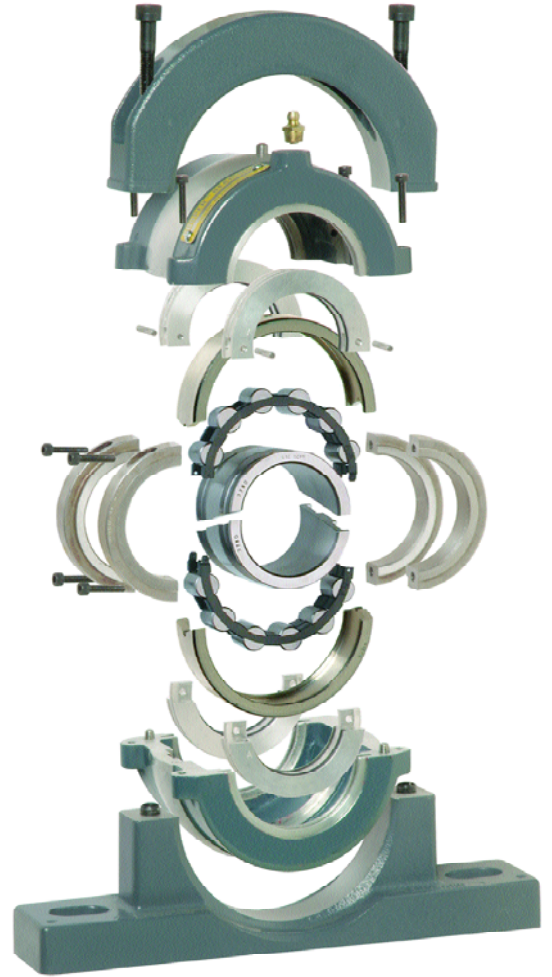
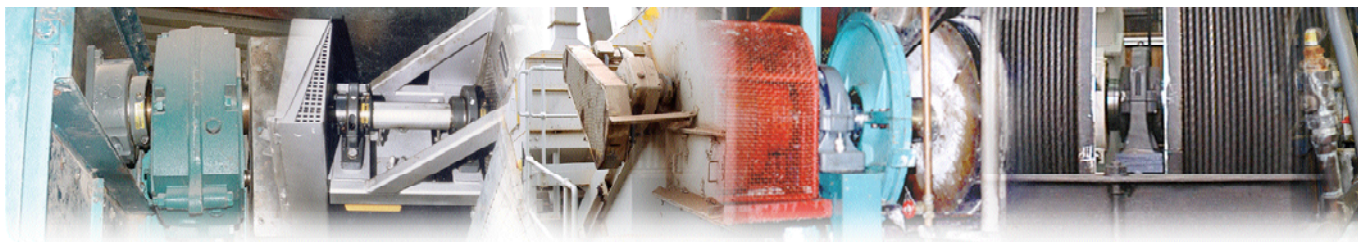




# COOPER<sup>®</sup>

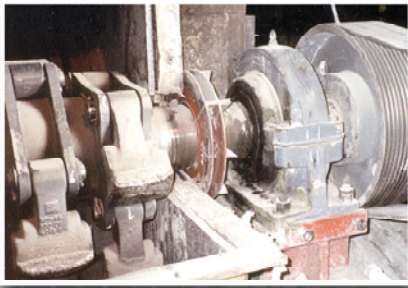


*Celebrating 100 Years of The World's Number One Split Roller Bearing*



**1907 - 2007**

**Product Catalogue**



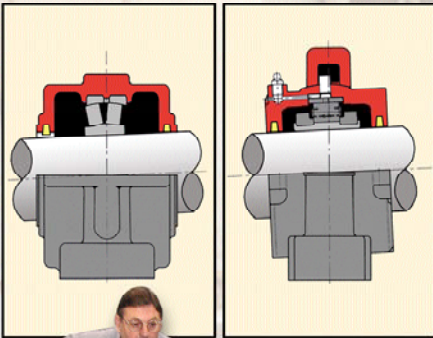
## Split to the Shaft Roller Bearings

- Installed without moving adjacent equipment or machinery.
- Low cost of installation.
- Ease of replacement.
- Reduces downtime and increases uptime.
- Increases maintenance efficiency.



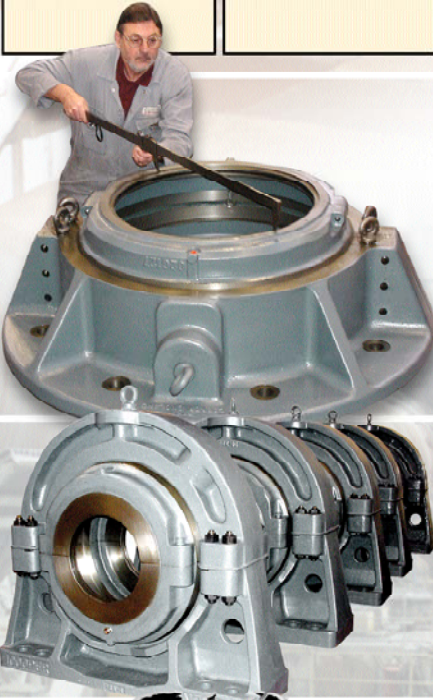
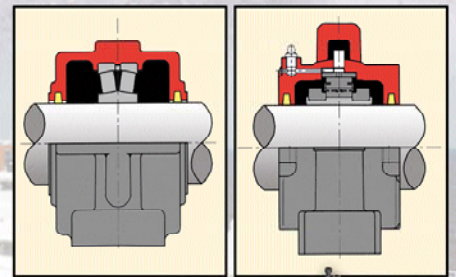
## Comprehensive Range of Housings

- Meets most application requirements from the standard range.
- Pedestals available in aluminium, steel, grey iron and nodular iron including: flanges, rod end bearings, take-up bearings and custom bearings.



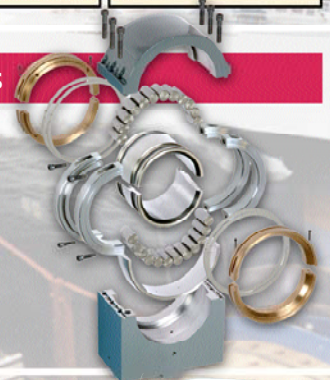
## Superior Sealing

- Always remains completely sealed with the shaft. Permits up to 2.5° misalignment.
- Reduces contamination.
- Retains lubrication.
- Prolongs bearing life.
- Proven range of sealing options.



## Made to Order Products

- Split or solid, thrust or radial bearings.
- Up to a shaft size of 1.5metres.
- Inspection and rework facility.
- Housings in a variety of materials
- Watercooled bearings for continuous slab casters.



## Full Service Manufacturer

- Technical and installation support service.
- Problem solving solutions a speciality.
- Vast engineering knowledge.
- Proven range of products.



## Established Global Organisation

- Global distribution network.
- Local support provided by Cooper and distribution partners.

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## Vision Statement

To be the world's leading specialist bearing company.

## Mission Statement

To deliver best value engineered products and solutions that delight stakeholders.

## Objectives

Cooper Bearings Group objectives are supportive of the company vision and mission and have been categorised into three distinct groupings, those that are orientated towards customers, shareholders and people.

## Customer

To set the standard for customer service levels in every key market served.

To develop specialist, value adding and environmentally sustainable products.  
To become the design partner of choice with OEMs.  
To deliver best value solutions to distribution partners and industrial end users.

## Shareholder

To achieve profitable sales growth in every key market served.

To build on a century of success to continually improve performance in all aspects of the business.

## People

To support the development of all employees.  
To encourage innovation and reward success.  
To maintain a high standard of integrity and promote a healthy and safe working environment.

## Globally Acclaimed

The Cooper solutions are specified by industry around the globe, by large international companies and small niche market companies alike, all valuing the quality of the Cooper product and the expertise of the Cooper people worldwide.

Throughout the world, Cooper has an established network of skilled supply chain partners who provide seamless support and service to our customers.

## Service and Delivery

In support of our global distribution network, a distribution centre has been established at our manufacturing facility to provide faster turnaround and greater availability for stock items.

Depending on customer requirements, Cooper products can be shipped by air, sea or overland. Getting the product to the customer on time is our priority no matter where our customer is located.

## Vast Industry-wide Experience

The Cooper Company of today is highly experienced in solving customers' problems across a broad range of industries and operating conditions. We work directly with our customers and supply chains partners to deliver solutions that provide competitive advantage.

Cooper offers authoritative advice on bearing applications in all major industries throughout the world. Cooper engineers have access to a huge database of specifically engineered, proven solutions. No matter how

specialised the application, Cooper will provide knowledgeable advice and recommend a solution.

## Inventiveness and Innovation

The name Cooper is synonymous with inventiveness, innovation and problem solving.

Cooper has been at the forefront of split roller bearing technology from the product's inception. We continue to lead the way with continuous improvements to our products and by building on our experience of varied applications.





State of the art machining centres represent the thrust of our investment and are making positive contributions to quality and manufacturing times.

### Who to Contact

At our European headquarters and Chinese, US and German operations, we have dedicated teams of specialists, sales managers and engineers with vast experience of industry requirements.

With our in-house development and testing facilities we are able to continually expand the range of uses and conditions to which our bearings can be applied with confidence in the engineering integrity of our solutions.

### High Level of Investment

Providing solutions to customer demands for quality products at reasonable cost and with a high degree of availability is a challenge that will never change. To meet this challenge, Cooper is combining the skills of our engineers and craftspersons with highly sophisticated engineering machinery and continuously updating its working practices.

Separating production into product groups, cellular manufacturing has enhanced our service capability by minimising manufacturing time, whilst raising the bar on manufacturing standards and response time.



Our Regional Sales Managers are located throughout the world and are backed by Cooper authorised distribution partners in over thirty countries.

For a list of authorised distributors, please contact us or visit our website at [www.CooperBearings.com](http://www.CooperBearings.com).

Just one call to any of the offices shown on the back cover will put you in touch with professional advisors.

Alternatively, you may visit our website at [www.CooperBearings.com](http://www.CooperBearings.com). This site contains the information shown in this catalogue and much more.

Contact us or any of our distributors by whatever method suits you and we'll be pleased to respond.

### Totally Accessible at all Times

The Cooper bearing is completely split to the shaft. This feature alone saves countless hours on installation and inspection.

Inspection is simple. There is no need to remove ancillary equipment to check a Cooper bearing.

Simply remove the pedestal cap and the top part of the cartridge housing and outer race assembly. The entire bearing is now ready for inspection.

This applies to every Cooper bearing, no matter how large or the type of mounting.

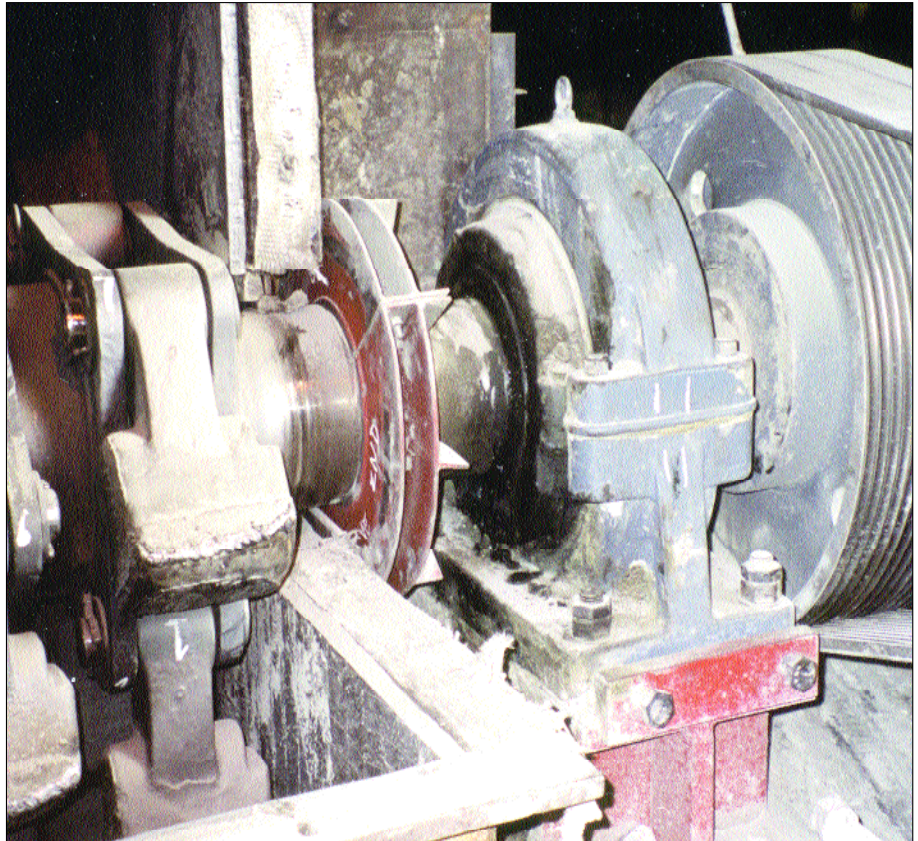
### Maintenance Savings

As the inspection process is so easy, the saving that can be made in maintenance hours is considerable. When the working life of a Cooper bearing is taken into account, the Cooper bearing becomes an extremely attractive investment.

### Proven Return on Investment

In the case of one long term Cooper customer, a heavy duty clinker breaker application in the cement industry utilising solid bearings was undergoing bearing replacement every six months. Each changeout took 32 man hours with the downtime at 16 hours. Production loss was quoted at £4,160 per hour; this alone totalled a production loss cost to the customer of £66,560 per changeout. The total cost per year for this customer was £133,870.

The bearings were then replaced with Cooper 03 BCP 180mm GR bearings and



installation time plummeted to four hours. Uptime increased and production loss costs reduced to £8,320. The result was an instant saving of £58,240.

### On Going Long Term Benefits

In three years, the original Cooper bearings have not been changed. This is due to the customers' preventative maintenance program, ease of inspection of the Cooper bearing and the quality of the the Cooper product.

At the time these costs were compiled, this customer had saved £131,080 per machine. The level of saving increased on a monthly basis, proving that even in the toughest operating conditions a Cooper split roller bearing is a guaranteed return on investment.

The top photograph shows the clinker breaker with guards removed for photographic purposes and the lower picture illustrates a typical trapped application, in this instance a steel works cooling bank. The accessibility benefits of a totally split Cooper bearing can be readily appreciated from these two photographs.



### Applications

Cooper split roller bearings are proved in service every day throughout the world across a wide range of industries.

Preferred by leading companies in over forty countries, Cooper reliability keeps the wheels of industry turning in some of the world's harshest industrial environments. The ability to fit Cooper in trapped applications and limited access locations is one of the major factors in specifying Cooper.

### Marine

Specified for use on supertankers to hydrofoils, Cooper bearings play an important role around the sea lanes of the world. In an industry where down time means missed tides and lost cargoes, the worldwide availability, flexibility, speed of installation and ease of maintenance has made the Cooper bearing the first choice of marine engineers around the globe.



### Iron and Steel

Widely used in almost every stage of steel production from ore terminals to finishing mills, blast furnace main charging conveyors to continuous casters, the split feature of the Cooper bearing has enabled designers of iron and steel manufacturing equipment to design for optimum performance without the need to consider bearing installation or replacement.

Designed to operate reliably and continuously over long periods in extremes of temperature, Cooper



bearings are ideally suited to the harsh environment of steel production and assist in keeping downtime costs to a minimum by allowing the operation of non-disruptive, preventative maintenance programmes.

### Mining

Specified globally for underground and surface mining applications, Cooper bearings are ideally suited where accessibility is severely limited. Special cages are available where conventional materials are unsuitable.

Widely used on conveyors, ventilation fans and winding gears, Cooper bearings are renowned for their ability to operate reliably and efficiently for prolonged periods in a dust laden atmosphere.

Surface mining equipment OEM's have also specified Cooper bearings for use on their large machines.

### Air Movement

Easy to install, even in the most confined areas, Cooper Bearings have unrivaled expertise in the world of ventilation and air movement.

Cooper bearings have the added advantage of allowing any mis-alignment to be taken up at the assembly stage by the cartridge swivel seating, maintaining the concentricity of the seals under misaligned conditions.

Our technical department has perfected accurate manufacturing tolerances to reduce to a minimum the problems caused by out of balance conditions.

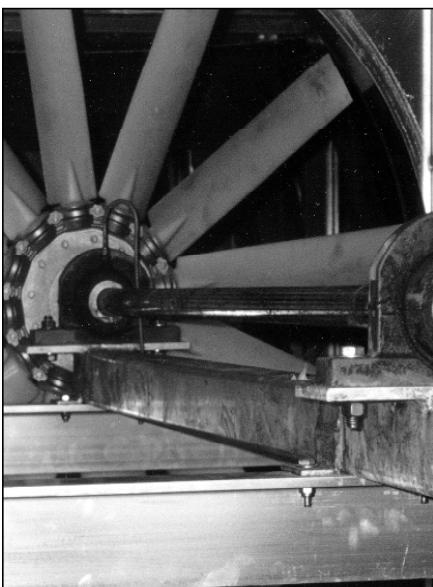


## Cement

The harsh, abrasive, dust laden conditions encountered in cement production is one of the world's severest industrial environments.

The number one choice for cement companies around the world, the Cooper bearings' split feature, legendary reliability and proven sealing characteristics play a key role in keeping downtime to a minimum.

Applications include: conveyors, ball mill drives and trunnions, preheater grates, fans and coal mills.



## Power Generation

Cooper split roller bearings have been used extensively for many years in the power generation industry. In this industry in particular, downtime is cost critical. Cooper bearings are specified in coal fired power stations, hydropower plants and wind turbines.

The combination of excellent sealing and instant access makes Cooper a tough product to beat.



## Quarrying

Downtime costs are critical in quarrying and Cooper bearings are widely specified by many aggregate and quarry company engineers.

Preferred for ease of installation and inspection and their ability to operate reliably in dust laden conditions while requiring only minimum maintenance, the Cooper bearing continues to prove invaluable in the tough environment on applications such as conveyors, screens and crushers.

