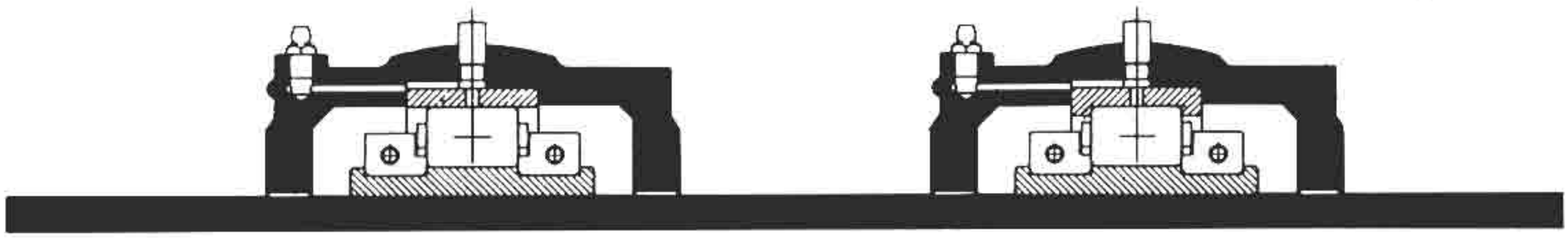
COOPER
BEARINGS

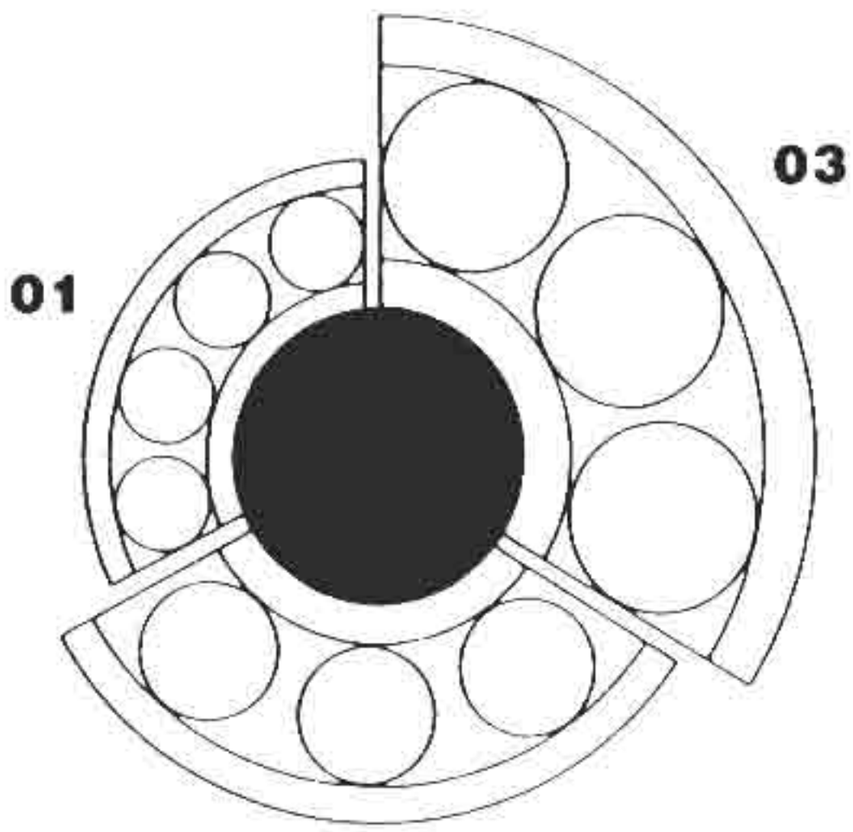
TECHNICAL DATA

TYPE AND SERIES OF BEARINGS



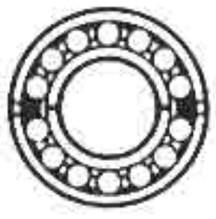
EXPANSION EX
Bearings for radial loads only, The inner race and shaft have axial freedom.

FIXED GR
Bearings for radial and axial loads. Position the shaft endways and resist axial load by cycloidal contact of the roller ends within the inner and outer race grooves.
The halves of the inner races are aligned by recessed clamping rings and are fitted to plain shafts as above or between abutments when specified. The split outer race must also be accurately registered axially.



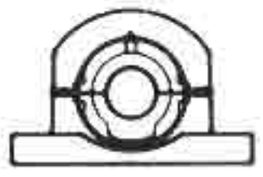
COMPARISON OF RATINGS
To provide optimum selection, standard Cooper Split Roller Bearings are classified in Series 01, 02 and 03 according to their respective ratings as depicted above Selection page 3.

REFERENCES FOR STANDARD UNIT RANGE



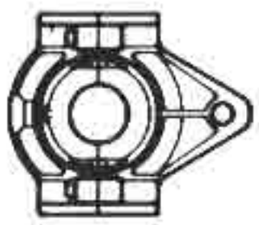
ROLLER BEARING
B

BEARING in SWIVEL CARTRIDGE
BC



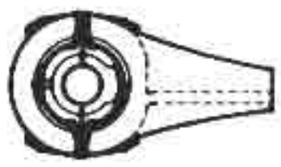
PEDESTAL Complete
BCP

BC in FLANGE
BCF



BC in TAKE UP

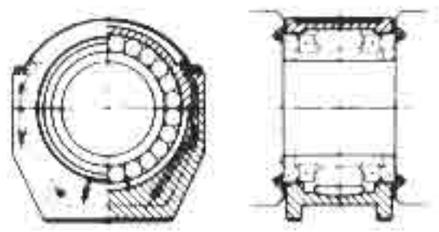
Tension	Push
BCTT	BCTP



BC in ROD END

Shoe	Tee
BCRES	BCRET

BEARING in HANGER
BH



Water Cooled Bearing

Electrical & High Rise Pedestal

STANDARD BEARING RATINGS

kilonewtons kN
(1 kN = 100 kgf = 225 lbf approximately)

For bearings with normal clearance

Series 01

Bore **d** mm	Dynamic **C**	Static C_{or}	Axial C_a	Max rpm **n**
40	65	67	3.2	5400
50	75	80	3.6	4630
60 **65**	97	110	5.4	3940
70 **75**	130	157	7.6	3310
80 **85** **90**	179	226	12.4	2790
100 **105**	239	318	16.0	2340
110 **115**	298	407	18.6	1970
120 **125** **130**	348	484	22.2	1740
135 **140**	386	542	25.8	1570
150 **155**	420	616	29.4	1450
160	475	708	33.0	1320
170 **180**	510	793	36.4	1220
190 **200**	534	883	41.0	1070
220	578	980	49.0	930
240	640	1170	57.8	820
260 **280**	725	1333	66.8	730
300	762	1456	78.2	650
320	841	1642	89.0	590
340	871	1778	99.6	540
360 **380**	938	1929	110.4	500
400	970	2076	115.6	460
420	992	2223	121.0	430
440 **460**	1029	2370	127.2	410
480	1063	2433	132.6	380
500	1102	2593	137.8	360
530	1140	2755	140.6	340
560	1176	2916	142.4	330
600	1300	3311	146.8	300

Series 02

Bore **d** mm	Dynamic **C**	Static C_{or}	Axial C_a	Max rpm **n**
–	–	–	–	–
50	117	124	6.2	4350
60 **65**	165	186	8.8	3680
70 **75**	219	262	10.6	3080
80 **85** **90**	278	345	17.8	2520
100	360	456	25.0	2130
110 **115**	447	577	31.2	1820
120 **125** **130**	548	714	38.2	1600
140	612	809	45.4	1450
150	730	1007	52.4	1320
160 **170**	769	1033	61.4	1200
180	849	1191	71.2	1120
190 **200**	990	1457	80.0	960
220	1067	1661	89.8	850
240 **260**	1213	1756	98.8	750
280	1364	2145	113.8	670
300	1462	2409	129.0	610
320	1560	2622	144.2	550
340 **360**	1729	2940	159.2	500
380	1822	3254	174.4	460
400	1909	3438	188.4	430
420	2013	3702	202.0	400
440 **460**	2138	4057	216.0	380
480	2251	4419	230.0	360
500	2346	4776	244.0	340
530	2565	5137	258.0	330
560	2675	5556	272.0	310
600	2769	5992	300.0	290

Series 03

Bore **d** mm	Dynamic **C**	Static C_{or}	Axial C_a	Max rpm **n**
–	–	–	–	–
–	–	–	–	–
–	–	–	–	–
–	–	–	–	–
–	–	–	–	–
100	618	684	31.2	1820
110 **120**	625	698	39.2	1640
130	758	852	49.0	1500
140 **150**	910 1023	1069 1213	58.8 69.4	1340 1220
160 **170**	1191	1564	79.2	1110
180	1284	1704	89.0	1030
190 **200**	1508	2022	99.6	880
220	1653	2163	109.4	760
240 **260**	1843	2551	130.8	700
280X	1979	2960	153.0	620
280E	2134	3233	153.0	620
300	2190	3312	174.4	560
320	2611	3795	198.8	500
340E **360E**	2778	4392	213.6	460
360X	2827	4377	226.0	460
380 **400**	3073	4800	250.8	420
420E **440E**	3494	6006	275.8	360
460E	3709	6156	302.4	340
460X **480X**	3831	6186	308.8	340
500 **530**	4162	7041	347.0	310
560E **600E**	4682 4874	8511 9130	382.6 400.0	280 270

Special Considerations

Modified Construction
may be required for some applications e.g. long transmission shafts and orbital rotation. Reciprocating loads and high temperatures may require special clearance.

Please note there is adjustment in the Dynamic Rating C for bearings with special diametric clearance. Wider clearances (C3 and C5) give reductions of approximately 5% and 10% respectively.

Please consult our Sales Department for precise values.

Full Row Bearings (without cage)
Have higher ratings and are suitable for oscillating and some rotating applications.

Temperature
The normal range for standard bearings is 0 to 100°C. Outside this range special consideration must be given to design, lubrication and seals, and all at 120°C and above to special heat treatment for material stabilisation. Above 150°C there is a rating reduction as follows:

°C	170	200	250	300
% Reduction	5	15	25	40

Where there is a temperature differential between shaft and housing, extra diametric clearance may be required with reduction in rating and account taken of axial movement through Expans on bearings.

Electrical Machinery
Bearings for use on electrical machinery should be to **EL** specification.

BEARING SELECTION

Radial Load Ratings
given in this catalogue are based on ISO 281/1. Bearing life, $L_{10} = \left(\frac{C}{P}\right)^{\frac{10}{3}}$, where **C** is the bearing rating and **P** the effective load. The ratings given are for a life of one million revolutions, i.e. 500 hours at 33.3 rpm, this being the minimum expected life for 90% of similar bearings. The average life will be about five times the L_{10} life and some 50% of bearings should attain this average.

Radial Internal Clearance (Diametric Clearance)
is defined as the amount by which the inner race of a rolling bearing can be moved radially relative to the outer race. In the case of a split roller bearing, this can only be measured when the bearing is mounted on a shaft and within a suitable housing.

Dynamic Ratings C
have been calculated using median values of normal diametric clearance, of shaft diameter (h7 tolerance), and housing bore, with allowance made for technological improvements.

RADIAL LOAD

Selection is considered independently from the Axial Load.

1. Estimate each net radial load acting on the bearing from the dead weights, power transmitted and forces applied.
2. Multiply each load by the appropriate Dynamic Factor f_d and/or f_k. Assess these factors from the tables below, and according to experience.
3. Resolve these loads to find the effective load **P**.
4. Determine the life factors, f_L or f_n from the formula given below or table opposite. Note that where the speed is under 5 rpm or intermittent selection may be made from the static rating **Cor.**
5. Select a bearing having a **C** rating not less than the product of $P \times f_L \times f_n$.
   The product of f_L and f_n must not be less than 1.

Dynamic Factors MACHINE	f_d
Steady load or small fluctuations	1.0—1.3
Light shock	1.3—2.0
Heavy shock, vibration, reciprocation	2.0—3.5
DRIVE	f_k
Chain and gears: according to accuracy	1.0—1.3
Belts: according to tightness	1.5—4.0

Life Factors L_{10} life	f_L

Consider actual number of hours equipment operates (duty cycle) and calculate f_L from formula:-

$$f_L = \left(\frac{\text{OPERATING HOURS}}{500}\right)^{0.3}$$

Speed Factor	f_n

In the case of variable speed, a mean speed over the time cycle should be taken. Calculate the speed factor f_n, from the formula

$$f_n = \left(\frac{\text{RPM}}{33.33}\right)^{0.3}$$

Life in Revolutions
Transport applications may be selected by distance or total revolutions. This may be achieved by halving the required life in millions of revolutions, multiplying by 1000 and substituting the value for operating hours in the above formula to obtain f_L.
e.g. Life = 100 million revs × 0.5 × 1000 = 50,000 hrs.
Multiply f_L by the effective load **P** to obtain the **C** rating required.

LIFE ADJUSTMENT FACTORS FOR CRITICAL APPLICATIONS

The basic L_{10} life obtained by using the tables in this catalogue is adequate for normal applications, as the effect of other factors such as lubrication has been incorporated in the recommendations given, and selection can be made assuming a suitable lubricant as specified on page 9. For some applications, however, it may be necessary to consider these factors in greater detail. In such cases the following revised equation for bearing life applies.

$$L_{na} = a_1 \times a_2 \times a_3 \times L_{10}$$

Where L_{na} = adjusted life in millions of revolutions

a_1 = factor for reliability
a_2 = factor for material
a_3 = factor for operating conditions

For reliability of 90% (L_{10} life) and normal materials and operating conditions $a_1 = a_2 = a_3 = 1$.

For reliability greater than 90%, use values of a, as follows:

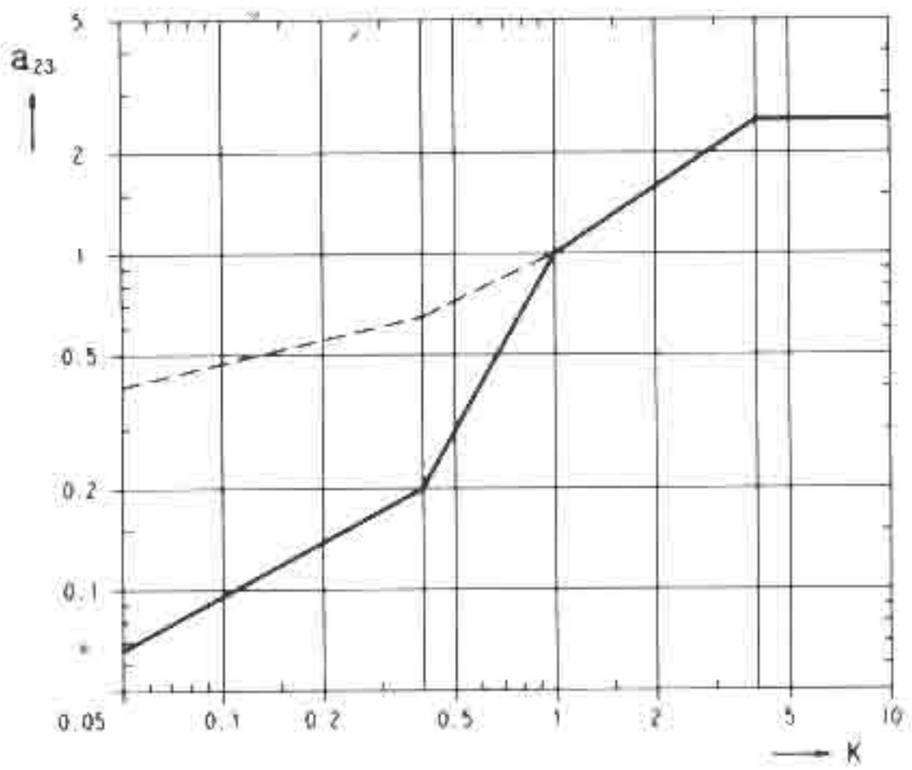
Reliability %	**95**	**96**	**97**	**98**	**99**
a_1	**0.62**	**0.53**	**0.44**	**0.33**	**0.21**

Values of a_2 greater than **1** may be obtained by the use of special steels – please consult our Technical Department.

The effect of elevated temperatures is considered on page 3 and factor a_3 is, therefore, essentially a factor for lubrication which is determined by the rating **Va/Vr**, i.e. the actual viscosity of the lubricant to that required for adequate separation of the rolling surfaces at the operating temperature. Since the advantages of improved steels are not realised without adequate lubrication the factors a_2 and a_3 are, therefore, interdependent and can be replaced by a combined factor a_{23}.

The chart below shows the variation of factor a_{23} with the lubricant viscosity factor.

VARIATION OF BEARING LIFE FACTOR a_{23} WITH VISCOSITY RATIO, K.



$$K = \frac{\text{VISCOSITY OF OIL USED}}{\text{VISCOSITY OF OIL REQUIRED FOR APPLICATION}}$$

Note that for values of **K** less than **1**, a reduction in bearing life may be expected. In this case the use of a lubricant with EP additives when the factor a_{23} may be increased to the level shown by the dotted line.

For applications with slow rotation speed and high operating temperatures the viscosity of the lubricant must be considered – please refer to page 9 or to our Technical Department.

