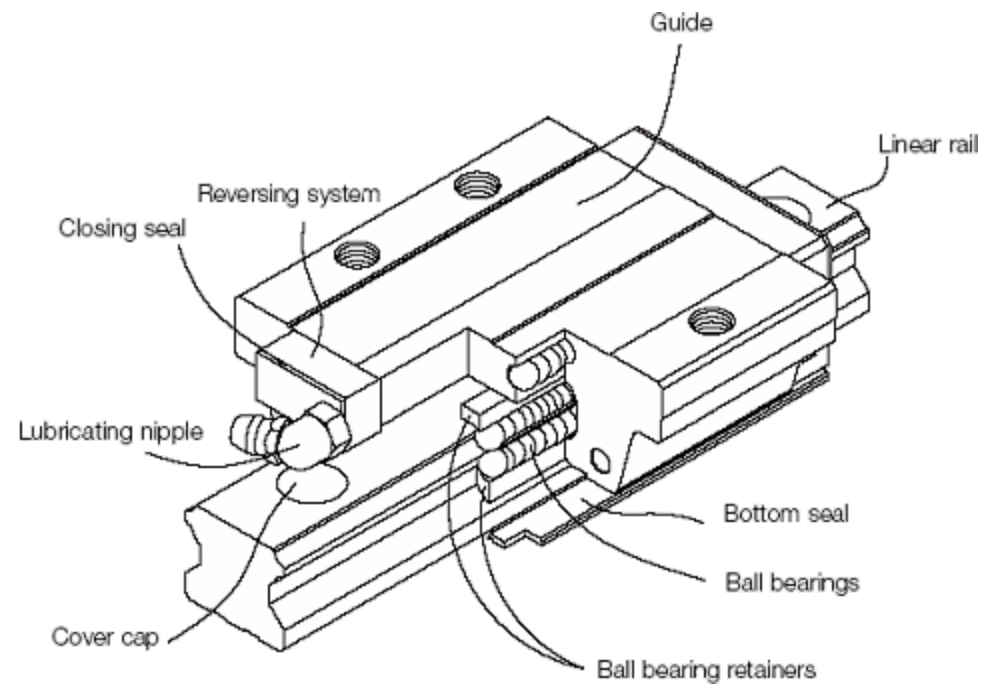
# LINEAR GUIDES AND RAILS

At Absac, we concentrate on the flanged mount and square mount versions of linear guides. These items are in stock and have proven to be the best linear guide solution when teamed up with any of our ball and lead screw products. Dimensional data for these models can be accessed by the buttons above but we do encourage you to contact our knowledgeable sales team who can help you with the right selection..

By primarily using a four ball path design, within the slide, allows the guides to accept up to 30% more load and up to 30% stiffer than similar products in the market. An added bonus is that the ball bearings are retained within the housing so that should the guides come off the end of the rail, you will not be faced with all the ball bearings falling out. From experience, we know that this advantage can also significantly aid in the final assembly.

Typical Guide applications include:

- Grinders
- NC Lathes
- Machining centres
- Precision milling
- Automation technology
- Transportation technology
- Measuring applications
- Machines that require a high level of positional accuracy
- Ideal for use with our Transport ball screw ranges



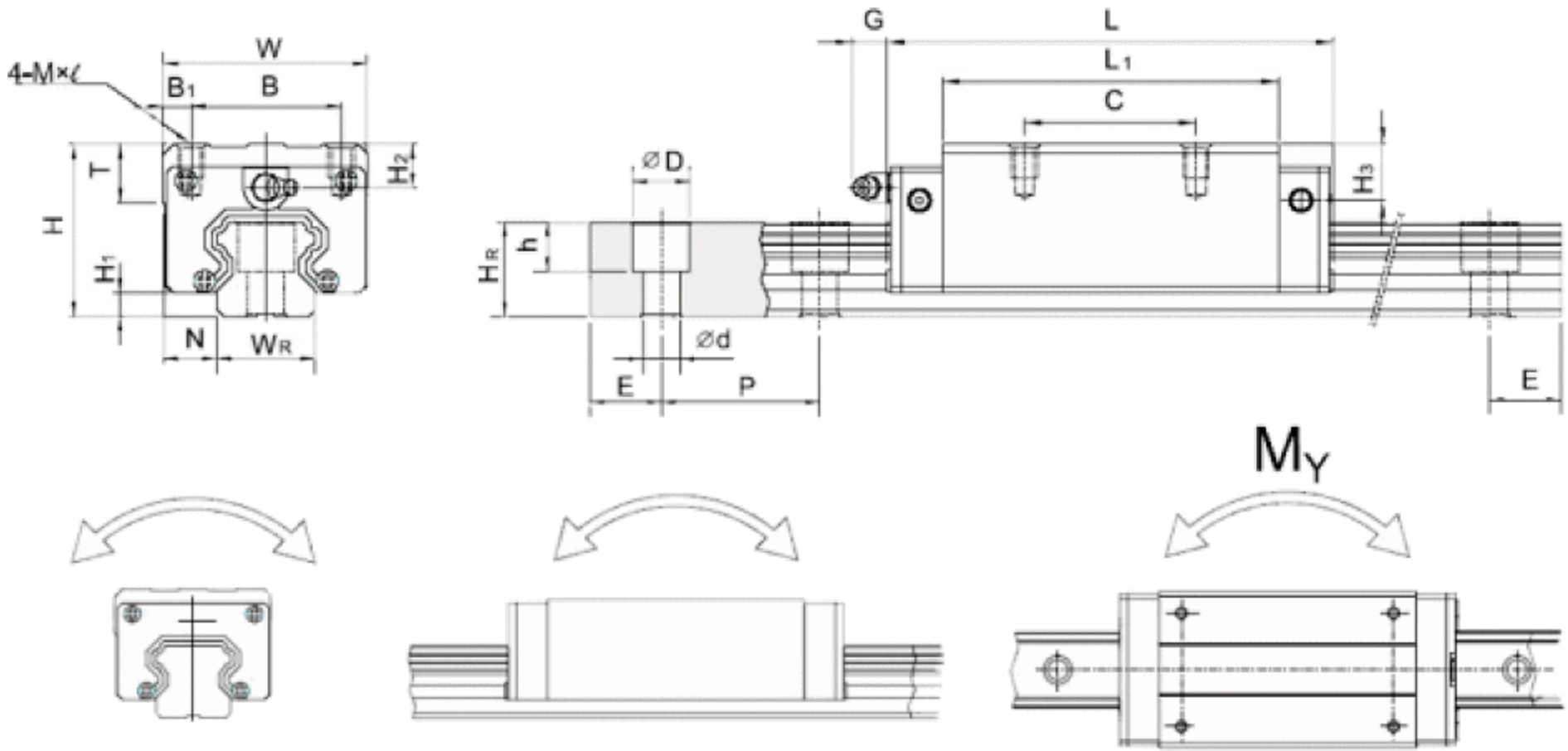
We also offer the advantage of supplying lightly pre-loaded heavy duty or extra heavy duty guide models to suit individual applications. When compared to other slide mechanisms such as dovetail slides, efficiency is far greater. The linear guides can carry loads in both horizontal and vertical directions. Please also note that the rails are pre drilled for ease of fitting and can be delivered cut to your desired length at no extra cost. Please note that all guides come with dust proofing seals at each end.

