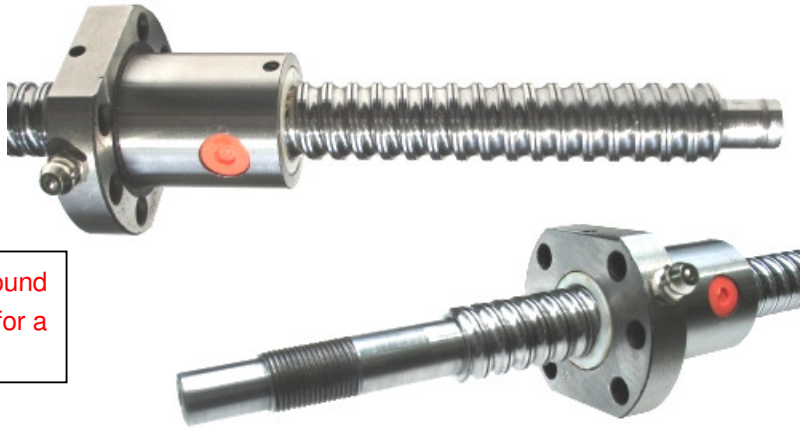
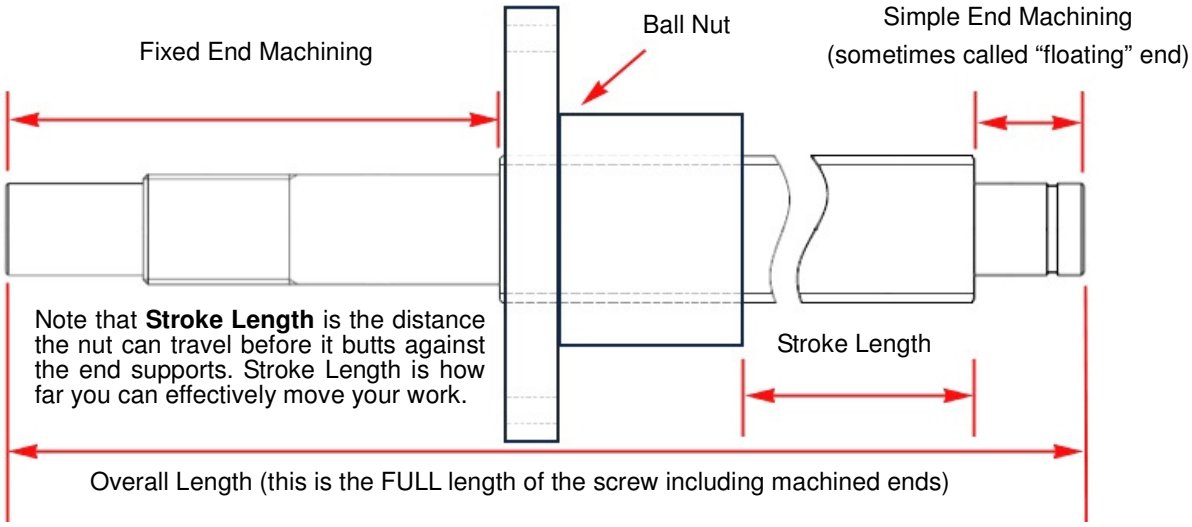
Ball Screws and Related Products……Technical Catalog

Table of Contents

Precision Rolled Ball Screws



Need C5 rolled or ground screws? Contact us for a quick quote.



Typical part number: RM1605-0350-0200-FS

RM16 = Our series identifier and diameter (in mm)

05 = Lead for screw in mm (one turn moves nut this many mm)

0350 = Overall length of screw in mm (end to end)

0200 = Stroke length in mm (approx. nut travel)

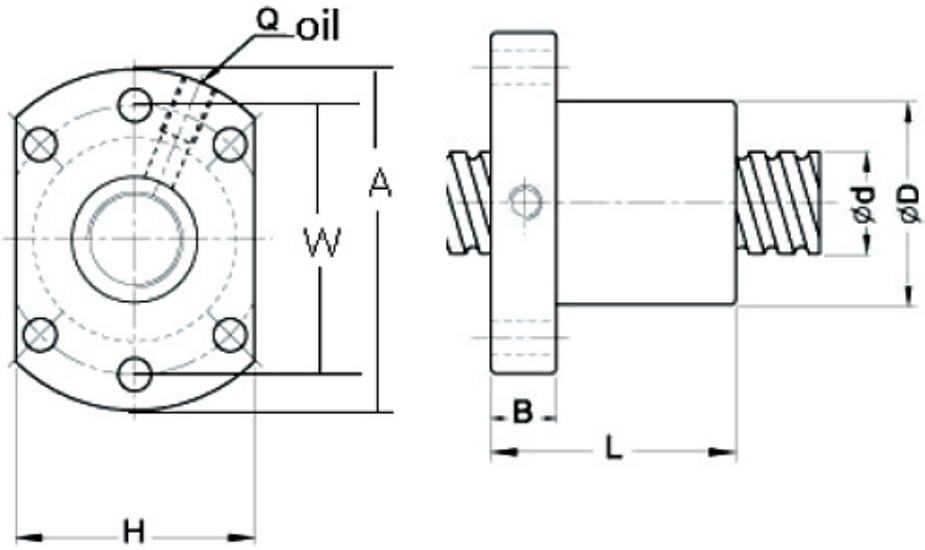
FS = Fixed & Simple end machining

Our stock program includes these parts/sizes

RM1605-0350-0200-FS	RM1610-0350-0200-FS
RM1605-0450-0300-FS	RM1610-0450-0300-FS
RM1605-0550-0400-FS	RM1610-0550-0400-FS
RM1605-0650-0500-FS	RM1610-0650-0500-FS
RM1605-0750-0600-FS	RM1610-0750-0600-FS
RM1605-0850-0700-FS	RM1610-0850-0700-FS
RM1605-0950-0800-FS	RM1610-0950-0800-FS
RM1605-1150-1000-FS	RM1610-1150-1000-FS
RM1605-1350-1200-FS	RM1610-1350-1200-FS
RM1605-1550-1400-FS	RM1610-1550-1400-FS

Contact us for custom screws of any size and length!

