

Bearing Supports/End Machining



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Phone: 540-633-3549

Fax: 540-639-4162

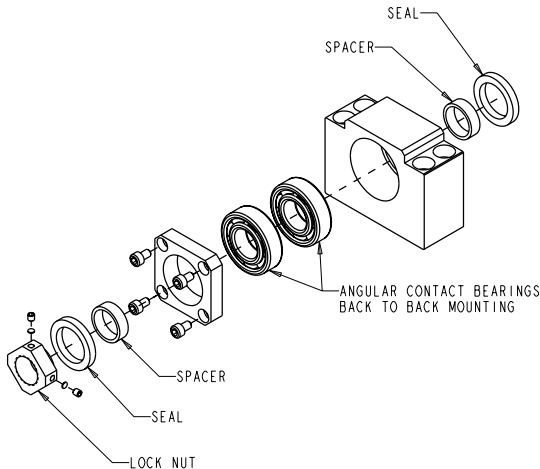
Email: thomson@danahermotion.com

Bearing Supports/End Machining Product Overview

Thomson Bearing Supports — complete package for simple mounting of Thomson ball screw and ball spline assemblies. Flange and Base mounts available with dual angular contact bearings or floating radial bearing.

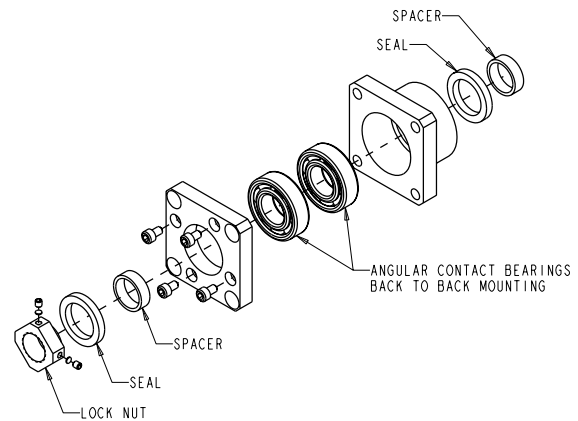
- Rugged steel construction
- Low profile, compact design
- Base or Flange mounting configurations
- Pre-assembled and ready for installation
- Available off-the-shelf

BK Bearing Support⁽¹⁾⁽²⁾



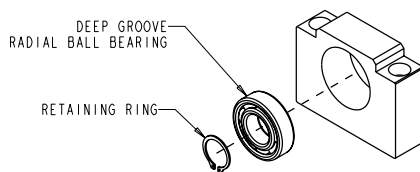
The base mounted BK Bearing Support contains an angular contact bearing pair arranged back-to-back (DB) for increased stiffness and axial load capacity. Design dimensions fit standard Type BK or BK1 end machining.

FK Bearing Support⁽¹⁾⁽²⁾



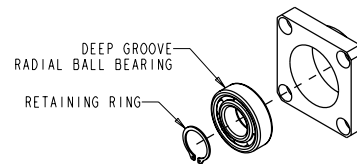
The flange mounted FK Bearing Support contains an angular contact bearing pair arranged back-to-back (DB) for increased stiffness and axial load capacity. Design dimensions fit standard Type FK or FK1 end machining.

BF Bearing Support⁽¹⁾⁽³⁾



The base mounted BF Bearing Support contains a floating radial bearing to allow axial shaft movement. Design dimensions fit standard Type BF or BF1 end machining.

FF Bearing Support⁽¹⁾⁽³⁾



The flange mounted FF Bearing Support contains a floating radial bearing to allow axial shaft movement. Design dimensions fit standard Type FF or FF1 end machining.

(1) Bearings supports are classified as “simple” for purposes of critical speed and column strength calculations.

(2) Locknut included in assembly

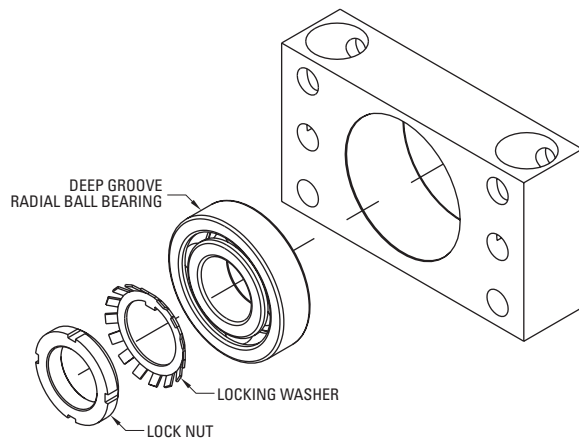
(3) Retaining ring included in assembly

Bearing Supports/End Machining Product Overview

Thomson Bearing Supports — a unitized package for simple mounting of Thomson ball screw and ball spline assemblies. Both “Floating” and “Simple” style bearing supports are available.