Available rail widths from 15mm to 65mm cater from the lightest to the heaviest load. If your application requires an accurate support and guide, our ex-stock range of linear rails may be the answer to your design challenges. Rails can be supplied from 100mm to 4000mm in length and in some cases can be attached to the application from beneath.

## Typical Performance Data

HG Series 25, 30, 35	Normal	High	Precision	Super Precision	Ultra Precision
<b>Accuracy Class</b>	+/- 0.1mm	+/- 0.04mm	+/- 0	+/- 0	+/- 0
<b>Height Tolerance H1</b>	+/- 0.1mm	+/- 0.04mm	+ 0 / - 0.04mm	+ 0 / 0.02mm	+ 0 / 0.01mm
<b>Width Tolerance N1</b>	+/- 0.1mm	+/- 0.04mm	+ 0 / - 0.04mm	+ 0 / 0.02mm	+ 0 / 0.01mm

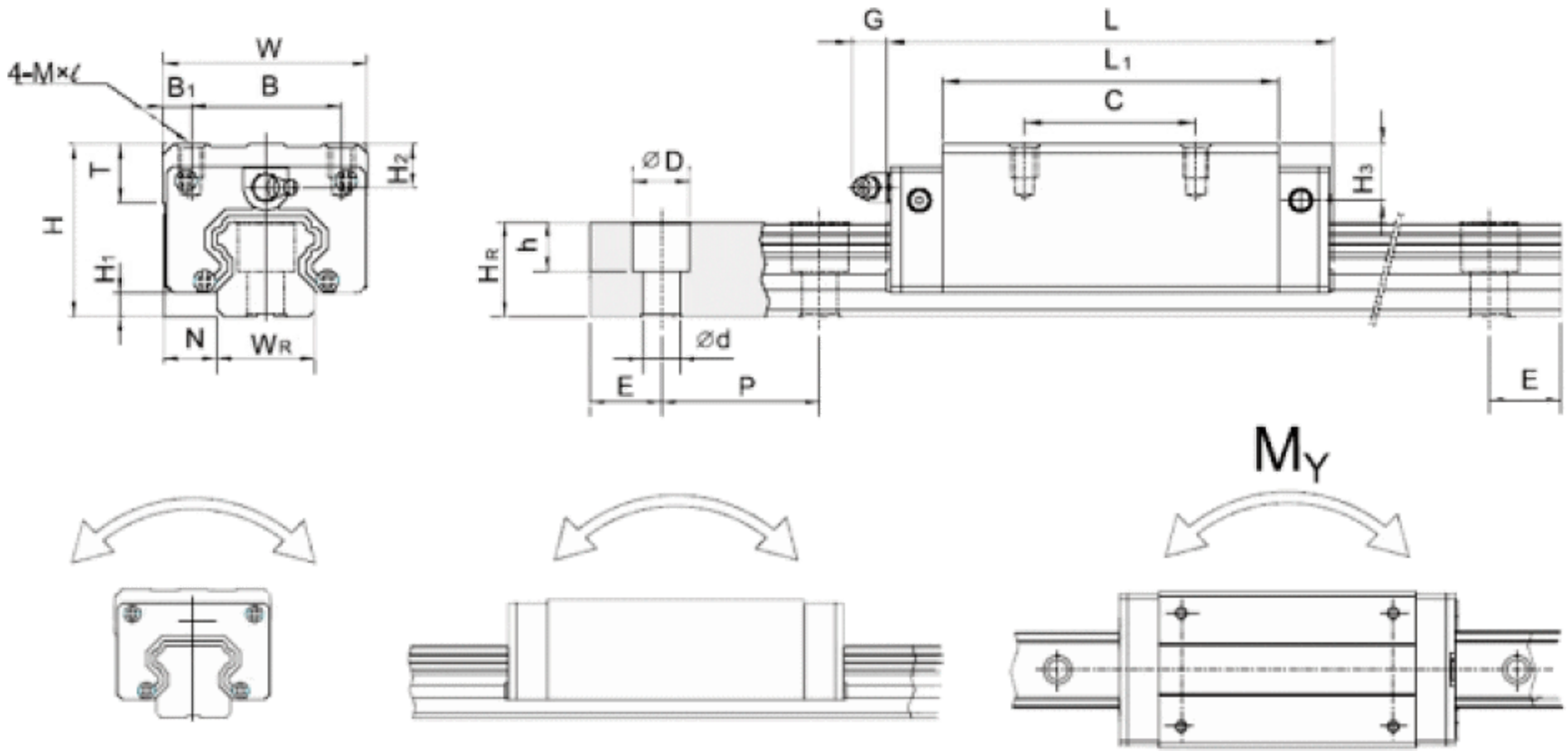
# LINEAR GUIDES AND RAILS - DIMENSIONS



Model No.	Dimensions of Assembly (mm)			Dimensions of Block (mm)										Dimensions of Rail (mm)						Mounting Bolt for Rail (mm)	Basic Dynamic Load Rating C (kN)	Basic Static Load Rating CO (kN)	Static Rated Moment			Weight					
	H	H <sub>1</sub>	N	W	B	B <sub>1</sub>	C	L <sub>1</sub>	L	K <sub>1</sub>	K <sub>2</sub>	G	MxL	T	H <sub>2</sub>	H <sub>3</sub>	W <sub>R</sub>	H <sub>R</sub>	D				h	d	P	E	M <sub>R</sub> (kN-m)	M <sub>P</sub> (kN-m)	M <sub>Y</sub> (kN-m)	Block (kg)	Rail (kg/m)
HGH 15CA	24	4.3	9.5	34	26	4	26	39.4	61.4	10	4.85	5.3	M4x5	6	7.95	7.7	15	15	7.5	5.3	4.5	60	20	M4x16	11.38	16.97	0.12	0.10	0.10	0.18	1.45
HGH 20CA	30	4.6	12	44	32	6	36	50.5	77.5	12.25	6	12	M5x6	8	6	7	20	17.5	9.5	8.5	6	60	20	M5x16	17.75	27.76	0.27	0.20	0.20	0.30	2.21
HGH 20HA							50	65.2	92.2	12.6															21.18	35.90	0.35	0.35	0.35		
HGH 25CA	40	5.5	12.5	48	35	6.5	35	58	84	16.8	6	12	M6x8	8	10	13	23	22	11	9	7	60	20	M6x20	26.48	36.49	0.42	0.33	0.33	0.51	3.21
HGH 25HA							50	78.6	104.6	19.6															32.75	49.44	0.56	0.57	0.57		
HGH 30CA	45	6	16	60	40	10	40	70	97.4	20.25	6	12	M8x10	8.5	9.5	13.8	28	26	14	12	9	80	20	M8x25	38.74	52.19	0.66	0.53	0.53	0.88	4.47
HGH 30HA							60	93	120.4	21.75															47.27	69.16	0.88	0.92	0.92		
HGH 35CA	55	7.5	18	70	50	10	50	80	112.4	20.6	7	12	M8x12	10.2	16	19.6	34	29	14	12	9	80	20	M8x25	49.52	69.16	1.16	0.81	0.81	1.45	6.30
HGH 35HA							72	105.8	138.2	22.5															60.21	91.63	1.54	1.40	1.40		
HGH 45CA	70	9.5	20.5	86	60	13	60	97	139.4	23	10	12.9	M10x17	16	18.5	30.5	45	38	20	17	14	105	22.5	M12x35	77.57	102.71	1.98	1.55	1.55	2.73	10.41
HGH 45HA							80	128.8	171.2	28.9															94.54	136.46	2.63	2.68	2.68		
HGH 55CA	80	13	23.5	100	75	12.5	75	117.7	166.7	27.35	11	12.9	M12x18	17.5	22	29	53	44	23	20	16	120	30	M14x45	114.44	148.33	3.69	2.64	2.64	4.17	15.08
HGH 55HA							95	155.8	204.8	36.4															139.35	196.20	4.88	4.57	4.57		
HGH 65CA	90	15	31.5	126	76	25	70	144.2	200.2	43.1	14	12.9	M16x20	25	15	15	63	53	26	22	18	150	35	M16x50	163.63	215.33	6.65	4.27	4.27	7.00	21.18
HGH 65HA							120	203.6	259.6	47.8															208.36	303.13	9.38	7.38	7.38		