Ballnut/Ball Screw Tech Data



Note: ball nuts are supplied with non-removable flange as shown

Material Type	Dia. d	Lead	Ball Dia.	D	A	B	L	W	X	H	Oil Q	# of Circuits	Dyn. kgf Ca	Sta. kgf Coa	Rigidity Kgf/um K
RM1605	16	5	3.175	28	48	10	50	38	5.5	40	M6	4	1380	3052	32
RM1610	16	10	3.175	28	48	10	57	38	5.5	40	M6	3	1103	2401	26
RM2005	20	5	3.175	36	58	10	51	47	6.6	44	M6	4	1551	3875	39
RM2010	20	10	3.175	36	58	10	60	47	6.6	44	M6	3	1516	3833	21
RM2505	25	5	3.175	40	62	10	51	51	6.6	48	M6	4	1724	4904	45
RM2510	25	10	4.762	40	62	12	85	51	6.6	48	M6	4	2954	7295	50
RM3205	32	5	3.175	50	80	12	52	65	9	62	M6	4	1922	6343	54
RM3210	32	10	6.35	50	80	12	90	65	9	62	M6	4	4805	12208	61
	We stock various lengths in sizes shaded in this color. Special sizes also available in 1605 and 1610 with about 2-3 week lead time.														
	We can provide custom screws in sizes shaded in this color in about 2-3 weeks.														

Rolled screws have Class 7 accuracy rating. **ACCURACY**

Precision Rolled Screw Runout: +/- 0.050/300mm or 0.002"/12".

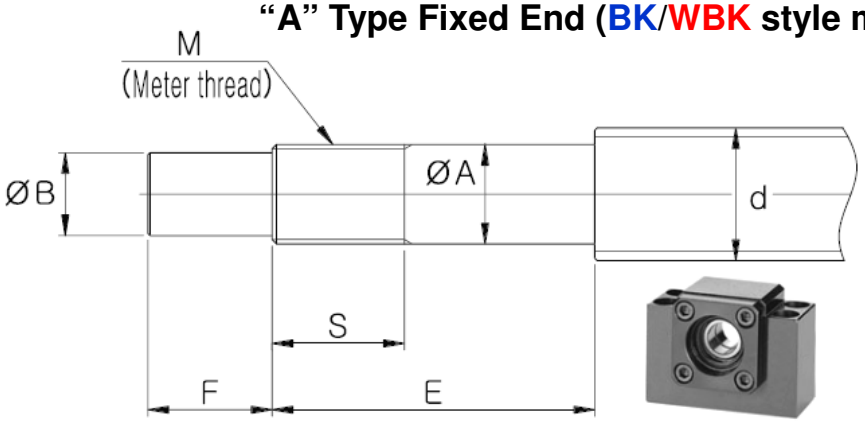
Ballnut: Single ballnut with anti-backlash defined as <0.015mm or <0.0006".

Note: Our standard ball screws and most of our custom screws are supplied with the "BSFU" style ball nut. This is a very common design of ball nut which also carries this designation: Type DIN 69051. The BSFU ball nuts we provide have metal, internal deflectors/returns for longer life and better performance.

With other sizes/leads, other ball nut styles are utilized. We will advise you about the type of ball nut available for a given size at the time of quote.

Typical/Recommended End Machining

"A" Type Fixed End (BK/WBK style mount)

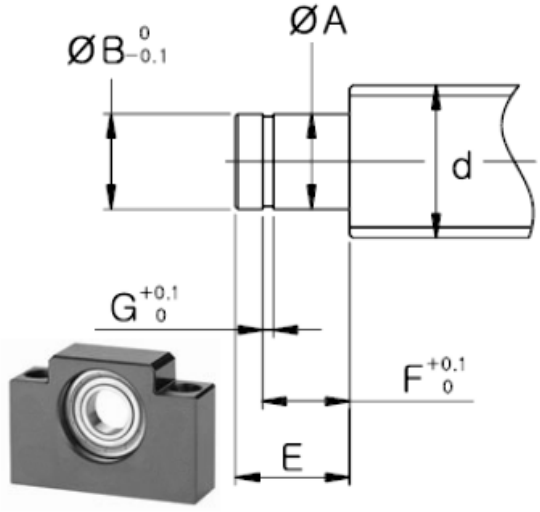


Important note: In some cases slightly different machining is required on the fixed end depending on whether you are using a BK mount or WBK mount. Before we can provide a custom screw, we MUST know how you intend to support the ball screw.

All dimensions in MM

Support PN	Screw Ø d	Bearing Ø A	Motor Coupling B	E	F	M	S
BK10/WBK10*	12/14/15	10	8	36	15	M10 x 1	16
BK12/WBK12*	14/15/16	12	10	36	15	M12 x 1	14
BK15	18/20	15	12	40	20	M15 x 1	12
WBK15*	18/20	15	12	47	20	M15 x 1	12
BK20	25/28	20	17	53	25	M20 x 1	15
WBK20*	25/28	20	17	62	25	M20 x 1	15
BK25	32/36	25	20	65	30	M25 x 1.5	18
WBK25*	32/36	25	20	76	30	M25 x 1.5	18
BK30/WBK30*	36/40	30	25	72	38	M30 x 1.5	25
BK35	45	35	30	81	45	M35 x 1.5	28
BK40	50	40	35	93	50	M40 x 1.5	35

*Note that some manufacturers refer to their flange type fixed end supports as "FK" style and others call them "WBK" style, they are the same. Our present provider uses the WBK designation.



While BK and BF end supports are shown in this illustration, the same machining works with WBK/WBF.

