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## BEARING TYPES

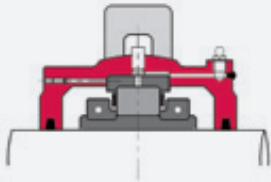
Cooper bearings are commonly supplied in two forms: the Fixed Type ('GR') and Expansion Type ('EX') as described below. Where conditions are unsuitable for these standard types other configurations are possible.

### FIXED TYPE BEARINGS (GR)

The outer race of the fixed (GR) bearing has shoulders integral with the roller track, while the inner race assembly has shoulders formed by hardened lips on the clamping rings or similar integral shoulders.

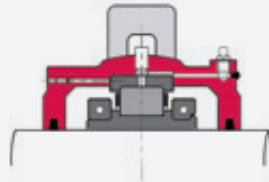
This type of bearing provides axial location to the rotating portions of machinery and can sustain both radial and axial loading.

The inner race halves are accurately aligned by means of fitted clamping rings.



#### GR BEARING (D TYPE)

01 and 02 Series through 300mm /12" shaft size and 03 Series through 155mm /6" shaft size.  
100 Series all shaft sizes.



#### GR BEARING (C TYPE)

01 and 02 Series over 300mm /12" shaft size and 03 Series over 155mm /6" shaft size.

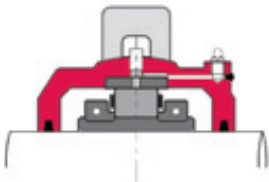
### EXPANSION TYPE BEARINGS (EX)

The expansion (EX) bearing has a plain outer race roller track. This bearing takes radial load only.

The inner race is clamped to the shaft, and moves

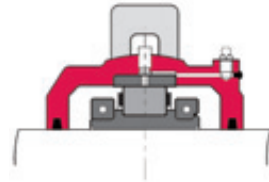
axially with it when expansion or contraction occurs.

The Cooper expansion bearing offers virtually no resistance to axial movement as the rollers spiral through the outer race.



#### EX BEARING (D TYPE)

01 and 02 Series through 300mm /12" shaft size and 03 Series through 155mm /6" shaft size.  
100 Series all shaft sizes.



#### EX BEARING (C TYPE)

01 and 02 Series over 300mm /12" shaft size and 03 Series over 155mm /6" shaft size.

## HOUSING TYPES

Most styles of Cooper housing are available in cast iron, ductile iron or steel. Special types of housing, alternative materials and housings to special dimensions are available on request.

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### PEDESTALS

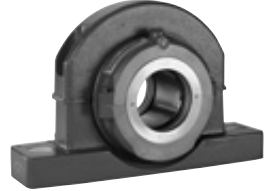
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Pedestals (also called pillow blocks) are the most common mountings for Cooper bearings. Detail design and number of fixing bolts varies with bearing series and size.

Cooper offer ranges of pedestals that allow direct replacement of SNC, SD, and SAF pillow block units.



**LARGE BORE BASE**



**TWO BOLT BASE**

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### TAKE-UP AND ROD END MOUNTINGS

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Take-up units are available as tension type (shown) or push type. Rod-end units are available as shoe type (shown) or tee type.



**ROD END UNITS**



**TAKE-UP UNITS**

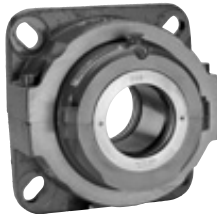
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### FLANGE MOUNTINGS

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**ROUND FLANGE UNITS**



**SQUARE FLANGE UNITS**

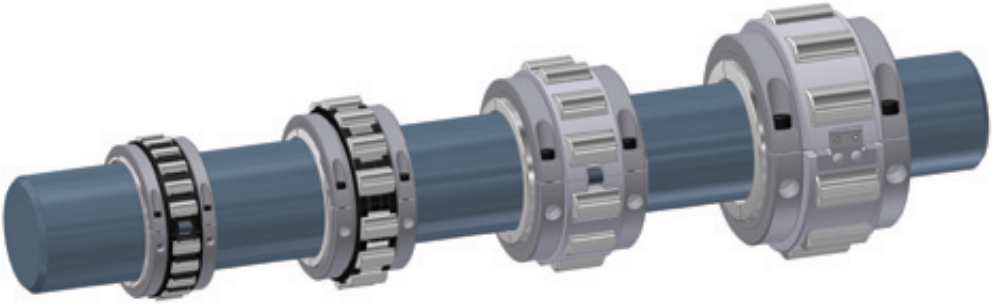
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### HANGER MOUNTINGS

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**HANGER UNITS**



## SELECTION FOR RADIAL LOAD CALCULATING BEARING LIFE

Selection for radial loading is usually based on the radial load rating denoted by "Cr". The radial load ratings listed in this catalogue are based on ISO standards. The system establishes a common basis for calculating load ratings for all anti-friction bearings. It is based on the statistical life expectancy for rolling contact fatigue, and provides a reasonable estimate of service life under conditions of adequate lubrication, freedom from contamination and excessive misalignment. In practice, the service life of the bearing may be determined by factors other than the rolling contact fatigue. Generally, the term 'life' used in the Bearing Selection section of this catalogue refers to the statistical life of the bearing against rolling contact fatigue as calculated using ISO standards.

Selection for radial load is determined independently from the axial load. Determine the radial load, speed and minimum life required. Generally the shaft size has been predetermined. Selection of the bearing can be made using the following formula:

$$Cr \geq P \times fn \times fL \times fd.$$

Where Cr = radial dynamic rating.

P = calculated effective radial load.

fn = speed (rpm) factor.

fL = life (hours) factor.

fd = dynamic or service factor.

$$fn = (\text{rpm} \times 0.03)^{0.3}.$$

$$fL = (\text{L10 hours}/500)^{0.3}.$$

L10 hours is the expected life in hours of 90% of similar bearings under similar operating conditions.

**Note:** The product  $fn \times fL$  should not be less than 1.0.

Alternatively, bearing life may be calculated by the equation  $L10 = [Cr/(P \times fd)]^{10/3}$ , where:  
L10 = expected life of 90% of similar bearings under similar operating conditions, in millions of revolutions.

When the equivalent radial load equals the Cr rating, multiplied by the service factor, the L10 life will be 1 million revolutions.

If high temperatures (above 100°C) are involved, please refer to notes on page 7.

Refer to the next page for further notes.

**BEARING LIFE REQUIREMENTS**

Suggested lives and factors for specific operating conditions are shown below.

Operating conditions	Life factor (fL)	Life hours (L10)
8 hour daily working	3.0-4.0	20,000- 50,000
Continuous operation main drives, large electrical machinery, flywheels, mining	4.4-5.0	70,000-100,000
Continuous operation and an exceptionally high degree of reliability	5.0-6.0	100,000-200,000

We recommend that bearings are specified to provide an L10 life of at least 10,000 hours, except for bearings selected on the basis of static rating.

**DYNAMIC FACTOR**

The appropriate dynamic factor  $f_d$  may be taken from the chart below.

Conditions	$f_d$
Steady load or small fluctuations	1.0 - 1.3
Light shock	1.3 - 2.0
Heavy shock, vibration or reciprocation	2.0 - 3.5

**LIFE ADJUSTMENT FACTORS FOR CRITICAL APPLICATIONS**

The basic L10 life obtained by using the equations or tables in this catalogue are adequate for normal applications.

Bearings for most normal applications are specified using the L10 life as above. For reliability greater than 90%, replace L10 in the above equations with  $L_{na}$  where  $L_{na} = a_l \times L_{10}$  and is given in the table below.

**Reliability**

%	95	96	97	98	99
$a_l$	0.62	0.53	0.44	0.33	0.21

**MINIMUM RADIAL LOAD**

The radial load must exceed a certain value in order to prevent the rollers skidding rather than rolling. Cooper bearings are able to operate at lower loads than other types of rolling element bearings. Minimum radial loads are generally  $C_r/65$  for GR bearings and  $C_r/120$  for EX bearings. Lower loads can be accommodated under certain conditions. Please refer to our technical department.

**BASIC STATIC LOAD RATINGS (C<sub>0r</sub>)**

The values of  $C_{0r}$  given in this publication have been calculated in accordance with ISO standards. The basic static load rating is defined as that static (radial) load which corresponds to a contact stress of 4,000 MPa (580,000 psi) at the centre of the most heavily loaded roller/raceway contact and produces a permanent deformation of 0.0001 times the roller diameter.

Where rotation is very slow (less than 5 rpm) or intermittent, bearing size can be selected based on the static load carrying capacity. The requisite basic static load rating can be determined from:

$C_{0r} = S_o \times P$

where:

$C_{0r}$  = basic static radial load rating (kN)

$P$  = effective bearing load (kN)

$S_o$  = static safety factor

Bearing Static Safety Factors,  $s_o$

Type of operation	Requirements for smooth running		
	Low	Normal	High
Vibration free	1	1.5	3
Normal	1	2	3.5
High shock loads	2.5	3	4

## SELECTION FOR AXIAL LOAD

Selection for axial load is considered independently from the radial load. Determine the axial load applied to the bearing. Knowing the speed and desired shaft size, select a bearing using the following formula:

$$Ca > (fd_a \times fd_n \times Pa) / fb$$

Where:

**Ca** = axial rating | **fd<sub>a</sub>** = dynamic or service factor

**Pa** = calculated axial load

**fd<sub>n</sub>** = Velocity (dn) factor (See scale opposite)

**fb** = bearing factor (see scale opposite)

The dynamic or service factor **fd<sub>a</sub>** may be 1 for peak overload periods and 1.1 to 1.2 for general running (depending on smoothness), where the load is accurately known. An allowance for any inaccuracies in the calculated loads must be made to ensure that the bearing axial capacity is not exceeded.

Retaining rings or recessed journals are required when  $Pa > 0.5Ca$  for 01, 02 and 03 Series, if  $Pa > 0.25Ca$  for 01E and 02E Series bearings, and if  $Pa > 0.2Ca$  for 100 Series bearings. Refer to our technical department.

If the axial load exceeds 40% of the radial load, please consult our technical department. The axial load capacity is decreased by 50% if the lubricant does not have extreme pressure (EP) additives.

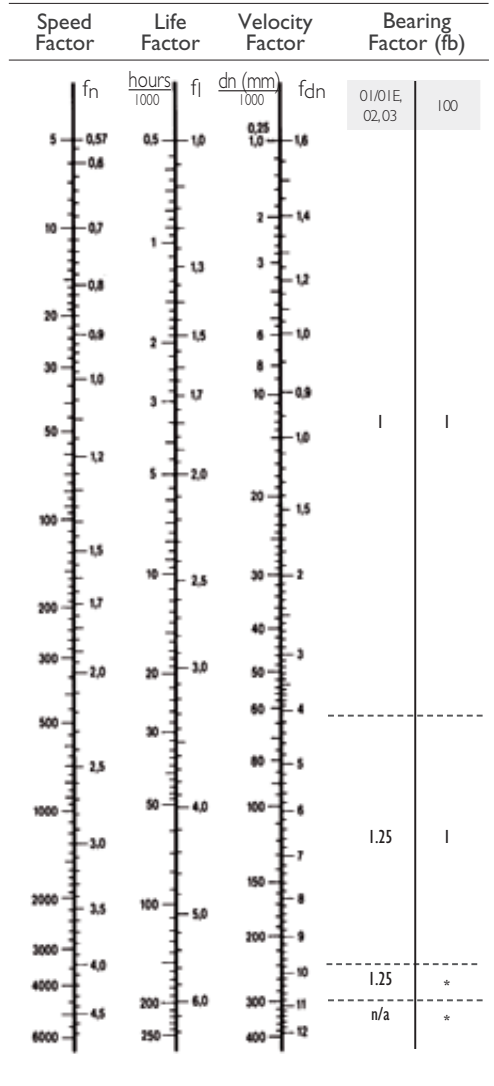
## TEMPERATURE AND BEARING CLEARANCE

The normal temperature range for standard bearings is 0°C to 100°C. For temperatures outside this range, our technical department should be consulted as special attention may be required to materials, seals and lubrication.

The standard bearing clearance is usually suitable for temperatures up to 100°C provided that the difference between shaft and housing temperatures is not more than 40°C. For higher temperatures or greater temperature differentials, bearings of C3 or C5 clearance are offered.

Reduced (C2) clearance bearings are offered where appropriate (e.g. for reciprocating or vibratory applications).

Bearing dynamic capacity is decreased by increased clearance or operation over 150°C



Velocity factor **fd<sub>n</sub>** applies only to axial loads on GR bearings.

$dn$  (mm) = bearing bore (mm) x shaft speed (rpm)

\* refer to technical department





## SHAFT TOLERANCE

Journal diameter tolerance is generally h7.

For speeds over 150,000mm dn and all C2 clearance bearings the tolerance is h6.

For light loads and slow speeds wider tolerances up to h9 may be permissible. Please consult our technical department if a wider tolerance is required, or if it is required to mount a bearing on an existing shaft with a different tolerance to those specified above.

The tolerance on roundness and parallelism of the journal is IT6 in all cases.

Where the shaft is stepped so that the diameter of the shaft at the seals is different to the journal diameter, a wider tolerance (h9) is permissible for the shaft diameter at the seals.

The table below shows relevant tolerances for shaft diameters up to 600mm. The maximum surface roughness of the journal should not exceed 3.2µm Ra when diameter tolerance h7 applies, or 1.6µm Ra when tolerance h6 applies. The maximum surface roughness of the portion of the shaft under the seals is specified on pages 10 and 11.

### TOLERANCES OF SHAFT DIAMETERS

Diameter (mm)	Over	-	50	80	120	180	250	315	400	500
	Up to and including	50	80	120	180	250	315	400	500	630
Tolerance in µm										
Tolerance band (to BS 4500)	h6	+0	+0	+0	+0	+0	+0	+0	+0	+0
		-16	-19	-22	-25	-29	-32	-36	-40	-44
	h7	+0	+0	+0	+0	+0	+0	+0	+0	+0
		-25	-30	-35	-40	-46	-52	-57	-63	-70
	h9	+0	+0	+0	+0	+0	+0	+0	+0	+0
		-62	-74	-87	-100	-115	-130	-140	-155	-175
	IT6	16	19	22	25	29	32	36	40	44

## SEALING SOLUTIONS

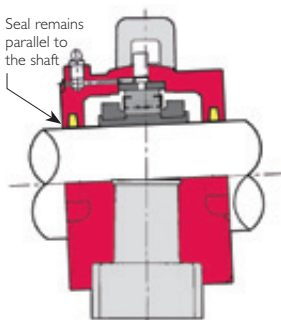
Efficient performance and long life of the roller bearing depend to a large extent upon the exclusion of foreign matter from the internal bearing surfaces. Grease, or oil, serves the dual purpose of lubricating these surfaces and protecting them from corrosion. Thus the seal must prevent dust, grit and moisture from entering the bearing and at the same time prevent grease or oil from escaping.

### ALIGNMENT FEATURE

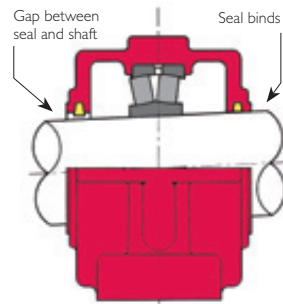
Cooper supplies various mounting options and for all, except the hanger mountings, the bearing is housed in a cartridge supported by the mounting unit. Cartridges have a spherical outer surface that fits into a conforming surface in the mounting unit (such as pedestal or flange) in the manner of a ball and socket joint.

Any shaft misalignment that may exist tends to move the cartridge, seal and bearing together, maintaining the seal on an axis parallel to the shaft. Standard pedestals and flanges are designed to allow up to  $2\frac{1}{2}^\circ$  misalignment between the shaft and housing, under constant or slowly changing alignment conditions, without compromising sealing.

Compare this with the situation that occurs with a double row spherical bearing in a standard pedestal. If the pedestal is not accurately aligned with the shaft, contact between the seal and the shaft tends to be lost at one side, and the seal presses more heavily against the shaft at the other. In the worst case a gap may open, compromising the sealing, or the seal may bind on the shaft. Although felt seals are shown in the illustration, a similar situation occurs with labyrinth or lip seals.



**COOPER  
SPLIT ROLLER  
BEARING**



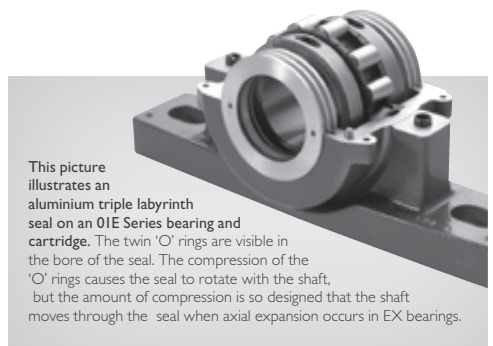
**DOUBLE ROW  
SPHERICAL  
BEARING**

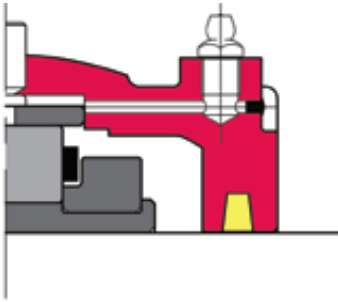
### SEAL TYPES

Cartridges for shaft sizes up to 300mm/12" are usually supplied with a general purpose felt seal. The felt groove will also accommodate high temperature packing seals, lipped seals or suitable blanking plates.

Triple labyrinth seals are often supplied as an alternative and are precision non-rubbing seals capable of high speed operation. Due to the aligning feature described above, extremely close tolerances can be maintained between the housing and the shaft. The result is an effective sealing element which is one of the best in the anti-friction bearing industry.

Cartridges for shaft sizes over 300mm/12" are supplied with grease groove seals as standard. Cooper offer a wide range of sealing options, the more common of which are illustrated overleaf. For special applications seals may be made from other materials and alternative special seals can be supplied to suit specific conditions.

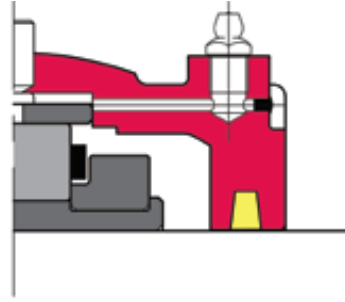




### FELT (F)

Standard in UK and Europe

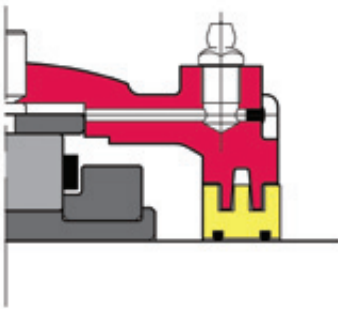
Temperature limits -70°C to 100°C  
 Maximum speed 150000 dn(mm)  
 Shaft surface finish 1.6 µm Ra max.



### HIGH TEMPERATURE PACKING (HTP)

A direct replacement for felt in high temperature applications.

Temperature limits -70°C to 260°C  
 Maximum speed 150000 dn(mm)  
 Shaft surface finish 0.8 µm Ra max.



### ALUMINUM TRIPLE LABYRINTH (ATL)

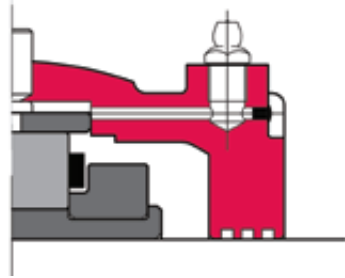
**High temperature version (ATL HT)**

**Low temperature version (ATL LT)**

Machined aluminium bodied triple labyrinth seal for high speed and general applications. ATL supplied as standard sealing arrangement in USA and Canada. ATL HT and ATL LT are fitted with O rings of different materials.

Temperature limits ATL -20°C to 100°C  
 ATL HT -20°C to 175°C  
 ATL LT -60°C to 100°C

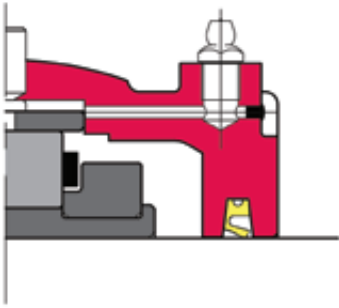
Maximum speed Bearing maximum  
 Shaft surface finish 3.2 µm Ra max.



### GREASE GROOVE (LAB)

Suitable for high or slow speed operations. Particularly successful on marine applications.

Temperature limits Bearing maximum  
 Maximum speed Bearing maximum  
 Shaft surface finish 3.2 µm Ra max.



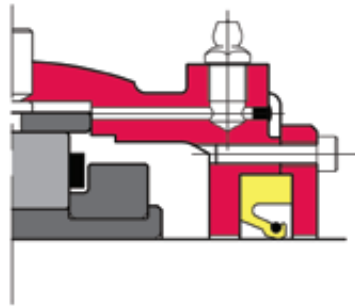
### SYNTHETIC RUBBER SINGLE LIP (SRS)

**High temperature version (SRS HT)**

**Low temperature version (SRS LT)**

Suitable for wet but not submerged conditions. Can be used for improved lubricant retention by mounting lip inwards.

Temperature limits	-70°C to 260°C
Maximum speed	150000 dn(mm)
Shaft surface finish	0.8 µm Ra max.



### SPRING-LOADED SINGLE LIP WITH RETAINING PLATE (SRSRP)

**High pressure version (SRSRP 40M)**

Suitable for severe splash or completely submerged conditions. The standard version is suitable for up to 2m of water; the high pressure version is suitable for up to 40m of water.

Temperature limits	-20°C to 100°C
Maximum speed	150000 dn(mm)
Shaft surface finish	0.4 µm Ra max.

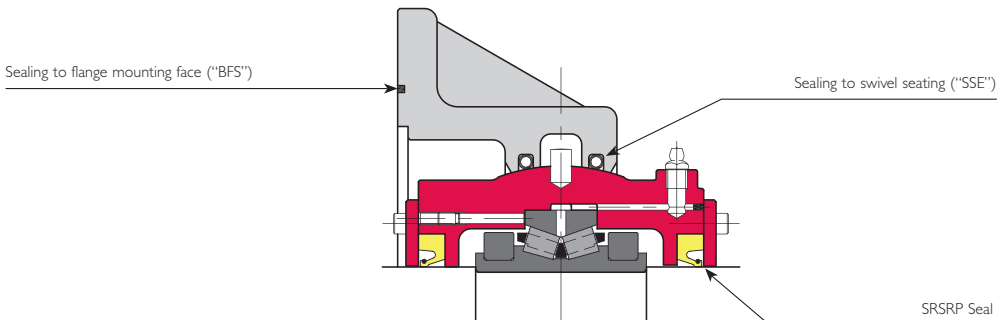
## BULKHEAD SEALING

It is often found economical to combine a bearing and bulkhead seal into one unit. This reduces the number of individual units required, and prevents problems with shaft eccentricity sometimes encountered at the bulkhead seal when it is separated from the bearing.

Generally, a specially adapted flange mounting is used and the bearing is fitted with SRSRP seals.

Generally, the flange incorporates additional sealing to the cartridge seating, and may include sealing on the mounting face ('backface').

Where the shaft surface speed is too high for standard SRSRP seals, an alternative high speed version is available, or alternative seal types can be used if a moderate leakage of water is permitted through the bearing in an emergency.



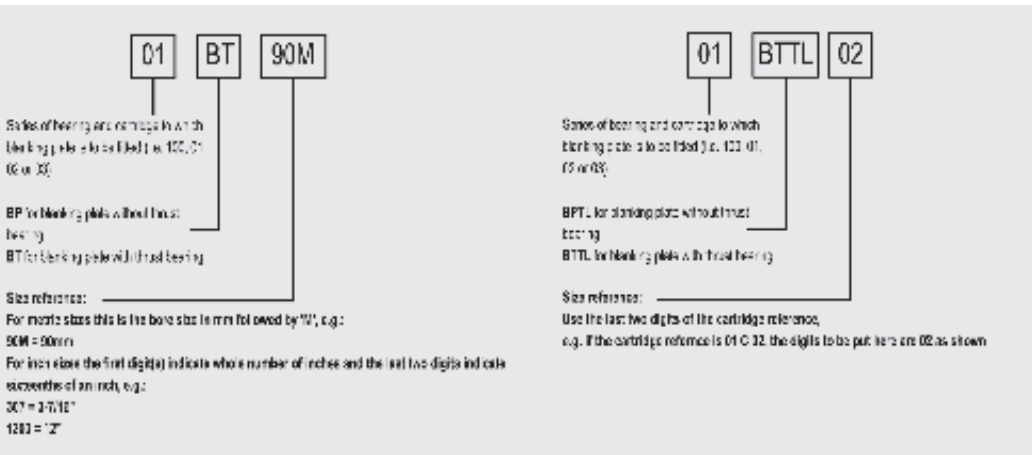
## BLANKING PLATES

Where shafts terminate at the bearings, 'blanking plates' may be used to close off the cartridge ends. Blanking plates are available to suit standard single groove and TL cartridges.

On sizes up to 90mm/3½" blanking plates accommodating thrust bearings can be used for axial location of shafts.

A typical application is on the shafts of belt conveyors.

For blanking plates with thrust bearings, the shaft ends must be machined smooth and square. Upon assembly, there must be slight clearance between the shaft ends and the thrust bearings (i.e. slight end float), without the possibility of preload. Blanking plates with thrust bearings are limited to a maximum speed of 20,000mm dn (calculated using the shaft size, not the bore of the thrust bearing) and to shaft location only (i.e. only nominal axial loading).



## ORDERING

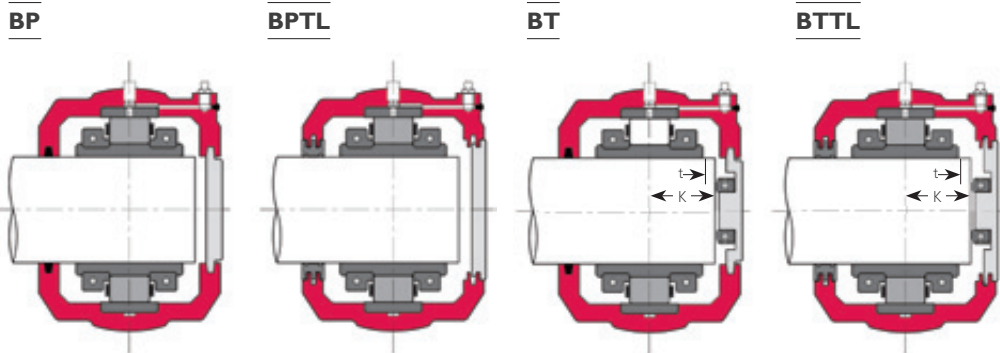
For blanking plates to suit single groove cartridges, the part code is made up as follows:

For blanking plates to suit TL cartridges, the part code is made up as follows:

BT and BTTL blanking plates are only regarded as

standard items for 01 and 02 series cartridges up to 90mm/3½" bore size.

For all blanking plates, if the cartridge end bore is machined to suit a shaft diameter that is different to the bore of the bearing, refer to Cooper for the relevant part code.



## DIMENSIONS

Dimensions for shaft terminations, when using blanking plates with thrust bearings, are shown below:

Shaft diameter d		K	01 Series		02 Series	
			t	K	t	
35mm	1 <sup>3</sup> / <sub>16</sub> "	27	2	-	-	
40mm	1 <sup>1</sup> / <sub>4</sub> " 1 <sup>7</sup> / <sub>16</sub> " 1 <sup>1</sup> / <sub>2</sub> "					
45mm	1 <sup>1</sup> / <sub>16</sub> " 1 <sup>3</sup> / <sub>4</sub> "	29	1	-	-	
50mm	1 <sup>15</sup> / <sub>16</sub> " 2"	29	1	35	1	
55mm		30	2	-	-	
60mm	2 <sup>3</sup> / <sub>16</sub> "	30	2	38	2	
65mm	2 <sup>1</sup> / <sub>4</sub> " 2 <sup>7</sup> / <sub>16</sub> " 2 <sup>1</sup> / <sub>2</sub> "					
70mm	2 <sup>1</sup> / <sub>16</sub> "	35	4	41	0	
75mm	2 <sup>15</sup> / <sub>16</sub> " 3"					
80mm	3 <sup>3</sup> / <sub>16</sub> "	40	4	48	3	
85mm	3 <sup>1</sup> / <sub>4</sub> "					
90mm	3 <sup>7</sup> / <sub>16</sub> " 3 <sup>1</sup> / <sub>2</sub> "					

## INSTALLATION AND ASSEMBLY

The following is a typical assembly sequence of a pedestal or flange mounted bearing and is included to allow engineers using this catalogue to understand the assembly process of the Cooper bearing and to allow them to produce relevant documentation for their own machines, which may require this information. A full set of assembly instructions is usually packaged with each standard bearing, for use by the fitters. If non-standard bearings are to be used, and/or a different assembly sequence is required for the application, specific assembly instructions can be supplied on request.

The illustrations use a pedestal mounted unit as an example.

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### PRELIMINARY NOTES

Bearings must be disassembled before assembling into position.

Unwrap the bearing parts, remove the outer race halves (if supplied assembled around other parts), and separate the halves of the cage (if required). Various cage jointing methods are used depending on size and series of bearing. Undo the clamping ring screws and remove the clamping rings from the inner race.

Remove the preservative from all surfaces of all the parts.

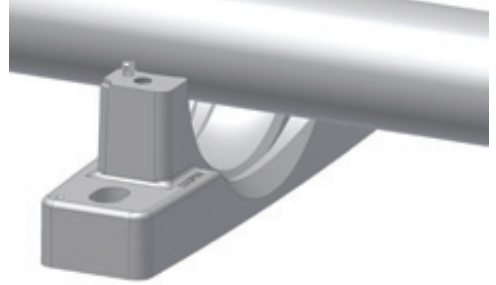
All bearing and housing components (with the exception of pressed steel, die cast and plastic cages) are marked with matching numbers or letters on each half. Ensure that the match marks on the halves are the same and are placed together on each component when the bearing is assembled.

Even though cage halves are not necessarily match-marked, they must not be mixed, as the rollers are graded into sets.

Complete roller bearings are interchangeable between similar Cooper cartridges. Individual parts should not be interchanged. Cartridges are interchangeable between standard outer housings provided that standard clearances are specified.

### STEP 1 – HOUSING BASE

Place the pedestal base or flange lower half into position. If the precise location of the housing is predetermined it may be bolted into position. Generally, pedestal bases may require slight movement at a later stage in order to accurately position the shaft.

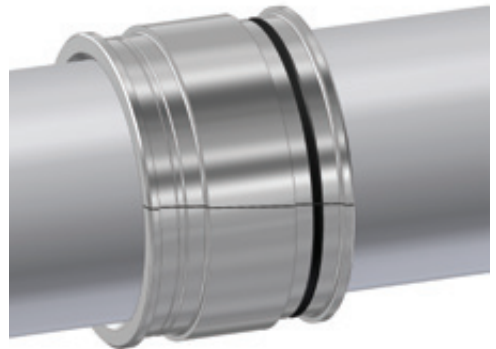


*Note: The pedestal base is not shown in most of the illustrations that follow, for clarity of other details.*

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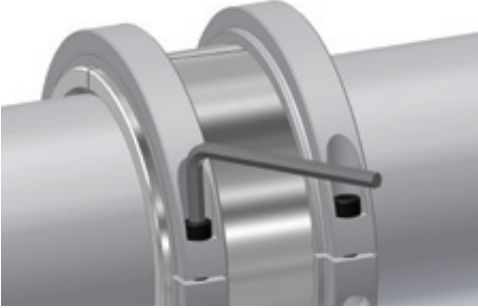
### STEP 2 – INNER RACE

Lightly oil the shaft with thin machine oil, then remove the excess with a clean wiper. Place the inner race at the correct position on the cleaned shaft. Soft packing on the joint faces, or feeler gauges, should be used to ensure that the joint gaps are approximately equal. Inner races of expansion bearings are usually set centrally with the outer race, but in cases of significant axial expansion there may be a deliberate offset. (This is usually up to a maximum of 10% of the roller length, but may be more in the case of special types of bearing).



**STEP 3 – CLAMPING RINGS**

Fit the clamping rings with joints at approximately 90° to the inner race joints (45° in the case of large bearings with 4-part clamping rings). Progressively tighten all clamping ring screws.



Tap down each half of the inner race and clamping rings all around the shaft using a soft-faced hammer, or insert a hardwood block between a steel hammer and the bearing parts. Retighten the clamping ring screws. Repeat until screws remain fully tight.



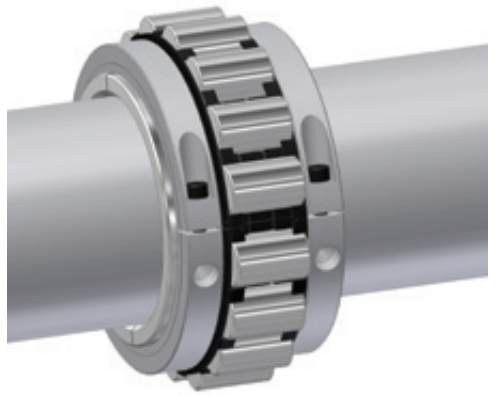
Check that there are approximately equal gaps at both joints of the inner race.

Check that there are approximately equal joints at both (or all 4) joints of each clamping ring.

**STEP 4 – CAGE AND ROLLERS**

Coat the bore of the cage and roller assembly with grease and lightly cover the inner race assembly (fitted to the shaft) all over with grease for protection.

Assemble the cage (complete with rollers) around the inner race. The two halves of the cage are fixed together by various means depending on size and series of bearing. (Further details are to be found in the assembly leaflets supplied with the bearing, or details of the joint of a particular size and series of cage can be supplied on request).

**STEP 5 – CARTRIDGE AND OUTER RACE SUB-ASSEMBLY**

Place the half outer race with the lubrication hole in the top half of the cartridge and the second half outer race into the lower half of the cartridge. Ensure that the ends of the outer race project from the cartridge joint face by equal amounts. All lipped outer races must be clamped axially. Side screws 'A' are fitted to all GR cartridges. Side rods 'B' are fitted to some sizes only.



Radial screws 'C' and washers are fitted to both EX and GR cartridges of larger sizes only.



#### EX CARTRIDGES:

Just enter radial screws 'C' (where fitted, complete with washers) into the corresponding outer race holes, but do not tighten. Place the two half cartridges together, complete with half outer races, and fully tighten the joint screws 'D'. Fully tighten the radial screws 'C'.

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#### CARTRIDGES FOR LIPPED OUTER RACES (GRAND SPECIAL TYPES):

Just enter radial screws 'C' (where fitted, complete with washers) into the corresponding outer race holes, but do not tighten. Place the two half cartridges together, complete with outer races, and fully tighten the joint screws 'D'. Enter the side rods 'B' (where fitted) and side screws 'A'. Progressively and fully tighten the side screws 'A' and radial screws 'C' (where fitted).

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#### ALL TYPES:

Inject grease to fill the grease passages. Remove joint screws 'D' and separate cartridge halves, taking care that the outer race halves do not fall out of position in their respective half-cartridges.

#### STEP 6 – SEALS

If the unit is to be fitted with aluminium triple labyrinth (ATL) seals, fit them onto the shaft as follows:

Separate the ATL seal halves by driving out the two jointing pins. Lubricate the 'O' rings in the bore with grease. Reassemble on the shaft by compressing the 'O' rings of both halves sufficiently to allow the jointing pins to be reinserted, and reinsert the pins. Note: ATL seals are able to slide along the shaft once assembled



Felt seals should be soaked in oil before fitting into the cartridge end bores. Most types of seal other than triple labyrinth seals and SRSRP seals are fitted into the cartridge end bores before assembling the cartridge into position.