## Conveyor Systems



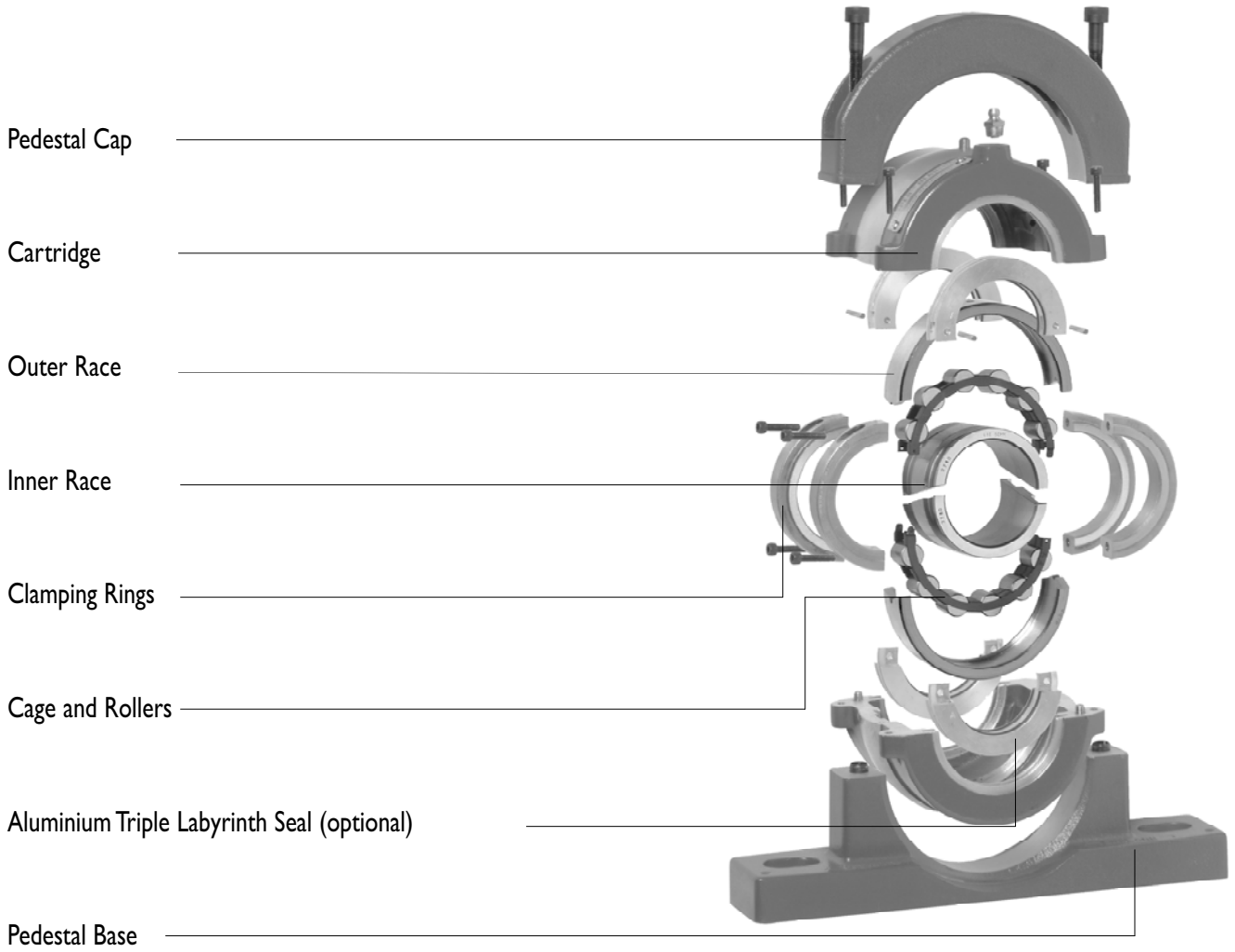
Accessibility in trapped applications and ease of maintenance in the harshest of environments make Cooper the first choice for conveyors.

No matter what the industry, Cooper has a range of proven conveyor bearings. Our conveying experience ranges from keeping nearly three million Londoners on the move every day on London Transport escalators, one of the busiest mass transit systems in the world, to the daily grind in a quarry to the versatility of ship loaders.

Easy of inspection and maintenance makes the Cooper bearing the ideal choice for any application.





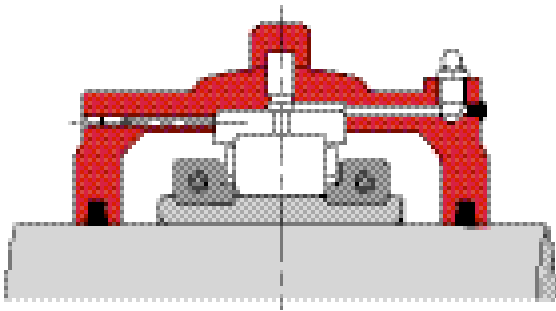


## Fixed Type Bearings (GR)

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.

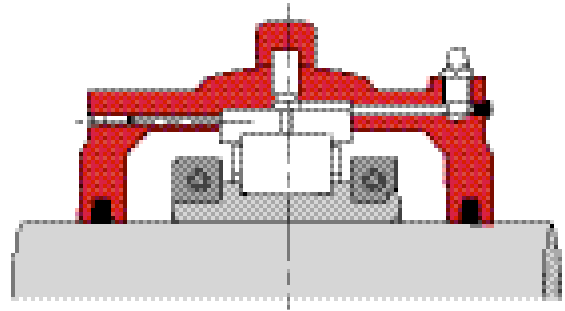
This type of bearing provides axial location to the rotating portions of machinery and can sustain both radial and thrust loading.

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



**GR Bearing (D Type)**

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



**GR Bearing (C Type)**

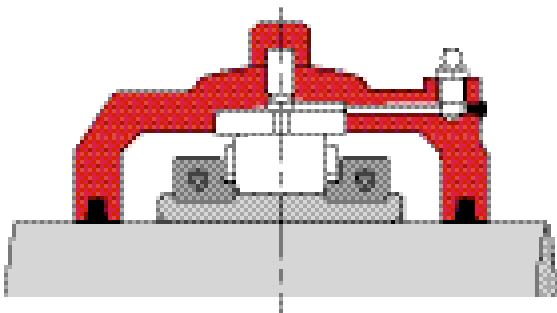
01 and 02 Series over 12"/300mm shaft size and 03 Series over 6"/155mm shaft size.

## Expansion Type Bearings (EX)

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

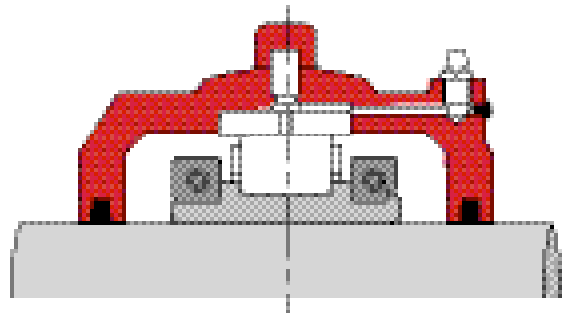
The inner race is clamped to the shaft, and moves axially with it when expansion or contraction occurs.

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 12"/300mm shaft size and 03 Series through 6"/155mm shaft size.



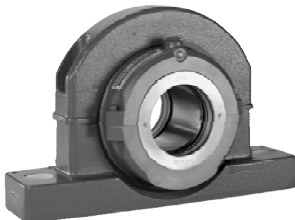
**EX Bearing (C Type)**

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

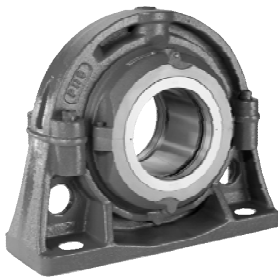
Most styles of Cooper housing are available in cast iron, ductile iron or steel. Special types of housing, alternative materials and housings to special dimensions are available on request.

## PEDESTALS

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.



**Two Bolt Base**



**Large Bore Base**

## TAKE-UP AND ROD END MOUNTINGS

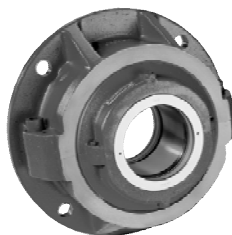


**Take-Up Units**  
35mm/1<sup>3</sup>/<sub>16</sub>" to 155mm/6"  
Available as tension type (shown) or push type



**Rod End Units**  
35mm/1<sup>3</sup>/<sub>16</sub>" to 155mm/6"  
Available as shoe type (shown) or tee type

## FLANGE MOUNTINGS



**Round Flange Units**  
35mm/1<sup>3</sup>/<sub>16</sub>" to 300mm/12"



**Square Flange Units**  
50mm/1<sup>1</sup>/<sub>16</sub>" to 75mm/3"

## HANGER MOUNTINGS



**Hanger Unit**  
35mm/1<sup>3</sup>/<sub>16</sub>" to 140mm/5<sup>1</sup>/<sub>2</sub>"

## CUSTOM BEARINGS



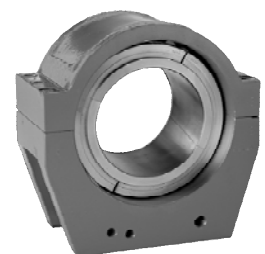
### Flat Thrust Bearings

Flat thrust bearings are available in solid ring FT and split ring ET designs, they can be manufactured in bore sizes from 2<sup>1</sup>/<sub>4</sub>" upwards. Available as unmounted units.



### High Speed Bearings

High speed bearings are designed for light loads and high speeds, typically 660,000mm/26,000" dn (Shaft diameter x RPM) or higher depending on the design. Supplied with or without the housing. For more information, please contact our technical department.



### Watercooled Bearings

Watercooled bearings are designed primarily for use in steel mill continuous casters. The low profile housing is either cast or fabricated steel. For more information, please contact our technical department.

## Comparison of Series

For most shaft sizes Cooper offers a range of three standard Series: 01 Series for medium duties, 02 Series for heavy duties and 03 Series for extra heavy duties.

The use of more rollers, larger rollers or a combination of both, increases the load capacity of a roller bearing.

For a given shaft size, 02 Series offers more radial and axial capacity than the 01 Series. The 03 Series in turn offers more capacity than the 02. The choice of three Series enables Cooper users to select bearings suitable for a wide variety of load and speed conditions.

### 01 Series

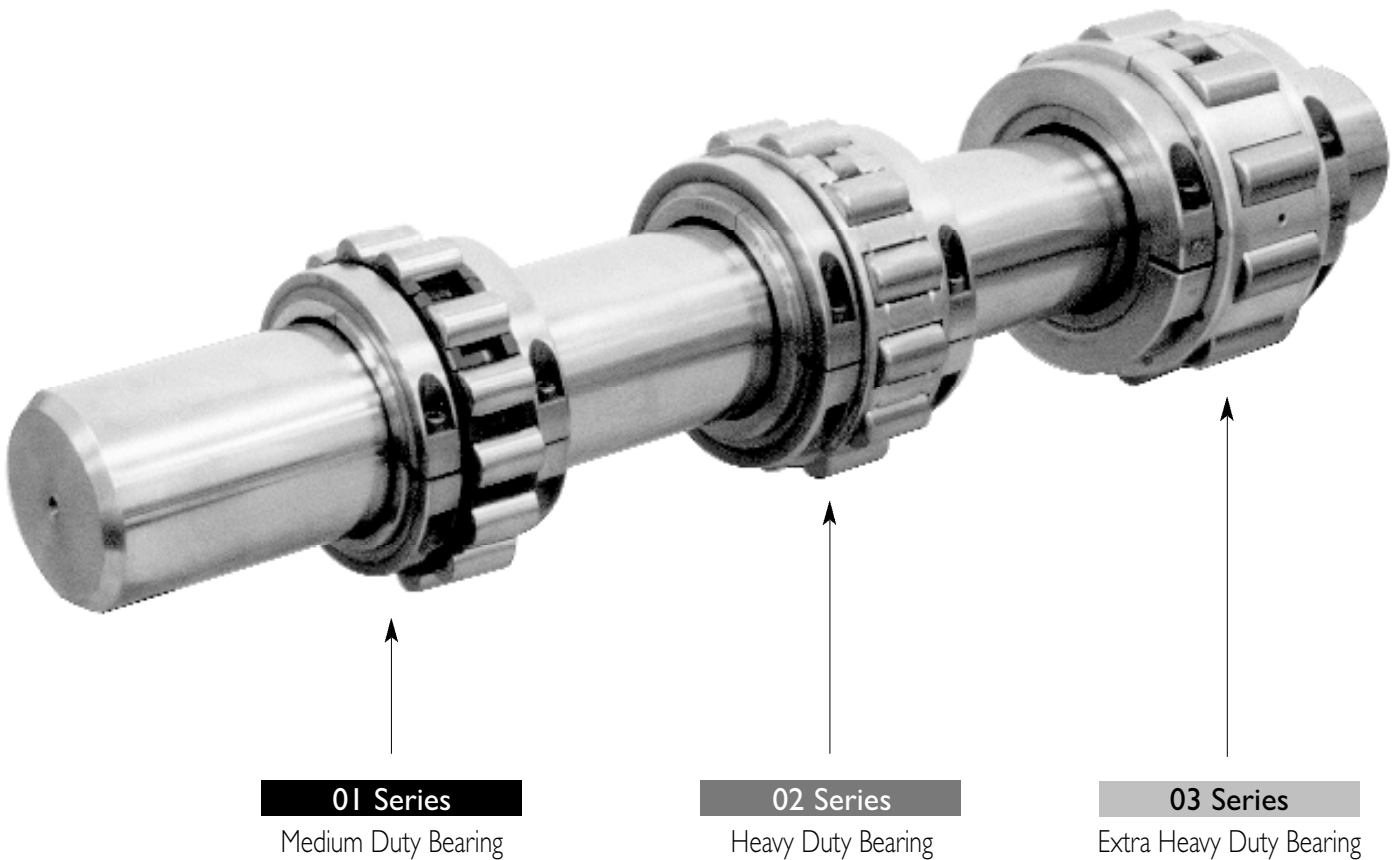
The most commonly used of the three standard series, 01 Series bearings are intended for medium loads and a wide range of speeds, up to 12,600 inches / 320,000mm dn (Shaft diameter x RPM) under the right conditions. Some sizes are now available as the 01E Series with enhanced capacity. The 01E bearings will be suitable in some applications where the heavier 02 Series was previously used.

### 02 Series

The 02 Series offers a more rugged bearing solution for demanding applications where 01 Series may not be suitable. The 02 Series also operates over a wide range of speeds.

### 03 Series

Designed for extreme loading conditions the 03 Series tops the capacity of the 02 Series and offers the highest load ratings of the three standard series.



**Inner Race Joint Gaps**

When the inner race is assembled around a shaft, there should be a small gap at both joints. The gaps at the joints, typically between 0.4mm (0.015") and 0.6mm (0.025") per side, ensure contact between the bore of the inner race and the shaft. This is illustrated below.

**Selection of Internal Bearing Clearance**

C<sub>n</sub> represents the standard diametral clearance between the rollers and the outer race specified by the International Standards Organisation (ISO) and is usually adequate between minus 20°C to 100°C (0°-212°F) and when the temperature difference between the shaft temperature and the housing temperature is less than 40°C (70°F).

C2 clearance is less than standard and is used for reciprocating applications or when the shock loads and other conditions demand reduced clearance. It is limited to a temperature difference of 17°C (30°F) between shaft and housing temperature since high temperatures cause expansion of the bearing components.

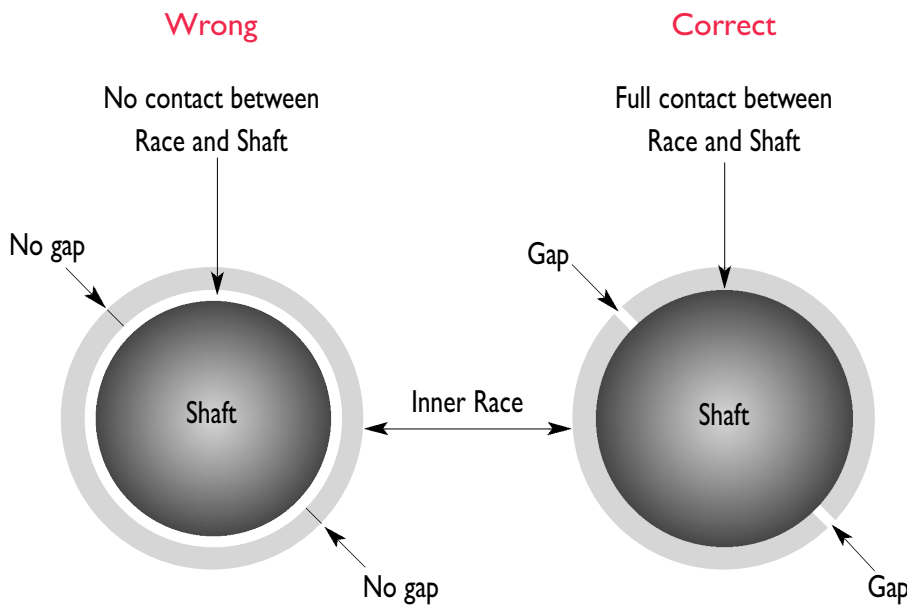
C3 clearance is greater than standard and is typically used when the difference between the shaft and bearing housing surface temperatures is between 40°C (70°F) and 72°C (130°F).

C5 is typically the greatest clearance that Cooper offers. It is used when the difference between the shaft and bearing housing surface temperatures is greater than 72°C (130°F).

Cooper does not typically offer a C4 clearance.

Radial load ratings listed in this catalogue are for standard clearance and C2 bearings. Bearings with C3 and C5 clearance have 5% and 10% lower capacity respectively.

For most industrial applications zero clearance is not desirable. Bearings will generate heat as they run. Without clearance bearings may bind and fail prematurely.



## Bearing Selection

Selection of Cooper bearings must take into account both radial and axial loads, which are considered independently as the effect of the axial load on the radial life of the bearing is small enough to discount at normal working loads and speeds.

The thrust or axial load is taken by the end face of the rollers and the flanged shoulders of the inner race assembly and outer race. The ability of the fixed (GR) unit to handle thrust loads is dependent upon specific pressure, velocity of contact areas and lubrication.