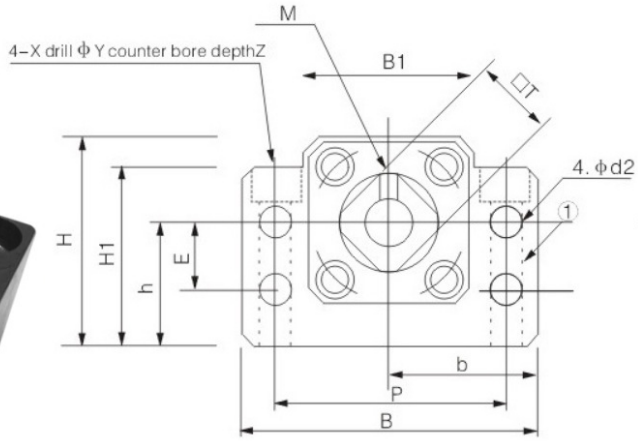
"B" Type Simple End (for BF & WBF style mount)

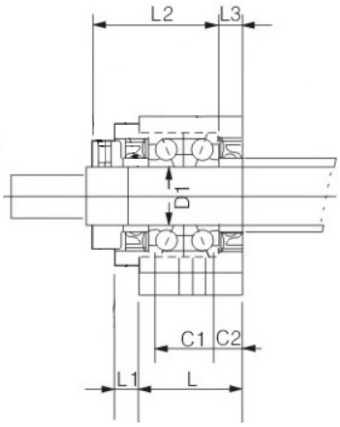
Support PN	Screw Ø d	Bearing Ø A	E	Snap Ring Flute B	F	G
BF10/WBF10*	12/14/15	8	10	7.6	7.9	0.9
BF12/WBF12*	14/15/16	10	11	9.6	9.15	1.15
BF15/WBF15*	18/20	15	13	14.3	10.15	1.15
BF20/WBF20*	25/28/30	20	19	19	15.35	1.35
BF25/WBF25*	28/30/36	25	20	23.9	16.35	1.35
BF30/WBF30*	36/40	30	21	28.6	17.75	1.75
BF35	40/45	35	22	33	18.75	1.75
BF40	50	40	23	38	19.75	1.95

*Note that some manufacturers refer to their flange type simple end supports as "FF" style and others call them "WBF" style, they are the same. Our present provider uses the WBF designation.

BK

Fixed Side

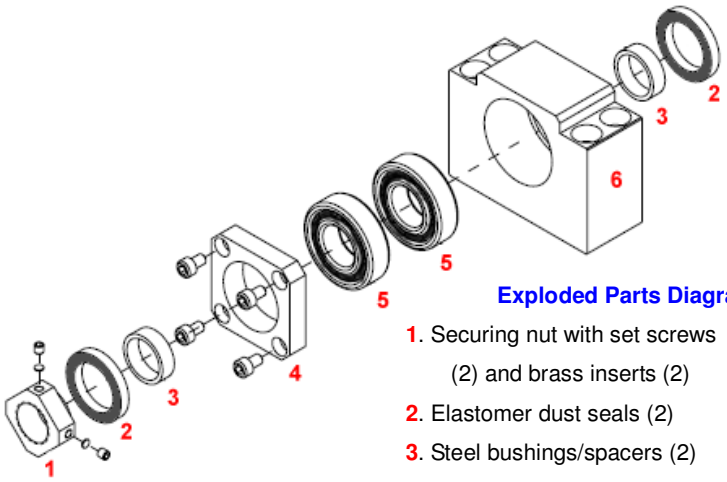




Dimensions in MM

Model	D1	L	L1	L2	L3	B	B1	H	H1	b	E	h	P	C1	C2	d2	X	Y	Z	T	M
BK10	10	25	6	29.5	5	60	34	39	32.5	30	15	22	46	13	6	5.5	6.3	10.5	5	16	M3
BK12	12	25	6	29.5	5	60	34	42	32.5	30	18	25	46	13	6	5.5	6.3	10.5	5.5	19	M3
BK15	15	27	6	32	6	70	38	47	38	35	18	28	54	15	6	5.5	6.3	10.5	6.5	22	M3
BK17	17	35	10	44	7	86	48	63	55	43	28	39	68	19	8	6.6	8.7	14	8.6	24	M4
BK20	20	35	6	43	8	88	50	59	50	44	22	34	70	19	8	6.6	8.7	14	8.5	30	M4
BK25	25	42	6	54	9	106	62	79	70	53	33	48	85	22	10	9	10.7	17.5	10.5	35	M5
BK30	30	45	6	61	9	128	74	88	78	64	33	51	102	23	11	11	13.7	20	13	40	M6
BK35	35	50	10	67	12	140	86	95	79	70	35	52	114	26	12	11	13.7	20	13	50	M8
BK40	40	61	10	76	15	160	98	109	90	80	37	60	130	33	14	14	17.7	26	17.5	50	M8

Note: BK mounts come complete with bearing spacer bushings and locking nut. Locking nut may be supplied with separate brass inserts or other design to protect threads when set screws are tightened See exploded diagram below for typical components.



Exploded Parts Diagram

1. Securing nut with set screws (2) and brass inserts (2)
2. Elastomer dust seals (2)
3. Steel bushings/spacers (2)
4. Bearing retainer cover with cap screws (4)
5. Angular contact ball bearings (2)
6. BK mount body

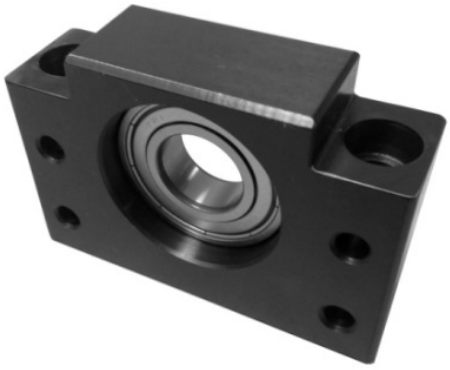
Load Ratings/Speed Information

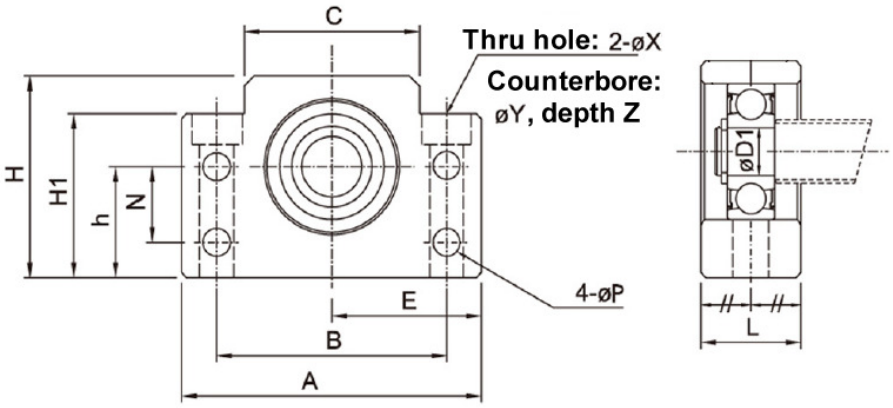
Model	Static Load (kgf)	Dynamic Load (kgf)	Max Speed (rpm)
BK10	266	133	16,800
BK12	305	153	15,400
BK15	350	175	13,300
BK17	610	305	11,200
BK20	670	335	10,500
BK25	1,050	525	8,400
BK30	1,510	755	7,000
BK35	1,870	1,202	4,200
BK40	2,340	1,504	3,710