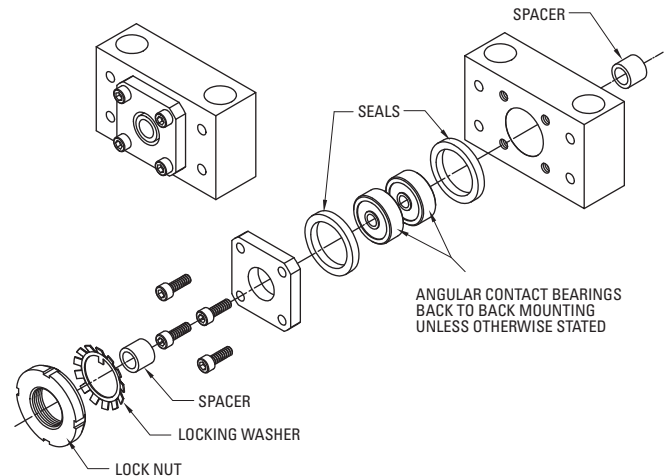
- Rugged steel construction
- Low profile, compact design
- Foot or face mounting
- Pre-assembled and ready for installation
- Available off-the-shelf for quick building convenience

QF Bearing Support⁽¹⁾⁽²⁾



The QF Bearing Support provides a single deep groove radial ball bearing. Design dimensions fit standard Type QF or QF1 end machining.

QK Bearing Support⁽¹⁾⁽²⁾



The QK Bearing Support contains high angular contact bearings arranged in a back-to-back (DB) configuration for high stiffness. Design dimensions fit standard Type QK or QK1 end machining.

(1) Both QK and QF Bearings Supports are classified as “simple” for purposes of critical speed and column strength calculations.

(2) Installation accessories (locknut and washer) included for complete assembly.

Bearing Supports/End Machining Product Overview

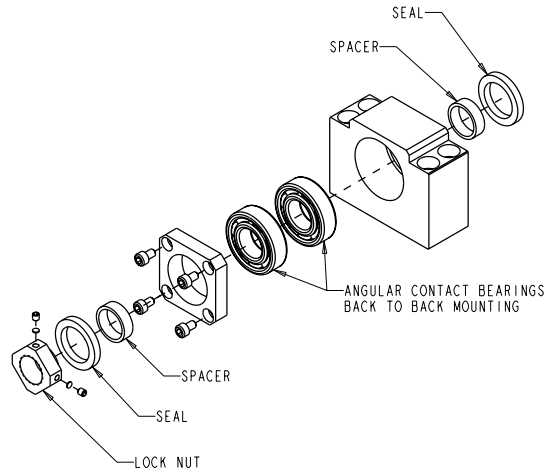
Inch Series Ball Screws						
Diameter x Lead	BK	BF	FK	FF	QK	QF
0.500 x 0.200	7833360	7833368	7833377	7833384	7828282	7833291
0.500 x 0.500						
0.631 x 0.200	7833361	7833369	7833378	7833385	7824154	7833256
0.631 x 1.000						
0.750 x 0.200	7833362	7833370	7833379	7833386	7824155	7833259
0.750 x 0.500						
0.875 x 0.200	7833363	7833371	7833380	7833387	7824156	7833262
1.000 x 0.200	7833364	7833372	7833381	7833388	7824157	7833265
1.000 x 0.500						
1.000 x 1.000						
1.171 x 0.413						
1.150 x 0.200	7833365	7833373	7833382	7833389	7824158	7833268
1.250 x 0.200						
1.250 x 0.250						
1.250 x 0.500						
1.500 x 0.200	7833366	7833374	7833383	7833390	7824159	7833270
1.500 x 0.250						
1.500 x 0.473	7833365	7833373	7833382	7833389	7824158	7833268
1.500 x 0.500	7833366	7833374	7833383	7833390	7824159	7833270
1.500 x 1.000	7833365	7833373	7833382	7833389	7824158	7833268
1.500 x 1.875	7833366	7833374	7833383	7833390	7824159	7833270
1.500 x 2.000						
1.750 x 0.200	7833367	7833375	-	-	7829544	7833273
2.000 x 0.200	-	-	-	-	7824160	7833276
2.000 x 0.500						
2.000 x 1.000						
2.250 x 0.500						
2.250 x 1.000						
2.500 x 0.250	-	-	-	-	7824161	7833279
2.500 x 0.500						
2.500 x 1.000						

Metric Ball Screws						
Diameter	BK	BF	FK	FF	QK	QF
12	7833391	7833398	7833405	7833411	7829546	7833292
16	7833392	7833399	7833406	7833412	7829547	7833282
20	7833393	7833400	7833407	7833413	7829548	7833283
25	7833394	7833401	7833408	7833414	7829549	7833284
32	7833395	7833402	7833409	7833415	7829550	7833285
40	7833396	7833403	7833410	7833416	7829551	7833286
50	7833397	7833404	-	-	7829552	7823287
63	-	-	-	-	7829553	7833288

Ball Splines						
Nominal Size	BK	BF	FK	FF	QK	QF
0.625	7833360	7833368	7833377	7833384	7824154	7833256
1.000	7833364	7833372	7833381	7833388	7824157	7833265
1.500	7833365	7833373	7833382	7833389	7824158	7833268
2.000	7833367	7833375	-	-	7829554	7833273
2.500	-	-	-	-	7824161	7833279