Note: 1kgf = 9.81N

# LINEAR GUIDES AND RAILS - DIMENSIONS



Model No.	Dimensions of Assembly (mm)			Dimensions of Block (mm)										Dimensions of Rail (mm)										Mounting Bolt for Rail (mm)	Basic Dynamic Load Rating C (kN)	Basic Static Load Rating CO (kN)	Static Rated Moment			Weight	
	H	H <sub>1</sub>	N	W	B	B <sub>1</sub>	C	L <sub>1</sub>	L	K <sub>1</sub>	K <sub>2</sub>	G	MxL	T	H <sub>2</sub>	H <sub>3</sub>	W <sub>R</sub>	H <sub>R</sub>	D	h	d	P	E				M <sub>R</sub> (kN-m)	M <sub>P</sub> (kN-m)	M <sub>Y</sub> (kN-m)	Block (kg)	Rail (kg/m)
HGH 15CA	24	4.3	16	47	38	4.5	30	39.4	61.4	8	4.85	5.3	M5	6	7.95	7.7	15	15	7.5	5.3	4.5	60	20	M4x16	11.38	16.97	0.12	0.10	0.10	0.17	1.45
HGH 20CA	30	4.6	21.5	63	53	5	40	50.5	77.5	10.25	6	12	M6	8	6	7	20	17.5	9.5	8.5	6	60	20	M5x16	17.75	27.76	0.27	0.20	0.20	0.40	2.21
HGH 20HA								65.2	92.2	17.6															21.18	35.90	0.35	0.35	0.35	0.52	
HGH 25CA	36	5.5	23.5	70	57	6.5	45	58	84	11.8	6	12	M8	8	6	9	23	22	11	9	7	60	20	M6x20	26.48	36.49	0.42	0.33	0.33	0.59	3.21
HGH 25HA								78.6	104.6	22.1															32.75	49.44	0.56	0.57	0.57	0.80	
HGH 30CA	42	6	31	90	72	9	52	70	97.4	14.25	6	12	M10	8.5	6.5	10.8	28	26	14	12	9	80	20	M8x25	38.74	52.19	0.66	0.53	0.53	1.09	4.47
HGH 30HA								93	120.4	25.75															47.27	69.16	0.88	0.92	0.92	1.44	
HGH 35CA	48	7.5	33	100	82	9	62	80	112.4	14.6	7	12	M10	10.1	9	12.6	34	29	14	12	9	80	20	M8x25	49.52	69.16	1.16	0.81	0.81	1.56	6.3
HGH 35HA								105.8	138.2	27.5															60.21	91.63	1.54	1.40	1.40	2.06	
HGH 45CA	60	9.5	37.5	120	100	10	80	97	139.4	13	10	12.9	M12	15.1	8.5	20.5	45	38	20	17	14	105	22.5	M12x35	77.57	102.71	1.98	1.55	1.55	2.79	10.41
HGH 45HA								128.8	171.2	28.9															94.54	136.46	2.63	2.68	2.68	3.69	
HGH 55CA	70	13	43.5	140	116	12	95	117.7	166.7	17.35	11	12.9	M14	17.5	12	19	53	44	23	20	16	120	30	M14x45	114.44	148.33	3.69	2.64	2.64	4.52	15.08
HGH 55HA								155.8	204.8	36.4															139.35	196.20	4.88	4.57	4.57	5.96	
HGH 65CA	90	15	53.5	170	142	14	110	144.2	200.2	23.1	14	12.9	M16	25	15	15	63	53	26	22	18	150	35	M16x50	163.63	215.33	6.65	4.27	4.27	9.17	21.18
HGH 65HA								203.6	259.6	52.8															208.36	303.13	9.38	7.38	7.38	12.89	

Note: 1kgf = 9.81N



# BLUE BRONZE NUT GREASE

## LONG LIFE MULTI-PURPOSE GREASE

Appearance	Smooth, blue grease
Worked penetration	290-320
Base type	Severely refined mineral oil
Thickener	Multi-complex soap technology
Temperature range	-30°C to 150°C
Base fluid viscosity at 40°C	180 cSt
Base fluid viscosity at 100°C	17 cSt
Shell 4 ball (IP 239)(ASTMD2596) Weld load	>800 kg
Mean hertz load	120 kg
Timken 'OK' Load	60lb
(IP 326)(ASTMD2509) Copper Corrosion test	1 a
(IP 112)(ASTMD130) Corrosion test - Emcor (IP 220)	0:0
Water Washout Test (IP 215)(ASTMD1264)	2%

## STORAGE

Storage temperature should be controlled to between 1 and 40°C.  
Designed for the effective lubrication and protection of all types of Abszac bronze nuts.

## FEATURES

Temperature range -30°C to 150°C.  
Revolutionary multi-complex soap technology.  
Greatly extended lubrication intervals typically 3 times longer than conventional soap thickened greases.  
Good corrosion resistance.  
Blue in colour for high visibility.