Note that set screws/inserts inclued with fixed supports are sometimes supplied as a single unit where a brass protective tip is integrated into the set screw or securing nut is of special design to protect threads.

BF

Simple/floating support

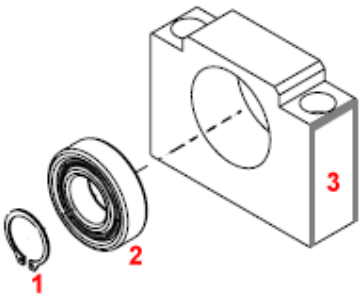




Dimensions in MM

Model	øD1	A	L	B	C	H	H1	E	X	Y	Z	N	h	P	Snap Ring
BF10	8	60	20	46	34	39	32.5	30	6.3	10.8	5	15	22	5.5	S08
BF12	10	60	20	46	34	43	32.5	30	6.3	10.8	5.5	18	25	5.5	S10
BF15	15	70	20	54	40	48	38	35	6.3	11	6.5	18	28	5.5	S15
BF17	17	86	23	68	50	64	55	43	8.7	14	8.6	28	39	6.6	S17
BF20	20	88	26	70	52	60	50	44	8.7	8.7	8.6	22	34	6.6	S20
BF25	25	106	30	85	64	80	70	53	10.7	10.7	11	33	48	9	S25
BF30	30	128	32	102	76	89	78	64	13.7	13.7	13	33	51	11	S30
BF35	35	140	32	114	88	96	79	70	13.7	13.7	13	35	52	11	S35
BF40	40	160	37	130	100	110	90	80	17.7	17.7	17.7	37	60	14	S40

Note: BF mounts are supplied with circlip to secure ball screw to bearing. Ball bearing may be packaged separately in sealed package, but it simply slides into the housing without the need for tools or special skills.

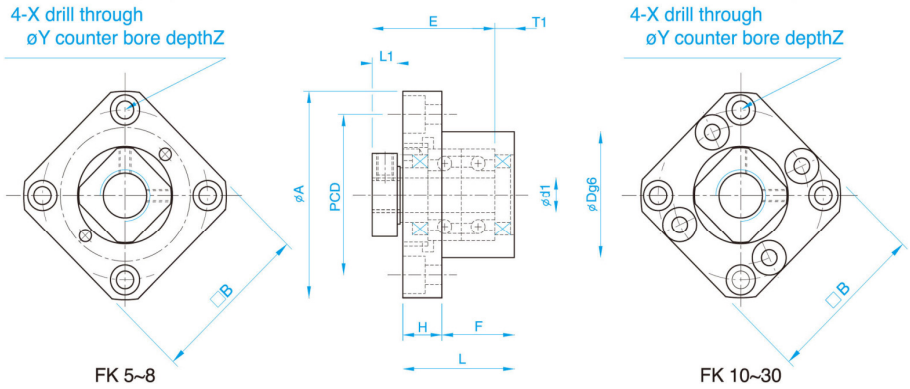


Exploded Parts Diagram

1. Circlip/snap ring retaining fastener
2. Sealed ball bearing
3. BF mount body

WBK
Fixed Side

Note that some manufacturers refer to the fixed side "flange" support as WBK and some as FK. They are the same in terms of size and function. Our supplier uses the WBK designation.

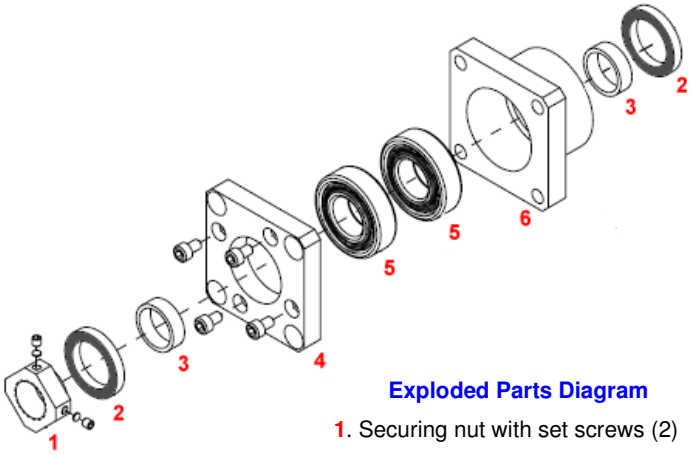


Dimensions in MM

Model	d1	L	H	F	E	Dg6	A	PCD	B	L1	T1	X	Y	Z
WBK5	5	16.5	6	10.5	18.5	20	34	26	26	5.5	3.5	3.4	6.5	4
WBK6	6	20	7	13	22	22	36	28	28	5.5	3.5	3.4	6.5	4
WBK8	8	23	9	14	26	28	43	35	35	7	4	3.4	6.5	4
WBK10	10	27	10	17	29.5	34	52	42	42	7.5	5	4.5	8	4
WBK12	12	27	10	17	29.5	36	54	44	44	7.5	5	4.5	8	4
WBK15	15	34	17	17	36	40	63	50	52	10	6	5.5	9.5	6
WBK20	20	52	22	30	50	57	85	70	68	8	10	6.6	11	10
WBK25	25	57	27	30	60	63	98	80	79	13	10	9	15	13
WBK30	30	62	30	32	61	75	117	95	93	11	12	11	17.5	15

Yellow shaded area above indicates sizes we do not stock but can obtain as special order in QUANTITY

Notes: WBK mounts come complete with bearing spacer bushings, locking nut and set screws for locking nut. Some manufacturers refer to their flange type simple end supports as "FF" style and others call them "WBF" style, they are the same. Our present provider uses the WBF designation.