AXIAL LOAD

Selection is considered independently from the Radial Load as the effect of the Axial Load on the radial life of the bearing is small enough to discount at normal working loads and speeds.

1. Estimate each net axial load acting on the bearing.
2. Multiply by the appropriate Dynamic Factor f_d and/or f_k
3. Combine these loads to find the effective axial load. P_a.
4. Select a bearing having a C_a value not less than the product of $P_a \times f_{dn}$. dn is the product of the shaft size in mm and the shaft speed in rpm. To find f_{dn} use the value of dn in the nomogram

Axial ratings Ca

are for constant loads where oil or extreme pressure grease lubrication is used, or for intermittent or reversing loads with normal grease. For constant loads with normal grease lubrication reduce the ratings by 50%.
Where the correct lubrication routine can be maintained and the speed is higher than 40,000mm dn, the axial capacity may be increased by 25%. Refer to our Technical Department.

Static Ratings C_{or}

given in this catalogue are calculated according to the ISO 76 standard, 1987 edition, and are defined as the static load which corresponds to a contact stress of 4000MPa at the centre of the most heavily loaded roller/raceway contact and produces a permanent deformation of 0.0001 of the roller diameter.

Where rotation is very slow (less than 5rpm) or intermittent, selection should be made on static load rating. The required static load can be determined from

$$C_{or} = S_o.P$$

where **P** = the bearing effective load, **kN**
S_o = a static safety factor

The table below gives value for the static safety factor, S_o, according to operation type and smooth running requirement.

Bearing Static Safety Factors, S_o

Type of operation	Requirement for smooth running		
	Low	Normal	High
Smooth vibration free	1	1.5	3
Normal	1	2	3.5
Pronounced shock loads	2.5	3	4

Variable Loads.

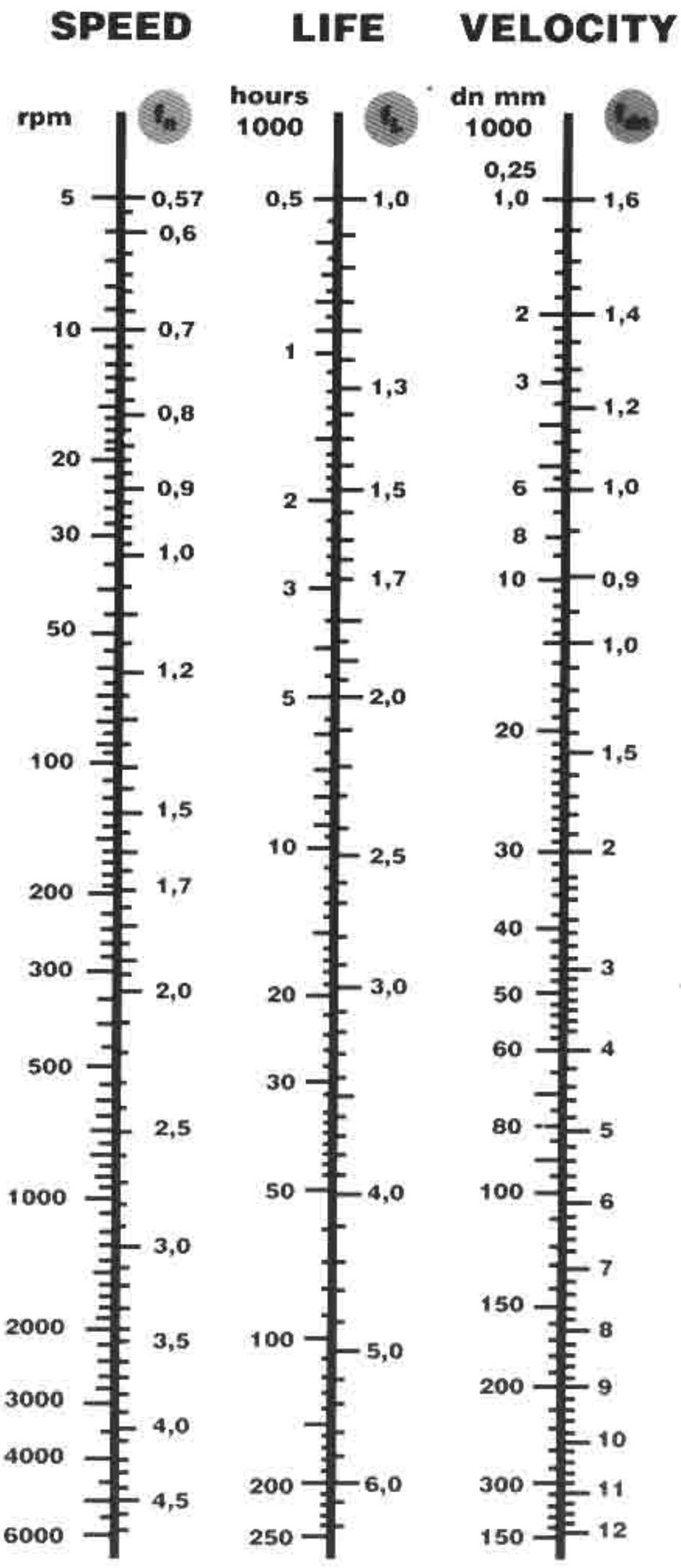
Peak and variable radial loads affect bearing life. In such cases the 'cubic mean load' P_m can be assessed by equating the various resultant loads $P_1\ P_2\ P_3$ ... for $N_1\ N_2\ N_3$ ... revolutions or hours

$$P_m = \sqrt[3]{\frac{P_1^3N_1 + P_2^3N_2 + P_3^3N_3 + \dots}{N}}$$

Where N = total revolutions or hours

If the load varies as a sine curve between 0 and maximum, or between maximum plus and minus, the mean load can be considered as approximately 68% of the maximum load.

Peak loads should not exceed the Dynamic Ratings without special consideration.

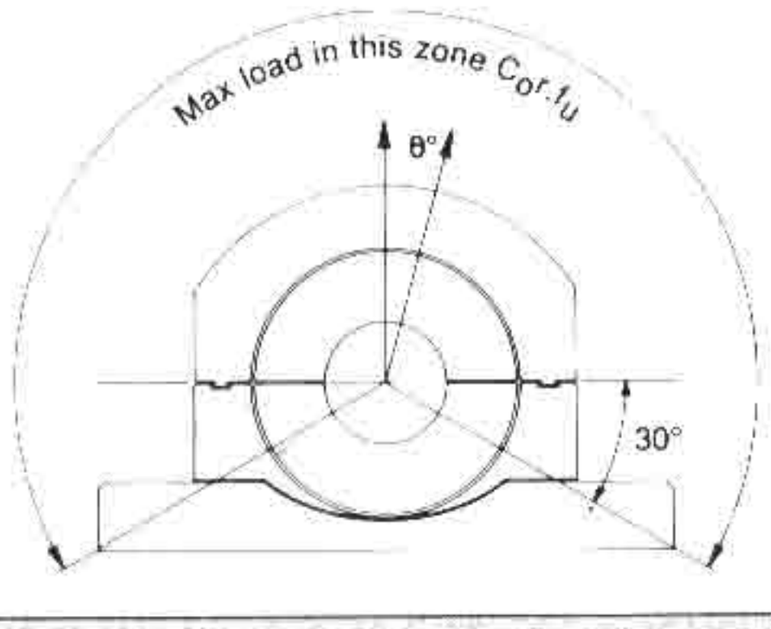


The product of $f_n.f_k$ not to be less than 1.0

Applies only to axial loads on GR bearings
d=bearing bore
n=rpm

CASTING LOADING

Pedestal
The following diagram and table give the maximum cap loading. Values for Series 03E are lower—please submit details.



f_u	◆	0	15	30	45	60	65	70	over 120
	Cast Iron	0.16	0.17	0.19	0.23	0.33	0.38	0.52	1.0
	Nodular Iron	0.20	0.21	0.22	0.28	0.39	0.46	0.52	1.0
	Steel	0.22	0.23	0.25	0.31	0.43	0.51	0.52	1.0

The recommended minimum grade for pedestal base bolts is 4.6. High upward loads or axial loads may require the use of high tensile bolts (grade 8.8).

Also consider

1 The strength of the support,
2 The use of steel pedestals for shock loads,
3 Chocks or dowels for loads within 45° of the horizontal

Flange
Maximum load on C.I. Flanges 0.26 C_{or} or 0.25 C_a. Higher loads at slow speeds and shock conditions require nodular iron or steel flanges and HT bolts. In these cases the support plate must be adequate and a spigot provided. Please consult our Sales Department.

Tension Take-Up and Hanger
Maximum load 0.16 C_{or}

Rod End
Normal selection.

The Maximum loads are the effective loads, i.e. the net resultant load with Dynamic Factors, but without Speed and Life Factors.

RACE POSITIONING

Shaft Axial Positioning
One bearing only, of the Fixed GR type, should be used to position a shaft axially. See below.

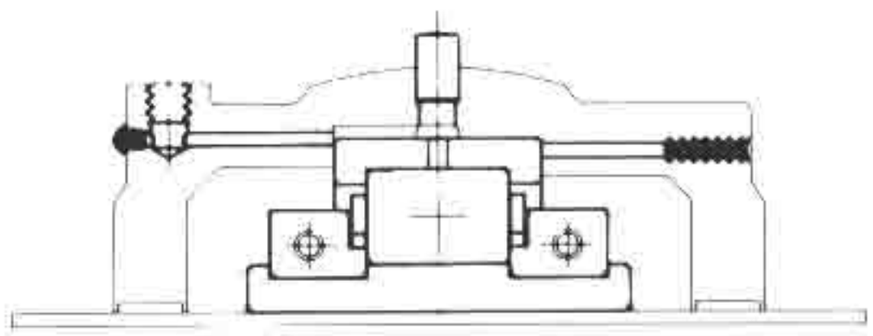
INNER RACE
Plain parallel shafts are suitable for most applications of EX and GR bearings where, in the case of GR bearings, the effective axial load P_a does not exceed 50% of the C_a value given on page 3 without the velocity factor f_{dn}. Shaft Tolerances and Tightening Torques are important, see leaflet AL1 supplied with bearings; also page 7. For positioning EX inner races see page 7, paragraph 2.

For fixed GR bearings a shaft recess or some form of abutment is required if the axial load exceeds 50% C_a or a combination of axial loading and one or more of the following: shock loads; vertical shafts; fluctuating temperatures over 100°C; or when special precautions are considered desirable for adverse or deteriorating conditions. Please submit details.

The recommended abutment diameter would be:

Sizes to 90mm	+5 on shaft dia. 1,2 fillet rad.
over 90mm to 155mm	+10 on shaft dia. 2.0 fillet rad.
over 155mm to 300mm	+15 on shaft dia. 2,3 fillet rad.
over 300mm	+20 on shaft dia. 5,0 fillet rad.

Axial loads can be applied to GR bearings in either direction.



OUTER RACE
Expansion outer races should be just free sideways in housing groove.

All outer races having one or two lips must be positioned axially in the housing groove by axial screws.

Some large or heavy bearings have four radial screws to retain the outer races and clearance holes for these are required in the housing, as shown on page 7.

Details for race-fixing supplied on request.

Tolerances
and Surface Texture

			Diameters and widths, mm. over / to												Surface Texture	
			over		50	80	120	180	250	315	400	500	630	800	1000	Maximum Roughness [1]	
			to	50	80	120	180	250	315	400	500	630	800	1000	1250		
Shafts	BS 4500		Tolerance μm. (0.001mm)													μm. Ra	Grade No
Uni-directional loads at speeds up to dn = 100 000 Moderate loads (C/P > 10)	**d**	h7	+0	25	30	35	40	46	52	57	63	70	80	90	105	3.2	N8
Reciprocating loads. Vibratory duty Extra-fine clearance bearings Speeds over dn = 100 000 Heavy loads (C/P < 10)	**d**	h6	+0	16	19	22	25	29	32	36	40	44	50	56	66	1.6	N7
Abutment diameter } when used see above	d_1	h9	+0 −	62	74	87	100	115	130	140	155	175	200	230	260	see page 19	
Width between abutments } when used see above	**C**	D11	+	80	100	120	145	170	190	210	230						
			+	240	290	340	395	460	510	570	630						
Geometric Accuracy																	
Cylindricity of shaft journal	**d**	IT6		16	19	22	25	29	32	36	40	44	50	56	65		
Squareness of abutments	d_1																

1) Subject to seal type, see Page 22

ASSEMBLY

How to assemble your unique solution – the totally split to the shaft bearing.

1 Check shaft diameter. Roundness and parallelism as specified on Page 6. The inner race, before assembly, measures undersize equivalent to the final gap at the joints. This gap is a feature of the design to ensure that the half races seat on the shaft.

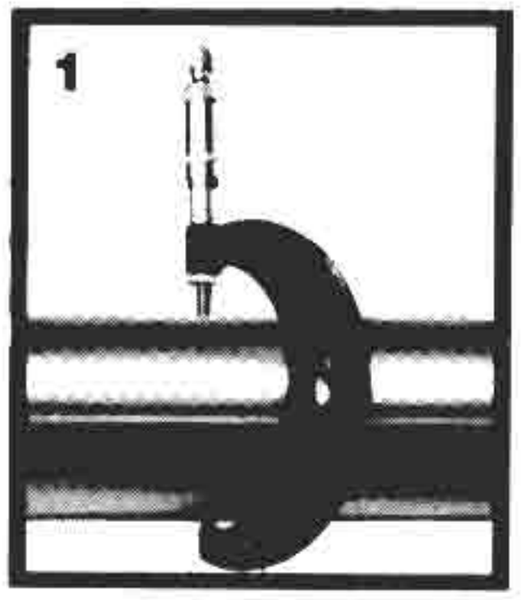
2 Place the two halves of the inner race at the correct position on the cleaned shaft. Expansion races are normally set centrally with the outer race but in cases of axial expansion may be offset to within 10% of the outer race width.

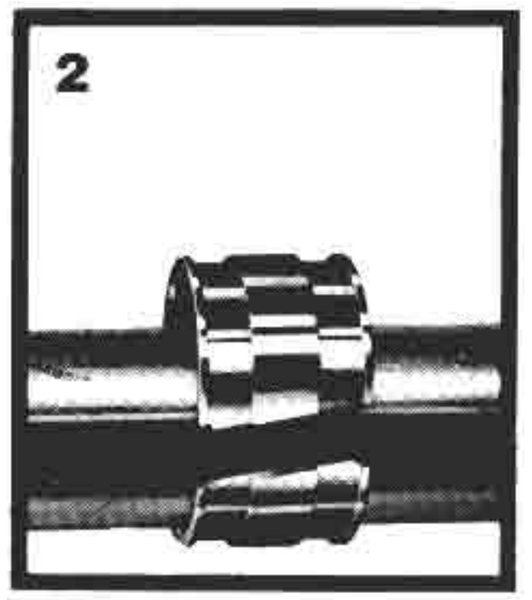
3 Fit the clamping rings with the joints at about 90° to the inner race joint. (Discolouration on certain clamping rings is associated with localised heat treatment to increase wear resistance). There should be approximately equal gaps at both joints of the clamping rings and races. To achieve this more easily use a soft packing in the race joint under the clamping rings, especially for large bearings. Take care not to damage the joint faces. Tighten all four clamping screws equally using the correct hexagon key and torque wrench.

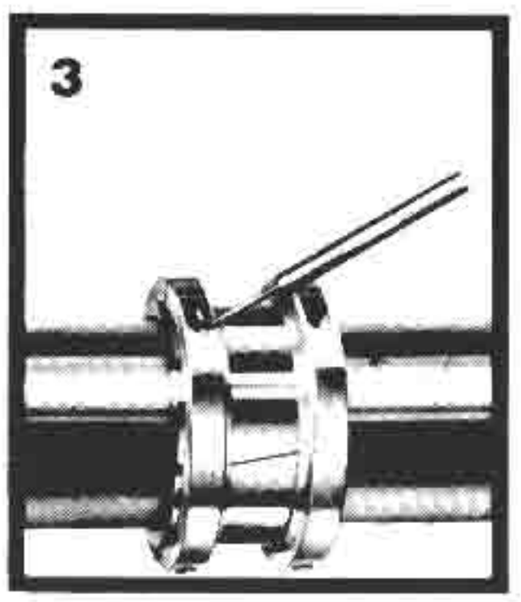
4 Tap down each half of the inner race and clamping rings all round the shaft, interposing a fibre or hardwood block between the hammer and bearing parts. Retighten screws. Repeat until the screws are fully tight. The recommended torque values are shown below. Check there is a gap at both joints of the inner race. The total gap varies and is not critical provided the shaft is within the required tolerance. Check that expansion inner races will be central or correctly offset when all parts are finally positioned.