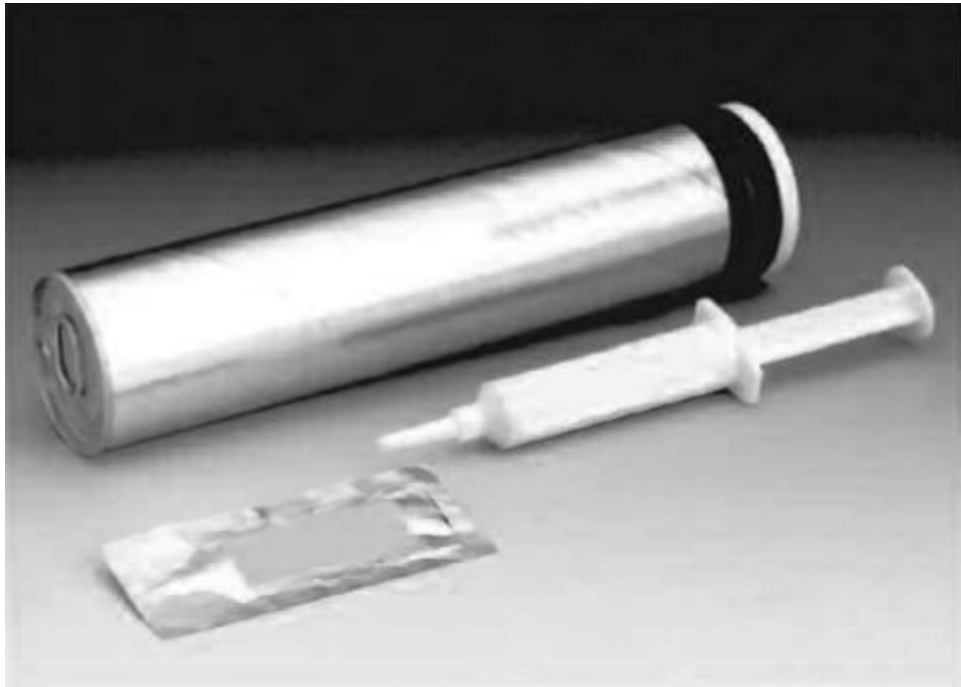
## DIRECTIONS FOR USE

Apply manually.  
Compatible with other soap thickened greases.  
However, for best results, the previous lubricant should be removed prior to application.

**Please call us for a quotation.**



# Lubrication



## Overview

We offer a full complement of lubricants including our low vapour pressure greases for clean room and vacuum application. The TriGel line is specifically formulated to offer a lubrication solution for a wide range of linear motion applications. Choose the appropriate gel for your requirements and get the utmost performance out of your Danaher Motion products.

## Lubrication Selection Chart for Ball & Lead Screw Assemblies

	TriGel-300S	TriGel-450R	TriGel-600SM	TriGel-1200SC	TriGel-1800RC
Application	Lead Screws, Supernuts, Plastic Nuts	Ball Screws, Linear Bearings	Bronze Nuts	Lead Screws, Plastic Nuts, Clean Room, High Vacuum	Ball Screws, Linear Bearings, Bronze Nuts, Clean Room, Vacuum
Maximum Temperature	200 °C (392 °F)	125 °C (257 °F)	125 °C (257 °F)	250 °C (482 °F)	125 °C (257 °F)
Mechanism	Plastic on Plastic or Metal	Metal on Metal	Metal on Metal Bronze on Steel	Plastic on Metal Combination	Metal on Metal
Mechanical Load	Light	Moderate	Moderate to Heavy	Light to Moderate	Moderate
Very Low Torque Variation over Temperature	Yes	-	-	Yes	-
Very Low Starting Torque	Yes	Yes	-	Yes	Yes
Compatibility with Reactive Chemicals	Not recommended w/o OEM testing	Not recommended w/o OEM testing	Not recommended w/o OEM testing	Usually OK	Not recommended w/o OEM testing
Compatibility with Plastics and Elastomers	May cause silicon rubber seals to swell	May cause EPDM seals to swell	May cause EPDM seals to swell	Usually OK	May cause EPDM seals to swell
Clean Room Use	Not recommended	Not recommended	Not recommended	Usually OK	Usually OK
High Vacuum Use	Not recommended	Not recommended	Not recommended	Usually OK	Usually OK
Vapor Pressure (25°C)	Varies with lot	Varies with lot	Varies with lot	1 × 10 <sup>-6</sup> Pa	0,5 × 10 <sup>-6</sup> Pa
Packaging 10-cc-Syringe 0,45-kg-Tube	<b>TriGel-300S</b> <b>TriGel-300S-1</b>	7832867/ <b>TriGel-450R</b> 7832868/ <b>TriGel-450R-1</b>	0,1-kg-Tube/ <b>TriGel-600SM</b>	<b>TriGel-1200SC</b> n.z.	7832869/ <b>TriGel-1800RC</b>

\* Maximum temperature for continuous exposure. Higher surge temperatures may be permissible but should be validated in the actual end use by the OEM.  
Low temperature limits are -15°C or lower. Consult Danaher Motion for specifics.



# PTFE Dry Film Lubricant

Formulated for plastic on metal lead screw applications



PTFE coating is a dry film which creates a lubrication barrier between a metal substrate and a polymer bushing or lead nut. It can in some cases eliminate the need for an additional gel type lubricant which must be reapplied. It is well suited for use with our SuperNut line of plastic nuts and stainless steel lead screws. Lubrication maintenance intervals can be eliminated and the coating does not attract particulate like a gel lubricant. Gel lubricants can provide lower friction coefficients than dry film lubricants but must be maintained to prevent performance degradation. PTFE coating provides an attractive and clean\* alternative to gels and oils.

## Typical Properties

<b>Type:</b>	Bonded Solid Film Lubricant
<b>Purpose:</b>	Increased Lubricity, Decreased Friction & Wear
<b>Appearance:</b>	Black Coating
<b>Thickness:</b>	Approx. 13 – 25 micron
<b>Active Lubricant:</b>	Polytetrafluroethylene
<b>Friction Coefficient:</b>	0,06 to 0,12
<b>Temperature Operating Range:</b>	-250° to 290° C
<b>Resistance to Acids:</b>	Excellent
<b>Resistance to Bases:</b>	Very Good
<b>Resistance to Solvents:</b>	Excellent

\* Some particulate will be generated as a result of wear between nut and screw. Screw may begin to show signs of "polishing" over time. This does not necessarily indicate failure.



# LEAD SCREW APPLICATION DATA FORM (PART 1)

Name \_\_\_\_\_ Company \_\_\_\_\_

Address \_\_\_\_\_

Tel \_\_\_\_\_ Fax \_\_\_\_\_ E-Mail \_\_\_\_\_

## OPERATING LOADS

Normal operating load \_\_\_\_\_ Kilo/lbs

Load is in tension  Load is in compression  Load is in both

Load is constant  Load is variable

*(If load is variable submit load curve diagram.)*

Maximum static load in tension \_\_\_\_\_ Kilo/lbs

Maximum static load in compression \_\_\_\_\_ Kilo/lbs

Sideloads if any \_\_\_\_\_ Overturning moment (cantilever loads) \_\_\_\_\_

Describe \_\_\_\_\_

## DUTY CYCLE

Continuous operation  Intermittent operation  Variable

Time under dynamic load \_\_\_\_\_ Time at rest \_\_\_\_\_

Describe operation \_\_\_\_\_

## METHOD OF OPERATION

Screw will be driven  Nut will be driven

The force will be applied to the nut to rotate the screw (back driven screw)

Assembly will be lubricated  Type of lube \_\_\_\_\_

Please ask our technical staff for recommendations for the best lubricant for your application.

## SPEED AND TRAVEL RATE

Rate of travel described in inches per minute \_\_\_\_\_

Input RPM at screw or nut \_\_\_\_\_

Amount of torque available \_\_\_\_\_



# LEAD SCREW APPLICATION DATA FORM (PART 2)

## TRAVEL LENGTH AND SUPPORTS

What is the unsupported screw length between bearings in/mm

---

Does the nut travel the full length of the screw in/mm

---

If not, over what area does the nut travel

---

Is the screw operated in a vertical  Horizontal  Other, please state \_\_\_\_\_

What type of end supports are you using?