Exploded Parts Diagram

1. Securing nut with set screws (2) and brass inserts (2)
2. Elastomer dust seals (2)
3. Steel bushings/spacers (2)
4. Bearing retainer cover with cap screws (4)
5. Angular contact ball bearings (2)
6. WBK mount body

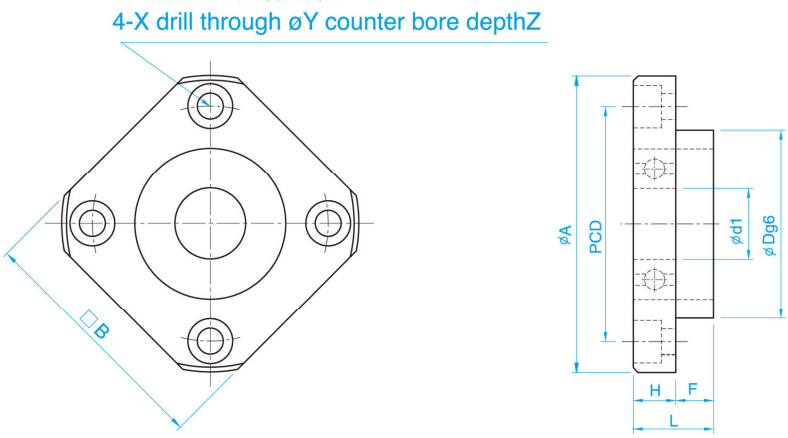
Load Ratings/Speed Information

Model	Static Load (kgf)	Dynamic Load (kgf)	Max Speed (rpm)
WBK10	266	133	16,800
WBK 12	305	153	15,400
WBK 15	350	175	13,300
WBK 17	610	305	11,200
WBK 20	845	423	9,300
WBK 25	1,050	525	8,400
WBK 30	1,510	755	7,000

Note that set screws/inserts inclued with fixed supports are sometimes supplied as a single unit where a brass protective tip is actually attached to the set screw.

WBF

Floating Side



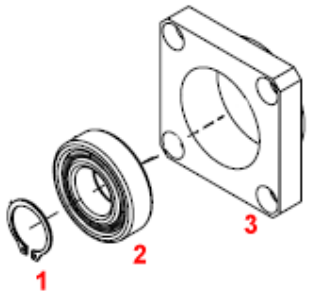
Dimensions in MM

Model	d1	L	H	F	Dg6	A	PCD	B	X	Y	Z
WBF6	6	10	6	4	22	36	28	28	3.4	6.5	4
WBF10	8	12	7	5	34	43	35	35	4.5	6.5	4
WBF12	10	15	7	8	36	52	42	42	4.5	8	4
WBF15	15	17	9	8	40	63	50	52	5.5	9.5	5.5
WBF20	20	20	11	9	57	85	70	68	6.6	11	6.5
WBF25	25	24	14	10	63	98	80	79	9	14	8.5
WBF30	30	27	18	9	75	117	95	93	11	17.5	11

Yellow shaded area above indicates size we do not stock but can obtain as special order in QUANTITY

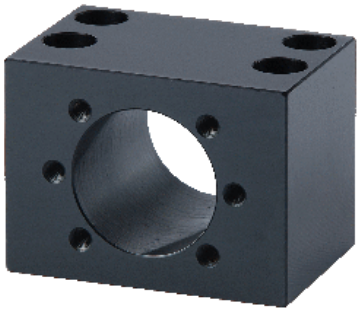
Some manufacturers refer to this type of end support with the “FF” designation while others use “WBF.” They are, in fact, the same in terms of size and function.

Note: WBF mounts are supplied with circlip to secure ball screw to bearing. Sealed ball bearing may be packaged separately, but it simply slides into the support body without need for tools or special skills.



Exploded Parts Diagram

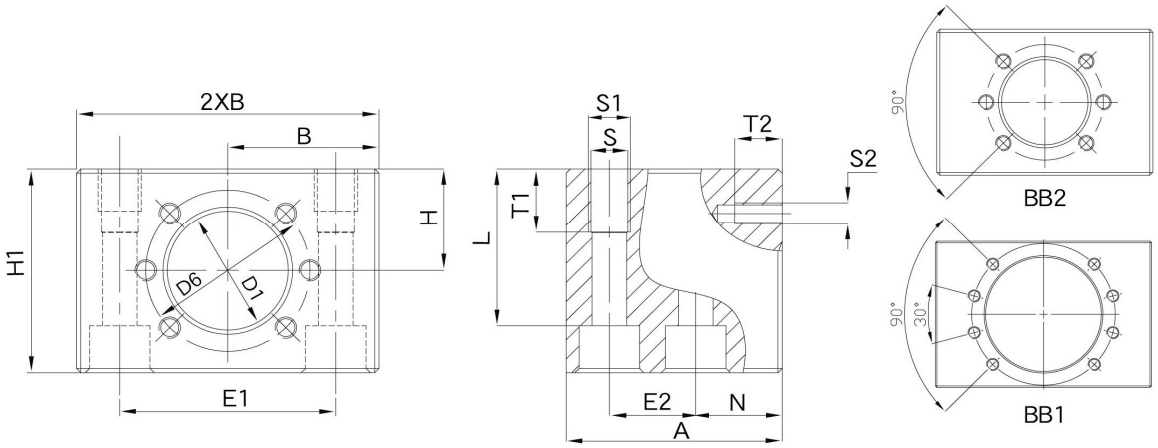
1. Circlip/snap ring retaining fastener
2. Sealed ball bearing
3. WBF mount body



MGD Style Ball Screw Nut Bracket

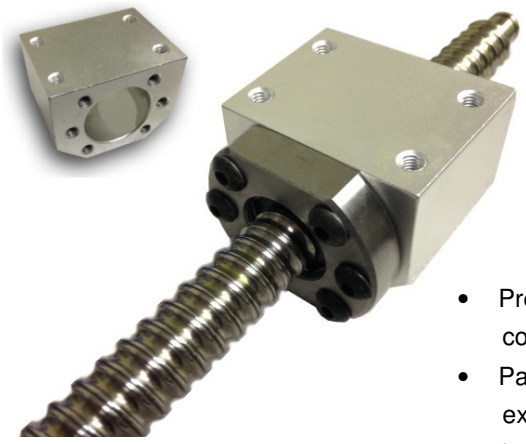
(machined from steel)

We stock the MGD16, MGD20 and MGD25 sizes. Other sizes can be special-ordered. CAD drawings are available from our website.