## Calculating Bearing Loads

The bearing loads are affected by one or more of the following:

- 1 Weight of components such as shafting, flywheels, sheaves, pulleys, gears, etc.
- 2 Tension resulting from belt or chain drives.
- 3 Tangential, separating and axial loading developed by gears.
- 4 Inertia loading resulting from acceleration or deceleration.
- 5 Centrifugal forces developed in rotary or out of balance motion.

## Selection for Radial Load

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. The radial load rating is denoted by  $C_r$ .

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:

$$C_r \geq P \times f_n \times f_L \times f_d$$

Where  $C_r$  = radial dynamic rating

$P$  = calculated effective radial load

$f_n$  = speed (rpm) factor

$f_L$  = Life (hours) factor

$f_d$  = dynamic or service factor

$f_n = (\text{rpm} \times 0.03)^{0.3}$  or find from scale on page 15.

$f_L = (\text{L}_{10} \text{ hours}/500)^{0.3}$  or find from scale on page 15.

Note: The product  $f_n \times f_L$  should not be less than 1.0.

Alternatively, bearing life may be calculated by the 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, in millions of revolutions.

When the equivalent radial load equals the  $C_r$  rating, multiplied by the service factor, the  $L_{10}$  life will be 1 million revolutions.

If high temperatures (above 212°F/100°C) are involved, please refer to notes on page 15.

## Bearing Life Requirements (L)

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

Operating conditions	Life factor $f_L$	Life hours $L_{10}$
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  $L_{10}$  type 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.

Dynamic factors	$f_d$
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  $L_{10}$  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  $L_{10}$  life as above. For reliability greater than 90%, replace  $L_{10}$  in the above equations with  $L_{na}$  where  $L_{na} = a_1 \times L_{10}$  and is given in the table below

Reliability %	95	96	97	98	99
$a_1$	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  $Cr/65$  for GR bearings and  $Cr/120$  for EX bearings. Lower loads can be accommodated under certain conditions. Please refer to our technical department.

## Basic Static Load Ratings ( $C_{0r}$ )

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:

$$C_{0r} = S_0 \times P$$

where:

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

$P$  = effective bearing load (kN)

$S_0$  = static safety factor

## Bearing Static Safety Factors, $S_0$

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:

$$C_a \geq (f_d \times f_{dn} \times P_a) / f_b$$

Where  $C_a$  = axial rating

$f_d$  = dynamic or service factor

$P_a$  = calculated axial load

$f_{dn}$  = Velocity (dn) factor

(See scale opposite)

$f_b = 1.0$  when  $dn \leq 2,500''/63,500mm$

$f_b = 1.25$  when  $dn > 2,500''/63,500mm$

When  $P_a > 0.5C_a$  retaining rings or recessed journal are required.

See page 20 or please consult our technical department.

If axial load exceeds 40% of the radial load, please consult our technical department.

## Temperature

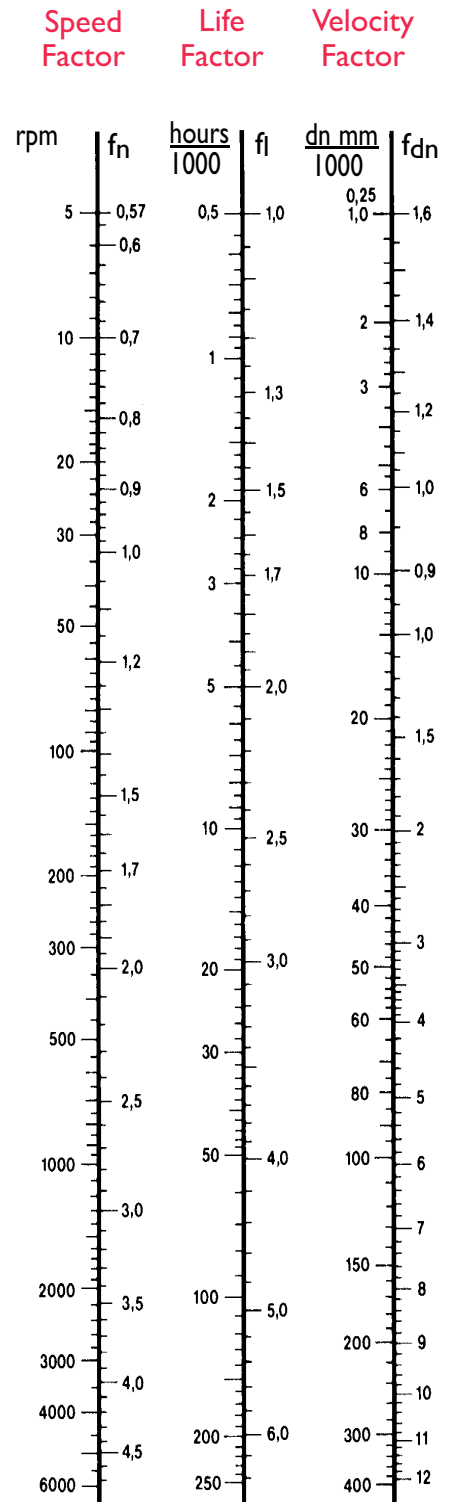
The normal range for standard bearings is 0° to 100° C (32° F to 212° F). Where the temperature rise is mainly from the shaft, increased diametral clearance may be necessary (see page 12) and account taken of axial movement through expansion (EX) bearings.

Above 212° F/100° C, special consideration must be given to material, design, lubrication and seals. Above 250° F/120° C, special heat treatment of the bearing parts is required.

A reduction in radial capacity occurs at temperatures above 300° F(150° C) which can be seen below.

°C	170	200	250
°F	340	390	480
% reduction	5	15	25

For temperatures above 212° F/ 100° C or below 32° F(10° C), please consult our technical department.



Velocity factor  $f_{dn}$  applies only to axial loads on GR bearings.

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



**01 Series**

Shaft size range		Bearing rating kN/lb				Max rpm
mm	inches	Dynamic C <sub>r</sub>	Static C <sub>or</sub>	Axial C <sub>a</sub>		
35 40	1 <sup>3</sup> / <sub>16</sub> to 1 <sup>1</sup> / <sub>2</sub>	65 14600	67 15100	3.2 720	5400	
45 50	1 <sup>1</sup> / <sub>16</sub> to 2	95 21375	104 23400	3.8 855	4630	
60 65	2 <sup>3</sup> / <sub>16</sub> to 2 <sup>1</sup> / <sub>2</sub>	134 30150	156 35100	7.2 1620	3940	
70 75	2 <sup>1</sup> / <sub>16</sub> to 3	165 37125	196 44100	10.8 2430	3310	
80-85 90	3 <sup>3</sup> / <sub>16</sub> to 3 <sup>1</sup> / <sub>2</sub>	228 51300	289 65025	13.6 3060	2790	
100 105	3 <sup>1</sup> / <sub>16</sub> to 4	315 70875	412 92700	19.6 4410	2340	
110 115	4 <sup>3</sup> / <sub>16</sub> to 4 <sup>1</sup> / <sub>2</sub>	298 67000	407 91600	18.6 4190	1970	
120-125 130	4 <sup>15</sup> / <sub>16</sub> & 5	348 78200	484 108900	22.2 5000	1740	
135 140	5 <sup>3</sup> / <sub>16</sub> & 5 <sup>1</sup> / <sub>2</sub>	386 86800	542 1220000	25.8 5810	1570	
150 155	5 <sup>15</sup> / <sub>16</sub> & 6	420 94500	616 138600	29.4 6620	1450	
160	6 <sup>7</sup> / <sub>16</sub> & 6 <sup>1</sup> / <sub>2</sub>	475 106800	708 159300	33 7430	1320	
170 180	6 <sup>15</sup> / <sub>16</sub> & 7	510 114700	793 178400	36.4 8190	1220	
190 200	7 <sup>15</sup> / <sub>16</sub> & 8	533 119900	883 198700	41 9230	1070	
220	9	577 129800	980 220500	49 11030	930	
240	10	640 144000	1170 263300	57.8 13010	820	
260 280	11	725 163000	1333 299900	66.8 15030	730	
300	12	762 171400	1456 327600	78.2 17600	650	
320	13	848 190700	1642 369500	89 20030	590	
340	14	871 195900	1778 400100	99.6 22410	540	
360 380	15	938 211000	1929 434000	110.4 24840	500	
400	16	970 218100	2076 467100	115.6 26010	460	
420	17	992 223100	2223 500200	121 27230	430	
440 460	18	1028 231300	2370 533300	127.2 28620	410	
480	19	1062 238900	2433 547400	132.6 29840	380	
500	20	1102 247900	2593 583400	137.8 31010	360	
530	21	1139 256200	2755 619900	140.6 31640	340	
560	22	1176 264500	2916 656100	142.4 32040	330	
-	23	1262 283800	3128 703800	144 32400	310	
600	24	1300 292400	3311 745000	146.8 33030	300	

**02 Series**

Shaft size range		Bearing rating kN/lb				Max rpm
mm	inches	Dynamic C <sub>r</sub>	Static C <sub>or</sub>	Axial C <sub>a</sub>		
-	-	-	-	-	-	
50	1 <sup>1</sup> / <sub>16</sub> to 2	117 26200	124 27900	6.2 1400	4350	
60 65	2 <sup>3</sup> / <sub>16</sub> to 2 <sup>1</sup> / <sub>2</sub>	165 37100	186 41900	8.8 1980	3680	
70 75	2 <sup>1</sup> / <sub>16</sub> to 3	219 49200	262 59000	10.6 2390	3080	
80-85 90	3 <sup>3</sup> / <sub>16</sub> to 3 <sup>1</sup> / <sub>2</sub>	278 62600	345 77600	17.8 4010	2520	
100 105	3 <sup>1</sup> / <sub>16</sub> to 4	360 80900	456 102600	25 5630	2130	
110 115	4 <sup>3</sup> / <sub>16</sub> to 4 <sup>1</sup> / <sub>2</sub>	447 100500	577 129800	31.2 7020	1820	
120-125M 130	4 <sup>15</sup> / <sub>16</sub> & 5	548 123300	714 160700	38.2 8600	1600	
140	5 <sup>3</sup> / <sub>16</sub> & 5 <sup>1</sup> / <sub>2</sub>	612 137500	809 182000	45.4 10220	1450	
150	5 <sup>15</sup> / <sub>16</sub> & 6	730 164200	1007 226600	52.4 11790	1320	
160 170	6 <sup>7</sup> / <sub>16</sub> & 6 <sup>1</sup> / <sub>2</sub>	769 172900	1033 232400	61.4 13820	1200	
180	6 <sup>15</sup> / <sub>16</sub> & 7	849 190900	1191 268000	71.2 16020	1120	
190 200	7 <sup>15</sup> / <sub>16</sub> & 8	990 222600	1457 327800	80 18000	960	
220	9	1067 240000	1661 373700	89.8 20210	850	
240 260	10	1213 272800	1756 395100	98.8 22230	750	
280	11	1364 306800	2145 482600	113.8 25610	670	
300	12	1462 328800	2409 542000	129 29030	610	
320	13	1560 350800	2622 590000	144.2 32450	550	
340 360	14	1729 388900	2940 661500	159.2 35820	500	
380	15	1822 409900	3254 732200	174.4 39240	460	
400	16	1908 429200	3438 773600	188.4 42390	430	
420	17	2013 452800	3702 833000	202 45450	400	
440 460	18	2138 480900	4057 912800	216 48600	380	
480	19	2250 506300	4419 994300	230 51750	360	
500	20	2346 527800	4776 1074600	244 54900	340	
530	21	2565 577100	5137 1155800	258 58050	330	
560	22	2675 601800	5556 1250100	272 61200	310	
-	23	2675 616500	5556 1315800	272 64350	300	
600	24	2769 622900	5992 1348200	300 67500	290	

**03 Series**

Shaft size range		Bearing rating kN/lb				Max rpm
mm	inches	Dynamic C <sub>r</sub>	Static C <sub>or</sub>	Axial C <sub>a</sub>		
-	-	-	-	-	-	
-	-	-	-	-	-	
-	-	-	-	-	-	
-	-	-	-	-	-	
100	3 <sup>3</sup> / <sub>4</sub> & 4	618 139000	684 153900	31.2 7020	1820	
110 120	4 <sup>7</sup> / <sub>16</sub> & 4 <sup>1</sup> / <sub>2</sub>	625 140500	698 157100	39.2 8820	1640	
130 758	4 <sup>15</sup> / <sub>16</sub> & 5	852 170500	852 191700	49.0 11030	1500	
140	5 <sup>7</sup> / <sub>16</sub> & 5 <sup>1</sup> / <sub>2</sub>	910 204600	1069 240500	58.8 13230	1340	
150	5 <sup>15</sup> / <sub>16</sub> & 6	1023 230000	1213 272900	69.4 15620	1220	
160 170	6 <sup>7</sup> / <sub>16</sub> & 6 <sup>1</sup> / <sub>2</sub>	1191 267900	1564 351900	79.2 17820	1110	
180	6 <sup>15</sup> / <sub>16</sub> & 7	1284 288800	1704 383400	89 20030	1030	
190 200	7 <sup>15</sup> / <sub>16</sub> & 8	508 339200	2022 455000	99.6 22410	880	
220	9	1653 371900	2163 486700	109.4 24620	760	
240 260	10	1842 414400	2551 574000	130.8 29430	700	
280E	11E	2134 480100	3233 727400	153 34430	620	
300	12	2190 492700	3312 745200	174.4 39240	560	
320	13	2611 587400	3795 853900	198.8 44730	500	
340E 360E	14E	2777 624800	4392 988200	213.6 48060	460	
380 400	15	3073 691400	4800 1080000	250.8 56430	420	
-	-	-	-	-	-	
420E 440E	17E	3494 786100	6006 1351400	275.8 62060	360	
460	18	834500 3709	1385100 6156	68040 302.4	340	
-	-	-	-	-	-	
500 530	20	4162 936400	7041 1584200	347 78080	310	
-	-	-	-	-	-	
560E	22E	4682 1053500	8511 1915000	382.6 86090	280	
600E	23E	4874 1096600	9130 2054300	400 90000	270	
-	-	-	-	-	-	

Axial rating (C<sub>a</sub>) which applies to GR bearing only will be reduced by 50% unless an EP (Extreme pressure) grease or oil lubrication is used.

\*Maximum speed (rpm) shown for grease lubrication. For higher speed applications or oil lubrication please consult our technical department.

If P<sub>a</sub> exceeds 0.5C<sub>a</sub>, see page 20.

Denotes E Series bearing.

## Pedestal Load

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

If the load falls outside the shaded area or is greater than  $C_{Or}$ , please consult our technical department.

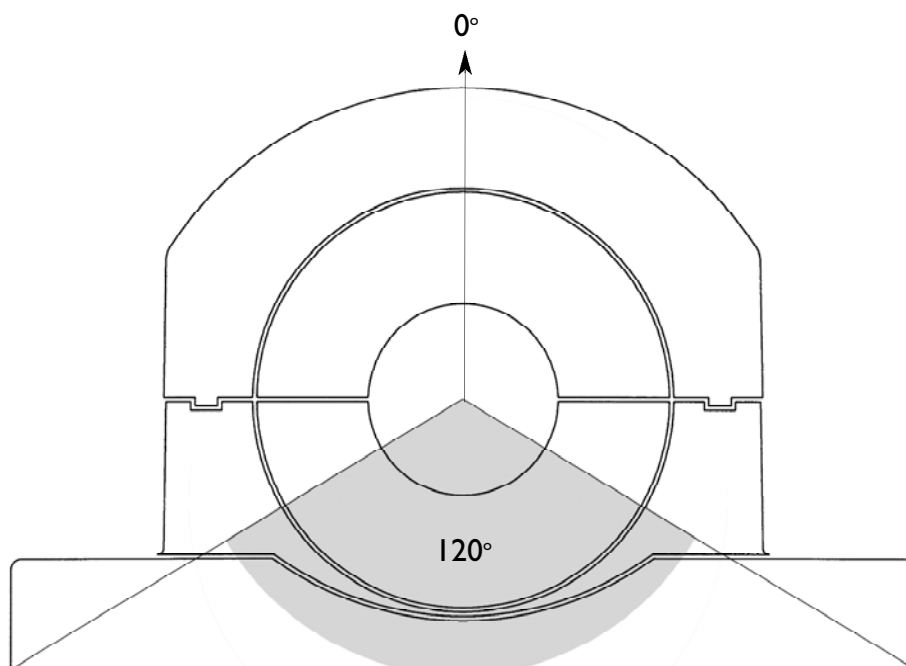
When considering suitability of pedestal castings, the resultant effective radial load must be used. The effective radial load is the resultant of net loads and appropriate dynamic factors, excluding speed and life factors.

If the axial load exceeds 50% of the axial rating ( $C_a$ ), please consult our technical department.

For shock and pulsating loads, steel or ductile iron pedestals should be considered. For loads within  $45^\circ$  of the horizontal, the base should be chocked or doweled.

## Flange Load

The maximum load on cast iron flanges is  $0.26 C_{Or}$  or  $0.25 C_a$ . Higher loads and shock conditions require ductile iron or steel flanges and high tensile bolts.



During normal operation, a Cooper bearing will commonly have higher vibration readings than solid roller bearings due to the following.

- Additional internal clearance created in the bearing from the inner race “shrinking” on to undersized shafting

- The clearance in the ball and socket joint between the cartridge and pedestal.

Typical velocity readings for a properly installed new bearing can be as high as 0.15 inches per second (ips) (4.0mm/sec) at a bearing component frequency.

Typically, alarm levels would be set not higher than 0.6 ips. (15.0mm/sec). Shut down should occur not higher than 0.8 ips.(20.0mm/sec).

To obtain the correct frequencies for your application, the table values must be multiplied by the shaft speed.