---

## LEAD ACCURACY

Standard accuracy (.015 in per ft max) / 0.3mm per 300mm

Precision rolled thread accuracy required (0.003 in per ft) / (.07mm per 300mm)

Ground precision accuracy required (.0005 in per ft) / (.01mm per 300mm)

Better than the above required? Please state 0.0mm / 300mm

---

## SCREW SIZE

Standard backlash OK (up to .007in) / (.1778mm)

Reduced backlash required (.002 in max) / (.0508mm)

Zero backlash required

## ENVIRONMENT

Will operate at normal room temperature  Will operate in very dirty / dusty conditions

Will operate at very high temperatures  Will operate where metal chips are present

Will operate at very low temperatures  Will operate in corrosive atmosphere

## STRAIGHTNESS

Standard straightness OK (.01in per ft) 0.254mm / 300mm

Special straightness required (.002in per ft) 0.0508mm / 300mm

Straightness better than 0.002in per ft required 0.0508mm / 300mm

## END MACHINING

If you want to order the screws with the ends already machined to your specifications, submit a sketch or drawing with details and tolerances required.

## QUOTATION INFORMATION

Quantity desired

---

Delivery schedule

---

Please submit any additional data you feel would be helpful to us in selecting the proper screw size and in submitting your quotation. Attach drawings of screw and nut if available.

Suggestions, help and advice is given in good faith but without responsibility. It remains the responsibility of the customer or end user to ensure that the product chosen meets their life, duty cycle and other performance criteria.



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# STANDARD CONDITIONS OF SALE

1. Interpretation
  - 1.1 In these Conditions:

"Buyer" means the person who accepts a quotation of the Seller for the sale of the Goods or whose order for the Goods is accepted by the Seller

"Goods" means the goods (including any instalment of the goods or any parts for them) which the Seller is to supply in accordance with these Conditions

"Seller" means ABSSAC LIMITED a company incorporated in England and whose registered number is 1677177.

"Conditions" means the standard terms and conditions of sale set out in this document and (unless the context otherwise requires) includes any special terms and conditions agreed in writing between the Buyer and the Seller

"Contract" means the Contract for the purchase and sale of the Goods

"Writing" includes telex, cable, facsimile transmission, E-Mail and comparable means of communication
  - 1.2 Any reference in these Conditions to any provision of a statute shall be construed as a reference to that provision as amended, re-enacted or extended at the relevant time
  - 1.3 The headings in these Conditions are for convenience only and shall not affect their interpretation
2. Basis of the sale
  - 2.1 Subject to Condition 3 below, the Seller shall sell and the Buyer shall purchase the Goods in accordance with any oral or written order of the Buyer which is accepted by the Seller, or any written quotation of the Seller which is accepted by the Buyer, subject to these Conditions which shall govern the Contract to the exclusion of any other terms and conditions subject to which any such quotation is accepted or purported to be accepted, or any such order is made or purported to be made, by the Buyer
  - 2.2 No variation, addition or waiver of any of these Conditions shall be effective unless it is in Writing and signed by a duly authorised representative of both the Seller and the Buyer
  - 2.3 The Seller's employees or agents are not authorised to make any representations concerning the Goods unless confirmed by the Seller in Writing. In entering into the Contract the Buyer acknowledges that it does not rely on any such representations which are not so confirmed
  - 2.4 Samples supplied and advice or recommendations as to storage, application or use of the Goods given by the Seller or its employees or agents to the Buyer or its employees or agents are for guidance only and any such matter which is not confirmed in Writing by the Seller is followed or acted upon entirely at the Buyer's own risk and accordingly the Seller shall not be liable for any such advice or recommendation which is not so confirmed then the Buyer should depend on their accuracy only after obtaining specific written confirmation to that effect from the Seller
  - 2.5 Any typographical, clerical or other error or omission in any sales literature, quotation, price list, acceptance of offer, invoice or other document or information issued by the Seller shall be subject to correction without any liability on the part of the Seller
3. Quotations and acceptance of orders
  - 3.1 Quotations issued by the Seller are invitations to order Goods from the Seller. No Contract will exist until the Seller has accepted the Buyer's order in accordance with condition 3.3.
  - 3.2 Subject to condition 3.1 the price in the quotation should be valid for a period of 30 days from the date of the quotation unless otherwise advised by the Seller in Writing
  - 3.3 The Seller shall not be bound by any order submitted by the Buyer unless and until confirmed by the Seller in Writing
  - 3.4 Scheduled call off purchase orders made by the Buyer with the Seller are for twelve month periods only, or until 19th December of that year, depending which comes first unless otherwise agreed in Writing by the Seller
  - 3.5 The Buyer is committed to purchasing any remaining amount of products on his purchase order if the Buyer decides to cancel the order mid schedule unless otherwise agreed in Writing by the Seller
- 3.6 No order which has been accepted by the Seller may be cancelled by the Buyer except with the agreement in Writing of the Seller on the terms that the Buyer shall indemnify the Seller in full against all loss (including loss of profit), costs (including the costs of all labour and materials used), damages, charges and expenses incurred by the Seller as a result of cancellation.
- 3.7 Compliance with United States Export Regulations

It is Absac's policy to request, if applicable, the end use and end user details in all sales and repairs of USA origin products and in all transfers of technical data or software to ensure compliance with applicable u.s. export control laws and regulations. Because the products you are purchasing may be used outside of the United States, we will need confirmation of the following from the (buyer). It is on the onus of the buyer to ensure that Absac is informed of the following information.

  - 1.1 (Buyer) will not export or re-export any USA origin products, technology or software to Cuba, Iran, Iraq, Libya, North Korea, Sudan, or Syria, unless otherwise authorized by the United States Government.
  - 2.1 (Buyer) will not sell, transfer, export or re-export any USA origin products for use in activities which involve the development, production, use or stockpiling of nuclear, chemical or biological weapons or missiles, nor use USA origin products in any facilities which are engaged in activities relating to such weapons.
  - 3.1 (Buyer) acknowledge that u.s. law prohibits the sale, transfer, export or re-export or other participation in any export transaction involving USA origin products with individuals or companies listed in the u.s. Commerce Department's Table of Denial Orders, the u.s. Treasury Department's list of Specially Designated Nationals or the u.s. Department of State's list of individuals debarred from receiving Munitions List items.
  - 4.1 (Buyer) will abide by all applicable u.s. export control laws and regulations for any products purchased from USA origin products, software or technology.
  - 5.1 (Buyer) agree that the export control requirements in No. 1-4 above shall survive the completion, early termination, cancellation or expiration of the applicable purchase order, agreement or contract.
4. Specifications
  - 4.1 The Buyer shall be responsible to the Seller for ensuring the accuracy of the terms of any order (including any applicable specification) submitted by the Buyer, and for giving the Seller any necessary information relating to the Goods within a sufficient time to enable the Seller to perform the Contract in accordance with its terms
  - 4.2 The quantity, quality and description of any specification for the Goods shall be those set out in the Seller's quotation (if accepted by the Buyer) or the Buyer's order (if accepted by the Seller)
  - 4.3 If Goods are supplied in accordance with the Buyer's specifications the Buyer shall be solely responsible for the specifications and ensuring that they are accurate
  - 4.4 If any technical calculations are made by the Seller using information supplied by the Buyer the Buyer accepts that they are responsible for supplying accurate technical information and accordingly the Seller is not liable in respect of calculations based on incorrect information given
  - 4.5 If Goods are to be manufactured or any process is to be applied to the Goods by the Seller in accordance with a specification or request submitted by the Buyer or should any change be made to the Goods at the request of the Buyer the Buyer shall indemnify the Seller against all loss damages costs and expenses awarded against or incurred by the Seller in connection with or paid or agreed to be paid by the Seller in settlement of any claims for infringement of any patent, copy right, design, trade mark or other industrial or intellectual property rights of any person which results from the Seller's use of the Buyers specification

