

BEARING, SHAFTS, CLAMPS, COLLARS & HUBS

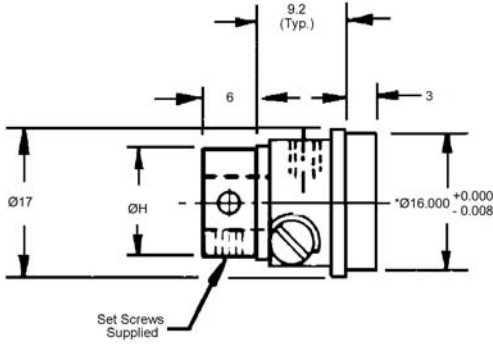
Table of Contents

HUBS	
Phase Adjustable Hub	MI 2
Gear, Sprocket and Dial Hubs	MI 3 - MI 5
Dual Gear Hubs	MI 6
CLAMPS	
Split Hub Clamps	MI 7 - MI 8
Shaft Clamp	MI 9
Clamps	MI 10
Threaded Shaft Clamp	MI 11
Squeeze Clamp	MI 12
COLLARS	
Set Screw Collars	MI 13 - MI 14
SHAFTS	
Case Hardened Ground Shafts	MI 15
Stainless Ground Shafts	MI 16, MI 18 - MI 23
Ground Shafts	MI 17
BEARINGS	
Dyna-Speed Needle Roller Bearings	MI 24
Ball Bearings	MI 25 - MI 27
Oil-Less Bearings	MI 28 - MI 30
Te-F-Thane® Bearing	MI 31 - MI 32
Long-Life Bearings	MI 33
Thermoplastic Bearings - Reference Chart	MI 34
Thermoplastic Bearings	MI 35 - MI 37
Spherical Bearings	MI 38
Spherical Pillow Block Bearings	MI 39
Thrust Bearings	MI 40
Roller Thrust Bearings	MI 41

For inch options, please see our inch catalog.

PHASE ADJUSTABLE HUB

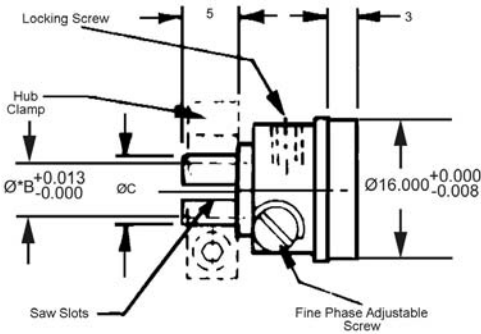
BORE	TYPE	MATERIAL
4MM TO 6MM	PIN HUB 360° ADJUSTABLE BI-DIRECTIONAL	STAINLESS STEEL DIN 1.4305



STOCK NO.	$\varnothing B$ BORE	$\varnothing H$	$\varnothing C$
PH6M-1	3.995	9.0	5.6
PH6M-2	4.995	10.0	6.6
PH6M-3	5.995	13.0	7.6

* Concentric to bore within 0.008mm

BORE	TYPE	MATERIAL
4MM TO 6MM	CLAMP HUB 360° ADJUSTABLE BI-DIRECTIONAL	STAINLESS STEEL DIN 1.4305

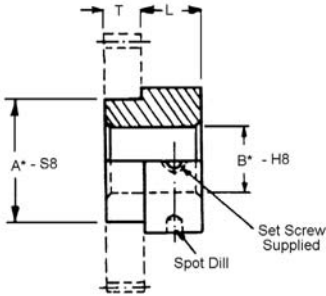


STOCK NO.	$\varnothing B$ BORE	$\varnothing C$	HUB CLAMP NO. (ORDER SEPARATELY)
CH6M-1	3.995	5.6	CG1M-5
CH6M-2	4.995	6.6	CG1M-8
CH6M-3	5.995	7.9	CG1M-11

* Concentric to bore within 0.008mm

GEAR, SPROCKET AND DIAL HUBS

BORE	TYPE	MATERIAL
4MM TO 12MM	PIN HUB	STAINLESS STEEL DIN 1.4305



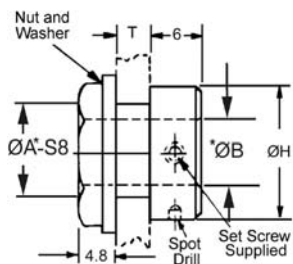
STOCK NO.	$\varnothing B$	$\varnothing A$	T	L	$\varnothing H$
PH4M-1	4.00	10.00	1.6	6	13
PH4M-2			3.0		
PH4M-3			5.0		
PH4M-4			6.4		
PH4M-5			9.5		
PH4M-6	6.00	10.00	1.6	6	13
PH4M-7			3.0		
PH4M-8			5.0		
PH4M-9			6.4		
PH4M-10			9.5		
PH4M-11	7.00	10.00	1.6	6	13
PH4M-12			3.0		
PH4M-13			5.0		
PH4M-14			6.4		
PH4M-15			9.5		
PH4M-40	8.00	10.00	1.6	13	20
PH4M-41			3.0		
PH4M-42			5.0		
PH4M-43			6.4		
PH4M-44			9.5		
PH4M-16	10.00	16.00	1.6	13	20
PH4M-17			4.8		
PH4M-18			6.4		
PH4M-19			9.5		
PH4M-20			10.0		
PH4M-21	12.00	16.00	1.6	13	20
PH4M-22			4.8		
PH4M-23			6.4		
PH4M-24			9.5		
PH4M-25			10.0		

* Diameters A & B are concentric within 0.013mm.

- Fasten component to hub with epoxy cement or stake and dutch pin
- Assembly by Berg available.

GEAR, SPROCKET AND DIAL HUBS

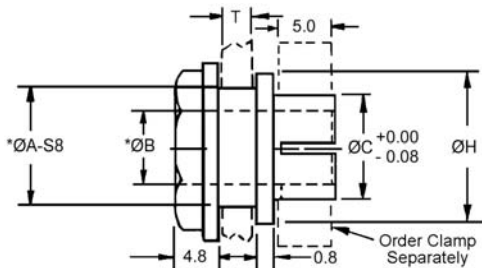
BORE	TYPE	MATERIAL
3MM TO 8MM	PIN HUB	STAINLESS STEEL DIN 1.4305



STOCK NO.	ØB-H8	T	ØH	A
PH4M-30 PH4M-31	3	1.6 3.0	12	10
PH4M-32 PH4M-33	4	1.6 3.0	12	10
PH4M-34 PH4M-35	6	1.6 3.0	12	10
PH4M-38 PH4M-39	8	1.6 3.0	15	12

* Concentric to bore within 0.013mm

BORE	TYPE	MATERIAL
3MM TO 8MM	CLAMP HUB	STAINLESS STEEL DIN 1.4305

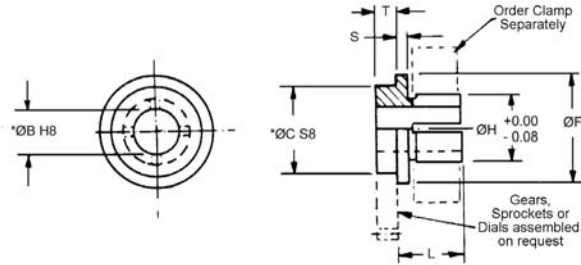


STOCK NO.	ØB-H8	T	ØH	ØC	CLAMP STOCK NO.	ØA
CH2M-30 CH2M-31	3	1.6 3.0	12	4.60	CG1M-3	10
CH2M-32 CH2M-33	4	1.6 3.0	12	5.60	CG1M-5	10
CH2M-34 CH2M-35	6	1.6 3.0	12	7.60	CG1M-11	10
CH2M-38 CH2M-39	8	1.6 3.0	15	9.60	CG1M-14	12

* Concentric to bore within 0.013mm

GEAR, SPROCKET AND DIAL HUBS

BORE	TYPE	MATERIAL
4MM TO 12MM	CLAMP HUB	STAINLESS STEEL DIN 1.4305

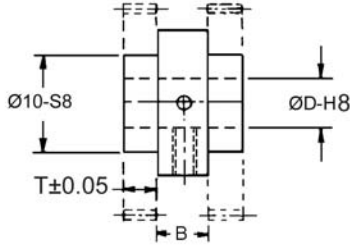
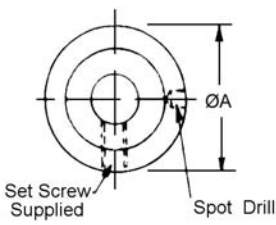


* Concentric within 0.008mm

STOCK NO.	$\varnothing B$	$\varnothing C$	T	L	$\varnothing H$	$\varnothing F$	S	CLAMP STOCK NO.
CH2M-1	4	10	1.6	4.8	5.6	12	0.8	CG1M-5
CH2M-2			3.0					
CH2M-3			5.0					
CH2M-4			6.4					
CH2M-5			9.5					
CH2M-6	6	10	1.6	6.2	7.6	13	1.2	CG1M-11
CH2M-7			3.0					
CH2M-8			5.0					
CH2M-9			6.4					
CH2M-10			9.5					
CH2M-11	7	10	1.6	6.6	8.6	14	1.6	CG1M-12
CH2M-12			3.0					
CH2M-13			5.0					
CH2M-14			6.4					
CH2M-15			9.5					
CH2M-40	8	10	1.6	7.6	9.6	16	1.6	CG1M-14
CH2M-41			3.0					
CH2M-42			5.0					
CH2M-43			6.4					
CH2M-44			9.5					
CH2M-16	10	16	1.6	7.6	11.6	24	1.6	CG1M-16
CH2M-17			4.8					
CH2M-18			6.4					
CH2M-19			9.5					
CH2M-20			10.0					
CH2M-21	12	16	1.6	9.6	13.6	30	1.6	CG1M-18
CH2M-22			4.8					
CH2M-23			6.4					
CH2M-24			9.5					
CH2M-25			10.0					

DUAL GEAR HUBS

BORE	TYPE	MATERIAL
3MM TO 8MM	PIN HUB	STAINLESS STEEL DIN 1.4305

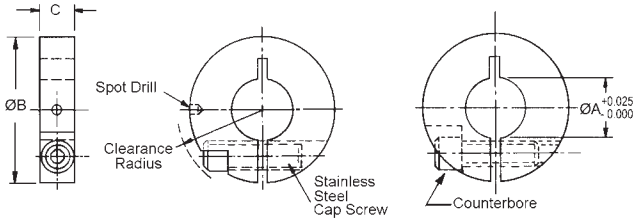


STOCK NO.	$\varnothing D$	T	$\varnothing A$	B
PH3M-1	3	3.00	11.0	6.5
PH3M-2	5		11.0	
PH3M-3	6		12.7	
PH3M-4	8		12.7	

- Assembly available
- Gears are triple staked and dutch pinned at assembly
- Components may also be assembled to hubs with epoxy cement
- Order gears separately

SPLIT HUB CLAMPS

BORE	TYPE	MATERIAL
4.60MM TO 13.60MM	COMPACT CLAMP DESIGN	STAINLESS STEEL DIN 1.4305 OR ALUMINUM ANODIZED DIN 3.1355



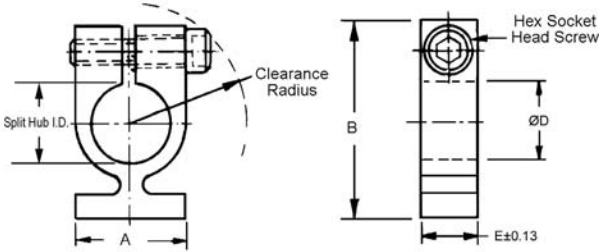
Note: Some sizes may be full or semi-counterbored or step cut at manufacturer's option.