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#### STEP 7 – LUBRICATION

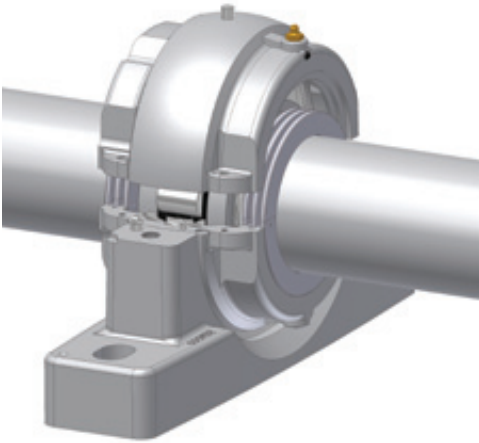
Coat the inside of the cartridge, cage and rollers and all seals with grease (See page 18 for correct quantity). For speeds over 150,000mm dn (shaft diameter in mm multiplied by shaft speed in rpm) approximately 40% of the grease used should be applied to the bearing parts and the remainder applied to the inside of the cartridge. This is to avoid excessive churning of grease when running at high speed.

**STEP 8 – CARTRIDGE**

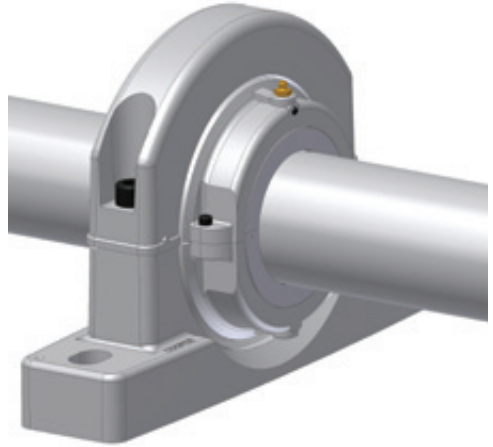
Lubricate the spherical seating of the bottom half of the cartridge with grease.

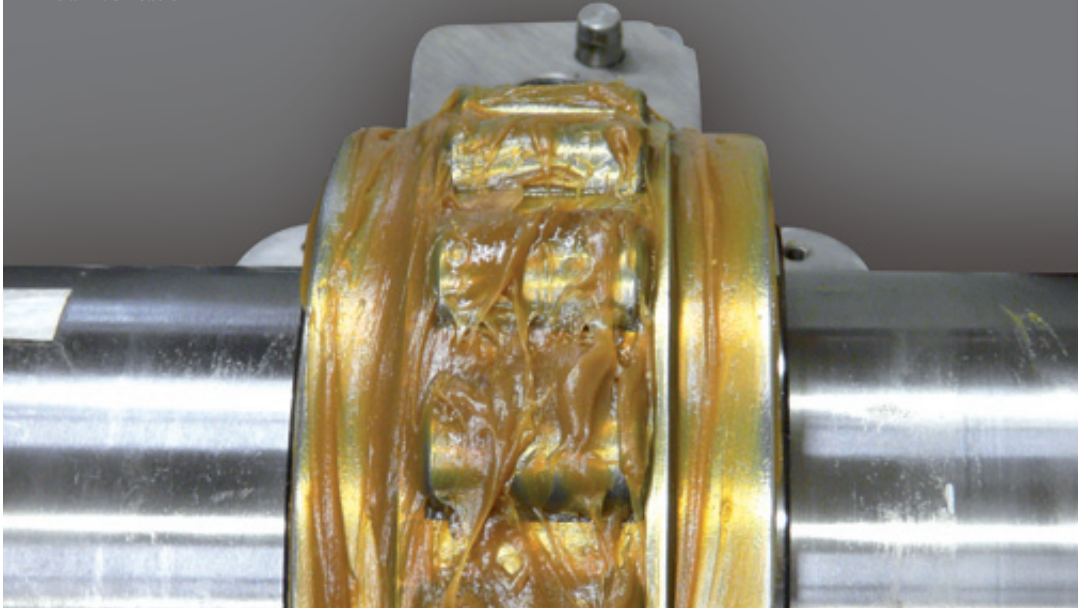
Place the bottom half of the cartridge on top of the bearing and rotate 180° into the pedestal base or half-flange.

Place the top half of the cartridge on top of the bottom half, close the cartridge and fully tighten the joint screws. Lubricate the spherical seating with grease.

**STEP 9 – HOUSING**

If not already done, tighten the bolts fixing the pedestal base or lower flange half into position. Place the pedestal cap or flange top half into position. If it is safe to do so, running the shaft for a time without the outer housing joint screws fully tightened will help the bearing to accurately align. Fully tighten the joint screws.





## GREASE QUANTITIES FOR INITIAL LUBRICATION

The quantity of grease required on initial assembly is dependent upon operating speed and temperature.

If the operating temperature is below 80°C the quantity of grease may be determined directly according to bearing reference and operating speed from the following table.

If the operating temperature is above 80°C, a 25% pack of grease should be used regardless of speed (refer to the right hand column of the table). With a 'full pack' of grease the space within the cartridge (i.e. surrounding the bearing components) in the assembled unit is completely filled with grease.

The table assumes normal density grease (about 0.85g/cm<sup>3</sup>).

### 100 SERIES

Group Reference	Speed (rpm)	Grease (full pack)	Speed (rpm)		Grease (75% full pack)	Speed (rpm)		Grease (50% full pack)	Speed (rpm)		Grease (33% full pack)	Speed (rpm)	Grease (25% full pack)
	up to	(kg)	from	to	(kg)	from	to	(kg)	from	to	(kg)	over	(kg)
100 300	656	0.15	656	1312	0.11	1312	1969	0.08	1969	2625	0.05	2625	0.04
100 307	573	0.22	573	1145	0.17	1145	1718	0.11	1718	2291	0.07	2291	0.06
100 400	492	0.36	492	984	0.27	984	1476	0.18	1476	1969	0.12	1969	0.09
100 408	437	0.36	437	875	0.27	875	1312	0.18	1312	1750	0.12	1750	0.09
100 500	394	0.49	394	787	0.37	787	1181	0.25	1181	1575	0.16	1575	0.12
100 508	358	0.64	358	716	0.48	716	1074	0.32	1074	1432	0.21	1432	0.16
100 600	328	1.02	328	656	0.77	656	984	0.51	984	1312	0.34	1312	0.26

**01/0E SERIES**

Group Reference	Speed (rpm)	Grease (full pack)	Speed (rpm)		Grease (75% full pack)	Speed (rpm)		Grease (50% full pack)	Speed (rpm)		Grease (33% full pack)	Speed (rpm)	Grease (25% full pack)
	up to	(kg)	from	to	(kg)	from	to	(kg)	from	to	(kg)	over	(kg)
01 108	1312	0.06	1312	2625	0.05	2625	3937	0.03	3937	5249	0.02	5249	0.02
01E 200	984	0.09	984	1969	0.07	1969	2953	0.05	2953	3937	0.03	3937	0.02
01E 208	787	0.15	787	1575	0.11	1575	2362	0.08	2362	3150	0.05	3150	0.04
01E 300	656	0.18	656	1312	0.14	1312	1969	0.09	1969	2625	0.06	2625	0.05
01E 308	562	0.30	562	1125	0.23	1125	1687	0.15	1687	2250	0.10	2250	0.08
01E 400	492	0.36	492	984	0.27	984	1476	0.18	1476	1969	0.12	1969	0.09
01 408	437	0.51	437	875	0.38	875	1312	0.26	1312	1750	0.17	1750	0.13
01 500	394	0.60	394	787	0.45	787	1181	0.30	1181	1575	0.20	1575	0.15
01 508	358	0.78	358	716	0.59	716	1074	0.39	1074	1432	0.26	1432	0.20
01 600	328	0.90	328	656	0.68	656	984	0.45	984	1312	0.30	1312	0.23
01E 608	303	1.00	303	606	0.75	606	909	0.50	909	1211	0.33	1211	0.25
01E 700	281	1.20	281	562	0.90	562	844	0.60	844	1125	0.40	1125	0.30
01E 800	246	1.40	246	492	1.05	492	738	0.70	738	984	0.46	984	0.35
01E 900	219	1.40	219	437	1.05	437	656	0.70	656	875	0.46	875	0.35
01E 1000	197	2.00	197	394	1.50	394	591	1.00	591	787	0.66	787	0.50
01E 1100	179	2.00	179	358	1.50	358	537	1.00	537	716	0.66	716	0.50
01E 1200	164	2.00	164	328	1.50	328	492	1.00	492	656	0.66	656	0.50
01 1300	151	2.76	151	303	2.07	303	454	1.38	454	606	0.91	606	0.69
01 1400	141	3.00	141	281	2.25	281	422	1.50	422	562	0.99	562	0.75
01 1500	131	3.00	131	262	2.25	262	394	1.50	394	525	0.99	525	0.75
01 1600	123	3.60	123	246	2.70	246	369	1.80	369	492	1.19	492	0.90
01 1700	116	4.20	116	232	3.15	232	347	2.10	347	463	1.39	463	1.05
01 1800	109	4.20	109	219	3.15	219	328	2.10	328	437	1.39	437	1.05
01 1900	104	4.80	104	207	3.60	207	311	2.40	311	414	1.58	414	1.20
01 2000	98	4.80	98	197	3.60	197	295	2.40	295	394	1.58	394	1.20
01 2100	94	5.40	94	187	4.05	187	281	2.70	281	375	1.78	375	1.35
01 2200	89	5.40	89	179	4.05	179	268	2.70	268	358	1.78	358	1.35
01 2300	86	6.00	86	171	4.50	171	257	3.00	257	342	1.98	342	1.50
01 2400	82	6.00	82	164	4.50	164	246	3.00	246	328	1.98	328	1.50

**02/02E SERIES**

Group Reference	Speed (rpm)	Grease (full pack)	Speed (rpm)		Grease (75% full pack)	Speed (rpm)		Grease (50% full pack)	Speed (rpm)		Grease (33% full pack)	Speed (rpm)	Grease (25% full pack)
	up to	(kg)	from	to	(kg)	from	to	(kg)	from	to	(kg)	over	(kg)
02 200	984	0.15	984	1969	0.11	1969	2953	0.08	2953	3937	0.05	3937	0.04
02 208	787	0.21	787	1575	0.16	1575	2362	0.11	2362	3150	0.07	3150	0.05
02 300	656	0.30	656	1312	0.23	1312	1969	0.15	1969	2625	0.10	2625	0.08
02 308	562	0.45	562	1125	0.34	1125	1687	0.23	1687	2250	0.15	2250	0.11
02 400	492	0.60	492	984	0.45	984	1476	0.30	1476	1969	0.20	1969	0.15
02 408	437	0.90	437	875	0.68	875	1312	0.45	1312	1750	0.30	1750	0.23
02 500	394	1.20	394	787	0.90	787	1181	0.60	1181	1575	0.40	1575	0.30
02 508	358	1.40	358	716	1.05	716	1074	0.70	1074	1432	0.46	1432	0.35
02 600	328	1.40	328	656	1.05	656	984	0.70	984	1312	0.46	1312	0.35
02E 608	303	1.40	303	606	1.05	606	909	0.70	909	1211	0.46	1211	0.35
02E 700	303	2.00	303	606	1.50	606	909	1.00	909	1211	0.66	1211	0.50
02E 800	246	2.70	246	492	2.03	492	738	1.35	738	984	0.89	984	0.68
02E 900	219	3.60	219	437	2.70	437	656	1.80	656	875	1.19	875	0.90
02E 1000	197	4.20	197	394	3.15	394	591	2.10	591	787	1.39	787	1.05
02E 1100	179	4.80	179	358	3.60	358	537	2.40	537	716	1.58	716	1.20
02E 1200	164	5.40	164	328	4.05	328	492	2.70	492	656	1.78	656	1.35
02 1300	151	6.60	151	303	4.95	303	454	3.30	454	606	2.18	606	1.65
02 1400	141	7.20	141	281	5.40	281	422	3.60	422	562	2.38	562	1.80
02 1500	131	7.80	131	262	5.85	262	394	3.90	394	525	2.57	525	1.95
02 1600	123	9.00	123	246	6.75	246	369	4.50	369	492	2.97	492	2.25
02 1700	116	9.60	116	232	7.20	232	347	4.80	347	463	3.17	463	2.40
02 1800	109	9.60	109	219	7.20	219	328	4.80	328	437	3.17	437	2.40
02 1900	104	10.20	104	207	7.65	207	311	5.10	311	414	3.37	414	2.55
02 2000	98	10.80	98	197	8.10	197	295	5.40	295	394	3.56	394	2.70
02 2100	94	11.40	94	187	8.55	187	281	5.70	281	375	3.76	375	2.85
02 2200	89	11.40	89	179	8.55	179	268	5.70	268	358	3.76	358	2.85
02 2300	86	12.60	86	171	9.45	171	257	6.30	257	342	4.16	342	3.15
02 2400	82	12.60	82	164	9.45	164	246	6.30	246	328	4.16	328	3.15

**03 SERIES**

Group Reference	Speed (rpm)	Grease (full pack)	Speed (rpm)		Grease (75% full pack)	Speed (rpm)		Grease (50% full pack)	Speed (rpm)		Grease (33% full pack)	Speed (rpm)	Grease (25% full pack)
	up to	(kg)	from	to	(kg)	from	to	(kg)	from	to	(kg)	over	(kg)
03 400	492	1.20	492	984	0.90	984	1476	0.60	1476	1969	0.40	1969	0.30
03 408	437	1.40	437	875	1.05	875	1312	0.70	1312	1750	0.46	1750	0.35
03 500	394	1.40	394	787	1.05	787	1181	0.70	1181	1575	0.46	1575	0.35
03 508	358	2.00	358	716	1.50	716	1074	1.00	1074	1432	0.66	1432	0.50
03 600	328	2.70	328	656	2.03	656	984	1.35	984	1312	0.89	1312	0.68
03 700	303	3.60	303	606	2.70	606	909	1.80	909	1211	1.19	1211	0.90
03 800	246	5.40	246	492	4.05	492	738	2.70	738	984	1.78	984	1.35
03 900	219	6.90	219	437	5.18	437	656	3.45	656	875	2.28	875	1.73
03 1000	197	8.10	197	394	6.08	394	591	4.05	591	787	2.67	787	2.03
03E 1100	179	10.00	179	358	7.50	358	537	5.00	537	716	3.30	716	2.50
03 1200	164	11.00	164	328	8.25	328	492	5.50	492	656	3.63	656	2.75
03 1300	151	12.00	151	303	9.00	303	454	6.00	454	606	3.96	606	3.00
03E 1400	141	15.00	141	281	11.25	281	422	7.50	422	562	4.95	562	3.75
03 1500	131	16.20	131	262	12.15	262	394	8.10	394	525	5.35	525	4.05
03E 1700	116	21.60	116	232	16.20	232	347	10.80	347	463	7.13	463	5.40
03E 1800	109	24.60	109	219	18.45	219	328	12.30	328	437	8.12	437	6.15
03 2000	98	30.00	98	197	22.50	197	295	15.00	295	394	9.90	394	7.50
03E 2200	89	36.00	89	179	27.00	179	268	18.00	268	358	11.88	358	9.00
03E 2300	86	38.40	86	171	28.80	171	257	19.20	257	342	12.67	342	9.60

## SCREW TIGHTENING TORQUES

Screw size	Tightening torques (Nm)				Key size A/F	
	Clamping ring screw (1)	Pedestal or cartridge joint screw	Cartridge radial screw	Side screw	Socket head cap screw (2)	Side screw
M3	2.0	-	-	-	2.5	-
M4	4.5	3.5	-	2.0	3	2
M5	8.5	6.5	-	-	4	-
M6	15	11	-	7.8	5	3
M8	35	26.0	-	-	6	-
M10	70.0	52.5	35.0	30.0	8	5
M12	120	90	60.0	-	10	-
M16	300	225	150	125	14	8
M20	560	420	-	-	17	-
M24	950	712	-	-	19	-

1) For vertical shaft or high thrust applications this may be increased by up to 20%

2) All screws except side screw

## I00 SERIES

Group Reference	Clamping ring screw	Cartridge joint screw	Cartridge radial screw	Side screw	Pedestal joint screw	Flange joint screw
I00 300	M3	M4	-	M4	M10	M10
I00 307	M4	M4	-	M4	M12	M12
I00 400	M4	M5	-	M4	M16	M12
I00 408	M5	M6	-	M4	M16	M16
I00 500	M6	M6	-	M6	M20	M16
I00 508	M6	M6	-	M6	M20	M20
I00 600	M6	M8	-	M6	M20	M20

## O1/O1E SERIES

Group Reference	Clamping ring screw	Cartridge joint screw	Cartridge radial screw	Side screw	Pedestal joint screw	Flange joint screw
O1 108	M4	M4	-	M4	M8	M8
O1E 200	M4	M4	-	M4	M8	M8
O1E 208	M4	M4	-	M4	M10	M10
O1E 300	M4	M4	-	M4	M12	M12
O1E 308	M5	M5	-	M4	M16	M12
O1E 400	M6	M6	-	M4	M16	M16
O1 408	M6	M6	-	M6	M20	M16
O1 500	M6	M6	-	M6	M20	M20
O1 508	M8	M8	-	M6	M20	M20
O1 600	M8	M8	-	M6	M20	M20
O1E 608	M8	M8	-	M6	M16	M20
O1E 700	M8	M8	-	M6	M16	M20
O1E 800	M8	M8	M10	M6	M16	M24
O1E 900	M10	M10	M10	M6	M16	M24
O1E 1000	M10	M10	M10	M6	M20	M24
O1E 1100	M10	M10	M10	M10	M20	M24
O1E 1200	M10	M10	M10	M10	M20	M24
O1 1300	M12	M12	M10	M10	M20	M24
O1 1400	M12	M12	M10	M10	M20	M24
O1 1500	M12	M12	M10	M10	M20	M24
O1 1600	M12	M12	M10	M10	M20	M24
O1 1700	M12	M12	M12	M10	M20	-
O1 1800	M12	M12	M12	M10	M20	-
O1 1900	M12	M12	M12	M10	M20	-
O1 2000	M16	M16	M12	M10	M20	-
O1 2100	M16	M16	M12	M10	M20	-
O1 2200	M16	M16	M12	M10	M20	-
O1 2300	M16	M16	M12	M10	M20	-
O1 2400	M16	M16	M12	M10	M20	-

**02/02E SERIES**

Group Reference	Clamping ring screw	Cartridge joint screw	Cartridge radial screw	Side screw	Pedestal joint screw	Flange joint screw
02 200	M5	M5	-	M4	M10	M10
02 208	M5	M5	-	M4	M12	M12
02 300	M6	M6	-	M4	M16	M12
02 308	M6	M6	-	M4	M16	M16
02 400	M6	M6	-	M4	M20	M16
02 408	M8	M8	-	M6	M20	M20
02 500	M8	M8	-	M6	M20	M20
02 508	M8	M8	-	M6	M20	M24
02 600	M8	M8	-	M6	M20	M24
02E 608	M10	M10	-	M6	M20	M24
02E 700	M10	M10	M10	M6	M20	M24
02E 800	M12	M12	M10	M6	M20	M24
02E 900	M12	M12	M10	M6	M20	M24
02E 1000	M12	M12	M10	M10	M20	M24
02E 1100	M16	M16	M10	M10	M20	M24
02E 1200	M16	M16	M10	M10	M20	M24
02 1300	M16	M16	M10	M10	M20	M24
02 1400	M16	M16	M12	M10	M20	-
02 1500	M16	M16	M12	M10	M20	-
02 1600	M16	M16	M12	M10	M20	-
02 1700	M16	M16	M12	M10	M20	-
02 1800	M16	M16	M12	M10	M20	-
02 1900	M20	M20	M12	M10	M24	-
02 2000	M20	M20	M12	M10	M24	-
02 2100	M20	M20	M12	M10	M24	-
02 2200	M20	M20	M12	M10	M24	-
02 2300	M20	M20	M12	M10	M24	-
02 2400	M20	M20	M12	M10	M24	-

**03 SERIES**

Group Reference	Clamping ring screw	Cartridge joint screw	Cartridge radial screw	Side screw	Pedestal joint screw
03 400	M10	M10	-	M6	M16
03 408	M10	M10	M10	M6	M16
03 500	M10	M10	M10	M6	M16
03 508	M10	M10	M10	M10	M20
03 600	M10	M10	M10	M10	M20
03 608	M12	M12	M12	M10	M20
03 700	M12	M12	M12	M10	M20
03 800	M12	M12	M12	M10	M24
03 900	M16	M16	M12	M10	M20
03 1000	M16	M16	M12	M10	M20
03E 1100	M20	M20	M12	M10	M20
03 1200	M20	M20	M12	M10	M20
03 1300	M20	M20	M12	M10	M24
03E 1400	M24	M20	M12	M16	M24
03 1500	M24	M20	M12	M10	M24
03E 1700	M24	M20	M12	M16	M24
03E 1800	M24	M20	M12	M16	M24
03 2000	M24	M20	M16	M10	M24
03 2100	M24	M20	M16	M10	M24
03E 2200	M24	M20	M12	M16	M24
03E 2300	M24	M20	M12	M16	M24



**100 SERIES**

Group Reference	Shaft Diameter d	Bearing Ratings				
		Cr (kN)	Cor (kN)	Ca (kN)	Max. Speed (rpm)	
100 300	75mm	2 15/16" 3"	91	128	7.0	4800
100 307	85mm	3 7/16"	142	209	12.3	4190
100 400	100mm	3 15/16" 4"	191	288	18.3	3600
100 408	110mm 115mm	4 7/16" 4 1/2"	279	426	22.2	3200
100 500	120mm 125mm 130mm	4 15/16" 5"	280	433	23.8	2880
100 508	140mm	5 7/16" 5 1/2"	331	520	30.5	2620
100 600	150mm	5 15/16" 6"	397	606	31.4	2400

**01/01E SERIES**

Group Reference	Shaft Diameter d	Bearing Ratings				
		Cr (kN)	Cor (kN)	Ca (kN)	Max. Speed (rpm)	
01 108	35mm 40mm	1 3-1/16" 1 1/4" 1 7/16" 1 1/2"	67	67	3.2	5400
01E 200	45mm 50mm	1 11/16" 1 3/4" 1 15/16" 2"	95	105	3.8	4630
01E 208	55mm 60mm 65mm	2 3/16" 2 1/4" 2 7/16" 2 1/2"	135	157	7.2	3940
01E 300	70mm 75mm	2 11/16" 2 3/4" 2 15/16" 3"	166	197	10.8	3310
01E 308	80mm 85mm 90mm	3 3/16" 3 1/4" 3 7/16" 3 1/2"	234	299	13.6	2790
01E 400	95mm 100mm 105mm	3 11/16" 3 3/4" 3 15/16" 4"	320	421	19.6	2340
01 408	110mm 115mm	4 3/16" 4 7/16" 4 1/2"	306	407	18.6	1970

**01/01E SERIES**

Group Reference	Shaft Diameter d	Bearing Ratings				
		Cr (kN)	Cor (kN)	Ca (kN)	Max. Speed (rpm)	
01 500	120mm 125mm 130mm	4 15/16" 5"	355	484	22.2	1740
01 508	135mm 140mm	5 3/16" 5 7/16" 5 1/2"	394	542	25.8	1570
01 600	150mm 160mm	5 15/16" 6"	428	616	29.4	1450
01E 608	160mm 170mm	6 7/16" 6 1/2"	594	863	56.5	1320
01E 700	170mm 175mm 180mm	6 15/16" 7"	557	845	52.2	1220
01E 800	190mm 200mm	7 15/16" 8"	679	1078	72.5	1070
01E 900	220mm 230mm	9"	715	1191	79.8	930
01E 1000	240mm 250mm 260mm	10"	804	1367	96.6	820
01E 1100	260mm 270mm 275mm 280mm	11"	917	1560	127	730
01E 1200	290mm 300mm	12"	1041	1885	139	650
01 1300	320mm 330mm 340mm	13"	894	1638	89.0	590
01 1400	340mm 350mm 360mm	14"	935	1774	99.6	540
01 1500	360mm 380mm	15"	1005	1925	110	500
01 1600	390mm 400mm	16"	1048	2071	116	460
01 1700	420mm	17"	1089	2218	121	430
01 1800	440mm 460mm	18"	1129	2366	127	410
01 1900	480mm	19"	1169	2433	133	380
01 2000	500mm	20"	1213	2593	138	360
01 2100	530mm	21"	1253	2755	141	340
01 2200	560mm	22"	1294	2916	142	330
01 2300	580mm	23"	1387	3138	144	310
01 2400	600mm	24"	1431	3311	147	300

**02/02E SERIES**

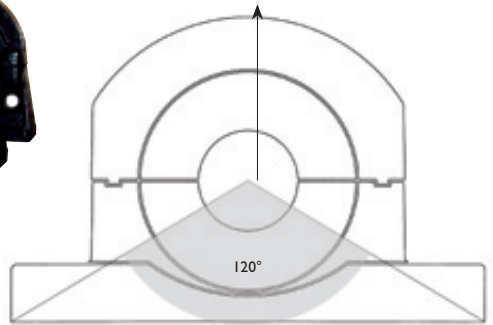
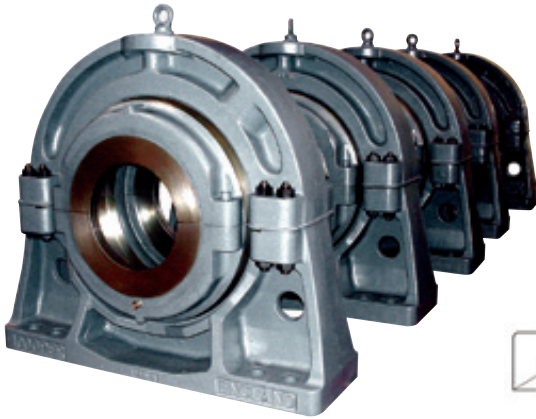
Group Reference	Shaft Diameter d	Bearing Ratings			
		Cr (kN)	Cor (kN)	Ca (kN)	Max. Speed (rpm)
02 200	50mm	119	125	6.2	4350
02 208	60mm	168	193	8.8	3680
	65mm				
	2 1/2"				
02 300	70mm	229	268	10.6	3080
	75mm				
	3"				
02 308	80mm	280	345	17.8	2520
	85mm				
	90mm				
	3 1/2"				
02 400	100mm	362	456	25.0	2130
	105mm				
	4"				
	4 3/16"				
02 408	110mm	454	583	31.2	1820
	115mm				
	4 1/2"				
02 500	120mm	547	713	38.2	1600
	125mm				
	130mm				
02 508	140mm	608	808	45.4	1450
	145mm				
	5 1/2"				
02 600	150mm	724	1005	52.4	1320
	155mm				
	160mm				
02E 608	160mm	887	1262	71.2	1200
02E 700	170mm	936	1334	82.8	1120
	175mm				

**02/02E SERIES**

Group Reference	Shaft Diameter d	Bearing Ratings			
		Cr (kN)	Cor (kN)	Ca (kN)	Max. Speed (rpm)
02E 800	190mm	1137	1627	122	960
02E 900	220mm	1233	1863	138	850
	230mm				
02E 1000	240mm	1346	1986	167	750
	250mm				
	260mm				
02E 1100	280mm	1545	2435	190	670
02E 1200	300mm	1660	2735	214	610
02 1300	320mm	1570	2622	144	550
	330mm				
02 1400	340mm	1744	2940	159	500
	350mm				
	360mm				
02 1500	380mm	1862	3254	174	460
02 1600	400mm	1948	3438	188	430
02 1700	420mm	2069	3702	202	400
02 1800	440mm	2195	4057	216	380
	460mm				
02 1900	480mm	2313	4419	230	360
02 2000	500mm	2430	4776	244	340
02 2100	530mm	2658	5137	258	330
02 2200	560mm	2790	5556	272	310
02 2300	580mm	2336	4836	227	300
02 2400	600mm	2905	5992	300	290

## 03E SERIES

Group Reference	Shaft Diameter d	Bearing Ratings				
		Cr (kN)	Cor (kN)	Ca (kN)	Max. Speed (rpm)	
03 400	100mm	3 15/16" 4"	610	684	31.2	1820
03 408	110mm 120mm	4 7/16" 4 1/2"	614	698	39.2	1640
03 500	130mm	4 15/16" 5"	706	852	49.0	1500
03 508	140mm	5 7/16" 5 1/2"	886	1069	58.8	1340
03 600	150mm	5 15/16" 6"	994	1213	69.4	1220
03 608	160mm 170mm	6 7/16" 6 1/2"	1156	1564	79.2	1110
03 700	180mm	6 15/16" 7"	1242	1704	89.0	1030
03 800	190mm 200mm	7 15/16" 8"	1451	2022	99.6	880
03 900	220mm	9"	1586	2163	109.4	760
03 1000	240mm 250mm 260mm	10"	1778	2551	131	700
03E 1100	280mm	11"	2105	3233	153	620
03 1200	290mm 300mm	12"	2156	3312	174	560
03 1300	320mm	13"	2529	3795	199	500
03E 1400	340mm 360mm	14"	2750	4392	214	460
03 1500	380mm 400mm	15"	3019	4800	251	420
03E 1700	420mm 440mm	17"	3474	6006	276	360
03E 1800	460mm	18"	3650	6156	302	340
03 2000	500mm 530mm	20"	4087	7042	347	310
03E 2200	560mm	22"	4669	8511	383	280
03E 2300	600mm	23"	4887	9130	400	270



## PEDESTALS

Pedestals (also known as Pillow Blocks) are the most common method of mounting Cooper split roller bearings (in cartridges as explained above).

Cooper standard pedestals are shown on the following pages. Pedestals with height-to-centre and bolt hole configurations to match industry standard SN, SD and SAF pillow blocks are listed separately in this catalogue.

Pedestals are common between expansion (EX) and fixed (GR) units.

## LOADS AND MOUNTING

The maximum safe radial load for a pedestal is based on the static rating ( $C_{or}$ ) of the corresponding size of roller bearing. The full static rating can be applied if the angle of the load falls within the shaded area of the sketch.

If the radial load falls outside the shaded area, if the radial load exceeds  $C_{or}$ , or if the axial loads exceed 50% of the axial rating ( $C_a$ ) of the

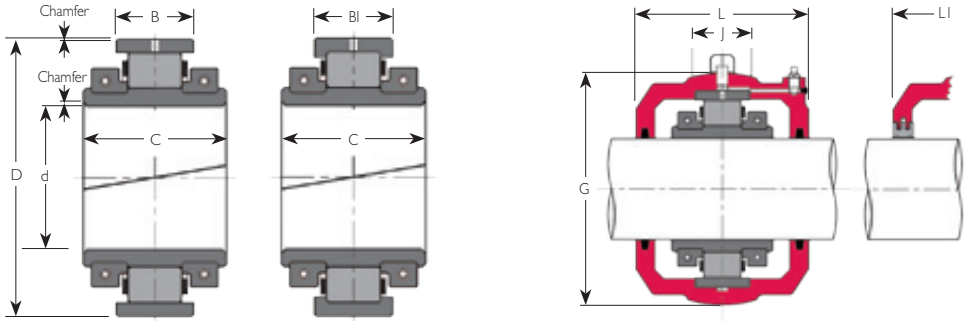
corresponding roller bearing please consult our technical department. For 100 Series bearings, the maximum axial load is reduced to 35%  $C_a$  and for 01E and 02E series to 26%  $C_a$  due to their higher axial load ratings.

Pedestals should be fully supported on a flat, rigid surface to avoid distortion of the pedestal or deflection under load.

For loads within  $45^\circ$  of horizontal, the base should be chocked or dowelled.

Standard Cooper pedestals are manufactured from grade EN-GJL-250 grey iron to BS EN 1561 : 1997. Ductile iron and steel pedestals are also available and should be considered for shock or pulsating loads. Particulars of pedestals in alternative materials are available from our technical department.

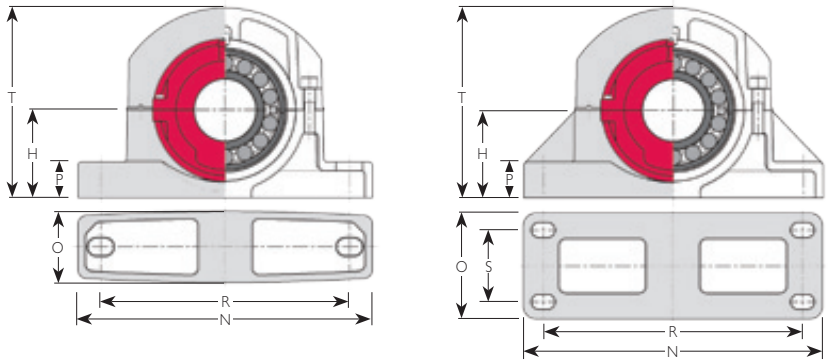
# Pedestal Units 100 Series



		BEARING DATA						CARTRIDGE DATA							
Group Reference	Shaft Diameter d	Reference (I)		D (mm)	C (mm)	B BI (mm)	Axial Float (2) (mm)	Mass (kg)	Cartridge References (I)			G (mm)	J (mm)	L LI (mm)	Mass (kg)
									for felt seals	for ATL seals					
100 300	75mm 2 15/16" 3"	100 B 75M	100 B 215 100 B 300	114.30	48.0	27.0 27.0	3.5	1.2	100 C 75M	100 C 215 100 C 300	100 C 03	134.94	32	104 104	3.6
100 307	85mm 3 7/16"	100 B 85M	100 B 307	133.35	60.0	31.8 31.8	5	2.1	100 C 85M	100 C 307	100 C 04	157.16	38	114 114	5.4
100 400	100mm 3 15/16" 4"	100 B 100M	100 B 315 100 B 400	152.4	65.0	38.9 38.9	6	2.8	100 C 100M	100 C 315 100 C 400	100 C 05	177.80	50	136 136	7.4
100 408	110mm 115mm 4 7/16" 4 1/2"	100 B 110M 100 B 115M	100 B 407 100 B 408	174.62	80.0	45.3 45.3	7	4.6	100 C 110M 100 C 115M	100 C 407 100 C 408	100 C 06	203.20	50	134 134	7.9
100 500	120mm 125mm 130mm 4 15/16" 5"	100 B 120M 100 B 125M 100 B 130M	100 B 415 100 B 500	203.20	85.0	46.9 46.9	7	7.4	100 C 120M 100 C 125M 100 C 130M	100 C 415 100 C 500	100 C 07	231.78	64	142 142	11
100 508	140mm 5 7/16" 5 1/2"	100 B 140M	100 B 507 100 B 508	222.25	90.0	54.0 54.0	7	9.3	100 C 140M	100 C 507 100 C 508	100 C 08	266.70	76	156 156	18.4
100 600	150mm 5 15/16" 6"	100 B 150M	100 B 515 100 B 600	241.30	90.0	55.6 55.6	8	10.4	100 C 150M	100 C 515 100 C 600	100 C 09	279.40	76	168 168	19.4

1) Add 'EX' or 'GR' to reference for expansion or fixed type respectively, e.g: Bearing: 100 B 75M EX or 100 B 215 EX  
Cartridge: 100 C 75M EX or 100 C 03 EX

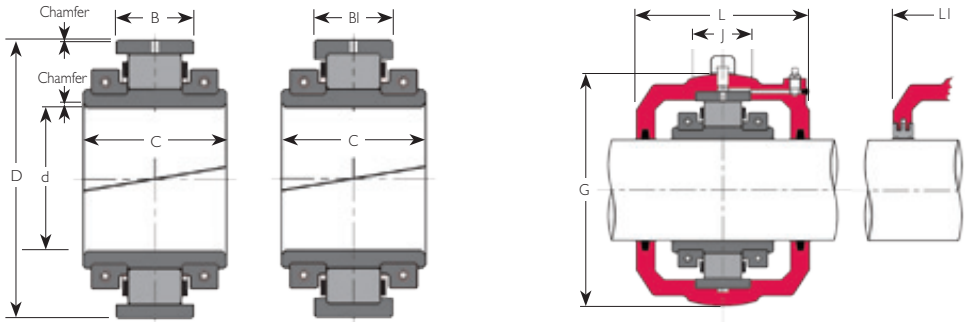
2) Total movement tabulated. Maximum offset from centreline half this amount.