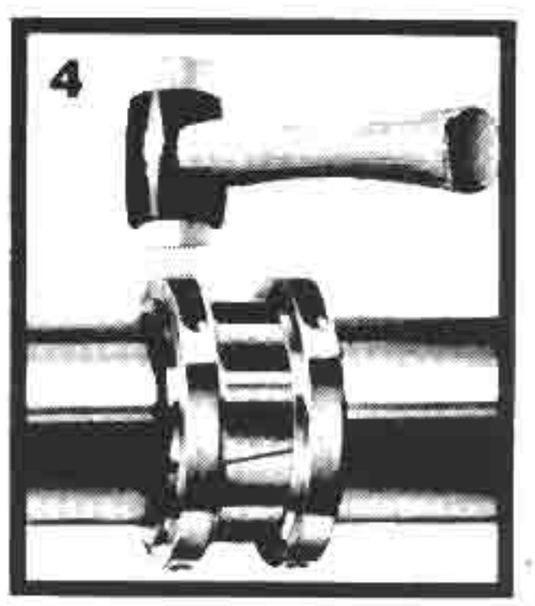
5 Coat the roller cage with grease and lightly cover the other parts for protection. Place the cage round the inner race and engage the jointing clips. Place the half outer race with the lubrication hole into the top half cartridge and the second half race into the lower half cartridge ensuring the pairing marks will coincide. Ensure that the ends of the outer race project from the cartridge joint faces by equal amounts. For fitting of axial and/or radial screws, see diagram. Inject grease to fill the grease passages. End bore seals should be well lubricated on assembly including the bores of the revolving triple labyrinth seals. Blanking plates should be sealed with grease or compound. Add grease to the cartridge as specified on Page 9.

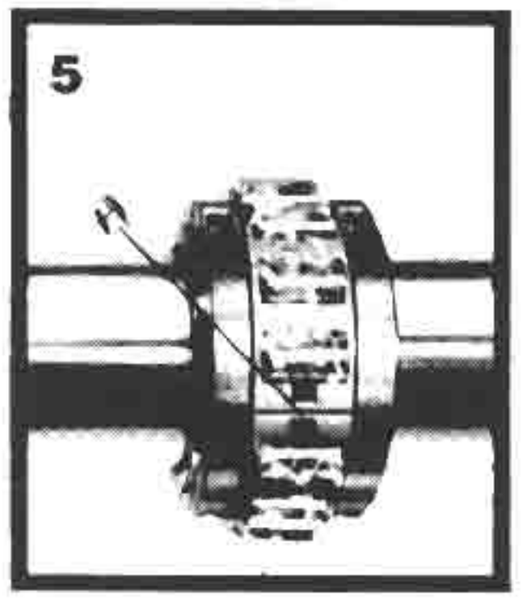
6 Close cartridge and tighten joint screws. For expansion bearings, indicate on shaft the correct axial position of cartridge. Lubricate spherical seating, anti-scuffing compounds are advantageous. Pedestal bases must be supported to avoid deflection. To ensure swivel alignment the shaft should be run for a short period before fully tightening the pedestal cap screws. Where oil lubrication is to be used the cartridge joint faces and screws should be treated with a sealing compound.

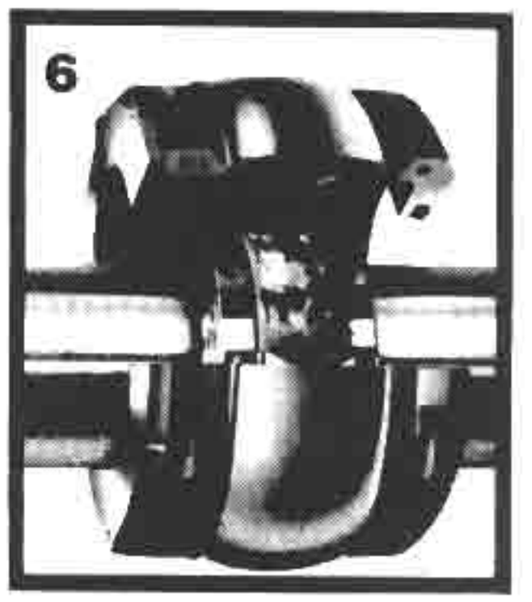






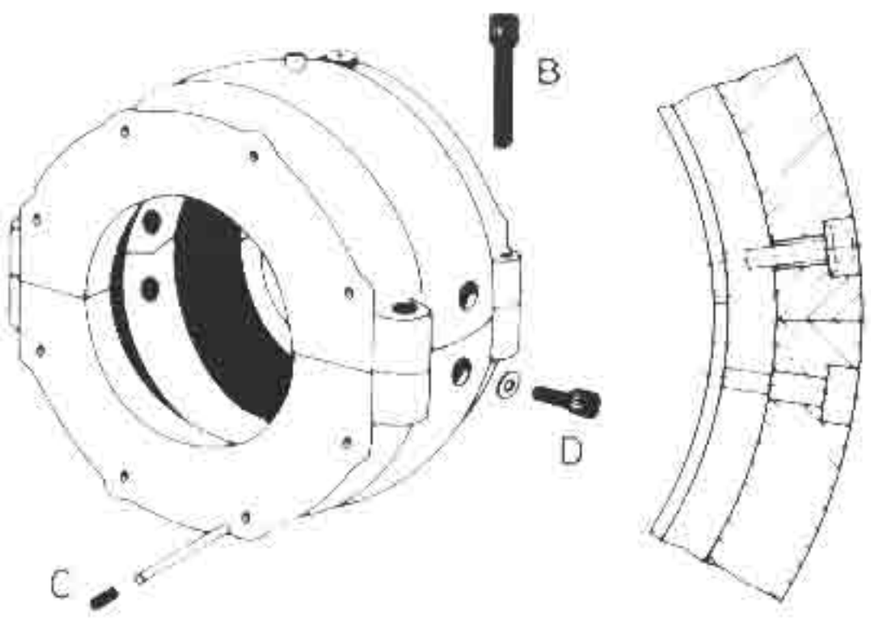






Fitting an Outer Race where Radial and/or Axial screws are used

All lipped outer races must be clamped axially



Side screws **C** are fitted to all GR cartridges but rods are not required for sizes 100-155mm in Series 01 and 02.
Clean the cartridge bore and lightly oil.
Fit the half outer races - see paragraph 5.
Just enter radial holding screws **D** where provided. It is important to fit washers.
Fit the side rods and screws **C** where provided and very lightly tighten.
Place together the half cartridges and fully tighten the cartridge joint screws **B.**
Progressively and fully tighten the radial screws **D** and/or side screws **C.**
In some sizes two cartridge joint screws must be removed to gain access to the side screws.
When subsequently lifting half cartridges, take care the half outer race does not fall.

Check List

The correct shaft limit is important.
Parts should not be interchanged.
Markings should coincide.
Lightly oil threads and interfaces.
Fully tighten the inner race clamping rings.
Lubricate before closing the cartridge.
Lubricate swivel seatings.
Safeguard rolling surfaces for transit.

SCREW SIZES All threads are metric coarse

Series 01

SERIES 01 Bore d mm		Pedestal	Flange	Take-up	Cartridge Joint	Cartridge Radial	Cartridge Side	Clamping Ring
40		8	8	8	4		4	4
50		8	8	8	4		4	4
60		10	10	10	4		4	4
65								
70		12	12	12	4		4	4
75								
80	90	16	12	16	5		4	5
85								
100		16	16	16	6		4	6
105								
110	115	20	16	20	6		6	6
120	130	20	20	20	6		6	6
125								
135	140	20	20	20	8		6	8
150	155	20	20	20	8		6	8
160		16	20		8		6	8
170	180	16	20		8		6	8
190	200	16	24		8	10	6	8
220		16	24		10	10	6	10
240		20	24		10	10	6	10
260	280	20	24		10	10	10	10
300		20	24		10	10	10	10
320		20			12	10	10	12
340		20			12	10	10	12
360	380	20			12	10	10	12
400		20			12	10	10	12
420		20			12	12	10	12
440	460	20			12	12	10	12
480		20			12	12	10	12
500		20			16	12	10	16
530		20			16	12	10	16
560		20			16	12	10	16
600		20			16	12	10	16

Series 02

SERIES 02 Bore d mm		Pedestal	Flange	Take-up	Cartridge Joint	Cartridge Radial	Cartridge Side	Clamping Ring
–		–	–	–	–	–	–	–
50		10	10	10	5		4	5
60		12	12	12	5		4	5
65								
70		16	12	16	6		4	6
75								
80	90	16	16	16	6		4	6
85								
100		20	16	20	6		4	6
110	115	20	20	20	8		6	8
120	130	20	20	20	8		6	8
125								
140		20	24	20	8		6	8
150		20	24	20	8		6	8
160	170	20	24		10		6	10
180		20	24		10	10	6	10
190	200	20	24		12	10	6	12
220		20	24		12	10	6	12
240	260	20	24		12	10	10	12
280		20	24		16	10	10	16
300		20	24		16	10	10	16
320		20			16	10	10	16
340	360	20			16	12	10	16
380		20			16	12	10	16
400		20			16	12	10	16
420		20			16	12	10	16
440	460	20			16	12	10	16
480		24			20	12	10	20
500		24			20	12	10	20
530		24			20	12	10	20
560		24			20	12	10	20
600		24			20	12	10	20

Series 03

SERIES 03 Bore d mm		Pedestal	Cartridge Joint	Cartridge Radial	Cartridge Side	Clamping Ring
–		–	–	–	–	–
–		–	–	–	–	–
–		–	–	–	–	–
–		–	–	–	–	–
100		16	10	10	6	10
110	120	16	10	10	6	10
130		16	10	10	10	10
140		20	10	10	10	10
150		20	10	10	10	10
160	170	20	12	12	10	12
180		20	12	12	10	12
190	200	24	12	12	10	12
220		20	16	12	10	16
240	260	20	16	12	10	16
280X		20	20	12	10	20
280E		20	20	12	10	20
300		20	20	12	10	20
320		24	20	12	10	20
340E	360E	24	20	12	16	24
360X		24	20	12	10	24
380	400	24	20	12	10	24
420E	440E	24	20	12	16	24
460		24	20	12	16	24
460X	480X	24	20	16	10	24
500	530	24	20	16	10	24
560E		24	20	12	16	24
600E		24	20	12	16	24

Tightening Torque

Screw Size	Clamping Ring Torque lbs	Clamping Ring Torque lbf ft	Clamping Ring Key A/F	Side Screw Key A/F
4	4.5	3.5	3	2
5	8.5	6.5	4	–
6	15	11	5	3
8	35	26	6	–
10	70	52	8	5
12	120	88	10	–
16	300	220	14	8
20	560	415	17	–
24	950	700	19	–

Torque values for screws other than Clamping Ring are 75% of above.

LUBRICATION

Routine Greasing

If possible it is better to re-grease as the bearing rotates. The grease charges listed below are for bearings up to 75mm bore, use progressively more grease as the bearing size increases.
EXPANSION EX BEARINGS. One or two shots (3ml) from a grease gun two or three times a year, i.e., every 1,000 operating hours is usually sufficient.

FIXED GR BEARINGS FOR THRUST. One or two shots (3ml) from a grease gun every two weeks, i.e., every 100 operating hours or longer according to duty and experience.

FIXED GR BEARINGS USED FOR LOCATION ONLY. Treat as Expansion Bearings.
For bearings with speeds up to dn = 50,000 which are assembled with a full pack of grease, re-greasing intervals can be increased to one year, provided the thrust load on the GR bearing is nominal.
Pumped systems should be metered to be equivalent to the above quantities.

Clean out and replace the grease after several years or as determined by the conditions.
Extreme pressure lithium based greases of No. 2 or No. 3 consistency are recommended for most applications.

Procedure

Calculate dn by multiplying the shaft speed by the bore of the bearing in millimetres. Eg. 750rpm x 100mm = 75000dn
Ensure that all bearing parts are clean and apply grease as follows.

For speeds up to dn = 50,000 the roller bearing and cartridge should be packed full on assembly – full pack weights are given in the table. As the dn value increases use progressively less grease to coat the bearing parts, from a full coating of the cage and bearing surfaces at dn 50,000 down to a smear about 1mm thick at dn = 200,000, the remaining amount to be added in the cartridge. Proportional amounts are listed below.

dn over	dn to	Percentage of full pack
	50,000	100
50,000	100,000	75
100,000	150,000	50
150,000	200,000	33
200,000		25

All cartridge and bore seals should be well lubricated on assembly including the bores of the revolving triple labyrinth seals and of thrust bearings where fitted.

Blanking plates should be sealed with grease or jointing compound.

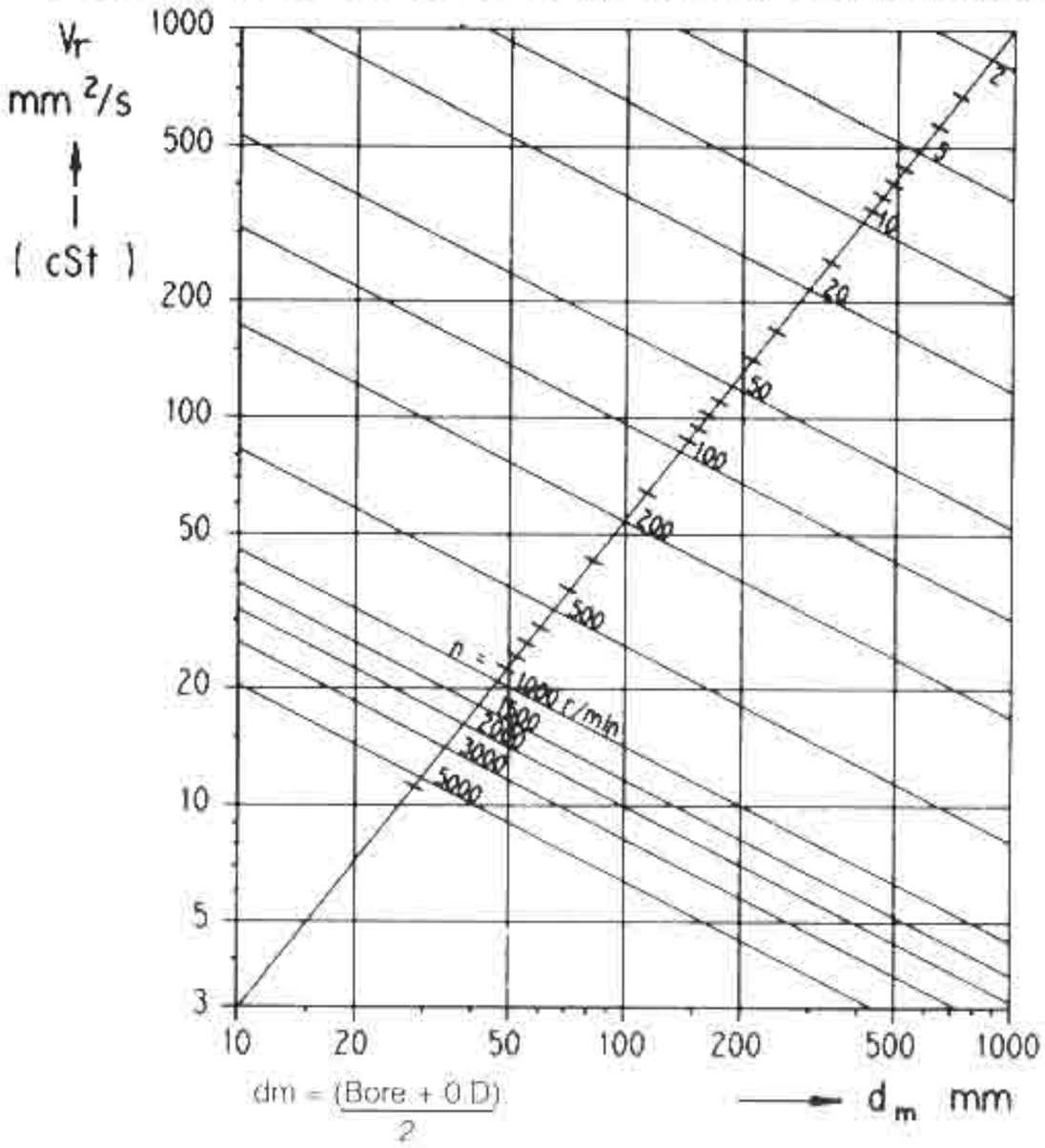
NEVER ASSEMBLE THE BEARINGS DRY AND INJECT THE GREASE AFTER CLOSING THE CARTRIDGE. ALWAYS COAT SWIVEL SEATINGS WITH OIL OR GREASE.

Selection of Lubricant

For most applications, a good lithium based grease, preferably with EP additives and having a base oil viscosity of at least 68cSt is suitable. At slower speeds, a higher viscosity may be required to maintain good lubrication and this can be checked using the chart. From the dimensions given in the catalogue find the mean diameter of the bearing. Locate this point on the horizontal axis. Trace a line vertically until it intersects the curve for the operating speed of the bearing and then read off the required viscosity in cSt on the vertical axis. If this is less than the base oil of the lubricant at the operating temperature, find the a23 factor and the expected reduction in L10 life as shown on page 4.

The normal temperature range for standard bearings is 0-100°C. Outside of this range special consideration must be given to the lubricant as well as design and seals.

SELECTION OF OIL VISCOSITY V_r AT BEARING OPERATING TEMPERATURE



Variation of Viscosity with Temperature.