STAINLESS STEEL DIN 1.4305	ALUMINUM ANODIZED DIN 3.1355	ØA	ØB	C	CLEAR RADIUS	SPLIT HUB I.D. (Ref.)
STOCK NO.	STOCK NO.					
CG1M-1	CG1M-1A	4.60	14.0	4.0	8.5	3
CG1M-2	CG1M-2A		16.0	4.0	8.5	
CG1M-3	CG1M-3A		16.0	5.0	8.5	
CG1M-4	CG1M-4A		16.0	6.5	10.0	
CG1M-5	—	5.60	16.0	4.0	8.5	4
CG1M-7	CG1M-7A	6.60	16.0	4.0	8.5	5
CG1M-8	CG1M-8A		16.0	5.0	8.5	
CG1M-9	CG1M-9A		22.0	5.0	12.5	
CG1M-10	CG1M-10A		22.0	6.0	13.0	
CG1M-11	—	7.60	22.0	5.0	12.5	6
CG1M-12	—	8.60	22.0	5.0	12.5	7
CG1M-13	CG1M-13A		22.0	6.0	13.0	
CG1M-14	CG1M-14A	9.60	28.5	6.5	16.0	8
CG1M-15	CG1M-15A		28.5	8.0	16.0	
CG1M-16	CG1M-16A	11.60	28.5	6.5	16.0	10
CG1M-17	CG1M-17A		32.0	8.0	16.0	
CG1M-18	CG1M-18A	13.60	32.0	8.0	16.0	12

Special clamps are available on request.

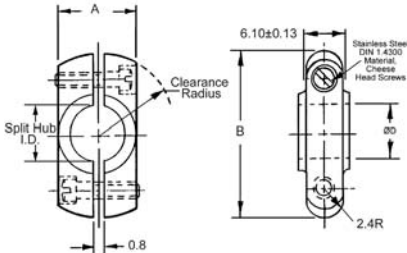
SPLIT HUB CLAMPS

SHAFT SIZE	MATERIAL
3MM TO 12MM	STAINLESS STEEL AND MILD STEEL



STOCK NO.	MATERIAL	D	A	B	CLEAR. RADIUS	E	FINISH	SHAFT SIZE
CG3M-1	DIN 1.4005 S.S.	4.60	7.9	17.5	11.1	6.35	BLACK PASS.	3.00
CG3M-2	DIN 1.4305 S.S.					6.35	CLEAR PASS.	
CG3M-3	MILD STEEL					3.56	CAD. PLATE	
CG3M-4	DIN 1.4005 S.S.	6.60	9.6	20.6	13.1	6.35	BLACK PASS.	5.00
CG3M-5	DIN 1.4305 S.S.					6.35	CLEAR PASS.	
CG3M-6	MILD STEEL					3.56	CAD. PLATE	
CG3M-7	DIN 1.4005 S.S.	8.60	11.1	20.6	14.3	6.35	BLACK PASS.	7.00
CG3M-8	DIN 1.4305 S.S.					6.35	CLEAR PASS.	
CG3M-9	MILD STEEL					3.56	CAD. PLATE	
CG3M-10	DIN 1.4005 S.S.	11.60	15.9	26.2	17.1	6.35	CLEAR PASS.	10.00
CG3M-11	MILD STEEL					6.35	CAD. PLATE	
CG3M-12	MILD STEEL					3.56	CAD. PLATE	
CG3M-13	DIN 1.4005 S.S.	13.60	15.9	26.2	17.1	6.35	CLEAR PASS.	12.00
CG3M-14	MILD STEEL					6.35	CAD. PLATE	
CG3M-15	MILD STEEL					3.56	CAD. PLATE	

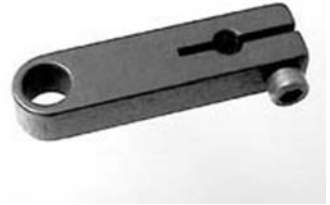
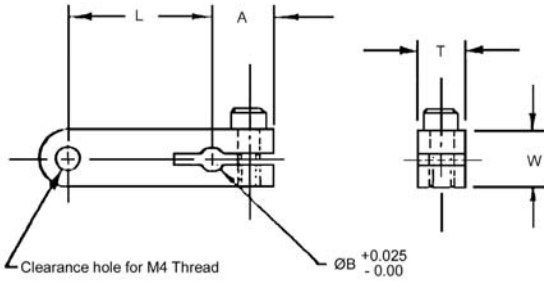
SHAFT SIZE	TYPE	MATERIAL
3MM TO 7MM	BALANCED CLAMP	STAINLESS STEEL AND MILD STEEL



STOCK NO.	ØD	A	B	TYPE CLEAR. RADIUS	SPLIT HUB OF BALANCE	INSIDE DIA. (REF.)
CG2M-1	4.60	7.9	17.4	9.5	DYNAMICALLY BALANCED	3.00
CG2M-2	6.60	9.5	18.85	10.3		5.00
CG2M-3	8.60	11.1	20.6	11.9		7.00
CG2M-4	4.60	7.9	17.4	9.5	AS CAST	3.00
CG2M-5	6.60	9.5	18.85	10.3		5.00
CG2M-6	8.60	11.1	20.6	11.9		7.00

SHAFT CLAMP

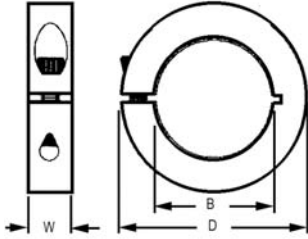
SHAFT SIZE	MATERIAL
3MM TO 6MM	STAINLESS STEEL DIN 1.4005



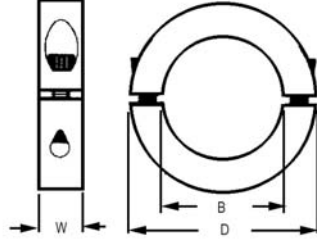
STOCK NO.	A	$\varnothing B$	L	T	W
CG7M-1	6.4	3.00	15.9	4.8	6.4
CG7M-2	6.4	4.00	15.9	4.8	6.4
CG7M-3	6.4	5.00	15.9	4.8	7.9
CG7M-4	6.7	6.00	15.9	4.8	7.9

CLAMPS

BORE	TYPE	MATERIAL
3MM TO 26MM	ONE AND TWO PIECE STYLES	COLD ROLLED STEEL OR STAINLESS STEEL



One Piece Style

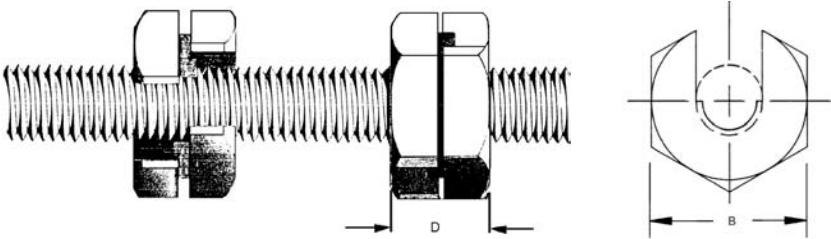


Two Piece Style

STOCK NUMBER				BORE (B)	O.D (D)	WIDTH (W)	FORGED CLAMP SCREW	REC.MAX SCREW TOR. N•m
COLD ROLLED STEEL		STAINLESS STEEL						
ONE-PIECE STYLE	TWO-PIECE STYLE	ONE-PIECE STYLE	TWO-PIECE STYLE					
CG8M-3	CG8SM-3	CG8M-3SS	CG8SM-3SS	3	16	9	M3x8	2.1
CG8M-4	CG8SM-4	CG8M-4SS	CG8SM-4SS	4	16	9	M3x8	2.1
CG8M-5	CG8SM-5	CG8M-5SS	CG8SM-5SS	5	16	9	M3x8	2.1
CG8M-6	CG8SM-6	CG8M-6SS	CG8SM-6SS	6	16	9	M3x8	2.1
CG8M-7	CG8SM-7	CG8M-7SS	CG8SM-7SS	7	18	9	M3x8	2.1
CG8M-8	CG8SM-8	CG8M-8SS	CG8SM-8SS	8	18	9	M3x8	2.1
CG8M-9	CG8SM-9	CG8M-9SS	CG8SM-9SS	9	24	9	M3x10	2.1
CG8M-10	CG8SM-10	CG8M-10SS	CG8SM-10SS	10	24	9	M3x10	2.1
CG8M-11	CG8SM-11	CG8M-11SS	CG8SM-11SS	11	28	11	M4x12	4.6
CG8M-12	CG8SM-12	CG8M-12SS	CG8SM-12SS	12	28	11	M4x12	4.6
CG8M-13	CG8SM-13	CG8M-13SS	CG8SM-13SS	13	30	11	M4x14	4.6
CG8M-14	CG8SM-14	CG8M-14SS	CG8SM-14SS	14	30	11	M4x14	4.6
CG8M-15	CG8SM-15	CG8M-15SS	CG8SM-15SS	15	34	13	M5x16	9.5
CG8M-16	CG8SM-16	CG8M-16SS	CG8SM-16SS	16	34	13	M5x16	9.5
CG8M-17	CG8SM-17	CG8M-17SS	CG8SM-17SS	17	36	13	M5x16	9.5
CG8M-18	CG8SM-18	CG8M-18SS	CG8SM-18SS	18	36	13	M5x16	9.5
CG8M-19	CG8SM-19	CG8M-19SS	CG8SM-19SS	19	40	15	M6x16	16
CG8M-20	CG8SM-20	CG8M-20SS	CG8SM-20SS	20	40	15	M6x16	16
CG8M-21	CG8SM-21	CG8M-21SS	CG8SM-21SS	21	42	15	M6x16	16
CG8M-22	CG8SM-22	CG8M-22SS	CG8SM-22SS	22	42	15	M6x16	16
CG8M-23	CG8SM-23	CG8M-23SS	CG8SM-23SS	23	45	15	M6x16	16
CG8M-24	CG8SM-24	CG8M-24SS	CG8SM-24SS	24	45	15	M6x16	16
CG8M-25	CG8SM-25	CG8M-25SS	CG8SM-25SS	25	45	15	M6x16	16
CG8M-26	CG8SM-26	CG8M-26SS	CG8SM-26SS	26	48	15	M6x16	16

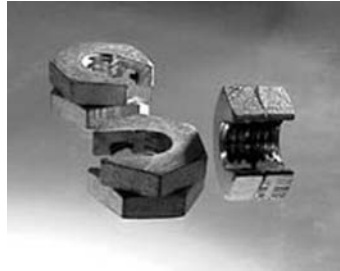
THREADED SHAFT CLAMP

THREAD SIZE	MATERIAL
M8 X 1.25 TO M20 X 2.50	STEEL DIN 1.0718



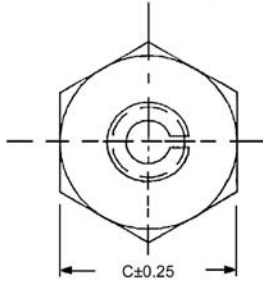
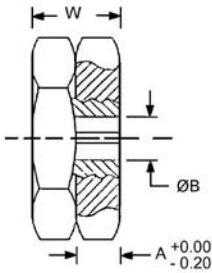
STOCK NO.	THREAD	B	D (APPROX)	REC.* LOAD (kg)
TSC-8M	M8 X 1.25	19	9	295
TSC-10M	M10 X 1.50	22	12	900
TSC-12M	M12 X 1.75	28	15	1815
TSC-16M	M16 X 2.00	33	15	2265
TSC-20M	M20 X 2.50	41	20	3625

* Or as limited by rod.