## PEDESTAL DATA

Reference	H (mm)	Min. (mm)	Max. (mm)	Ro (mm)	S (mm)	Bolts	N (mm)	O (mm)	P (mm)	T (mm)	Mass (Kg)
P03	80	226	242	-	-	2-off M16 or 5/8"	280	70	32	180	4.9
P04	95	260	280	-	-	2-off M20 or 3/4"	330	76	38	208	6.9
P05	112	312	328	-	-	2-off M24 or 7/8"	380	90	44	252	13.3
P06	125	342	366	-	-	2-off M24 or 7/8"	420	102	52	272	14.7
P07	143	374	410	-	-	2-off M24 or 7/8"	466	120	60	314	20.6
P08	162	438	462	-	120	4-off M24 or 7/8"	508	178	38	372	43.3
P09	181	470	494	-	120	4-off M24 or 7/8"	558	178	41	405	52

Shaft Diameter d	Group Reference	
75mm	2 15/16" 3"	100 300
85mm	3 7/16"	100 307
100mm	3 15/16" 4"	100 400
110mm 115mm	4 7/16" 4 1/2"	100 408
120mm 125mm 130mm	4 15/16" 5"	100 500
140mm	5 7/16" 5 1/2"	100 508
150mm	5 15/16" 6"	100 600



**BEARING DATA**

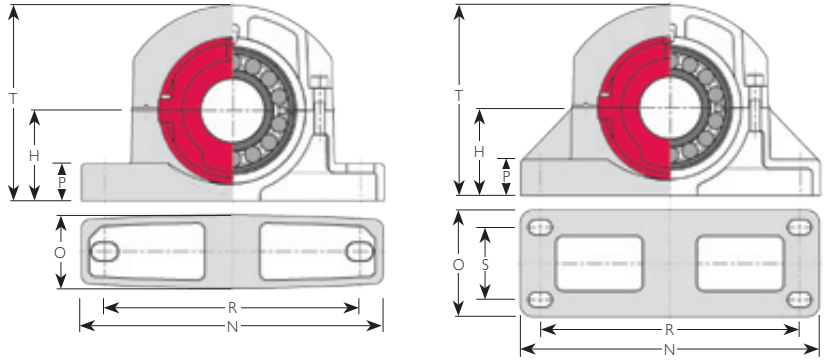
Group Reference	Shaft Diameter d	Reference (1)		D (mm)	C (mm)	B/BI (mm)	Axial Float (2) (mm)	Mass (kg)
01 108	35	1 3/16"	01 B 103	84.14	50.1	23.8	3.5	1.2
	40	1 1/4"	01 B 104					
		1 7/16"	01 B 107					
		1 1/2"	01 B 108					
01E 200	45	1 11/16"	01EB 111	98.42	55.7	25.4	4	1.5
	50	1 3/4"	01EB 112					
		1 15/16"	01EB 115					
		2"	01EB 200					
01E 208	55	2 3/16"	01EB 203	114.30	55.7	27.0	4.5	1.8
	60	2 1/4"	01EB 204					
	65	2 7/16"	01EB 207					
		2 1/2"	01EB 208					
01E 300	70	2 11/16"	01EB 211	133.35	61.2	31.8	5	2.5
	75	2 3/4"	01EB 212					
		2 15/16"	01EB 215					
		3"	01EB 300					
01E 308	80	3 3/16"	01EB 303	152.40	70.7	38.9	6	4.0
	85	3 1/4"	01EB 304					
	90	3 7/16"	01EB 307					
		3 1/2"	01EB 308					
01E 400	95	3 11/16"	01EB 311	174.62	81.0	45.3	7	6.0
	100	3 3/4"	01EB 312					
	105	3 15/16"	01EB 315					
		4"	01EB 400					
01 408	110	4 3/16"	01 B 403	203.20	84.9	46.9	7	10.2
	115	4 7/16"	01 B 407					
		4 1/2"	01 B 408					
			01 B 408					
01 500	120	4 15/16"	01 B 415	222.25	89.7	54.0	7	12.8
	125	5"	01 B 500					
	130		01 B 500					
			01 B 500					
01 508	135	5 3/16"	01 B 503	241.30	98.4	55.6	8	15.0
	140	5 7/16"	01 B 507					
		5 1/2"	01 B 508					
			01 B 508					
01 600	150	5 15/16"	01 B 515	254.00	98.4	55.6	8	16.6
	160	6"	01 B 600					

**CARTRIDGE DATA**

Cartridge References (1) for felt seals	for ATL seals	G (mm)	J (mm)	L/LI (mm)	Mass (kg)				
						01 C 103	01 C 104	01 C 107	01 C 108
01 C 35M	01 C 40M								
01 C 111	01 C 112	01 C 115	01 C 200	117.48	25	98	98	2.5	
01 C 203	01 C 204	01 C 207	01 C 208	134.94	32	104	104	3.2	
01 C 211	01 C 212	01 C 215	01 C 300	157.16	38	114	114	5.5	
01 C 303	01 C 304	01 C 307	01 C 308	177.80	50	136	136	7	
01 C 311	01 C 312	01 C 315	01 C 400	203.20	50	134	134	8	
01 C 403	01 C 407	01 C 408		231.78	64	142	142	11.9	
01 C 415	01 C 500			266.70	76	156	156	19.5	
01 C 503	01 C 507	01 C 508		279.40	76	168	168	20.8	
01 C 515M	01 C 600			295.28	82	174	174	24.4	

1) Add 'EX' or 'GR' to reference for expansion or fixed type respectively, e.g. Bearing: 01 B 35M EX or 01 B 103 EX  
Cartridge: 01 C 35M EX or 01 C 01 EX

2) Total movement tabulated. Maximum offset from centreline half this amount

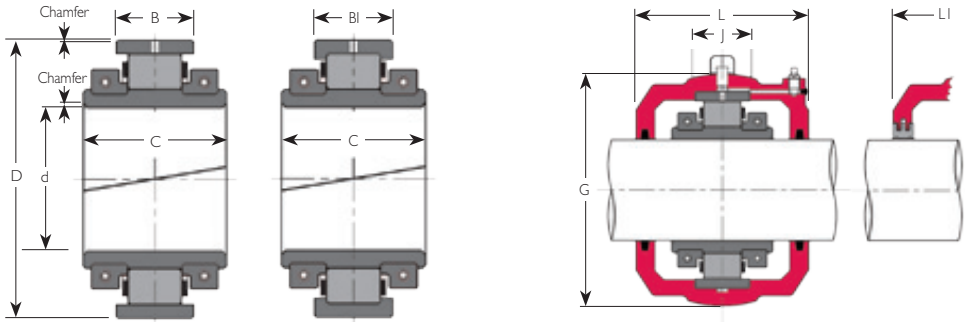


## PEDESTAL DATA

Reference	H (mm)	Min. (mm)	Max. (mm)	Ro (mm)	S (mm)	Bolts	N (mm)	O (mm)	P (mm)	T (mm)	Mass (Kg)	Shaft Diameter d mm	Shaft Diameter d inches	Group Reference
P01	60	172	192	-	-	2-off M12 or 1/2"	228	60	22	138	2.5	35 40	1 3/16" 1 1/4" 1 7/16" 1 1/2"	01 108
P02	70	203	227	-	-	2-off M16 or 5/8"	270	60	25	158	3.2	45 50	1 11/16" 1 3/4" 1 15/16" 2"	01E 200
P03	80	226	242	-	-	2-off M16 or 5/8"	280	70	32	180	4.9	55 60 65	2 3/16" 2 1/4" 2 7/16" 2 1/2"	01E 208
P04	95	260	280	-	-	2-off M20 or 3/4"	330	76	38	208	6.9	70 75	2 11/16" 2 3/4" 2 15/16" 3"	01E 300
P05	112	312	328	-	-	2-off M24 or 7/8"	380	90	44	252	13.3	80 85 90	3 3/16" 3 1/4" 3 7/16" 3 1/2"	01E 308
P06	125	342	366	-	-	2-off M24 or 7/8"	420	102	52	272	14.7	95 100 105	3 11/16" 3 3/4" 3 15/16" 4"	01E 400
P07	143	374	410	-	-	2-off M24 or 7/8"	466	120	60	314	20.6	110 115	4 3/16" 4 7/16" 4 1/2"	01 408
P08	162	438	462	-	120	4-off M24 or 7/8"	508	178	38	372	43.3	120 125 130	4 15/16" 5" 5 1/8"	01 500
P09	181	470	494	-	120	4-off M24 or 7/8"	558	178	41	405	52	135 140	5 3/16" 5 7/16" 5 1/2"	01 508
P10	181	484	508	-	120	4-off M24 or 7/8"	558	178	41	415	54	150 160	5 15/16" 6"	01 600

\* Add 'OTL' to reference for cartridge for ATL seals if the cartridge for felt seals with the same bore size is also marked\*, eg 01 C 10 OTL.





**BEARING DATA**

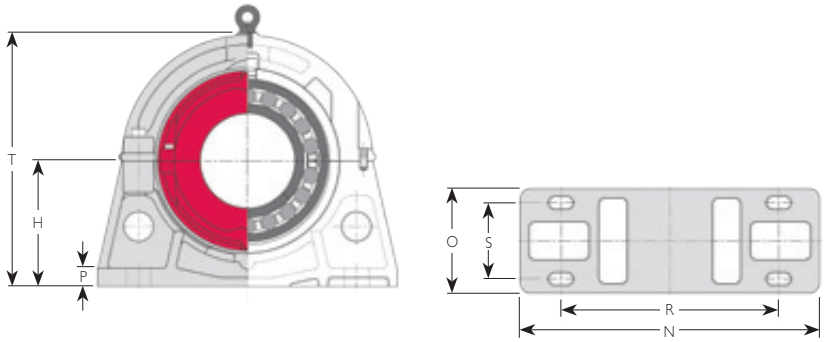
**CARTRIDGE DATA**

Group Reference	Shaft Diameter d	Reference (1)		D (mm)	C (mm)	B	BI (mm)	Axial Float (2) (mm)	Mass (kg)	Cartridge References (1)							
										for felt seals	for ATL seals	G (mm)	J (mm)	L/LI (mm)	Mass (kg)		
01E 608	160mm	6 7/16"	01EB 160M	01EB 607	273.05	109.0	60.3	8	21.0	01 C 160M	01 C 607	311.15	76	172	30		
	170mm	6 1/2"	01EB 608-170M*	01EB 608						01 C 608-170M*	01 C 608					01 C 11*	192
01E 700	170mm	6 5/16"	01EB 170M	01EB 615	285.75	109.0	55.5	8	23.0	01 C 170M	01 C 615	323.85	70	172	31		
	175mm		01EB 175M	01EB 700						01 C 175M	01 C 700					01 C 12	200
	180mm		01EB 180M							01 C 180M							
01E 800	190mm	7 15/16"	01EB 190M	01EB 715	311.15	109.0	60.3	8	25.0	01 C 190M	01 C 715	358.78	86	172	41		
	200mm	8"	01EB 200M	01EB 800						01 C 200M	01 C 800					200	
01E 900	220mm	9"	01EB 220M	01EB 900	342.90	115.0	63.5	8	32	01 C 220M	01 C 900	387.35	82	178	70		
	230mm		01EB 230M	63.5			01 C 230M			01 C 14	216						
01E 1000	240mm	10"	01EB 240M	01EB 1000	374.65	122.0	66.7	9	40	01 C 240M	01 C 1000	419.10	90	188	58		
	250mm		01EB 250M	66.7			01 C 250M			01 C 15*	222						
	260mm		01EB 1000-260M				01 C 1000-260M*										
01E 1100	260mm	11"	01EB 260M	01EB 1100	406.40	128.0	69.0	10	50	01 C 260M	01 C 1100	454.00	95	204	70		
	270mm		01EB 270M				69.0			01 C 270M				232			
	275mm		01EB 275M							01 C 275M							
	280mm		01EB 280M							01 C 280M							
01E 1200	290mm	12"	01EB 290M	01EB 1200	438.15	143.0	74.6	10	60	01 C 290M	01 C 1200	489.00	98	216	86		
	300mm	01EB 300M	74.6	01 C 300M			248										

1) Add 'EX' or 'GR' to reference for expansion or fixed type respectively, e.g. **Bearing:** 01 B 160M EX or 01 B 607 EX  
**Cartridge:** 01 C 160M EX or 01 C 11 EX

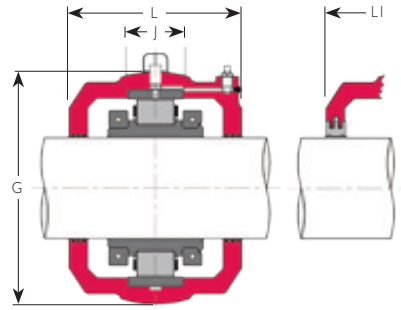
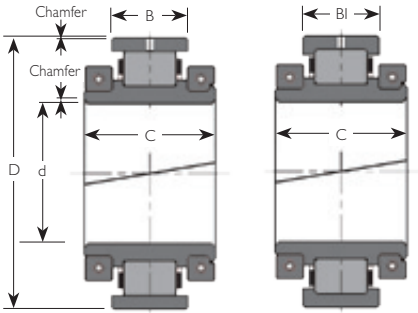
\* Add 'OTL' to reference for cartridge for ATL seals if the cartridge for felt seals with the same bore size is also marked\*, e.g. 01 C 11 OTL

2) Total movement tabulated. Maximum offset from centreline half this amount



## PEDESTAL DATA

Reference	H (mm)	R		Ro (mm)	S (mm)	Bolts	N (mm)	O (mm)	P (mm)	T (mm)	Mass (Kg)	Shaft Diameter d	Group Reference	
		Min. (mm)	Max. (mm)											
P11	213	356	380	-	114	4-off M24 or 1"	508	178	32	430	53	160mm 170mm	6 7/16" 6 1/2"	01E 608
P12	235	376	400	-	128	4-off M24 or 1"	534	190	35	470	63	170mm 175mm 180mm	6 15/16" 7"	01E 700
P13	248	410	434	-	140	4-off M24 or 1"	572	204	38	495	83	190mm 200mm	7 15/16" 8"	01E 800
P14	270	440	480	-	140	4-off M30 or 1 1/4"	636	216	40	540	90	220mm 230mm	9"	01E 900
P15	292	482	522	-	140	4-off M30 or 1 1/4"	686	228	44	585	114	240mm 250mm 260mm	10"	01E 1000
P16	311	514	554	-	140	4-off M30 or 1 1/4"	724	228	48	620	142	260mm 270mm 275mm 280mm	11"	01E 1100
P17	343	564	604	-	178	4-off M30 or 1 1/4"	762	254	50	685	169	290mm 300mm	12"	01E 1200



**BEARING DATA**

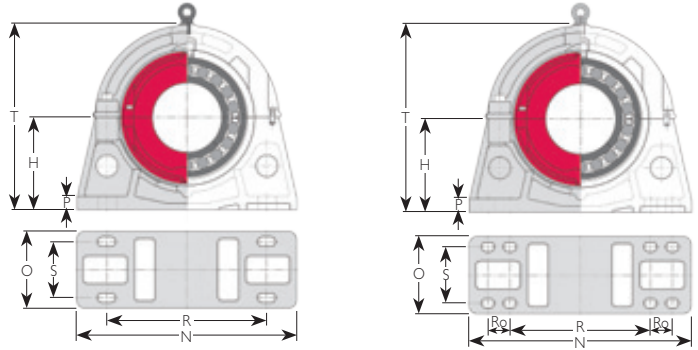
Group Reference	Shaft Diameter d	Reference (l)		D (mm)	C (mm)	B BI	Axial	
							Float (2)	Mass (kg)
01 I 300	320mm	01 B 320M	01 B 1300	463.55	136.0	74.6	10	72
	330mm	01 B 330M						
	340mm	01 B 1300-340M						
01 I 400	340mm	01 B 340M	01 B 1400	488.95	136.0	74.6	10	78
	350mm	01 B 350M						
	360mm	01 B 1400-360M						
01 I 500	360mm	01 B 360M	01 B 1500	520.70	140.0	76.2	10	86
	380mm	01 B 380M						
01 I 600	390mm	01 B 390M	01 B 1600	546.10	140.0	76.2	10	95
	400mm	01 B 400M						
01 I 700	420mm	01 B 420M	01 B 1700	571.50	140.0	76.2	10	104
01 I 800	440mm	01 B 440M	01 B 1800	596.90	140.0	76.2	10	114
	460mm							
01 I 900	480mm	01 B 480M	01 B 1900	628.65	144.0	81.0	11	128
01 I 2000	500mm	01 B 500M	01 B 2000	654.05	168.0	80.2	11	136
01 I 2100	530mm	01 B 530M	01 B 2100	692.15	168.0	81.0	11	164
01 I 2200	560mm	01 B 560M	01 B 2200	717.55	168.0	81.0	11	178
01 I 2300	580mm	01 B 580M	01 B 2300	749.30	172.0	84.1	11	195
01 I 2400	600mm	01 B 600M	01 B 2400	774.70	172.0	84.1	11	210

**CARTRIDGE DATA**

Cartridge References (l)		G (mm)	J (mm)	L/LI (mm)	Mass (kg)
for felt seals	for ATL seals				
01 C 320M 01 C 330M 01 C 1300-340M	01 C 1300 01 C 18	520.70	95	260 272	106
01 C 340M 01 C 350M 01 C 1400-360M	01 C 1400 01 C 19	546.10	98	260 272	117
01 C 360M 01 C 380M	01 C 1500 01 C 20	571.50	98	260 280	126
01 C 390M 01 C 400M	01 C 1600 01 C 21	603.30	102	280 286	141
01 C 420M	01 C 1700 01 C 22	628.70	102	292 298	150
01 C 440M 01 C 460M	01 C 1800 01 C 23	650.90	108	304 310	151
01 C 480M	01 C 1900 01 C 24	682.60	108	304 324	162
01 C 500M	01 C 2000 01 C 25	717.60	114	304 330	192
01 C 530M	01 C 2100 01 C 26	755.70	114	330 336	226
01 C 560M	01 C 2200 01 C 27	781.10	114	336 342	252
01 C 580M	01 C 2300 01 C 28	816.00	120	342 348	273
01 C 600M	01 C 2400 01 C 29	841.40	120	342 348	290

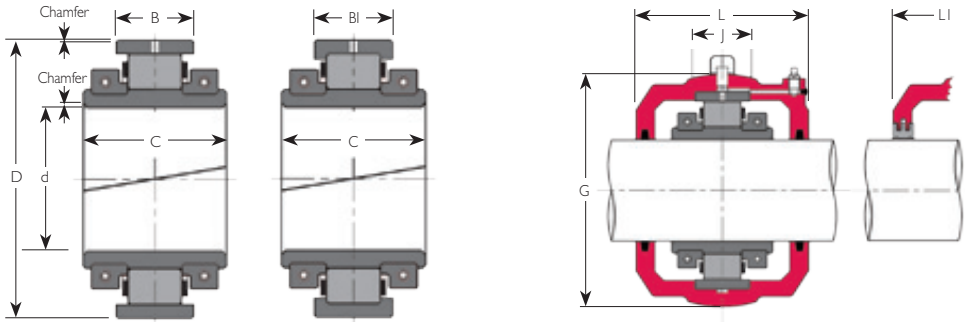
1) Add 'EX' or 'GR' to reference for expansion or fixed type respectively, e.g. **Bearing:** 01 B 320M EX or 01 B 1300 EX  
**Cartridge:** 01 C 320M EX or 01 C 18 EX

2) Total movement tabulated. Maximum offset from centreline half this amount



## PEDESTAL DATA

Reference	H (mm)	R		Ro (mm)	S (mm)	Bolts	N (mm)	O (mm)	P (mm)	T (mm)	Mass (Kg)	Shaft Diameter d	Group Reference
		Min. (mm)	Max. (mm)										
P18	368	602	642	-	178	4-off M36 or 1 1/2"	812	254	54	735	196	320mm 330mm 340mm	13" 01 1300
P19	387	634	674	-	166	4-off M36 or 1 1/2"	850	254	57	775	213	340mm 350mm 360mm	14" 01 1400
P20	397	656	696	-	166	4-off M36 or 1 1/2"	902	254	60	795	288	360mm 380mm	15" 01 1500
P21	432	704	744	-	166	4-off M36 or 1 1/2"	940	254	67	865	309	390mm 400mm	16" 01 1600
P22	445	736	776	-	166	4-off M36 or 1 1/2"	966	254	67	890	316	420mm	17" 01 1700
P23	464	768	808	-	190	4-off M42 or 1 3/4"	1042	280	70	925	370	440mm 460mm	18" 01 1800
P24	483	796	836	-	188	4-off M42 or 1 3/4"	1092	304	73	965	402	480mm	19" 01 1900
P25	489	824	864	-	216	4-off M42 or 1 3/4"	1092	304	76	980	402	500mm	20" 01 2000
P26	533	884	924	-	206	4-off M42 or 1 3/4"	1194	304	80	1065	495	530mm	21" 01 2100
P27	552	916	956	-	206	4-off M42 or 1 3/4"	1220	304	83	1110	570	560mm	22" 01 2200
P28	578	857	896	102	220	8-off M36 or 1 1/2"	1346	304	90	1156	630	580mm	23" 01 2300
P29	597	888	928	105	220 84,1	8-off M36 or 1 1/2"	1372	304	90	1200	630	600mm	24" 01 2400



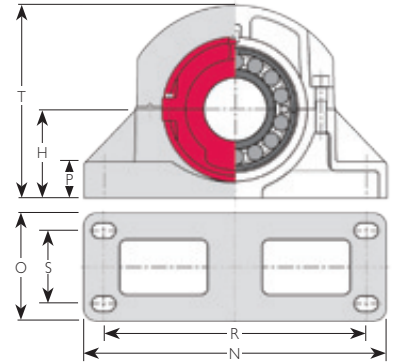
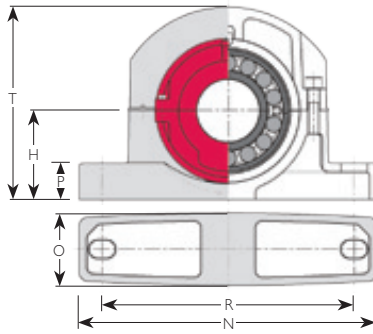
**BEARING DATA**

**CARTRIDGE DATA**

Group Reference	Shaft Diameter d	Reference (1)		D (mm)	C (mm)	B/BI (mm)	Axial Float (2) (mm)	Mass (kg)	Cartridge References (1)						
									for felt seals	for ATL seals	G (mm)	J (mm)	L/LI (mm)	Mass (kg)	
02.200	50mm 1 15/16" 2"	02 B 50M	02 B 115 02 B 200	107.95	67.5	35.0 35.0	5	2.0	02 C 50M	02 C 115 02 C 200	02 C 03	134.94	32	114 114	4
02.208	60mm 2 3/16" 2 1/4" 65mm 2 7/16" 2 1/2"	02 B 60M 02 B 65M	02 B 203 02 B 204 02 B 207 02 B 208	127.00	72.3	38.9 38.9	5.5	3.0	02 C 60M 02 C 65M	02 C 203 02 C 204 02 C 207 02 C 208	02 C 04	157.16	38	126 126	7
02.300	70mm 2 11/16" 2 3/4" 75mm 2 15/16" 3"	02 B 70M 02 B 75M	02 B 211 02 B 212 02 B 215 02 B 300	149.22	82.6	46.1 46.1	6	5.0	02 C 70M 02 C 75M	02 C 211 02 C 212 02 C 215 02 C 300	02 C 05	177.80	50	140 140	9
02.308	80mm 3 3/16" 3 1/4" 85mm 3 7/16" 90mm 3 1/2"	02 B 80M 02 B 85M 02 B 90M	02 B 303 02 B 304 02 B 307 02 B 308	169.86	89.7	48.4 48.1	7	7.0	02 C 80M 02 C 85M 02 C 90M	02 C 303 02 C 304 02 C 307 02 C 308	02 C 06	203.20	50	154 154	10
02.400	100mm 3 11/16" 3 3/4" 105mm 3 15/16" 4"	02 B 100M 02 B 105M	02 B 311 02 B 312 02 B 315 02 B 400	193.68	92.1	51.6 51.6	8	9.0	02 C 100M 02 C 105M	02 C 311 02 C 312 02 C 315 02 C 400	02 C 07	231.78	64	146 146	12
02.408	110mm 4 3/16" 115mm 4 7/16" 4 1/2"	02 B 110M 02 B 115M	02 B 403 02 B 407 02 B 408	228.60	100.0	57.2 57.2	9	16.0	02 C 110M 02 C 115M	02 C 403 02 C 407 02 C 408	02 C 08	266.70	76	162 162	19
02.500	120mm 4 15/16" 125mm 5" 130mm	02 B 120M 02 B 125M 02 B 130M	02 B 415 02 B 500	254.00	114.3	63.5 63.5	10	20.0	02 C 120M 02 C 125M 02 C 130M	02 C 415 02 C 500	02 C 10	295.28	82	184 184	26

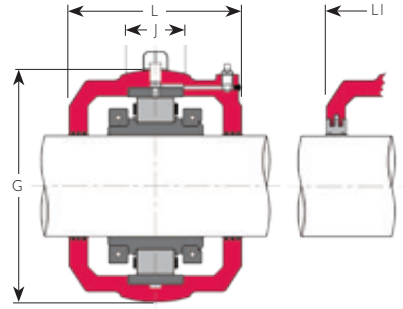
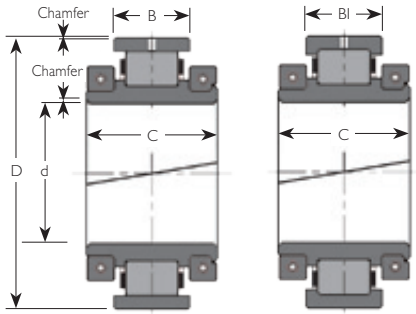
1) Add 'EX' or 'GR' to reference for expansion or fixed type respectively, e.g: **Bearing:** 02 B 50M EX or 02 B 115 EX  
**Cartridge:** 02 C 50M EX or 02 C 03 EX

2) Total movement tabulated. Maximum offset from centre line half this amount.



## PEDESTAL DATA

Reference	H (mm)	Min. (mm)	Max. (mm)	Ro (mm)	S (mm)	Bolts	N (mm)	O (mm)	P (mm)	T (mm)	Mass (Kg)	Shaft Diameter d	Group Reference	
P03	80	226	242	-	-	2-off M16 or 5/8"	280	70	32	180	4.9	50mm	1 15/16" 2"	02.200
P04	95	260	280	-	-	2-off M20 or 3/4"	330	76	38	208	6.9	60mm 65mm	2 3/16" 2 1/4" 2 7/16" 2 1/2"	02.208
P05	112	312	328	-	-	2-off M24 or 7/8"	380	90	44	252	13.3	70mm 75mm	2 11/16" 2 3/4" 2 15/16" 3"	02.300
P06	125	342	366	-	-	2-off M24 or 7/8"	420	102	52	272	14.7	80mm 85mm 90mm	3 3/16" 3 1/4" 3 7/16" 3 1/2"	02.308
P07	143	374	410	-	-	2-off M24 or 7/8"	466	120	60	314	20.6	100mm 105mm	3 11/16" 3 3/4" 3 15/16" 4"	02.400
P08	162	438	462	-	120	4-off M24 or 7/8"	508	178	38	372	43.3	110mm 115mm	4 3/16" 4 7/16" 4 1/2"	02.408
P10	181	484	508	-	120	4-off M24 or 7/8"	558	178	41	415	54	120mm 125mm 130mm	4 15/16" 5"	02.500



### BEARING DATA

Group Reference	Shaft Diameter d	Reference (1)		Axial				
		D (mm)	C (mm)	B / BI (mm)	Float (2) (mm)	Mass (kg)		
02 508	140mm	02 B 140M	02 B 503	273.05	117.5	66.7	10	24.0
	145mm	02 B 145M	02 B 507					
	5 1/2"		02 B 508					
02 600	150mm	02 B 150M	02 B 515	292.10	123.8	68.3	10	29.0
	155mm	02 B 155M	02 B 600					
	160mm	02 B 600-160M						
02E 608	160mm	02E B 160M	02E B 607	317.50	140.0	83.3	11	39.0
	170mm	02E B 170M	02E B 608					
02E 700	175mm	02E B 175M	02E B 615	330.20	140.0	83.3	11	45.0
	180mm	02E B 180M	02E B 700					
02E 800	190mm	02E B 190M	02E B 715	368.30	156.0	90.5	13	59.0
	200mm	02E B 200M	02E B 800					
02E 900	220mm	02E B 220M	02E B 900	393.70	163.0	90.5	13	68
	230mm	02E B 230M						
02E 1000	240mm	02E B 240M	02E B 1000	431.80	170.0	96.8	13	77
	250mm	02E B 250M						
	260mm	02E B 260M						
02E 1100	280mm	02E B 280M	02E B 1100	463.55	186.0	101.6	14	86
02E 1200	300mm	02E B 300M	02E B 1200	495.30	193.0	103.2	14	123

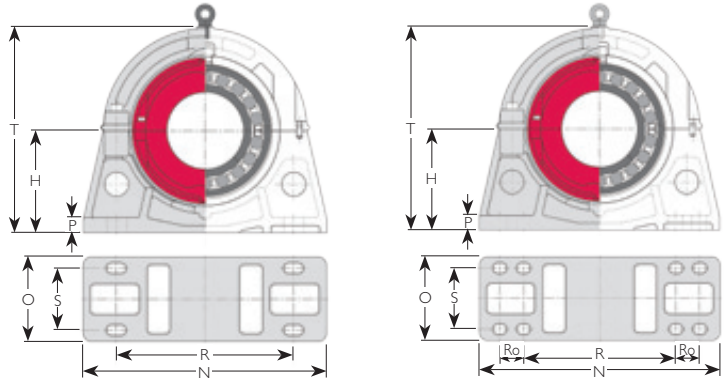
### CARTRIDGE DATA

Cartridge References (1) for felt seals		Cartridge References (1) for ATL seals		G (mm)	J (mm)	L/LI (mm)	Mass (kg)
02 C 140M	02 C 503	02 C 30	323.85				
02 C 145M	02 C 507	02 C 508			188		
02 C 150M	02 C 515	02 C 31*	336.55	95	204	39	
02 C 600-160M*	02 C 600				204		
02 C 160M	02 C 607	02 C 32*	368.30	95	206	56	
02 C 170M*	02 C 608				232		
02 C 175M	02 C 615	02 C 33	381.00	95	222	66	
02 C 180M	02 C 700				242		
02 C 190M	02 C 715	02 C 34	425.50	105	235	84	
02 C 200M	02 C 800				258		
02 C 220M	02 C 900	02 C 35	457.20	110	242	98	
02 C 230M					274		
02 C 240M	02 C 1000	02 C 36*	495.30	118	248	105	
02 C 250M					280		
02 C 260M							
02 C 280M	02 C 1100	02 C 37	527.10	130	264	131	
					300		
02 C 300M	02 C 1200	02 C 38	552.50	128	268	129	
					306		

1) Add 'EX' or 'GR' to reference for expansion or fixed type respectively, e.g. **Bearing:** 02 B 140M EX or 02 B 503 EX  
**Cartridge:** 02 C 140M EX or 02 C 30 EX

\* Add 'OTL' to reference for cartridge for ATL seals if the cartridge for felt seals with the same bore size is also marked\*, eg 02 C 31 OTL

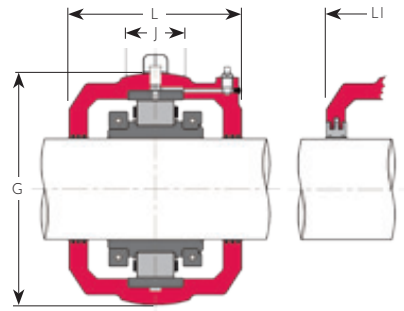
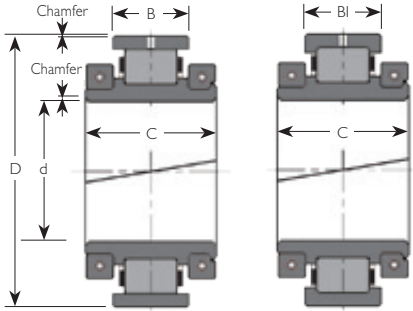
2) Total movement tabulated. Maximum offset from centreline half this amount.



## PEDESTAL DATA

Reference	H (mm)	Min. (mm)	Max. (mm)	Ro (mm)	S (mm)	Bolts	N (mm)	O (mm)	P (mm)	T (mm)	Mass (Kg)	Shaft Diameter d	Group Reference
P30	203	534	558	-	120	4-off M24 or 1"	610	178	51	460	76	140mm 145mm	5 3/16" 5 7/16" 5 1/2" 02 508
P31	210	546	570	-	128	4-off M24 or 1"	636	204	50	470	83	150mm 155mm 160mm	5 15/16" 6" 02 600
P32	267	428	468	-	172	4-off M30 or 1 1/4"	596	242	44	535	106	160mm 170mm	6 7/16" 6 1/2" 02E 608
P33	273	438	478	-	166	4-off M30 or 1 1/4"	636	242	44	545	116	175mm 180mm	6 15/16" 7" 02E 700
P34	305	488	528	-	190	4-off M30 or 1 1/4"	686	266	50	610	145	190mm 200mm	7 15/16" 8" 02E 800
P35	324	530	570	-	190	4-off M36 or 1 1/2"	750	280	50	650	179	220mm 230mm	9" 02E 900
P36	356	576	616	-	204	4-off M36 or 1 1/2"	812	292	54	710	212	240mm 250mm 260mm	10" 02E 1000
P37	378	514	554	101	254	8-off M30 or 1 1/4"	914	330	60	760	292	280mm	11" 02E 1100
P38	394	546	586	101	254	8-off M30 or 1 1/4"	958	330	60	790	330	300mm	12" 02E 1200





**BEARING DATA**

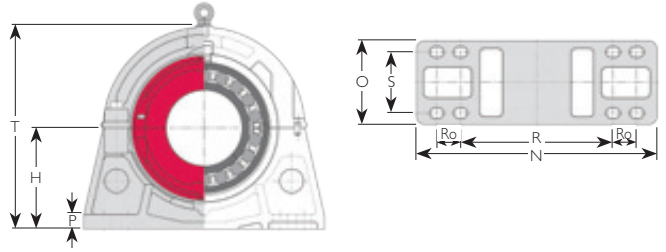
Group Reference	Shaft Diameter d	Reference (1)		D (mm)	C (mm)	B / BI (mm)	Axial	
							Float (2)	Mass (kg)
02 I300	320mm	02 B 320M	02 B I300	527.05	192.0	106.4	15	150
	330mm							
02 I400	340mm	02 B 340M	02 B I400	565.15	200.0	115.9	16	182
	350mm	02 B 350M						
	360mm	02 B 360M						
02 I500	380mm	02 B 380M	02 B I500	584.20	200.0	111.1	16	186
02 I600	400mm	02 B 400M	02 B I600	615.95	200.0	115.9	16	209
02 I700	420mm	02 B 420M	02 B I700	647.70	200.0	119.1	17	241
02 I800	440mm	02 B 440M	02 B I800	666.75	200.0	115.9	17	250
	460mm	02 B 460M						
02 I900	480mm	02 B 480M	02 B I900	698.50	223.0	119.1	17	263
02 I2000	500mm	02 B 500M	02 B I2000	717.55	226.0	115.9	17	272
02 I2100	530mm	02 B 530M	02 B I2100	762.00	229.0	119.1	18	309
02 I2200	560mm	02 B 560M	02 B I2200	793.75	233.0	122.2	18	336
02 I2300	580mm	02 B 580M	02 B I2300	812.80	232.0	119.1	16	340
02 I2400	600mm	02 B 600M	02 B I2400	838.20	214.0	119.1	18	381

**CARTRIDGE DATA**

Cartridge References (1) for felt seals	Reference (1)		G (mm)	J (mm)	L/LI (mm)	Mass (kg)	
		for ATL seals					
02 C 320M 02 C 330M	02 C I300	02 C 39	587.40	128	298	172	
		02 C 39					330
02 C 340M 02 C 350M 02 C 360M	02 C I400	02 C 40	628.70	146	305	186	
		02 C 40					342
		02 C 40					342
02 C 380M	02 C I500	02 C 41	647.70	146	305	209	
02 C 400M	02 C I600	02 C 42	685.80	146	324	254	
							02 C 42
02 C 420 M	02 C I700	02 C 43	717.60	146	324	264	
							02 C 43
02 C 440M 02 C 460M	02 C I800	02 C 44	733.40	146	324	265	
							02 C 44
02 C 480M	02 C I900	02 C 45	762.00	146	338	272	
							02 C 45
02 C 500M	02 C I2000	02 C 46	787.40	146	350	323	
							02 C 46
02 C 530M	02 C I2100	02 C 47	831.90	150	350	351	
							02 C 47
02 C 560M	02 C I2200	02 C 48	866.80	152	356	379	
							02 C 48
02 C 580M	02 C I2300	02 C 49	882.70	152	356	386	
							02 C 49
02 C 600M	02 C I2400	02 C 50	914.40	152	388	454	
							02 C 50

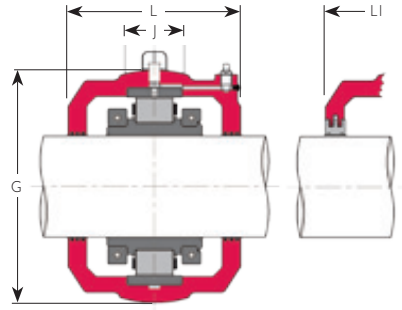
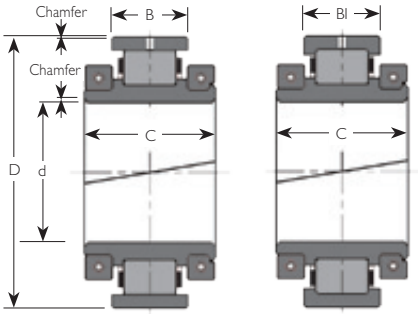
1) Add 'EX' or 'GR' to reference for expansion or fixed type respectively, e.g. **Bearing:** 02 B 320M EX or 02 B I300 EX  
**Cartridge:** 02 C 320M EX or 02 C 39 EX

2) Total movement tabulated. Maximum offset from centreline half this amount.