## 01 Series

mm	inches	01 Group size	Cage	Roller	Outer	Inner
35 40	1 <sup>3</sup> / <sub>16</sub> to 1 <sup>1</sup> / <sub>2</sub>	108	0.405	2.538	4.051	5.949
45 50	1 <sup>1</sup> / <sub>16</sub> to 2	E200	0.415	2.857	4.980	7.020
60 65	2 <sup>3</sup> / <sub>16</sub> to 2 <sup>1</sup> / <sub>2</sub>	E208	0.417	2.934	5.840	8.160
70 75	2 <sup>1</sup> / <sub>16</sub> to 3	E300	0.420	3.053	5.883	8.117
80-85 90	3 <sup>3</sup> / <sub>16</sub> to 3 <sup>1</sup> / <sub>2</sub>	E308	0.423	3.187	6.774	9.226
100 105	3 <sup>1</sup> / <sub>16</sub> to 4	E400	0.422	3.138	6.756	9.244
110 115	4 <sup>3</sup> / <sub>16</sub> to 4 <sup>1</sup> / <sub>2</sub>	408	0.430	3.503	6.880	9.120
120-125 130	4 <sup>15</sup> / <sub>16</sub> & 5	500	0.432	3.598	6.909	9.091
135 140	5 <sup>3</sup> / <sub>16</sub> & 5 <sup>1</sup> / <sub>2</sub>	508	0.433	3.683	6.933	9.067
150 155	5 <sup>15</sup> / <sub>16</sub> & 6	600	0.438	3.938	7.875	10.125
160 170	6 <sup>7</sup> / <sub>16</sub> & 6 <sup>1</sup> / <sub>2</sub>	608	0.438	3.997	7.891	10.109
170 180	6 <sup>15</sup> / <sub>16</sub> & 7	700	0.442	4.236	8.836	11.164
190 200	7 <sup>15</sup> / <sub>16</sub> & 8	800	0.448	4.712	9.846	12.154
200	9	900	0.450	4.950	9.900	12.100
240	10	1000	0.455	5.455	11.818	14.182
260	11	1100	0.454	5.354	10.889	13.111
300	12	1200	0.457	5.807	11.889	14.111
320	13	1300	0.458	5.911	11.908	14.092
340	14	1400	0.461	6.294	12.895	15.105
360	15	1500	0.461	6.416	12.916	15.085
400	16	1600	0.463	6.782	13.900	16.100
420	17	1700	0.465	7.147	14.886	17.114
440	18	1800	0.467	7.512	15.874	18.127
480	19	1900	0.467	7.576	14.949	17.051
500	20	2000	0.469	7.925	15.932	18.068
530	21	2100	0.470	8.362	16.928	19.073
560	22	2200	0.471	8.711	17.913	20.087
-	23	2300	0.471	8.721	17.914	20.086
600	24	2400	0.473	9.056	18.899	21.101

## 02 Series

mm	inches	02 Group size	Cage	Roller	Outer	Inner
-	-	-	-	-	-	-
45 50	1 <sup>1</sup> / <sub>16</sub> to 2	200	0.402	2.453	4.020	5.980
60 65	2 <sup>3</sup> / <sub>16</sub> to 2 <sup>1</sup> / <sub>2</sub>	208	0.411	2.729	4.935	7.065
70 75	2 <sup>1</sup> / <sub>16</sub> to 3	300	0.411	2.719	4.932	7.068
80-85 90	3 <sup>3</sup> / <sub>16</sub> to 3 <sup>1</sup> / <sub>2</sub>	308	0.417	2.918	5.834	8.166
100 105	3 <sup>1</sup> / <sub>16</sub> to 4	400	0.417	2.917	5.833	8.167
110 115	4 <sup>3</sup> / <sub>16</sub> to 4 <sup>1</sup> / <sub>2</sub>	408	0.417	2.918	5.834	8.166
120-125 130	4 <sup>15</sup> / <sub>16</sub> & 5	500	0.417	2.917	5.833	8.167
135 140	5 <sup>3</sup> / <sub>16</sub> & 5 <sup>1</sup> / <sub>2</sub>	508	0.419	3.015	5.869	8.131
150 155	5 <sup>15</sup> / <sub>16</sub> & 6	600	0.421	3.104	6.743	9.257
160 170	6 <sup>7</sup> / <sub>16</sub> & 6 <sup>1</sup> / <sub>2</sub>	608	0.421	3.088	5.895	8.105
180	6 <sup>15</sup> / <sub>16</sub> & 7	700	0.425	3.258	6.800	9.200
190 200	7 <sup>15</sup> / <sub>16</sub> & 8	800	0.428	3.389	6.844	9.156
220	9	900	0.434	3.703	7.806	10.194
240 260	10	1000	0.435	3.792	7.833	10.167
280	11	1100	0.436	3.836	7.846	10.154
300	12	1200	0.440	4.140	8.810	11.190
320	13	1300	0.433	4.298	8.852	11.148
340 360	14	1400	0.433	4.337	8.862	11.138
380	15	1500	0.446	4.552	9.806	12.194
400	16	1600	0.447	4.683	9.839	12.161
420	17	1700	0.449	4.806	9.868	12.132
440	18	1800	0.451	5.008	10.814	13.186
480	19	1900	0.453	5.267	11.777	14.223
500	20	2000	0.455	5.469	12.731	15.269
530	21	2100	0.453	5.322	11.789	14.211
560	22	2200	0.455	5.561	12.751	15.249
-	23	2300	0.461	6.432	13.841	16.159
600	24	2400	0.458	5.958	13.750	16.250

## 03 Series

mm	inches	03 Group size	Cage	Roller	Outer	Inner
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
100 105	3 <sup>1</sup> / <sub>16</sub> to 4	400	0.384	2.038	3.839	6.161
110 115	4 <sup>3</sup> / <sub>16</sub> to 4 <sup>1</sup> / <sub>2</sub>	408	0.392	2.199	3.917	6.083
120-125 130	4 <sup>15</sup> / <sub>16</sub> & 5	500	0.398	2.360	4.781	7.219
135 140	5 <sup>3</sup> / <sub>16</sub> & 5 <sup>1</sup> / <sub>2</sub>	508	0.393	2.226	4.714	7.286
150 155	5 <sup>15</sup> / <sub>16</sub> & 6	600	0.395	2.270	4.737	7.263
160 170	6 <sup>7</sup> / <sub>16</sub> & 6 <sup>1</sup> / <sub>2</sub>	608	0.409	2.642	5.720	8.280
180	6 <sup>15</sup> / <sub>16</sub> & 7	700	0.411	2.717	5.753	8.247
190 200	7 <sup>15</sup> / <sub>16</sub> & 8	800	0.413	2.796	5.786	8.214
220	9	900	0.414	2.808	4.964	7.036
240 260	10	1000	0.418	2.971	5.853	8.147
280	11	X1100	0.425	3.240	6.794	9.206
280	11	E1100	0.423	3.160	6.764	9.236
300	12	1200	0.426	3.326	6.824	9.176
320	13	1300	0.423	3.184	5.927	8.073
340 360	14	X1400	0.427	3.362	6.835	9.165
340 360	14	E1400	0.428	3.405	6.850	9.150
380 400	15	1500	0.429	3.429	6.857	9.143
420 440	17	E1700	0.435	3.759	8.693	11.307
460	18	X1800	0.432	3.598	6.909	9.091
460	18	E1800	0.433	3.683	7.800	10.200
500 530	20	2000	0.437	3.900	7.864	10.136
560	22	E2200	0.440	4.107	8.800	11.200
600	23	E2300	0.442	4.244	9.722	12.278
-	-	-	-	-	-	-

## 01 Series

mm	inches	01 Group size	PCD	Number of rollers	Roller diameter
35 40	1 <sup>3</sup> / <sub>16</sub> to 1 <sup>1</sup> / <sub>2</sub>	108	2.469	10	0.469
45 50	1 <sup>11</sup> / <sub>16</sub> to 2	E200	3.012	12	0.512
60 65	2 <sup>3</sup> / <sub>16</sub> to 2 <sup>1</sup> / <sub>2</sub>	E208	3.563	14	0.591
70 75	2 <sup>11</sup> / <sub>16</sub> to 3	E300	4.193	14	0.669
80-85 90	3 <sup>3</sup> / <sub>16</sub> to 3 <sup>1</sup> / <sub>2</sub>	E308	4.882	16	0.748
100 105	3 <sup>11</sup> / <sub>16</sub> to 4	E400	5.576	16	0.866
110 115	4 <sup>3</sup> / <sub>16</sub> to 4 <sup>1</sup> / <sub>2</sub>	408	6.252	16	0.875
120-125 130	4 <sup>15</sup> / <sub>16</sub> & 5	500	6.874	16	0.938
135 140	5 <sup>3</sup> / <sub>16</sub> & 5 <sup>1</sup> / <sub>2</sub>	508	7.500	16	1.000
150 155	5 <sup>15</sup> / <sub>16</sub> & 6	600	8.000	18	1.000
160	6 <sup>7</sup> / <sub>16</sub> & 6 <sup>1</sup> / <sub>2</sub>	608	8.625	18	1.063
170 180	6 <sup>15</sup> / <sub>16</sub> & 7	700	9.125	20	1.063
190 200	7 <sup>15</sup> / <sub>16</sub> & 8	800	10.125	22	1.063
220	9	900	11.250	22	1.125
240	10	1000	12.375	26	1.125
260	11	1100	13.500	24	1.250
300	12	1200	14.625	26	1.250
320	13	1300	15.620	26	1.3125
340	14	1400	16.619	28	1.3125
360	15	1500	17.744	28	1.375
400	16	1600	18.744	30	1.375
420	17	1700	19.744	32	1.375
440	18	1800	20.744	34	1.375
480	19	1900	21.868	32	1.4375
500	20	2000	22.868	34	1.4375
530	21	2100	24.117	36	1.4375
560	22	2200	25.117	38	1.4375
-	23	2300	26.242	38	1.500
600	24	2400	27.242	40	1.500

Contact angle = 0

## 02 Series

mm	inches	02 Group size	PCD	Number of rollers	Roller diameter
-	-	-	-	-	-
45 50	1 <sup>11</sup> / <sub>16</sub> to 2	200	3.187	10	0.625
60 65	2 <sup>3</sup> / <sub>16</sub> to 2 <sup>1</sup> / <sub>2</sub>	208	3.875	12	0.687
70 75	2 <sup>11</sup> / <sub>16</sub> to 3	300	4.563	12	0.813
80-85 90	3 <sup>3</sup> / <sub>16</sub> to 3 <sup>1</sup> / <sub>2</sub>	308	5.250	14	0.875
100 105	3 <sup>11</sup> / <sub>16</sub> to 4	400	6.000	14	1.000
110 115	4 <sup>3</sup> / <sub>16</sub> to 4 <sup>1</sup> / <sub>2</sub>	408	6.750	14	1.125
120-125 130	4 <sup>15</sup> / <sub>16</sub> & 5	500	7.500	14	1.250
135 140	5 <sup>3</sup> / <sub>16</sub> & 5 <sup>1</sup> / <sub>2</sub>	508	8.125	14	1.313
150 155	5 <sup>15</sup> / <sub>16</sub> & 6	600	8.750	16	1.375
160 170	6 <sup>7</sup> / <sub>16</sub> & 6 <sup>1</sup> / <sub>2</sub>	608	9.500	14	1.500
180	6 <sup>15</sup> / <sub>16</sub> & 7	700	10.000	16	1.500
190 200	7 <sup>15</sup> / <sub>16</sub> & 8	800	11.250	16	1.625
220	9	900	12.250	18	1.625
240 260	10	1000	13.500	18	1.750
280	11	1100	14.625	18	1.875
300	12	1200	15.750	20	1.875
320	13	1300	16.870	20	1.9375
340 360	14	1400	18.119	20	2.063
380	15	1500	18.994	22	2.063
400	16	1600	20.119	22	2.125
420	17	1700	21.244	22	2.1875
440	18	1800	22.119	24	2.1875
480	19	1900	23.244	26	2.1875
500	20	2000	24.119	28	2.1875
530	21	2100	25.492	26	2.375
560	22	2200	26.617	28	2.375
-	23	2300	27.492	30	2.125
600	24	2400	28.493	30	2.375

Contact angle = 0

## 03 Series

mm	inches	03 Group size	PCD	Number of rollers	Roller diameter
-	-	-	-	-	-
-	-	-	-	-	-
-	-	-	-	-	-
-	-	-	-	-	-
100 105	3 <sup>3</sup> / <sub>4</sub> to 4	400	7.000	10	1.625
110 115	4 <sup>3</sup> / <sub>16</sub> to 4 <sup>1</sup> / <sub>2</sub>	408	7.500	10	1.625
120-125 130	4 <sup>15</sup> / <sub>16</sub> & 5	500	8.000	12	1.625
135 140	5 <sup>3</sup> / <sub>16</sub> & 5 <sup>1</sup> / <sub>2</sub>	508	8.750	12	1.875
150 155	5 <sup>15</sup> / <sub>16</sub> & 6	600	9.500	12	2.000
160 170	6 <sup>7</sup> / <sub>16</sub> & 6 <sup>1</sup> / <sub>2</sub>	608	10.250	14	1.875
180	6 <sup>15</sup> / <sub>16</sub> & 7	700	10.875	14	1.938
190 200	7 <sup>15</sup> / <sub>16</sub> & 8	800	12.250	14	2.125
220	9	900	13.750	12	2.375
240 260	10	1000	14.500	14	2.375
280	11	1100	E - 15.375	16	2.375
300	12	1200	17.00	16	2.500
320	13	1300	18.745	14	2.875
340 360	14	1400	19.119	16	2.750
380 400	15	1500	20.994	16	3.000
-	16	-	-	-	-
420 440	17	1700	22.277	20	2.913
460	18	1800	23.617	18	3.150
-	19	-	-	-	-
500 530	20	2000	26.756	18	3.375
-	21	-	-	-	-
560	22	2200	28.117	20	3.375
600	23	2300	29.125	22	3.386
-	24	-	-	-	-

Contact angle = 0

These charts contain the Pitch Circle Diameter (PCD) in inches, number of rollers and roller diameter in inches for all Cooper bearings, Series 01, 02 and 03, in sizes 1<sup>3</sup>/<sub>16</sub>" (108 Group) through 24" (2400 Group).

**Shaft Tolerance**

Shaft tolerance is application and speed dependant. Shaft diameter tolerances are as follows:

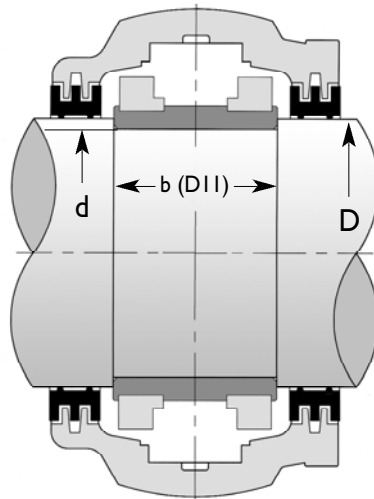
- h9 - For speeds less than 50,000mm dn and  $C_r/F_r \geq 10$ .
- h8 - For speeds from 50,000mm dn to 150,000mm and  $C_r/F_r \geq 10$ .
- h7 - For speeds from 50,000mm dn to 150,000mm dn and  $C_r/F_r < 10$ .
- h6 - For speeds over 150,000mm dn and for all C2 clearance bearings

The upper limit on diameter is + 0.000 in all cases. The table opposite shows these tolerances for shafts up to 180mm.

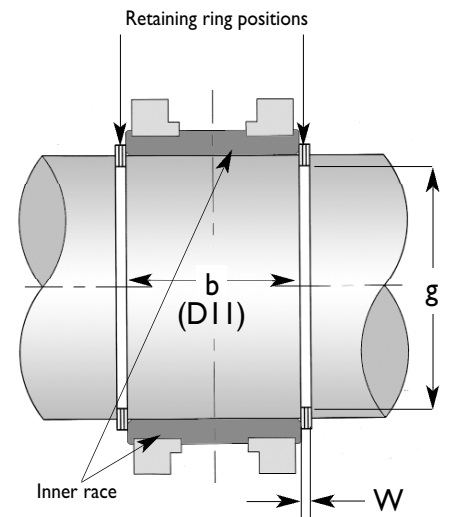
The tolerance on parallelism and roundness of the journal is IT6 in all cases.

**Shaft Tolerance in 0.001mm/0.001 inches**

Diameter over - to	h9	h8	h7	h6	IT6
0 - 50mm 0 - 2"	-62 -2.5	-39 -1.5	-25 -1.0	-16 -0.6	16 0.6
50 - 80mm 2 - 3"	-74 -3.0	-46 -1.8	-30 -1.2	-19 -0.7	19 0.7
80 - 120mm 3 - 5"	-87 -3.5	-54 -2.1	-35 -1.4	-22 -0.9	22 0.9
120 - 180mm 5 - 7"	-100 -4.0	-63 -2.5	-40 -1.5	-25 -1.0	25 1.0



This arrangement requires a special cartridge and seals that can accommodate the abutment diameter.



**Recess Mounting**

For fixed GR bearings a shaft recess or some form of abutment is required if the axial load exceeds 50%  $C_a$  or if there is a combination of axial loading and one or more of the following: shock loads; vertical shafts; fluctuating temperatures over 100C.

Abutment diameters should be:

- Bearing bore, d      Abutment diameter, D
- Up to 90mm (3 1/2")    d + 5mm (3/16")
- Over 90mm (3 1/2")    d + 10mm (3/8")

The nominal width of the recess is the width of the inner race, as given in the product tables of this catalogue. The tolerance on recess width is D11.

**Retaining Rings**

If a recess is not practical, another option is to use retaining rings. Grooves are machined into the shaft using the same spacing between rings as the width of the recess (dimension b).

Select a retaining ring that will support the axial load using the ring manufacturers data. Machine groove width W and diameter g accordingly.

These rings are placed in the grooves on either side of the inner race and will prevent axial movement of the shaft.

Make sure that the retaining rings do not interfere with the seals. In this case, the seals and bearing will have the same bore size.

For more information on groove dimensions and tolerances, please consult our technical department.

## Bearing Lubrication

Friction and wear are reduced by separating rollers and races with a lubricant film to minimise metal to metal contact. The major factors in selecting a lubricant are speed, lubricant base oil viscosity and temperature.

## Building a Lubricant Film

As speed and viscosity increase, thickness of lubricant film increases. As temperature increases, lubricant film thickness decreases. The lubricant film should be sufficient to cover the average peaks on the bearing surface by a ratio of at least 1.25. As the ratio falls below 1.25, some metal to metal contact will occur with a corresponding loss of  $L_{10}$  life.