SQUEEZE CLAMP

SHAFT SIZE	MATERIAL
3MM TO 12MM	NUT - STAINLESS STEEL DIN 1.4005 BUSHING - SINTERED BRONZE



STOCK NO.	BORE ØB	A	WIDTH W	REF. D	C	SPLIT HUB I.D. (REF.)
SCL-3M-1 SCL-3M-2	4.6	2.4 3.2	4.8 6.4	18.1	15.8	3
SCL-4M-1 SCL-4M-2	5.6	2.4 3.2	4.8 6.4	18.1	15.8	4
SCL-5M-1 SCL-5M-2	6.6	2.4 3.2	4.8 6.4	18.1	15.8	5
SCL-6M-1 SCL-6M-2	7.6	2.4 3.2	4.8 6.4	18.1	15.8	6
SCL-7M-1 SCL-7M-2	8.6	2.4 3.2	4.8 6.4	23.8	20.8	7
SCL-8M-1 SCL-8M-2	9.6	2.4 3.2	4.8 6.4	23.8	20.8	8
SCL-9M	10.6	3.2	6.4	27.2	23.8	9
SCL-10M	11.6	3.2	6.4	27.2	23.8	10
SCL-11M	12.6	3.2	6.4	27.2	23.8	11
SCL-12M	13.6	4.0	8.0	27.2	23.8	12

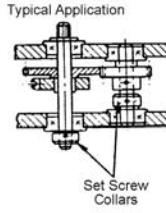
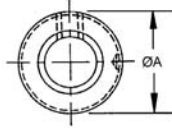
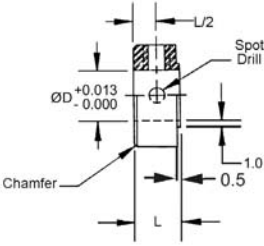
- High clamping force
 - Clamp directly to shafting or over a split hub
 - Dynamically balance
 - Higher holding torques
 - Smaller outline
 - Low moment of inertia
 - Eliminates costly machining of keyways
 - Eliminates the marking of shafts with set screws
1. The Squeeze Clamp consists of an externally threaded & slotted bushing with two internally threaded nuts. By tightening one nut against the other, the bushing is squeezed onto a clamp hub or shaft thereby retaining the part on the shaft.
 2. The dynamically balanced Squeeze Clamp is dimensionally smaller in comparison with conventional clamps, but has a higher holding torque due to its unique shaft holding mechanism.
 3. Shaft size 3mm to 12 mm can be accommodated.

Material:

- Nut - Stainless Steel
- Bushing - Bronze

SET SCREW COLLARS

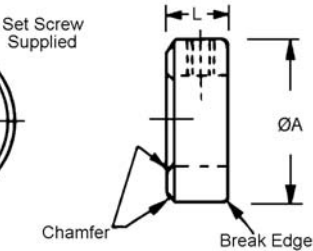
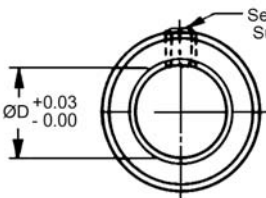
BORE SIZE	MATERIAL
3MM TO 19MM PRECISION BORE	STAINLESS STEEL DIN 1.4305 WITH INTEGRAL BEARING SHIM SPACER



STOCK NUMBER	SHAFT SIZE	ØD	L	ØA
CSM-1	3	3.003	4	8
CSM-2	4	4.003	5	10
CSM-3	5	5.003	5	12
CSM-4	6	6.003	6	12
CSM-5	7	7.003	6	16
CSM-6	8	8.003	6	16
CSM-7	10	10.003	10	19
CSM-8	12	12.003	10	19
CSM-9	16	16.003	12	32
CSM-10	19	19.003	14	38

- No shim spacers required
- Used to pre-load bearing

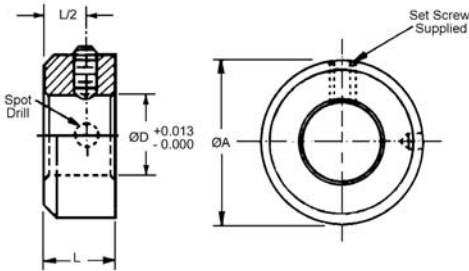
BORE SIZE	MATERIAL
3MM TO 32MM COMMERCIAL BORE	COLD ROLLED STEEL ZINC PLATED



STOCK NO.	ØD	ØA	L
CSM-19	3.01	10	6
CSM-20	4.01	10	6
CSM-21	6.01	12	8
CSM-22	8.01	16	8
CSM-23	10.01	16	10
CSM-24	12.01	19	10
CSM-25	16.01	29	12
CSM-26	19.01	32	12
CSM-27	25.01	38	16
CSM-28	32.01	44	18

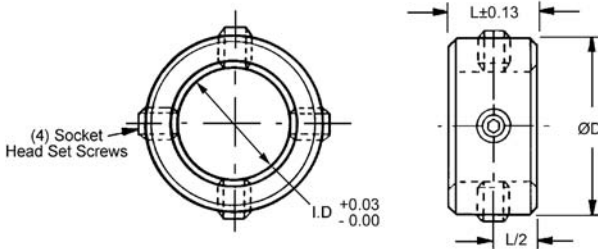
SET SCREW COLLARS

BORE SIZE	MATERIAL
3MM TO 12MM PRECISION BORE	STAINLESS STEEL DIN 1.4305



STOCK NUMBER	SHAFT SIZE	ØD	L	ØA
CSM-11	3	3.003	4	8
CSM-12	4	4.003	5	10
CSM-13	5	5.003	5	12
CSM-14	6	6.003	6	12
CSM-15	7	7.003	6	16
CSM-16	8	8.003	6	16
CSM-17	10	10.003	10	19
CSM-18	12	12.003	10	19

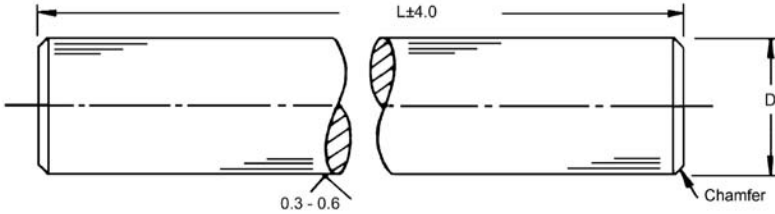
BORE SIZE	MATERIAL
3MM TO 12MM COMMERCIAL BORE SCREW TYPE	STAINLESS STEEL DIN 1.4305 OR ALUMINUM ANODIZED DIN 3.1355



STAINLESS DIN 1.4305	ALUMINUM DIN 3.1355	I.D.	ØD	L	SPLIT HUB I.D. (Ref.)
STOCK NO.	STOCK NO.				
CSM-29	CSM-29A	4.60	6.4	9.53	3.00
CSM-30	CSM-30A	6.60	6.4	12.70	5.00
CSM-31	CSM-31A	8.60	6.4	12.70	7.00
CSM-32	CSM-32A	11.60	7.9	19.05	10.00
CSM-33	CSM-33A	13.60	7.9	19.05	12.00

CASE HARDENED GROUND SHAFTS

DIAMETER	MATERIAL
6MM TO 50MM	STAINLESS STEEL DIN 1.4005 HARDENED OR STEEL DIN 1.0601 HARDENED



STOCK NOS.		NOM. DIA.	D	L
ST/ST DIN 1.4005	STEEL DIN 1.0601			
S416-6M-900	—	6	5.987/6.000	900
—	LMS-8M-300	8	7.991/8.000	300
—	LMS-8M-900			900
S416-10M-900	—	10	9.992/10.000	900
—	LMS-12M-300	12	11.989/11.999	300
—	LMS-12M-900			900
S416-13M-900	—	13	12.989/13.000	900
—	LMS-16M-300	16	15.989/15.999	300
—	LMS-16M-900			900
—	LMS-20M-300	20	19.987/20.000	300
S416-20M-900	LMS-20M-900			900
—	LMS-25M-300	25	24.989/25.000	300
S416-25M-900	LMS-25M-900			900
—	LMS-30M-300	30	29.987/30.000	300
S416-30M-900	LMS-30M-900			900
—	LMS-40M-300	40	39.987/40.000	300
—	LMS-40M-900			900
—	LMS-50M-300	50	49.985/50.000	300
—	LMS-50M-900			900

Straightness:

6MM - Best Efforts Basis

8MM To 50MM - Within 0.08 - 0.17 mm/Meter

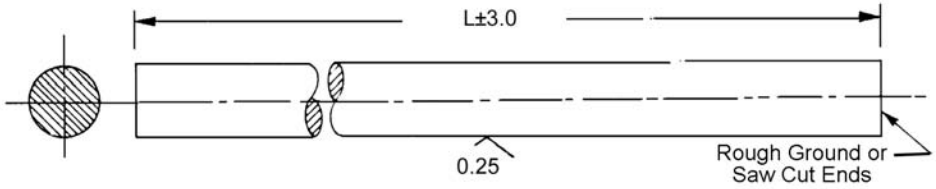
- Shafting available in other lengths.

Specify by similar stock number and length required.

Example: LMS-25M-1000 (25mm Diameter, 1000mm long).

STAINLESS GROUND SHAFTS

DIAMETER	MATERIAL
3MM TO 30MM	STAINLESS STEEL DIN 1.4305

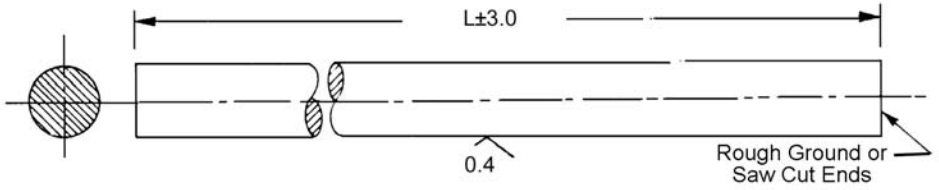


STOCK NO.	FRACT. DIA. REF.	ACTUAL DIA.	DIAMETER TOL.	L
S1-103	3	2.992	+0.000 -0.005	600
S1-131		3.000		600
S1-132		3.003		300
S1-133		3.003		600
S1-104	4	3.992		600
S1-134		3.999		600
S1-105	5	4.991		900
S1-135		5.000		600
S1-106	6	5.992		900
S1-136		6.000		900
S1-137	7	6.992		900
S1-138		6.992		600
S1-139		7.000		900
S1-140		7.000		600
S1-108	8	7.993		900
S1-141		8.000		600
S1-109	9	8.992	900	
S1-110	10	9.992	900	
S1-142		10.000	400	
S1-143		10.000	900	
S1-144	12	11.991	+0.000 -0.005	400
S1-112		11.991	900	
S1-145		12.000	400	
S1-146		12.000	900	
S1-149	13	12.993	400	
S1-113		12.993	900	
S1-114	14	13.993	900	
S1-116	16	15.974	+0.000 -0.008	900
S1-147		16.000		900
S1-120	20	19.992		900
S1-125	25	24.993		900
S1-148		25.000		900
S1-130	30	29.992		900

* Straightness: 10 mm diameter and above .0101 mm/mm. 6mm diameter and below on best efforts basis.