## PEDESTAL DATA

Reference	H (mm)	Min. (mm)	Max. (mm)	Ro (mm)	S (mm)	Bolts	N (mm)	O (mm)	P (mm)	T (mm)	Mass (Kg)	Shaft Diameter d	Group Reference
P39	419	590	630	101	210	8-off M30 or 1 1/4"	1016	292	64	840	383	320mm 330mm	13" 02 1300
P40	451	640	680	102	280	8-off M36 or 1 1/2"	1092	368	67	900	429	340mm 350mm 360mm	14" 02 1400
P41	464	662	702	102	280	8-off M36 or 1 1/2"	1092	368	67	925	445	380mm	15" 02 1500
P42	495	710	750	102	280	8-off M36 or 1 1/2"	1168	368	70	990	537	400mm	16" 02 1600
P43	514	748	788	102	280	8-off M36 or 1 1/2"	1194	368	70	1030	564	420mm	17" 02 1700
P44	533	768	808	104	280	8-off M36 or 1 1/2"	1244	368	73	1070	564	440mm 460mm	18" 02 1800
P45	552	792	832	115	280	8-off M36 or 1 1/2"	1270	368	76	1110	690	480mm	19" 02 1900
P46	572	824	864	115	280	8-off M36 or 1 1/2"	1296	368	80	1145	677	500mm	20" 02 2000
P47	591	870	910	114	280	8-off M36 or 1 1/2"	1398	368	83	1180	905	530mm	21" 02 2100
P48	616	904	956	114	280	8-off M42 or 1 3/4"	1422	382	86	1230	965	560mm	22" 02 2200
P49	635	932	984	115	280	8-off M42 or 1 3/4"	1448	382	90	1270	1000	580mm	23" 02 2300
P50	673	984	1036	114	280	8-off M42 or 1 3/4"	1524	382	92	1345	1050	600mm	24" 02 2400



### BEARING DATA

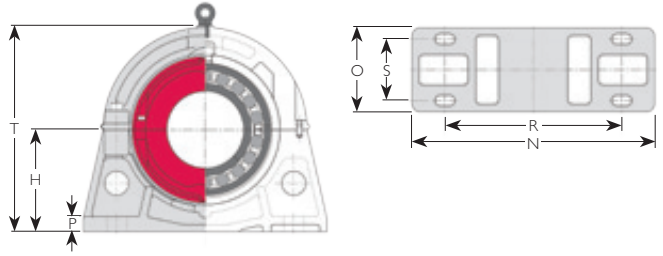
Group Ref.	Shaft Diameter d	Reference (1)	D (mm)	C (mm)	B/B1 (mm)	Axial Float (2) (mm)	Mass (kg)
03 400	100mm	03 B 100M 03 B 315 03 B 400	254.00	136.0	84.2 84.2	11	30
03 408	110mm 120mm	03 B 110M 03 B 120M	266.70	147.0	87.3 87.3	11	36.0
03 500	130mm	03 B 130M	279.40	140.0	73.1 84.2	11	36.0
03 508	140mm	03 B 140M	304.80	147.0	79.4 90.5	12	44.0
03 600	150mm	03 B 150M	330.20	160.0	81.0 96.9	13	57.0
03 608	160mm 170mm	03 B 160M 03 B 170M	355.60	171.0	103.2 103.2	14	72.0
03 700	180mm	03 B 180M	374.65	178.0	92.1 108.8	15	79.0
03 800	190mm 200mm	03 B 190M 03 B 200M	419.10	191.0	97.7 118.3	16	105
03 900	220mm	03 B 220M	469.90	212.0	109.6 131.8	18	145
03 1000	240mm 250mm 260mm	03 B 240M 03 B 250M 03 B 260M	482.60	211.0	105.6 124.6	18	150

### CARTRIDGE DATA

Cartridge References (1) for felt seals	Cartridge References (1) for ATL seals	Principal Dimensions				
		G (mm)	J (mm)	L/L1 (mm)	Mass (kg)	
03 C 100M	03 C 315 03 C 400	03 C 54	308.00	95	200 206	41
03 C 110M 03 C 120M	03 C 407 03 C 408	03 C 55	323.85	102	210 222	46
03 C 130M	03 C 415 03 C 500	03 C 56	323.85	102	214 222	48
03 C 140M	03 C 507 03 C 508	03 C 57	355.60	108	216 230	52
03 C 150M	03 C 515 03 C 600	03 C 58	393.70	114	232 254	70
03 C 160M 03 C 170M	03 C 607 03 C 608	03 C 59	422.30	120	244 268	81
03 C 180M	03 C 615 03 C 700	03 C 60	431.80	132	254 284	87
03 C 190M 03 C 200M	03 C 715 03 C 800	03 C 61	489.00	146	270 300	109
03 C 220M	03 C 900	03 C 62	546.10	165	298 334	155
03 C 240M 03 C 250M 03 C 260M	03 C 1000	03 C 63	558.80	165	298 334	161

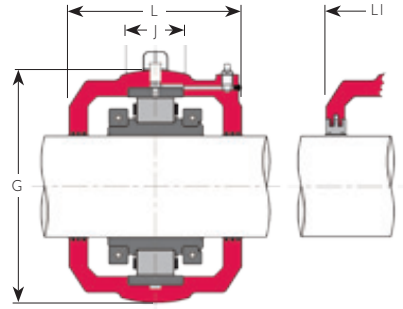
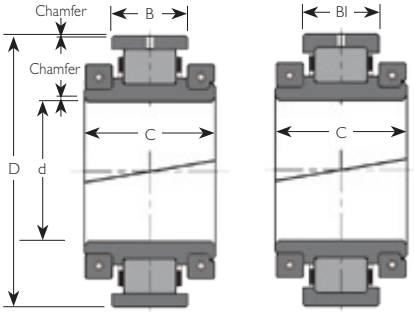
1) Add 'EX' or 'GR' to reference for expansion or fixed type respectively, e.g: **Bearing:** 03 B 100M EX or 03 B 315 EX  
**Cartridge:** 03 C 100M EX or 03 C 54 EX

2) Total movement tabulated. Maximum offset from centreline half this amount.



## PEDESTAL DATA

Reference	H (mm)	R		Ro (mm)	S (mm)	Bolts	N (mm)	O (mm)	P (mm)	T (mm)	Mass (Kg)	Shaft Diameter d	Group Reference	
		Min. (mm)	Max. (mm)											
P54	191	426	450	-	82	4-off M24 or 7/8"	514	152	38	405	61	100mm	3 15/16" 4"	03 400
P55	197	446	470	-	88	4-off M24 or 1"	534	166	38	425	69	110mm 120mm	4 7/16" 4 1/2"	03 408
P56	203	458	482	-	96	4-off M24 or 1"	546	166	48	435	74	130mm	4 15/16" 5"	03 500
P57	229	494	534	-	102	4-off M30 or 1 1/4"	622	178	54	485	97	140mm	5 7/16" 5 1/2"	03 508
P58	254	538	578	-	120	4-off M30 or 1 1/4"	666	204	57	535	142	150mm	5 15/16" 6"	03 600
P59	267	608	648	-	140	4-off M30 or 1 1/4"	736	228	60	570	162	160mm 170mm	6 7/16" 6 1/2"	03 608
P60	279	616	656	-	152	4-off M30 or 1 1/4"	762	254	64	580	172	180mm	6 15/16" 7"	03 700
P61	311	616	656	-	172	4-off M36 or 1 1/2"	838	266	67	655	223	190mm 200mm	7 15/16" 8"	03 800
P62	349	716	756	-	178	4-off M42 or 1 3/4"	952	280	76	730	309	220mm	9"	03 900
P63	394	650	690	-	304	4-off M42 or 1 3/4"	914	406	76	790	392	240mm 250mm 260mm	10"	03 1000



### BEARING DATA

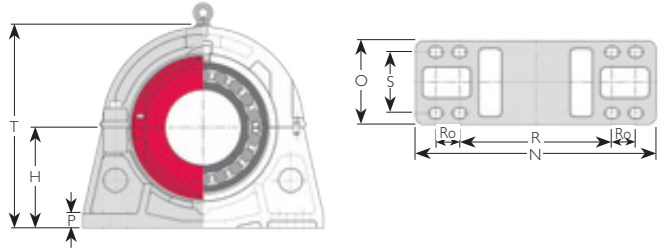
Group Reference	Shaft Diameter d	Reference (I)		D (mm)	C (mm)	B/BI (mm)	Axial	
							Float (2)	Mass (kg)
03E 1100	280mm 11"	03E B 280M	03E B 1100	495.30	244.0	139.7 139.7	20	182
03 1200	290mm 300mm 12"	03 B 290M 03 B 300M	03 B 1200	558.80	244.0	139.7 139.7	19	238
03 1300	320mm 13"	03 B 320M	03 B 1300	622.30	272.0	160.4 160.4	22	327
03E 1400	340mm 360mm 14"	03E B 340M 03E B 360M	03E B 1400	615.95	279.0	158.0 158.0	22	318
03 1500	380mm 400mm 15"	03 B 380M 03 B 400M	03 B 1500	685.80	292.0	166.7 166.7	23	431
03E 1700	420mm 440mm 17"	03E B 420M 03E B 440M	03E B 1700	700.00	284.0	160.0 160.0	23	395
03E 1800	460mm 18"	03E B 460M	03E B 1800	740.00	294.0	170.0 170.0	24	431
03 2000	500mm 530mm 20"	03 B 500M 03 B 530M	03 B 2000	850.90	300.0	187.4 187.4	26	730
03E 2200	560mm 22"	03E B 560M	03E B 2200	863.60	310.0	196.9 196.9	28	635
03E 2300	600mm 23"	03E B 600M	03E B 2300	890.00	310.0	184.0 184.0	27	680

### CARTRIDGE DATA

Cartridge References (I)		G (mm)	J (mm)	L/LI (mm)	Mass (kg)
for felt seals	for ATL seals				
02E C 280M	03E C 1100 03E C 83	571.50	165	356 356	204
03 C 290M 03 C 300M	03 C 1200 03 C 65	641.40	165	346 370	239
03 C 320M	03 C 1300 03 C 66	717.60	170	368 418	273
03E C 340M 03E C 360M	03E C 1400 03E C 86	704.90	196	432 432	385
03 C 380M 03 C 400M	03 C 1500 03 C 68	774.70	202	400 438	399
03E C 420M 03E C 440M	03E C 1700 03E C 89	788.00	200	440 442	408
03E C 460M	03E C 1800 03E C 90	840.00	200	450 450	454
03 C 500M 03 C 530M	03 C 2000 03 C 94	958.90	204	495 508	770
03E C 560M	03E C 2200 03E C 94	958.90	204	490 490	671
03E C 600M	03E C 2300 03E C 95	990.00	204	490 490	720

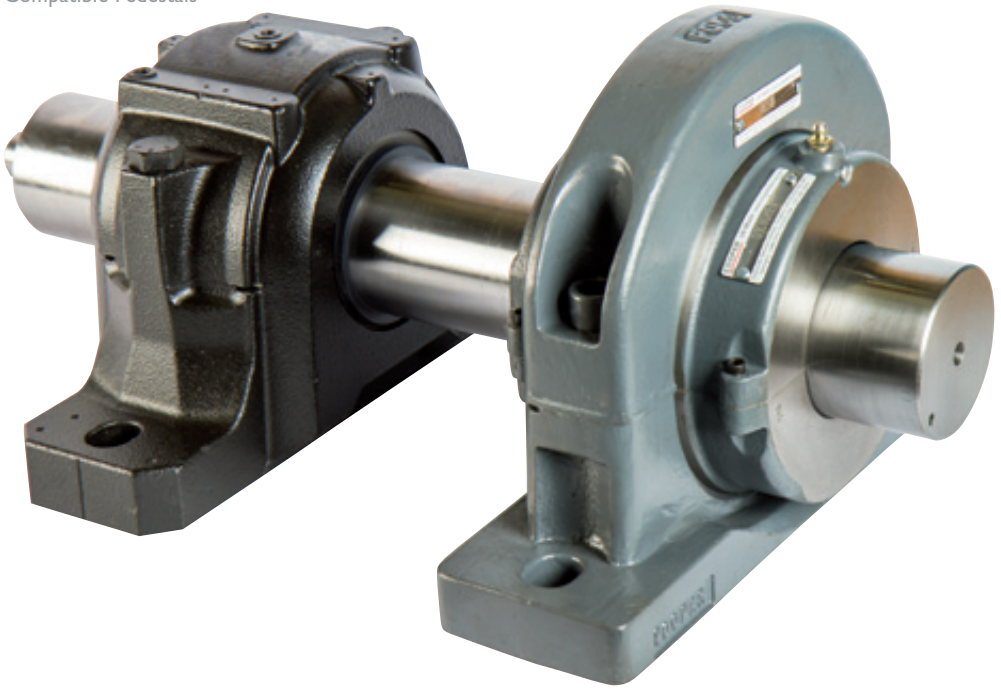
1) Add 'EX' or 'GR' to reference for expansion or fixed type respectively, e.g. Bearing: 03 B 280M EX or 03 B 1100 EX  
Cartridge: 03 C 280M EX or 03 C 83 EX

2) Total movement tabulated. Maximum offset from centreline half this amount.



## PEDESTAL DATA

Reference	H (mm)	R		Ro (mm)	S (mm)	Bolts	N (mm)	O (mm)	P (mm)	T (mm)	Mass (Kg)	Shaft Diameter d		Group Reference
		Min. (mm)	Max. (mm)									280mm	11"	
P83	368	482	522	120	178	8-off M36 or 1 1/2"	940	280	70	785	205	280mm	11"	03E 1100
P65	457	654	694	101	330	8-off M36 or 1 1/2"	1092	420	76	915	586	290mm 300mm	12"	03 1200
P66	518	742	782	108	266	8-off M36 or 1 1/2"	1194	356	80	1035	655	320mm	13"	03 1300
P86	470	634	686	134	190	8-off M42 or 1 3/4"	1220	318	82	1000	464	340mm 360mm	14"	03E 1400
P68	559	780	832	115	292	8-off M42 or 1 3/4"	1270	394	92	1120	859	380mm 400mm	15"	03 1500
P89	508	664	716	150	210	8-off M48 or 2"	1270	360	90	1075	482	420mm 440mm	17"	03E 1700
P90	550	754	806	150	220	8-off M48 or 2"	1370	380	95	1165	705	460mm	18"	03E 1800
P94	622	914	966	165	242	8-off M56 or 2 1/4"	1600	406	102	1340	1000	500mm 530mm	20"	03 2000
P94	622	914	966	165	242	8-off M56 or 2 1/4"	1600	406	102	1340	1000	560mm	22"	03E 2200
P95	622	914	966	165	242	8-off M56 or 2 1/4"	1600 184.0	406	102	1340	930	600mm	23"	03E 2300



## COOPER 'COMPATIBLE' PEDESTALS

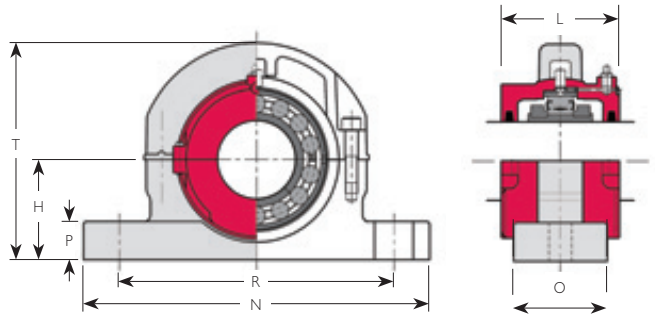
Cooper SNC500, SDC3100 and SAF500 Series pedestals are designed for use where interchangeability with SN500, SD3100 and SAF500 series pillow block units is required. They may be used to economically replace existing solid bearings, or may be incorporated into new machinery where the envelope dimensions of these units are desirable.

Generally, the bearings and cartridges are standard 01, 01E, 02 or 02E Series units. In some cases cartridges and bearings of reduced outside diameter are used in order to provide adequate pedestal base thickness. However, the load ratings of the standard bearings of the same bore size still apply.

The Cooper pedestals have bolt hole spacings and heights to centres corresponding to the equivalent industry standard units for solid bearings. However, the footprint, overall pedestal height and length on shaft may differ and should be checked against available space.

The tables on the following pages list the Cooper pedestals with the bearing and cartridge of the same bore size as the shaft diameter that is commonly accommodated in the equivalent pillow block with a solid bearing mounted on an adaptor sleeve. These pedestals may also be used with alternative sizes of Cooper bearing. Bearings and cartridges of the same group size (as tabulated in the main bearing, cartridge and pedestal pages) may be accommodated in the same pedestal. In many cases, bearings and cartridges of different series may also be accommodated in these pedestals, providing an even wider choice of bore sizes where the pedestal dimensions are appropriate and loading conditions permit.

SNC500 pedestals are manufactured from grade EN-GJL-250 grey iron to BS EN 1561 : 1997 as standard. SAF500 and SDC3100 pedestals are manufactured from grade EN-GJS-400/18 ductile iron to BS EN 1563 : 1997 as standard.



## SN COMPATIBLE PEDESTALS

Shaft Diameter	Bearing Reference(1)	Reference(1) (pedestal only)	H (mm)	Min(mm)	R Max (mm)	Bolt size	N (mm)	O (mm)	P (mm)	T (mm)	L(2) (mm)	Pedestal Mass (kg)
60	01E B 60M	SNC513	80	226	242	M16	280	70	32	180	104	4.9
65	01E B 65M	SNC515	80	226	242	M16	280	70	32	180	104	4.9
70	01E B 70M	SNC516	95	254	266	M20	315	90	38	208	114	7.3
75	01E B 75M	SNC517	95	254	266	M20	315	90	38	208	114	7.3
80	01E B 80M	SNC518	100	284	296	M20	345	100	32	240	136	13.4
85	01E B 85M	SNC519*	112	284	296	M20	345	100	44	252	136	15.2
90	01E B 90M	SNC520*	112	312	328	M24	380	90	44	252	136	13.3
100	01E B 100M	SNC522*	125	342	366	M24	420	102	52	272	134	14.7
110	01 B 110M	SNC524*	140	344	356	M24	410	120	45	310	142	19.5
115	01 B 115M	SNC526*	150	372	388	M24	450	130	50	320	142	22.7
125	01 B 125M	SNC528*	150	414	426	M30	500	150	50	360	156	38.2
135	01 B 135M	SNC530*	160	444	456	M30	530	160	56	386	168	40
140	01 B 140M	SNC532*	170	462	478	M30	558	178	41	391	168	52

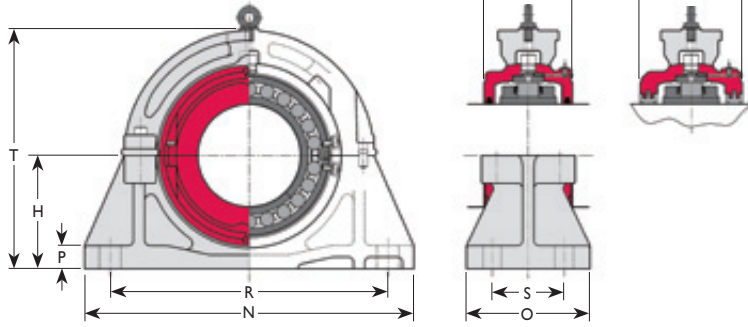
1) For full references of bearings and cartridges see pages 30 to 36

2) Applies for cartridges with either single seal groove or TL seals

\*Pedestals equivalent to these sizes are also available in the Cooper SSNC500 range. Cooper SSNC500 pedestals have the same height to centre as the SNC500 range but do not have slots for the holding-down bolts. They may be drilled by the user for either 2 or 4 bolts. The SSNC500 pedestals are manufactured from ductile iron. Please consult Cooper for full dimensional and loading data.

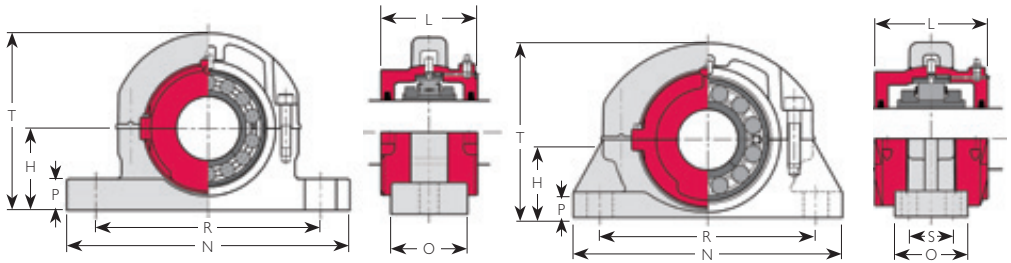


## SD Compatible Pedestals



## SD COMPATIBLE PEDESTALS

Shaft Diameter d (mm)	Bearing Expansion/ Fixed	References			Pedestal Only	R										Masses (kg)	
		Standard Expansion/ Fixed	Cartridge Expansion/ Fixed	TL Cartridge Expansion/ Fixed		H (mm)	Min. (mm)	Max. (mm)	S (mm)	Bolt Size (mm)	N (mm)	O (mm)	P (mm)	T (mm)	L (mm)	LI (mm)	Pedestal only
150	01 B 150M EX	01C 150M EX	01C 10 EX	SDC3134	170	424	436	100	M24	510	178	40	401	174	174	48	98
	01 B 150M GR	01C 150M GR	01C 10 GR														
	02 B 150M EX10 02 B 150M GR11	02C 150M EX11 02C 150M GR11	02C 31 EX20 02C 31 GR22	PN3112	401	204	204	53	109								
160	01E B 600-160M EX	01C 160M EX	01C 11 EX	SDC3136	180	438	462	110	M24	530	190	40	396	172	192	50	105
	01E B 600-160M GR	01C 160M GR	01C 11 GR														
	02E B 600-160M EX 02E B 600-160M GR	02C 600-160M EX 02C 600-160M GR	02C 31 EX OTL 02C 31 GR OTL	PN3113	440	204	204	69	178								
170	01E B 170M EX	01C 170M EX	01C 12 EX	SDC3138	190	468	492	120	M24	560	200	40	425	172	200	59	113
	01E B 170M GR	01C 170M GR	01C 12 GR														
	02E B 170M EX10 02E B 170M GR13	02C 170M EX10 02C 170M GR10	02C 32 EX11 02C 32 GR13	PN3210	457	206	232	83	164								
180	01E B 180M EX	01C 180M EX	01C 12 EX	SDC3140	210	503	517	130	M30	600	210	40	445	172	200	66	120
	01E B 180M GR	01C 180M GR	01C 12 GR														
	02E B 180M EX 02E B 180M GR	02C 180M EX 02C 180M GR	02C 33 EX 02C 33 GR	PN3312	482	222	242	109	222								
200	01E B 200M EX	01C 200M EX	01C 13 EX	SDC3144	220	533	547	140	M30	640	240	45	467	172	200	87	153
	01E B 200M GR	01C 200M GR	01C 13 GR														
	02E B 200M EX 02E B 200M GR	02C 200M EX10 02C 200M GR13	02C 34 EX10 02C 34 GR15	PN3410	525	235	258	115	238								
220	01E B 220M EX	01C 220M EX	01C 14 EX	SDC3148	240	593	607	150	M30	700	250	45	510	178	216	96	174
	01E B 220M GR	01C 220M GR	01C 14 GR														
	02E B 220M EX 02E B 220M GR	02C 220M EX 02C 220M GR	02C 35 EX 02C 35 GR	PN3510	564	242	274	141	328								
240	01E B 240M EX	01C 240M EX	01C 15 EX	SDC3152	260	642	658	160	M36	770	280	49	552	188	222	132	230
	01E B 240M GR	01C 240M GR	01C 15 GR														
	02E B 240M EX 02E B 240M GR	02C 240M EX 02C 240M GR	02C 36 EX 02C 36 GR	PN3610	614	248	280	174	390								
260	01E B 260M EX	01C 260M EX	01C 16 EX	SDC3156	280	662	678	160	M36	790	280	55	591	204	232	160	280
	01E B 260M GR	01C 260M GR	01C 16 GR														
	02E B 260M EX 02E B 260M GR	02C 260M EX 02C 260M GR	02C 36 EX10 02C 36 GR11	PN3612	634	248	300	199	445								
280	01E B 280M EX	01C 280M EX	01C 16 EX	SDC3160	300	702	718	190	M36	830	310	55	611	204	232	175	295
	01E B 280M GR	01C 280M GR	01C 16 GR														
	02E B 280M EX 02E B 280M GR	02C 280M EX 02C 280M GR	02C 37 EX 02C 37 GR	PN3711	678	264	300	247	493								
300	01E B 300M EX	01C 300M EX	01C 17 EX	SDC3164	320	742	758	200	M36	880	320	60	663	216	248	208	354
	01E B 300M GR	01C 300M GR	01C 17 GR														



## SAF COMPATIBLE PEDESTALS

Shaft Diameter d (inches)	Bearing Reference(1)	Reference(1) (pedestal only)	H	R		S	Bolts		N	O	P	T	L(2)	Pedestal Mass (kg)
				Min	Max		No.	Size						
1 15/16	01EB 115	SAFCS11	2 3/4"	7 3/8"	7 7/8"	-	2	5/8"	9 5/8"	2 3/4"	7/8"	6 1/8"	3 13/16"	4.3
2 2/16	01EB 203	SAFCS13	3"	8 1/8"	9 1/2"	-	2	5/8"	11"	3 1/8"	1"	7"	4 1/16"	6.4
2 7/16	01EB 207	SAFCS15	3 1/4"	8 5/8"	9 5/8"	-	2	5/8"	11 1/4"	3 1/8"	1 1/8"	7 1/4"	4 1/16"	7.4
2 11/16	01EB 211	SAFCS16	3 1/2"	9 5/8"	11"	-	2	3/4"	13"	3 1/2"	1 3/8"	7 7/8"	4 1/2"	9.7
2 15/16	01EB 215	SAFCS17	3 3/4"	9 7/8"	11"	-	2	3/4"	13"	3 1/2"	1 7/16"	8 3/8"	4 1/2"	11.5
	02 B 215	FSAFCS17	3 3/4"	10"	10 7/8"	2 3/16"	4	5/8"	13"	3 1/2"	1 1/4"	8 1/2"	5 1/2"	11.5
3 3/16	01EB 303	SAFCS18	4"	10 3/8"	11 5/8"	-	2	3/4"	13 3/8"	3 7/8"	1 1/4"	9 1/2"	5 5/16"	15.4
3 7/16	01E B 307	SAFCS20	4 1/2"	11 5/8"	13 1/8"	-	2	7/8"	15 1/4"	3 7/8"	1 3/4"	10"	5 5/16"	19.3
	02 B 307	FSAFCS20	4 1/2"	11 5/8"	13 1/8"	2 3/16"	4	3/4"	15 1/4"	4 7/8"	1 3/4"	10 1/4"	6 1/16"	15.0
3 15/16	02 B 315	SAFCS22	4 15/16"	12 5/8"	14 1/2"	2 3/4"	4	3/4"	16 1/2"	4 3/4"	2"	11 5/8"	5 3/4"	19.5
4 7/16	02 B 407	SAFCS26	6"	14 5/8"	16"	3 1/4"	4	7/8"	18 3/8"	5 1/8"	2 3/8"	14 1/4"	6 3/8"	43
4 15/16	02 B 415 (3)	SAFCS28 (3)	6"	16"	17 1/8"	3 3/8"	4	1"	20 1/8"	5 7/8"	1 3/8"	15	7 1/4"	54
5 7/16	02 B 507	SAFCS32	6 11/16"	17 3/8"	19 1/4"	3 3/4"	4	1"	22"	6 1/4"	2 11/16"	16 3/4"	7 3/8"	74
5 15/16	02 B 515	SAFCS34	7 1/16"	19 3/8"	21 5/8"	4 1/4"	4	1"	24 3/4"	6 3/4"	2 3/4"	17 1/4"	8"	83

1) For full references of bearings and cartridges see pages 30 and 36 to 38

2) Applies for cartridges with either single seal groove or TL seals

3) Special bearing and cartridge required for this size. Bearing ratings are as for standard 02 B 415, but outside diameters of bearing and cartridge differ from standard.

References: Fixed-type bearing: 02 B 415 GR 16  
 Expansion-type bearing: 02 B 415 EX 16  
 Fixed-type cartridge (for TL seals): 02 C 10 GR 21  
 Expansion-type cartridge (for TL seals): 02 C 10 EX 21

## FLANGES

Flanges provide a simple means of mounting Cooper split roller bearings against a vertical or horizontal face or bulkhead.

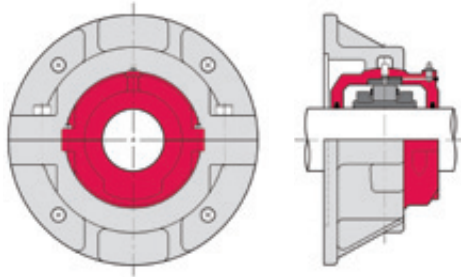
The most common types of flange are the round flange as shown on pages 51 to 55 and the more compact square flange as shown on page 56. Standard round flanges and square flanges are made from grey iron and ductile iron respectively. Alternative materials and designs are available.

Flanges are common between expansion (EX) and fixed (GR) units.

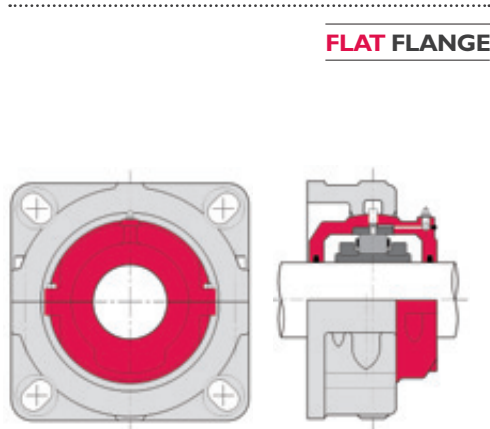
Maximum radial loads for standard units are 26% of static rating (Cor) when used with 01 or 02

Series bearings, and 20% of static rating when used with 01E, 02E and 100 Series bearings. Maximum axial loads are 25% of the axial rating (Ca) of 01 or 02 Series bearings, 18% for 100 Series and 13% for 01E or 02E Series bearings. These loadings can be exceeded considerably with modified construction or materials, and depending on loading direction.

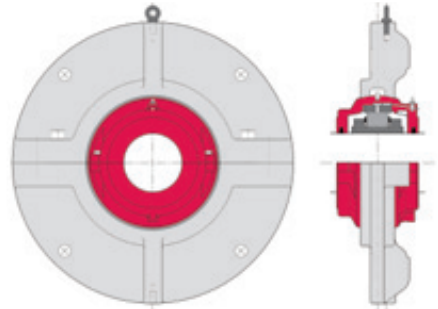
The bulkhead or support plate on which the flange is mounted must be of adequate strength and rigidity to support the imposed load with little distortion of the flange mounting area. Square flanges are more appropriate for steel frames or skid mounted units.