This situation should not occur if the lubricant is selected according to the method given on page 23.

## Grease Lubrication

Grease lubrication is easier to retain in the bearing than oil, offering lower lubricant losses and improved sealing. Grease also offers better protection against corrosion to the roller surfaces. A grease typically consists of three components; a thickener (sometimes called a soap), a base oil and additives. The oil in the grease has an ISO-VG rating. In most cases, this is the key to selecting the grease. At speeds in excess of 200,000mm dn, greases with synthetic base oils are recommended. Please consult our technical department for proper grease selection.

The National Lubricating Grease Institute (NLGI) has designated consistency grades for greases based upon the amount of thickener in the grease. The standard recommended grease for Cooper is a No.2 or No.3 consistency grade with an EP additive. The exception to this is a central pumped system where a No.1 is used for "pumpability".

A lithium complex thickener is used for normal applications operating at temperatures between 32°F and 180°F. When water resistance is required, an aluminium complex thickener can be used. Aluminium complex greases are not compatible with some other types of grease. The bearing must therefore be solvent cleaned of other greases prior to adding an aluminium complex based grease.

The initial pack of grease depends on speed. The initial pack should be used to coat the rolling surfaces of the bearing during installation. Initial amounts are shown on page 22s.

## Oil Lubrication

Oil lubrication can be broken down into three major categories; recirculating oil systems, constant level and oil mist.

Recirculating oil systems use a pump to provide a continuous flow of oil to the bearing which is then recaptured, cooled, filtered and recirculated.

A constant level oiler is the simplest method for delivery of oil lubrication to a bearing. The oiler maintains a constant level in the bottom of the bearing. Ideal conditions for oiler use would be bearing temperature less than 140°F (60°C), load through centre, with low to moderate speeds.

An oil mist system uses compressed air to atomise oil and spray it into the bearing. Conveying oil with filtered air maintains a positive pressure in the cartridge which is an effective method for keeping out contaminants. Oil mist systems are especially effective for high speeds.

### Grease for Initial Lubrication

The initial amount of grease is dependant upon operating speed and temperature and is expressed as a percentage of full pack.

If the operating temperature is above 80°C (180°F), the bearing should be

packed with 25% of the full pack amount regardless of speed. For temperatures below 80°C (180°F), the following chart should be used.

Speed in this case is expressed as dn (shaft diameter x rpm). The proper initial grease pack percentage for various dn ranges is shown below.

### Shaft Speed

dn (mm)		dn (inch)		Percentage of Full Pack
over	to	over	to	
-	50,000	-	2,000	100
50,000	100,000	2,000	4,000	75
100,000	150,000	4,000	6,000	50
150,000	200,000	6,000	8,000	33
200,000	-	8,000	-	25

### Full Pack Grease Quantities

mm	inches	Group size	01 Series		02 Series		03 Series		mm	inches	Group size	01 Series		02 Series		03 Series	
			Kg	oz/lb	Kg	oz/lb	Kg	oz/lb				Kg	oz/lb	Kg	oz/lb	Kg	oz/lb
30 to 40	1 3/16 to 1 1/2	108	0.06	2.0oz	-	-	-	-	240 to 250	9 1/2 to 10	1000	2.00	4.4lbs	4.20	9.0lbs	8.10	18.0lbs
45 to 50	1 11/16 to 2	200	0.09	3.0oz	0.15	5.5oz	-	-	275 to 280	10 1/2 to 11 1/8	1100	2.00	4.4lbs	4.80	10.5lbs	10.00	22.0lbs
55 to 65	2 3/16 to 2 1/2	208	0.15	5.3oz	0.21	7.5oz	-	-	300	11 1/2 to 12	1200	2.00	4.4lbs	5.40	12.0lbs	11.00	24.2lbs
70 to 75	2 11/16 to 3	300	0.18	6.3oz	0.30	10.5oz	-	-	320 to 330	12 1/2 to 13	1300	2.76	6.0lbs	6.60	14.6lbs	12.00	26.5lbs
80 to 90	3 3/16 to 3 1/2	308	0.30	10.5oz	0.45	1.0lb	-	-	340 to 350	13 1/2 to 14 1/8	1400	3.00	6.6lbs	7.20	15.9lbs	15.00	33.1lbs
95 to 105	3 11/16 to 4	400	0.36	12.7oz	0.60	1.5lbs	1.20	2.6lbs	380	14 1/2 to 15	1500	3.00	6.6lbs	7.80	17.2lbs	16.20	35.7lbs
110 to 115	4 3/16 to 4 1/2	408	0.51	1.1lbs	0.90	2.0lbs	1.40	3.1lbs	410	15 1/2 to 16	1600	3.60	7.9lbs	9.00	19.8lbs	-	-
120 to 130	4 11/16 to 5	500	0.60	1.3lbs	1.20	2.6lbs	1.40	3.1lbs	420	16 1/2 to 17	1700	4.20	9.3lbs	9.60	21.2lbs	21.60	47.6lbs
135 to 140	5 3/16 to 5 1/2	508	0.78	1.7lbs	1.40	3.1lbs	2.00	4.4lbs	460	17 1/2 to 18 1/4	1800	4.20	9.3lbs	9.60	21.2lbs	24.60	54.2lbs
145 to 155	5 11/16 to 6 1/8	600	0.90	2.0lbs	1.40	3.1lbs	2.70	6.0lbs	480	18 1/2 to 19	1900	4.80	10.6lbs	10.20	22.5lbs	-	-
160	6 1/4 to 6 1/2	608	1.00	2.2lbs	1.40	3.1lbs	3.60	8.0lbs	500	19 1/2 to 20	2000	4.80	10.6lbs	10.80	23.8lbs	30.00	66.1lbs
180	6 11/16 to 7	700	1.20	2.6lbs	2.00	4.4 lbs	4.20	9.2lbs	520 to 530	20 1/2 to 21	2100	5.40	11.90lbs	11.40	25.1lbs	-	-
190 to 200	7 1/2 to 8	800	1.40	3.1lbs	2.70	6.0lbs	5.40	12.0lbs	550 to 560	21 1/2 to 22	2200	5.40	11.90lbs	11.40	25.1lbs	36.00	79.4lbs
210 to 230	8 1/2 to 9 1/8	900	1.40	3.1lbs	3.60	8.0lbs	6.90	15.0lbs	580	22 1/2 to 23	2300	6.00	13.2lbs	12.60	27.8lbs	38.40	84.7lbs
									600	23 1/2 to 24	2400	6.00	13.2lbs	12.60	27.8lbs	-	-

Quantities shown in the table assume normal density grease (about 0.85 g/cm<sup>3</sup>)

## Selection of Base Oil Viscosity Grade (ISO-VG)

To determine the proper viscosity grade, the Cooper part number, operating temperature and speed (rpm) must be known.

Select the appropriate bearing geometry factor from the table below for the given shaft size and Series.

Multiply the geometry factor by the bearing rpm to obtain the velocity factor. Starting with the VG 150 graph on the opposite page, draw a vertical line from the calculated velocity factor and a horizontal line from the bearing operating temperature.

If the lines intersect inside the shaded area, a grease or oil containing a base oil viscosity grade (ISO-VG) of 150 should be suitable for use.

If the intersection of the lines is outside the shaded area on the VG 150 graph, follow the same procedures as above to determine if a VG 220 or VG 460 would be suitable.

For conditions not covered by the chart and graphs, please contact our technical department.

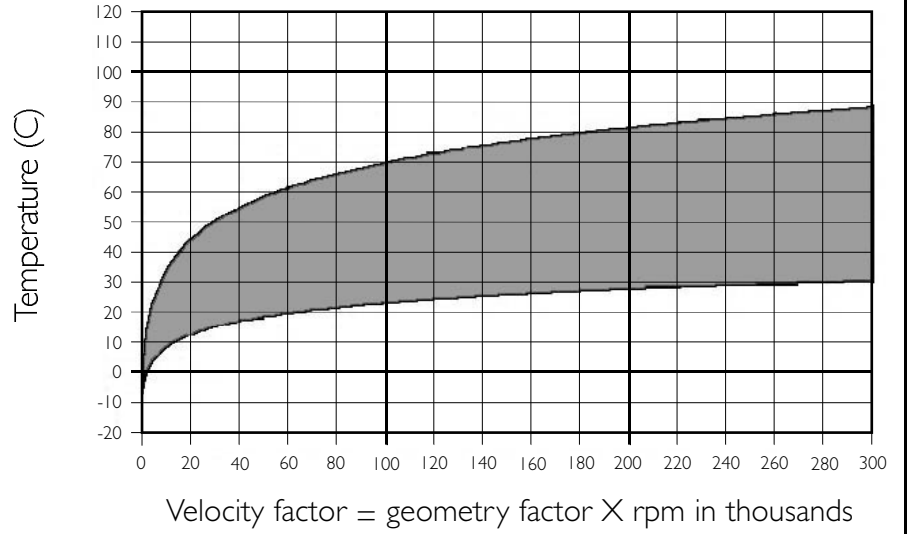
## Geometry Factors of 01, 02 and 03 Series for Bore Sizes through 24"

mm	inches	Group size	01 Series	02 Series	03 Series
30 to 40	1 <sup>3</sup> / <sub>16</sub> to 1 <sup>1</sup> / <sub>2</sub>	108	27.35	-	-
45 to 50	1 <sup>1</sup> / <sub>16</sub> to 2	200	37.62	38.96	-
55 to 60	2 <sup>3</sup> / <sub>16</sub> to 2 <sup>1</sup> / <sub>2</sub>	208	48.83	53.24	-
70 to 75	2 <sup>1</sup> / <sub>16</sub> to 3	300	62.34	67.14	76.98
80 to 90	3 <sup>3</sup> / <sub>16</sub> to 3 <sup>1</sup> / <sub>2</sub>	308	78.59	83.67	97.66
95 to 105	3 <sup>1</sup> / <sub>16</sub> to 4	400	94.10	101.26	112.28
110 to 115	4 <sup>3</sup> / <sub>16</sub> to 4 <sup>1</sup> / <sub>2</sub>	408	112.34	119.81	127.49
120 to 130	4 <sup>1</sup> / <sub>16</sub> to 5	500	129.39	139.28	143.27
135 to 140	5 <sup>3</sup> / <sub>16</sub> to 5 <sup>1</sup> / <sub>2</sub>	508	147.30	157.51	159.59
145 to 155	5 <sup>1</sup> / <sub>16</sub> to 6 <sup>1</sup> / <sub>8</sub>	600	163.75	176.43	180.71
160	6 <sup>1</sup> / <sub>4</sub> to 6 <sup>1</sup> / <sub>2</sub>	608	182.85	198.17	211.57
180	6 <sup>1</sup> / <sub>16</sub> to 7	700	200.37	216.10	232.14
190 to 200	7 <sup>1</sup> / <sub>2</sub> to 8	800	236.79	258.09	277.45
210 to 230	8 <sup>1</sup> / <sub>2</sub> to 9 <sup>1</sup> / <sub>8</sub>	900	277.45	297.23	327.65

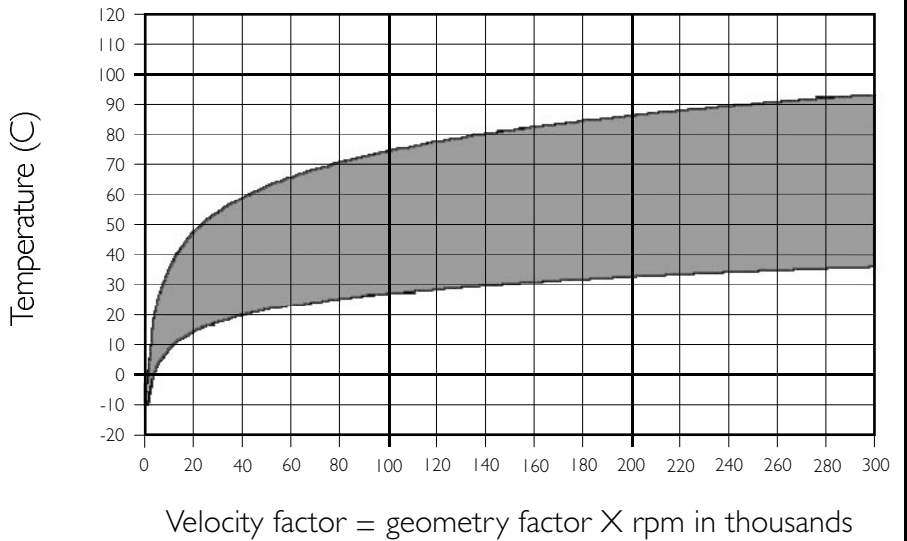
mm	inches	Group size	01 Series	02 Series	03 Series
240 to 250	9 <sup>1</sup> / <sub>2</sub> to 10	1000	322.52	343.19	358.94
275 to 280	10 <sup>1</sup> / <sub>2</sub> to 11 <sup>1</sup> / <sub>8</sub>	1100	364.24	385.66	1100E - 396.51 1100X - 412.95
300	11 <sup>1</sup> / <sub>2</sub> to 12	1200	412.95	435.18	463.45
320 to 330	12 <sup>1</sup> / <sub>2</sub> to 13	1300	454.68	483.35	527.27
340 to 350	13 <sup>1</sup> / <sub>2</sub> to 14 <sup>1</sup> / <sub>8</sub>	1400	500.71	536.13	551.12
380	14 <sup>1</sup> / <sub>2</sub> to 15	1500	551.10	578.36	630.90
410	15 <sup>1</sup> / <sub>2</sub> to 16	1600	599.82	630.90	-
420	16 <sup>1</sup> / <sub>2</sub> to 17	1700	649.72	684.75	700.59
460	17 <sup>1</sup> / <sub>2</sub> to 18 <sup>1</sup> / <sub>4</sub>	1800	700.83	730.09	758.32
480	18 <sup>1</sup> / <sub>2</sub> to 19	1900	756.38	789.70	-
500	19 <sup>1</sup> / <sub>2</sub> to 20	2000	809.82	836.98	917.07
520 to 530	20 <sup>1</sup> / <sub>2</sub> to 21	2100	878.08	902.35	-
550 to 560	21 <sup>1</sup> / <sub>2</sub> to 22	2200	933.91	965.75	994.32
580	22 <sup>1</sup> / <sub>2</sub> to 23	2300	994.32	1030.41	1052.12
600	23 <sup>1</sup> / <sub>2</sub> to 24	2400	1052.23	1074.21	-



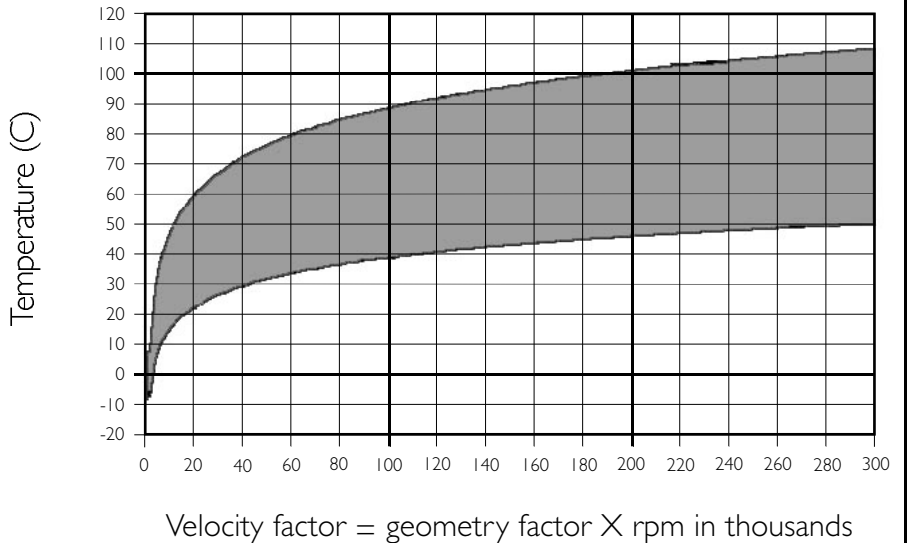
Cooper Bearing recommended speed and temperature range for VG 150 grease and oils



Cooper Bearing recommended speed and temperature range for VG 220 grease and oils



Cooper Bearing recommended speed and temperature range for VG 460 grease and oils



## Routine Greasing

The following charts should be used to determine the frequency and amounts of grease required for routine greasing.

Routine greasing depends on temperature, speed and environment. If the operating conditions fall outside the given limitations, please contact our technical department for a recommended lubrication interval.

If it can be done SAFELY, routine greasing should occur while the shaft is rotating to properly distribute grease. DO NOT mix different types of grease in the bearing.

Routine greasing* frequency	Temperature	Speed	Environment
Every 100 hours (if one of the conditions apply)	181°F to 350°F 80°C to 175°C	8000 to 12500dn 200,000 to 300,000mm	Very dirty/submerged
Every 200 hours (if one of the conditions apply)	141°F to 180°F 60°C to 80°C	4000 to 8000dn 100,000 to 200,000mm	Dusty/splashed
Every 400 hours (if one of the conditions apply)	Below 140°F Below 60°C	0 to 4000dn 0 to 100,000mm	Clean/dry

\* Applies particularly to fixed GR bearings supporting axial loads. Provided the environment is clean and dry, the greasing frequency for EX bearings and GR bearings used for location only may be extended to every 1000 operating hours.

For applications where operating speed and temperature allow for full pack of grease, regreasing can occur every 400 hours regardless of the working environment. See page 22.