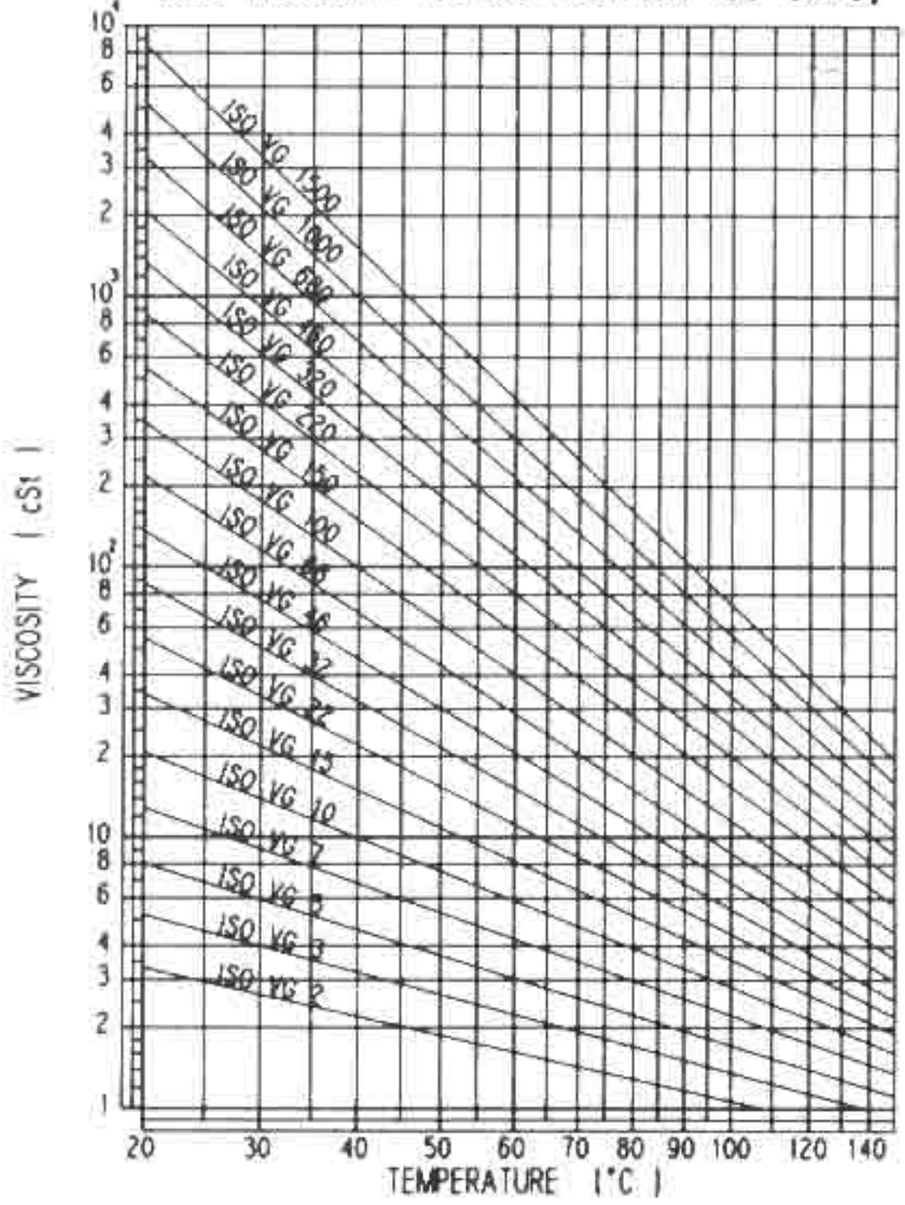
Where the operating temperature of the bearing is greater than 40°C, the chart below can be used to estimate the viscosity grade of the oil required to maintain correct lubrication at that temperature. On the chart, find the point of intersection between the horizontal line representing the required viscosity and the vertical line representing the operating temperature. This will fall between two sloping lines which give the required viscosity grade of the base oil of the lubricant. Select the higher value.

For example:

A bearing with dm = 100mm rotating at 500rpm requires a base oil viscosity of at least 25cSt at the operating temperature. If the operating temperature is 100°C, then from the chart a lubricant with a base oil viscosity equivalent to VG220 (220cSt at 40°C) is required to maintain correct lubrication.

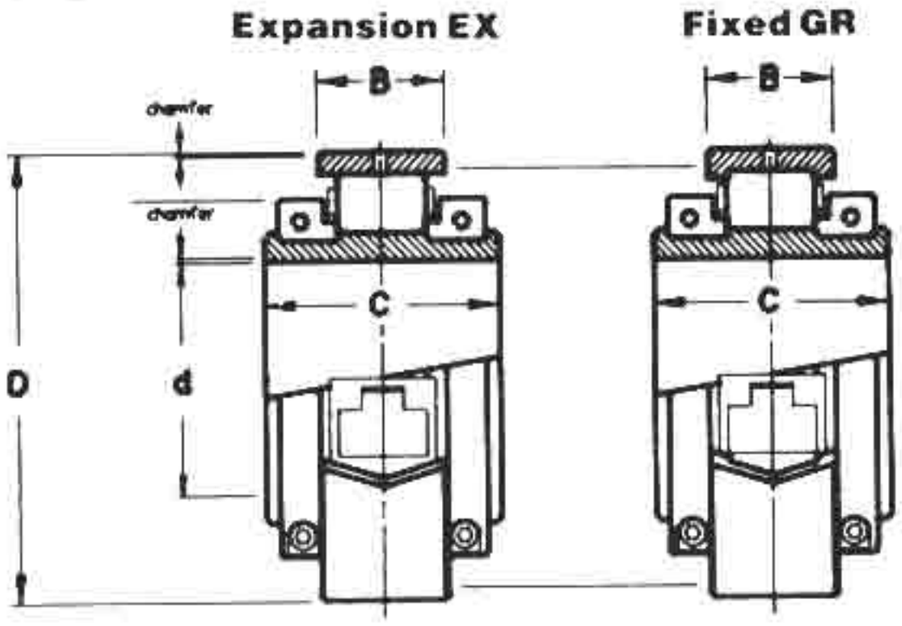
Note that the chart applies only to mineral oils.

VARIATION OF VISCOSITY WITH TEMPERATURE
(ISO VISCOSITY CLASSIFICATION ISO 3448)

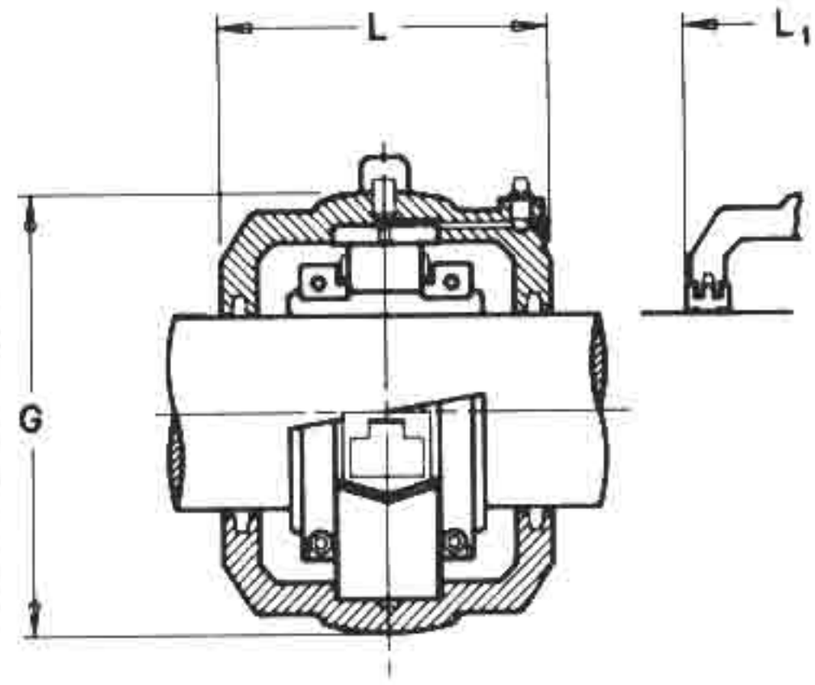


SERIES 01

Series 01 Bearing



Series 01 Cartridge



d mm	Reference Bearing only	Dynamic C	Static Cor	Axial Ca	Max rpm	D	B	C	Wt B kg
40	01 B 40	65	67	3.2	5400	84.14	23.8	50.1	1.0
50	01 B 50	75	80	3.6	4630	98.42	25.4	55.7	1.5
60	01 B 60	97	110	5.4	3940	114.30	27.0	55.7	1.5
65	01 B 65								
70	01 B 70	130	157	7.6	3310	133.35	31.8	61.2	2.5
75	01 B 75								
80	01 B 80	179	226	12.4	2790	152.40	38.9	70.7	4.0
85	01 B 85								
90	01 B 90								
100	01 B 100	239	318	16.0	2340	174.62	45.3	81.0	6.0
105	01 B 105								
110	01 B 110	298	407	18.6	1970	203.20	46.9	84.9	9.0
115	01 B 115								
120	01 B 120	348	484	22.2	1740	222.25	54.0	89.7	11.0
125	01 B 125								
130	01 B 130								
135	01 B 135	386	542	25.8	1570	241.30	55.6	98.4	14.0
140	01 B 140								
150	01 B 150	420	616	29.4	1450	254.00	55.6	98.4	16.0
155	01 B 155								
160*	01 B 160	475	708	33.0	1320	273.05	60.3	109	20
170*	01 B 170	510	793	36.4	1220	285.75	55.5	109	23
180	01 B 180								
190	01 B 190	534	883	41.0	1070	311.15	60.3	109	25
200	01 B 200								
220	01 B 220	578	980	49.0	930	342.90	63.5	115	32
240	01 B 240	640	1170	57.8	820	374.65	66.7	122	40
260	01 B 260	725	1333	66.8	730	406.40	69.0	128	50
280	01 B 280								
300	01 B 300	762	1456	78.2	650	438.15	74.6	143	60
320	01 B 320	841	1642	89.0	590	463.55	74.6	136	72
340	01 B 340	871	1778	99.6	540	488.95	74.6	136	78
360	01 B 360	938	1929	110.4	500	520.70	76.2	140	86
380	01 B 380								
400	01 B 400	970	2076	115.6	460	546.10	76.2	140	95
420	01 B 420	992	2223	121.0	430	571.50	76.2	140	104
440	01 B 440	1029	2370	127.2	410	596.90	76.2	140	114
460	01 B 460								
480	01 B 480	1063	2433	132.6	380	628.65	81.0	144	128
500	01 B 500	1102	2593	137.8	360	654.05	80.2	168	136
530	01 B 530	1140	2755	140.6	340	692.15	81.0	168	164
560	01 B 560	1176	2916	142.4	330	717.55	81.0	168	178
600	01 B 600	1300	3311	146.8	300	774.70	84.1	172	210

Add mm and EX or GR to reference.

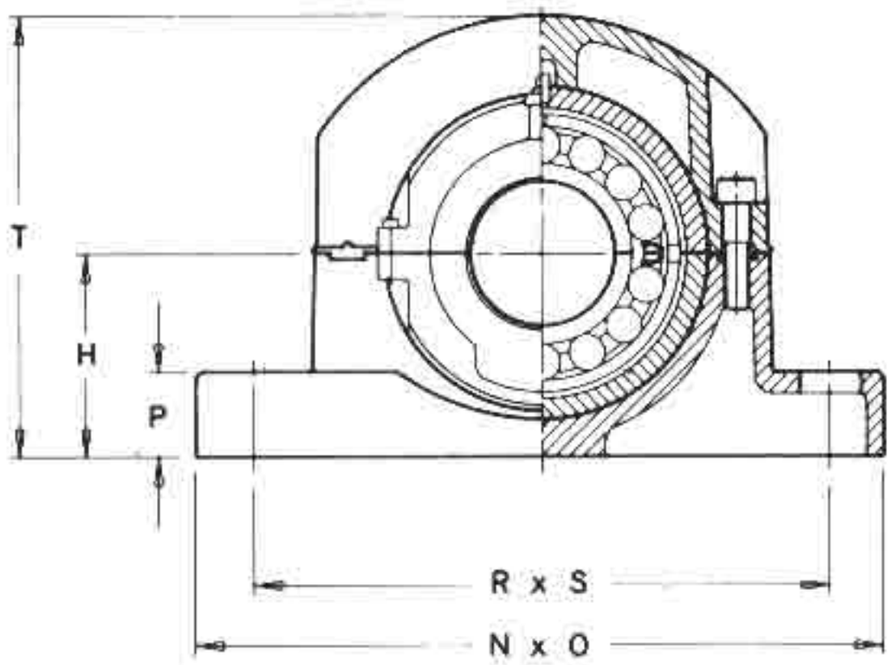
*160mm size can also be supplied with overall dimensions and ratings as 150mm
Ref. 01 B 600 160mm

*170mm size can also be supplied with overall dimensions and ratings as 160mm
Ref. 01 B 608 170mm

Reference Cartridge Shell only	L & L1	G	Wt BC kg	Full Pack Grease Wt kg
01 C 40	86	100.00	3	0.06
01 C 50	98	117.48	4	0.09
01 C 60	104	134.94	5	0.15
01 C 65				
01 C 70	114	157.16	8	0.18
01 C 75				
01 C 80	136	177.80	11	0.30
01 C 85				
01 C 90				
01 C 100	134	203.20	14	0.36
01 C 105				
01 C 110	142	231.78	21	0.51
01 C 115				
01 C 120	156	266.70	31	0.60
01 C 125				
01 C 130				
01 C 135	168	279.40	35	0.78
01 C 140				
01 C 150	174	295.28	42	0.90
01 C 155				
01 C 160	172 192	311.15	52	1.00
01 C 170	172 200	323.85	54	1.10
01 C 180				
01 C 190	172 200	358.78	66	1.40
01 C 200				
01 C 220	178 216	387.35	78	1.40
01 C 240	188 222	419.10	98	2.00
01 C 260	204 232	454.00	120	2.00
01 C 280				
01 C 300	216 248	489.00	146	2.00
01 C 320	260	520.70	178	2.70
01 C 340	260	546.10	195	3.00
01 C 360	260	571.50	212	3.00
01 C 380				
01 C 400	280	603.30	236	3.60
01 C 420	292	628.70	254	4.20
01 C 440	304	650.90	265	4.20
01 C 460				
01 C 480	304	682.60	290	4.80
01 C 500	304	717.60	328	4.80
01 C 530	330	755.70	390	5.40
01 C 560	336	781.10	430	5.40
01 C 600	342	841.40	500	6.00

Add mm and EX or GR to reference.

Series 01 Pedestal



Reference Pedestal casting	H	N x O	P	bolts	R x S	T	Wt BCP kg
P 01	60	228 x 60	22	2–M12	180	138	5
P 02	70	270 x 60	25	2–M16	214	158	8
P 03	80	280 x 70	32	2–M16	234	180	11
P 04	95	330 x 76	38	2–M20	270	208	16
P 05	112	380 x 90	44	2–M24	320	252	26
P 06	125	420 x 102	52	2–M24	354	272	30
P 07	143	466 x 120	60	2–M24	392	314	42
P 08	162	508 x 178	38	4–M24	450 x 120	372	76
P 09	181	558 x 178	40	4–M24	482 x 120	405	87
P 10	181	558 x 178	40	4–M24	496 x 120	415	97
P 11	213	508 x 178	32	4–M24	368 x 114	430	113
P 12	235	534 x 190	35	4–M24	388 x 128	470	123
P 13	248	572 x 204	38	4–M24	422 x 140	495	154
P 14	270	636 x 216	40	4–M30	460 x 140	540	190
P 15	292	686 x 228	44	4–M30	502 x 140	585	240
P 16	311	724 x 228	48	4–M30	534 x 140	620	286
P 17	343	762 x 254	50	4–M30	584 x 178	685	340
P 18	368	812 x 254	54	4–M36	622 x 178	735	386
P 19	387	850 x 254	57	4–M36	654 x 166	775	430
P 20	397	902 x 254	60	4–M36	676 x 166	795	500
P 21	432	940 x 254	67	4–M36	724 x 166	865	545
P 22	445	966 x 254	67	4–M36	756 x 166	890	570
P 23	464	1042 x 280	70	4–M42	788 x 190	925	635
P 24	483	1092 x 304	73	4–M42	816 x 188	965	750
P 25	489	1092 x 304	76	4–M42	844 x 216	980	770
P 26	553	1194 x 304	80	4–M42	904 x 206	1065	885
P 27	552	1220 x 304	83	4–M42	936 x 206	1110	1000
P 29	597	1372 x 304	90	8–M36	1118 & 908 x 200	1200	1220

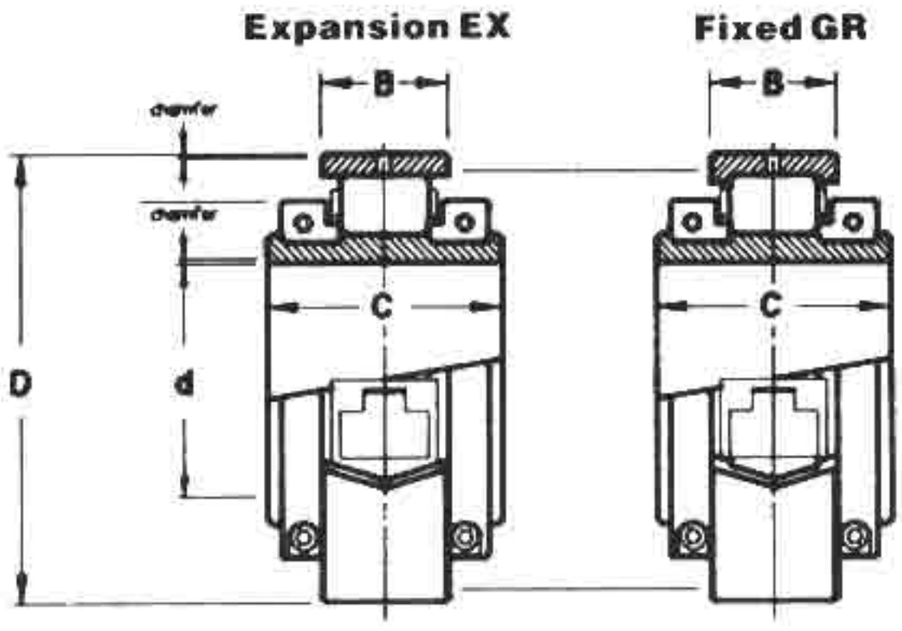
The adjacent table shows the range of bearings available for metric and imperial shaft sizes. Additional sizes can be made to order. All bearings in a single group have the same overall dimensions apart from bore size.