Bearing Supports/End Machining — Ball Splines

BK Support Blocks

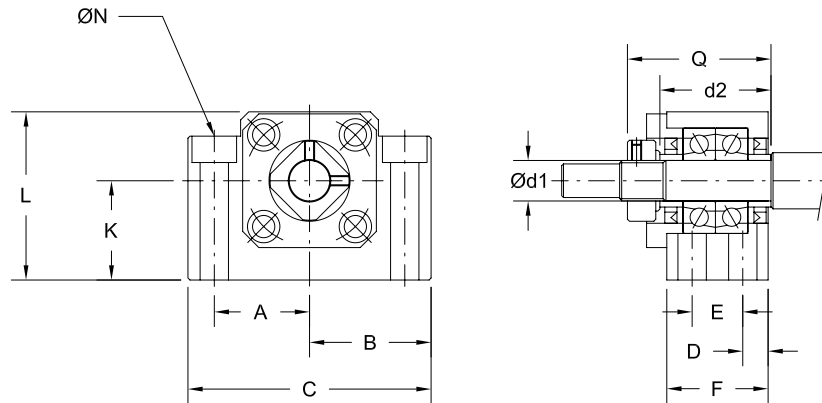


Standard P/N	Spline Size (inch)	Bearing Rating				Lock Nut Type	Bearing Block Weight (lbs)
		Static Rating C_0		Dynamic Rating C_{am}			
		(lbs)	(N)	(lbs)	(N)		
7833360	0.625	326	1450	989	4400	RN10	0.9
7833364	1.000	1832	8150	3215	14300	RN20	2.8
7833365	1.500	2113	9400	3732	16600	RN25	5.3
7833367	2.00	6789	30200	11375	50600	RN40	15.0

Note: Design dimensions fit standard Type BK and BK1 end machining. See page 188 for details.

Bearing Supports/End Machining — Ball Splines

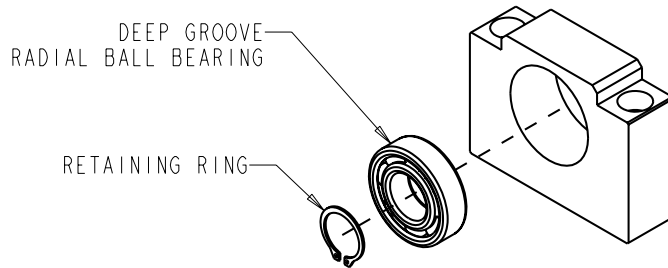
BK Bearing Support Blocks



Standard P/N	Bearing Block Dimensions (inch)											
	d1 (mm)	d2	A	B	C	D	E	F	K ± 0.001	L	N	Q
7833360	10	1.063	0.906	1.181	2.362	0.236	0.512	0.984	0.866	1.535	4 Holes 0.260 dia Thru 0.425 C-Bore x 0.197 Deep	1.339
7833364	20	1.575	1.378	1.732	3.465	0.315	0.748	1.378	1.339	2.362	4 Holes 0.354 dia. Thru 0.551 C-Bore x 0.335 Deep	2.008
7833365	25	1.890	1.673	2.087	4.173	0.394	0.866	1.654	1.890	3.150	4 Holes 0.433 dia. Thru 0.699 C-Bore x 0.433 Deep	2.480
7833367	40	2.598	2.559	3.150	6.299	0.551	1.299	2.402	2.362	4.331	4 Holes 0.709 dia. Thru 1.024 C-Bore x 0.689 Deep	3.583

Bearing Supports/End Machining — Ball Splines

BF Support Blocks

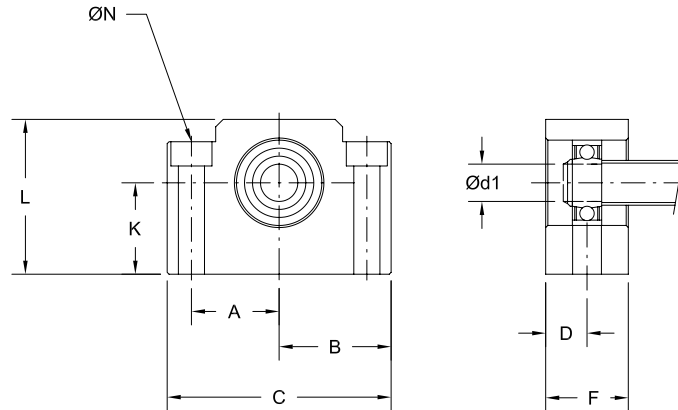


Standard P/N	Spline Size (inch)	Bearing Rating				Snap Ring (DIN 471) (mm)	Bearing Block Weight (lbs)
		Static Rating C_o		Dynamic Rating C_{am}			
		(lbs)	(N)	(lbs)	(N)		
7833368	0.625	366	1630	821	3650	8	0.7
7833372	1.000	1461	6500	3237	14400	20	1.7
7833373	1.500	1753	7800	3597	16000	25	3.2
7833375	2.00	5822	25900	11375	50600	40	7.3

Note: Design dimensions fit standard Type BF and BF1 end machining. See page 188 for details.