- 4.6 The Seller reserves the rights to make any changes in the specification of the Goods which are required to conform with any applicable statutory or EC requirements or, where the Goods are to be supplied to the Seller's specification, which do not materially affect their quality or performance
- 4.7 At all times the buyer has the responsibility to adequately guard and maintain the product supplied in accordance with relevant operation manuals, service factors and health and safety legislation applicable for any product supplied by ABSSAC Limited.
- 4.8 The seller (Abszac Limited) shall not in any event be liable for any consequential damages, secondary charges, expenses for installing or disconnecting, or losses or injuries to persons or property resulting from any alleged defect in the product or any use of the product, and in manner that exceeds its design, duty cycle and or ability.
- 4.9 It remains the responsibility of the buyer to test any samples or other products that the seller will provide for fatigue, stress and general ability in the application. All products that the seller provides and are used in both real and test situations are considered by Abszac Ltd to have been thoroughly tested to meet and exceed the anticipated life and duty requirement of the product in its application by the buyer. It remains the responsibility of the buyer to give all technical information to the seller and all buyers are responsible for meeting health and safety measures and adequately guarding users and all associated parties against all and any possible failures in line with the health and safety requirements.  
Other Where recommended guidelines of serviceable or replaceable parts and maintenance/inspection requirements are exceeded or ignored by the user and/or buyer, no warranty or other claim can or will exist. Where minimum or maximum values/sizes/limits/dimensions/fitting instructions and technical data of parts are ignored/abused/extended/not applied/not actioned or used in excess of the design or standard parameters of the product by the user and/or buyer then no warranty claim or other claim can exist.  
No warranty or other claim can exist or be made by the user or buyer or other to the seller or its agent or other for any part used in motor sport, military or aviation. No warranty is given to this type of application.  
All or any secondary or further processes/disassembly/machining/ heating/drying/coating or any other additional process the originally supplied product or associated part/product after dispatch from the seller or its agent voids any warranty claim or other claim.  
It remains the responsibility of the buyer or user to advise us the seller of any and all certification/test/traceable certification requirement.  
Conversations may be recorded as part of our ongoing customer service program.
5. Packaging
- 5.1 Packaging for the Goods shall be at the discretion of the Seller which has the right to pack the Goods in such a manner and with such materials and in such quantities as in his absolute discretion thinks fit unless detailed packaging instructions are received from the Buyer prior to agreeing a price for the Goods which the Seller agrees to in Writing
6. Price of the Goods
- 6.1 Price of the Goods shall be the Seller's quoted price or, where no price has been quoted (or a quoted price is no longer valid) the price listed in the Seller's published price list current at the date of acceptance of this order. Where the Goods are supplied for export from the United Kingdom, the Seller's published export price list shall apply. All prices quoted are valid for 30 days only or until earlier acceptance by the Buyer, after which time they may be altered by the Seller without given giving written notice to the Buyer
- 6.2 The price is exclusive of any applicable value added tax, which the Buyer shall be additionally liable to pay to the Seller
- 6.3 All prices stated shall be subject to variation at the sole discretion of the Seller at any time without prior notice and the Seller shall notify the Buyer of any variation before delivery of the Goods
7. Payment
- 7.1 Liability for payment for the Goods supplied to customers who have a trading account with the Seller shall arise on delivery and payment in cash is due 30 days from the date of the invoice or as otherwise specifically agreed in Writing by the Seller. Payment shall be due and the company shall be entitled to sue for the price whether or not property in the Goods has passed by virtue of condition 10 and notwithstanding the delivery may not have taken place as a result of the Buyer's wrongful or refusal to accept delivery. The time of payment of the price shall be of the essence of the Contract
- 7.2 Liability for payment for the Goods supplied on a proforma invoice basis for customers who do not have a trading account with the Seller shall be prior to delivery of the Goods. The time of payment of the price shall be of the essence of the Contract. It is the Buyer's responsibility to give written notice to the Seller of any payment under proforma invoice arrangements
- 7.3 Sums paid after the due date shall pay interest until the day payment is received at the rate of 5% per annum above the base rate from time to time of National Westminster Bank Plc occurring from day to day from the date of delivery until the date of payment in full
- 7.4 If the recovery of sums outstanding from the Buyer is passed to a debt collection agency the Buyer shall pay the Seller's costs in instructing the said debt collection agency and all ancillary legal costs
- 7.5 Without prejudice to any other rights or remedies of the Seller any in default of the Buyer in making payment on the due date shall entitle the Seller to suspend deliveries under the Contract or any other Contract so long as the default continues and break the Contract as repudiated by the Buyer and determined if the Buyer has not within 14 days of receiving written notice from the Seller paid all sums due to the Seller.
8. Delivery
- 8.1 Delivery shall take place when the Goods are unloaded at or delivered to the Buyer's premises or other delivery location agreed between the Seller and the Buyer except that if the Buyer collects or arranges collection of the Goods from the Seller's premises, or nominates a carrier for the Goods delivery shall take place when the Goods are loaded on the collection or carriers vehicle
- 8.2 Any dates quoted for delivery of the Goods are approximate only and the Seller will not be liable for any delay in delivery of the Goods however so caused. Time for delivery shall not be of the essence of the Contract unless previously agreed by the Seller in Writing. The Goods may be delivered by the Seller in advance of the quoted delivery date upon giving responsible notice to the Buyer
- 8.3 The Buyer shall accept immediate delivery or arrange to collect the Goods or arrange suitable storage, failing which the company may either:
- 8.3.1 effect delivery by whatever means they think most appropriate; or
- 8.3.2 arrange storage at the Buyer's risk and expense pending delivery; or
- 8.3.3 re-sell or otherwise dispose of the Goods without prejudice to any other rights the Seller may have against the Buyer for breach of Contract or otherwise
- 8.4 Where the agreement provides for delivery by instalments each delivery shall constitute a separate Contract and failure by the Seller to deliver any one or more of the instalments in accordance with these Conditions or any claim by the Buyer in respect of any one or more instalments shall not entitle the Buyer to treat the Contract as a whole as repudiated
- 8.5 The Buyer shall not be entitled to reject the Goods by reason only of short delivery