Series 01 Size Range

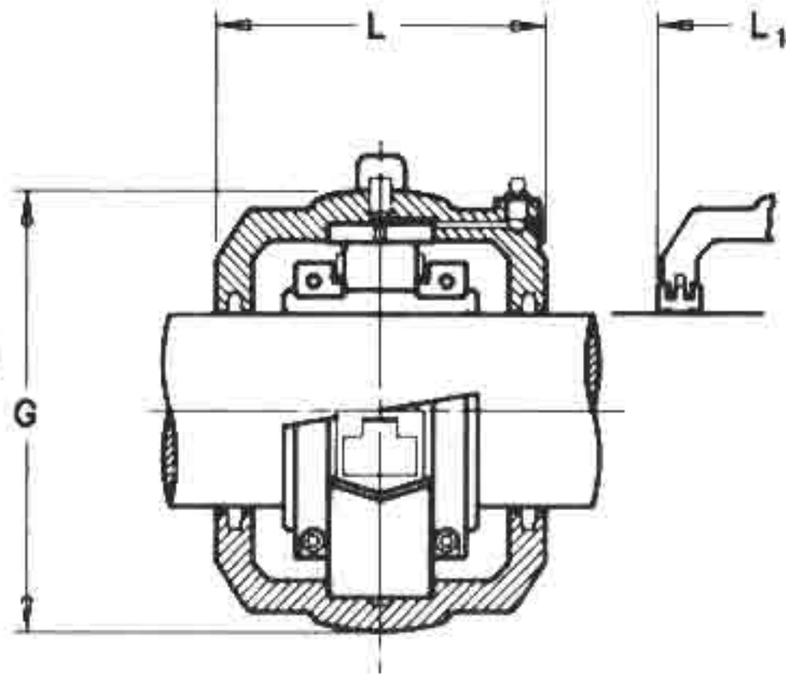
METRIC Shaft Dia. mm	REF	IMPERIAL Shaft Dia. Inches	REF
30	**30mm**	1 3/16	**103**
35	**35mm**	1 1/4	**104**
40	**40mm**	1 7/16	**107**
		1 1/2	**108**
45	**45mm**	1 11/16	**111**
50	**50mm**	1 3/4	**112**
		1 15/16	**115**
		2	**200**
55	**55mm**	2 3/16	**203**
60	**60mm**	2 1/4	**204**
65	**65mm**	2 7/16	**207**
		2 1/2	**208**
70	**70mm**	2 11/16	**211**
75	**75mm**	2 3/4	**212**
		2 15/16	**215**
		3	**300**
80	**80mm**	3 3/16	**303**
85	**85mm**	3 1/4	**304**
90	**90mm**	3 7/16	**307**
		3 1/2	**308**
95	**95mm**	3 11/16	**311**
100	**100mm**	3 3/4	**312**
105	**105mm**	3 15/16	**315**
		4	**400**
110	**110mm**	4 3/16	**403**
115	**115mm**	4 1/4	**404**
		4 3/8	**406**
		4 7/16	**407**
		4 1/2	**408**
120	**120mm**	4 11/16	**411**
125	**125mm**	4 3/4	**412**
130	**130mm**	4 15/16	**415**
		5	**500**
135	**135mm**	5 3/16	**503**
140	**140mm**	5 1/4	**504**
		5 7/16	**507**
		5 1/2	**508**
150	**150mm**	5 11/16	**511**
155	**155mm**	5 3/4	**512**
160	**600/160mm**	5 7/8	**514**
		5 15/16	**515**
		6	**600**
160	**160mm**	6 1/16	**607**
170	**608/170mm**	6 1/2	**608**
170	**170mm**	6 11/16	**611**
175	**175mm**	6 3/4	**612**
180	**180mm**	6 15/16	**615**
		7	**700**
190	**190mm**	7 1/4	**704**
200	**200mm**	7 1/2	**708**
		7 15/16	**715**
		8	**800**
220	**220mm**	8 1/2	**808**
230	**230mm**	8 7/8	**814**
		9	**900**
240	**240mm**	9 1/2	**908**
250	**250mm**	9 3/4	**912**
260	**1000/260mm**	10	**1000**
260	**260mm**	10 1/2	**1008**
270	**270mm**	10 3/4	**1012**
280	**280mm**	11	**1100**
300	**300mm**	11 1/2	**1108**
305	**305mm**	12	**1200**
320	**320mm**	12 1/2	**1208**
330	**330mm**	13	**1300**
340	**1300/340mm**		
340	**340mm**	14	**1400**
350	**350mm**		
360	**1400/360mm**		
360	**360mm**	15	**1500**
380	**380mm**		
390	**390mm**	16	**1600**
400	**400mm**		
420	**420mm**	17	**1700**
440	**440mm**	18	**1800**
460	**460mm**		
480	**480mm**	19	**1900**
500	**500mm**	20	**2000**
530	**530mm**	20 1/2	**2008**
		21	**2100**
560	**560mm**	22	**2200**
		23	**2300**
600	**600mm**	24	**2400**

SERIES 02

Series 02 Bearing



Series 02 Cartridge



d mm	Reference Bearing only	Bearing Rating kN Dynamic C	Static Cor	Axial Ca	Max rpm	D	B	C	Wt B kg
50	**02 B 50**	117	124	6.2	4350	107.95	35.0	67.5	2
60	**02 B 60**	165	186	8.8	3680	127.00	38.9	72.3	3
65	**02 B 65**								
70	**02 B 70**	219	262	10.6	3080	149.22	46.1	82.6	5
75	**02 B 75**								
80	**02 B 80**	278	345	17.8	2520	169.86	48.4	89.7	7
85	**02 B 85**								
90	**02 B 90**								
100	**02 B 100**	360	456	25.0	2130	193.68	51.6	92.1	9
110	**02 B 110**	447	577	31.2	1820	228.60	57.2	100.0	16
115	**02 B 115**								
120	**02 B 120**	548	714	38.2	1600	254.00	63.5	114.3	20
125	**02 B 125**								
130	**02 B 130**								
140	**02 B 140**	612	809	45.4	1450	273.05	66.7	117.5	24
150	**02 B 150**	730	1007	52.4	1320	292.10	68.3	123.8	29
160*	**02 B 160**	769	1033	61.4	1200	317.50	83.3	140	39
170	**02 B 170**								
180	**02 B 180**	849	1191	71.2	1120	330.20	83.3	140	45
190	**02 B 190**	990	1457	80.0	960	368.30	90.5	156	59
200	**02 B 200**								
220	**02 B 220**	1067	1661	89.8	850	393.70	90.5	163	68
240	**02 B 240**	1213	1756	98.8	750	431.80	96.8	170	77
260	**02 B 260**								
280	**02 B 280**	1364	2145	113.8	670	463.55	101.6	186	86
300	**02 B 300**	1462	2409	129.0	610	495.30	103.2	193	123
320	**02 B 320**	1560	2622	144.2	550	527.05	106.4	192	150
340	**02 B 340**	1729	2940	159.2	500	565.15	115.9	200	182
360	**02 B 360**								
380	**02 B 380**	1822	3254	174.4	460	584.20	111.1	200	186
400	**02 B 400**	1909	3438	188.4	430	615.95	115.9	200	209
420	**02 B 420**	2013	3702	202.0	400	647.70	119.1	200	241
440	**02 B 440**	2138	4057	216.0	380	666.75	115.9	200	250
460	**02 B 460**								
480	**02 B 480**	2251	4419	230.0	360	698.50	119.1	223	263
500	**02 B 500**	2346	4776	244.0	340	717.55	115.9	226	272
530	**02 B 530**	2565	5137	258.0	330	762.00	119.1	229	309
560	**02 B 560**	2675	5556	272.0	310	793.75	122.2	233	336
600	**02 B 600**	2769	5992	300.0	290	838.20	119.1	214	381

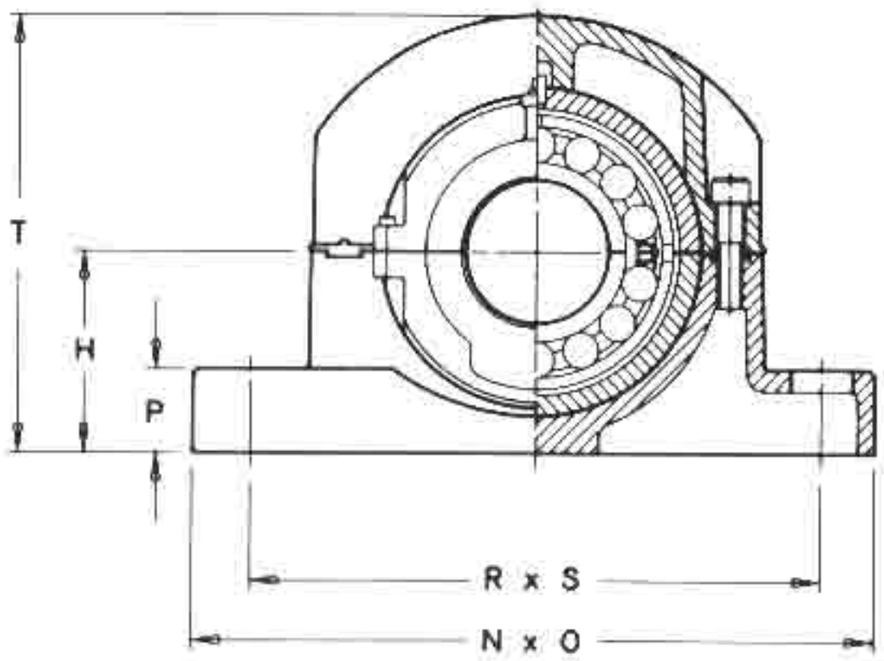
Add mm and EX or GR to reference.

*160mm size can also be supplied with overall dimensions and ratings as 150mm
REF: 02 B600 160mm

Reference Cartridge Shell only	L & L_1	G	Wt BC kg	Full Pack Grease Wt kg
02 C 50	114	134.94	6	0.15
02 C 60	126	157.16	10	0.21
02 C 65				
02 C 70	140	177.80	14	0.30
02 C 75				
02 C 80	154	203.20	17	0.45
02 C 85				
02 C 90				
02 C 100	146	231.78	21	0.60
02 C 110	162	266.70	35	0.90
02 C 115				
02 C 120	184	295.28	46	1.10
02 C 125				
02 C 130				
02 C 140	188	323.85	57	1.40
02 C 150	204	336.55	68	1.40
02 C 160	206 232	368.3	95	1.40
02 C 170				
02 C 180	222 242	381.0	111	2.00
02 C 190	235 258	425.5	143	2.70
02 C 200				
02 C 220	242 274	457.2	166	3.60
02 C 240	248 280	495.3	182	4.20
02 C 260				
02 C 280	264 300	527.1	217	4.80
02 C 300	268 306	552.5	252	5.40
02 C 320	298	587.4	322	6.60
02 C 340	305	628.7	368	7.20
02 C 360				
02 C 380	305	647.7	395	7.80
02 C 400	324	685.8	463	9.00
02 C 420	324	717.6	505	9.60
02 C 440	324	733.4	515	9.60
02 C 460				
02 C 480	338	762.0	535	10.20
02 C 500	350	787.4	595	10.80
02 C 530	350	831.9	660	11.40
02 C 560	356	866.8	715	11.40
02 C 600	388	914.4	835	12.60

Add mm and EX or GR to reference.

Series 02 Pedestal



Reference Pedestal casting	H	N x O	P	bolts	R x S	T	Wt BCP kg
P 03	80	280 x 70	32	2–M16	234	180	12
P 04	95	330 x 76	38	2–M20	270	208	18
P 05	112	380 x 90	44	2–M24	320	252	29
P 06	125	420 x 102	52	2–M24	354	272	33
P 07	143	466 x 120	60	2–M24	392	314	42
P 08	162	508 x 178	38	4–M24	450 x 120	372	80
P 10	181	558 x 178	40	4–M24	496 x 120	415	101
P 30	203	610 x 178	50	4–M24	546 x 120	460	132
P 31	210	636 x 204	50	4–M24	558 x 128	470	154
P 32	267	596 x 242	44	4–M30	448 x 172	535	209
P 33	273	636 x 242	44	4–M30	458 x 166	545	245
P 34	305	686 x 266	50	4–M30	508 x 190	610	331
P 35	324	750 x 280	50	4–M36	550 x 190	650	390
P 36	356	812 x 292	54	4–M36	596 x 204	710	454
P 37	378	914 x 330	60	8–M30	736 & 534 x 254	760	545
P 38	394	958 x 330	60	8–M30	768 & 566 x 254	790	625
P 39	419	1016 x 292	64	8–M30	812 & 610 x 210	840	705
P 40	451	1092 x 368	67	8–M36	864 & 660 x 280	900	840
P 41	464	1092 x 368	67	8–M36	886 & 682 x 280	925	885
P 42	495	1168 x 368	70	8–M36	934 & 730 x 280	990	1000
P 43	514	1194 x 368	70	8–M36	972 & 768 x 280	1030	1090
P 44	533	1244 x 368	73	8–M36	996 & 788 x 280	1070	1135
P 45	552	1270 x 368	76	8–M36	1042 & 812 x 280	1110	1225
P 46	572	1296 x 368	80	8–M36	1074 & 844 x 280	1145	1340
P 47	591	1398 x 368	83	8–M36	1118 & 890 x 280	1180	1565
P 48	616	1422 x 382	86	8–M42	1158 & 930 x 280	1230	1680
P 50	673	1524 x 382	92	8–M42	1238 & 1010 x 280	1345	1885

The adjacent table shows the range of bearings available for metric and imperial shaft sizes.

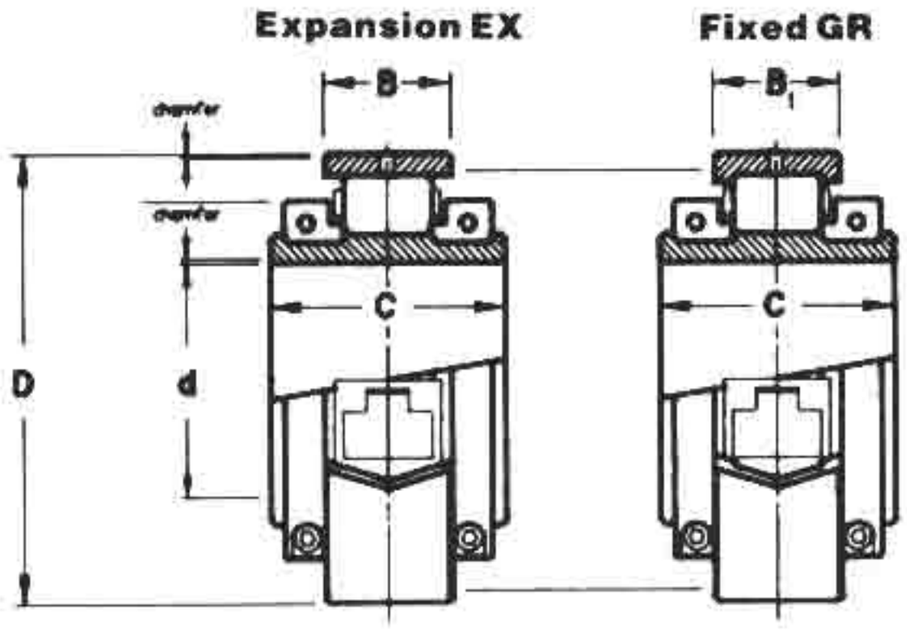
Additional sizes can be made to order. All bearings in a single group have the same overall dimensions apart from bore size.