Bearing Supports/End Machining — Ball Splines

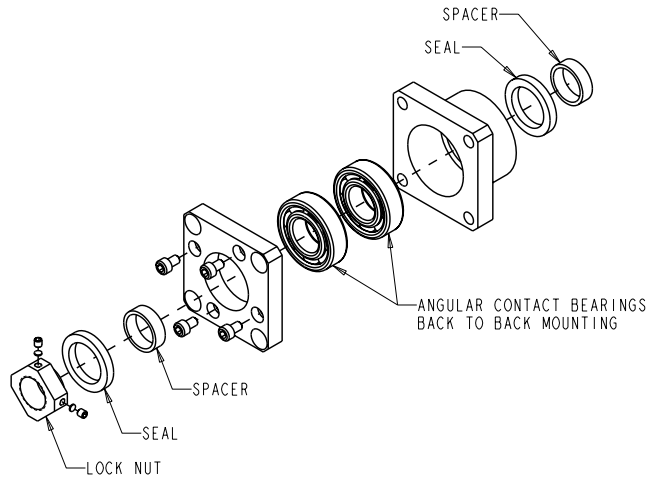
BF Bearing Support Blocks



Standard P/N	Bearing Block Dimensions (inch)								
	d1 (mm)	A	B	C	D	F	K ±0.001	L	N
7833368	8	0.906	1.181	2.362	0.394	0.787	0.866	1.535	2 Holes 0.260 dia Thru 0.425 C-Bore x 0.197 Deep
7833372	20	1.378	1.732	3.465	0.512	1.024	1.339	2.362	2 Holes 0.354 dia. Thru 0.551 C-Bore x 0.335 Deep
7833373	25	1.673	2.087	4.173	0.591	1.181	1.890	3.150	2 Holes 0.433 dia. Thru 0.699 C-Bore x 0.433 Deep
7833375	40	2.559	3.150	6.299	0.728	1.457	2.362	4.331	2 Holes 0.709 dia. Thru 1.024 C-Bore x 0.689 Deep

Bearing Supports/End Machining — Ball Splines

FK Support Blocks

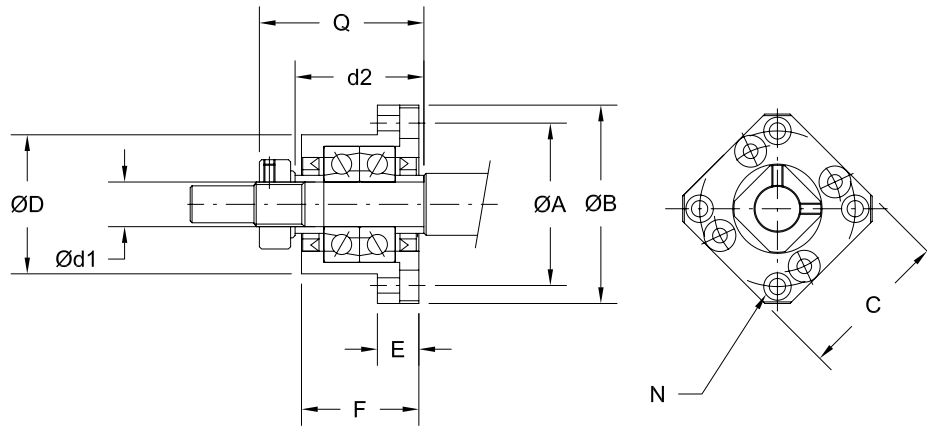


Standard P/N	Spline (inch)	Bearing Rating				Lock Nut Type	Bearing Block Weight (lbs)
		Static Rating C_0		Dynamic Rating C_{am}			
		(lbs)	(N)	(lbs)	(N)		
7833377	0.625	326	1450	989	4400	RN10	0.6
7833381	1.000	1832	8150	3215	14300	RN20	2.5
7833382	1.500	2113	9400	3732	16600	RN25	3.5

Note: Design dimensions fit standard Type FK and FK1 end machining. See page 189 for details.

Bearing Supports/End Machining — Ball Splines

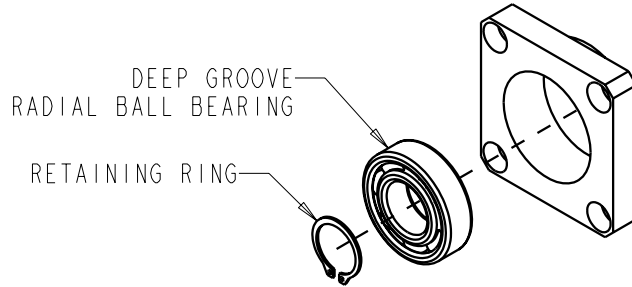
FK Bearing Support Blocks



Standard P/N	Bearing Block Dimensions (inch)									
	d1 (mm)	d2	A	B	C	D	E	F	N	Q
7833360	10	1.063	1.654	2.047	1.654	1.3382 1.3376	0.394	1.063	4 Holes 0.177 dia Thru 0.315 C-Bore x 0.157 Deep	1.299
7833364	20	1.969	2.756	3.346	2.677	2.2437 2.2430	0.866	2.047	4 Holes 0.260 dia. Thru 0.433 C-Bore x 0.394 Deep	2.598
7833365	25	2.362	3.150	3.858	3.110	2.4799 2.4792	1.063	2.244	4 Holes 0.354 dia. Thru 0.591 C-Bore x 0.512 Deep	2.913