**ROUND FLANGE**

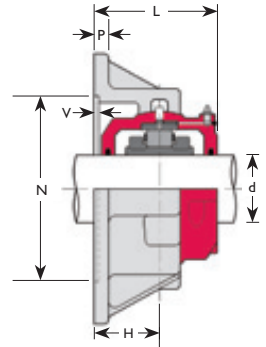
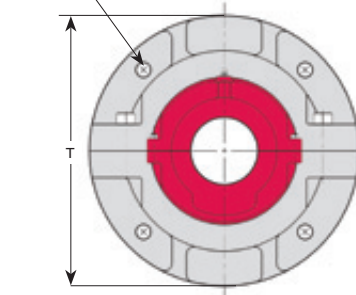


**FLAT FLANGE**



**SQUARE (DF) FLANGE**

R p.c.d. – holes equally spaced



## 100 SERIES

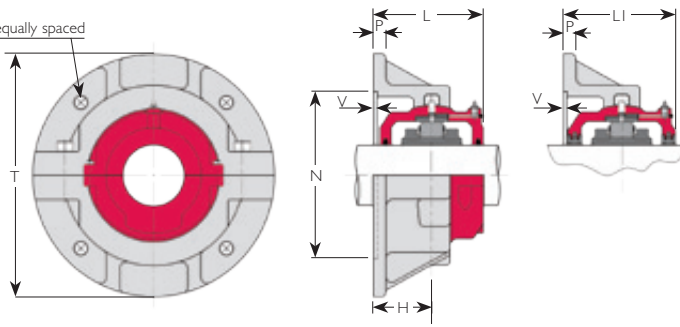
Group Reference	Shaft Diameter d	Bearing Reference (1)	Flange Reference	T(2) (mm)	Bolts	R (mm)	P (mm)	H (mm)	N(3) (mm)	V(3) (mm)	L (mm)	LI (mm)	Mass (flange only) (kg)		
100 300	75mm	2 15/16" 3"	100 B 75M	100 B 215 100 B 300	F03	260	4-off M12 or 1/2"	218	16	67	166.69	3	119	119	9.1
100 307	85mm	3 7/16"	100 B 85M	100 B 307	F04	286	4-off M12 or 1/2"	242	16	73	192.09	3	130	130	12.4
100 400	100mm	3 15/16" 4"	100 B 100M	100 B 315 100 B 400	F05	330	4-off M16 or 5/8"	274	19	79	215.9	3	147	147	19.4
100 408	110mm 115mm	4 7/16" 4 1/2"	100 B 110M 100 B 115M	100 B 407 100 B 408	F06	356	4-off M16 or 5/8"	302	19	86	244.48	3	153	153	22
100 500	120mm 125mm 130mm	4 15/16" 5"	100 B 120M 100 B 125M 100 B 130M	100 B 415 100 B 500	F07	382	4-off M16 or 5/8"	334	22	92	276.23	3	163	163	26.6
100 508	140mm	5 7/16" 5 1/2"	100 B 140M	100 B 507 100 B 508	F08	432	4-off M24 or 1"	374	22	98	314.33	3	176	176	34.9
100 600	150mm	5 15/16" 6"	100 B 150M	100 B 515 100 B 600	F09	444	4-off M24 or 1"	384	25	98	317.5	3	182	182	40.8

1) For full references of bearings and cartridges see page 28  
 2) Dimension shown is as-cast dimension. Depending upon manufacturing method used, flanges supplied may be machined 5mm smaller

3) Dimensions shown are for locating spigot for mounting flange on to. Diameter tolerance of locating spigot: f8

## Round flanges 01/01E Series

R pcd – holes equally spaced



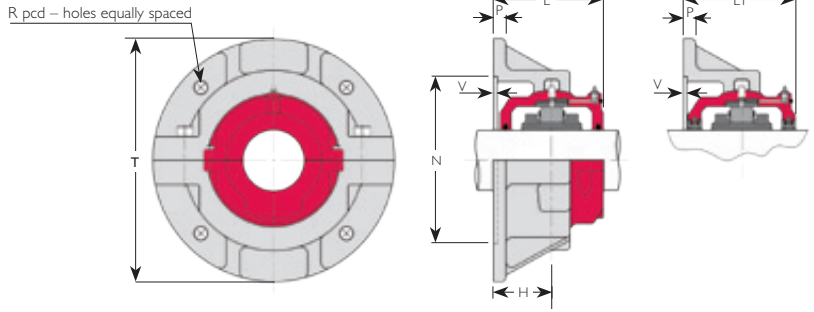
### 01/01E SERIES

Group Reference	Shaft Diameter d	Bearing Reference (1)	Flange Reference	T(2) (mm)	Bolts	R (mm)	P (mm)	H (mm)	N(3) (mm)	V(3) (mm)	L (mm)	LI (mm)	Mass (flange only) (kg)	
01 108	35mm	1 3-16"	01 B 103	F01	204	4-off M12 or 1/2"	164	13	51	119.06	3	94	94	4.2
	40mm	1 1/4"	01 B 104											
		1 7/16"	01 B 107											
		1 1/2"	01 B 108											
01E 200	45mm	1 11/16"	01E B 111	F02	216	4-off M12 or 1/2"	180	13	57	136.53	3	106	106	5.1
	50mm	1 3/4"	01E B 112											
		1 15/16"	01E B 115											
		2"	01E B 200											
01E 208	55mm	2 3/16"	01 E B 203	F03	260	4-off M12 or 1/2"	218	16	67	166.69	3	119	119	9.1
	60mm	2 1/4"	01 E B 204											
	65mm	2 7/16"	01 E B 207											
		2 1/2"	01 E B 208											
01E 300	70mm	2 11/16"	01E B 211	F04	286	4-off M12 or 1/2"	242	16	73	192.09	3	130	130	12.4
	75mm	2 3/4"	01E B 212											
		2 15/16"	01E B 215											
		3"	01 E B 300											
01E 308	80mm	3 3/16"	01E B 303	F05	330	4-off M16 or 5/8"	274	19	79	215.9	3	147	147	19.4
	85mm	3 1/4"	01E B 304											
	90mm	3 7/16"	01E B 307											
		3 1/2"	01E B 308											
01E 400	95mm	3 11/16"	01E B 311	F06	356	4-off M16 or 5/8"	302	19	86	244.48	3	153	153	22.0
	100mm	3 3/4"	01E B 312											
	105mm	3 15/16"	01E B 315											
		4"	01E B 400											
01 408	110mm	4 3/16"	01 B 403	F07	382	4-off M16 or 5/8"	334	22	92	276.23	3	163	163	26.6
	125mm	4 7/16"	01 B 407											
	130mm	4 1/2"	01 B 408											
01 500	120mm	4 15/16"	01 B 120M	F08	432	4-off M24 or 1"	374	22	98	314.33	3	176	176	34.9
	125mm	5"	01 B 415											
	130mm		01 B 500											
01 508	135mm	5 3/16"	01 B 503	F09	444	4-off M24 or 1"	384	25	98	317.5	3	182	182	40.8
	140mm	5 7/16"	01 B 507											
		5 1/2"	01 B 508											

1) For full references of bearings and cartridges see pages 30 to 34

2) Dimension shown is as-cast dimension. Depending upon manufacturing method used, flanges supplied may be machined 5mm smaller.

3) Dimensions shown are for locating spigot for mounting flange on to. Diameter tolerance of locating spigot: f8

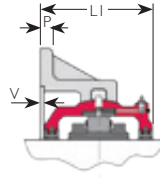
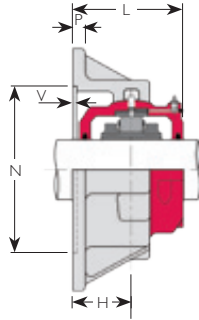
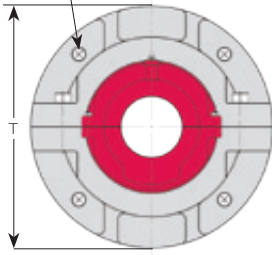


**01/01E SERIES**

Group Reference	Shaft Diameter d	Bearing Reference (1)	Flange Reference	T(2) (mm)	Bolts	R (mm)	P (mm)	H (mm)	N(3) (mm)	V(3) (mm)	L (mm)	L1 (mm)	Mass (flange only) (kg)		
01 600	150mm 160mm	5 15/16" 6"	01 B 150M 01 B 600-160M	01 B 515 01 B 600	F10	470	4-off M24 or 1"	412	25	114	346.07	3	201	201	50.2
01E 608	160mm 170mm	6 7/16" 6 1/2"	01EB 160M 01EB 608-170M	01EB 607 01EB 608	F11	496	4-off M24 or 1"	426	25	105	352.43	3	191	201	58
01E 700	170mm 175mm 180mm	6 15/16" 7"	01EB 170M 01EB 175M 01EB 180M	01EB 615 01EB 700	F12	508	4-off M24 or 1"	438	29	108	365.13	3	194	208	62
01E 800	190mm 200mm	7 15/16" 8"	01EB 190M 01EB 200M	01EB 715 01EB 800	F13	534	4-off M24 or 1"	474	32	108	400.05	3	194	208	71
01E 900	220mm 230mm	9"	01EB 220M 01EB 230M	01EB 900	F14	584	4-off M30 or 1 1/4"	512	35	117	431.8	3	206	225	85
01E 1000	240mm 250mm 260mm	10"	01EB 240M 01EB 250M 01EB 1000-260M	01EB 1000	F15	610	4-off M30 or 1 1/4"	542	35	117	463.55	3	211	228	100
01E 1100	260mm 270mm 275mm 280mm	11"	01EB 260M 01EB 270M 01EB 275M 01EB 280M	01EB 1100	F16	660	4-off M30 or 1 1/4"	584	38	124	504.83	3	226	240	116
01E 1200	290mm 300mm	12"	01EB 290M 01EB 300M	01EB 1200	F17	712	4-off M30 or 1 1/4"	626	38	133	539.75	3	241	257	119
01 1300	320mm 330mm 340mm	13"	01 B 320M 01 B 330M 01 B 1300-340M	01 B 1300	F18	812	4-off M36 or 1 1/2"	698	38	152	584.2	5	282	288	184
01 1400	340mm 350mm 360mm	14"	01 B 340M 01 B 350M 01 B 1400-360M	01 B 1400	F19	850	4-off M36 or 1 1/2"	738	40	140	610	7	270	276	207
01 1500	360mm 380mm	15"	01 B 360M 01 B 380M	01 B 1500	F20	914	8-off M30 or 1 1/4"	800	44	165	673.1	5	295	305	276
01 1600	390mm 400mm	16"	01 B 390M 01 B 400M	01 B 1600	F21	914	8-off M30 or 1 1/4"	800	44	165	673.1	5	305	308	273.0

## Round flanges 02/02E series

R pcd – holes equally spaced

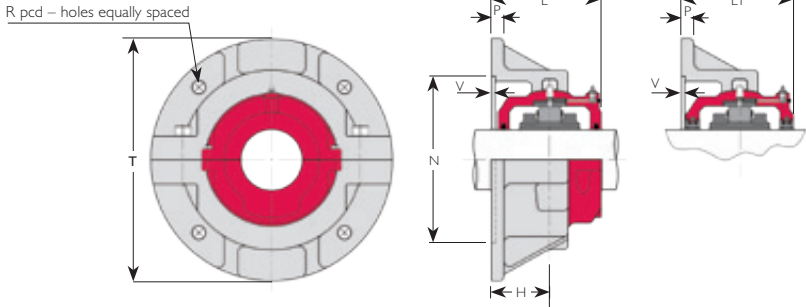


### 02/02E SERIES

Group Reference	Shaft Diameter	Bearing Reference (1)	Flange Reference	T(2) (mm)	Bolts	R (mm)	P (mm)	H (mm)	N(3) (mm)	V(3) (mm)	L (mm)	LI (mm)	Mass (flange only) (kg)		
02 200	50mm	1 15/16" 2"	02 B 50M	02 B 115 02 B 200	F03	260	4-off M12 or 1/2"	218	16	67	166.69	3	124	124	9.1
		2 3/16" 2 1/4"	02 B 60M 02 B 65M	02 B 203 02 B 204 02 B 207 02 B 208	F04	286	4-off M12 or 1/2"	242	16	73	192.09	3	136	136	12.4
02 300	70mm 75mm	2 11/16" 2 3/4"	02 B 70M 02 B 75M	02 B 211 02 B 212 02 B 215 02 B 300	F05	330	4-off M16 or 5/8"	274	19	79	215.9	3	149	149	19.4
		3 3/16" 3 1/4"	02 B 80M 02 B 85M 02 B 90M	02 B 303 02 B 304 02 B 307 02 B 308	F06	356	4-off M16 or 5/8"	302	19	86	244.48	3	163	163	22.0
02 400	100mm 105mm	3 11/16" 3 3/4"	02 B 100M 02 B 105M	02 B 311 02 B 312 02 B 315 02 B 400	F07	382	4-off M16 or 5/8"	334	22	92	276.23	3	165	165	26.6
		3 15/16" 4"	02 B 110M 02 B 115M	02 B 403 02 B 407 02 B 408	F08	432	4-off M24 or 1"	374	22	98	314.33	3	179	179	34.9
02 500	120mm 125mm 130mm	4 15/16" 5"	02 B 120M 02 B 125M 02 B 130M	02 B 415 02 B 500	F10	470	4-off M24 or 1"	412	25	114	346.07	3	206	206	50

- 1) For full references of bearings and cartridges see pages 36 to 40  
 2) Dimension shown is as-cast dimension. Depending upon manufacturing method used, flanges supplied may be machined 5mm smaller

- 3) Dimensions shown are for locating spigot for mounting flange on to. Diameter tolerance of locating spigot: f8

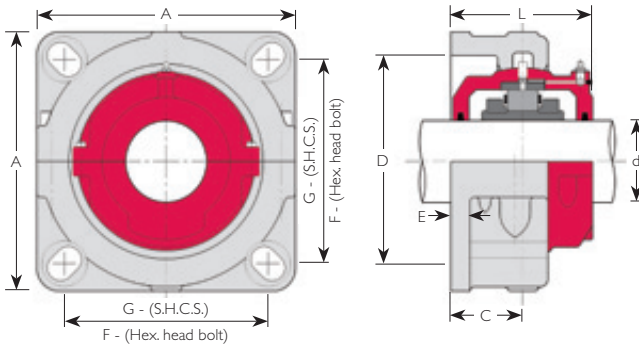


**02/02E SERIES**

Group Reference	Shaft Diameter d	Bearing Reference (1)	Flange Reference	T(2) (mm)	Bolts	R (mm)	P (mm)	H (mm)	N(3) (mm)	V(3) (mm)	L (mm)	LI (mm)	Mass (flange only) (kg)		
02 508	140mm 145mm	5 3/16" 5 7/16" 5 1/2"	02 B 140M 02 B 145M	02 B 503 02 B 507 02 B 508	F30	508	4-off M24 or 1"	444	25	114	377.82	3	208	208	67
02 600	150mm 155mm 160mm	5 15/16" 6"	02 B 150M 02 B 155M 02 B 600-160M	02 B 515 02 B 600	F31	534	4-off M24 or 1"	466	25	124	393.7	3	226	226	81
02E 608	160mm 170mm	6 7/16" 6 1/2"	02E B 160M 02E B 170M	02E B 607 02E B 608	F32	584	4-off M30 or 1 1/4"	508	29	124	428.63	5	227	240	95
02E 700	175mm 180mm	6 15/16" 7"	02E B 175M 02E B 180M	02E B 615 02E B 700	F33	596	4-off M30 or 1 1/4"	524	32	130	444.5	5	241	251	100
02E 800	190mm 200mm	7 15/16" 8"	02E B 190M 02E B 200M	02E B 715 02E B 800	F34	648	4-off M30 or 1 1/4"	572	32	137	492.13	5	254.5	266	138
02E 900	220mm 230mm	9"	02E B 220M 02E B 230M	02E B 900	F35	712	4-off M36 or 1 1/2"	620	35	146	527.05	5	267	283	145
02E 1000	240mm 250mm 260mm	10"	02E B 240M 02E B 250M 02E B 260M	02E B 1000	F36	736	4-off M36 or 1 1/2"	660	38	149	568.33	5	273	289	178
02E 1100	280mm	11"	02E B 280M	02E B 1100	F37	762	8-off M30 or 1 1/4"	682	38	159	603.25	5	291	309	195
02E 1200	300mm	12"	02E B 300M	02E B 1200	F38	788	8-off M30 or 1 1/4"	708	41	162	628.65	5	296	315	195
02 1300	320mm 330mm	13"	02 B 320M 02 B 330M	02 B 1300	F39	914	8-off M30 or 1 1/4"	800	45	190	680	7	339	355	309



## Square Flanges



### 100 SERIES

Group Reference	Shaft Diameter d	Bearing Reference (1)	Flange Reference	A (mm)	SHCS		Hex. Head Bolt		C (mm)	D (mm)	E (mm)	L(2) (mm)	Mass (flange only) (kg)	
					Size	G centres (mm)	Size	F centres (mm)						
100 300	75mm	2 15/16" 3"	100 B 75M 100 B 215 100 B 300	DF03	184	M16	136	5/8"	141	55	146	16	107	5.6
100 307	85mm	3 7/16"	100 B 85M 100 B 307	DF04	217	M20	164	3/4"	171	60	178	16	117	8.5
100 400	100mm	3 15/16" 4"	100 B 100M 100 B 315 100 B 400	DFN0510	214(3)	M20	171	3/4"	171	79	180	25	147	10.9

### 01E SERIES

Group Reference	Shaft Diameter d	Bearing Reference (1)	Flange Reference	A (mm)	SHCS		Hex. Head Bolt		C (mm)	D (mm)	E (mm)	L(2) (mm)	Mass (flange only) (kg)	
					Size	G centres (mm)	Size	F centres (mm)						
01E 200	45mm 50mm	1 11/16"	01E B 111	DF02	165	M12	114	1/2"	118	52	120	13	101	4
		1 3/4"	01E B 112											
		1 15/16"	01E B 115											
		2"	01E B 200											
01E 208	55mm 60mm 65mm	2 3/16"	01E B 203	DF03	184	M16	136	5/8"	141	55	146	16	107	5.6
		2 1/4"	01E B 204											
		2 7/16"	01E B 207											
		2 1/2"	01E B 208											
01E 300	70mm 75mm	2 11/16"	01E B 211	DF04	217	M20	164	3/4"	171	60	178	16	117	8.5
		2 3/4"	01E B 212											
		2 15/16"	01E B 215											
		3"	01E B 300											
01E 308	80mm 85mm 90mm	3 3/16"	01E B 303	DFN0510	214(3)	M20	171	3/4"	171	79	180	25	147	10.9
		3 1/4"	01E B 304											
		3 7/16"	01E B 307											
		3 1/2"	01E B 308											

1) For full references of bearings and cartridges see pages 28 and 30

2) Applies for cartridges with either single seal groove or TL seals

3) Dimension applies to backface of flange. Joint bosses project beyond footprint of backface. Width over joint bosses: 255mm

## HANGERS

**Hanger units are a compact means of supporting the shafts of screw conveyors and similar equipment.**

The 100 Series units offer the lowest housing frontal area for a given shaft diameter.

Double felt seals are supplied as standard. The standard seal grooves are also able to accommodate rubber lip seals or high temperature packing. A tapped hole in communication with the space between the seal grooves at each end of the housing is optionally provided. This is for connection to either a grease supply or an air supply for regular or continuous purging of the seals.

Another option is for the housing end bores to be machined to take heavy duty lip seals as illustrated below. The length on shaft of these units may be slightly greater than standard; details will be supplied on request.

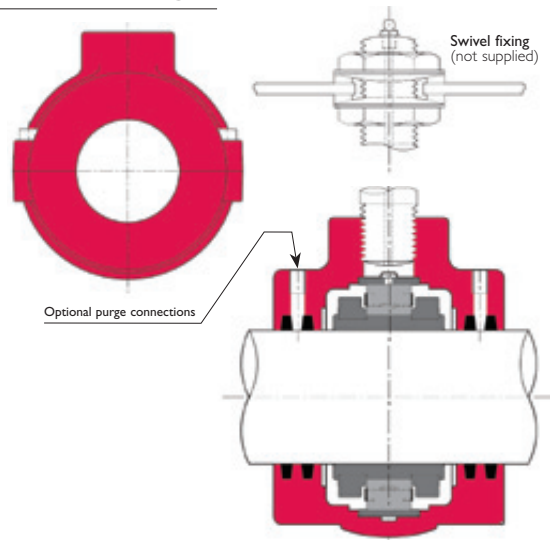
It is recommended that our technical department is contacted in order to obtain a recommendation for the sealing of each hanger unit application.

Lubrication points are not fitted to hangers as standard, with provision for lubrication of the bearing usually made through the suspension rod. Continuous grease feed is sometimes desirable.

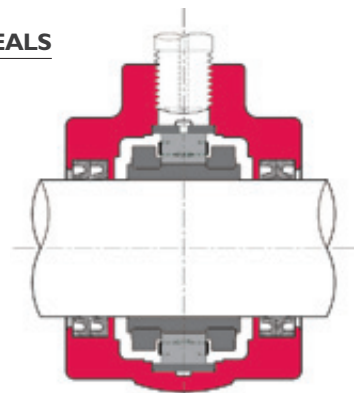
The bearing is mounted directly into a split grey iron housing ('hanger') with a threaded boss, to allow suspension from the conveyor cross-bracing. A swivel fixing at the cross-bracing joint is recommended to provide for alignment of the bearing.

Hangers are only suitable for housing expansion ('EX') type bearings.

### STANDARD HANGER



### HANGER WITH HEAVY DUTY LIP SEALS

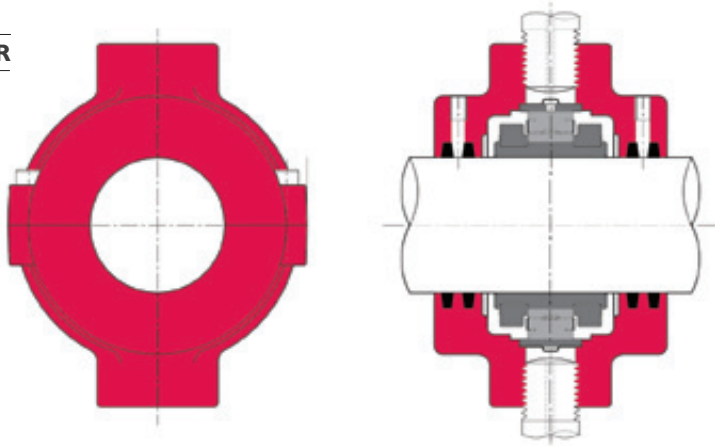


The standard type of hanger has a single threaded boss for suspension from above, by a single rod to minimise the obstruction to material flow in scroll conveyors. For applications where it is desired to locate the housing by rods from above and below, a double boss type is available.

A further type of hanger has three threaded bosses disposed at 120 degree intervals for location by three rods.

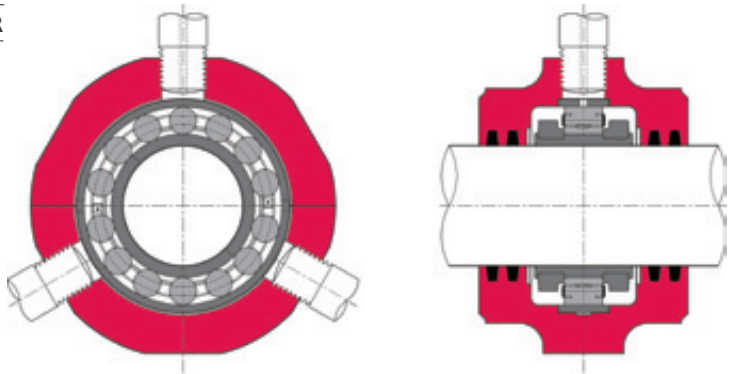
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**DOUBLE BOSS HANGER**



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**TRIPLE BOSS HANGER**



**COOPER**<sup>®</sup>

# THE ORIGINAL

## SPLIT ROLLER BEARING

The inventor of the split to the shaft roller bearing, Cooper has unrivalled expertise gained in over 100 years manufacturing both the bearing and the housing at their site in King's Lynn (UK)

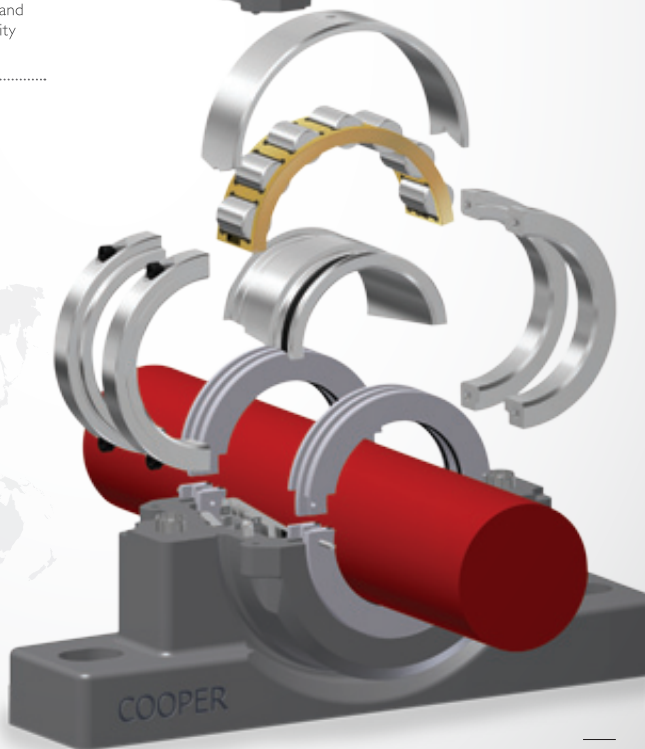


### HIGHEST CAPACITY

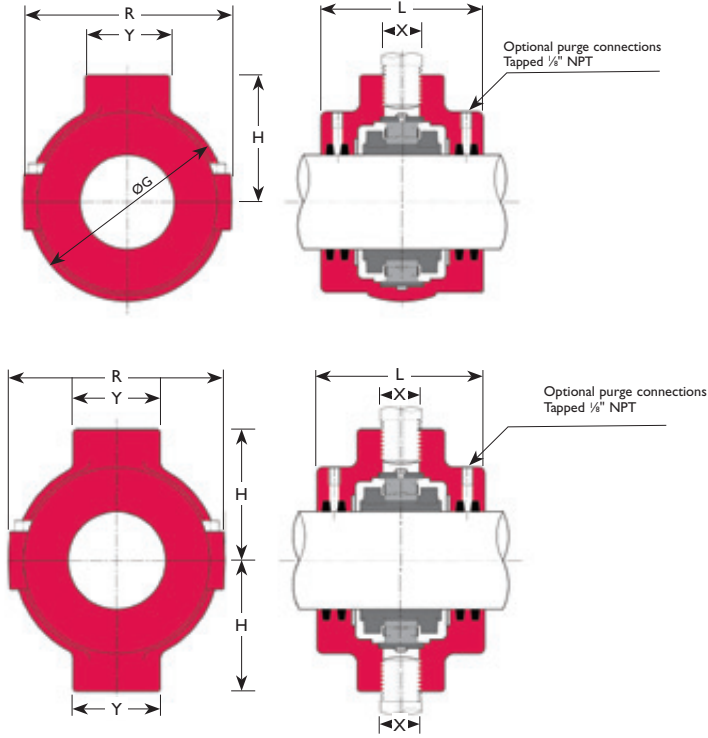
Cooper's position as a leader in the field has been recently re-affirmed with the introduction of the O1E/O2E series. Equipped with a robust brass cage and larger rollers the new series ensures significant improvements in radial and axial capacity confirming Cooper as the highest capacity split bearing on the market.

### WIDEST RANGE

With 4 series of split cylindrical roller bearings: 100 (light), 01 (medium), 02 (heavy) and 03 (extra heavy) as well as a range of split taper roller bearings, Cooper has a range unmatched by any manufacturer.



# Single and Double Boss Hangers



## 100 SERIES

Group Reference	Shaft Diameter d	Bearing Reference	Hanger Only Reference (1)	G (mm)	L (mm)	H (mm)	X (2)	Y (mm)	R (mm)	Hanger Mass (3) (kg)			
100 300	75mm 2 15/16" 3"	100 B 75M EX	100 B 215 EX 100 B 300 EX	100 H 75M	100 H 215 100 H 300	134	108	82	M30	1"-8 UNC	50	139	4.7
100 307	85mm 3 7/16"	100 B 85M EX	100 B 307 EX	100 H 85M	100 H 307	158	130	92	M30	1"-8 UNC	50	162	8.0
100 400	100mm 3 15/16" 4"	100 B 100M EX	100 B 315 EX 100 B 400 EX	100 H 100M	100 H 315 100 H 400	178	146	114	M36	1 1/2"-6 UNC	76	188	12.0
100 408	110mm 115mm 4 7/16" 4 1/2"	100 B 110M EX 100 B 115M EX	100 B 407 EX 100 B 408 EX	100 H 110M 100 H 115M	100 H 407 100 H 408	203	152	127	M36	1 1/2"-6 UNC	76	204	14.0
100 500	120mm 125mm 130mm 4 15/16" 5"	100 B 120M EX 100 B 125M EX 100 B 130M EX	100 B 415 EX 100 B 500 EX	100 H 120M 100 H 125M 100 H 130M	100 H 415 100 H 500	232	156	140	M36	1 1/2"-6 UNC	76	226	16.4
100 508	140mm 5 7/16" 5 1/2"	100 B 140M EX	100 B 507 EX 100 B 508 EX	100 H 140M	100 H 507 100 H 508	276	162	156	M36	1 1/2"-6 UNC	76	238	22.3
100 600	150mm 5 15/16" 6"	100 B 150M EX	100 B 515 EX 100 B 600 EX	100 H 150M	100 H 515 100 H 600	280	158	160	M36	1 1/2"-6 UNC	76	264	20.9

**01/01E SERIES**

Group Reference	Shaft Diameter d	Bearing Reference	Hanger Only Reference (1)			G (mm)	L (mm)	H (mm)	X (2)	Y (mm)	R (mm)	Hanger Mass (3) (kg)
01 108	35mm	1 3-16"	01 B 103 EX	01 H 103	100	108	66	M30	1"-8 UNC	50	106	2.6
	40mm	1 1/4"	01 B 104 EX	01 H 104								
		1 7/16"	01 B 107 EX	01 H 107								
		1 1/2"	01 B 108 EX	01 H 108								
01E 200	45mm	1 11/16"	01E B 111 EX	01 H 111	118	108	76	M30	1"-8 UNC	50	123	4.1
	50mm	1 3/4"	01E B 112 EX	01 H 112								
		1 15/16"	01E B 115 EX	01 H 115								
		2"	01E B 200 EX	01 H 200								
01E 208	55mm	2 3/16"	01E B 203 EX	01 H 203	134	108	82	M30	1"-8 UNC	50	139	4.7
	60mm	2 1/4"	01E B 204 EX	01 H 204								
	65mm	2 7/16"	01E B 207 EX	01 H 207								
		2 1/2"	01E B 208 EX	01 H 208								
01E 300	70mm	2 11/16"	01E B 211 EX	01 H 211	158	130	92	M30	1"-8 UNC	50	162	8.0
	75mm	2 3/4"	01E B 212 EX	01 H 212								
		2 15/16"	01E B 215 EX	01 H 215								
		3"	01E B 300 EX	01 H 300								
01E 308	80mm	3 3/16"	01E B 303 EX	01 H 303	178	146	114	M36	1 1/2"-6 UNC	76	188	12.0
	85mm	3 1/4"	01E B 304 EX	01 H 304								
	90mm	3 7/16"	01E B 307 EX	01 H 307								
		3 1/2"	01E B 308 EX	01 H 308								
01E 400	95mm	3 11/16"	01E B 311 EX	01 H 311	203	152	127	M36	1 1/2"-6 UNC	76	204	14.0
	100mm	3 3/4"	01E B 312 EX	01 H 312								
	105mm	3 15/16"	01E B 315 EX	01 H 315								
		4"	01E B 400 EX	01 H 400								
01 408	110mm	4 3/16"	01 B 403 EX	01 H 403	232	156	140	M36	1 1/2"-6 UNC	76	226	16.4
	115mm	4 7/16"	01 B 407 EX	01 H 407								
		4 1/2"	01 B 408 EX	01 H 408								
01 500	120mm	4 15/16"	01 B 415 EX	01 H 415	276	162	156	M36	1 1/2"-6 UNC	76	238	22.3
	125mm	5"	01 B 500 EX	01 H 500								
	130mm											
01 508	135mm	5 3/16"	01 B 503 EX	01 H 503	280	158	160	M36	1 1/2"-6 UNC	76	264	20.9
	140mm	5 7/16"	01 B 507 EX	01 H 507								
		5 1/2"	01 B 508 EX	01 H 508								

1) For grease / air purge points to seals add 'AP' to reference, e.g.: 01 H 125M AP For double boss type add 'DOUBLE BOSS' to reference, e.g.: 01 H 125M AP

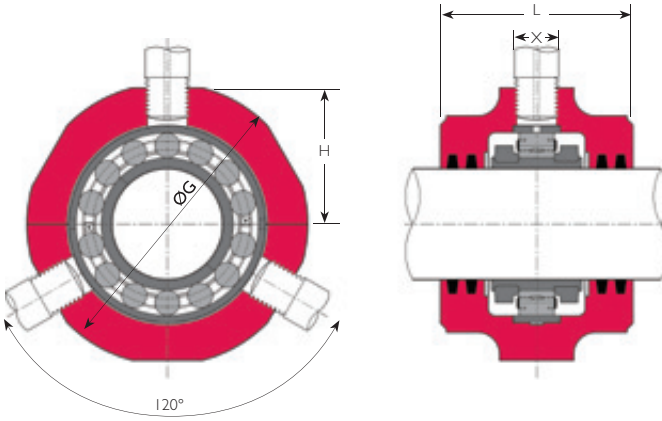
For double boss type with purge points to seals add 'DOUBLE BOSS AP' to reference, e.g.: 01 H 125M DOUBLE BOSS AP

2) Hangers with metric bore sizes have metric mounting threads as standard.

Hangers with inch-size bore sizes have UNC mounting threads as standard.

3) Mass of single boss version. Double boss version slightly heavier.

## Triple Boss Hangers



### TRIPLE BOSS HANGERS

Group Reference	Shaft Diameter d	Bearing Reference	Hanger Only Reference (I)			G (mm)	L (mm)	H (mm)	X(I)	Hanger Mass (kg)	
01E 200	45mm	1 11/16" 01E B 45M EX	01E B 111 EX	01 H 45M TRIPLE BOSS	01 H 111 TRIPLE BOSS	160	109	76	M30	1"-8 UNC	6.4
	50mm	1 15/16" 01E B 50M EX	01E B 112 EX 01E B 115 EX 01E B 200 EX	01 H 50M TRIPLE BOSS	01 H 112 TRIPLE BOSS 01 H 115 TRIPLE BOSS 01 H 200 TRIPLE BOSS						
01E 300	70mm	2 11/16" 01E B 70M EX	01E B 211 EX	01 H 70M TRIPLE BOSS	01 H 211 TRIPLE BOSS	190	130	92	M30	1"-8 UNC	10.0
	75mm	2 15/16" 01E B 75M EX	01E B 212 EX 01E B 215 EX 01E B 300 EX	01 H 75M TRIPLE BOSS	01 H 212 TRIPLE BOSS 01 H 215 TRIPLE BOSS 01 H 300 TRIPLE BOSS						
100 307	85mm	3 7/16" 100 B 85M EX	100 B 307 EX	100 H 85M TRIPLE BOSS	100 H 307 TRIPLE BOSS	190	130	92	M30	1"-8 UNC	10.0
01 408	110mm	4 3/16" 01 B 110M EX	01 B 403 EX	01 H 110M TRIPLE BOSS	01 H 403 TRIPLE BOSS	290	170	140	M36	1 1/2"-6 UNC	30.0
	115mm	4 7/16" 01 B 115M EX	01 B 407 EX 01 B 408 EX	01 H 115M TRIPLE BOSS	01 H 407 TRIPLE BOSS 01 H 408 TRIPLE BOSS						
100 500	120mm	4 15/16" 100 B 120M EX	100 B 415 EX	100 H 120M TRIPLE BOSS	100 H 415 TRIPLE BOSS	290	170	140	M36	1 1/2"-6 UNC	30.0
	125mm	5" 100 B 125M EX	100 B 500 EX	100 H 125M TRIPLE BOSS	100 H 500 TRIPLE BOSS						
	130mm	100 B 130M EX		100 H 130M TRIPLE BOSS							

- I) Hangers with metric bore sizes have metric mounting threads as standard.  
Hangers with inch-size bore sizes have UNC mounting threads as standard.

## TAKE-UP UNITS

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

Each take-up unit consists of a Cooper split roller bearing in a swivel cartridge mounted in a cast iron sliding unit. Two basic configurations are available – the 'push' type and 'tension' type as illustrated.

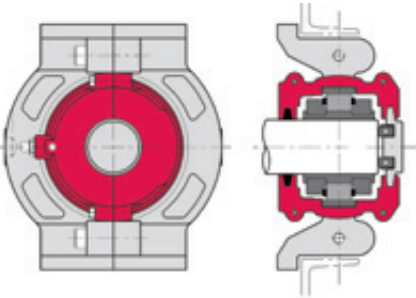
Usually a Cooper take-up will be mounted at each end of the shaft. Up to and including

90mm/3½" bore size the standard arrangement uses two expansion (EX) bearings, with axial location provided by blanking plates and ball thrust bearings. Above 90mm/3½" bore size the standard arrangement uses two fixed (GR) bearings and plain blanking plates. If a through-shaft or different method of axial location is required, please consult our technical department.