GROUND SHAFTS

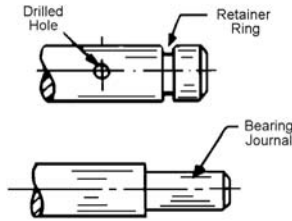
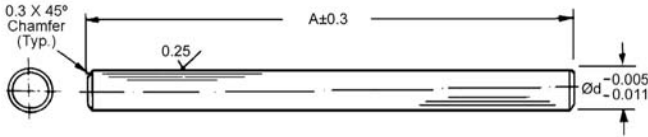
DIAMETER	MATERIAL
3MM TO 32MM	CARBON STEEL DIN 1.0718 SURFACE FINISH



STOCK NO.	FRACT. DIA. REF.	ACTUAL DIA.	DIAMETER TOL.	L
S20M-1	3	2.993		900
S20M-2	4	3.993		
S20M-3	6	5.993	+0.000 -0.005	
S20M-4	8	7.993		
S20M-5	10	9.993		
S20M-6	12	11.993		900
S20M-7	16	15.993		
S20M-8	19	18.993	+0.000 -0.010	
S20M-9	25	24.993		
S20M-10	32	31.993		

STAINLESS GROUND SHAFTS

DIAMETER	MATERIAL
3MM AND 4MM	STAINLESS STEEL DIN 1.4305



TYPICAL MODIFICATIONS

- Precision ground finish
- Straightness within .0076 mm/mm
- Send sketch for quotation on modifications

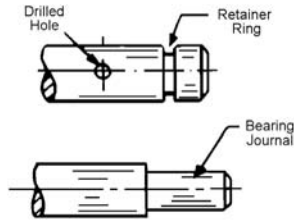
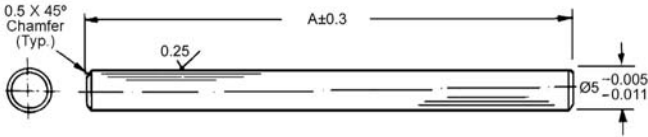
Available on request:

- Retainer ring grooves
- Special shaft lengths
- Journals
- Drilled holes
- Milled flats

STOCK NO. Ød = 3	STOCK NO. Ød = 4	A
S3M-20	S4M-20	20.0
S3M-25	S4M-25	25.0
S3M-30	S4M-30	30.0
S3M-35	S4M-35	35.0
S3M-40	S4M-40	40.0
S3M-45	S4M-45	45.0
S3M-50	S4M-50	50.0
S3M-55	S4M-55	55.0
S3M-60	S4M-60	60.0
S3M-65	S4M-65	65.0
S3M-70	S4M-70	70.0
S3M-75	S4M-75	75.0
S3M-80	S4M-80	80.0
S3M-85	S4M-85	85.0
S3M-90	S4M-90	90.0
S3M-95	S4M-95	95.0
S3M-100	S4M-100	100.0
S3M-105	S4M-105	105.0
S3M-110	S4M-110	110.0
S3M-115	S4M-115	115.0
S3M-120	S4M-120	120.0
S3M-125	S4M-125	125.0
S3M-130	S4M-130	130.0
S3M-135	S4M-135	135.0
S3M-140	S4M-140	140.0
S3M-145	S4M-145	145.0
S3M-150	S4M-150	150.0
S3M-155	S4M-155	155.0
S3M-160	S4M-160	160.0
S3M-165	S4M-165	165.0
S3M-170	S4M-170	170.0
S3M-175	S4M-175	175.0
S3M-180	S4M-180	180.0
S3M-185	S4M-185	185.0
S3M-190	S4M-190	190.0
S3M-195	S4M-195	195.0
S3M-200	S4M-200	200.0
S3M-210	S4M-210	210.0
S3M-220	S4M-220	220.0
S3M-230	S4M-230	230.0
S3M-240	S4M-240	240.0
S3M-250	S4M-250	250.0
S3M-260	S4M-260	260.0
S3M-270	S4M-270	270.0
S3M-280	S4M-280	280.0
S3M-290	S4M-290	290.0
S3M-300	S4M-300	300.0
S3M-310	S4M-310	310.0
S3M-320	S4M-320	320.0
S3M-330	S4M-330	330.0
S3M-340	S4M-340	340.0
S3M-350	S4M-350	350.0
S3M-360	S4M-360	360.0
S3M-370	S4M-370	370.0
S3M-380	S4M-380	380.0
S3M-390	S4M-390	390.0
S3M-400	S4M-400	400.0
S3M-420	S4M-420	420.0
S3M-440	S4M-440	440.0
S3M-460	S4M-460	460.0
S3M-480	S4M-480	480.0
S3M-500	S4M-500	500.0
S3M-520	S4M-520	520.0
S3M-540	S4M-540	540.0
S3M-560	S4M-560	560.0
S3M-580	S4M-580	580.0
S3M-600	S4M-600	600.0

STAINLESS GROUND SHAFTS

DIAMETER	MATERIAL
5MM	STAINLESS STEEL DIN 1.4305



TYPICAL MODIFICATIONS

- Precision ground finish
- Straightness within .0076 mm/mm
- Send sketch for quotation on modifications

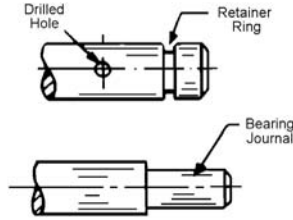
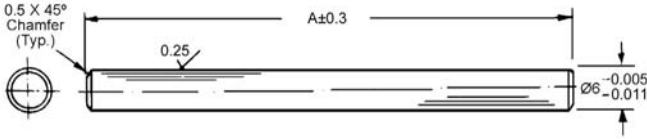
Available on request:

- Retainer ring grooves
- Special shaft lengths
- Journals
- Drilled holes
- Milled flats

STOCK NO.	A
S5M-20	20.0
S5M-25	25.0
S5M-30	30.0
S5M-35	35.0
S5M-40	40.0
S5M-45	45.0
S5M-50	50.0
S5M-55	55.0
S5M-60	60.0
S5M-65	65.0
S5M-70	70.0
S5M-75	75.0
S5M-80	80.0
S5M-85	85.0
S5M-90	90.0
S5M-95	95.0
S5M-100	100.0
S5M-105	105.0
S5M-110	110.0
S5M-115	115.0
S5M-120	120.0
S5M-125	125.0
S5M-130	130.0
S5M-135	135.0
S5M-140	140.0
S5M-145	145.0
S5M-150	150.0
S5M-155	155.0
S5M-160	160.0
S5M-165	165.0
S5M-170	170.0
S5M-175	175.0
S5M-180	180.0
S5M-185	185.0
S5M-190	190.0
S5M-195	195.0
S5M-200	200.0
S5M-210	210.0
S5M-220	220.0
S5M-230	230.0
S5M-240	240.0
S5M-250	250.0
S5M-260	260.0
S5M-270	270.0
S5M-280	280.0
S5M-290	290.0
S5M-300	300.0
S5M-310	310.0
S5M-320	320.0
S5M-330	330.0
S5M-340	340.0
S5M-350	350.0
S5M-360	360.0
S5M-370	370.0
S5M-380	380.0
S5M-390	390.0
S5M-400	400.0
S5M-420	420.0
S5M-440	440.0
S5M-460	460.0
S5M-480	480.0
S5M-500	500.0
S5M-520	520.0
S5M-540	540.0
S5M-560	560.0
S5M-580	580.0
S5M-600	600.0

STAINLESS GROUND SHAFTS

DIAMETER	MATERIAL
6MM	STAINLESS STEEL DIN 1.4305



TYPICAL MODIFICATIONS

- Precision ground finish
- Straightness within .0076 mm/mm
- Send sketch for quotation on modifications

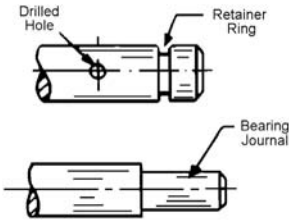
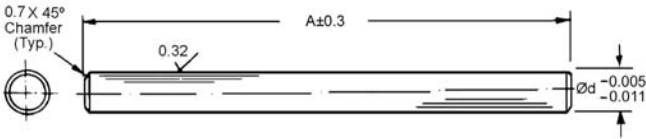
Available on request:

- Retainer ring grooves
- Special shaft lengths
- Journals
- Drilled holes
- Milled flats

STOCK NO.	A
S6M-20	20.0
S6M-25	25.0
S6M-30	30.0
S6M-35	35.0
S6M-40	40.0
S6M-45	45.0
S6M-50	50.0
S6M-55	55.0
S6M-60	60.0
S6M-65	65.0
S6M-70	70.0
S6M-75	75.0
S6M-80	80.0
S6M-85	85.0
S6M-90	90.0
S6M-95	95.0
S6M-100	100.0
S6M-105	105.0
S6M-110	110.0
S6M-115	115.0
S6M-120	120.0
S6M-125	125.0
S6M-130	130.0
S6M-135	135.0
S6M-140	140.0
S6M-145	145.0
S6M-150	150.0
S6M-155	155.0
S6M-160	160.0
S6M-165	165.0
S6M-170	170.0
S6M-175	175.0
S6M-180	180.0
S6M-185	185.0
S6M-190	190.0
S6M-195	195.0
S6M-200	200.0
S6M-210	210.0
S6M-220	220.0
S6M-230	230.0
S6M-240	240.0
S6M-250	250.0
S6M-260	260.0
S6M-270	270.0
S6M-280	280.0
S6M-290	290.0
S6M-300	300.0
S6M-310	310.0
S6M-320	320.0
S6M-330	330.0
S6M-340	340.0
S6M-350	350.0
S6M-360	360.0
S6M-370	370.0
S6M-380	380.0
S6M-390	390.0
S6M-400	400.0
S6M-420	420.0
S6M-440	440.0
S6M-460	460.0
S6M-480	480.0
S6M-500	500.0
S6M-525	525.0
S6M-550	550.0
S6M-575	575.0
S6M-600	600.0

STAINLESS STEEL GROUND SHAFTS

DIAMETER	MATERIAL
7MM AND 8MM	STAINLESS STEEL DIN 1.4305



TYPICAL MODIFICATIONS

- Precision ground finish
- Straightness within .00101 mm/mm
- Send sketch for quotation on modifications

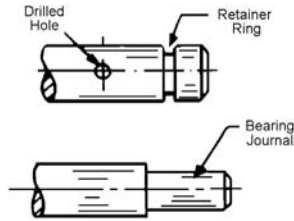
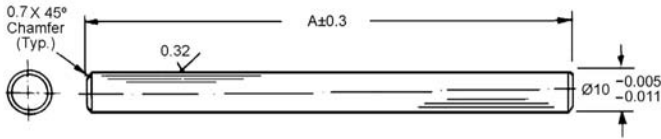
Available on request:

- Retainer ring grooves
- Special shaft lengths
- Journals
- Drilled holes
- Milled flats