Unit：mm

Model No.	Size d_0xP		D1±0.1	D6	A	B±0.1	H±0.1	H1	E1	E2	N	S	S1	T1	S2	T2		ISO4762	L	Weight (Kgs)
MGD 16	16×5 16×16	16×10	28.4	38	50	35	24	48	50±0.1	20±0.1	20	8.4	M10	15	M5	10	BB2	M8	37	0.91
MGD 20	20×5	20×20	36.4	47	55	37.5	28	56	55±0.1	23±0.1	22	8.4	M10	15	M6	11	BB2	M8	45	1.18
MGD 25	25×5 25×25	25×10	40.4	51	55	40	30	60	60±0.1	23±0.1	22	8.4	M10	15	M6	11	BB2	M8	49	1.33
MGD32S	32×5	32×10	50.4	65	70	45	35	70	70±0.1	45±0.1	12.5	14	M12	20	M8	14	BB2	M12	-	2.5
MGD 32	32×20	32×32				50			75±0.1	30±0.1	27		M16					M12	52	2.77
MGD 40	40×5 40×12 40×20	40×10 40×16 40×40	63.4	78	80	60	42	84	90±0.1	35±0.1	31	15	M18	25	M8	17	BB1	M14	66	3.61



HD Style Ball Screw Nut Bracket

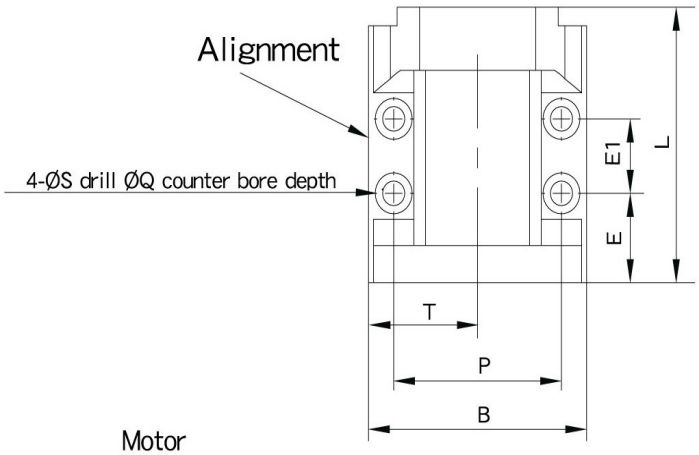
(machined from aluminum)

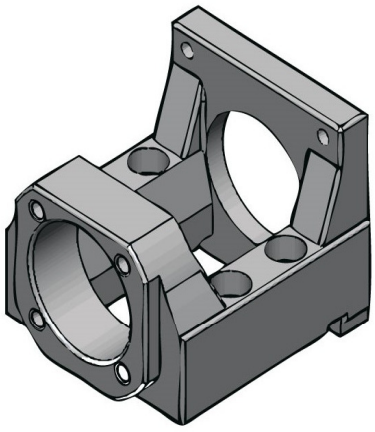
We stock the HD16, HD20, HD25 and HD32 sizes. CAD drawings and PDF spec sheets are available from our website.

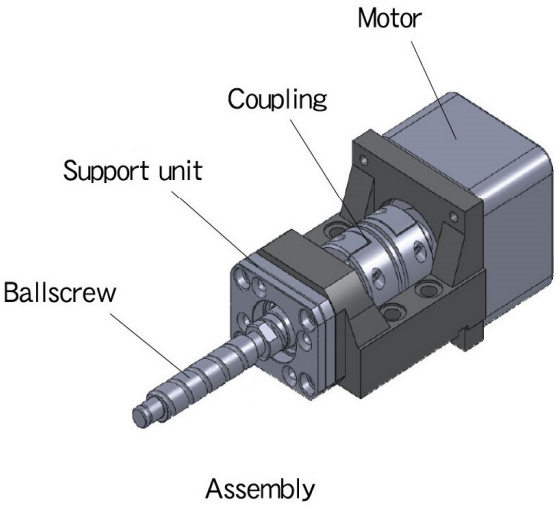
- Precision machined from aluminum. The HD brackets are excellent quality but cost significantly less than MGD brackets above.
- Part numbers indicate the size screw upon which these are used. For example, the HD16 model is used in conjunction with the ball nut typically installed on a 16mm Ø screw. The barrel of the ball nut for this size is usually 28mm Ø, so the receiving bore in the bracket is just in excess of that.

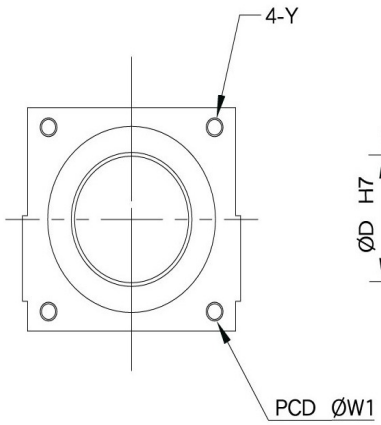
MBA Style Motor Brackets

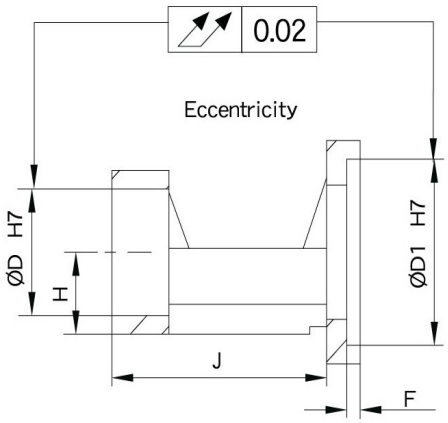
These brackets make it easy to build a ball screw assembly by combining common motors, flexible motor couplings and ball screw end supports. Save both time and money…and get a precision result FAST.