Bearing Supports/End Machining — Ball Splines

FF Support Blocks

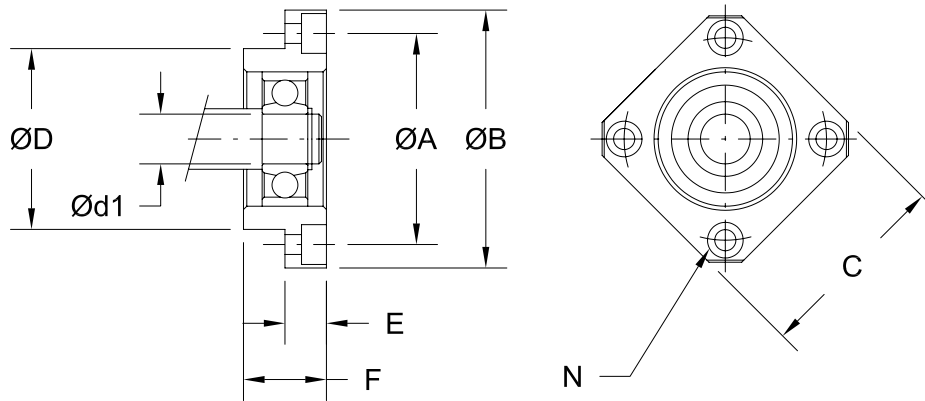


Standard P/N	Spline Size (inch)	Bearing Rating				Snap Ring (DIN 471) (mm)	Bearing Block Weight (lbs)
		Static Rating C_0		Dynamic Rating C_{am}			
		(lbs)	(N)	(lbs)	(N)		
7833384	0.625	366	1630	821	3650	10	0.2
7833388	1.000	1461	6500	3237	14400	20	1.0
7833389	1.500	1753	7800	3597	16000	25	1.5

Note: Design dimensions fit standard Type FF and FF1 end machining. See page 189 for details.

Bearing Supports/End Machining — Ball Splines

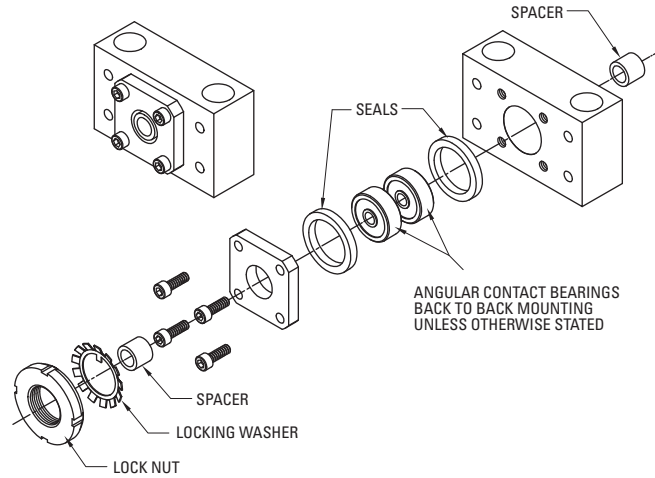
FF Bearing Support Blocks



Standard P/N	Bearing Block Dimensions (inch)							
	d1 (mm)	A	B	C	D	E	F	N
7833368	8	1.378	1.693	1.378	1.1021 1.1016	0.276	0.472	4 Holes 0.134 dia Thru 0.256 C-Bore x 0.157 Deep
7833372	20	2.756	3.346	2.677	2.2437 2.2430	0.433	0.787	4 Holes 0.260 dia. Thru 0.433 C-Bore x 0.256 Deep
7833373	25	3.150	3.858	3.110	2.4799 2.4792	0.551	0.945	4 Holes 0.354 dia. Thru 0.551 C-Bore x 0.335 Deep