## Routine grease quantities

Bearing bore		Group size	01 Series	02 Series	03 Series
mm	inches				
30 to 40	1 <sup>3</sup> / <sub>16</sub> to 1 <sup>1</sup> / <sub>2</sub>	108	3.5g	3.5g	3.5g
45 to 50	1 <sup>11</sup> / <sub>16</sub> to 2	200	3.5g	3.5g	3.5g
55 to 65	2 <sup>3</sup> / <sub>16</sub> to 2 <sup>1</sup> / <sub>2</sub>	208	3.5g	3.5g	3.5g
70 to 75	2 <sup>11</sup> / <sub>16</sub> to 3	300	3.5g	3.5g	3.5g
80 to 90	3 <sup>3</sup> / <sub>16</sub> to 3 <sup>1</sup> / <sub>2</sub>	308	3.5g	3.5g	3.5g
95 to 105	3 <sup>11</sup> / <sub>16</sub> to 4	400	3.5g	3.5g	3.5g
110 to 115	4 <sup>3</sup> / <sub>16</sub> to 4 <sup>1</sup> / <sub>2</sub>	408	3.5g	3.5g	3.5g
120 to 130	4 <sup>11</sup> / <sub>16</sub> to 5	500	3.5g	3.5g	3.5g
135 to 140	5 <sup>3</sup> / <sub>16</sub> to 5 <sup>1</sup> / <sub>2</sub>	508	3.5g	3.5g	7g
145 to 155	5 <sup>11</sup> / <sub>16</sub> to 6 <sup>1</sup> / <sub>8</sub>	600	3.5g	3.5g	7g
160	6 <sup>1</sup> / <sub>4</sub> to 6 <sup>1</sup> / <sub>2</sub>	608	3.5g	7g	7g
180	6 <sup>11</sup> / <sub>16</sub> to 7	700	3.5g	7g	7g
190 to 200	7 <sup>1</sup> / <sub>2</sub> to 8	800	3.5g	7g	14g
210 to 230	8 <sup>1</sup> / <sub>2</sub> to 9 <sup>1</sup> / <sub>8</sub>	900	3.5g	7g	14g

Bearing bore		Group size	01 Series	02 Series	03 Series
mm	inches				
240 to 250	9 <sup>1</sup> / <sub>2</sub> to 10	1000	7g	7g	14g
275 to 280	10 <sup>7</sup> / <sub>8</sub> to 11 <sup>1</sup> / <sub>8</sub>	1100	7g	14g	14g
300	11 <sup>1</sup> / <sub>2</sub> to 12	1200	7g	14g	14g
320 to 330	12 <sup>1</sup> / <sub>2</sub> to 13	1300	7g	14g	21.5g
340 to 350	13 <sup>1</sup> / <sub>2</sub> to 14 <sup>1</sup> / <sub>8</sub>	1400	7g	14g	21.5g
380	14 <sup>1</sup> / <sub>2</sub> to 15	1500	7g	14g	21.5g
410	15 <sup>1</sup> / <sub>2</sub> to 16	1600	14g	14g	21.5g
420	16 <sup>1</sup> / <sub>2</sub> to 17	1700	14g	14g	21.5g
460	17 <sup>1</sup> / <sub>2</sub> to 18 <sup>1</sup> / <sub>4</sub>	1800	14g	21.5g	28.5g
480	18 <sup>1</sup> / <sub>2</sub> to 19	1900	14g	21.5g	28.5g
500	19 <sup>1</sup> / <sub>2</sub> to 20	2000	14g	21.5g	28.5g
520 to 530	20 <sup>1</sup> / <sub>2</sub> to 21	2100	14g	21.5g	28.5g
550 to 560	21 <sup>1</sup> / <sub>2</sub> to 22	2200	14g	21.5g	28.5g
580	22 <sup>1</sup> / <sub>2</sub> to 23	2300	14g	21.5g	28.5g
600	23 <sup>1</sup> / <sub>2</sub> to 24	2400	14g	21.5g	28.5g

## 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.

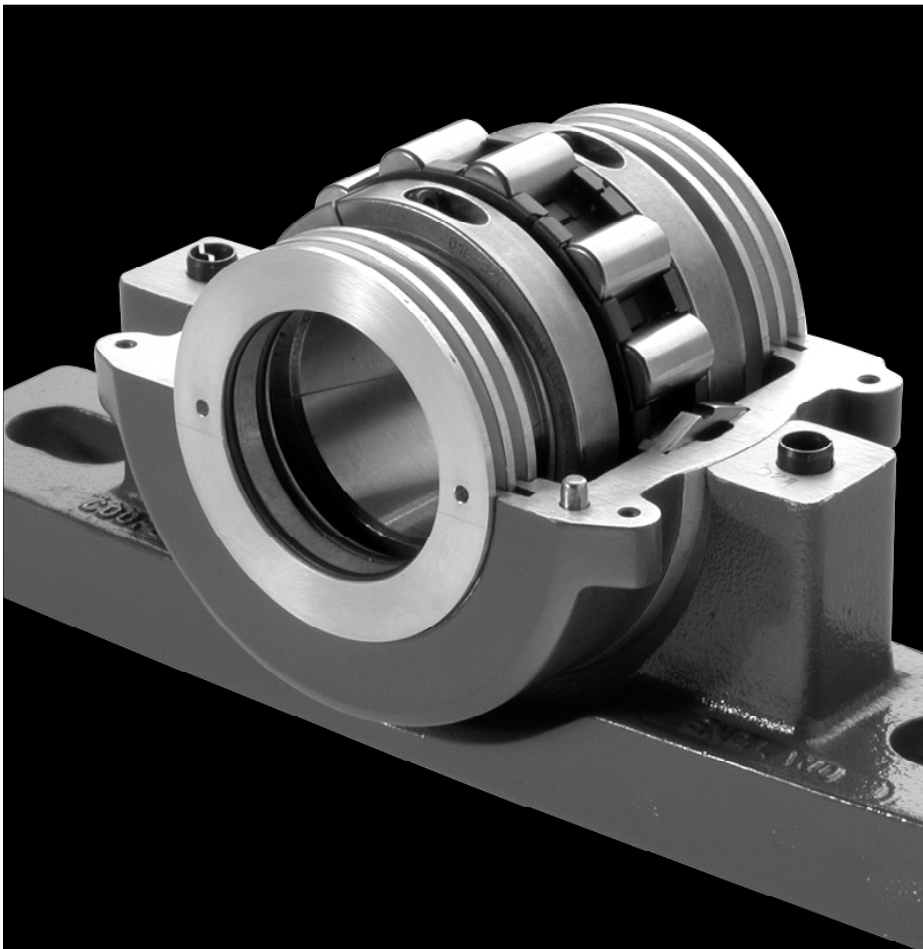
The aligning feature of the Cooper split roller bearing is between the cartridge and pedestal or flange. Any shaft misalignment that may exist tends to move the cartridge housing, seal and bearing together maintaining the seal on an axis parallel with the shaft.

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

Triple labyrinth seals are precision non-rubbing seals capable of high speed operation. Extremely close tolerances can be maintained between the housing and the seal resulting in an effective sealing element which is one of the best of its type in the anti friction bearing industry.

Triple labyrinth seals are readily available on request to suit the more difficult sealing environments.

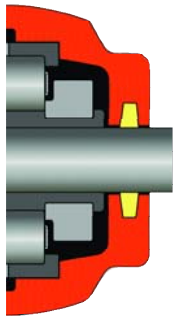
For special applications seals may be made from other materials and alternative special seals can be supplied to suit specific conditions.



Picture left:

Illustrates an aluminium triple labyrinth seal on an OIE Series bearing and cartridge.

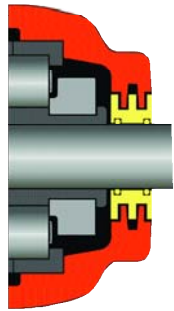
The twin 'O' rings are visible in the bore of the seal. The compression of the 'O' rings causes the seal to rotate with the shaft, but the amount of compression is so designed that the shaft moves through the seal when axial expansion occurs.



### Felt (F)

Made from wool and selected fibres. Felt is the current UK and European standard seal for bearings up to 300mm/12" bore size.

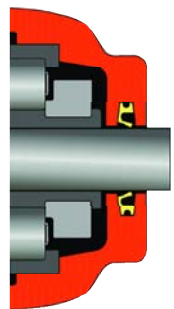
Temperature limits -94°F to +212°F  
-70°C to +100°C  
Maximum speed 150000mm dn  
Shaft surface finish 1.6 µm Ra max.



### Aluminium Triple Labyrinth (ATL)

Machined aluminium bodied triple labyrinth seal for high speed and general applications. Supplied as standard in USA and Canada.

Temperature limits -4°F to +212°F  
-20°C to +100°C  
Maximum speed Bearing maximum  
Shaft surface finish 3.3 µm Ra max.

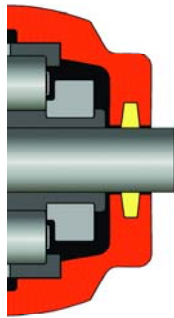


### Synthetic nitrile rubber single lip (SRS)\*

For wet but not submerged applications. Can be used to retain bearing lubricant by mounting lip innermost.

Temperature limits -4°F to +212°F  
-20°C to +100°C  
Maximum speed 150000mm dn  
Shaft surface finish 0.8µm Ra max.

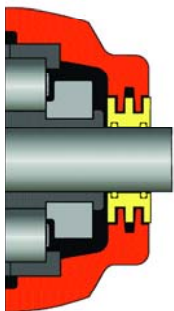
\* High and low temperature versions also available.



### High Temperature Packing (HTP)

A PTFE filament yarn impregnated with graphite and lubricated with silicon. A direct replacement for felt in high temperature applications. Also available silicon free.

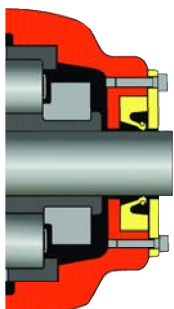
Temperature limits -94°F to +500°F  
-70°C to +260°C  
Maximum speed 150000mm dn  
Shaft surface finish 0.8 µm Ra max.



### Triple labyrinth with Viton rubber cord insert (TL HT)

Suitable for high speed and high temperature applications.

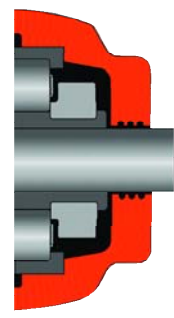
Temperature limits -4°F to +347°F  
-20°C to +175°C  
Maximum speed Bearing maximum  
Shaft surface finish 3.2 µm Ra max.



### Single lip with spring loaded retaining plate (SRS RP)

Suitable for severe splash or completely submerged applications. Two grades are available, one operates up to 2 metres of fluid the other up to 30 metres.

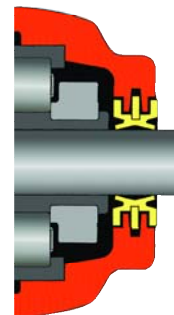
Temperature limits -4°F to +212°F  
-20°C to +100°C  
Maximum speed 150000mm dn  
Shaft surface finish 0.4 µm Ra max.



### Labyrinth grease groove (LAB)

Standard seal for bearings over 12"/300mm. Particularly successful on marine applications. Suitable for low or high speed operation.

Temperature limits As bearing  
Maximum speed As bearing  
Shaft surface finish 3.2 µm Ra max.



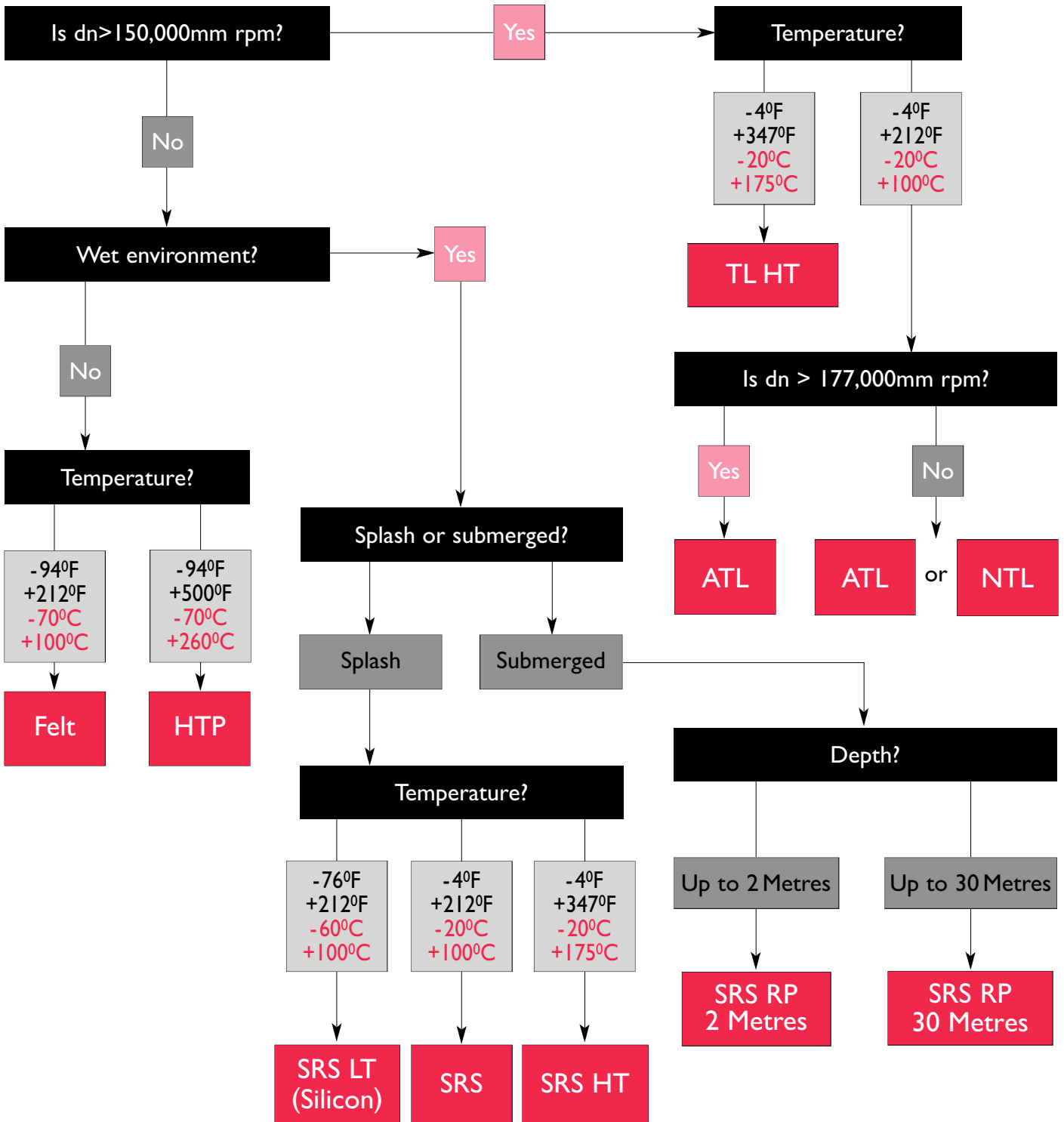
### Neoprene rubber triple labyrinth (NTL)

Can be used where an explosive or corrosive atmosphere prevents the use of aluminium.

Temperature limits -4°F to +212°F  
-20°C to +100°C  
Maximum speed:  
Shaft diameters up to 65mm: 3300rpm  
Shaft diameters from 70mm to 90mm: 2000rpm  
Shaft diameters from 95mm to 105mm: 1800rpm  
Shaft surface finish 3.2 µm Ra max.

Shaft surface finish shown is the recommended shaft finish for optimum performance.

Seal Selection



## 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 surface that fits into a conforming surface in the mounting unit. This arrangement allows the cartridge to swivel in the mounting in a similar way to a ball and socket joint.

Cartridge and mounting units are designed so that the shaft can be up to  $2\frac{1}{2}^\circ$  out of alignment with respect to the mountings on initial assembly. This alignment feature is intended for static or very slowly changing conditions.

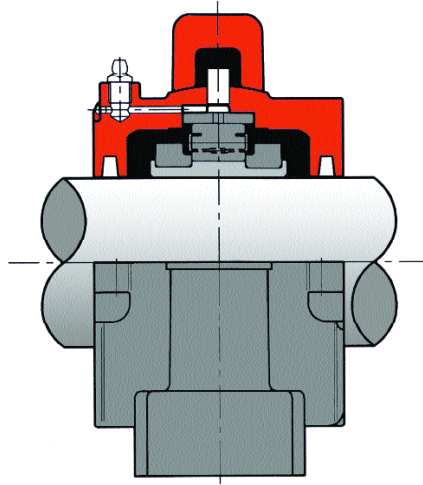
## Constantly Superior Sealing

An important property of the cartridge and mounting unit alignment feature is that the seals are constantly concentric with the shaft. Whatever the misalignment condition, the seals are maintained at the correct attitude with respect to the shaft giving optimum sealing as illustrated.

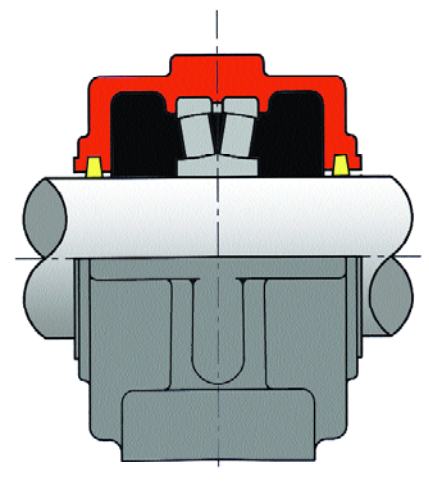
Compare this with the situation that occurs with a double row spherical bearing in a standard pedestal.

As the shaft misaligns, a gap between the seal and shaft opens on one side. In the worst case when the shaft is at about  $0.5^\circ$  degrees, the shaft can bind on the seal carrier or cause the seal to bind in the housing, compromising the sealing. Although felt seals are shown in the illustration, the same applies for labyrinth or lip seals.