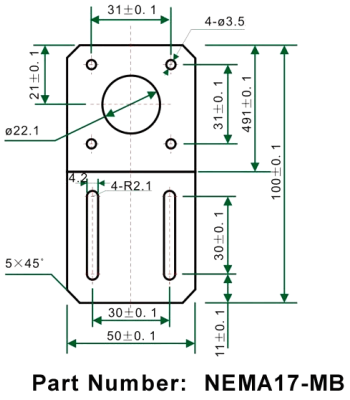
Model	D1	W1	Y	D	L	H ±0.02	B	P	T	S	Q	E	E1	F	J	Wt. (kgs)	Fixed Side	Support Side
MBA12-C	38.1	66.7	M4	36	74	25	65	50	32.5	6.6	11	24	20	5	65	0.71	FK12	BF12
MBA12-D	50	70	M5	36	74	25	65	50	32.5	6.6	11	24	20	5	65	0.71	FK12	BF12
MBA15-C	38.1	66.7	M4	40	82	28	70	55	35	6.6	11	24	28	5	73	1.4	FK15	BF15
MBA-15-D	50	70	M5	40	84	28	70	55	35	6.6	11	25	28	5	74	1.4	FK15	BF15
MBA-15-E	70	90	M6	40	94	28	88	70	44	8.5	14	30	28	6	82	1.4	FK15	BF15
MBA-15-F	73	98.4	M6	40	92	28	88	70	44	8.5	14	29	28	6	81	1.4	FK15	BF15
MBA20-D	50	70	M5	57	113	34	88	70	44	8.5	14	29	42	5	-	1.61	FKA20	BF20
MBA20-E	70	90	M6	57	113	34	88	70	44	8.5	14	29	42	6	102	1.61	FKA20	BF20
MBA20-F	73	98.4	M6	57	113	34	88	70	44	8.5	14	29	42	6	102	1.61	FKA20	BF20

NEMA Motor Brackets

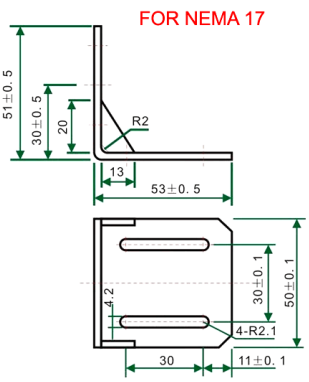
These sturdy steel brackets make it easy to mount NEMA standard frame size motors. We stock NEMA 17, NEMA 23 and NEMA 34 versions. Just bolt up your motor, and you are ready to attach it to a ball screw or other device.

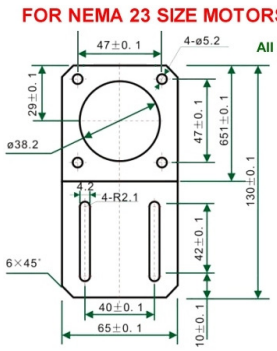
Quality construction with durable black paint finish. Welded corner gussets provide extra rigidity. VALUE PRICED!

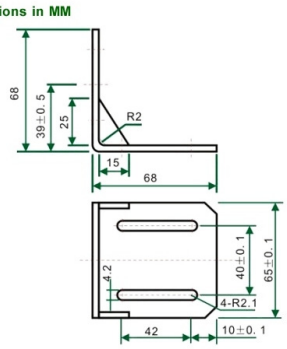
See images below for dimensions or visit our website to download full-size PDF spec sheets.



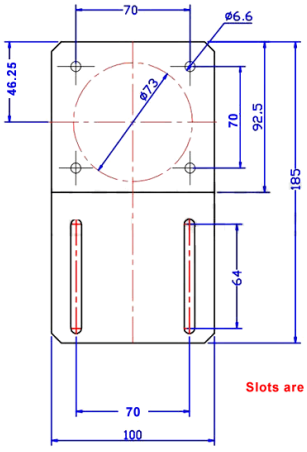
Part Number: NEMA17-MB

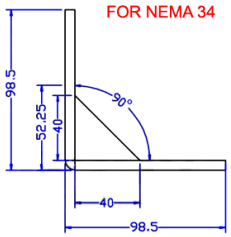


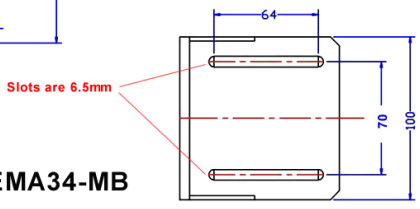




Part Number: NEMA23-MB

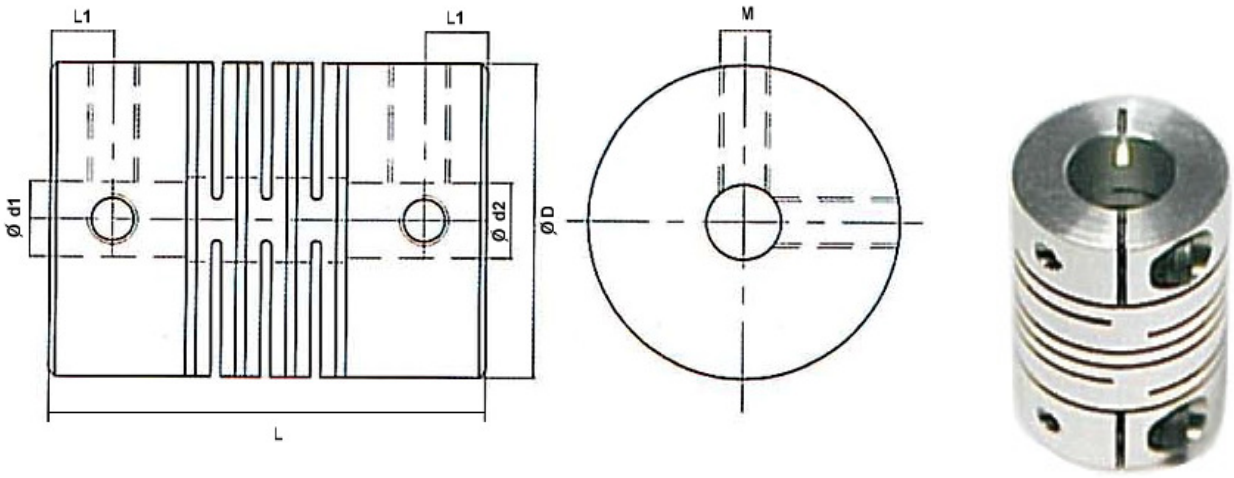






Part Number: NEMA34-MB

DR1-C Flexible Motor Couplings (stainless steel construction)