Bearing Supports/End Machining — Ball Splines

QK Bearing Support Blocks



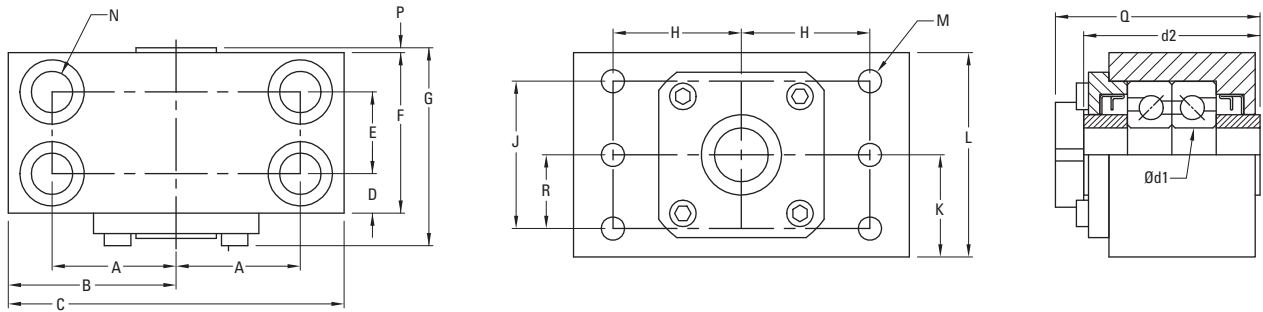
Standard P/N	Spline Size (inch)	Bearing Rating				Lock Nut Type	Bearing Block Weight (lbs)
		Static Rating C_0		Dynamic Rating C_{am}			
		(lbs)	(N)	(lbs)	(N)		
7828282 ⁽¹⁾	0.625	440	1960	1030	4550	5/16-24	2.0
7824157	1.000	1838	8150	3225	14300	N-04	5.5
7824158	1.500	2120	9400	3750	16600	N-05	9.5
7829554	2.000	6800	30200	11400	50600	N-08	21.5
7824161	2.500	10800	47900	17300	76800	N-10	39

(1) Deep groove radial bearing.

Note: Design dimensions fit standard Type QK and QK1 end machining. See page 190 for details.

Bearing Supports/End Machining — Ball Splines

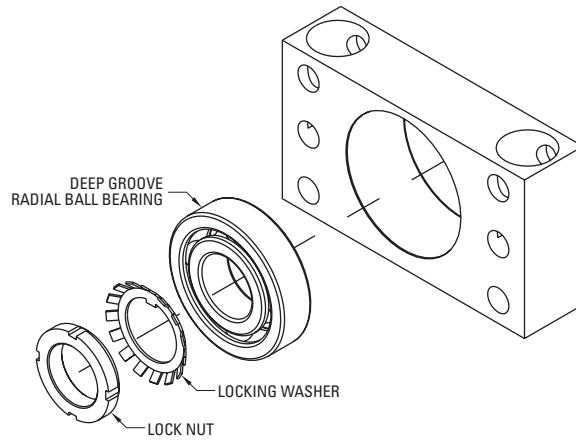
QK Bearing Support Blocks



Standard P/N	Bearing Block Dimensions (inch)																
	d1 (mm)	d2	A & H	B	C	D	E	F	G	J	K	L	M	N	P	Q	R
7828282	9	1.44	1.000	1.38	2.75	0.63	—	1.19	1.4	1.375	1.000	2.00	4 Holes 0.281 dia.	2 Holes 0.281 dia. Thru 0.50 C-Bore x 0.56 DP	—	1.8	0.688
7824157	20	2.2	1.625	2.25	4.50	0.83	—	1.87	2.4	1.750	1.438	2.75	4 Holes 0.469 dia.	2 Holes 0.656 dia. Thru 1.00 C-Bore x 0.312 DP	0.04	2.7	0.938
7824158	25	2.36	2.125	3.00	6.00	0.94	—	1.94	2.6	2.000	1.750	3.38	4 Holes 0.656 dia.	2 Holes 0.906 dia. Thru 1.375 C-Bore x 2.00 DP	0.03	2.9	1.000
7829554	40	3.62	2.937	3.75	7.50	0.76	1.63	3.15	3.8	3.000	2.250	4.25	6 Holes 0.656 dia.	4 Holes 0.906 dia. Thru 1.375 C-Bore x 2.25 DP	0.05	4.2	1.500
7824161	50	4.25	3.563	4.50	9.00	0.92	1.72	3.56	4.5	3.625	2.813	5.63	6 Holes 0.812 dia.	4 Holes 1.031 dia. Thru 1.625 C-Bore x 3.500 DP	0.05	4.9	1.813

Bearing Supports/End Machining — Ball Splines

QF Support Blocks

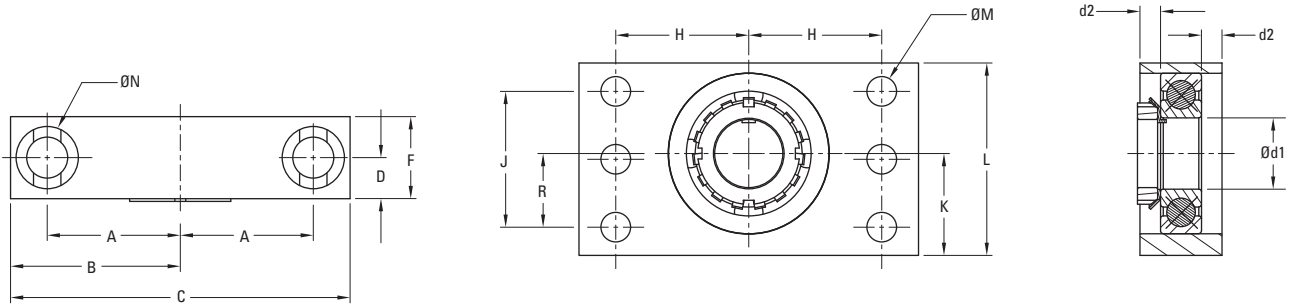


Standard P/N	Spline Size (inch)	Bearing Rating				Lock Nut Type	Bearing Block Weight (lbs)
		Static Rating C_0		Dynamic Rating C_{am}			
		(lbs)	(N)	(lbs)	(N)		
7833291	0.625	440	1960	1030	4550	5/16-24	0.8
7833265	1.000	1461	6500	3237	14400	N-04	5.8
7833268	1.500	1753	7800	3597	16000	N-05	6.8
7833273	2.000	5822	25900	11375	50600	N-08	9.7
7833279	2.500	8475	37700	15579	69300	N-10	18.5

Note: Design dimensions fit standard Type QF and QF1 end machining. See page 190 for details.