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### PUSH TYPE

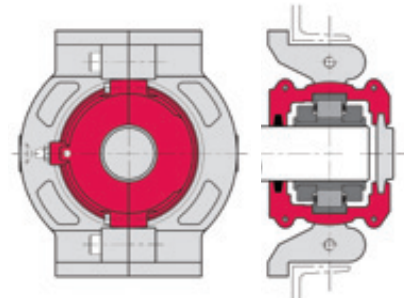
Up to 90mm arrangement




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### PUSH TYPE

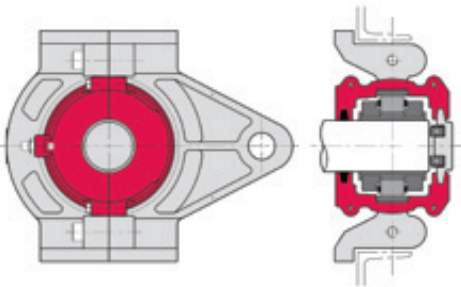
Over 90mm arrangement




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### TENSION TYPE

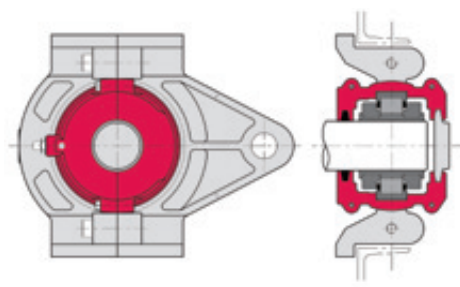
Up to 90mm arrangement



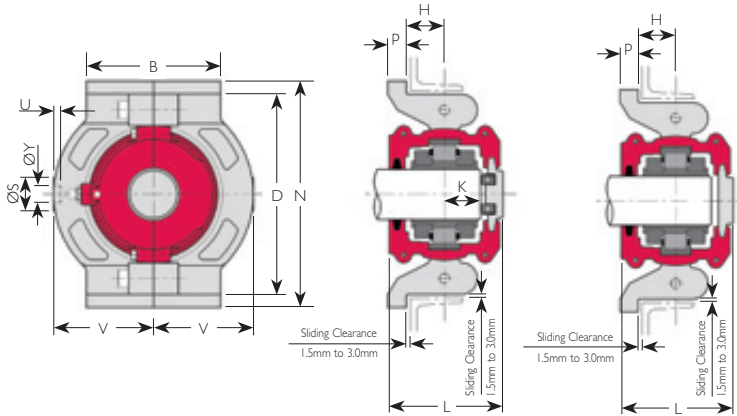

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### TENSION TYPE

Over 90mm arrangement







### 100 SERIES UP TO 90mm BORE SIZE

Group Reference	Shaft Diameter d	References (1)		Take-up housing	B (mm)	N (mm)	D (mm)	V (mm)	K (mm)	P (mm)	H (mm)	L (mm)	S (mm)	Y (mm)	U (mm)	Mass (Complete unit) (kg)	
		Bearing															
100 300	75mm	2 15/16" 3"	100 B 75M	100 B 215 100 B 300	TP03	128	235	203	102	30	20	32	104	38	16	6	13
100 307	85mm	3 7/16"	100 B 85M	100 B 307	TP04	152	266	229	114	35	22	40	114	41	16	6	17

1) For radial bearing only reference (for standard arrangement) add 'EX' e.g. 100 B 75M EX. Ball thrust bearings are usually

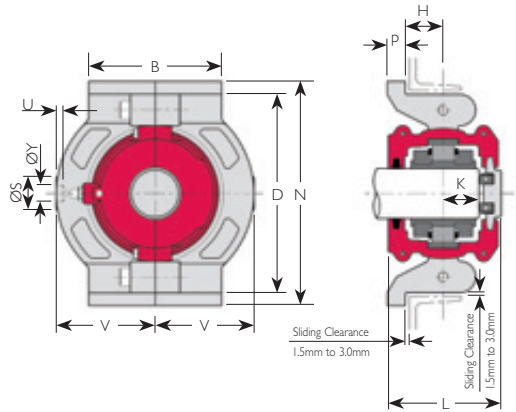
supplied complete with blanking plate. Refer to page 12  
For cartridge reference refer to page 28

### 100 SERIES OVER 90mm BORE SIZE

Group Reference	Shaft Diameter d	References (2)		Take-up housing	B (mm)	N (mm)	D (mm)	V (mm)	P (mm)	H (mm)	L (mm)	S (mm)	Y (mm)	U (mm)	Mass (Complete unit) (kg)	
		Bearing														
100 400	100mm	3 15/16" 4"	100 B 100M	100 B 315 100 B 400	TP05	190	318	280	140	22	40	136	51	16	6	26
100 408	110mm 115mm	4 7/16" 4 1/2"	100 B 110M 100 B 115M	100 B 407 100 B 408	TP06	204	342	305	152	22	43	134	51	19	6	29
100 500	120mm 125mm 130mm	4 15/16" 5"	100 B 120M 100 B 125M 100 B 130M	100 B 415 100 B 500	TP07	216	382	343	162	22	48	142	70	19	6	42
100 508	140mm	5 7/16" 5 1/2"	100 B 140M	100 B 507 100 B 508	TP08	254	420	381	190	25	51	156	76	19	6	60
100 600	150mm	5 15/16" 6"	100 B 150M	100 B 515 100 B 600	TP09	266	438	400	196	25	54	168	76	23	8	73

2) For radial bearing only reference (for standard arrangement) add 'GR' e.g. 100 B 100M GR

For cartridge reference refer to page 28

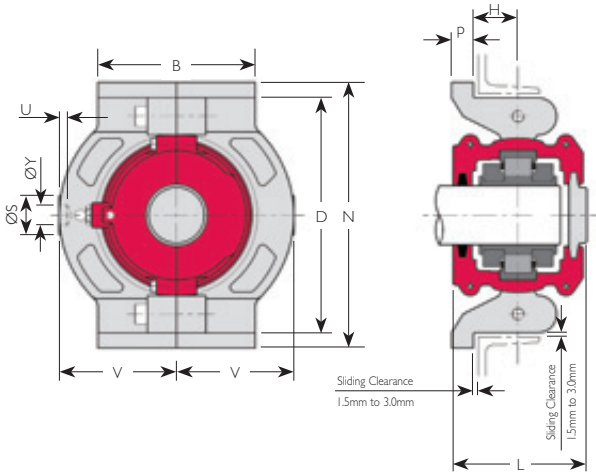


**01/01E SERIES UP TO 90mm BORE SIZE**

Group Reference	Shaft Diameter d	References (1)		Take-up housing	B (mm)	N (mm)	D (mm)	V (mm)	K (mm)	P (mm)	H (mm)	L (mm)	S (mm)	Y (mm)	U (mm)	Mass (Complete unit) (kg)
		Bearing														
01 108	35mm	1 3/16"	01 B 103	TP01	102	172	153	76	27	14	29	86	25	13	5	6
	40mm	1 1/4"	01 B 104													
		1 7/16"	01 B 107													
		1 1/2"	01 B 108													
01E 200	45mm	1 11/16"	01E B 111	TP02	114	204	178	88	29	16	29	98	29	13	5	9
	50mm	1 3/4"	01E B 112													
		1 15/16"	01E B 115													
		2"	01E B 200													
01E 208	55mm	2 3/16"	01E B 203	TP03	128	235	203	102	30	20	32	104	38	16	6	13
	60mm	2 1/4"	01E B 204													
	65mm	2 7/16"	01E B 207													
		2 1/2"	01E B 208													
01E 300	70mm	2 11/16"	01E B 211	TP04	152	266	229	114	35	22	40	114	41	16	6	17
	75mm	2 3/4"	01E B 212													
		2 15/16"	01E B 215													
		3"	01E B 300													
01E 308	80mm	3 3/16"	01E B 303	TP05	190	318	280	140	40	22	40	136	51	16	6	27
	85mm	3 1/4"	01E B 304													
	90mm	3 7/16"	01E B 307													
		3 1/2"	01E B 308													

1) For radial bearing only reference (for standard arrangement) add 'EX' e.g. 01 B 40M EX

For cartridge reference refer to page 30

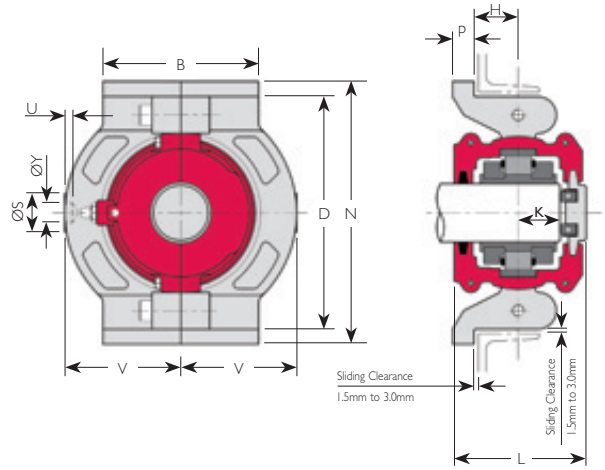


## 01/01E SERIES OVER 90mm BORE SIZE

Group Reference	Shaft Diameter	References (1)										Mass (Complete unit) (kg)				
		Bearing	Take-up housing	B (mm)	N (mm)	D (mm)	V (mm)	P (mm)	H (mm)	L (mm)	S (mm)		Y (mm)	U (mm)		
01E 400	95mm	3 11/16"	01E B 95M	01E B 311	TP06	204	342	305	152	22	43	134	51	19	6	31
	100mm	3 3/4"	01E B 100M	01E B 312												
	105mm	3 15/16"	01E B 105M	01E B 315												
		4"	01E B 105M	01E B 400												
01 408	110mm	4 3/16"	01 B 110M	01 B 403	TP07	216	382	343	162	22	48	142	70	19	6	46
	115mm	4 7/16"	01 B 115M	01 B 407												
		4 1/2"		01 B 408												
01 500	120mm	4 15/16"	01 B 120M	01 B 415	TP08	254	420	381	190	25	51	156	76	19	6	65
	125mm	5"	01 B 125M	01 B 500												
	130mm		01 B 130M													
01 508	135mm	5 3/16"	01 B 135M	01 B 503	TP09	266	438	400	196	25	54	168	76	23	8	80
	140mm	5 7/16"	01 B 140M	01 B 507												
		5 1/2"		01 B 508												
01 600	150mm	5 15/16"	01 B 150M	01 B 515	TP10	266	464	426	204	25	57	174	86	23	8	91
	160mm	6"	01 B 600-160M	01 B 600												

1) For radial bearing only reference (for standard arrangement) add 'GR' e.g. 01E B 100M GR  
Ball thrust bearings are usually supplied complete with

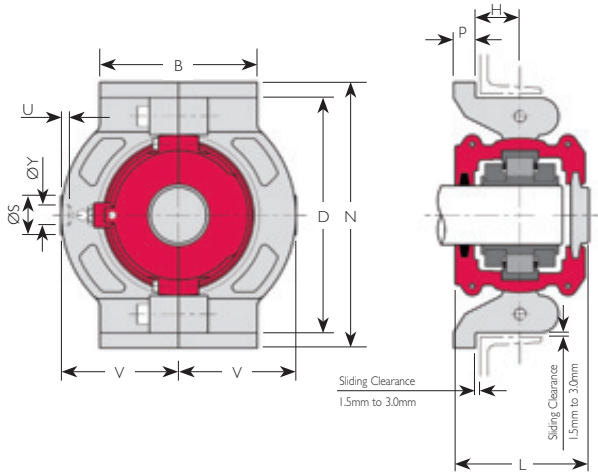
blanking plate. Refer to page 12  
For cartridge reference refer to page 30



**O2 SERIES UP TO 90mm BORE SIZE**

Group Reference	Shaft Diameter d	Reference (1)		Take-up housing	B (mm)	N (mm)	D (mm)	V (mm)	K (mm)	P (mm)	H (mm)	L (mm)	S (mm)	Y (mm)	U (mm)	Mass (Complete unit) (kg)	
		Bearing															
02 200	50mm	1 15/16" 2"	02 B 50M	02 B 115 02 B 200	TP03	128	235	203	102	35	20	32	114	38	16	6	12
02 208	60mm 65mm	2 3/16"	02 B 60M 02 B 65M	02 B 203	TP04	152	266	229	114	38	22	40	126	41	16	6	17
		2 1/4"		02 B 204													
		2 7/16"		02 B 207													
02 300	70mm 75mm	2 11/16"	02 B 70M 02 B 75M	02 B 211	TP05	190	318	280	140	41	22	40	140	51	16	6	27
		2 3/4"		02 B 212													
		2 15/16"		02 B 215													
02 308	80mm 85mm 90mm	3 3/16"	02 B 80M 02 B 85M 02 B 90M	02 B 303	TP06	204	342	305	152	48	22	43	154	51	19	6	31
		3 1/4"		02 B 304													
		3 7/16"		02 B 307													
		3 1/2"		02 B 308													

1) For radial bearing only reference (for standard arrangement) add 'EX' e.g. 02 B 50M EX  
For cartridge reference refer to page 36

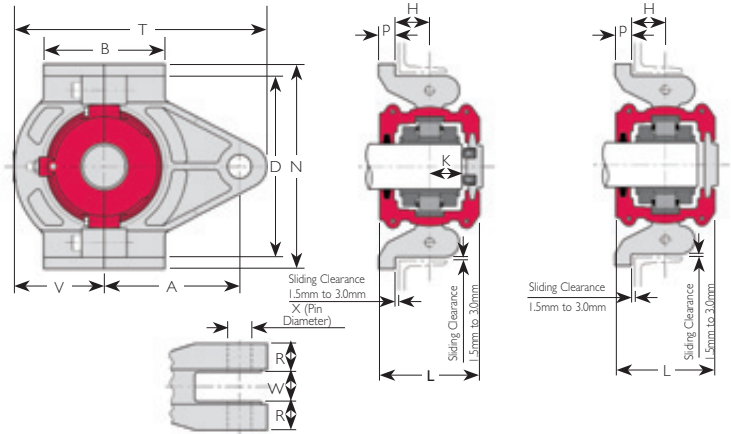


**02 SERIES OVER 90mm BORE SIZE**

Group Reference	Shaft Diameter d	References (I)											Mass (Complete unit) (kg)		
		Bearing	Take-up housing	B (mm)	N (mm)	D (mm)	V (mm)	P (mm)	H (mm)	L (mm)	S (mm)	Y (mm)		U (mm)	
02.400	100mm	3 11/16"	02 B 311	TP07	216	382	343	162	22	48	146	70	19	6	46
		3 3/4"	02 B 312												
	105mm	3 15/16"	02 B 315												
		4"	02 B 400												
02.408	110mm	4 3/16"	02 B 403	TP08	254	420	381	190	25	51	162	76	19	6	65
		4 7/16"	02 B 407												
	115mm	4 1/2"	02 B 408												
02.500	120mm	4 15/16"	02 B 415	TP10	266	464	426	204	25	57	184	86	23	8	91
	125mm	5"	02 B 125M												
	130mm		02 B 130M												
02.508	140mm	5 3/16"	02 B 503	TP09	266	438	400	196	25	54	168	76	23	8	109
		5 7/16"	02 B 507												
	145mm	5 1/2"	02 B 508												
02.600	150mm	5 15/16"	02 B 515	TP31	305	528	489	235	25	64	204	92	26	10	109
	155mm	6"	02 B 155M												
	160mm		02 B 600-160M												

I) For radial bearing only reference (for standard arrangement) add 'GR' e.g. 02 B 100M GR

For cartridge reference refer to pages 36 and 38



### 100 SERIES UP TO 90mm BORE SIZE

Group Reference	Shaft Diameter d	References (1)		Take-up housing	B (mm)	N (mm)	D (mm)	A (mm)	T (mm)	X (mm)	V (mm)	K (mm)	P (mm)	H (mm)	W (mm)	R (mm)	L (mm)	Mass (Complete unit) (kg)	
		Bearing	Take-up housing																
100 300	75mm	2 15/16" 3"	100 B 75M	100 B 215 100 B 300	TT03	128	235	203	146	280	24	102	30	20	32	30	29	104	13
100 307	85mm	3 7/16"	100 B 85M	100 B 307	TT04	152	266	229	158	305	24	114	35	22	40	30	32	114	19

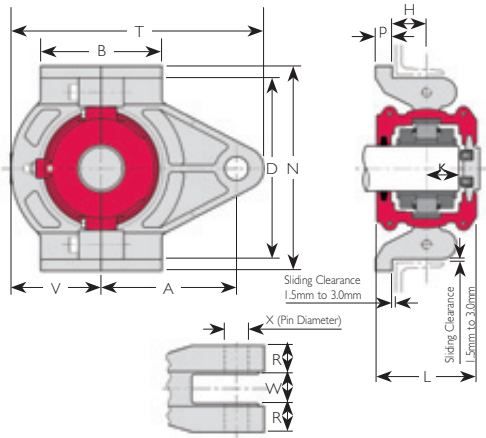
### 100 SERIES OVER 90mm BORE SIZE

Group Reference	Shaft Diameter d	References (2)		Take-up housing	B (mm)	N (mm)	D (mm)	A (mm)	T (mm)	X (mm)	V (mm)	P (mm)	H (mm)	W (mm)	R (mm)	L (mm)	Mass (Complete unit) (kg)	
		Bearing	Take-up housing															
100 400	100mm	3 15/16" 4"	100 B 100M	100 B 315 100 B 400	TT05	190	318	280	190	368	30	140	22	40	38	35	136	29
100 408	110mm 115mm	4 7/16" 4 1/2"	100 B 110M 100 B 115M	100 B 407 100 B 408	TT06	204	342	305	210	414	36	152	22	43	44	35	134	33
100 500	120mm 125mm 130mm	4 15/16" 5"	100 B 120M 100 B 125M 100 B 130M	100 B 415 100 B 500	TT07	216	382	343	228	445	42	162	22	48	44	41	142	47
100 508	140mm	5 7/16" 5 1/2"	100 B 140M	100 B 507 100 B 508	TT08	254	420	381	260	508	42	190	25	51	44	44	156	67
100 600	150mm	5 15/16" 6"	100 B 150M	100 B 515 100 B 600	TT09	266	438	400	266	514	42	196	25	54	44	48	168	82

1) For radial bearing only reference (for standard arrangement) add 'EX' e.g. 100 B 75M EX. Ball thrust bearings are usually supplied complete with blanking plate. Refer to page 12  
For cartridge reference refer to page 28

2) For radial bearing only reference (for standard arrangement) add 'GR' e.g. 100 B 100M GR  
For cartridge reference refer to page 28

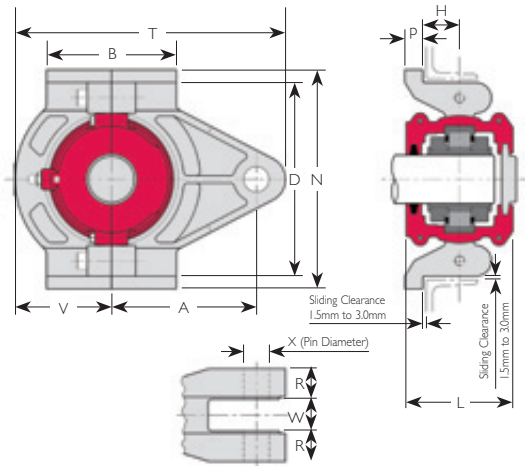
# Take-up tension units O1 Series



## O1/O1E SERIES UP TO 90mm BORE SIZE

Group Reference	Shaft Diameter d	References (1)										Mass (Complete unit) (kg)							
		Bearing	Take-up housing	B (mm)	N (mm)	D (mm)	A (mm)	T (mm)	X (mm)	V (mm)	K (mm)		P (mm)	H (mm)	W (mm)	R (mm)	L (mm)		
O1 108	35mm	1 3/16"	O1 B 103	TT01	102	172	153	114	216	20	76	27	14	29	25	24	86	7	
	40mm	1 1/4"	O1 B 35M																O1 B 104
		1 7/16"	O1 B 40M																O1 B 107
		1 1/2"																	O1 B 108
O1E 200	45mm	1 11/16"	O1E B 111	TT02	114	204	178	128	242	24	88	29	16	29	25	25	98	10	
	50mm	1 3/4"	O1E B 45M																O1E B 112
		1 15/16"	O1E B 50M																O1E B 115
		2"																	O1E B 200
O1E 208	55mm	2 3/16"	O1E B 203	TT03	128	235	203	146	280	24	102	30	20	32	30	29	104	13	
	60mm	2 1/4"	O1E B 55M																O1E B 204
	65mm	2 7/16"	O1E B 60M																O1E B 207
		2 1/2"	O1E B 65M																O1E B 208
O1E 300	70mm	2 11/16"	O1E B 211	TT04	152	266	229	158	305	24	114	35	22	40	30	32	114	19	
	75mm	2 3/4"	O1E B 70M																O1E B 212
		2 15/16"	O1E B 75M																O1E B 215
		3"																	O1E B 300
O1E 308	80mm	3 3/16"	O1E B 303	TT05	190	318	280	190	368	30	140	40	22	40	38	35	136	30	
	85mm	3 1/4"	O1E B 80M																O1E B 304
	90mm	3 7/16"	O1E B 85M																O1E B 307
		3 1/2"	O1E B 90M																O1E B 308

- 1) For radial bearing only reference (for standard arrangement) add 'EX' e.g. O1 B 40M EX  
 Ball thrust bearings are usually supplied complete with blanking plate. Refer to page 12  
 For cartridge reference refer to page 30



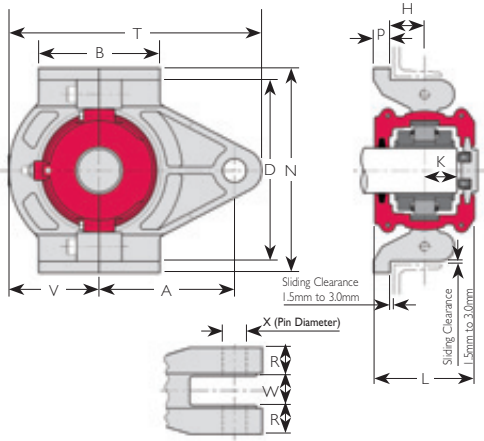
### 01/01E SERIES OVER 90mm BORE SIZE

Group Reference	Shaft Diameter d	Reference (1)				Take-up housing	B (mm)	N (mm)	D (mm)	A (mm)	T (mm)	X (mm)	V (mm)	P (mm)	H (mm)	W (mm)	R (mm)	L (mm)	Mass (Complete unit) (kg)
		Bearing																	
01E 400	95mm	3 11/16"	01E B 95M	01E B 311	TT06	204	342	305	210	414	36	152	22	43	44	35	134	34	
	100mm	3 3/4"	01E B 100M	01E B 312															
	105mm	3 15/16" 4"	01E B 105M	01E B 315 01E B 400															
01 408	110mm	4 3/16"	01 B 110M	01 B 403	TT07	216	382	343	228	445	42	162	22	48	44	41	142	51	
	115mm	4 7/16" 4 1/2"	01 B 115M	01 B 407 01 B 408															
01 500	120mm	4 15/16"	01 B 120M	01 B 415	TT08	254	420	381	260	508	42	190	25	51	44	44	156	71	
	125mm	5"	01 B 125M	01 B 500															
	130mm		01 B 130M																
01 508	135mm	5 3/16"	01 B 135M	01 B 503	TT09	266	438	400	266	514	42	196	25	54	44	48	168	89	
	140mm	5 7/16" 5 1/2"	01 B 140M	01 B 507 01 B 508															
01 600	150mm	5 15/16"	01 B 150M	01 B 515	TT10	266	464	426	280	546	48	204	25	57	50	51	174	100	
	160mm	6"	01 B 600-160M	01 B 600															

1) For radial bearing only reference (for standard arrangement)  
 add 'GR' e.g. 01E B 100M GR  
 For cartridge reference refer to page 30



Take-up tension units O2 Series



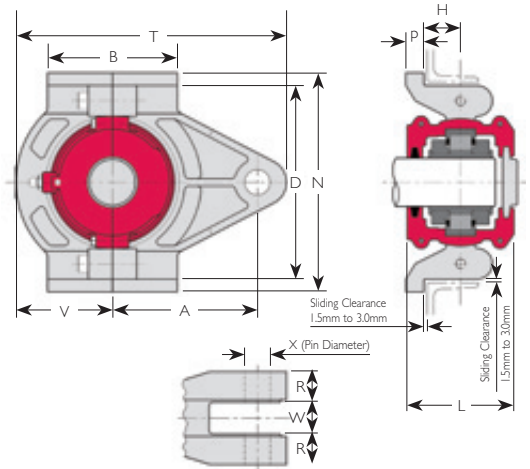
**O2 SERIES UPTO 90mm BORE SIZE**

Group Reference	Shaft Diameter d	References (1)		Take-up housing	B (mm)	N (mm)	D (mm)	A (mm)	T (mm)	X (mm)	V (mm)	K (mm)	P (mm)	H (mm)	W (mm)	R (mm)	L (mm)	Mass (Complete unit) (kg)	
		Bearing																	
02 200	50mm	1 15/16" 2"	02 B 50M	02 B 115 02 B 200	TT03	128	235	203	146	280	24	102	35	20	32	30	29	114	13
02 208	60mm 65mm	2 3/16"	02 B 60M	02 B 203	TT04	152	266	229	158	305	24	114	38	22	40	30	32	126	19
		2 1/4"	02 B 60M	02 B 204															
		2 7/16"	02 B 65M	02 B 207															
		2 1/2"	02 B 65M	02 B 208															
02 300	70mm 75mm	2 11/16"	02 B 70M	02 B 211	TT05	190	318	280	190	368	30	140	41	22	40	38	35	140	30
		2 3/4"	02 B 70M	02 B 212															
		2 15/16"	02 B 75M	02 B 215															
		3"	02 B 75M	02 B 300															
02 308	80mm 85mm 90mm	3 3/16"	02 B 80M	02 B 303	TT06	204	342	305	210	414	36	152	48	22	43	44	35	154	34
		3 1/4"	02 B 80M	02 B 304															
		3 7/16"	02 B 85M	02 B 307															
		3 1/2"	02 B 90M	02 B 308															

1) For radial bearing only reference (for standard arrangement)  
add 'EX' e.g. 02 B 50M EX

Ball thrust bearings are usually supplied complete with blanking plate. Refer to page 12

For cartridge reference refer to page 30



## O2 SERIES OVER 90mm BORE SIZE

Group Reference	Shaft Diameter d	References (1) Bearing	Take-up housing	B (mm)	N (mm)	D (mm)	A (mm)	T (mm)	X (mm)	V (mm)	P (mm)	H (mm)	W (mm)	R (mm)	L (mm)	Mass (Complete unit) (kg)		
02 400	100mm	3 11/16"	TT07	216	382	343	228	445	42	162	22	48	44	41	146	51		
	105mm	3 3/4"															02 B 100M	02 B 311
		3 15/16"															02 B 105M	02 B 312
		4"																02 B 315
			02 B 400															
02 408	110mm	4 3/16"	TT08	254	420	381	260	508	42	190	25	51	44	44	162	71		
	115mm	4 7/16"															02 B 110M	02 B 403
		4 1/2"															02 B 115M	02 B 407
			02 B 408															
02 500	120mm	4 15/16"	TT10	266	464	426	280	546	48	204	25	57	50	51	184	100		
	125mm	5"															02 B 120M	02 B 415
	130mm																02 B 125M	02 B 500
02 508	140mm	5 3/16"	TT30	280	502	464	298	584	48	222	25	60	50	54	188	119		
	145mm	5 7/16"															02 B 140M	02 B 503
		5 1/2"															02 B 145M	02 B 507
			02 B 508															
02 600	150mm	5 15/16"	TT31	305	528	489	312	616	48	235	25	64	50	57	204	141		
	155mm	6"															02 B 150M	02 B 515
	160mm																02 B 155M	02 B 600
			02 B 600-160M															

1) For radial bearing only reference (for standard arrangement)

add 'GR' e.g. 02 B 100M GR

For cartridge reference refer to pages 36 and 38

## ROD ENDS

Cooper split roller bearings in rod end housings provide a simple way of mounting roller bearings on cranks. As the complete bearing and housing unit is split radially, cranks can be made solid rather than being built-up or overhung. Typical applications include shaker screens and classifiers. Rod ends are available to suit 100, 01/01E and 02 Series bearings as shown on pages 28 to 30 and 36 to 38.

Each rod end consists of a split outer casing, which encloses a fixed (GR) bearing in a swivel cartridge. Two basic configurations are available – the 'T' type and the 'shoe' type. These can be modified to suit various rods and attachments.

Standard rod ends are of grey iron. Spheroidal graphite iron or steel versions are available. Rod ends are supplied with matched cartridge to

reduce the clearance between the cartridge and rod-end (S1 fit).

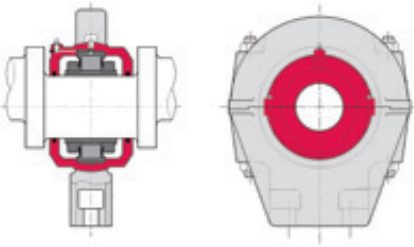
Except for very slow speed applications, bearings with C2 clearance should be specified. Dimensions and load capacities of housings should be confirmed before finalising designs.

## SHAFT DIMENSIONS

Journals should be machined to h6 tolerance. Close tolerance machining to the sides of the journal is not required. These are clearance only (i.e. not locating) as the bearing is positioned by the inner race being clamped onto the shaft. The journal widths and fillet radii listed in the tables are suggested dimensions to clear standard Cooper cartridges. Other combinations of journal width and fillet radius may be used. Special cartridges may be supplied if narrower journals are required.

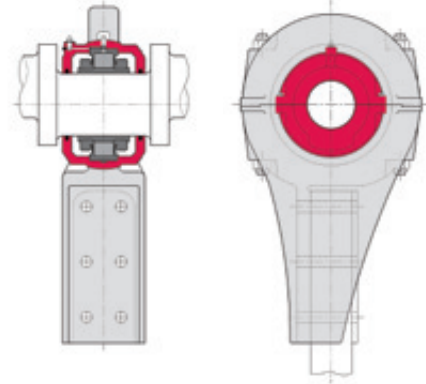
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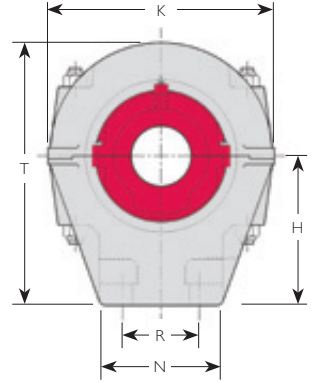
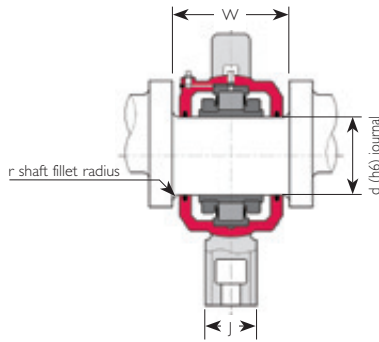
### 'T' TYPE



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### SHOE TYPE





## 100 SERIES

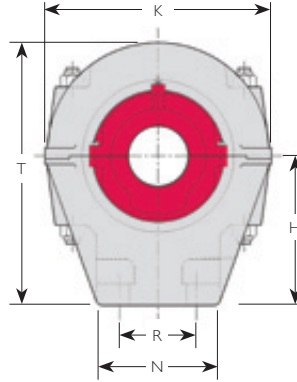
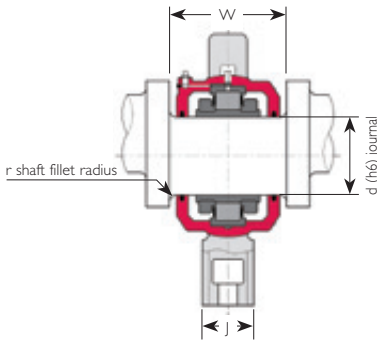
Group Reference	Shaft Diameter d	Bearing Reference (1)	Housing Reference (2)	W (max) (mm)	r (mm)	N (mm)	J (mm)	H (mm)	K (mm)	T (mm)	R (mm)	Bolts	Mass (Complete unit) (kg)
100 300	75mm 3 15/16"	100 B 75M GR C2	100 B 215 GR C2 100 B 300 GR C2	100 CRES 75M	100 CRES 215 100 CRES 300	113	4.5	115	38	95	197	194 76(3) M16	9
100 307	85mm 3 7/16"	100 B 85M GR C2	100 B 307 GR C2	100 CRES 85M	100 CRES 307	126	6	128	44	108	216	220 89(3) M16	13
100 400	100mm 4 1/2"	100 B 100M GR C2	100 B 315 GR C2 100 B 400 GR C2	100 CRES 100M	100 CRES 315 100 CRES 400	148	6	146	48	127	248	256 102(3) M20	19
100 408	110mm 4 7/16"	100 B 110M GR C2	100 B 407 GR C2 100 B 408 GR C2	100 CRES 110M	100 CRES 407 100 CRES 408	146	6	170	76	200	308	356 124 M24	35
100 500	120mm 125mm 130mm 4 15/16" 5"	100 B 120M GR C2 100 B 125M GR C2 100 B 130M GR C2	100 B 415 GR C2 100 B 500 GR C2	100 CRES 120M 100 CRES 125M 100 CRES 130M	100 CRES 415 100 CRES 500	154	6	190	86	222	334	390 136 M30	48
100 508	140mm 5 7/16" 5 1/2"	100 B 140M GR C2	100 B 507 GR C2 100 B 508 GR C2	100 CRES 140M	100 CRES 507 100 CRES 508	168	6	190	86	222	375	425 136 M30	60
100 600	150mm 6"	100 B 150M GR C2	100 B 515 GR C2 100 B 600 GR C2	100 CRES 150M	100 CRES 515 100 CRES 600	187	9.5	204	102	279	442	502 140 M30	82

1) These are reduced clearance bearings which are standard specification for rod ends

2) Reference refers to matched rod-end housing and cartridge together

3) Holes tapped in end face

Rod - ends 'T' type 01/01E Series



**01/01E SERIES**

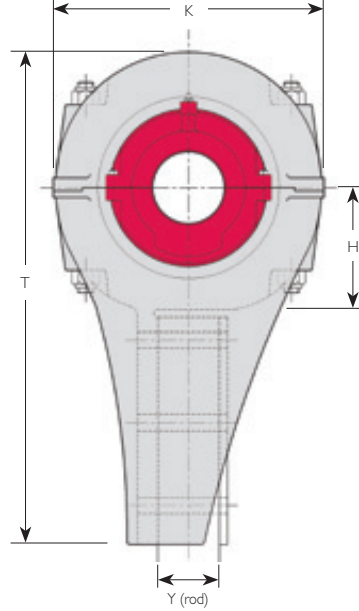
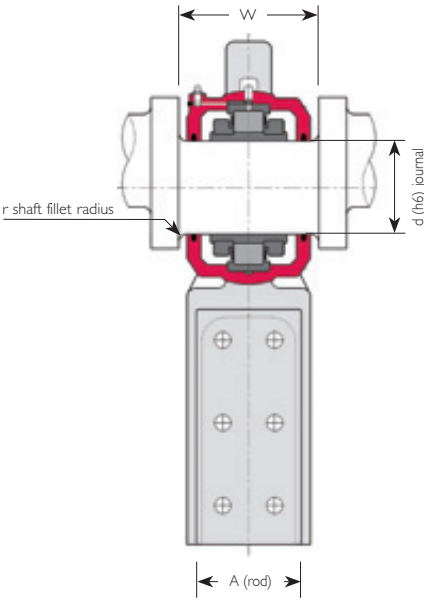
Group Reference	Shaft Diameter d	Bearing Reference (1)	Housing Reference (2)	W (mm)	r (mm)	N (mm)	J (mm)	H (mm)	K (mm)	T (mm)	R (mm)	Bolts	Mass (Complete unit) (kg)
01 108	1 3-16"	01 B 35M GR C2 01 B 40M GR C2	01 B 103 GR C2 01 B 104 GR C2 01 B 107 GR C2 01 B 108 GR C2	01 CRET 35M 01 CRET 40M	92	3	86	30	76	140	152	57(3) M12	6
	35mm												
	40mm												
	1 1/2"												
01E 200	1 1/16"	01E B 45M GR C2 01E B 50M GR C2	01E B 111 GR C2 01E B 112 GR C2 01E B 115 GR C2 01E B 200 GR C2	01 CRET 45M 01 CRET 50M	104	3	102	32	102	166	190	70(3) M10	8
	45mm												
	50mm												
	2"												
01E 208	2 3/16"	01E B 55M GR C2 01E B 60M GR C2 01E B 65M GR C2	01E B 203 GR C2 01E B 204 GR C2 01E B 207 GR C2 01E B 208 GR C2	01 CRET 55M 01 CRET 60M 01 CRET 65M	113	4.5	115	38	95	197	194	76(3) M16	9
	55mm												
	60mm												
	65mm												
01E 300	2 1/16"	01E B 70M GR C2 01E B 75M GR C2	01E B 211 GR C2 01E B 212 GR C2 01E B 215 GR C2 01E B 300 GR C2	01 CRET 70M 01 CRET 75M	126	6	128	44	108	216	220	89(3) M16	13
	70mm												
	75mm												
	3"												
01E 308	3 3/16"	01E B 80M GR C2 01E B 85M GR C2 01E B 90M GR C2	01E B 303 GR C2 01E B 304 GR C2 01E B 307 GR C2 01E B 308 GR C2	01 CRET 80M 01 CRET 85M 01 CRET 90M	148	6	146	48	127	248	256	102(3) M20	20
	80mm												
	85mm												
	90mm												
01E 400	3 11/16"	01E B 95M GR C2 01E B 100M GR C2 01E B 105M GR C2	01E B 311 GR C2 01E B 312 GR C2 01E B 315 GR C2 01E B 400 GR C2	01 CRET 95M 01 CRET 100M 01 CRET 105M	146	6	170	76	200	308	356	124 M24	36
	95mm												
	100mm												
	105mm												
01 408	4 3/16"	01 B 110M GR C2 01 B 115M GR C2	01 B 403 GR C2 01 B 407 GR C2 01 B 408 GR C2	01 CRET 110M 01 CRET 115M	154	6	190	86	222	334	390	136 M30	52
	110mm												
	115mm												
	4 1/2"												
01 500	4 15/16"	01 B 120M GR C2 01 B 125M GR C2 01 B 130M GR C2	01 B 415 GR C2 01 B 500 GR C2	01 CRET 120M 01 CRET 125M 01 CRET 130M	168	6	190	86	222	375	425	136 M30	65
	120mm												
	125mm												
	130mm												
01 508	5 3/16"	01 B 135M GR C2 01 B 140M GR C2	01 B 503 GR C2 01 B 507 GR C2 01 B 508 GR C2	01 CRET 135M 01 CRET 140M	187	9.5	204	102	279	442	502	140 M30	89
	135mm												
	140mm												
	5 1/2"												
01 600	5 15/16"	01 B 150M GR C2 01 B 155M GR C2 01 B 600-160M GR C2	01 B 515 GR C2 01 B 600 GR C2	01 CRET 150M 01 CRET 155M 01 CRET 600-160M	193	9.5	204	102	279	442	502	140 M30	99
	150mm												
	155mm												
	160mm												