Series 02 Size Range

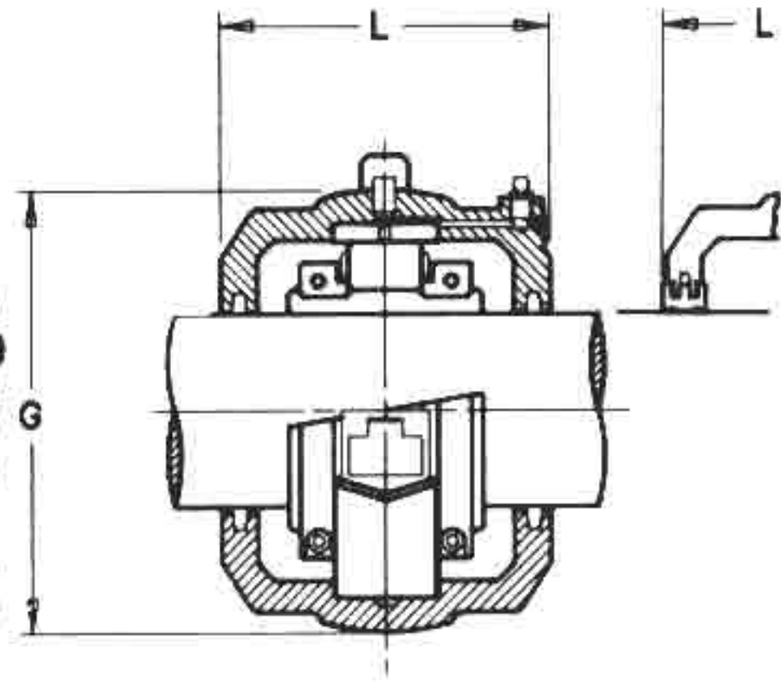
METRIC Shaft Dia. mm	REF	IMPERIAL Shaft Dia. Inches	REF
45	**45mm**	1 1/16	**111**
50	**50mm**	1 3/4	**112**
		1 15/16	**115**
		2	**200**
60	**60mm**	2 3/16	**203**
65	**65mm**	2 1/4	**204**
		2 7/16	**207**
		2 1/2	**208**
70	**70mm**	2 11/16	**211**
75	**75mm**	2 3/4	**212**
		2 15/16	**215**
		3	**300**
80	**80mm**	3 3/16	**303**
85	**85mm**	3 1/4	**304**
90	**90mm**	3 7/16	**307**
		3 1/2	**308**
95	**95mm**	3 11/16	**311**
100	**100mm**	3 3/4	**312**
105	**105mm**	3 15/16	**315**
		4	**400**
110	**110mm**	4 3/16	**403**
115	**115mm**	4 1/4	**404**
		4 7/16	**407**
		4 1/2	**408**
120	**120mm**	4 11/16	**411**
125	**125mm**	4 3/4	**412**
130	**130mm**	4 15/16	**415**
		5	**500**
140	**140mm**	5 3/16	**503**
145	**145mm**	5 1/4	**504**
		5 7/16	**507**
		5 1/2	**508**
150	**150mm**	5 11/16	**511**
155	**155mm**	5 3/4	**512**
160	**600/160mm**	5 15/16	**515**
		6	**600**
160	**160mm**	6 7/16	**607**
170	**170mm**	6 1/2	**608**
175	**175mm**	6 11/16	**611**
180	**180mm**	6 7/8	**614**
		6 15/16	**615**
		7	**700**
190	**190mm**	7 1/2	**708**
200	**200mm**	7 15/16	**715**
		8	**800**
220	**220mm**	8 1/2	**808**
230	**230mm**	9	**900**
240	**240mm**	9 1/2	**908**
250	**250mm**	10	**1000**
260	**260mm**		
280	**280mm**	10 1/2	**1008**
		11	**1100**
300	**300mm**	11 1/2	**1108**
		12	**1200**
320	**320mm**	13	**1300**
330	**330mm**		
340	**340mm**	14	**1400**
360	**360mm**		
380	**380mm**	15	**1500**
400	**400mm**	16	**1600**
420	**420mm**	17	**1700**
440	**440mm**	18	**1800**
460	**460mm**		
480	**480mm**	19	**1900**
500	**500mm**	20	**2000**
530	**530mm**	21	**2100**
560	**560mm**	22	**2200**
600	**600mm**	24	**2400**

SERIES 03

Series 03 Bearing



Series 03 Cartridge



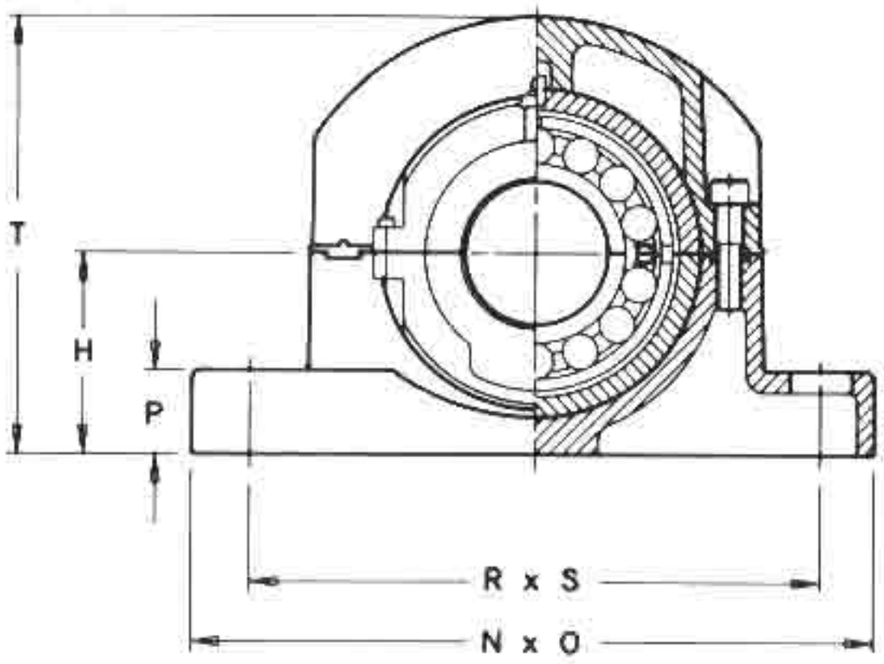
d mm	Reference Bearing only	Dynamic C	Static Cor	Axial Ca	Max rpm	D	B	B_1	C	Wt B kg
100	03 B 100	618	684	31.2	1820	254.00	84.2	84.2	136	30
110	03 B 110	625	698	39.2	1640	266.70	87.3	87.3	147	36
120	03 B 120									
130	03 B 130	758	852	49.0	1500	279.40	73.1	84.2	140	36
140	03 B 140	910	1069	58.8	1340	304.80	79.4	90.5	147	44
150	03 B 150	1023	1213	69.4	1220	330.20	81.0	96.9	160	57
160	03 B 160	1191	1564	79.2	1110	355.60	103.2	103.2	171	72
170	03 B 170									
180	03 B 180	1284	1704	89.0	1030	374.65	92.1	108.8	178	79
190	03 B 190	1508	2022	99.6	880	419.10	97.7	118.3	191	105
200	03 B 200									
220	03 B 220	1653	2163	109.4	760	469.90	109.6	131.8	212	145
240	03 B 240	1843	2551	130.8	700	482.60	105.6	124.6	211	150
260	03 B 260									
280	03X B 280	1979	2960	153.0	620	520.70	131.8	131.8	231	197
280	03E B 280	2134	3233	153.0	620	495.30	139.7	139.7	244	182
300	03 B 300	2190	3312	174.4	560	558.80	139.7	139.7	244	238
320	03 B 320	2611	3795	198.8	500	622.30	160.4	160.4	272	327
340	03E B 340	2778	4392	213.6	460	615.95	158.0	158.0	279	318
360	03E B 360									
360	03X B 360	2827	4377	226.0	460	647.70	160.4	160.4	279	372
380	03 B 380	3073	4800	250.8	420	685.80	166.7	166.7	292	431
400	03 B 400									
420	03E B 420	3494	6006	275.8	360	700.00	160.0	160.0	284	395
440	03E B 440									
460	03E B 460	3709	6156	302.4	340	740.00	170.0	170.0	294	431
460	03X B 460	3831	6186	308.8	340	800.10	187.4	187.4	300	630
480	03X B 480									
500	03 B 500	4162	7041	347.0	310	850.90	187.4	187.4	300	730
530	03 B 530									
560	03E B 560	4682	8511	382.6	280	863.60	196.9	196.9	310	635
600	03E B 600	4874	9130	400.0	270	890.00	184.0	184.0	310	680

Add mm and EX or GR to reference

Reference Cartridge Shell only	L	L_1	G	Wt BC kg	Full Pack Grease Wt kg
03 C 100	200	206	308.00	71	1.20
03 C 110	210	222	323.85	82	1.40
03 C 120					
03 C 130	214	222	323.85	84	1.40
03 C 140	216	230	355.6	96	2.00
03 C 150	232	254	393.7	127	2.70
03 C 160	244	268	422.3	153	3.60
03 C 170					
03 C 180	254	284	431.8	166	4.20
03 C 190	270	300	489.0	214	5.40
03 C 200					
03 C 220	298	334	546.1	300	6.90
03 C 240	298	334	558.8	311	8.10
03 C 260					
03X C 280	324	352	596.9	397	10.00
03E C 280	356	356	571.5	386	10.00
03 C 300	346	370	641.4	468	11.00
03 C 320	368		717.6	600	12.00
03E C 340	432		704.9	703	15.00
03E C 360					
03X C 360	380		739.8	725	16.20
03 C 380	400		774.7	830	19.20
03 C 400					
03E C 420	440		788.0	803	21.60
03E C 440					
03E C 460	450		840.0	885	24.60
03X C 460	476		914.4	1370	24.60
03X C 480					
03 C 500	495		958.9	1500	30.00
03 C 530					
03E C 560	490		958.9	1306	36.00
03E C 600	490		990.0	1400	38.40

Add mm and EX or GR to reference.

Series 03 Pedestal



Reference Pedestal casting	H	N x O	P	bolts	R x S	T	Wt BCP kg
P 54	191	514 x 152	38	4–M24	438 x 82	405	145
P 55	197	534 x 166	38	4–M24	458 x 88	425	168
P 56	203	546 x 166	48	4–M24	470 x 96	435	182
P 57	229	622 x 178	54	4–M30	514 x 102	485	222
P 58	254	666 x 204	57	4–M30	558 x 120	535	302
P 59	267	736 x 228	60	4–M30	628 x 140	570	340
P 60	279	762 x 254	64	4–M30	636 x 152	580	385
P 61	311	838 x 266	67	4–M36	636 x 172	655	515
P 62	349	952 x 280	76	4–M42	736 x 178	730	715
P 63	394	914 x 406	76	4–M42	670 x 304	790	815
P 64	425	1028 x 406	76	8–M36	812 & 610 x 318	850	1000
P 83	368	940 x 280	70	8–M36	742 & 502 x 178	785	600
P 65	457	1092 x 420	76	8–M36	876 & 674 x 330	915	1135
P 66	518	1194 x 356	80	8–M36	978 & 762 x 266	1035	1270
P 86	470	1220 x 318	82	8–M42	928 & 660 x 190	1000	1150
P 67	533	1244 x 368	90	8–M42	1012 & 784 x 266	1065	1545
P 68	559	1270 x 394	92	8–M42	1036 & 806 x 292	1120	1770
P 89	508	1270 x 360	90	8–M48	990 & 690 x 210	1075	1325
P 90	550	1370 x 380	95	8–M48	1080 & 780 x 220	1165	1590
P 71	660	1574 x 470	108	8–M48	1290 & 934 x 362	1320	2700
P 94	622	1600 x 406	102	8–M56	1270 & 940 x 242	1340	2500
P 94	622	1600 x 406	102	8–M56	1270 & 940 x 242	1340	2300
P 95	622	1600 x 406	102	8–M56	1270 & 940 x 242	1340	2330

The adjacent table shows the range of bearings available for metric and imperial shaft sizes. Additional sizes can be made to order. All bearings in a single group have the same overall dimensions apart from bore size.

Series 03 Size Range

METRIC Shaft Dia. mm	METRIC Shaft Dia. REF	IMPERIAL Shaft Dia. Inches	IMPERIAL Shaft Dia. REF
100	**100mm**	3¾	**312**
		3 15/16	**315**
		4	**400**
110	**110mm**	4 7/16	**407**
120	**120mm**	4½	**408**
125	**125mm**	4 15/16	**415**
130	**130mm**	5	**500**
140	**140mm**	5 7/16	**507**
		5½	**508**
150	**150mm**	5 15/16	**515**
		6	**600**
160	**160mm**	6 7/16	**607**
170	**170mm**	6½	**608**
180	**180mm**	6 15/16	**615**
		7	**700**
		7½	**700/708**
190	**190mm**	7½	**708**
200	**200mm**	7 15/16	**715**
		8	**800**
		8½	**800/808**
220	**220mm**	9	**900**
240	**240mm**	10	**1000**
250	**250mm**		
260	**260mm**		
280	**X 280mm**	11	**X 1100**
280	**E 280mm**	11	**E 1100**
300	**300mm**	12	**1200**
320	**320mm**	13	**1300**
340	**E 340mm**	14	**E 1400**
360	**E 360mm**	14	**E 1400**
	X 360mm	14	**X 1400**
380	**380mm**	15	**1500**
400	**400mm**		
420	**E 420mm**	17	**E 1700**
440	**E 440mm**		
460	**E 460mm**	18	**E 1800**
480	**X 460mm**	18	**X 1800**
480	**X 480mm**		
500	**500mm**	20	**2000**
530	**530mm**		
560	**E 560mm**	22	**E 2200**
600	**E 600mm**		

FLANGE

Flange units provide a simple means of mounting Cooper Split Roller Bearings against a vertical or horizontal face. These units embody standard swivel cartridges which may be assembled with Expansion or Fixed type bearings as pages 10-13.

Where shafts terminate at the bearings, cartridge ends may be fitted with blanking plates or, in the case of Expansion bearings to 90mm, blanking plates with thrust bearings for one-way positioning – see page 22.

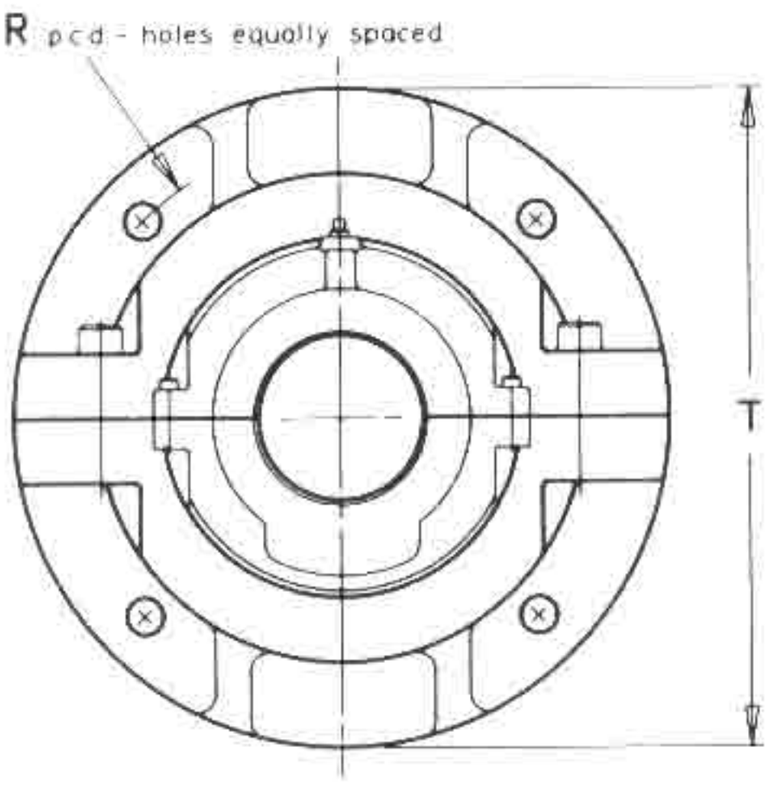
The rear face of the flange is recessed for use with the spigot if required. The top halves of both flange unit and cartridge can be lifted for inspection of the rolling surfaces.

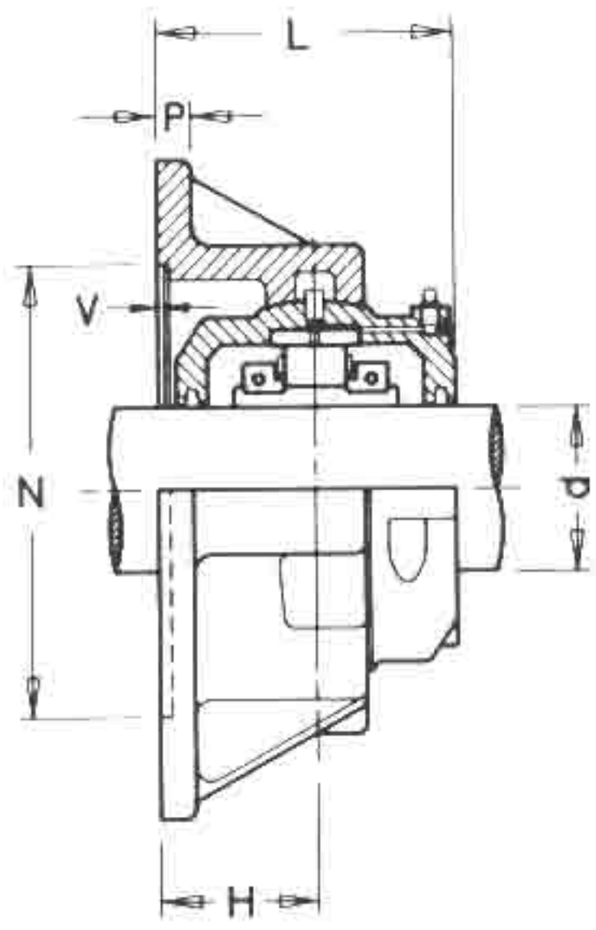
Standard cast iron flanges normally have drilled bolt holes, outer surface as cast – fit flat washer under bolt heads. Cast steel flanges normally have drilled holes, spot faced.