Bearing Supports/End Machining — Ball Splines

QF Support Blocks



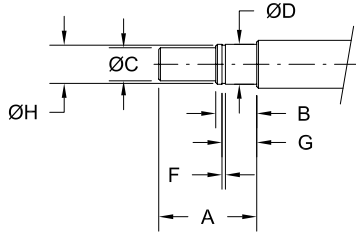
Standard P/N	Bearing Block Dimensions (inch)													
	d1 (mm)	d2	A & H	B	C	D	F	J	K	L	M	N	Q	R
7833291	9.0	0.118	1.000	1.380	2.750	0.276	0.551	1.375	1.000	2.000	4 Holes 0.281 dia.	2 Holes 0.281 dia. Thru 0.500 C-Bore x 0.562 DP	0.757	0.688
7833265	20.0	0.276	1.625	2.250	4.500	0.551	1.102	1.750	1.438	2.750	4 Holes 0.469 dia.	2 Holes 0.656 dia. Thru 1.000 C-Bore x 1.312 DP	1.258	0.938
7833268	25.0	0.531	2.125	3.000	6.000	0.827	1.654	2.000	1.750	3.375	4 Holes 0.656 dia.	2 Holes 0.906 dia. Thru 1.375 C-Bore x 2.000 DP	1.654	1.000
7833273	40.0	0.453	2.937	3.750	7.500	0.906	1.811	3.000	2.250	4.250	6 Holes 0.656 dia.	2 Holes 0.906 dia. Thru 1.375 C-Bore x 2.250 DP	1.869	1.625
7833279	50.0	0.531	3.563	4.500	9.000	1.063	2.126	3.625	2.813	5.625	6 Holes 0.812 dia.	2 Holes 1.031 dia. Thru 1.625 C-Bore x 3.500 DP	2.167	1.813

Bearing Supports/End Machining — Ball Splines

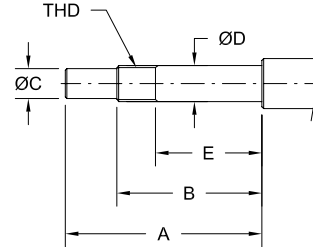
Standard End Machining

The typical ends shown below can be machined on all ball screws. Specific dimensional data is provided in the table.

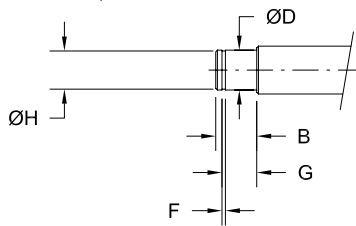
TYPE BF, REQUIRED FOR BF SUPPORT



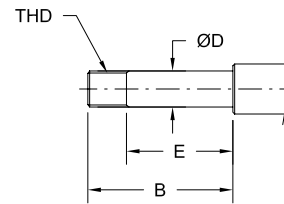
TYPE BK, REQUIRED FOR BK SUPPORT



TYPE BF1, REQUIRED FOR BF SUPPORT



TYPE BK1, REQUIRED FOR BK SUPPORT



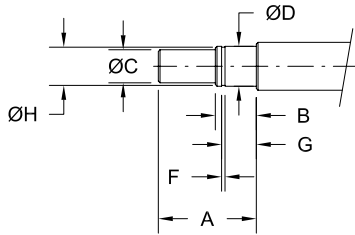
Spline Size Nominal Diameter	Type BF/BF1 (inch)										Type BK/BK1 (inch)							
	Standard P/N	A	B	C h7	D	F +0.006/ -0.000	G +0.008/ -0.000	H +0.000/ -0.008	Snap Ring (DIN 471) (mm)	Bearing Trade No.	Standard P/N	A	B	C h7	D	E	THD	Bearing Trade No.
0.625	7833368	0.984	0.394	0.2362 0.2357	0.3148 0.3145	0.035	0.311	0.299	8	608	7833360	2.008	1.417	0.3150 0.3144	0.3935 0.3932	0.787	M10x1	7000
1.000	7833372	1.614	0.630	0.6693 0.6686	0.7872 0.7869	0.053	0.526	0.748	20	6004	7833364	3.071	2.087	0.6693 0.6686	0.7872 0.7869	1.496	M20x1	7004
1.500	7833373	1.969	0.787	0.7874 0.7866	0.9841 0.9837	0.053	0.644	0.941	25	6205	7833365	3.740	2.559	0.7874 0.7866	0.9841 0.9837	1.850	M25x1.5	7205
2.000	7833375	2.874	0.906	1.3780 1.3771	1.5746 1.5742	0.077	0.785	1.496	40	6208	7833367	5.630	3.661	1.3780 1.3771	1.5746 1.5742	2.283	M40x1.5	7208

Bearing Supports/End Machining — Ball Splines

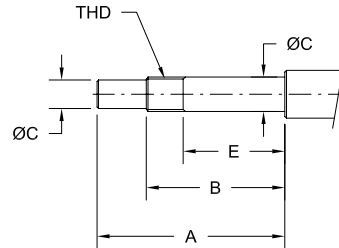
Standard End Machining

The typical ends shown below can be machined on all ball screws. Specific dimensional data is provided in the table.