STOCK NO. $\varnothing d = 7$	STOCK NO. $\varnothing d = 8$	A
S7M-35	S8M-35	35.0
S7M-40	S8M-40	40.0
S7M-45	S8M-45	45.0
S7M-50	S8M-50	50.0
S7M-55	S8M-55	55.0
S7M-60	S8M-60	60.0
S7M-65	S8M-65	65.0
S7M-70	S8M-70	70.0
S7M-75	S8M-75	75.0
S7M-80	S8M-80	80.0
S7M-85	S8M-85	85.0
S7M-90	S8M-90	90.0
S7M-95	S8M-95	95.0
S7M-100	S8M-100	100.0
S7M-105	S8M-105	105.0
S7M-110	S8M-110	110.0
S7M-115	S8M-115	115.0
S7M-120	S8M-120	120.0
S7M-125	S8M-125	125.0
S7M-130	S8M-130	130.0
S7M-135	S8M-135	135.0
S7M-140	S8M-140	140.0
S7M-145	S8M-145	145.0
S7M-150	S8M-150	150.0
S7M-155	S8M-155	155.0
S7M-160	S8M-160	160.0
S7M-165	S8M-165	165.0
S7M-170	S8M-170	170.0
S7M-175	S8M-175	175.0
S7M-180	S8M-180	180.0
S7M-185	S8M-185	185.0
S7M-190	S8M-190	190.0
S7M-195	S8M-195	195.0
S7M-200	S8M-200	200.0
S7M-210	S8M-210	210.0
S7M-220	S8M-220	220.0
S7M-230	S8M-230	230.0
S7M-240	S8M-240	240.0
S7M-250	S8M-250	250.0
S7M-260	S8M-260	260.0
S7M-270	S8M-270	270.0
S7M-280	S8M-280	280.0
S7M-290	S8M-290	290.0
S7M-300	S8M-300	300.0
S7M-310	S8M-310	310.0
S7M-320	S8M-320	320.0
S7M-330	S8M-330	330.0
S7M-340	S8M-340	340.0
S7M-350	S8M-350	350.0
S7M-360	S8M-360	360.0
S7M-370	S8M-370	370.0
S7M-380	S8M-380	380.0
S7M-390	S8M-390	390.0
S7M-400	S8M-400	400.0
S7M-425	S8M-425	425.0
S7M-450	S8M-450	450.0
S7M-475	S8M-475	475.0
S7M-500	S8M-500	500.0
S7M-550	S8M-550	550.0
S7M-600	S8M-600	600.0

STAINLESS GROUND SHAFTS

DIAMETER	MATERIAL
10MM	STAINLESS STEEL DIN 1.4305



TYPICAL MODIFICATIONS

- Precision ground finish
- Straightness within .00101 mm/mm
- Send sketch for quotation on modifications

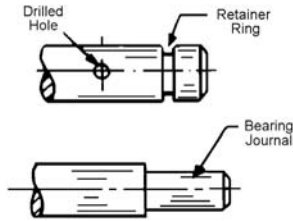
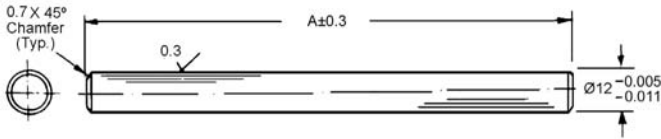
Available on request:

- Retainer ring grooves
- Special shaft lengths
- Journals
- Drilled holes
- Milled flats

STOCK NO.	A
S10M-55	55.0
S10M-60	60.0
S10M-65	65.0
S10M-70	70.0
S10M-75	75.0
S10M-80	80.0
S10M-85	85.0
S10M-90	90.0
S10M-95	95.0
S10M-100	100.0
S10M-105	105.0
S10M-110	110.0
S10M-115	115.0
S10M-120	120.0
S10M-125	125.0
S10M-130	130.0
S10M-135	135.0
S10M-140	140.0
S10M-145	145.0
S10M-150	150.0
S10M-155	155.0
S10M-160	160.0
S10M-165	165.0
S10M-170	170.0
S10M-175	175.0
S10M-180	180.0
S10M-185	185.0
S10M-190	190.0
S10M-195	195.0
S10M-200	200.0
S10M-210	210.0
S10M-220	220.0
S10M-230	230.0
S10M-240	240.0
S10M-250	250.0
S10M-260	260.0
S10M-270	270.0
S10M-280	280.0
S10M-290	290.0
S10M-300	300.0
S10M-310	310.0
S10M-320	320.0
S10M-330	330.0
S10M-340	340.0
S10M-350	350.0
S10M-360	360.0
S10M-370	370.0
S10M-380	380.0
S10M-390	390.0
S10M-400	400.0
S10M-420	420.0
S10M-440	440.0
S10M-460	460.0
S10M-480	480.0
S10M-500	500.0
S10M-600	600.0
S10M-700	700.0
S10M-800	800.0
S10M-900	900.0

STAINLESS GROUND SHAFTS

DIAMETER	MATERIAL
12MM	STAINLESS STEEL DIN 1.4305



TYPICAL MODIFICATIONS

- Precision ground finish
- Straightness within .00101 mm/mm
- Send sketch for quotation on modifications

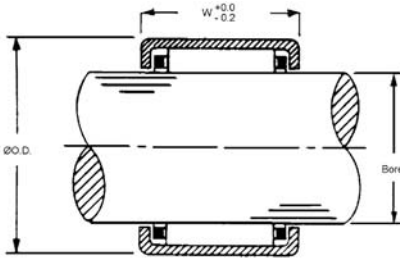
Available on request:

- Retainer ring grooves
- Special shaft lengths
- Journals
- Drilled holes
- Milled flats

STOCK NO.	A
S12M-60	60.0
S12M-65	65.0
S12M-70	70.0
S12M-75	75.0
S12M-80	80.0
S12M-85	85.0
S12M-90	90.0
S12M-95	95.0
S12M-100	100.0
S12M-105	105.0
S12M-110	110.0
S12M-115	115.0
S12M-120	120.0
S12M-125	125.0
S12M-130	130.0
S12M-135	135.0
S12M-140	140.0
S12M-145	145.0
S12M-150	150.0
S12M-155	155.0
S12M-160	160.0
S12M-165	165.0
S12M-170	170.0
S12M-175	175.0
S12M-180	180.0
S12M-185	185.0
S12M-190	190.0
S12M-195	195.0
S12M-200	200.0
S12M-220	220.0
S12M-230	230.0
S12M-240	240.0
S12M-250	250.0
S12M-260	260.0
S12M-270	270.0
S12M-280	280.0
S12M-290	290.0
S12M-300	300.0
S12M-310	310.0
S12M-320	320.0
S12M-330	330.0
S12M-340	340.0
S12M-350	350.0
S12M-360	360.0
S12M-370	370.0
S12M-380	380.0
S12M-390	390.0
S12M-400	400.0
S12M-420	420.0
S12M-440	440.0
S12M-460	460.0
S12M-480	480.0
S12M-500	500.0
S12M-600	600.0
S12M-700	700.0
S12M-800	800.0

DYNA-SPEED NEEDLE ROLLER BEARING

TYPE	MATERIAL
DRAWN CUP DESIGN FOR 3MM TO 25MM HARDENED SHAFTS	ROLLER CUP - CASE HARDENED STEEL NEEDLE ROLLERS - HARDENED STEEL DIN 1.3505 BEARING CAGE - LOW CARBON STEEL



STOCK NO.	BORE	BRG. O.D.	HOUSING BORE DIA.	BRG W	MAX.* SPEED RPM	LOAD CAPACITIES	
						DYNAMIC (N)	STATIC (N)
NRB-3	3	6.5	6.481-6.496	6.0	48,000	1230	840
NRB-4	4	8.0	7.981-7.996	8.0	43,000	1740	1270
NRB-5	5	9.0	8.981-8.996	9.0	39,000	2400	1990
NRB-6	6	10.0	9.981-9.996	9.0	37,000	2850	2600
NRB-7	7	11.0	10.997-10.995	9.0	33,000	3100	2950
NRB-8	8	12.0	11.977-11.995	10.0	29,000	3800	3950
NRB-9	9	13.0	12.977-12.995	10.0	27,000	4250	4650
NRB-10	10	14.0	13.977-13.995	10.0	24,000	4400	5100
NRB-12	12	16.0	15.977-15.995	10.0	21,000	4950	6200
NRB-13	13	19.0	18.972-18.993	12.0	19,000	6800	7900
NRB-14	14	20.0	19.972-19.993	12.0	18,000	7100	8500
NRB-15	15	21.0	20.972-20.993	12.0	16,000	7900	9400
NRB-16	16	22.0	21.972-21.993	12.0	16,000	7600	9700
NRB-17	17	23.0	22.972-22.993	12.0	15,000	7900	10300
NRB-18	18	24.0	23.972-23.993	12.0	14,000	8100	10900
NRB-20	20	26.0	25.972-25.993	12.0	13,000	8600	12100
NRB-22	22	28.0	27.972-27.993	12.0	12,000	9100	13400
NRB-25	25	32.0	31.967-31.992	12.0	10,000	11000	15200

* Represents speed values of bearing submerged in Oil.

- Extremely high speed
- High load capacity
- Low profile, Light weight
- Caged needle bearings offer up to 3 times the speed of uncaged designs
- Extremely low rolling friction
- High lubrication capacity
- Low sensitivity to misalignment

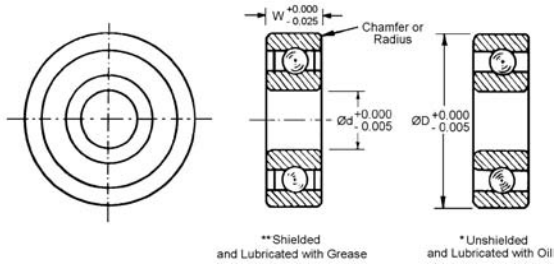
Mounting Tolerances:

Housing: N7

Shaft: h6

BALL BEARINGS

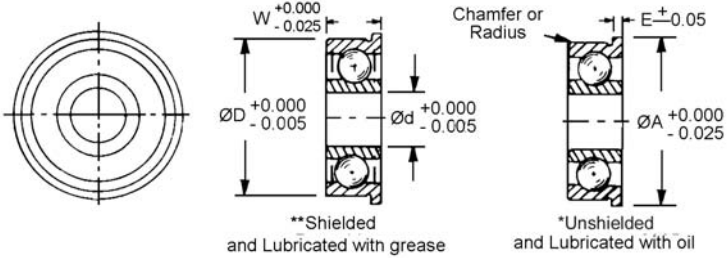
BORE SIZE	TYPE	MATERIAL
3MM TO 10MM	PLAIN PRECISION ABEC-7	STAINLESS STEEL DIN 1.4112



STOCK NO.	Ød	ØD	W	SHIELD DATA	DYNAMIC LOAD (N)	STATIC LOAD (N)
B1-50 B1-50-S	3.000	7.000	2.000 3.000	* **	206	108
B1-51 B1-51-S		8.000	3.000 4.000	* **	333	196
B1-52 B1-52-S		10.000	4.000 4.000	* **	383	216
B1-104-7 B1-104-S-7	4.000	9.000	2.500 4.000	* **	353	196
B1-53 B1-53-S	5.000	11.000	3.000 5.000	* **	392	216
B1-54 B1-54-S		13.000	4.000 4.000	* **	451	284
B1-55 B1-55-S		16.000	5.000 5.000	* **	1480	746
B1-106-7 B1-106-S-7	6.000	13.000	3.500 5.000	* **	579	353
B1-56 B1-56-S		15.000	5.000 5.000	* **	628	402
B1-57 B1-57-S		19.000	6.000 6.000	* **	1890	991
B1-108-7 B1-108-S-7	8.000	16.000	4.000 6.000	* **	951	628
B1-110-7 B1-110-S-7	10.000	19.000	5.000 7.000	* **	1020	696

BALL BEARINGS

BORE SIZE	TYPE	MATERIAL
3MM TO 10MM	SINGLE ROW - FLANGED PRECISION ABEC-7	STAINLESS STEEL DIN 1.4112

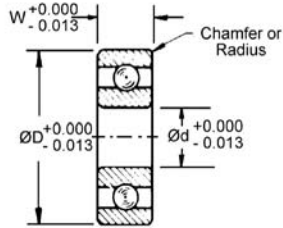
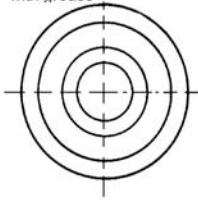