- 8.6 The quantity of the Goods delivered under the Contract shall be recorded by the Seller upon dispatch from the Seller's factory or warehouse and the Seller's records shall be accepted by the Buyer as conclusive evidence of the quantity delivered.
- 8.7 It is the Buyer's responsibility to notify the seller if Goods have not been received by the Buyer within seven days of the date of receipt of the Seller's invoice, therefore, if no notification is made the Buyer shall be deemed to have received the Goods.
- 8.8 If the Seller fails to deliver the Goods (or any instalment) for any reason other than any cause beyond the Seller's reasonable control or the Buyer's fault, and the Seller is accordingly liable to the Buyer, the Seller's liability shall be limited to the excess (if any) of the cost to the Buyer (in the cheapest available market) of similar Goods to replace those not delivered over the price of the Goods. The seller is under no obligation or liability in respect of failure to complete or delay or failure to deliver the goods comprised in any order or contract caused directly or indirectly by act of war or terrorism, strikes, lockouts, labour troubles, breakdowns, delays in transport, accidents, delay in obtaining material, fire, government prohibition, delivery of necessary fuel requirements, any and all problems or other restrictions relating to design or other manufacturing difficulties that arise during an order.
- 8.9 If the Buyer fails to take delivery of the Goods or fails to give the Seller adequate delivery instructions at the time stated for delivery (otherwise than by reason of any cause beyond the Buyer's reasonable control or by reason of the Seller's fault) then, with out prejudice to any other right or remedy available to the Seller, the Seller may:
- 8.9.1 store the Goods until actual delivery and charge the Buyer for the reasonable costs (including insurance) of storage;  
or
- 8.9.2 sell the Goods at the best price readily obtainable and (after deducting all reasonable storage and selling expenses) account to the Buyer for the excess over the price under the Contract or charge the Buyer for any shortfall below the price under the Contract
9. Examinations and claims
- 9.1 The Buyer shall upon delivery examine the Goods and shall promptly (but in any event within seven working days of delivery) notify in Writing the Seller and the carrier, where relevant, of any apparent damage defect or shortage.
- 9.2 The Buyer shall comply with the carriers rules, regulations and requirements so as, when appropriate, to the Seller to make a claim against the carrier in respect of any damage or loss in transit.
- 9.3 Claims in respect of damage defects or shortage not apparent on examination and under clause 9.1 must be notified in Writing to the Seller within 7 days of the date of delivery
- 9.4 Notification under clauses 9.1 to 9.3 above shall be first made by telephone then by notice in Writing delivered by facsimile transmission or by first class recorded delivery mail and addressed to Abssac Limited Units 19/20 Bond Industrial Estate Wickhamford Evesham Worcs WR11 7RH.
- 9.5 In default of such notification the seller shall be deemed conclusively to have properly preformed its obligations under the Contract.
10. Property and risk
- 10.1 All risk including that of dam age to or loss of the Goods shall pass to the Buyer:
- 10.1.1 at the time when the Seller notifies the Buyer that the Goods are available for collection the case of Goods to be supplied at the Seller's premises  
or
- 10.1.2 at the time of delivery but prior to unloading or if the Buyer wrongfully fails to take delivery of the Goods at the time when the Seller has tendered to delivery of the Goods in the case of Goods to be supplied otherwise than at the Seller's premises  
or;
- 10.1.3 at the time of delivery of the Goods to a carrier for delivery to the Buyer in the case of Goods to be supplied in a manner otherwise than as set out in Conditions 10.1.1 or 10.1.2 above
- 10.2 The Buyer shall fully insure the Goods against all risks from the times stipulated for the passing of risk in condition 10.1 above up to the time when the proprietary rights in such Goods pass to the Buyer
- 10.3 Property (both legal and beneficial) in the Goods shall remain in the company until all sums owing to the Seller whether under the Contract or any other Contract at any time between the Seller and the Buyer made prior to the date of the Contract ("the Indebtedness) shall have been paid in full, until such time the Buyer shall hold the Goods as bailee for the Seller
- 10.4 The Buyer shall not be entitled to pledge or in any way charge by way of security for any indebtedness any of the Goods which remain the property of the Seller, but if the Buyer does so all moneys owing by the Buyer to the Seller shall (without prejudice to any other right or remedy of the Seller) forthwith become due and payable
- 10.5 The Buyer until otherwise notified by the Seller or on the happening of any of the event specified in Condition 10.7 ("the Events") may in the ordinary course of business sell the Goods and pass property in them ("the Re-Sale") subject to the stipulations ("the Stipulations") imposed in Condition 1 0.5
- 10.6 The Stipulations are that until the Indebtedness has been fully discharged;
- 10.6.1 the Goods shall not be converted into any other product or mixed with any other Goods to make another product ("the New Product") nor will the Buyer sell the New Product and property in it ("the Sale") but if the Buyer in breach of the above provision does convert or mix the Goods property in the New Product shall at the earliest moment that such vesting is possible, vest and remain in the Seller whether or not property in the Goods is at the moment extinguished
- 10.6.2 the Re-Sale shall be for the account of the Seller and, unless the Seller by written notice requires the payment to it of the proceeds of the Re-Sale ("the Proceeds") to the extent of the Indebtedness, in which case the Buyer shall forthwith on receipt of such notice or as soon as thereafter as it shall receive the Proceeds makes its payment, the Buyer shall retain the Proceeds in a separate bank account to the order of the Seller and not mix them with any other monies
- 10.6.3 in the event of a breach by the Buyer of its obligations under additions 10.6.1 the Seller shall have the right to trace the Proceeds in to any other moneys which may have been mixed and the Buyer shall indemnify the Seller on a full indemnity basis against loss, damage, costs or expenses incurred in such tracing
- 10.6.4 until the Re-Sale the Seller has have the right to repossess the Goods or take possession of the New Product at any time and for this purpose shall have the right to enter on to any premises or land in the ownership or possession of the Buyer and remove the Goods and/or the New Product notwithstanding that they are affixed to such premises or land and the Buyer shall indemnify the Seller on a full indemnity basis against all loss, damage, costs or expenses so arising including loss, damage, costs or expenses in respect of third party claims. Such taking of possession re delivery shall be without prejudice in the obligation of the Buyer to purchase Goods
- 10.6.5 the Goods and the New Product shall until their Re-Sale or Sale be stored separately, protected and insured and identified and clearly marked as the Seller's property
- 10.7 The Events are;
- 10.7.1 The giving of any notice to the Buyer that a receiver, manager, administrative receiver, supervisor, nominee or administrator is to be or has been appointed over any of the property or assets of the Buyer or that a petition to wind up the Buyer is to be or has been presented or that an application for an administration order is to be or has been made or any notice of a resolution to wind up the Buyer (say for the purposes of bona fide reconstruction or amalgamation)
- 10.7.2 A decision by the Buyer that the Buyer intends to make any arrangement or composition with its creditors generally.
- 10.7.3 Where the Buyer pursuant to section 123 or 268 of the Insolvency Act 1986 appears to be unable to pay a debt or appears to have no reasonable prospects of being able to pay a debt