**02 SERIES**

Group Reference	Shaft Diameter	Bearing Reference (1)	Housing Reference (2)	W (mm)	r (mm)	N (mm)	J (mm)	H (mm)	K (mm)	T (mm)	R (mm)	Bolts	Mass (Complete unit) (kg)	
02 200	50mm	1 15/16" 2"	02 B 50M GR C2	02 B 115 GR C2 02 B 200 GR C2	02 CRET 50M	02 CRET 115 02 CRET 200	123	4.5	115	38	95	197	194 76(3) M16	9
02 208	60mm 65mm	2 3/16" 2 1/4" 2 7/16" 2 1/2"	02 B 60M GR C2 02 B 65M GR C2	02 B 203 GR C2 02 B 204 GR C2 02 B 207 GR C2 02 B 208 GR C2	02 CRET 60M 02 CRET 65M	02 CRET 203 02 CRET 204 02 CRET 207 02 CRET 208	138	6	128	44	108	216	220 89(3) M16	13
02 300	70mm 75mm	2 11/16" 2 3/4" 2 15/16" 3"	02 B 70M GR C2 02 B 75M GR C2	02 B 211 GR C2 02 B 212 GR C2 02 B 215 GR C2 02 B 300 GR C2	02 CRET 70M 02 CRET 75M	02 CRET 211 02 CRET 212 02 CRET 215 02 CRET 300	152	6	146	48	127	248	256 102(3) M20	20
02 308	80mm 85mm 90mm	3 3/16" 3 1/4" 3 7/16" 3 1/2"	02 B 80M GR C2 02 B 85M GR C2 02 B 90M GR C2	02 B 303 GR C2 02 B 304 GR C2 02 B 307 GR C2 02 B 308 GR C2	02 CRET 80M 02 CRET 85M 02 CRET 90M	02 CRET 303 02 CRET 304 02 CRET 307 02 CRET 308	173	9.5	170	76	200	308	356 124 M24	36
02 400	100mm 105mm	3 11/16" 3 3/4" 3 15/16" 4"	02 B 100M GR C2 02 B 105M GR C2	02 B 311 GR C2 02 B 312 GR C2 02 B 315 GR C2 02 B 400 GR C2	02 CRET 100M 02 CRET 105M	02 CRET 311 02 CRET 312 02 CRET 315 02 CRET 400	171	12.5	190	86	222	334	390 136 M30	52
02 408	110mm 115mm	4 3/16" 4 7/16" 4 1/2"	02 B 110M GR C2 02 B 115M GR C2	02 B 403 GR C2 02 B 407 GR C2 02 B 408 GR C2	02 CRET 110M 02 CRET 115M	02 CRET 403 02 CRET 407 02 CRET 408	187	12.5	190	86	222	375	425 136 M30	65
02 500	120mm 125mm 130mm	4 15/16" 5"	02 B 120M GR C2 02 B 125M GR C2 02 B 130M GR C2	02 B 415 GR C2 02 B 500 GR C2	02 CRET 120M 02 CRET 125M 02 CRET 130M	02 CRET 415 02 CRET 500	209	12.5	204	102	279	442	502 140 M30	99
02 508	140mm 145mm	5 3/16" 5 7/16" 5 1/2"	02 B 140M GR C2 02 B 145M GR C2	02 B 503 GR C2 02 B 507 GR C2 02 B 508 GR C2	02 CRET 140M 02 CRET 145M	02 CRET 503 02 CRET 507 02 CRET 508	213	12.5	204	102	279	445	558 140 M30	119
02 600	150mm 155mm 160mm	5 15/16" 6"	02 B 150M GR C2 02 B 155M GR C2 02 B 600-160M GR C2	02 B 515 GR C2 02 B 600 GR C2	02 CRET 150M 02 CRET 155M 02 CRET 600-160M	02 CRET 515 02 CRET 600	229	12.5	204	102	279	445	558 140 M30	131

- 1) These are reduced clearance bearings which are standard specification for rod ends
- 2) Reference refers to matched rod-end housing and cartridge together
- 3) Holes tapped in end face

## Rod ends shoe type 100 series



### 100 SERIES

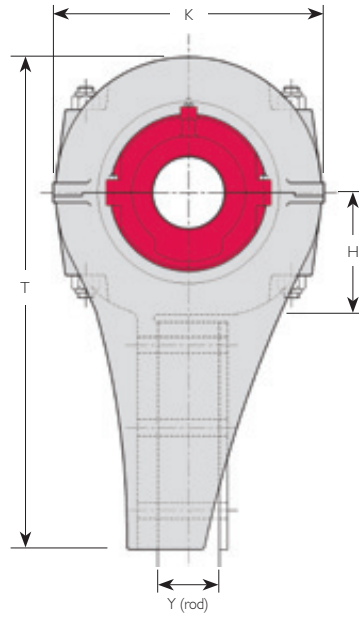
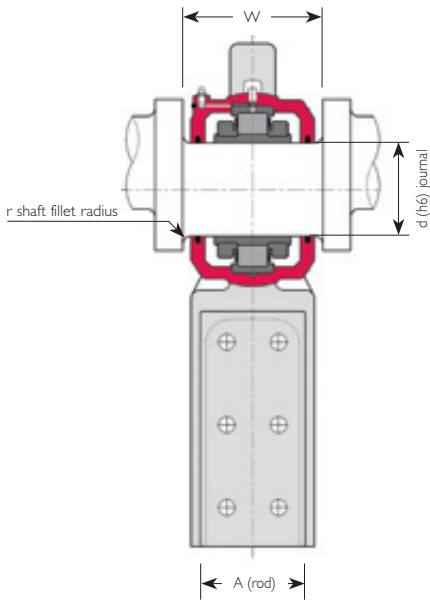
Group Reference	Shaft Diameter $d$	Bearing Reference (1)	Housing Reference (2)	$W$ (mm)	$r$ (max) (mm)	$A$ (3) (rod) (mm)	$Y$ (3) (rod) (mm)	$H$ (mm)	$K$ (mm)	$T$ (mm)	Mass (Complete unit) (kg)		
100 300	75mm 2 15/16" 3"	100 B 75M GR C2	100 B 215 GR C2 100 B 300 GR C2	100 CRES 75M	100 CRES 215 100 CRES 300	113	4.5	62	10	79	190	330	13
100 307	85mm 3 7/16"	100 B 85M GR C2	100 B 307 GR C2	100 CRES 85M	100 CRES 307	126	6	88	50	108	248	432	23
100 400	100mm 3 15/16" 4"	100 B 100M GR C2	100 B 315 GR C2 100 B 400 GR C2	100 CRES 100M	100 CRES 315 100 CRES 400	148	6	114	38	130	248	540	36
100 408	110mm 4 7/16" 4 1/2"	100 B 110M GR C2 100 B 115M GR C2	100 B 407 GR C2 100 B 408 GR C2	100 CRES 110M 100 CRES 115M	100 CRES 407 100 CRES 408	146	6	100	58	125	308	572	43
100 500	120mm 125mm 130mm	100 B 120M GR C2 100 B 125M GR C2 100 B 130M GR C2	100 B 415 GR C2 100 B 500 GR C2	100 CRES 120M 100 CRES 125M 100 CRES 130M	100 CRES 415 100 CRES 500	154	6	126	58	149	354	618	59
100 508	140mm 5 7/16" 5 1/2"	100 B 140M GR C2	100 B 507 GR C2 100 B 508 GR C2	100 CRES 140M	100 CRES 507 100 CRES 508	168	6	126	64	158	400	654	78
100 600	150mm 5 15/16" 6"	100 B 150M GR C2	100 B 515 GR C2 100 B 600 GR C2	100 CRES 150M	100 CRES 515 100 CRES 600	187	9.5	152	76	177	442	696	91

**01/01E SERIES**

Group Reference	Shaft Diameter	Bearing Reference (1)	Bearing Reference (2)	W	r	A(3)	Y(3)	H	K	T	Mass (Complete unit) (kg)		
	(mm)			(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)			
01 108	1 3/16"	01 B 35M GR C2 01 B 40M GR C2	01 B 103 GR C2 01 B 104 GR C2 01 B 107 GR C2 01 B 108 GR C2	01 CRES 35M 01 CRES 40M	01 CRES 103 01 CRES 104 01 CRES 107 01 CRES 108	92	3	62	10	65	160	258	5
	35mm												
	1 1/4"												
	1 7/16"												
01E 200	1 11/16"	01E B 45M GR C2 01E B 50M GR C2	01E B 111 GR C2 01E B 112 GR C2 01E B 115 GR C2 01E B 200 GR C2	01 CRES 45M 01 CRES 50M	01 CRES 111 01 CRES 112 01 CRES 115 01 CRES 200	104	3	62	10	70	166	308	7
	45mm												
	1 3/4"												
	1 15/16"												
01E 208	2 3/16"	01E B 55M GR C2 01E B 60M GR C2 01E B 65M GR C2	01E B 203 GR C2 01E B 204 GR C2 01E B 207 GR C2 01E B 208 GR C2	01 CRES 55M 01 CRES 60M 01 CRES 65M	01 CRES 203 01 CRES 204 01 CRES 215 01 CRES 208	113	4.5	62	10	79	190	330	13
	55mm												
	2 1/4"												
	2 7/16"												
01E 300	2 11/16"	01E B 70M GR C2 01E B 75M GR C2	01E B 211 GR C2 01E B 212 GR C2 01E B 215 GR C2 01E B 300 GR C2	01 CRES 70M 01 CRES 75M	01 CRES 211 01 CRES 212 01 CRES 215 01 CRES 300	126	6	88	50	108	248	432	22
	70mm												
	2 3/4"												
	2 15/16"												
01E 308	3 3/16"	01E B 80M GR C2 01E B 85M GR C2 01E B 90M GR C2	01E B 303 GR C2 01E B 304 GR C2 01E B 307 GR C2 01E B 308 GR C2	01 CRES 80M 01 CRES 85M 01 CRES 90M	01 CRES 303 01 CRES 304 01 CRES 307 01 CRES 308	148	6	100	50	133	264	602	43
	80mm												
	3 1/4"												
	3 7/16"												
01E 400	3 11/16"	01E B 95M GR C2 01E B 100M GR C2 01E B 105M GR C2	01E B 311 GR C2 01E B 312 GR C2 01E B 315 GR C2 01E B 400 GR C2	01 CRES 95M 01 CRES 100M 01 CRES 105M	01 CRES 311 01 CRES 312 01 CRES 315 01 CRES 400	146	6	100	58	125	308	572	44
	95mm												
	3 3/4"												
	3 15/16"												
01 408	4 3/16"	01 B 110M GR C2 01 B 115M GR C2	01 B 403 GR C2 01 B 407 GR C2 01 B 408 GR C2	01 CRES 110M 01 CRES 115M	01 CRES 403 01 CRES 407 01 CRES 408	154	6	126	58	149	354	618	63
	110mm												
	4 7/16"												
	4 1/2"												
01 500	4 15/16"	01 B 120M GR C2 01 B 125M GR C2 01 B 130M GR C2	01 B 415 GR C2 01 B 500 GR C2	01 CRES 120M 01 CRES 125M 01 CRES 130M	01 CRES 415 01 CRES 500	168	6	126	64	158	400	654	83
	120mm												
	4 5/8"												
	5"												
01 508	5 3/16"	01 B 135M GR C2 01 B 140M GR C2	01 B 503 GR C2 01 B 507 GR C2 01 B 508 GR C2	01 CRES 135M 01 CRES 140M	01 CRES 503 01 CRES 507 01 CRES 508	187	9.5	152	76	177	442	696	98
	135mm												
	5 7/16"												
	5 1/2"												
01 600	5 15/16"	01 B 150M GR C2 01 B 155M GR C2 01 B 600-160M GR C2	01 B 515 GR C2 01 B 600 GR C2	01 CRES 150M 01 CRES 155M 01 CRES 600-160M	01 CRES 515 01 CRES 600	193	9.5	152	76	177	442	696	107
	150mm												
	5 7/8"												
	6"												

- 1) These are reduced clearance bearings which are standard specification for rod ends
- 2) Reference refers to matched rod-end housing and cartridge together
- 3) Rod fixing varies from 2 to 6 bolts according to size, and can be adapted to requirements





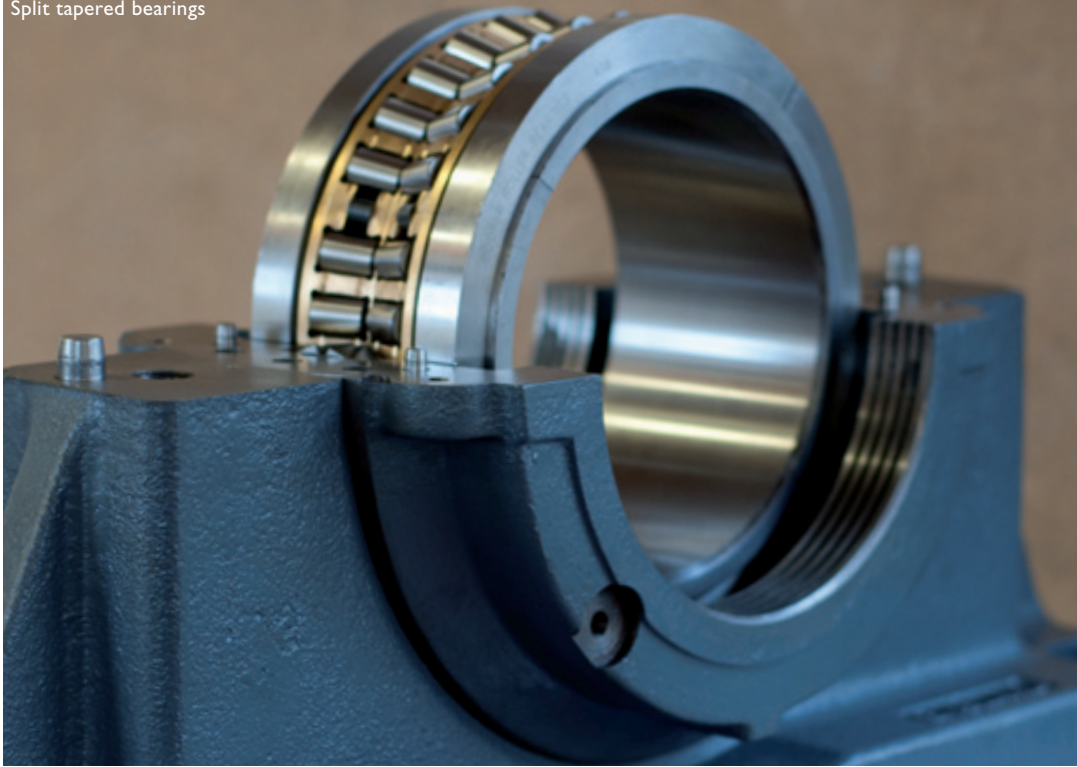
**02 SERIES**

Group Reference	Shaft Diameter	Bearing Reference (1)	Housing Reference (2)	W (mm)	r (mm)	A(3) (mm)	Y(3) (mm)	H (mm)	K (mm)	T (mm)	Mass (Complete unit) (kg)			
02.200	50mm	1 15/16" 2"	02 B 50M GR C2 02 B 115 GR C2 02 B 200 GR C2	02 CRES 50M	02 CRES 115 02 CRES 200	123	4.5	62	32	76	190	330	10	
02.208	60mm 65mm	2 3/16" 2 1/4" 2 7/16" 2 1/2"	02 B 60M GR C2 02 B 65M GR C2	02 B 203 GR C2 02 B 204 GR C2 02 B 207 GR C2 02 B 208 GR C2	02 CRES 60M 02 CRES 65M	02 CRES 203 02 CRES 204 02 CRES 207 02 CRES 208	138	6	88	50	108	248	432	20
02.300	70mm 75mm	2 11/16" 2 3/4" 2 15/16" 3"	02 B 70M GR C2 02 B 75M GR C2	02 B 211 GR C2 02 B 212 GR C2 02 B 215 GR C2 02 B 300 GR C2	02 CRES 70M 02 CRES 75M	02 CRES 211 02 CRES 212 02 CRES 215 02 CRES 300	152	6	114	38	130	248	540	40
02.308	80mm 85mm 90mm	3 3/16" 3 1/4" 3 7/16" 3 1/2"	02 B 80M GR C2 02 B 85M GR C2 02 B 90M GR C2	02 B 303 GR C2 02 B 304 GR C2 02 B 307 GR C2 02 B 308 GR C2	02 CRES 80M 02 CRES 85M 02 CRES 90M	02 CRES 303 02 CRES 304 02 CRES 307 02 CRES 308	173	9.5	126	76	149	334	610	62
02.400	100mm 105mm	3 11/16" 3 3/4" 3 15/16" 4"	02 B 100M GR C2 02 B 105M GR C2	02 B 311 GR C2 02 B 312 GR C2 02 B 315 GR C2 02 B 400 GR C2	02 CRES 100M 02 CRES 105M	02 CRES 311 02 CRES 312 02 CRES 315 02 CRES 400	171	12.5	126	76	149	354	618	71
02.408	110mm 115mm	4 3/16" 4 7/16" 4 1/2"	02 B 110M GR C2 02 B 115M GR C2	02 B 403 GR C2 02 B 407 GR C2 02 B 408 GR C2	02 CRES 110M 02 CRES 115M	02 CRES 403 02 CRES 407 02 CRES 408	187	12.5	126	76	162	400	654	91
02.500	120mm 125mm 130mm	4 15/16" 5"	02 B 120M GR C2 02 B 125M GR C2 02 B 130M GR C2	02 B 415 GR C2 02 B 500 GR C2	02 CRES 120M 02 CRES 125M 02 CRES 130M	02 CRES 415 02 CRES 500	209	12.5	152	76	177	442	696	124
02.508	140mm 145mm	5 3/16" 5 7/16" 5 1/2"	02 B 140M GR C2 02 B 145M GR C2	02 B 503 GR C2 02 B 507 GR C2 02 B 508 GR C2	02 CRES 140M 02 CRES 145M	02 CRES 503 02 CRES 507 02 CRES 508	213	12.5	152	76	177	442	696	145
02.600	150mm 155mm 160mm	5 15/16" 6"	02 B 150M GR C2 02 B 155M GR C2 02 B 600-160M GR C2	02 B 515 GR C2 02 B 600 GR C2	02 CRES 150M 02 CRES 155M 02 CRES 600-160M	02 CRES 515 02 CRES 600	229	12.5	152	64	203	444	736	166

1) These are reduced clearance bearings which are standard specification for rod ends

2) Reference refers to matched rod-end housing and cartridge together

3) Rod fixing varies from 2 to 6 bolts according to size, and can be adapted to requirements



## **SPLIT TAPERED BEARINGS**

### **INTRODUCTION**

The Cooper split tapered bearing is intended for the 'fixed' bearing position of shafts where there is both radial and axial loading and our 'GR' type cylindrical bearing is unsuitable. It is constructed with two rows of opposed rollers to take axial loading in either direction.

Cooper split tapered roller bearings are usually mounted in a cartridge in a similar way to Cooper cylindrical bearings. Cartridges for tapered bearings are machined with grease groove seals as standard and provision made for a temperature element. Alternative seal types are available as page 10 and 11, and flange-mounted units may be supplied with bulkhead

sealing arrangements. The proximity of the temperature element hole to the shaft means that if it is of a headed type, generally it will have to have a cranked probe. Alternative positions for the temperature element are possible.

The cartridge is mounted by its spherical seat in an outer housing. Various housing types are available, as for cylindrical bearings, but the most common types are the pedestal and flange. Cooper technical department should be consulted to confirm housing strength against the anticipated loads before finalising selection. Ductile iron housings are generally used with these bearings, as indicated by the part numbers listed on the following pages.

## BEARING SELECTION

Bearing ratings for dynamic radial capacity ( $C_r$ ) and static radial capacity ( $C_{or}$ ) shown in this leaflet are in accordance with ISO 281-1990 and ISO 76-1987 respectively.

Radial and axial loads must be considered together as combined 'equivalent loads', as explained below. Generally, maximum instantaneous loading is governed by housing strength rather than bearing static capacity.

### Dynamic rating

Expected bearing life is calculated by the following equation:

$$L_{10} = [C_r / (P \times f_d)]^{(10/3)}$$

where:

$L_{10}$  = expected life of 90% of similar bearings under similar operating conditions

$C_r$  = radial dynamic rating

$P$  = equivalent dynamic load

$f_d$  = dynamic or service factor, generally from 1 for steady loading to 3.5 for heavy shock, reciprocation or vibration

The dynamic equivalent load is calculated as follows:

$$\text{when } F_a/F_r \leq e : P = F_r + Y_1 F_a$$

$$\text{when } F_a/F_r > e : P = 0.67 F_r + Y_2 F_a$$

where:

$F_r$  = applied radial load

$F_a$  = applied axial load

and calculation factors  $Y_1$ ,  $Y_2$  and  $e$  are given in the product data tables.

### Life calculation with multiple load conditions

Where varying loads are experienced in operation, using the maximum load condition may lead to an unrealistically low calculated life. For  $n$  load conditions constituting the full load cycle (at constant speed), an overall dynamic equivalent load may be calculated as follows:

$$P = \left[ \sum_{i=1}^{i=n} P_i^{(10/3)} p_i \right]^{0.3}$$

where:

$P_i$  = dynamic equivalent load under load condition  $i$

$p_i$  = proportion of time load condition  $i$  is applicable

Where the load is continuously variable it may be broken down into a discrete approximation to the actual load cycle.

### Minimum loading

In order to avoid excessive skidding of the rollers, sufficient loading must be applied to the bearing, as follows:

$$P \geq 0.01 C_r$$

## ASSEMBLY

The assembly procedure for a Cooper split tapered roller bearing unit is substantially similar to that of a cylindrical bearing and housing. However, some additional points need to be

drawn to the attention of the fitter and a full set of assembly instructions for split tapered bearings should be referred to before commencing installation. This may be obtained in electronic form from Cooper technical department.

## GREASE QUANTITY FOR INITIAL LUBRICATION

The quantity of grease required on initial lubrication is dependent upon operating speed and temperature.

If the operating temperature is below 80°C the quantity of grease may be determined directly according to the bearing reference and operating speed from the table below. If the operating temperature is above 80°C a 25% pack of grease

should be used regardless of operating speed (refer to the right hand column of the table).

With a 'full pack' of grease the space within the housing (i.e. surrounding the bearing components) in the assembled unit is completely filled with grease.

The table assumes normal density grease (about 0.85 g/cm<sup>3</sup>).

## INITIAL LUBRICANT QUANTITIES

Shaft Diameter (mm)	Bearing Reference	Speed (rpm) up to	Grease (full pack) (Kg)	Speed (rpm)		Grease (75% full pack) (Kg)	Speed (rpm)		Grease (50% full pack) (Kg)	Speed (rpm)		Grease (33% full pack) (Kg)	Speed (rpm) over	Grease (25% full pack) (Kg)
				from	to		from	to		from	to			
75	IDTB75M	667	0.19	667	1333	0.14	1333	2000	0.10	2000	2667	0.06	2667	0.05
80	IDTB80M	625	0.23	625	1250	0.17	1250	1875	0.12	1875	2500	0.08	2500	0.06
90	IDTB90M	556	0.25	556	1111	0.19	1111	1667	0.12	1667	2222	0.08	2222	0.06
100	IDTB100M	500	0.41	500	1000	0.31	1000	1500	0.20	1500	2000	0.13	2000	0.10
110	IDTB110M	455	0.44	455	909	0.33	909	1364	0.22	1364	1818	0.14	1818	0.11
120	IDTB120M	417	0.50	417	833	0.38	833	1250	0.25	1250	1667	0.17	1667	0.13
140	IDTB140M	357	0.65	357	714	0.48	714	1071	0.32	1071	1429	0.21	1429	0.16
160	IDTB160M	313	0.63	313	625	0.47	625	938	0.32	938	1250	0.21	1250	0.16
180	IDTB180M	278	0.77	278	556	0.58	556	833	0.39	833	1111	0.25	1111	0.19

## ROUTINE GREASING

Relubricate the bearing weekly or every 150 hours of operation. Sizes up to and including 120mm: Use 2ml of fresh grease. Sizes over 120mm: Use 4ml of fresh grease. Note that 2ml is approximately 1 shot from a conventional side-lever grease gun. Automatic lubrication systems should be metered to deliver grease at an

average rate equivalent to the routine greasing periods and quantities specified. If it can be done safely, the bearing should be re-greased as it rotates to help distribute the grease. Do not mix different types of grease in the bearing. Excessive quantities of lubricant should not be used, particularly at high speeds, as this may result in excessive churning and overheating.

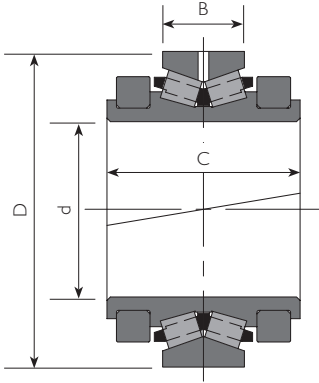
## TIGHTENING TORQUES

The tightening torques for the assembly of the bearings and housing are given in the following table. All screws are metric coarse thread, grade

12.9. Full assembly instructions are provided with each order, and are available separately if required.

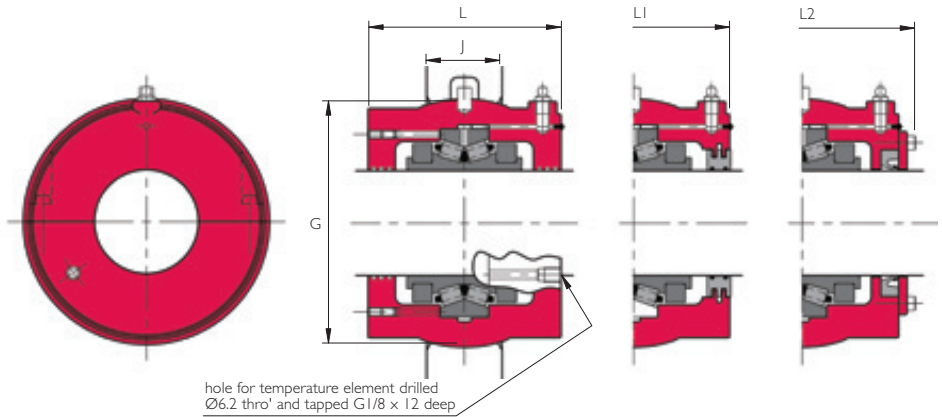
### TIGHTENING TORQUES

Shaft Diameter (mm)	Bearing Reference	Clamping ring screw			Cartridge joint screw			Side screw			Pedestal joint screw			Flange joint screw		
		Screw size	Key size A/F (mm)	Torque (Nm)	Screw size	Key size A/F (mm)	Torque (Nm)	Screw size	Key size A/F (mm)	Torque (Nm)	Screw size	Key size A/F (mm)	Torque (Nm)	Screw size	Key size A/F (mm)	Torque (Nm)
75	IDTB75M	M5x25	4	8.5	M6x25	5	11	M6x10	3	7.8	M16x65	14	225	M12x55	10	90
80	IDTB80M	M5x25	4	8.5	M10x45	8	52.5	M6x10	3	7.8	M16x65	14	225	M16x65	14	225
90	IDTB90M	M5x25	4	8.5	M10x45	8	52.5	M6x10	3	7.8	M16x65	14	225	M16x65	14	225
100	IDTB100M	M8x30	6	35	M10x45	8	52.5	M6x10	3	7.8	M20x80	17	420	M16x65	14	225
110	IDTB110M	M8x30	6	35	M12x55	10	90	M6x10	3	7.8	M20x80	17	420	M20x80	17	420
120	IDTB120M	M8x30	6	35	M10x45	8	52.5	M6x10	3	7.8	M20x80	17	420	M20x80	17	420
140	IDTB140M	M8x30	6	35	M10x45	8	52.5	M6x10	3	7.8	M20x80	17	420	M20x80	17	420
160	IDTB160M	M8x30	6	35	M10x45	8	52.5	M10x16	5	30	M16x65	14	225	M20x100	17	420
180	IDTB180M	M8x30	6	35	M10x55	8	52.5	M10x16	5	30	M20x80	17	420	M24x100	19	712



## BEARING DATA

Shaft Diameter d (mm)	Reference	Bearing Ratings			Calculation Factors				Principal Dimensions			Mass (kg)
		Cr (kN)	Cor (kN)	Max. Speed (rpm)	Y1	Y2	e	Yo	D (mm)	C (mm)	B (mm)	
75	IDTB75M	143	208	3410	1.27	1.89	0.53	1.24	135	82.6	35	4.0
80	IDTB80M	152	232	3200	1.20	1.79	0.56	1.18	145	85	35	4.6
90	IDTB90M	160	254	2840	1.11	1.65	0.61	1.08	150	85	35	4.7
100	IDTB100M	235	379	2560	1.17	1.75	0.58	1.15	175	100	40	8.3
110	IDTB110M	282	504	2330	1.05	1.56	0.64	1.02	190	110	48	11.4
120	IDTB120M	295	544	2130	1.00	1.49	0.68	0.98	200	110	48	11.9
130	IDTB130M	296	555	1830	1.27	1.90	0.53	1.24	215	125	45	13.9
140	IDTB140M	296	555	1830	1.27	1.90	0.53	1.24	215	110	45	12.2
150	IDTB150M	350	670	1600	1.34	1.99	0.50	1.31	240	123.8	45	16.8
160	IDTB160M	350	670	1600	1.34	1.99	0.50	1.31	240	110	45	14.8
180	IDTB180M	358	716	1420	1.21	1.80	0.56	1.18	265	110	45	17.0

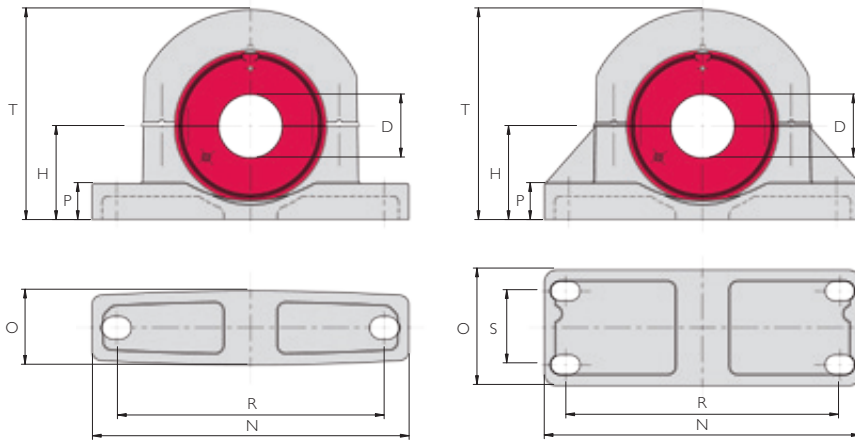


## CARTRIDGE DATA

Cartridge for LAB seals	References		G (mm)	J (mm)	Principal Dimensions			Mass (kg)
	Cartridge for ATL seals				L (mm)	L1 (mm)	L2 (mm)	
IDTC75GR75M	IDTC75GR30TL		177.80	50	138	140	162	11.8
IDTC80GR80M	IDTC80GR35TL		203.20	50	140	142	164	15.1
IDTC90GR90M	IDTC90GR35TL		203.20	50	146	148	170	13.5
IDTC100GR100M	IDTC100GR40TL		231.78	64	170	172	202	20.1
IDTC110GR110M	IDTC110GR45TL		266.70	76	178	180	210	29.8
IDTC120GR120M	IDTC120GR50TL		266.70	76	178	180	210	26.5
IDTC140GR130M	IDTC140GR50TL		279.40	76	190	192	222	31.2
IDTC140GR140M	IDTC140GR55TL		279.40	76	190	192	222	31.2
IDTC160GR150M	IDTC160GR60TL		311.15	76	200	202	232	47.0
IDTC160GR160M	IDTC160GR65TL		311.15	76	200	202	232	47.0
IDTC180GR180M	IDTC180GR70TL		336.55	95	200	206	232	42.5

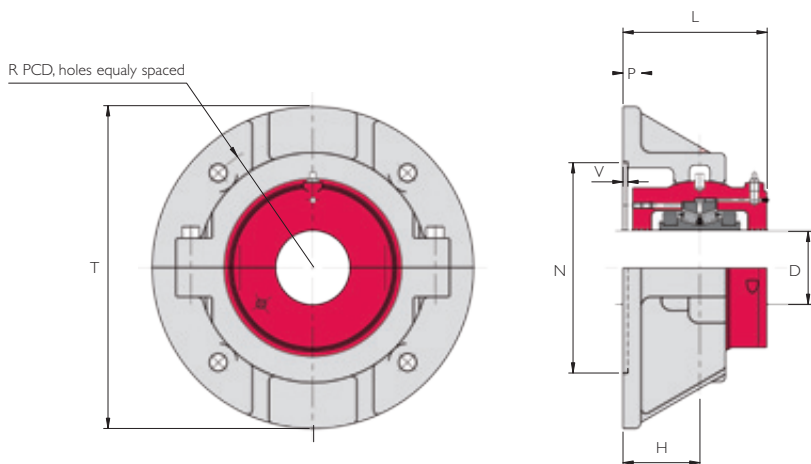


## Tapered bearing pedestal units



### PEDESTAL DATA

Shaft Diameter d (mm)	Bearing Reference	Pedestal Reference	H (mm)	R Min. (mm)	Max. (mm)	S (mm)	Bolts No.	Size	N (mm)	O (mm)	P (mm)	T (mm)	Mass (Pedestal only) (Kg)
75	IDTB75M	PN05	112	312	328	-	2	M24	380	90	44	252	13.3
80	IDTB80M	PN06	125	342	366	-	2	M24	420	102	52	272	14.7
90	IDTB90M	PN06	125	342	366	-	2	M24	420	102	52	272	14.7
100	IDTB100M	PN07	143	374	410	-	2	M24	466	120	60	314	20.6
110	IDTB110M	PN08	162	438	462	120	4	M24	508	178	38	372	43.3
120	IDTB120M	PN08	162	438	462	120	4	M24	508	178	38	372	43.3
130	IDTB130M	PN09	181	470	494	120	4	M24	558	178	41	405	52
140	IDTB140M	PN09	181	470	494	120	4	M24	558	178	41	405	52
150	IDTB150M	PN11	213	356	380	114	4	M24	508	178	32	430	53
160	IDTB160M	PN11	213	356	380	114	4	M24	508	178	32	430	53
180	IDTB180M	PN31	210	546	570	128	4	M24	636	204	50	470	83

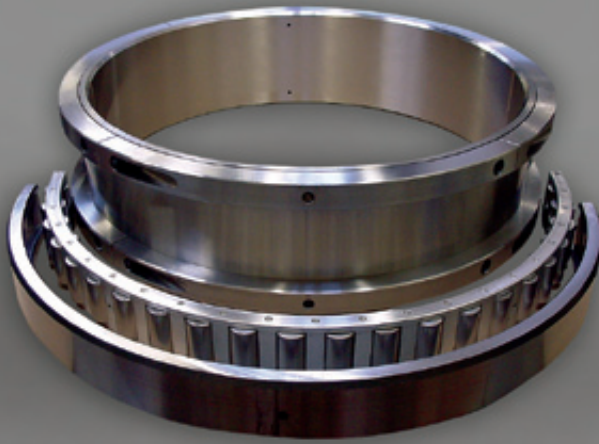


## FLANGE DATA

Shaft Diameter d (mm)	Bearing Reference	Flange Reference	T(1) (mm)	Bolt Size	R (mm)	P (mm)	H (mm)	N(2) (mm)	V(2) (mm)	Mass (flange only) (kg)
75	IDTB75M	FN05	330	M16	274	19	79	215.90	3	19.4
80	IDTB80M	FN06	356	M16	302	19	86	244.48	3	22.0
90	IDTB90M	FN06	356	M16	302	19	86	244.48	3	22.0
100	IDTB100M	FN07	382	M16	334	22	92	276.23	3	26.6
110	IDTB110M	FN08	432	M24	374	22	98	314.33	3	34.9
120	IDTB120M	FN08	432	M24	374	22	98	314.33	3	34.9
130	IDTB130M	FN09	444	M24	384	25	98	317.50	3	40.8
140	IDTB140M	FN09	444	M24	384	25	98	317.50	3	40.8
150	IDTB150M	FN11	496	M24	426	25	105	352.43	3	58
160	IDTB160M	FN11	496	M24	426	25	105	352.43	3	58
180	IDTB180M	FN31	534	M24	466	25	124	393.70	3	81

1) Dimension shown is as-cast dimension. Depending upon manufacturing method used, flanges supplied may be machined 5mm smaller

2) Dimensions shown are for locating spigot for mounting flange on to. Diameter tolerance of locating spigot: f8  
Where SRSRP seals are used cartridge assembly may protrude into bulkhead. Consult Cooper for minimum bulkhead aperture size.