The DR1-C flexible motor coupling line provides an economical way to connect motors to ball screws and other shafts via clamping pressure applied by two set screws. Durable stainless steel construction. These couplings offer higher torque ratings than similar couplings manufactured from aluminum.

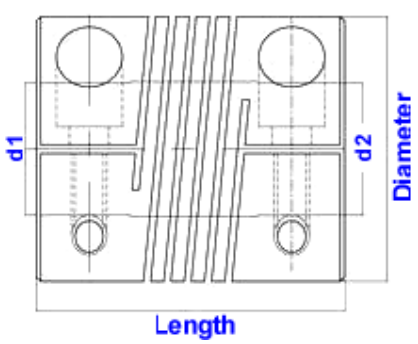
Specifications and sizes (mm) [note that 6.35mm = ¼"]

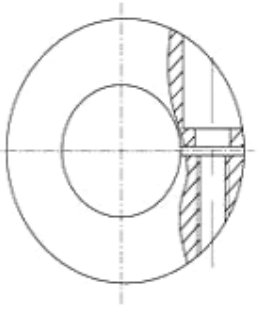
Part #	Length (L)	Diameter (D)	d1	d2	Rated Torque Max Torque	Eccentricty Error	Shaft Angle
DR1-C-20X25-5X5	25	20	5	5	1.5 N.m. 3.0 N.m.	±0.2mm	≤2º
DR1-C-25X30-5X6.35	30	25	5	6.35	1.5 N.m. 3.0 N.m.	±0.2mm	≤2º
DR1-C-25X30-6X6.35	30	25	6	6.35	1.5 N.m. 3.0 N.m.	±0.2mm	≤2º
DR1-C-25X30-8X5	30	25	8	5	1.5 N.m. 3.0 N.m.	±0.2mm	≤2º
DR1-C-25X30-8X6.35	30	25	8	6.35	1.5 N.m. 3.0 N.m.	±0.2mm	≤2º
DR1-C-25X30-10X5	30	25	10	5	1.5 N.m. 3.0 N.m.	±0.2mm	≤2º
DR1-C-25X30-10X6	30	25	10	6	1.5 N.m. 3.0 N.m.	±0.2mm	≤2º
DR1-C-25X30-10X6.35	30	25	10	6.35	1.5 N.m. 3.0 N.m.	±0.2mm	≤2º
DR1-C-25X30-10X8	30	25	10	8	1.5 N.m. 3.0 N.m.	±0.2mm	≤2º
DR1-C-25X30-12X5	30	25	12	5	1.5 N.m. 3.0 N.m.	±0.2mm	≤2º
DR1-C-25X30-12X6.35	30	25	12	6.35	1.5 N.m. 3.0 N.m.	±0.2mm	≤2º
DR1-C-25X30-12X8	30	25	12	8	1.5 N.m. 3.0 N.m.	±0.2mm	≤2º
DR1-C-25X30-12X12	30	25	12	12	1.5 N.m. 3.0 N.m.	±0.2mm	≤2º
All DR1-C couplings rated for 15,000 max. RPM.							

Note: We will be adding additional sizes in this style.

Special sizes can be supplied via special order (minimum quantities apply).

BR Flexible Motor Couplings





The BR flexible motor coupling line provides an economical way to connect motors to ball screws and other shafts via clamping pressure applied by two set screws. We stock an extensive range of couplings that account for most common bore sizes; special sizes can be provided as a special order (minimum quantities apply).

Specifications and sizes (mm) [note that 6.35mm = ¼"]

Part #	Length	Diameter	d1	d2	Rated Torque Max Torque	Eccentricty Error	Shaft Angle
BR-20X25-5X5	25	20	5	5	0.5 N.m. 1.0 N.m.	±0.2mm	≤2º
BR-25X30-5X6.35	30	25	5	6.35	0.5 N.m. 1.0 N.m.	±0.2mm	≤2º
BR-25X30-6X6.35	30	25	6	6.35	0.5 N.m. 1.0 N.m.	±0.2mm	≤2º
BR-25X30-8X5	30	25	8	5	0.5 N.m. 1.0 N.m.	±0.2mm	≤2º
BR-25X30-8X6.35	30	25	8	6.35	0.5 N.m. 1.0 N.m.	±0.2mm	≤2º
BR-25X30-10X5	30	25	10	5	0.5 N.m. 1.0 N.m.	±0.2mm	≤2º
BR-25X30-10X6	30	25	10	6	0.5 N.m. 1.0 N.m.	±0.2mm	≤2º
BR-25X30-10X6.35	30	25	10	6.35	0.5 N.m. 1.0 N.m.	±0.2mm	≤2º
BR-25X30-10X8	30	25	10	8	0.5 N.m. 1.0 N.m.	±0.2mm	≤2º
BR-25X30-12X5	30	25	12	5	0.5 N.m. 1.0 N.m.	±0.2mm	≤2º
BR-25X30-12X6.35	30	25	12	6.35	0.5 N.m. 1.0 N.m.	±0.2mm	≤2º
BR-25X30-12X8	30	25	12	8	0.5 N.m. 1.0 N.m.	±0.2mm	≤2º
BR-25X30-12X2	30	25	12	12	0.5 N.m. 1.0 N.m.	±0.2mm	≤2º
All BR couplings rated for 19,000 max. RPM.							