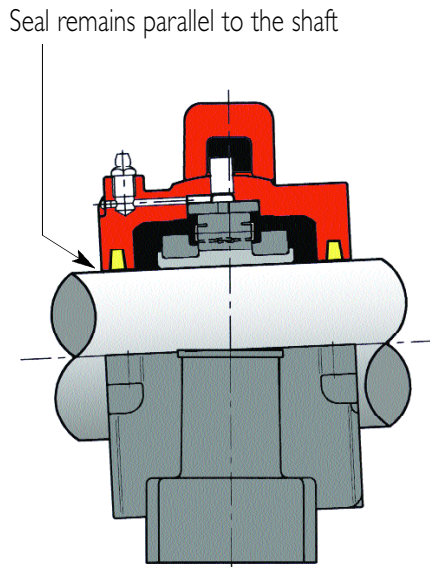
**Aligned**  
Cooper Split Roller Bearing



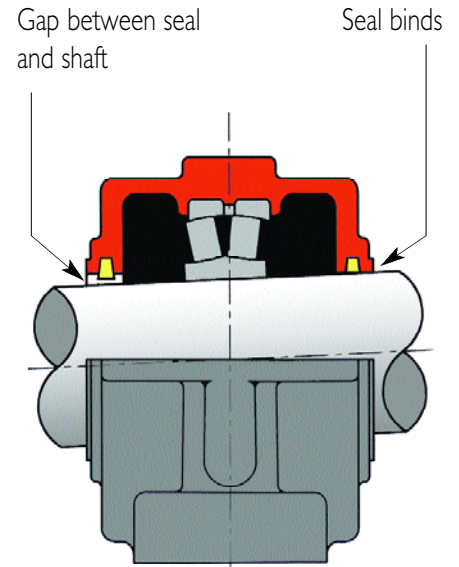
**Aligned**  
Double Row Spherical Bearing



**Misaligned**  
Cooper Split Roller Bearing



**Misaligned**  
Double Row Spherical Bearing



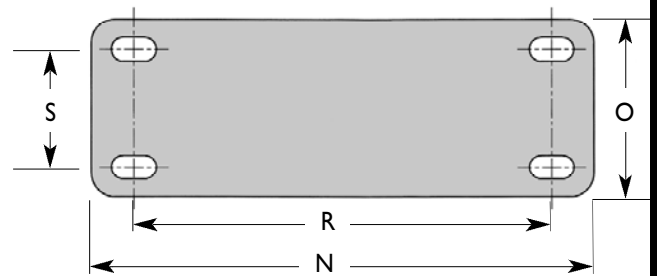
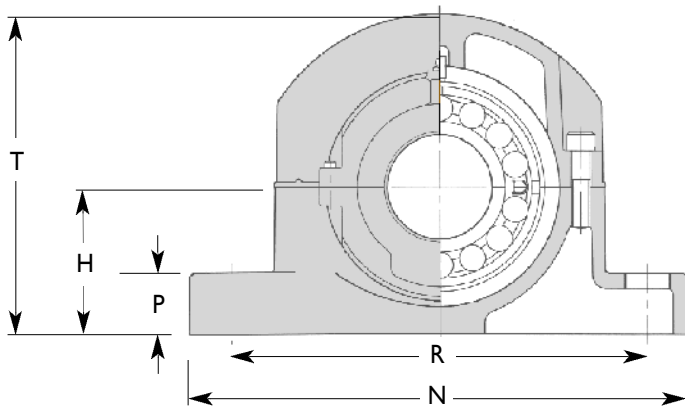
Pedestals (also known as Pillow Blocks) are the most common method of mounting Cooper Split Roller Bearings.

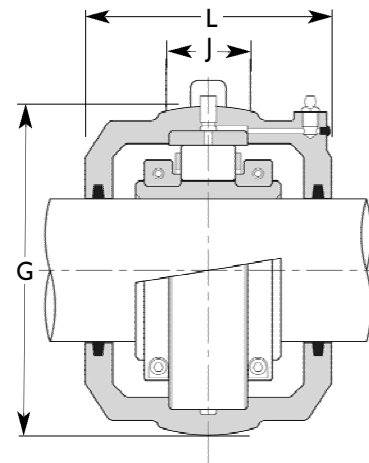
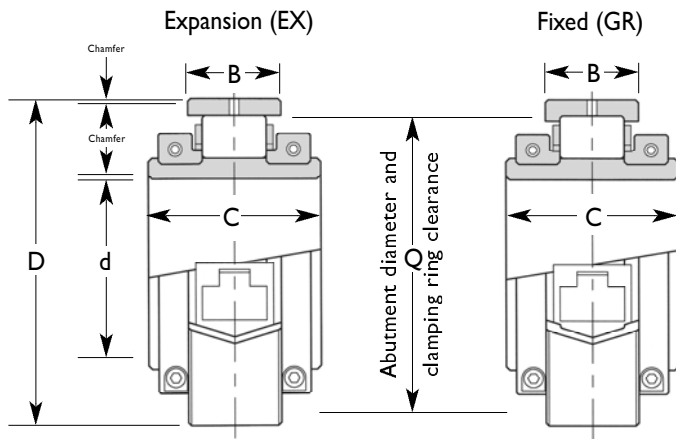
Cooper standard pedestals are shown on pages 31 to 46. The standard material is grey iron, but nodular iron or steel pedestals are also available. For arduous applications where alternative materials are required, or where the direction of the resultant load is above 30° below the pedestal joint, please consult our technical department.

Cooper pedestals with height to centre and bolt hole configurations to match industry standard SNC pillow blocks are shown on page 47. Cooper also manufactures pedestals that are similarly interchangeable with SD and SAFC pillow blocks, along with many special designs. Particulars are available from our technical department upon request.

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

The bearings and cartridges tabulated on pages 31 to 46 are also applicable to other mounting options shown later in the catalogue.





Lubricating points are tapped 1/8" NPT  
All grooved outer races must be clamped axially. Provision is made for this in Cooper cartridges.

## Roller Bearing

Shaft diameter (d)	References (Note 1)		D	C	B	Q	Mass (kg) (lb)
	Bearing only	Cartridge					
mm	inches	millimeters	inches				
35	1 3/16	01 B 103					
40	1 1/4	01 B 104	84.14	50.1	23.8	75.0	1.2
	1 7/16	01 B 107	3.313	1.972	0.938	2.953	2.7
	1 1/2	01 B 108					
45	1 11/16	01 EB 111					
	1 3/4	01 EB 112	98.42	55.7	25.4	90.0	1.5
50	1 15/16	01 EB 115	3.875	2.193	1.000	3.543	3.3
	2	01 EB 200					
60	2 3/16	01 EB 203					
65	2 1/4	01 EB 204	114.30	55.7	27.0	105.0	1.8
	2 1/16	01 EB 207	4.500	2.193	1.063	4.134	4.0
	2 1/2	01 EB 208					
70	2 11/16	01 EB 211					
	2 3/4	01 EB 212	133.35	61.2	31.8	124.0	2.5
75	2 15/16	01 EB 215	5.250	2.409	1.250	4.882	5.5
	3	01 EB 300					
80	3 3/16	01 EB 303					
85	3 1/4	01 EB 304	152.40	70.7	38.9	142.0	4.0
	3 7/16	01 EB 307	6.000	2.781	1.531	5.591	8.8
90	3 1/2	01 EB 308					
100	3 11/16	01 EB 311					
	3 3/4	01 EB 312	174.62	81.0	45.3	162.0	6.0
105	3 15/16	01 EB 315	6.875	3.189	1.781	6.378	13.2
	4	01 EB 400					
110	4 3/16	01 B 110M	203.20	84.9	46.9	182.0	10.2
115	4 7/16	01 B 115M	8.000	3.342	1.844	7.165	22.4
	4 1/2	01 B 403					
		01 B 407					
		01 B 408					
120	4 15/16	01 B 120M	222.25	89.7	54.0	200.0	12.8
125	5	01 B 125M	8.750	3.531	2.125	7.874	28.2
130		01 B 500					
135	5 3/16	01 B 135M	241.30	98.4	55.6	216.0	15.7
140	5 7/16	01 B 140M	9.500	3.875	2.188	8.504	34.5
	5 1/2	01 B 503					
		01 B 507					
		01 B 508					
150	5 15/16	01 B 150M	254.0	98.4	55.6	230.0	16.6
155	6	01 B 155M	10.000	3.875	2.188	9.055	36.5
		01 B 600					

## Cartridge Unit

Cartridge and standard seals	References (Note 1)		G	J	L	Available axial movement (Note 2)	Mass (bearing + cartridge) (kg) (lb)
	millimeters	inches					
01 C 35M	01 C 103						
01 C 40M	01 C 104	01 C 01	100.0	25	86	5.56	3.2
	01 C 107		3 15/16	1.0	3 3/8	7/32	7.04
	01 C 108						
01 C 45M	01 C 111						
01 C 50M	01 C 112	01 C 02	117.48	25	98	5.56	4.0
	01 C 115		4 5/16	1.0	3 13/16	7/32	8.8
	01 C 200						
01 C 60M	01 C 203						
01 C 65M	01 C 204	01 C 03	134.94	32.0	104	7.94	5.0
	01 C 207		5 1/16	1 1/4	4 1/16	5/16	11.0
	01 C 208						
01 C 70M	01 C 211						
01 C 75M	01 C 212	01 C 04	157.16	38.0	114	7.94	8.0
	01 C 215		6 3/16	1 1/2	4 1/2	5/16	17.6
	01 C 300						
01 C 80M	01 C 303						
01 C 85M	01 C 304	01 C 05	177.80	50.0	136	11.91	11.0
01 C 90M	01 C 307		7	2.0	5 5/16	15/32	24.3
	01 C 308						
01 C 100M	01 C 311						
01 C 105M	01 C 312	01 C 06	203.20	50.0	134	12.70	14.0
	01 C 315		8	2	5 1/4	1/2	30.8
	01 C 400						
01 C 110M	01 C 403						
01 C 115M	01 C 407	01 C 07	231.78	64.0	142	12.70	22.1
	01 C 408		9 1/8	2 1/2	5 5/8	1/2	48.6
01 C 120M	01 C 415						
01 C 125M	01 C 500	01 C 08	266.76	76.0	156	15.08	32.3
01 C 130M			10 1/2	3.0	6 1/8	19/32	71.1
01 C 135M	01 C 503						
01 C 140M	01 C 507	01 C 09	279.40	76.0	168	16.0	36.5
	01 C 508		11	3.0	6 5/8	5/8	80.3
01 C 150M	01 C 515						
01 C 155M	01 C 600	01 C 10	295.28	82.0	174	14.29	41.0
			11 5/8	3 3/4	6 7/8	9/16	90.2

(1) Add 'EX' or 'GR' to reference for expansion type or fixed type respectively, e.g. (bearing) 01EB60MEX (cartridge) 01CB60MEX

For bearing and cartridge together insert 'C' into bearing reference, e.g. 01EBC60MEX or 01BC508GR

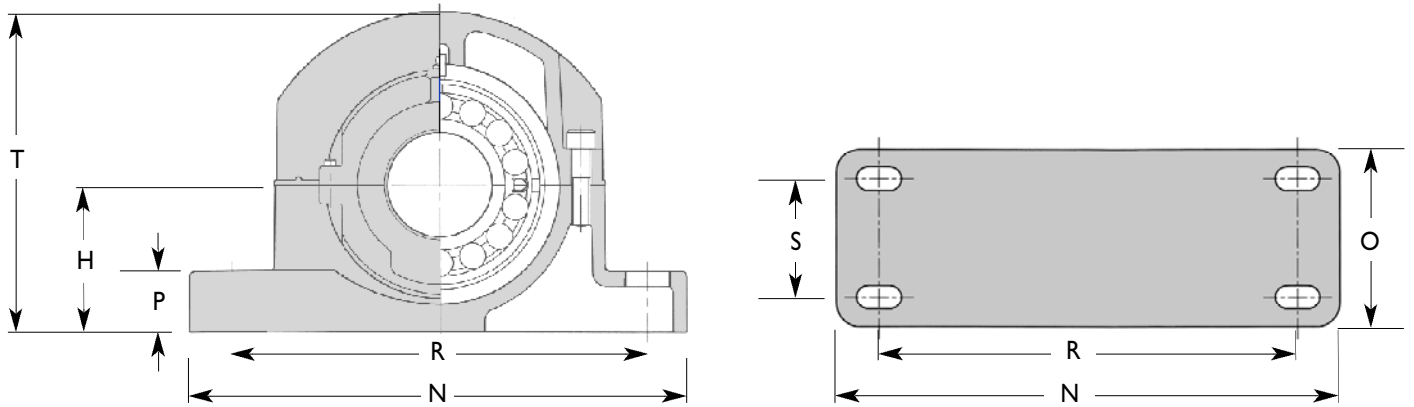
Chamfers

Inner race: Sizes to 90mm/3 1/2": 1.5mm/1/16", over 90mm/3 1/2": 2.5mm/3/32"

Outer race: Sizes to 105mm/4": 1.0mm/1/32", over 105mm/4": 1.5mm/1/16"

(2) Offset from centerline to accommodate axial movement should not exceed half this amount.

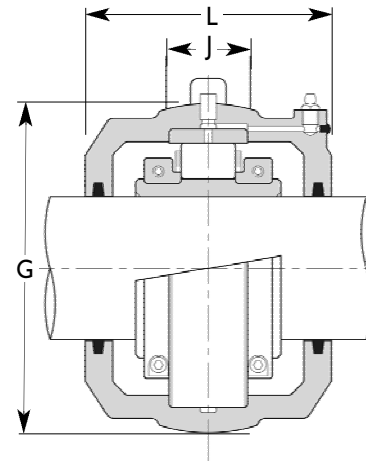
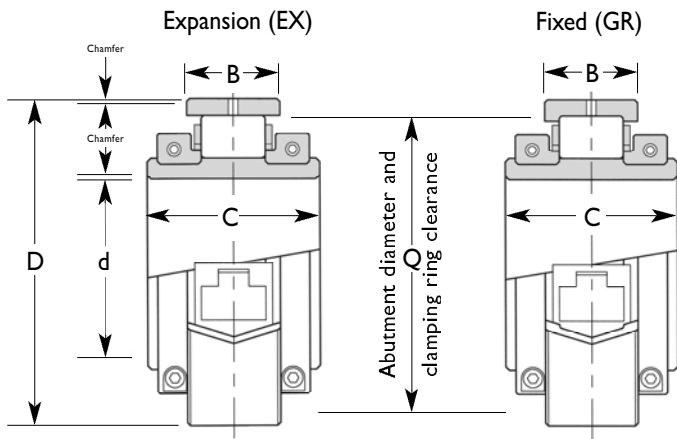



**Pedestals**

Shaft diameter (d)	References (Note 1)		Pedestal only	H	N	*O	P	Bolts	R		S	T	Mass (BCP) (kg) (lb)	
	mm	inches							Pedestals unit complete millimetres	inches				Min
35	1 3/16	01 BCP 103	P01	60.0	228	60.0	22.0	2-M12 (1/2 inch)	172	192	-	138	5.7	
40	1 1/4	01 BCP 104		2.36	9	*2 3/16	7/16		6 3/4	7 1/2		5 1/2	12.5	
	1 7/16	01 BCP 107												
	1 1/2	01 BCP 108												
45	1 11/16	01 EBCP 111	P02	70.0	270	60.0	25.0	2-M16 (5/8 inch)	204	22	-	15	8.0	
50	1 3/4	01 EBCP 112		2.76	10 5/8	*2 3/16	1		8	8 7/8		6 1/4	17.6	
	1 15/16	01 EBCP 115												
	2	01 EBCP 200												
60	2 1/8	01 EBCP 203	P03	80.0	280.0	70.0	32.0	2-M16 (5/8 inch)	226	242	-	180	11.0	
65	2 1/4	01 EBCP 204		3.15	11	*2 3/4	1 1/4		8 7/8	9 1/2		7	24.2	
	2 3/8	01 EBCP 207												
	2 1/2	01 EBCP 208												
70	2 11/16	01 EBCP 211	P04	95.0	330.0	76.0	38.0	2-M20 (3/4 inch)	260	280	-	208	16.0	
75	2 3/4	01 EBCP 212		3.74	13	*3	1 1/2		10 1/4	11		8 7/8	35.2	
	2 15/16	01 EBCP 215												
	3	01 EBCP 300												
80	3 1/8	01 EBCP 303	P05	112.0	380.0	90.0	44.0	2-M24 (7/8 inch)	312	32	-	25	27.8	
85	3 1/4	01 EBCP 304		4.41	15	*3 3/16	1 3/4		12 7/32	12 29/32		10	61.2	
	3 7/16	01 EBCP 307												
90	3 1/2	01 EBCP 308												
100	3 11/16	01 EBCP 311	P06	125.0	420.0	102.0	52.0	2-M24 (7/8 inch)	342	366	-	272	36.2	
105	3 3/4	01 EBCP 312		4.92	16 7/32	*4 1/16	2		13 15/32	14 13/32		10 3/4		
	3 15/16	01 EBCP 315												
	4	01 EBCP 400												
110	4 1/8	01 BCP 403	P07	143.0	466.0	120.0	60.0	2-M24 (7/8 inch)	374	410	-	314	42.7	
115	4 1/4	01 BCP 407		5.63	18 3/4	*4 23/32	2 3/8		14 23/32	16 5/16		12 3/8	93.9	
	4 5/8	01 BCP 408												
120	4 15/16	01 BCP 415	P08	162.0	508.0	178.0	38.0	4-M24 (7/8 inch)	438	462	120.0	372	75.6	
125	4 7/8	01 BCP 500		6.38	20	7	1 1/2		17 1/4	18 5/16		4 3/4	143 3/4	166.3
130	5													
135	5 1/8	01 BCP 503	P09	181.0	558.0	178.0	40.0	4-M24 (7/8 inch)	470	494	120.0	405	88.5	
140	5 1/4	01 BCP 507		7.13	22	7	1 5/8		18 1/2	19 1/2		4 3/4	157 1/8	194.7
	5 3/8	01 BCP 508												
	5 1/2													
150	5 15/16	01 BCP 515	P10	181.0	558.0	178.0	40.0	4-M24 (7/8 inch)	484	508	120.0	415	95.0	
155	6	01 BCP 600		7.13	22	7	1 5/8		19	20		4 3/4	16 1/4	209.0

(1) Add 'EX' or 'GR' to reference for expansion or fixed type respectively e.g. 01EBCP60MEX.

Pedestals are common between expansion and fixed units.



Lubricating points are tapped 1/8" NPT up to 240mm/10" bore size.  
 Lubricating points of 260mm/11" bore size and over are tapped 1/4" NPT.  
 All grooved outer races must be clamped axially. Provision is made for this in Cooper cartridges.