Tolerance f8 on spigot to fit recess N.
Flanges for bearings above 300mm bore and in Series 03 – prices and availability according to quantity.

Vertical shafts – bearings and vertical shafts may require modified construction, special seals and lubrication.

Maximum load on C.I. Flanges 0.26 **Cor** or 0.25 **Ca**. Higher loads at slow speeds and shock conditions require steel or nodular iron flanges and HT bolts. The support plate must be adequate. Please consult our Sales Department.





Series 01

d mm	Flange casting	T	bolts	R	P	H	N	V	L	wt kg
40	F 01	204	4–M12	164	13	51	119.06	3	94	8
50	F 02	216	4–M12	180	13	57	136.52	3	106	11
60 65	F 03	260	4–M12	218	16	67	166.69	3	120	15
70 75	F 04	286	4–M12	242	16	73	192.09	3	130	21
80 85 90	F 05	330	4–M16	274	19	79	215.90	3	148	31
100 105	F 06	356	4–M16	302	19	86	244.47	3	154	37
110 115	F 07	382	4–M16	334	22	92	276.22	3	164	51
120 125 130	F 08	432	4–M24	374	22	98	314.32	3	176	72
135 140	F 09	444	4–M24	384	25	98	317.50	3	182	72
150 155	F 10	470	4–M24	412	25	114	346.07	3	202	94
160	F 11	496	4–M24	426	25	105	352.42	3	202	100
170 180	F 12	508	4–M24	438	29	108	365.12	3	208	105
190 200	F 13	534	4–M24	474	32	108	400.05	3	208	126
220	F 14	584	4–M30	512	35	117	431.80	3	226	148
240	F 15	610	4–M30	542	35	117	463.55	3	228	168
260 280	F 16	660	4–M30	584	38	124	504.82	3	240	215
300	F 17	712	4–M30	626	38	133	539.75	3	258	265

Series 02

d mm	Flange casting	T	bolts	R	P	H	N	V	L	wt kg
50	F 03	260	4–M12	218	16	67	166.69	3	124	15
60 65	F 04	286	4–M12	242	16	73	192.09	3	136	22
70 75	F 05	330	4–M16	274	19	79	215.90	3	150	33
80 85 90	F 06	356	4–M16	302	19	86	244.47	3	164	40
100	F 07	382	4–M16	334	22	92	276.22	3	166	51
110 115	F 08	432	4–M24	374	22	98	314.32	3	180	75
120 125 130	F 10	470	4–M24	412	25	114	346.07	3	206	100
140	F 30	508	4–M24	444	25	114	377.82	3	208	120
150	F 31	534	4–M24	466	25	124	393.70	3	226	140
160 170	F 32	584	4–M30	508	29	124	428.62	5	240	170
180	F 33	596	4–M30	524	32	130	444.50	5	252	210
190 200	F 34	648	4–M30	572	32	137	492.12	5	266	290
220	F 35	712	4–M36	620	35	146	527.05	5	284	318
240 260	F 36	736	4–M36	660	38	149	568.32	5	290	340
280	F 37	762	8–M30	682	38	159	603.25	5	310	395
300	F 38	788	8–M30	708	41	162	628.65	5	316	446

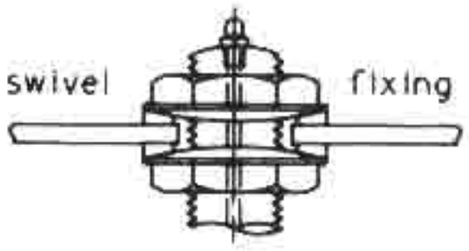
HANGER

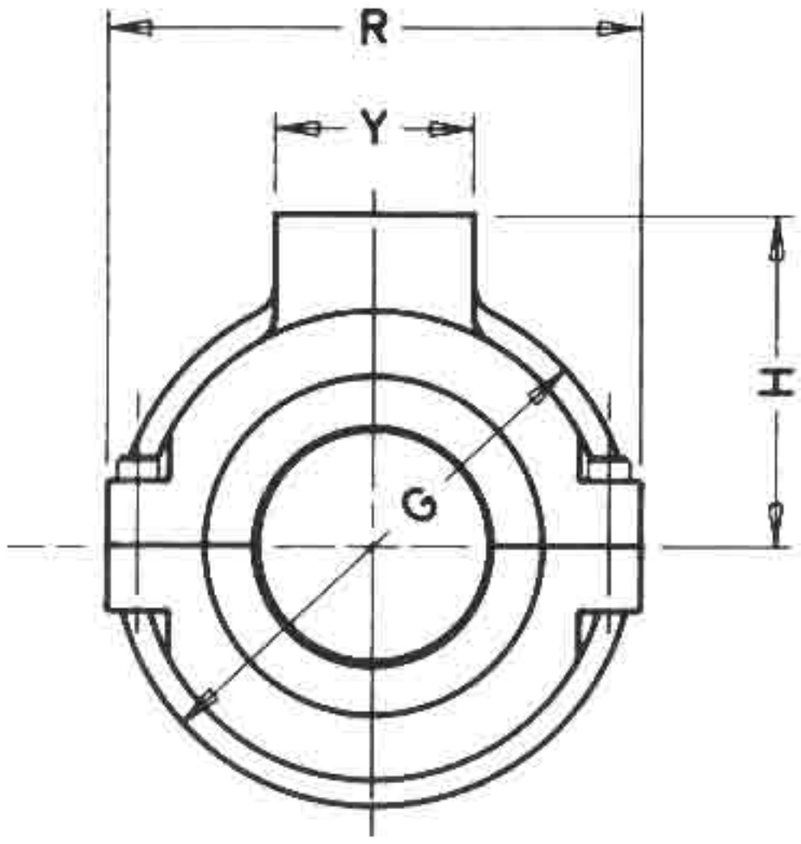
Hangers are a compact means of supporting the shafts of screw conveyors and similar equipment. The unit comprises a split roller bearing in a cast iron split housing with threaded boss to facilitate suspension from the conveyor cross-bracing. A swivel fixing at the cross-bracing joint is recommended to provide alignment of the bearings.
Double felt or lipped rubber seals are provided, air purge seals are also available. The aspect of sealing should be carefully considered for each application. Continuous grease feed is sometimes desirable and provision may be made through the hanger rods.

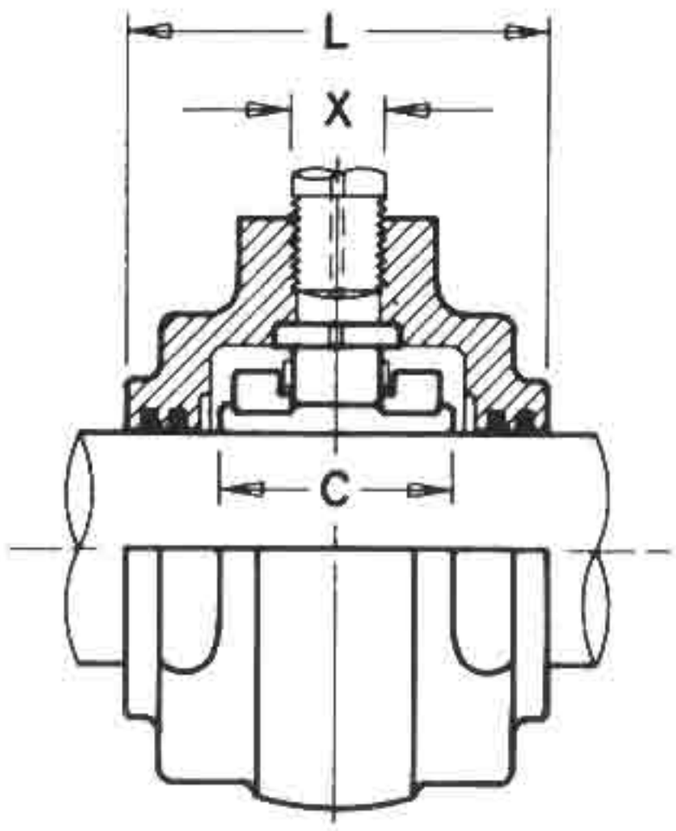
Bearing dimensions Page 10
Maximum loads 0.16 **Cor**. Normal maximum speeds dn = 20 000.

Selection page 3

Tolerances page 6







Series 01

d mm	Reference Hanger complete	Hanger casting	C	G	L	H	X	Y	R	Wt Kg
40	**01 BH 40**	01 H 40	50.1	100	108	66	M30	50	105	4
50	**01 BH 50**	01 H 50	55.7	117	108	76	M30	50	121	5
60	**01 BH 60**	01 H 60	55.7	135	108	82	M30	50	137	6
65	**01 BH 65**	01 H 65								
70	**01 BH 70**	01 H 70	61.2	157	130	92	M30	50	162	8
75	**01 BH 75**	01 H 75								
80	**01 BH 80**	01 H 80	70.7	178	146	114	M36	76	187	13
85	**01 BH 85**	01 H 85								
90	**01 BH 90**	01 H 90								
100	**01 BH 100**	01 H 100	81.0	203	152	128	M36	76	200	17
105	**01 BH 105**	01 H 105								
110	**01 BH 110**	01 H 110	84.9	232	156	140	M36	76	222	24
115	**01 BH 115**	01 H 115								

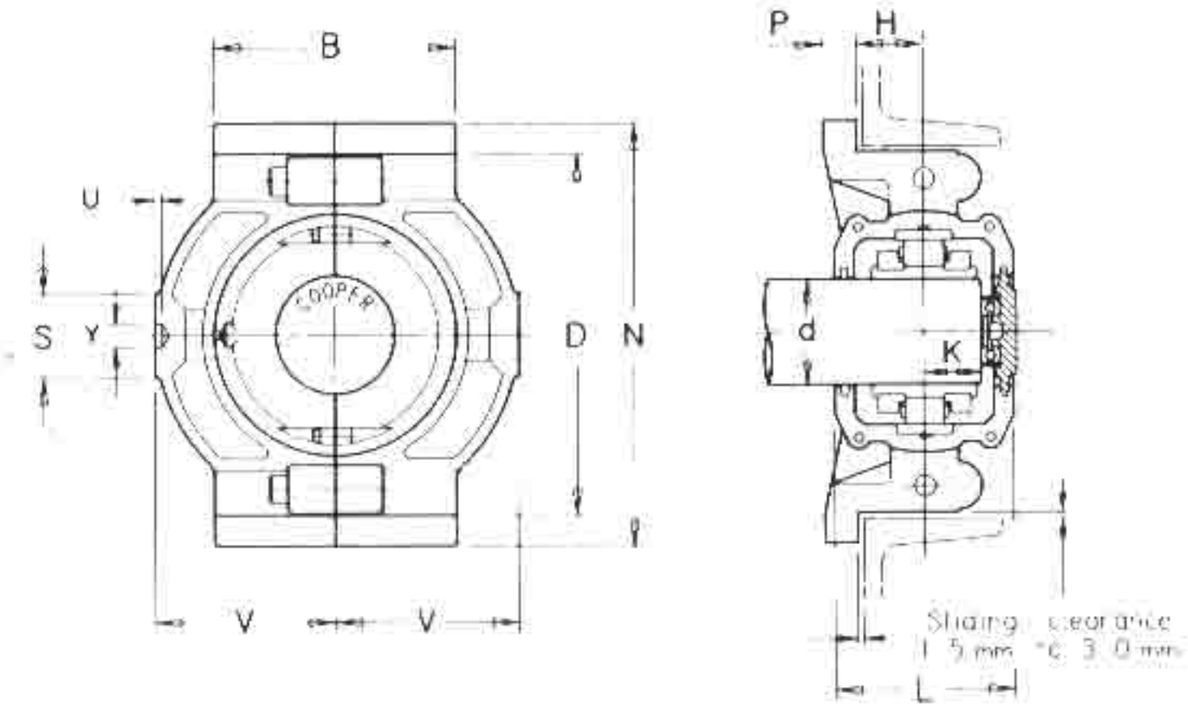
Add mm to reference

TAKE UP – Push Type

Take-Up units are an efficient means of tensioning the pulleys of conveyors and elevators.

The unit consists of a standard Expansion type Cooper Split Roller Bearing and swivel cartridge mounted in the spherical bore of the cast iron sliding unit. On sizes to 90mm the axial movement of the shaft is controlled in one direction by a shrouded thrust bearing fitted to the outboard end of each cartridge. See page 22 on larger sizes by two Fixed-type bearings.

01 BCTP
02 BCTP



Series 01

d mm	Reference Take-Up complete	Take-Up casting	B	N	D	V	K	P	H	L	S	Y	U	Wt Kg
40	01 BCTP 40	TP 01	102	172	153	76	27	14	29	86	25	13	5	6
50	01 BCTP 50	TP 02	114	204	178	88	29	16	29	98	29	13	5	9
60	01 BCTP 60	TP 03	128	235	203	102	30	20	32	104	38	16	6	12
65	01 BCTP 65													
70	01 BCTP 70	TP 04	152	266	229	114	35	22	40	114	41	16	6	17
75	01 BCTP 75													
80	01 BCTP 80	TP 05	190	318	280	140	40	22	40	136	51	16	6	27
85	01 BCTP 85													
90	01 BCTP 90													
100	01 BCTP 100	TP 06	204	342	305	152		22	43	134	51	19	6	31
105	01 BCTP 105													
110	01 BCTP 110	TP 07	216	382	343	162		22	48	142	70	19	6	46
115	01 BCTP 115													
120	01 BCTP 120	TP 08	254	420	381	190		25	51	156	76	19	6	65
125	01 BCTP 125													
130	01 BCTP 130													
135	01 BCTP 135	TP 09	266	438	400	196		25	54	168	76	23	8	80
140	01 BCTP 140													
150	01 BCTP 150	TP 10	266	464	426	204		25	57	174	86	23	8	91
155	01 BCTP 155													

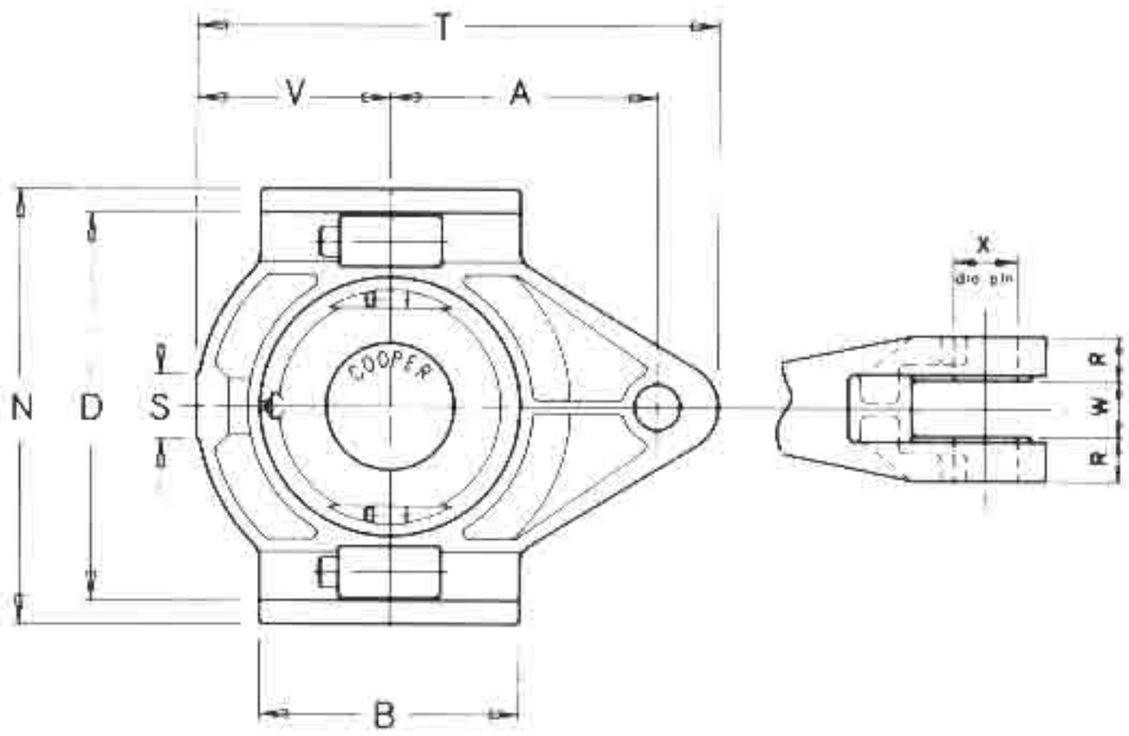
Series 02

d mm	Reference Take-Up complete	Take-Up casting	B	N	D	V	K	P	H	L	S	Y	U	Wt kg
50	02 BCTP 50	TP 03	128	235	203	102	35	20	32	114	38	16	6	12
60	02 BCTP 60	TP 04	152	266	229	114	38	22	40	126	41	16	6	18
65	02 BCTP 65													
70	02 BCTP 70	TP 05	190	318	280	140	41	22	40	140	51	16	6	29
75	02 BCTP 75													
80	02 BCTP 80	TP 06	204	342	305	152	48	22	43	154	51	19	6	34
85	02 BCTP 85													
90	02 BCTP 90													
100	02 BCTP 100	TP 07	216	382	343	162		22	48	146	70	19	6	46
110	02 BCTP 110	TP 08	254	420	381	190		25	51	162	76	19	6	68
115	02 BCTP 115													
120	02 BCTP 120	TP 10	266	464	426	204		25	57	184	86	23	8	94
125	02 BCTP 125													
130	02 BCTP 130													
140	02 BCTP 140	TP 30	280	502	464	222		25	60	188	92	23	8	109
150	02 BCTP 150	TP 31	305	528	489	235		25	64	204	92	26	10	124

Add mm to reference.