STOCK NO.	Ød	ØD	W	A	SHIELD AND LUBE DATA	E	DYNAMIC LOADS (N) CAPACITY	STATIC LOADS (N) CAPACITY
B2-50 B2-50-S	3.000	7.000	2.000 3.000	8.100	* **	0.50 0.80	206	108
B2-51 B2-51-S		8.000	3.000 4.000	9.500	* **	0.70 0.90	333	196
B2-52 B2-52-S		10.000	4.000 4.000	11.500	* **	1.00 1.00	383	216
B2-104-7 B2-104-S7	4.000	9.000	2.500 4.000	10.300	* **	0.60 1.00	353	196
B2-53 B2-53-S	5.000	11.000	3.000 5.000	12.500	* **	0.80 1.00	392	216
B2-54 B2-54-S		13.000	4.000 4.000	15.000	* **	1.00 1.00	451	284
B2-55 B2-55-S		16.000	5.000 5.000	18.000	* **	1.00 1.00	1480	746
B2-106-7 B2-106-S7	6.000	13.000	3.500 5.000	15.000	* **	1.00 1.10	579	353
B2-56 B2-56-S		15.000	5.000 5.000	17.000	* **	1.20 1.20	628	402
B2-57 B2-57-S	8.000	19.000	6.000 6.000	22.000	* **	1.50 1.50	1890	991
B2-108-7 B2-108-S7		16.000	4.000 6.000	18.000	* **	1.00 1.30	951	628
B2-58 B2-58-S	10.000	19.000	5.000 5.000	21.000	* **	1.00 1.00	1020	696

BALL BEARINGS

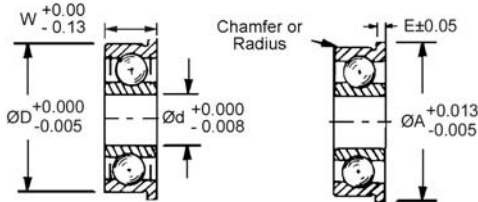
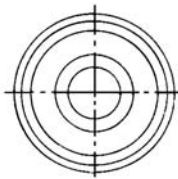
BORE SIZE	TYPE	MATERIAL
3MM TO 10MM	ABEC-1	STAINLESS STEEL DIN 1.3505

*Unshielded lubricated with oil
 **Shielded or
 ***Rubber sealed & lubricated with grease



STOCK NO.	ød	ØD	W	SHIELD AND LUBE DATA	DYNAMIC LOAD (N) CAPACITY	STATIC LOAD (N) CAPACITY
B11M-1 B11M-2 B11M-3	3.000	10.000	4.00	* ** ***	382	216
B11M-4 B11M-5 B11M-6	5.000	16.000	5.00	* ** ***	1480	746
B11M-7 B11M-8 B11M-9	6.000	19.000	6.00	* ** ***	1890	991
B11M-10 B11M-11 B11M-12	10.000	19.000	5.00	* ** ***	1020	696

BORE SIZE	TYPE	MATERIAL
3MM TO 10MM	FLANGED ABEC-1	STAINLESS STEEL DIN 1.3505



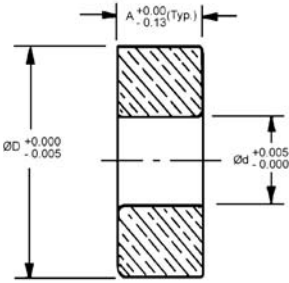
**Shielded and Lubricated with grease

*Unshielded Lubricated with Oil

STOCK NO.	ød	ØD	W	A	SHIELD AND LUBE DATA	E	DYNAMIC LOAD (N) CAPACITY	STATIC LOAD (N) CAPACITY
B13-103 B13-103-S	3.000	10.000	4.0	11.50	* **	1.00	383	216
B13-105 B13-105-S	5.000	16.000	5.0	18.00	* **	1.00	1480	749
B13-106 B13-106-S	6.000	19.000	6.0	22.00	* **	1.50	1890	991
B13-110 B13-110-S	10.000	19.000	5.0 7.0	22.00	* **	1.00 1.50	1020	696

"OIL-LESS" BEARINGS

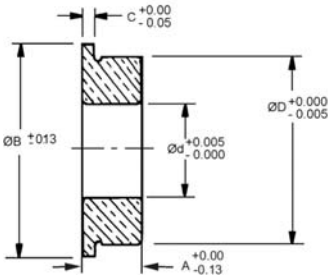
BORE SIZE	TYPE	MATERIAL
3MM TO 12MM	PLAIN ULTRA PRECISION	SINTERED BRONZE



STOCK NO.	SHAFT SIZE	Ød	ØD	A
B3M-1	3	3.000	6.000	2.50
B3M-2	3	3.000	8.000	3.00
B3M-3	3	3.000	10.000	4.00
B3M-4	4	4.000	8.000	4.00
B3M-5	5	5.000	12.000	4.00
B3M-6	5	5.000	13.000	5.00
B3M-7	5	5.000	10.000	5.00
B3M-8	6	6.000	16.000	5.00
B3M-9	6	6.000	10.000	5.00
B3M-10	8	8.000	16.000	6.00
B3M-11	10	10.000	19.000	7.00
B3M-12	12	12.000	20.000	8.00



BORE SIZE	TYPE	MATERIAL
3MM TO 12MM	FLANGED ULTRA PRECISION	SINTERED BRONZE

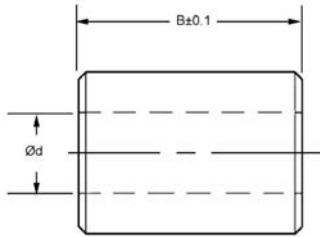
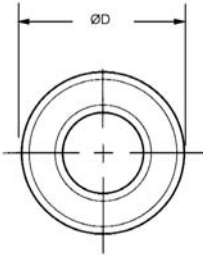


STOCK NO.	SHAFT SIZE	Ød	ØD	A	ØB	C
B4M-1	3	3.000	6.000	2.50	8.00	0.50
B4M-2	3	3.000	8.000	3.00	10.00	0.50
B4M-3	3	3.000	10.000	4.00	12.00	1.00
B4M-4	4	4.000	8.000	4.00	10.00	1.00
B4M-5	5	5.000	12.000	4.00	14.00	1.00
B4M-6	5	5.000	13.000	5.00	14.00	1.00
B4M-7	5	5.000	10.000	5.00	12.00	1.00
B4M-8	6	6.000	16.000	5.00	18.00	1.00
B4M-9	6	6.000	10.000	5.00	12.00	1.00
B4M-10	8	8.000	16.000	6.00	18.00	1.00
B4M-11	10	10.000	19.000	7.00	21.00	1.50
B4M-12	12	12.000	20.000	8.00	22.00	1.50



"OIL-LESS" BEARINGS

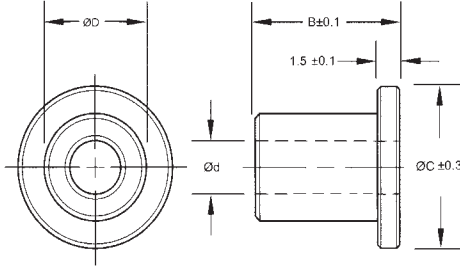
SHAFT SIZE	TYPE	MATERIAL
3MM TO 10MM	PLAIN	SINTERED BRONZE



STOCK NO.	SHAFT SIZE	Ød +.02	ØD -.03	B
B6M-1 B6M-2 B6M-3	3	3.01	6.04	4 6 10
B6M-4 B6M-5	4	4.01	8.04	4 10
B6M-6 B6M-7 B6M-8 B6M-9	5	5.01	8.04	5 8 12 16
B6M-10 B6M-11 B6M-12	6	6.01	10.04	6 10 12
B6M-13 B6M-14 B6M-15	8	8.01	12.05	8 12 16
B6M-16 B6M-17 B6M-18	10	10.01	13.05	10 16 20

"OIL-LESS" BEARINGS

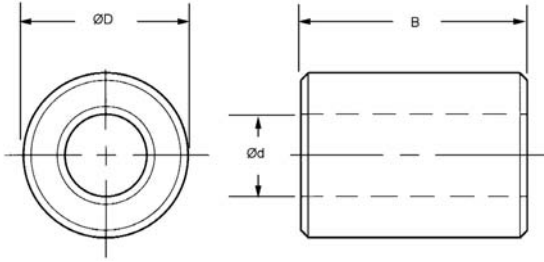
SHAFT SIZE	TYPE	MATERIAL
3MM TO 10MM	FLANGED	SINTERED BRONZE



STOCK NO.	SHAFT SIZE	$\varnothing d$ +.02	$\varnothing D$ -.03	B	$\varnothing C$
B7M-1 B7M-2 B7M-3	3	3.01	6.04	4 6 10	9
B7M-4 B7M-5	4	4.01	8.04	4 10	11
B7M-6 B7M-7 B7M-8 B7M-9	5	5.01	8.04	5 8 12 16	11
B7M-10 B7M-11 B7M-12	6	6.01	10.04	6 10 12	13
B7M-13 B7M-14 B7M-15	8	8.01	12.05	8 12 16	14
B7M-16 B7M-17 B7M-18	10	10.01	13.05	10 16 20	16

Te-F-Thane® BEARINGS

SHAFT SIZE	TYPE	MATERIAL
3MM TO 12MM	PLAIN	TEFLON

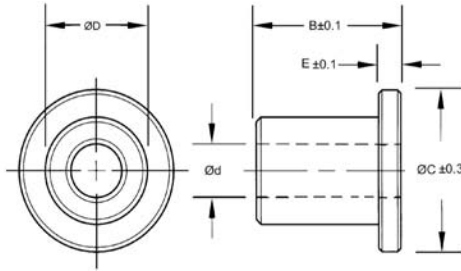


STOCK NO.	SHAFT SIZE	$\varnothing d$ +.13	$\varnothing D$ -.008	B ± 0.13
B8M-1	3	3.02	6.04	4
B8M-2				6
B8M-3				10
B8M-4	5	5.02	8.04	4
B8M-5				8
B8M-6				12
B8M-7	6	6.02	10.04	6
B8M-8				10
B8M-9				12
B8M-10				16
B8M-11	8	8.02	12.05	8
B8M-12				12
B8M-13				16
B8M-14	10	10.02	13.05	8
B8M-15				10
B8M-16				16
B8M-17				20
B8M-18	12	12.02	16.05	10
B8M-19				12
B8M-20				20
B8M-21				25

- Long life
- Smooth operation
- No lubrication required
- Minimal breakaway torque resistance

Te-F-Thane® BEARINGS

SHAFT SIZE	TYPE	MATERIAL
3MM TO 12MM	FLANGED	TEFLON

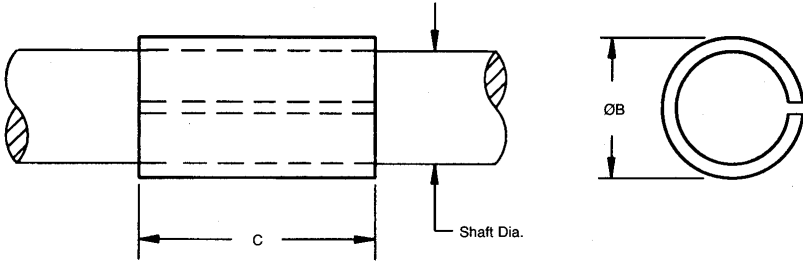


STOCK NO.	SHAFT SIZE	$\varnothing d$ +0.13	$\varnothing D$ -0.08	B ± 0.13	$\varnothing C$	E
B9M-1 B9M-2 B9M-3	3	3.02	6.04	4 6 10	8	1.2
B9M-4 B9M-5 B9M-6	5	5.02	8.04	4 8 12	10	1.2
B9M-7 B9M-8 B9M-9 B9M-10	6	6.02	10.04	6 10 12 16	12	1.2
B9M-11 B9M-12 B9M-13	8	8.02	12.05	8 12 16	16	1.5
B9M-14 B9M-15 B9M-16 B9M-17	10	10.02	13.05	8 10 16 20	16	1.5
B9M-18 B9M-19 B9M-20 B9M-21	12	12.02	16.05	10 12 20 25	19.0	1.5