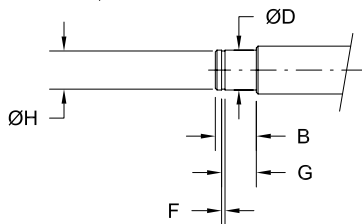
TYPE FF, REQUIRED FOR FF SUPPORT



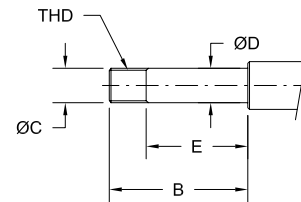
TYPE FK, REQUIRED FOR FK SUPPORT



TYPE FF1, REQUIRED FOR FF SUPPORT



TYPE FK1, REQUIRED FOR FK SUPPORT

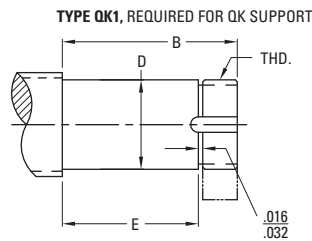
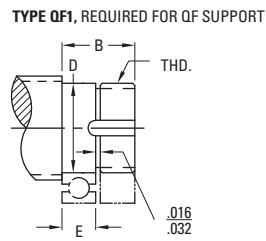
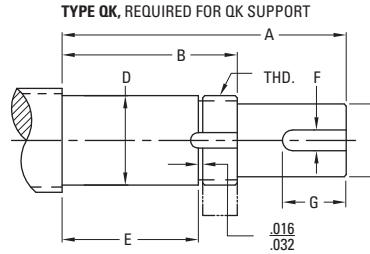
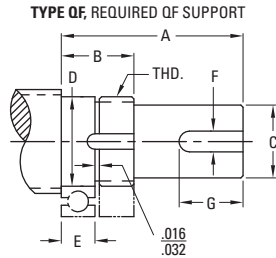


Spline Size Nominal Diameter	Type FF/FF1 (inch)										Type FK/FK1 (inch)							
	Standard P/N	A	B	C h7	D	F +0.006/ -0.000	G +0.008/ -0.000	H +0.000/ -0.008	Snap Ring (DIN 471) (mm)	Bearing Trade No.	Standard P/N	A	B	C h7	D	E	THD	Bearing Trade No.
0.625	7833384	0.984	0.394	0.2362 0.2357	0.3148 0.3145	0.035	0.311	0.299	8	608	7833377	2.008	1.417	0.3150 0.3144	0.3935 0.3932	0.984	M10x1	7000
1.000	7833388	1.614	0.630	0.6693 0.6686	0.7872 0.7869	0.053	0.526	0.748	20	6004	7833381	3.425	2.441	0.6693 0.6686	0.7872 0.7869	1.772	M20x1	7004
1.500	7833389	1.969	0.787	0.7874 0.7866	0.9841 0.9837	0.053	0.644	0.941	25	6205	7833382	4.173	2.992	0.7874 0.7866	0.9841 0.9837	2.205	M25x1.5	7205

Bearing Supports/End Machining — Ball Splines

Standard End Machining

The typical ends shown below can be machined on all ball splines. Specific dimensional data is provided in the table.



Spline Size (inch)	Type QF/QF1					Type QK/QK1					Common Dimensions				
	Standard P/N	A	B	E	Bearing Trade No.	Standard P/N	A	B	E	Bearing Trade No.	C	D ⁽¹⁾	F	G	THD
0.625	7833291	1.970	0.720	0.291	629	7828282	2.874	1.812	1.398	629	0.2500 0.2490	0.3544 0.3541	.092	1.000	5/16-24
1.000	7833265	2.375	1.060	0.551	6204	7824157	4.028	2.713	2.204	7204	0.6250 0.6240	0.7877 0.7873	.118	1.25	N-04
1.500	7833270	2.970	1.160	0.630	620	7824159	4.860	3.050	2.520	7206	1.0000 0.9990	1.1814 1.1810	.250	1.250	N-06
2.000	7833273	3.650	1.460	0.906	6308	7829554	6.368	4.178	3.624	7308	1.3750 1.3740	1.5752 1.5747	.313	1.875	N-08
2.500	7833279	4.560	1.680	1.063	6310	7824161	7.749	4.872	4.252	7310	1.7500 1.7490	1.9689 1.9684	.375	2.750	N-10

(1) Dimensioned for press fit of bearing on bearing journal.