TAKE UP — Tension Type

01 BCTT
02 BCTT



Series 01

d mm	Reference Take-Up complete	Take-Up casting	B	N	D	A	T	X	V	K	P	H	W	R	L	Wt Kg
40	01 BCTT 40	TT 01	102	172	153	114	216	20	76	27	14	29	25	24	86	7
50	01 BCTT 50	TT 02	114	204	178	128	242	24	88	29	16	29	25	25	98	10
60	01 BCTT 60	TT 03	128	235	203	146	280	24	102	30	20	32	30	29	104	13
65	01 BCTT 65															
70	01 BCTT 70	TT 04	152	266	229	158	305	24	114	35	22	40	30	32	114	19
75	01 BCTT 75															
80	01 BCTT 80	TT 05	190	318	280	190	368	30	140	40	22	40	38	35	136	30
85	01 BCTT 85															
90	01 BCTT 90															
100	01 BCTT 100	TT 06	204	342	305	210	414	36	152	22	43	44	35	134	34	
105	01 BCTT 105															
110	01 BCTT 110	TT 07	216	382	343	228	445	42	162	22	48	44	41	142	51	
115	01 BCTT 115															
120	01 BCTT 120	TT 08	254	420	381	260	508	42	190	25	51	44	44	156	71	
125	01 BCTT 125															
130	01 BCTT 130															
135	01 BCTT 135	TT 09	266	438	400	266	514	42	196	25	54	44	48	168	89	
140	01 BCTT 140															
150	01 BCTT 150	TT 10	266	464	426	280	546	48	204	25	57	50	51	174	100	
155	01 BCTT 155															

Series 02

d mm	Reference Take-Up complete	Take-Up casting	B	N	D	A	T	X	V	K	P	H	W	R	L	Wt kg
50	02 BCTT 50	TT 03	128	235	203	146	280	24	102	35	20	32	30	29	114	14
60	02 BCTT 60	TT 04	152	266	229	158	305	24	114	38	22	40	30	32	126	20
65	02 BCTT 65															
70	02 BCTT 70	TT 05	190	318	280	190	368	30	140	41	22	40	38	35	140	32
75	02 BCTT 75															
80	02 BCTT 80	TT 06	204	342	305	210	414	36	152	48	22	43	44	35	154	37
85	02 BCTT 85															
90	02 BCTT 90															
100	02 BCTT 100	TT 07	216	382	343	228	445	42	162		22	48	44	41	146	51
110	02 BCTT 110	TT 08	254	420	381	260	508	42	190		25	51	44	44	162	74
115	02 BCTT 115															
120	02 BCTT 120	TT 10	266	464	426	280	546	48	204		25	57	50	51	184	103
125	02 BCTT 125															
130	02 BCTT 130															
140	02 BCTT 140	TT 30	280	502	464	298	584	48	222		25	60	50	54	188	119
150	02 BCTT 150	TT 31	305	528	489	312	616	48	235		25	64	50	57	204	141

Add mm to reference.

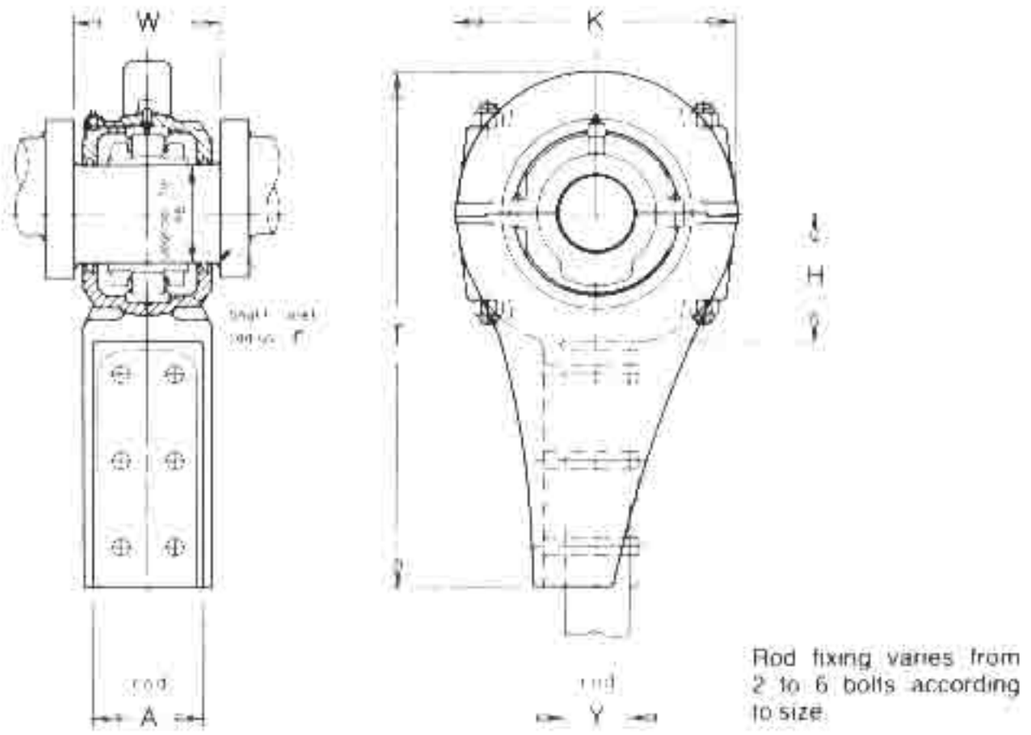
ROD END – Shoe Type

For solid crankshafts Cooper Split Roller Bearings can be simply applied. Cooper Rod Ends are specially designed to form connecting units for these and other reciprocating mechanisms.

Each unit consists of a split outer casting which encloses a Grooved Race bearing in a swivel cartridge.

Normally made in cast iron, these units are available as shoe-end and tee-end types shown and can be modified to suit various rods and attachments.

01 BCRES
02 BCRES



Series 01

d mm	Reference Rod-End complete	Rod-End casting	W	r	A x Y	H	K	T	Wt kg
40	01 BCRES 40	RES 01	92	3.0	62 x 10	65	160	258	5
50	01 BCRES 50	RES 02	104	3.0	62 x 10	70	166	308	7
60	01 BCRES 60	RES 03/2	113	4.5	62 x 10	79	190	330	13
65	01 BCRES 65								
70	01 BCRES 70	RES 04	126	6.0	88 x 50	108	248	432	22
75	01 BCRES 75								
80	01 BCRES 80	RES 05	148	6.0	100 x 50	133	264	602	43
85	01 BCRES 85								
90	01 BCRES 90								
100	01 BCRES 100	RES 06	146	6.0	100 x 58	125	308	572	44
105	01 BCRES 105								
110	01 BCRES 110	RES 07	154	6.0	126 x 58	149	354	618	63
115	01 BCRES 115								
120	01 BCRES 120	RES 08	168	6.0	126 x 64	158	400	654	83
125	01 BCRES 125								
130	01 BCRES 130								
135	01 BCRES 135	RES 09	187	9.5	152 x 76	177	442	696	98
140	01 BCRES 140								
150	01 BCRES 150	RES 10	193	9.5	152 x 76	177	442	696	107
155	01 BCRES 155								

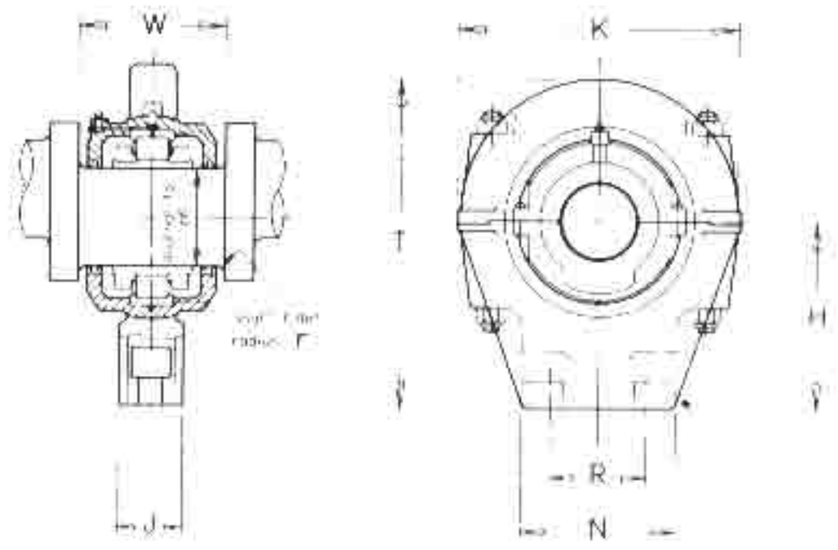
Series 02

d mm	Reference Rod-End complete	Rod-End casting	W	r	A x Y	H	K	T	Wt kg
50	02 BCRES 50	RES 03/1	123	4.5	62 x 32	76	190	330	10
60	02 BCRES 60	RES 04	138	6.0	88 x 50	108	248	432	20
65	02 BCRES 65								
70	02 BCRES 70	RES 05/3	152	6.0	114 x 38	130	248	540	40
75	02 BCRES 75								
80	02 BCRES 80	RES 06/6	173	9.5	126 x 76	149	334	610	62
85	02 BCRES 85								
90	02 BCRES 90								
100	02 BCRES 100	RES 07/3	171	12.5	126 x 76	149	354	618	71
110	02 BCRES 110	RES 08/2	187	12.5	126 x 76	162	400	654	91
115	02 BCRES 115								
120	02 BCRES 120	RES 10	209	12.5	152 x 76	177	442	696	124
125	02 BCRES 125								
130	02 BCRES 130								
140	02 BCRES 140	RES 30	213	12.5	152 x 76	177	442	696	145
150	02 BCRES 150	RES 31	229	12.5	152 x 64	203	444	736	166

Add mm to reference

ROD END – Tee Type

01 BCRET
02 BCRET



Illustrations are typical. Dimensions should be confirmed before fixing designs

Series 01

d mm	Reference Rod-End complete	Rod-End casting	W	r	N x J	H	K	T	R x bolts	Wt kg
40	01 BCRET 40	RET 01	92	3.0	86 x 30	76	140	152	57 x M12[1]	6
50	01 BCRET 50	RET 02	104	3.0	102 x 32	102	166	190	70 x M10	8
60	01 BCRET 60	RET 03	113	4.5	115 x 38	95	198	194	76 x M16[1]	9
65	01 BCRET 65									
70	01 BCRET 70	RET 04	126	6.0	128 x 44	108	216	220	89 x M16[1]	13
75	01 BCRET 75									
80	01 BCRET 80	RET 05/1	148	6.0	146 x 48	127	248	256	102 x M20[1]	20
85	01 BCRET 85									
90	01 BCRET 90									
100	01 BCRET 100	RET 06	146	6.0	170 x 76	200	308	356	124 x M24	36
105	01 BCRET 105									
110	01 BCRET 110	RET 07/3	154	6.0	190 x 86	222	334	390	136 x M30	52
115	01 BCRET 115									
120	01 BCRET 120	RET 08	168	6.0	190 x 86	222	375	425	136 x M30	65
125	01 BCRET 125									
130	01 BCRET 130									
135	01 BCRET 135	RET 09	187	9.5	204 x 102	279	442	502	140 x M30	89
140	01 BCRET 140									
150	01 BCRET 150	RET 10	193	9.5	204 x 102	279	442	502	140 x M30	99
155	01 BCRET 155									

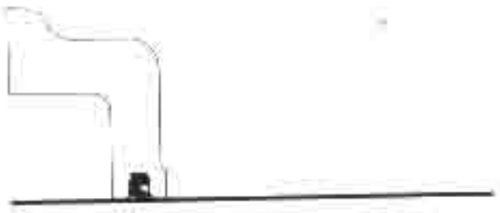
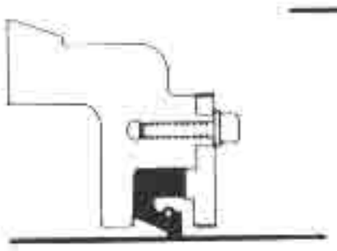
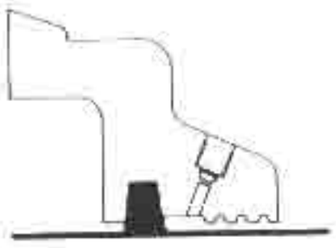
Series 02

d mm	Reference Rod-End complete	Rod-End casting	W	r	N x J	H	K	T	R x bolts	Wt kg
50	02 BCRET 50	RET 03	123	4.5	115 x 38	95	198	194	75 x M16[1]	9
60	02 BCRET 60	RET 04	138	6.0	128 x 44	108	216	220	89 x M16[1]	14
65	02 BCRET 65									
70	02 BCRET 70	RET 05/1	152	6.0	146 x 48	127	248	256	102 x M20[1]	20
75	02 BCRET 75									
80	02 BCRET 80	RET 06	173	9.5	170 x 76	200	308	356	124 x M24	41
85	02 BCRET 85									
90	02 BCRET 90									
100	02 BCRET 100	RET 07	171	12.5	204 x 102	241	324	445	140 x M30	57
110	02 BCRET 110	RET 08/1	187	12.5	204 x 102	279	442	502	140 x M30	84
115	02 BCRET 115									
120	02 BCRET 120	RET 10	209	12.5	204 x 102	279	442	502	140 x M30	101
125	02 BCRET 125									
130	02 BCRET 130									
140	02 BCRET 140	RET 30	213	12.5	204 x 102	279	445	558	140 x M30	119
150	02 BCRET 150	RET 31	229	12.5	204 x 102	279	445	558	140 x M30	131

Add mm to reference

[1] **Tapped holes in end facing.**

SEALS

	Max °C	Recommended Shaft Surface Finish dn < 20,000 max roughness µm Ra	dn > 20,000 max roughness µm Ra	
 Felt (Standard)	100	1.6	0.8	Available for sizes to 300mm Maximum speed dn = 150,000. Cartridge length L–see pages 5-10.
HT Packing (Ref HTP)	250			
 Rubber split seal grade 1 (Ref SRS) grade 2 (Ref SRSHT)	 100 175	 0.8	 0 4	 Available for sizes to 300mm Maximum speed dn = 150,000. Cartridge length L – see pages 5-10
 Neoprene triple labyrinth (ref NTL)	100	3.2	1 6	Available for sizes up to 105mm, in neoprene rubber Cartridge Length L_1 – see pages 5-10
 Aluminium triple labyrinth O-ring grade 1 (Ref ATL) O-ring grade 2 (Ref ATL HT)	 100 150	 3.2	 1 6	 Available for sizes up to 300mm with cartridge Length L_1 – see page 5-10 Larger sizes are made to order.
 Grease groove	—	—	—	Standard for sizes over 300mm and normally for Marine applications. Catridge length L – see page 5-10
 Rubber split seal with spring loaded lip and cover plate (Ref SRSRP) grade 1 grade 2	 100 150	 0.8	 0.4	For severe splash or completely submerged applications Increase cartridge length L c 25mm
 Felt and grease fed labyrinth	100	1.6	0.8	Increase cartridge length L c 50mm

The standard felt seals in Cooper cartridges suit most purposes. The clearance between the shaft and the bore of the cartridge is about 0.80mm and aligns concentrically with the cartridge. Entry of foreign matter is resisted if the cartridge ends are filled with grease during assembly and the bearing is regularly lubricated

The alternative seals shown can be provided to meet varied and severe conditions

Other special seals are available if required

Normal maximum speeds for rubbing seals dn = 150,000

Shaft limit generally as for journal or not greater than h9.

The maximum seal temperatures given should include an allowance for heat generation from rubbing contact with the shaft

BLANKING PLATES

Where shafts end at the bearings, blanking plates (BP) may be fitted in standard cartridges to prevent entry of contaminants. On sizes up to 90mm blanking plates with integral thrust bearings (BT) can be used with pairs of EX bearings where the axial load is minimal. The shaft ends must be smooth and square. Mountings may be drilled with extra clearance for the base bolts, to allow axial adjustment. Fill the cartridge and thrust bearing with grease, and position the units so there is just clearance between the shaft ends and the thrust bearings. Axial pre-loading must be avoided. Above 90mm use one EX and one GR bearing with Blanking plates.

Normal maximum speeds dn = 20 000 for **BT** type

Also supplied for sizes over 90mm as BP only. For sizes 100mm to 155mm shaft protrusion 't' may be up to 5mm max

When ordering add **BP** or **BT** to Unit reference, e.g. 01 BCP 90mm EXBT

BLANKING PLATES and Thrust Bearings

d mm	Series 01 K	t	Series 02 K	t
40	27	2	–	–
50	29	1	35	1
60 65	30	2	38	2
70 75	35	4	41	0
80 85 90	40	4	48	3