- 10.7.4 any distress or execution levied as threatened to be levied on any property or assets of the Buyer
- 10.7.5 the inability of the Buyer to pay its debts as they fall due
- 10.7.6 on receipt of notification from the company under Condition 10.5 or on the happening of any of the Events the Buyer shall immediately deliver the Goods and the New Product property in which the Product is reserved to or is vested in the Seller to such address as the Seller shall specify in default of which or in the alternative, the Seller shall have the right to enter on any premises or land in the ownership or possession of the Buyer in order to recover the Goods and the New Product and the Buyer shall indemnify the Seller on a full indemnity basis against all loss, damage, costs or expenses as arising including loss, damage, cost or expenses in respect of third party claims
11. Breach by or insolvency by the Buyer
- 11.1 if the Buyer shall not comply with any of its obligations to the Seller or upon the occurrence of any of the Events referred to in clause 10.7 the Seller shall have the right forthwith to terminate the Contract but without affecting any other claim right or remedy of the Seller against the Buyer and without any liability to the Buyer, and if the Goods have been delivered but not paid for the price shall become immediately due and payable notwithstanding any previous agreement or arrangement to the contrary
12. Export Terms
- 12.1 In these Conditions "Incoterms" mean the international rules for the interpretation of trade terms of the International Chambers of Commerce as in force at the date when the Contract is made. Unless the Context otherwise requires, any term or expression which is defined in or given a particular meaning by the provisions Incoterms shall have the same meaning in these Conditions, but if there is any conflict between the provisions of Incoterms and these Conditions, the latter shall prevail
- 12.2 Where the Goods are supplied for export from the United Kingdom, the provisions of this clause 12 shall (subject to any special terms agreed in Writing between the Buyer and the Seller) apply notwithstanding any other provision of these Conditions
- 12.3 The Buyer shall be responsible for complying with any legislation or regulations governing the importation of the Goods in to the country or destination and for the payment of any duties on them
- 12.4 Unless otherwise agreed in Writing between the Buyer and the Seller, the Goods shall be delivered fob the air or sea port of shipment and the Sellers shall be under no obligation to give notice under section 32(3) of the Sale Of Goods Act 1979
- 12.5 The Buyer shall be responsible for arranging for testing and inspection of the Goods at the Sellers premises before shipment. The Seller shall have no liability for any claim in respect of any defect in the Goods which would be apparent on inspection and which is made after shipment, or in respect of any damage during transit
- 12.6 Payment of all amounts due to the Seller shall be made by irrevocable letter of credit opened by the Buyer in favour of the Seller and confirmed by a bank acceptable by the Seller, or by telegraphic transfer in to the Sellers aforementioned bank account or if the Seller agrees in Writing on or before acceptance of the Buyer order to waive this requirement, by acceptance by the Buyer and delivery to the Seller of a bill of exchange drawn on the Buyer payable 60 days after sight of the order to the Seller at such branch of National Westminster Bank in England as may be specified in the bill of exchange
- 12.7 Unless otherwise specifically agreed between the Seller and the Buyer all Exports sales shall be made by delivery to the Buyer's premises and the Seller's prices shall be increased to cover the Seller's costs in making such deliveries
- 12.8 The Buyer warrants that if an import licence or permit is required for the importation of the Goods into the county or destination then such import licence or permit has been obtained or would be obtain prior to shipment
13. Cancellation, suspension and termination
- 13.1 If the Buyer shall purport to cancel the whole or any part of the Contract the Seller may by notice in Writing to the Buyer elect to treat the Contract as repudiated and the Buyers shall thereupon be liable to pay the Seller by way of liquidated damages a sum equal to all the expenses incurred by the Seller in connection with the Contract including an appropriate amount in respect of administration overheads, costs and loss of profit. The Sellers reasonable estimate of the expenses incurred shall be final and binding on the parties
- 13.2 If for any cause whatsoever beyond its control the Seller is unable to make any delivery on the applicable delivery date or preform any of its obligations under the Contract the Seller may be notice in Writing to the Seller terminate the Contract or suspend the Contract without liability of any loss or damage thereby occurred by the Buyer
14. Intellectual property
- 14.1 The Buyer shall not infringe any patent, trade name, registered design, copyright industrial or other intellectual property right belonging to the Seller in relation to the Goods or any other goods or matters supplied by the Seller with or in relation to the Goods
- 14.2 The Buyer shall promptly report to the Seller particulars of any use by any person of a patent, trade name, registered design, trade mark or get up of Goods which might amount to infringement of any patent, trade mark, registered design, copy right, industrial or other intellectual property right attaching to the Goods or to unfair competition on passing off
- 14.3 In the event that it comes to the notice of the Buyer that any person alleges that a patent, trade name, registered design, copy right, industrial or other intellectual property right is invalid or that they infringe any rights of that person or that they are open to any form of attack the Buyer shall not make any omissions but shall promptly report the matter to the Seller
- 14.4 The Seller shall have conduct of all proceedings relating to any patent, trade name, registered design, copy right, industrial or other intellectual property right attaching to the Goods
15. Force majeure
- 15.1 In so far as the performance of the Contract by the Seller may be affected by any strike, any lack of available, shipping or transport or materials, any restriction regulation or decree by any local or municipal authority or government department or by any cause beyond the Seller's reasonable control (which shall be construed without reference to the proceeding causes) the Seller may elect at its absolute discretion either;
- 15.1.1 to terminate the Contract or;
- 15.1.2 to proceed to preform or continue performance under the Contract within a reasonable time after the termination of such events of circumstance
- 15.2 In the event that the Seller makes an election under clause 15.1 the Buyer shall accept the Goods or such part of them as are delivered to it notwithstanding any delay
16. Exclusion of Contract (rights of the third party) Act 1999
- 16.1 Nothing in these Conditions will confer on any third party any benefit or the right to enforce any terms of these Conditions
17. Proper law
- 17.1 The Contract is and shall be deemed to be made in England and shall in all respects be governed by English Law and shall be subject to the non-exclusive jurisdiction of the English Court General
18. General
- 18.1 Any notice required or permitted to be given by either party to the other under these Conditions shall be in Writing and addressed to that other party at its registered office or principal place of business or such other address as may at the relevant time having been notified pursuant to this provision to the party giving the notice

- 18.2 No waiver by the Seller of any breach of the Contract by the Buyer shall be considered as a waiver of any subsequent breach of the same or any other provision
- 18.3 If any provision of these Conditions is held by any competent authority to be invalided or unenforceable in whole or in part the validity of the other provisions of these Conditions and the remainder of the provision in question shall not be affected
- 18.4 No liability, warranty or any other claim can or will exist for any product(s) during or as a consequence of or any consequence whatsoever resulting directly or indirectly from or in connection with any of the following regardless of any other contributory cause or event from :
- Terrorism Terrorism is defined as any act or acts including and not limited to the use or threat of force/violence/harm or damage to life or property or the threat of such harm or damage including harm or damage by nuclear and or chemical and or biological and or radiological means. Caused or occasioned by any persons or groups or so claimed in whole or in part for political religious ideological or similar purposes. Or, any action taken in controlling preventing suppressing or in anyway relating to the above.
- War War or invasion, act of foreign enemy hostilities of a warlike operation or operations (whether war be declared or not) civil war rebellion revolution insurrection civil commotion assuming the proportions of or amounting to an uprising military or usurped power. Or any action taken in controlling preventing suppressing or in any way relating to any of the above.
- 18.5 Any dispute arising under or in connection with these Conditions or the sale of the Goods shall be referred to arbitration by a single arbitrator appointed by agreement or (in default) nominated on the application of either party by the president for the time being of the Law Society.
- Absac Limited may make changes to the contents/ improvements and/or changes in the product(s) or service(s) described in this publication at any time.

**August 2013.**