- Long life
- Smooth operation
- No lubrication required
- Minimal breakaway torque resistance

LONG-LIFE® BEARINGS

SHAFT SIZE	TYPE	MATERIAL
3MM TO 25MM	DRY PFTE-LEAD LUBRICATING	STEEL BACKED POROUS BRONZE



- Lasts up to 10 times longer than oil impregnated porous bronze bearings
- High loads
- Runs cool - excellent heat dissipation
- Extremely low coefficient of friction
- Operates in extreme temperatures
- Reduce costs - lower maintenance - eliminate hardened shafting and expensive shaft preparations
- Excellent for rotating sliding or oscillating motion and both trust and radial loads
- In fully lubricated environments provides protection during dry starts and from lubrication system failure

Max. Cont. Load = 1.7 PV's ($\frac{N}{mm^2} \times \frac{M}{sec}$) Unlubricated
 70 PV's ($\frac{N}{mm^2} \times \frac{M}{sec}$) Lubricated

Max. Cont. Speed = 5 M/sec Unlubricated
 10 M/sec Lubricated

Temp. Range = -200°C to +280°C

Compressive Strength = 310 N/mm²

STOCK NO.	NORMAL SHAFT SIZE	ACTUAL SHAFT SIZE	NOMINAL O.D. ØB	HOUSING BORE	C	SHAFT STOCK NO.
DU14M-1 DU14M-2	3	3.000/2.994	4.5	4.508/4.500	3 6	S1-131
DU14M-3 DU14M-4 DU14M-5	5	4.991/4.979	7	7.016/7.001	5 8 10	S1-105
DU14M-6 DU14M-7	6	5.992/5.980	8	8.017/8.002	6 10	S1-106
DU14M-8 DU14M-9	8	7.993/7.978	10	10.021/10.006	8 12	S1-108
DU14M-10 DU14M-11 DU14M-12	10	9.992/9.977	12	12.023/12.005	8 12 20	S1-110
DU14M-13 DU14M-14 DU14M-15	12	11.991/11.973	14	14.025/14.007	8 12 25	S1-112
DU14M-16 DU14M-17 DU14M-18	16	15.984/15.966	18	18.018/18.00	12 15 25	S1-116
DU14M-19 DU14M-20 DU14M-21	20	19.992/19.971	23	23.033/23.012	15 20 30	S1-120
DU14M-22 DU14M-23 DU14M-24	25	24.993/24.972	28	28.034/28.013	15 25 50	S1-125

THERMOPLASTIC BEARING

Reference Chart

The B15/16 Series is a thick-walled light-duty bearing used in many types of machinery to dampen vibration and shock loads. They are dimensionally interchangeable with most sintered metal bearings, and can be retro-fitted without changing the housing bore or shaft. Typically they're used in agricultural and exercise equipment and machinery such as woodworking, packaging, and welding equipment.

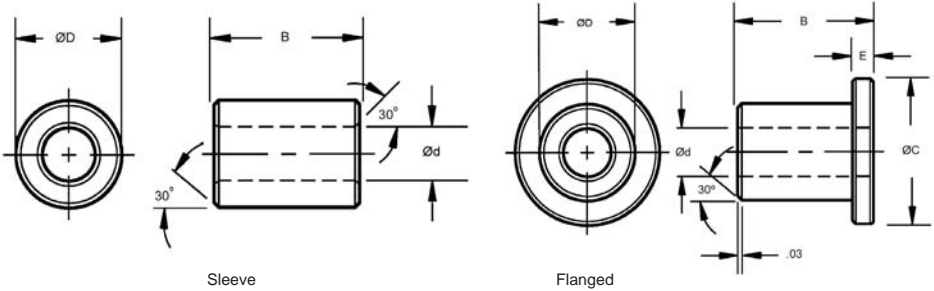
The B17/18 Series is available for situations where even the excellent abrasion resistance of the B19/20 Series is insufficient. It's superior characteristics are especially well suited for high performance requirements. Applications include, for example, pneumatic cylinders, lifting equipment, fitness machinery, industrial brakes, clutches and automotive components in general.

The B19/20 Series was initially designed for applications in chemical processing equipment. This material is a unique combination of exotic materials best suited for high load, temperature and speed applications. It is resistant to virtually any substance except for concentrated sulfuric acids. At present, this material is unique and unequalled. Applications include chemical mountings and pumps, oven manufacture, semi-conductors, film developing equipment, equipment for industrial-sized kitchens, etc.

DATA	B15/16 SERIES	B17/18 SERIES	B19/20 SERIES
MAX. LOAD (KG/CM ²)	161	662	1529
TEMP. RANGE FOR CONTINUOUS OPERATION	-40°F to 135°F 200°F	-40°F to 135°F 210°F	-149°F to 250°F 315°F
MAX. PV (NO LUB.)	208	594	2122
SPEEDS (MPM)			
OSCILLATING (CONTINUOUS)	59	119	178
OSCILLATING (SHORT TERM)	119	180	238
ROTATIONAL (CONTINUOUS)	59	90	90
ROTATIONAL (SHORT TERM)	119	149	209
LINEAR (CONTINUOUS)	178	297	297
LINEAR (SHORT TERM)	297	359	356
COEFFICIENT OF FRICTION. DYNAMIC STEEL. DRY.	.18-.30	.08-.15	.11-.17
MAINTENANCE FREE	YES	YES	YES
DRY OPERATION	YES	YES	YES
COMPRESSIVE STRENGTH (KG/CM ²)	183	662	1529
SPACE REQUIREMENTS	MEDIUM WALL THICKNESS	THIN WALLED	THIN WALLED
DENSITY (KG/CM ³)	.0010	.0012	.0012
MODULUS OF ELASTICITY (KG/CM ²)	17.331	56.071	67.285
H2O ABSORPTION @50% HUM. & 23° C (%)	1.6	.65	.10

THERMOPLASTIC BEARINGS

BORE SIZE	SHAFT SIZE	TYPE
1MM TO 12MM	1MM TO 12MM	SLEEVE AND FLANGED

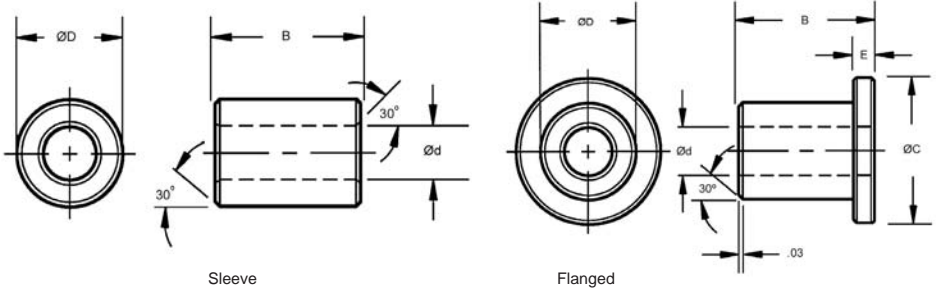


SLEEVE STOCK NO.	FLANGED STOCK NO.	NOMINAL SIZES					I.D. AFTER PRESS FIT		HOUSING BORE		SHAFT SIZE	
		Ød	ØD	ØC	B	E (+0/-.140)	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.
B15M-1	B16M-1	1	3	5	2	1	1.080	1.020	3.080	3.000	1.000	0.975
B15M-2	B16M-2	1.5	4	6	2	1	1.580	1.520	4.012	4.000	1.500	1.475
B15M-3	B16M-3	2	5	8	3	1.5	2.080	2.020	5.012	5.000	2.000	1.975
B15M-4	B16M-4	3	6	9	4	1.5	3.080	3.020	6.012	6.000	3.000	2.975
B15M-5	B16M-5	4	8	12	6	2	4.105	4.030	8.015	8.000	4.000	3.970
B15M-6	B16M-6	5	9	13	5	2	5.105	5.030	9.015	9.000	5.000	4.970
B15M-7	B16M-7	5	9	13	8	2	5.105	5.030	9.015	9.000	5.000	4.970
B15M-8	B16M-8	6	10	14	4	2	6.105	6.030	10.015	10.000	6.000	5.970
B15M-9	B16M-9	6	10	14	6	2	6.105	6.030	10.015	10.000	6.000	5.970
B15M-11	B16M-11	6	12	14	6	3	6.105	6.030	12.018	12.000	6.000	5.970
B15M-12	B16M-12	6	12	14	10	3	6.105	6.030	12.018	12.000	6.000	5.970
B15M-13	B16M-13	8	11	13	8	2	8.130	8.040	11.018	11.000	8.000	7.964
B15M-14	B16M-14	8	12	16	6	2	8.130	8.040	12.018	12.000	8.000	7.964
B15M-15	B16M-15	8	12	16	8	2	8.130	8.040	12.018	12.000	8.000	7.964
B15M-16	B16M-16	8	12	16	12	2	8.130	8.040	12.018	12.000	8.000	7.964
B15M-17	B16M-17	8	14	18	6	3	8.130	8.040	14.018	14.000	8.000	7.964
B15M-18	B16M-18	8	14	18	10	3	8.130	8.040	14.018	14.000	8.000	7.964
B15M-19	B16M-19	10	16	20	6	3	10.130	10.040	16.018	16.000	10.000	9.964
B15M-20	B16M-20	10	16	22	10	3	10.130	10.040	16.018	16.000	10.000	9.964
B15M-21	B16M-21	10	16	22	16	3	10.130	10.040	16.018	16.000	10.000	9.964
B15M-22	B16M-22	12	18	24	8	3	12.160	12.050	18.018	18.000	12.000	11.957
B15M-23	B16M-23	12	18	22	10	3	12.160	12.050	18.018	18.000	12.000	11.957
B15M-24	B16M-24	12	18	22	15	3	12.160	12.050	18.018	18.000	12.000	11.957
B15M-25	B16M-25	12	18	22	20	3	12.160	12.050	18.018	18.000	12.000	11.957