## LARGE BORE BEARINGS

The following table lists some of the bearings over 600mm/24" bore size manufactured by Cooper recently.

This table may be used as a guide for selecting or designing-in large bore bearings, but it should be borne in mind that these larger sizes of bearing are frequently adapted to meet application requirements. They may be modified to match existing or required envelopes and capacities. Many of the bearings may be supplied with slightly different bore sizes to those under which they are listed, while alternative versions may already be available at some bore sizes without modification.

Generally, these bearing are available in expansion 'EX' or fixed 'GR' types (see page 3). Extra-expansion 'EXILOG' types are also made regularly, but often have different envelope dimensions (in particular; the inner race is usually wider).

Lighter duty 04 Series bearings are shown separately on page 92. It is always advisable to contact Cooper when specifying large bearings.

## HOUSINGS

If the bearing is to be mounted in a housing made by the equipment manufacturer, Cooper will supply details of the required mounting tolerances upon request.

If the bearing is to be fitted into an existing housing, accurate details of the mounting dimensions should be supplied to Cooper to ensure compatibility.

Cooper can supply suitable housings, including cartridges, pedestals, flanges, and custom housings for large bearings. (See other sections for explanations of these housing types). Please contact Cooper with application details so that we can supply details of the most suitable housing, or design or adapt a housing to suit if required.

## DOUBLE BEARINGS

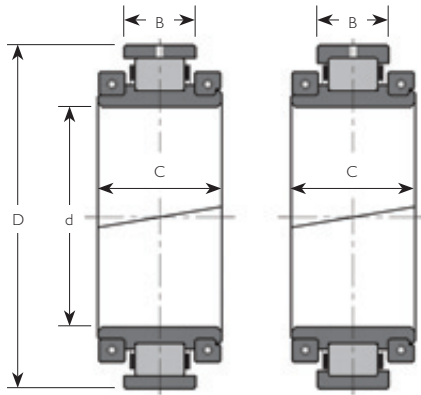
Large bearings are often paired to form a 'double bearing' of increased capacity.

To calculate the dynamic capacity of a double bearing, multiply the dynamic capacity ( $C_r$ ) of the single bearing by 1.714.

To calculate the static capacity of the double bearing, multiply the static capacity ( $C_{or}$ ) of the single bearing by 2.

Mountings for double bearings should be designed to equalise the loading on the two rows of rollers.

Bearings should only be mounted together to form a two-row bearing if they are supplied by Cooper specifically for this purpose, and the bearings should be maintained in their allocated pairings.



## LARGE BEARINGS

Shaft Diameter d	Reference	D (mm)	C (mm)	B (mm)	Cr (kN)	Cor (kN)
610mm	01 B 610M	780	172	84.1	1431	3311
613.2mm	03E B 613.2M	980	370(1)	200(1)	5593	9863
630mm	01 B 630M	794	190	88	1780	4181
	03 B 630M	980	361.6	216	7036(2)	14708(2)
25"	02 B 2500	866.78	219.08	117.48	2724	5833
670mm	03 B 670M	1050	410	250	8866(2)	18398(2)
650mm	02 B 650M	860	220	120	2724	5833
	03E B 650M	980	320	200	5738	11253
26"	03E B 2600	980	320	200	5738	11253
27"	01 B 2700	864	170	94	1761	4014
690mm	01 B 690M	864	170	94	1761	4014
710mm	01 B 710M	890	185	95	1817	4234
	02 B 710M	980	290	155	3530	7019
28"	01 B 2800	892.18	184.15	87.31	1682	4038
750mm	01 B 750M	971.55	206	101.6	2321	5685
	02 B 750M	990	240	140	3554	7582
	03 B 750M	1060	310	185	5173	10544
775mm	01 B 775M	945	165	80	1762	3974
850mm	01 B 850M	1046	200	106	2555	6401
	02 B 850M	1112	260	156	4335	9585
860mm	03 B 860M	1170	330	190	5698	12404
950mm	01 B 950M	1172	220	120	3238	8209
	02 B 950M	1212	260	156	4882	11587
40"	01 B 4000	1270	260	139.7	3958	10084
1150mm	4DS B 1150M	1490	305	175	5737	13445
1250mm	03 B 1250M	1630	350	214	8587	21001

1) Dimensions of 03E B 613.2mm refer to EXILOG type with roller axial guide surfaces to outer race only

2) These capacities are achieved with a special type of cage and roller assembly.

## 04 SERIES BEARINGS

Cooper 04 Series bearings are specialised bearings for lighter duties at large bore sizes.

04 Series bearings are capable of high speeds, but are also used on lower speed applications. Use of these bearings at high speeds requires special attention to lubrication.

If the bearing is to be used at slow speeds only it may be possible to omit some of the 'high speed' features of the bearing, allowing a more economical bearing specification.

Generally, these bearing are available in expansion 'EX' or fixed 'GR' types (see page 3). Alternative configurations are possible where appropriate. These bearings may be subjected to a degree of adaption to suit application requirements. They may also be supplied with slightly different bore sizes to those under which they are listed.

It is advisable to contact Cooper when specifying 04 Series bearings.

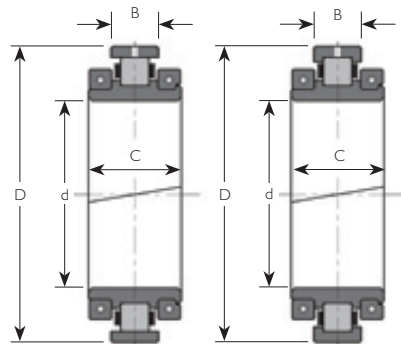
### HOUSINGS

Most commonly, 04 Series bearings are mounted in customer's own housings or into housings integrated into the structure of the machine. Details of appropriate mounting tolerances can be supplied on request.

If it is wished for Cooper to supply bearings complete with housings, please contact us with application details.

In general, if operating conditions and envelope restrictions allow, it is more economical to supply 01 Series bearings complete with housings, as a greater range of standardised housings is available for the 01 Series.

Shaft Diameter d (mm) (inches)	Reference	D (mm)	C (mm)	B (mm)	Cr (kN)	Cor (kN)	Max. Speed (rpm)	Mass (kg)
6	04 B 600	257.18	79	38.1	198	246	3000	14
10%	04 B 1010	365.13	103	48.4	336	367	2470	27
340	04 B 340M	438.15	103	48.4	261	282	1950	35
13½	04 B 1308	438.15	103	48.4	261	282	1950	34
400	04 B 400M	505	100	36	214	235	1650	34
17½	04 B 1708	546.1	108	48.4	302	367	1460	45
18½	04 B 1808	571.5	108	48.4	316	395	1370	50
20¾	04 B 2012	635	114	48.4	326	423	1210	54
550	04 B 550M	655	98	36	266	289	1150	54
22	04 B 2200	666.75	101	38.1	361	452	1130	54
23	04 B 2300	692.15	101	38.1	368	470	1080	59
24	04 B 2400	717.55	101	38.1	413	543	1020	61
26½	04 B 2608	781.05	114	48.4	509	818	910	77
30	04 B 3000	882.65	114	44.5	372	509	780	95
32	04 B 3200	939.8	114	44.5	394	579	730	104
33	04 B 3300	965.2	114	44.5	403	602	705	104
36	04 B 3600	1041.4	114	44.5	418	556	620	118
1060	04 B 1060M	1220	127	60	954	1472	560	180
44	04 B 4400	1295.4	168	76.2	1339	1822	140	200
48	04 B 4800	1371.6	140	69.9	1094	1693	350	146
1295	04 B 1295AM	1435.1	127	63.5	988	1606	340	193
1295	04 B 1295BM	1473.2	168	76.2	1831	2877	120	313
1550	04 B 1550M	1720	140	75	1364	2418	300	336



## WHAT TO DO WITH YOUR USED BEARING

### RECONDITIONING

Cooper offer a reconditioning service for larger bearings. A used bearing is thoroughly cleaned and a detailed report prepared on its condition and the work required to bring it back to an as-new functional condition. Generally a reconditioned bearing will consist of a combination of remachined components of the original bearing and new components to give the correct clearances.

Reconditioning is generally more economical than manufacture of new bearings, depending upon the amount of work required to the subject bearing, for the following bearings:

**01 Series:** 320mm/13" bore size and over

**02 Series:** 320mm/13" bore size and over

**03 Series:** 160mm/6½" bore size and over

**04 Series:** all sizes

**Thrust bearings:** all sizes

Cooper are also able to recondition radial and thrust cylindrical bearings of non-Cooper manufacture.

### FAILURE ANALYSIS

Cooper offer a failure analysis service for all sizes of bearing, of any age. Where appropriate, we will offer advice on fitting practices, lubrication regime, or modifications to the mounting arrangements to help improve future bearing life. Bearings sent for analysis may be reconditioned, recycled or returned as appropriate. Please inform Cooper if you wish to use this service, before returning bearings to one of our sites. A small charge may be made depending on requirements.

### RECYCLING

The materials used in a Cooper bearing unit are almost completely recyclable. The diagram below helps to identify the various materials used in standard and popular optional versions of Cooper bearings so that they can be segregated as required.

#### OUTER HOUSING

Grey iron or ductile iron as standard.

Cast steel housings will usually have the letter 'S' inserted into their reference compared to the standard units listed in this catalogue (e.g. "PS07" instead of "P07" or "FS07" instead of "F07").

Fabricated housings are usually mild steel

#### CLAMPING RINGS

Low or medium carbon steel

#### SCREWS

High tensile steel

#### CAGE

100 Series: Polyamide.

01E Series up to 105mm/4" bore size: Medium carbon steel.

01, 02 & 03 Series: Die cast or machined aluminium alloy as standard. Copper based alloys and zinc optional.

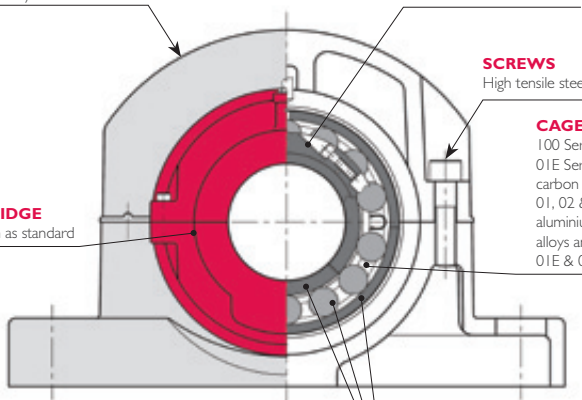
01E & 02E over 105mm/4" bore size: Brass.

#### CARTRIDGE

Grey iron as standard

#### ROLLERS, OUTER RACE & INNER RACE

High carbon chromium bearing steel



## SPECIAL FEATURES

Suffix characters may be used to indicate special features. Examples include:

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### BEARING FEATURES

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<b>C2/C3/C5</b>	Special clearances
<b>AF</b>	Axial float. This is preceded by the amount of axial float, e.g.: 2mm AF
<b>AL(D)F</b>	Aluminium cage with (double) flange (usually race riding)
<b>AP</b>	Air / grease purge points
<b>CHAM</b>	Special chamfer to inner race bore. This is followed by size of chamfer; e.g. (to indicate 7mm x 45° chamfer): CHAM 7
<b>EXILOG</b>	Bearing with fixed type outer race and floating inner race
<b>FR</b>	Full complement of rollers (no cage)
<b>GM</b>	Gunmetal / brass / bronze cage
<b>GM(D)F</b>	Gunmetal / brass / bronze cage with (double) flange (usually race riding)
<b>GROSL</b>	Single lipped outer race
<b>OSO</b>	Outer race set out (particularly for large bearings where outer race is usually retained in housing by radial screws)
<b>XJR</b>	Joint relief (to allow inner race to be mounted in recess)
<b>ZN</b>	Zinc alloy cage

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## CARTRIDGE FEATURES

<b>BOBP</b>	Bolt-on blanking plate
<b>BOBT</b>	Bolt-on blanking plate with thrust bearing
<b>BP/BT/ BPTL/BTTL</b>	See page 12
<b>IH</b>	Inspection hole (for measuring position of inner race of expansion bearings once assembled)
<b>OB</b>	Overbore (cartridge end bore is larger than bearing bore) This is followed by end bore size, using same format as bearing bore reference, e.g.: OB 207 or OB 65M (or OB 65mm)
<b>TE</b>	Drilled for temperature indicator element
<b>OIL LUB</b>	Oil lubricated

A letter may succeed the 'C' in the cartridge designation to indicate that the cartridge is made from non-standard material. Taking the examples of 01 C 60M and 01 C 03 as examples:

01 CN 60M and 01 CN 03 would indicate nodular (ductile) iron.  
 01 CS 60M and 01 CS 03 would indicate steel.  
 01 CA 60M and 01 CA 03 would indicate aluminium.

## OUTER HOUSING FEATURES

<b>BEM</b>	Base ends machined. This may be followed by machined length, e.g.: BEM 500mm
<b>SI</b>	Reduced swivel clearance between outer housing and cartridge
<b>SLUB</b>	Lubrication to spherical seat

For outer housings made in material other than standard, letters are interposed between the letter(s) designating the housing type (e.g. 'P' for pedestal, 'F' for flange or 'RET' for rod-end T-type) and the size designation. Taking the example of a P06 pedestal:

PN06 indicates a P06 in nodular (ductile) iron  
 PS06 indicates a P06 in steel  
 PA06 indicates a P06 in aluminium

Ductile iron and steel versions of an RET06 would be designated RETN06 and RETS06 respectively.

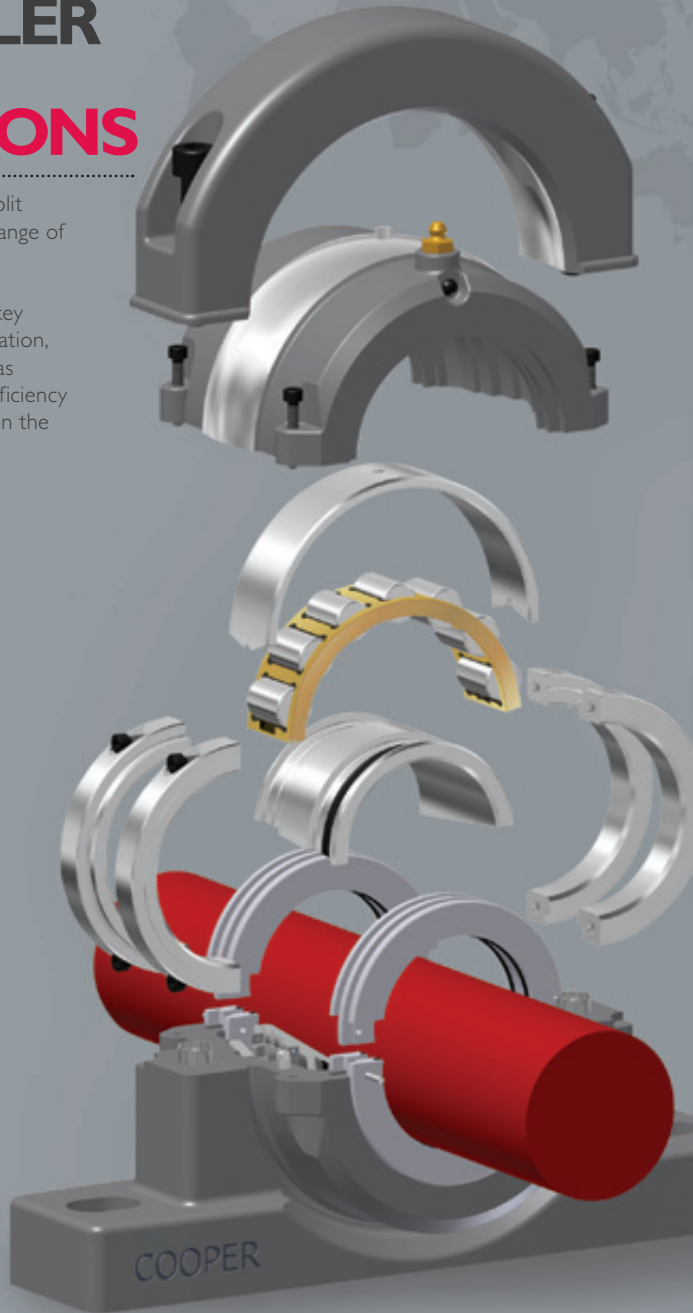
Numbers may be suffixed to bearing, cartridge or outer housing designations indicating a combination of special features or parts to special dimensions.



# SPLIT ROLLER BEARING APPLICATIONS

The following pages show Cooper Split Roller Bearings “in action” across a range of industries and applications.

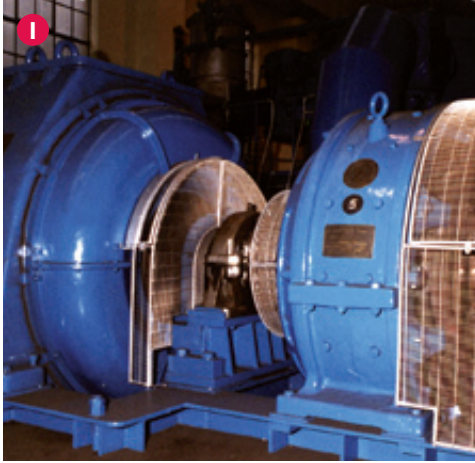
The examples shown underline the key advantages in terms of ease of installation, inspection and replacement, as well as graphically illustrating the superior efficiency of the Cooper sealing solution in even the most adverse environments.



# MINING EXCELLENCE

Underground or surface, Cooper bearings make mining more profitable and are used on key applications across the industry. From material handling through hauling, screening and stockpile management, Cooper split bearings have long been recognized as a benchmark for reliability.

## MINE WINDERS



**1.** Coal industry mine winders include 03 Series 600mm for an operating load of 80 tonnes per bearing at 48 rpm and 02 Series 400mm for an operating load of 32 tonnes per bearing at 31 rpm.



**2.** A 700mm diameter special double bearing supplied for a tower mounted winder in a copper mine. Normal operating load is 185 tonnes and the speed is 54 rpm.

## 3. STACKER RECLAIMERS

This bucket wheel stacker reclaimer can handle 3,500 tons per hour and the boom can operate on a pile up to 50 feet high. The slewing ring pinion gear is supported by 6½ inch and 7 inch 01 Series Cooper bearing in flange housings.

Cooper Bearings up to 380mm in diameter are used on the shaft of the bucket wheel as shown.



# SUGAR PRODUCTION

The Cooper value proposition is universally recognised by both cane and beet sugar manufacturers and is used across a range of demanding applications from cane knives to conveyors, fans and blowers etc. Besides the savings in downtime from the split bearing, the Cooper sealing solution is the ideal defence against the abrasive effects of "bagasse" and other contaminants.

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## 1. CANE KNIVES AND CRUSHERS

This cane knife machine is fitted with 03 BCP 200mm EX (Expansion) and GR (Fixed) bearings.



## 2. SCROLL CONVEYOR

Cleanliness requirements during the final stage of transporting white sugar to the bagging area demanded the use of custom-built 100mm stainless steel hanger unit.



# MARINE SOLUTIONS

Cooper bearings have long-standing expertise in supplying both the commercial and military fleets of the world and are installed on a variety of vessel types from water-jet and z-drive driven passenger, cargo and support vessels to powered-from-amidships minesweepers.

Cooper offers an extensive range of split cylindrical and taper roller bearings in a variety of housing materials including aluminium and stainless steel. Application expertise gained over the years results in a range of “customized” options including jacking screws for easy alignment and spherical cartridge lubrication to counter hull flexing.



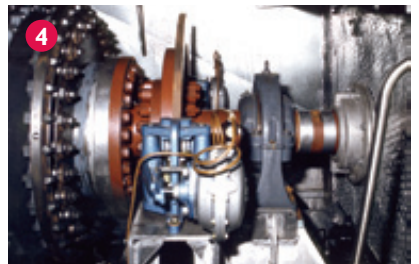
**1.** This Offshore Supply Vessel is fitted with Cooper 01 BCP 500 EX and 02 BCP 500 GR on the propulsion shaft.



**2.** A typical installation of a Cooper BCP on a propulsion shafting application.



**3.** Hoverspeed Super SeaCat is fitted with weight saving aluminium 01 BCAPLA 210mm EX cartridges and pedestals.



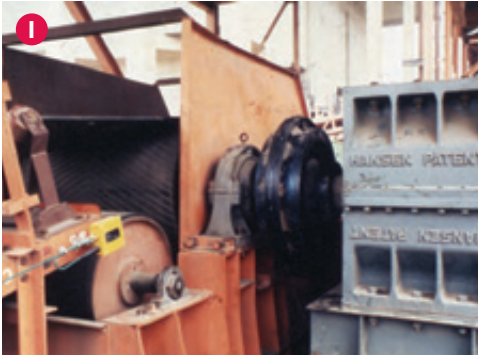
**4.** A typical waterjet drive trapped position utilising a 240mm BCP EX with felt seals.

# POWER GENERATION CONVENTIONAL

Cooper split roller bearings support the power generation industry in both conventional and renewable segments across a wide range of key applications such as fans and blowers, conveyors, motors and generators etc.

Our experience and technology means many of our solutions can be "Made to Order" to suit the individual conditions and requirements.

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## 1. CONVEYORS

The roles of conveyors include the transport of fuels (ranging from coal to organic wastes) and raw materials such as limestone for scrubbing. They remove waste products from both nuclear and conventional processes. You will find Cooper bearings assuring the smooth running of belt feeder, screw and other conveyors in power plants all over the world, in the harshest conditions and especially in 'trapped' locations where no other type of bearing can easily be installed or inspected.

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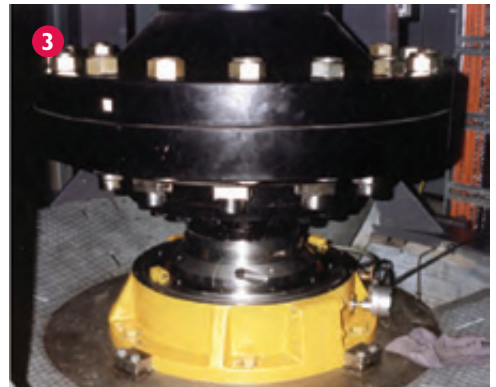
## 3. PUMPS AND PUMP DRIVES

Hardworking bearings support vital pumping activities, feeding boilers, circulating cooling fluids and extracting condensates. Cooper bearings find application on a wide range of pump shafts, many in hard-to-access situations.



## 2. FANS AND BLOWERS

Fans play an important role in regulating temperature, removing dust, maintaining ventilation and scrubbing flue gases, often in harsh or corrosive conditions. Bearing locations are often trapped, with the result that split-to-the-shaft Cooper products offer distinct advantages in terms of accessibility.



# POWER GENERATION RENEWABLE

## I. HYDRO TURBINES



02 BCF 2500 EX fitted to a Hydro Turbine vertical shaft. The customer chose Cooper for ease of installation and inspection. The elimination of oil lubrication was also a bonus for the customer as they could comply with environmental legislation.



**2.** 01 BCF 380mm fitted to a vertical shaft water turbine.

01 BCF 380mm EX was selected in conjunction with the OEM on this 11,000kW vertical shaft 'Kaplan' turbine. Cooper was chosen for simplified installation, and uncomplicated inspection & maintenance

## 3. WIND TURBINES

Housing manufactured at our foundry for 1250mm bearing for a wind turbine test rig. The Cooper solution offered significant advantages over hydrodynamic/plain bearings in terms of requirements for shaft tolerance. At the same time significant power savings are achieved on start up and the risk of loss of lubricant film due to power failure is eliminated avoiding potential damage to the shaft.



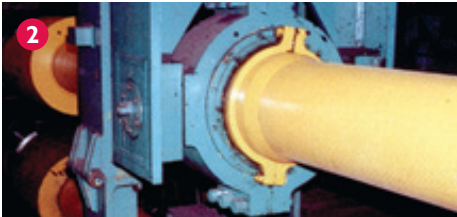
# STEEL EXPERTISE

Specialists in steel for decades, Cooper Bearings offer optimum performance, simple and speedy bearing inspection for preventative maintenance and immense downtime savings during inspection or replacement.

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## 1. CONTINUOUS SLAB CASTER BEARINGS

Cooper is renowned with steel end users and OEM customers around the world for their expertise and experience in producing bearings and water-cooled housings for this most demanding of applications.



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## 2. LINK SPINDLES

A Cooper 01 B 560mm on a link spindle drive to a high speed reversing (78rpm in 2 seconds) rolling mill. The use of 01 Series bearings, double mounted in one specially manufactured housing provided the required load capacity while meeting the high speed reversal speed requirements.

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## 3. PILGER MILLS

The Cooper brand has long been synonymous with longer bearing life in this most demanding of applications and is the bearing of choice for OE manufacturers and tube makers.

With a range from 125mm to 500mm bore, Cooper split bearings are used across the world for the manufacture of pilgered tube in copper, stainless steel and titanium.



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## 4. COOLING BEDS

Cooling beds are an application which perfectly illustrates the advantages in maintenance and downtime savings in trapped applications as well as the efficiency of the superior Cooper sealing solution.

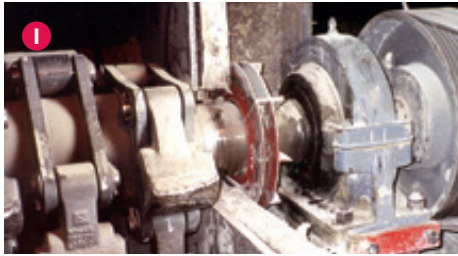
Cooling bed drive mechanism utilising 200mm 01 Series BCP units.



# CEMENT/AGGREGATES

## ROBUST SOLUTIONS

Cooper Bearings are proven to operate effectively in hostile and abrasive conditions across a range of applications in the cement and quarrying industries.



### 1. CLINKER BREAKERS

Detail of cement works clinker breaker showing a Cooper 03 BCP 180mm GR. This machine also uses 03 BCP 180mm EX Expansion bearings.



### 2. BALL MILLS

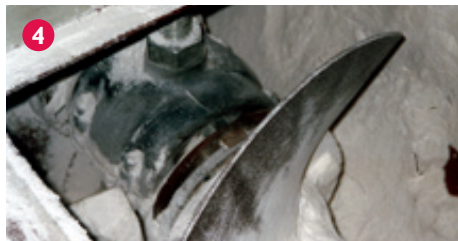
01 BCP 1016mm EXILOG GR fitted to a 10 feet diameter Silica Mill.

### 3. BALL MILLS

Lichtenberg Lafarge use Cooper 03BCP 320mm on this ball mill.

In addition to these illustrations and numerous UK applications, Cooper bearings are also used on ball mills in: Egypt, Greece, Ireland, USA and Turkey.

Sizes range from 01 BCP 300mm EX and GR to 01 BCP 950mm EXILOG GR



### 4. SCREW CONVEYORS

This Kaolin screw conveyor is fitted with 01 BH 60mm EX bearing and uses automatic lubrication. The hanger bearing has a double heavy duty lip seal to retain the lubrication and keep out the Kaolin



# CEMENT/AGGREGATES ROBUST SOLUTIONS

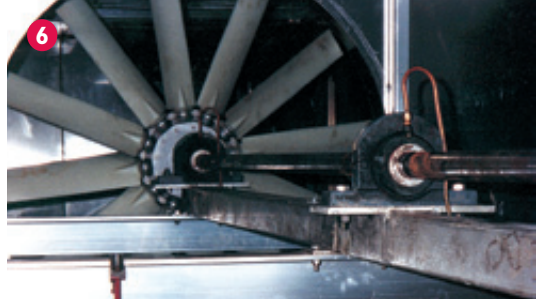
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## 5. FANS

This lubricator equipped cement industry fan is fitted with an 02 BCP 8" EXTL.

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## 6. FANS

Cooper 01 Series BCP on a Canadian lumber drying kiln.

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## 7. FANS

This cement works ventilation fan uses Cooper 02 BCP 900 EX TL SI and 02 BCP 900 GR TL SI.



## 8. CEMENT KILN

Cement kiln using 10 inch 03 Series with roller thrust bearings in the cartridge end plates which support the under rollers on the kiln. The radial load is 28 tons, the axial load 10 tons and the speed is 4-5rpm.



## 9. BUCKET ELEVATORS

This German bucket elevator uses Cooper 01 BCP 160mm GR in trapped positions. The advantages of Cooper split to the shaft bearings are easily seen in these pictures.



## 10. BELT CONVEYORS

Take up housings (Tension Type) with Cooper 01E 80mm EX (Expansion) and GR (Fixed) bearings fitted to a raw materials conveyor at an aggregate depot.



## 11. BELT CONVEYORS

A German chalk extraction conveyor operates in dusty, dirty and moist conditions which caused the motor and gearbox to be firmly stuck to the shaft. The main conveyor bearing failed requiring immediate replacement.

The existing 150mm bearing was replaced with a Cooper 01 BCP 150mm GR SRS. The split rubber seal was specified to combat the moist environmental conditions.

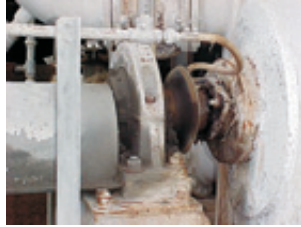


## 12. BELT CONVEYORS

Water collected in the tail drum pit entered the bearings. As a result, the SNL 515 - 612 bearing fitted to the 100mm shaft failed every 2 to 3 months.

Cooper recommended a BCP 100mm GR (Fixed) and EX (Expansion) bearing equipped with the Cooper SRS seal to solve the problem of water penetration. The SRS seal is available in high and low temperature versions (-20°C to 100°C).

# MISCELLANEOUS APPLICATIONS



## PAPER

Trapped 01E BCP 315 EX ATL and 01 BCP 415 EX ATL bearings are shown in use on agitators in the paper industry.

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## GRAIN

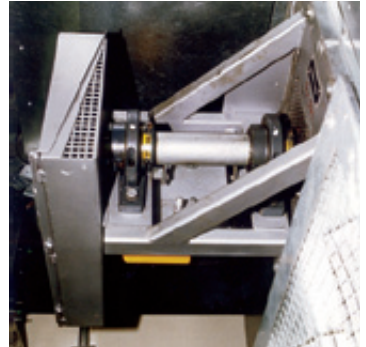
The previously fitted SF75/1075/75 bearings used on this 600 staggered bucket elevator had the 75mm, 106RPM drive shaft bearings fitted in trapped applications behind a 13-1 reduction gearbox which caused immense maintenance access problems.

In order to reduce the customer maintenance expense, Cooper recommended 01E BCDFN 75mm EX (Expansion) and GR (Fixed) bearings.



## ASPHALT

This application is a conversion from a solid pillow block unit to a split to the shaft 01E 65mm GR Cooper SN compatible pedestal. For trapped applications such as this Cooper split bearings are the ideal solution.



## AUTOMOTIVE

The UK General Motors paint shop uses Cooper 01E BCP 75mm EX and GR bearings for fume extraction bearings.

# BESPOKE SOLUTIONS

Cooper has a long and proud tradition of manufacturing "Made to Measure" solutions for individual customer requirements. Our facility for customising encompasses both bearing and housing both of which are manufactured in our factory. The following examples are merely a selection of the kind of configurations which we are pleased to do for continuing customer satisfaction.

## I. SCROLL CONVEYORS



Picture A shows a plain bearing on a scroll conveyor at a French sugar plant where short bearing life, shaft wear and product contamination from oil and rust were causing major problems.



The custom-built Cooper solution in picture B combined a triple boss hanger mounting with split roller bearing equipped with double sealing and air purge provision on each end.



## 2. MIXERS

Twin-screw mixer for processing Ammonia Nitrate for fertilizer. Due to both cost and the toxic environment the user wanted to reduce changeover time to an absolute minimum.



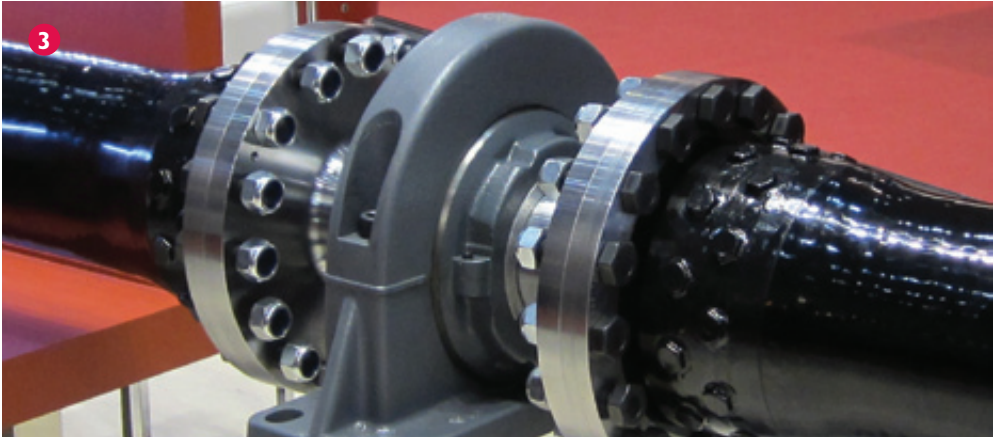
The use of a special tandem unit comprising a double pedestal housing with 02 BCP 60mm EX/GR bearings with special extended HTP seals reduced change time considerably with a saving of £4500 per outage.

# BESPOKE SOLUTIONS

## 3. MARINE “Z-LINE” UNITS

The image shows a Cooper Pedestal unit mounted by a Spanish coupling manufacturer on a composite propulsion shaft. The pedestal base is solid to enable mounting in “Chock-fast”® on the vessel.

The housing is drilled to enable mounting of a temperature sensor and a spherical lubrication point added to assist alignment when the ship’s hull flexes during operation.



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## 4. SPLIT TAPERED ROLLER BEARINGS

In recent years Cooper expertise and split bearing technology has seen the expansion of our product offering to include a range of split tapered roller bearings examples of which are shown below.



Cooper double row 780mm bore split tapered roller bearing on a link-spindle for a steel making plant.



Cooper tapered roller bearing for marine Z-drive propulsion for intermittent thrust loading.



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about our products

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