THERMOPLASTIC BEARINGS

BORE SIZE	SHAFT SIZE	TYPE
3MM TO 12MM	3MM TO 14MM	SLEEVE AND FLANGED

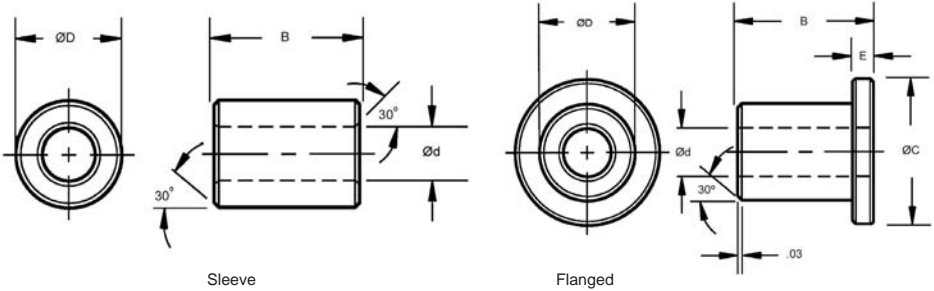


SLEEVE STOCK NO.	FLANGED STOCK NO.	NOMINAL SIZES					I.D. AFTER PRESS FIT		HOUSING BORE		SHAFT SIZE	
		Ød	ØD	ØC	B	E (+0/-.140)	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.
B17M-1	B18M-1	3	4.5	7.5	3	0.75	3.054	3.014	4.512	4.500	3.000	2.975
B17M-2	B18M-2	3	4.5	7.5	5	0.75	3.054	3.014	4.512	4.500	3.000	2.975
B17M-3	B18M-3	4	5.5	9.5	4	0.75	4.068	4.020	5.512	5.500	4.000	3.970
B17M-4	B18M-4	4	5.5	9.5	6	0.75	4.068	4.020	5.512	5.500	4.000	3.970
B17M-5	B18M-5	5	7	11	5	1	5.068	5.020	7.015	7.000	5.000	4.970
B17M-6	B18M-6	6	8	12	6	1	6.068	6.020	8.015	8.000	6.000	5.970
B17M-7	B18M-7	6	8	12	8	1	6.068	6.020	8.015	8.000	6.000	5.970
B17M-8	B18M-8	6	8	12	10	1	6.068	6.020	8.015	8.000	6.000	5.970
B17M-9	B18M-9	7	9	15	12	1	7.083	7.025	9.015	9.000	7.000	6.964
B17M-10	B18M-10	8	10	15	5.5	1	8.083	8.025	10.015	10.000	8.000	7.964
B17M-11	B18M-11	8	10	15	7.5	1	8.083	8.025	10.015	10.000	8.000	7.964
B17M-12	B18M-12	8	10	15	10	1	8.083	8.025	10.015	10.000	8.000	7.964
B17M-13	B18M-13	10	12	18	6	1	10.083	10.025	12.018	12.000	10.000	9.964
B17M-14	B18M-14	10	12	18	9	1	10.083	10.025	12.018	12.000	10.000	9.964
B17M-15	B18M-15	10	12	18	10	1	10.083	10.025	12.018	12.000	10.000	9.964
B17M-16	B18M-16	10	12	18	12	1	10.083	10.025	12.018	12.000	10.000	9.964
B17M-17	B18M-17	10	12	18	15	1	10.083	10.025	12.018	12.000	10.000	9.964
B17M-18	B18M-18	10	12	18	17	1	10.083	10.025	12.018	12.000	12.000	9.964
B17M-19	B18M-19	12	14	20	10	1	12.102	12.032	14.018	14.000	12.000	11.957
B17M-20	B18M-20	12	14	20	11	1	12.102	12.032	14.018	14.000	12.000	11.957



THERMOPLASTIC BEARINGS

BORE SIZE	SHAFT SIZE	TYPE
4MM TO 14MM	4MM TO 12MM	SLEEVE AND FLANGED



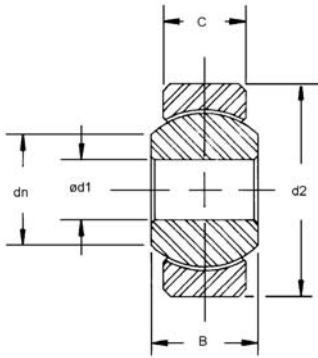
SLEEVE STOCK NO.	FLANGED STOCK NO.	NOMINAL SIZES					I.D. AFTER PRESS FIT		HOUSING BORE		SHAFT SIZE	
		Ød	ØD	ØC	B	E (+0/-.140)	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.
B19M-1	B20M-1	4	5.5	9.5	4	0.75	4.058	4.010	5.512	5.500	4.000	3.970
B19M-2	B20M-2	5	7	11	5	1	5.058	5.010	7.015	7.000	5.000	4.970
B19M-3	B20M-3	6	8	12	8	1	6.058	6.010	8.015	8.000	6.000	5.970
B19M-4	B20M-4	8	10	15	*	1	8.071	8.013	10.015	10.000	8.000	7.964
B19M-5	B20M-5	10	12	18	6	1	10.071	10.013	12.018	12.000	10.000	9.964
B19M-6	B20M-6	10	12	18	*	1	10.071	10.013	12.018	12.000	10.000	9.964
B19M-7	B20M-7	12	14	20	*	1	12.086	12.016	14.018	14.000	12.000	11.957
B19M-8	B20M-8	14	16	22	12	1	12.086	12.016	16.018	16.000	12.000	11.957

* Nominal Size for Sleeve version is 10, for Flanged version is 9.



SPHERICAL BEARINGS

BORE SIZE	TYPE	MATERIAL
5MM TO 25MM	SELF LUBRICATING	REINFORCED THERMOPLASTIC HOUSING, BALL B15/16 BEARING THERMOPLASTIC

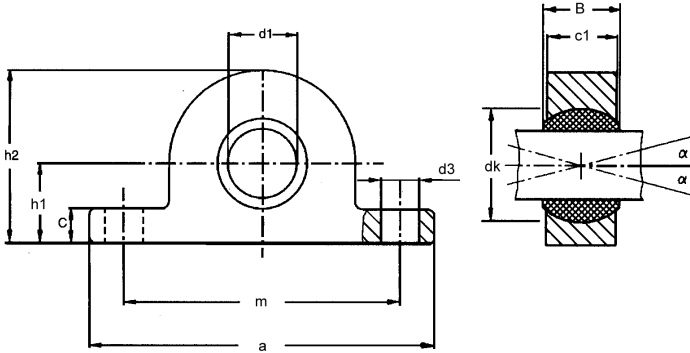


STOCK NO.	$\varnothing d_1$	d_2	B	C	d_n
SKGLM-05	5	13	8	6	7.7
SKGLM-06	6	16	9	6.5	8.9
SKGLM-08	8	19	12	9	10.3
SKGLM-10	10	22	14	10.5	12.9
SKGLM-12	12	26	16	12	15.4
SKGLM-14	14	28	19	13.5	16.8
SKGLM-16	16	32	21	15	19.3
SKGLM-18	18	35	23	16.5	21.8
SKGLM-20	20	40	25	18	24.3
SKGLM-22	22	42	28	20	25.8
SKGLM-25	25	47	31	22	29.5

- High radial and thrust load
- Long life cycle

SPHERICAL PILLOW BLOCK BEARINGS

BORE SIZE	MATERIAL
5MM TO 25MM	HOUSING - REINFORCED THERMOPLASTIC BALL - B15/16 BEARING THERMOPLASTIC



STOCK NO.	d1	B	c1	dk	h1	m	d3	a	c	h2
PSJAM-05	5	8	6	11.1	7	25	4.5	36	3	14
PSJAM-06	6	9	7	12.7	10	33	4.5	44	4	20
PSJAM-08	8	12	9	15.8	10	33	4.5	44	4	20
PSJAM-10	10	14	10.5	19.0	14	35	5.5	60	6	28
PSJAM-12	12	16	12	22.2	14	35	5.5	60	6	28
PSJAM-14	14	19	13.5	25.4	18	60	6.5	80	6	36
PSJAM-16	16	21	15	28.5	18	60	6.5	80	6	36
PSJAM-18	18	23	16.5	31.7	22	68	8.5	88	9	44
PSJAM-20	20	25	18	34.9	22	68	8.5	88	9	44
PSJAM-22	22	28	20	38.1	24	74	8.5	97	9	48
PSJAM-25	25	31	22	42.8	27	86	8.5	110	10	54

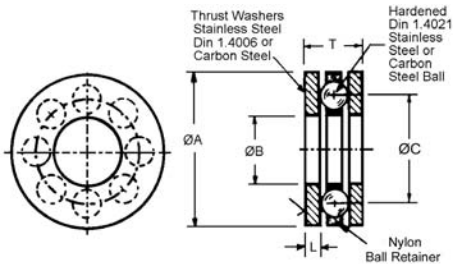
THRUST BEARINGS

BORE SIZE	MATERIAL
5MM TO 25MM	STAINLESS STEEL

STOCK NO.	ØB +0.13 -0.00	ØA +0.00 -0.13	ØC	L	Tolerance	T	NO. OF BALLS	LOAD RATING AT 15 RPM
B5M-2-SS	5.00	12.00	8.7	1.27	±0.05	4.98	7	323 N
B5M-3-SS	6.00	14.00	10.3			4.98	8	371 N
B5M-4-SS	7.00	17.00	11.9			4.98	9	418 N
B5M-5-SS	8.00	16.00	11.9			4.98	6	418 N
B5M-6-SS	10.00	21.00	15.1	1.57	+0.06 / -0.05	6.38	6	467 N
B5M-7-SS	12.00	24.00	18.3			6.38	8	618 N
B5M-8-SS	16.00	28.00	22.2	2.36	±0.08	8.80	6	755 N
B5M-9-SS	19.00	32.00	25.4			8.80	8	1002 N
B5M-10-SS	25.00	41.00	33.3	3.18	+0.12 / -0.13	11.12	10	1544 N

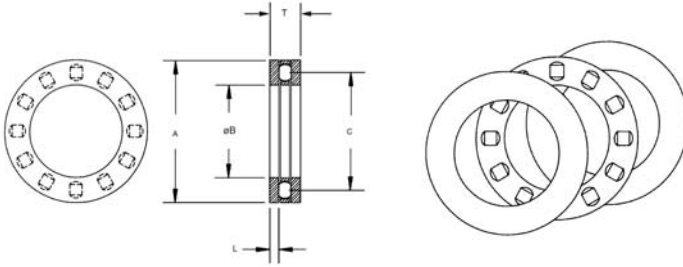
BORE SIZE	MATERIAL
5MM TO 25MM	CARBON STEEL

STOCK NO.	ØB +0.13 -0.00	ØA +0.00 -0.13	ØC	L	Tolerance	T	NO. OF BALLS	LOAD RATING AT 15 RPM
B5M-2	5.00	12.00	8.7	1.27	±0.05	4.98	7	461 N
B5M-3	6.00	14.00	10.3			4.98	8	530 N
B5M-4	7.00	17.00	11.9			4.98	9	598 N
B5M-5	8.00	16.00	11.9			4.98	6	598 N
B5M-6	10.00	21.00	15.1	1.57	+0.06 / -0.05	6.38	6	667 N
B5M-7	12.00	24.00	18.3			6.38	8	883 N
B5M-8	16.00	28.00	22.2	2.36	±0.08	8.80	6	1079 N
B5M-9	19.00	32.00	25.4			8.80	8	1432 N
B5M-10	25.00	41.00	33.3	3.18	+0.12 / -0.13	11.12	10	2207 N



ROLLER THRUST BEARINGS

BORE SIZE	MATERIAL
4MM TO 25MM	ROLLERS 52100 CHROME STEEL CAGE CARBON STEEL, WASHERS 1074 STEEL



PART NO.	DIMENSIONS ØB	A Tol. E10	T Tol. a12	L +0.000 -0.075	C	LOAD RATINGS		SPEED RATING rpm
						DYN. N	STAT. N	
BR5M-1	4	14	4.0	1.00	9.0	4450	8000	18000
BR5M-2*	5	15	4.0	1.00	10.0	4750	9200	17000
BR5M-3*	6	19	7.5	2.75	12.5	6800	15500	16000
BR5M-4*	8	21	7.5	2.75	14.5	7800	19400	15000
BR5M-5	10	24	7.5	2.75	17.5	9200	25500	14000
BR5M-6	12	26	7.5	2.75	19.5	9900	29000	13000
BR5M-7	15	28	7.5	2.75	22.0	11300	36000	11000
BR5M-8	17	30	7.5	2.75	24.0	11900	39500	10000
BR5M-9	20	35	7.5	2.75	28.0	13100	46500	8500
BR5M-10	25	42	8.0	3.00	35.0	14700	58000	7000

* These part numbers contain a plastic cage and limit operating temp. to 120° Cont. 150° intermittently.