**Roller Bearing**

Shaft diameter (d)		References (Note 1) Bearing only		D	C	B	Q	Mass (kg) (lb)
mm	inches	millimetres	inches					
160	6 <sup>7</sup> / <sub>16</sub>	01 B 160M	01 B 607	273.05	109.0	60.3	248.0	20.0
	6 <sup>1</sup> / <sub>2</sub>		01 B 608	10.750	4.291	2.375	9.764	45.0
170	6 <sup>15</sup> / <sub>16</sub>	01 B 170M	01 B 615	285.75	109.0	55.5	260.0	23.0
	7		01 B 700	11.250	4.291	2.185	10.236	50.0
180	7 <sup>15</sup> / <sub>16</sub>	01 B 180M	01 B 715	311.15	109.0	60.3	285.0	25.0
			01 B 800	12.250	4.291	2.375	11.220	56.0
190	8	01 B 190M	01 B 800	342.90	115.0	63.5	315.0	32.0
			01 B 900	13.500	4.528	2.500	12.402	70.0
220	9	01 B 220M	01 B 900	374.65	122.0	66.7	344.0	40.0
			01 B 1000	14.750	4.803	2.625	13.543	90.0
240	10	01 B 240M	01 B 1000	406.40	128.0	69.0	375.0	50.0
			01 B 1100	16.000	5.039	2.719	14.764	110
260	11	01 B 260M	01 B 1100	438.15	143.0	74.6	404.0	60.0
			01 B 1200	17.250	5.625	2.938	15.906	135.0
280	12	01 B 280M	01 B 1200	463.55	136.0	74.6	432.0	72.0
			01 B 1300	18.250	5.354	2.938	17.008	160.0
300	13	01 B 300M	01 B 1300	488.95	136.0	74.6	456.0	78.0
			01 B 1400	19.250	5.354	2.938	17.953	170.0

**Cartridge Unit**

Cartridge and standard seals millimetres	References (Note 1) TL cartridge (without seals)		G	J	L (Note 3)	Available axial movement Note (2)	Mass (bearing + cartridge) (kg) (lb)
	inches	TL cartridge (without seals)					
01 C 160M	01 C 607	01 C 11	311.15	76	172	19.05	52.0
	01 C 608		12 <sup>1</sup> / <sub>4</sub>	3	6 <sup>3</sup> / <sub>4</sub>	3/4	
01 C 170M	01 C 615	01 C 12	323.85	70.0	172	13.50	54.0
	01 C 700		12 <sup>3</sup> / <sub>4</sub>	2 <sup>3</sup> / <sub>4</sub>	6 <sup>3</sup> / <sub>4</sub>	17/32	120.0
01 C 180M	01 C 715	01 C 13	358.78	86	172	19.05	66.0
	01 C 800		14 <sup>1</sup> / <sub>8</sub>	3 <sup>3</sup> / <sub>8</sub>	6 <sup>3</sup> / <sub>4</sub>	3/4	146.0
01 C 190M	01 C 800	01 C 14	387.35	82	178	19.84	78.0
	01 C 900		15 <sup>1</sup> / <sub>4</sub>	3 <sup>1</sup> / <sub>4</sub>	7	25/32	170.0
01 C 200M	01 C 900	01 C 15	419.10	90	188	23.02	98.0
	01 C 1000		16 <sup>1</sup> / <sub>2</sub>	3 <sup>1</sup> / <sub>2</sub>	7 <sup>3</sup> / <sub>8</sub>	29/32	215.0
01 C 220M	01 C 1000	01 C 16	454.0	95	204	20.64	120.0
	01 C 1100		17 <sup>7</sup> / <sub>8</sub>	3 <sup>3</sup> / <sub>4</sub>	8 <sup>1</sup> / <sub>16</sub>	13/16	265.0
01 C 240M	01 C 1100	01 C 17	489.0	98	216	26.19	146.0
	01 C 1200		19 <sup>1</sup> / <sub>4</sub>	3 <sup>7</sup> / <sub>8</sub>	8 <sup>1</sup> / <sub>2</sub>	1 <sup>1</sup> / <sub>32</sub>	
01 C 260M	01 C 1200	01 C 18	520.70	95	260	-	178.0
	01 C 1300		20 <sup>1</sup> / <sub>2</sub>	3 <sup>3</sup> / <sub>4</sub>	10 <sup>1</sup> / <sub>4</sub>	-	390.0
01 C 280M	01 C 1300	01 C 19	546.10	98	260	-	195.0
	01 C 1400		21 <sup>1</sup> / <sub>2</sub>	3 <sup>7</sup> / <sub>8</sub>	10 <sup>1</sup> / <sub>4</sub>	-	

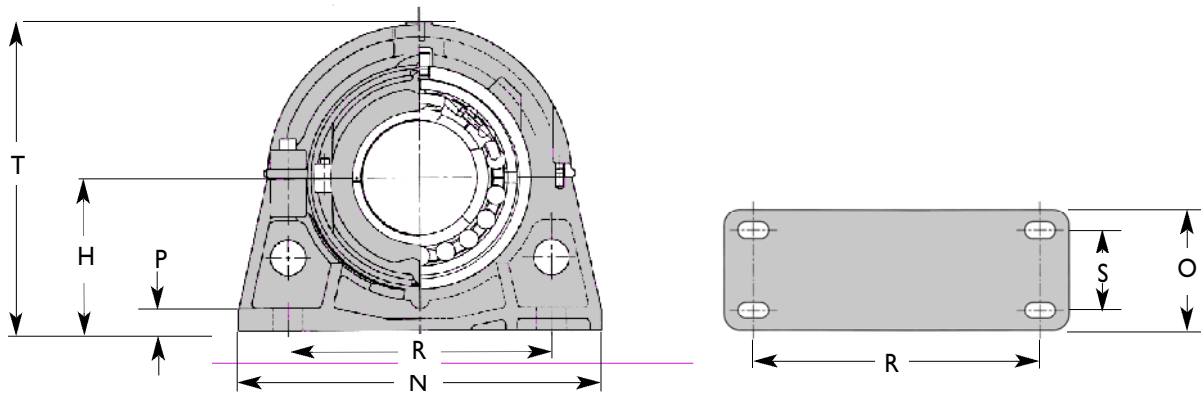
Add 'EX' or 'GR' to reference for expansion type or fixed type respectively, e.g. (bearing) 01B160MEX (cartridge) 01CB160MEX

For bearing and cartridge together insert 'C' into bearing reference, e.g. 01BC160MEX or 01BC800GR

Chamfers  
 Inner race: 3mm/1/8"  
 Outer race: 3mm/1/8"

- (2) Offset from centreline to accommodate axial movement should not exceed half this amount.
- (3) Dimension differs for TL cartridge. Please refer to our technical department

For these dimensions please consult our technical department

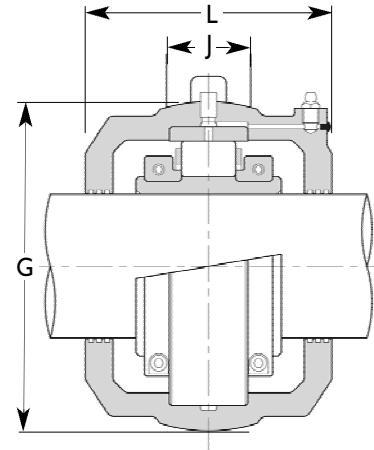
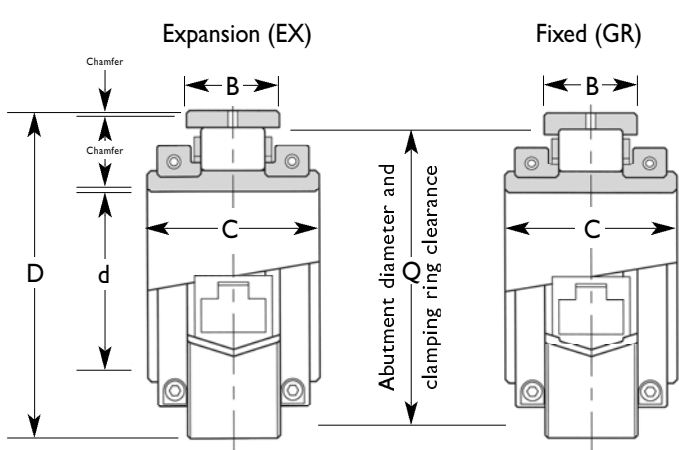


**Pedestals**

Shaft diameter (d)	References (Note 1)		Pedestal only	H	N	O	P	Bolts	R		S	T	Mass (BCP) (kg) (lb)		
	mm	inches							Pedestal unit complete millimetres	inches				Min	Max
160	6 <sup>7</sup> / <sub>16</sub>	6 <sup>1</sup> / <sub>2</sub>	01 BCP 160M	01 BCP 607 01 BCP 608	P11	213 8 <sup>3</sup> / <sub>8</sub>	508 20	178 7	32 1 <sup>1</sup> / <sub>4</sub>	4-M24 (1 inch)	356 14	381 15	114 4 <sup>1</sup> / <sub>2</sub>	430 17	113 248
170	6 <sup>15</sup> / <sub>16</sub>	7	01 BCP 170M	01 BCP 615 01 BCP 700	P12	235 9 <sup>1</sup> / <sub>4</sub>	534 21	190 7 <sup>1</sup> / <sub>2</sub>	35 1 <sup>3</sup> / <sub>8</sub>	4-M24 (1 inch)	375 14 <sup>3</sup> / <sub>4</sub>	400 15 <sup>3</sup> / <sub>4</sub>	128 5	470 18 <sup>1</sup> / <sub>2</sub>	123 270
190	7 <sup>15</sup> / <sub>16</sub>	8	01 BCP 190M	01 BCP 715 01 BCP 800	P13	248 9 <sup>3</sup> / <sub>4</sub>	572 22 <sup>1</sup> / <sub>2</sub>	204 8	38 1 <sup>1</sup> / <sub>2</sub>	4-M24 (1 inch)	410 16 <sup>1</sup> / <sub>8</sub>	435 17 <sup>1</sup> / <sub>8</sub>	140 5 <sup>1</sup> / <sub>2</sub>	495 19 <sup>1</sup> / <sub>2</sub>	154 340
220	9		01 BCP 220M	01 BCP 900	P14	270 10 <sup>5</sup> / <sub>8</sub>	636 25	216 8 <sup>1</sup> / <sub>2</sub>	40 1 <sup>5</sup> / <sub>8</sub>	4-M30 (1 <sup>1</sup> / <sub>4</sub> inch)	441 17 <sup>3</sup> / <sub>8</sub>	480 18 <sup>7</sup> / <sub>8</sub>	140 5 <sup>1</sup> / <sub>2</sub>	540 21 <sup>1</sup> / <sub>4</sub>	190 420
240	10		01 BCP 240M	01 BCP 1000	P15	292 11 <sup>1</sup> / <sub>2</sub>	686 27	228 9	44 1 <sup>3</sup> / <sub>4</sub>	4-M30 (1 <sup>1</sup> / <sub>4</sub> inch)	483 19	521 20 <sup>1</sup> / <sub>2</sub>	140 5 <sup>1</sup> / <sub>2</sub>	585 23	240 530
260	11		01 BCP 260M	01 BCP 1100	P16	311 12 <sup>1</sup> / <sub>4</sub>	724 28 <sup>1</sup> / <sub>2</sub>	228 9	48 1 <sup>7</sup> / <sub>8</sub>	4-M30 (1 <sup>1</sup> / <sub>4</sub> inch)	514 20 <sup>1</sup> / <sub>4</sub>	552 21 <sup>3</sup> / <sub>4</sub>	140 5 <sup>1</sup> / <sub>2</sub>	620 24 <sup>1</sup> / <sub>2</sub>	286 630
300	12		01 BCP 300M	01 BCP 1200	P17	343 13 <sup>1</sup> / <sub>2</sub>	762 30	254 10	50 2	4-M30 (1 <sup>1</sup> / <sub>4</sub> inch)	565 22 <sup>1</sup> / <sub>4</sub>	603 23 <sup>3</sup> / <sub>4</sub>	178 7	685 27	340 750
320	13		01 BCP 320M	01 BCP 1300	P18	368 14 <sup>1</sup> / <sub>2</sub>	812 32	254 10	54 2 <sup>1</sup> / <sub>8</sub>	4-M36 (1 <sup>1</sup> / <sub>2</sub> inch)	603 23 <sup>3</sup> / <sub>4</sub>	641 25 <sup>1</sup> / <sub>4</sub>	178 7	735 29	386 850
340	14		01 BCP 340M	01 BCP 1400	P19	387 15 <sup>1</sup> / <sub>4</sub>	850 33 <sup>1</sup> / <sub>2</sub>	254 10	57 2 <sup>1</sup> / <sub>4</sub>	4-M36 (1 <sup>1</sup> / <sub>2</sub> inch)	635 25	673 26 <sup>1</sup> / <sub>2</sub>	166 6 <sup>1</sup> / <sub>2</sub>	775 30 <sup>1</sup> / <sub>2</sub>	430 950

(1) Add 'EX' or 'GR' to reference for expansion or fixed type respectively e.g. 01BCP160MEX.

Pedestals are common between expansion and fixed units.



Lubricating points are tapped 1/4" NPT.  
All grooved outer races must be clamped axially. Provision is made for this in Cooper cartridges.

**Roller Bearing**

Shaft diameter (d)		References (Note 1) Bearing only		D	C	B	Q	Mass (kg) (lb)
mm	inches	millimetres	inches					
360	15	01 B 360M	01 B 1500	520.70	140.0	76.2	486.0	86.0
380		01 B 380M		20.500	5.512	3.000	19.134	190.0
400	16	01 B 400M	01 B 1600	546.10	140.0	76.2	512.0	95.0
				21.508	5.512	3.000	20.157	210.0
420	17	01 B 420M	01 B 1700	571.50	140.0	76.2	538.0	104.0
				22.500	5.512	3.000	21.181	230.0
440	18	01 B 440M	01 B 1800	596.90	140.0	76.2	562.0	114.0
460		01 B 460M		23.500	5.512	3.000	22.125	250.0
480	19	01 B 480M	01 B 1900	628.65	144.0	81.0	594.0	128.0
				24.750	5.669	3.187	23.386	280.0
500	20	01 B 500M	01 B 2000	654.05	168.0	80.2	618.0	136.0
				25.750	6.614	3.156	24.331	300.0
530	21	01 B 530M	01 B 2100	692.15	168.0	81.0	650.0	164.0
				27.250	6.614	3.187	25.590	360.0
560	22	01 B 560M	01 B 2200	717.55	168.0	81.0	675.0	178.0
				28.250	6.614	3.187	26.578	390.0
-	23	-	01 B 2300	749.0	172.0	84.1	706.0	195.0
				29.500	6.772	3.312	27.797	430.0
600	24	01 B 600M	01 B 2400	774.70	172.0	84.1	732.0	210.0
				30.500	6.772	3.312	28.819	460.0

**Cartridge Unit**

Cartridge and standard seals	References (Note 1)	TL cartridge (without seals)	G	J	L (Note 3)	Available axial movement Note (2)	Mass (bearing + cartridge) (kg) (lb)
millimetres	inches						
01 C 360M	01 C 1500	01 C 20	571.50	98	260	-	212
01 C 380M			22 1/2	3 7/8	10 1/4	-	470
01 C 400M	01 C 1600	01 C 21	603.30	102	280	-	236
			23 3/4	4	11 1/8	-	520
01 C 420M	01 C 1700	01 C 22	628.70	102	292	-	254
			24 3/4	4	11 1/2	-	560
01 C 440M	01 C 1800	01 C 23	650.90	108	304	-	265
01 C 460M			25 5/8	4 1/4	12	-	580
01 C 480M	01 C 1900	01 C 24	682.60	108	304	-	290
			26 7/8	4 1/4	12	-	640
01 C 500M	01 C 2000	01 C 25	717.60	114	304	-	328
			28 1/4	4 1/2	12	-	720
01 C 530M	01 C 2100	01 C 26	755.70	114	330	-	390
			29 3/4	4 1/2	13	-	860
01 C 560M	01 C 2200	01 C 27	781.10	114	336	-	430
			30 3/4	4 1/2	13 1/4	-	950
-	01 C 2300	01 C 28	816.0	120	342	-	468
			32 1/8	4 3/4	13 1/2	-	1030
01 C 600M	01 C 2400	01 C 29	841.40	120	342	-	500
			33 1/8	4 3/4	13 1/2	-	1110

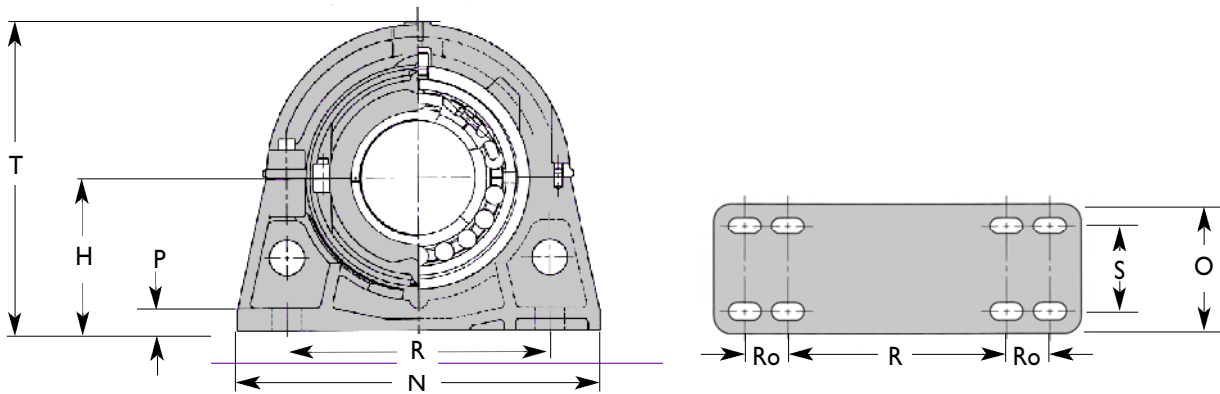
(1) Add 'EX' or 'GR' to reference for expansion type or fixed type respectively, e.g. (bearing) 01B420MEX (cartridge) 01C420MEX

For bearing and cartridge together insert 'C' into bearing reference, e.g. 01BC420MEX or 01BC2000GR

Chamfers  
Inner race: 3mm/1/8"  
Outer race: 3mm/1/8"

- (2) Offset from centreline to accommodate axial movement should not exceed half this amount.
- (3) Dimension differs for TL cartridge. Please refer to our technical department

For these dimensions please consult our technical department

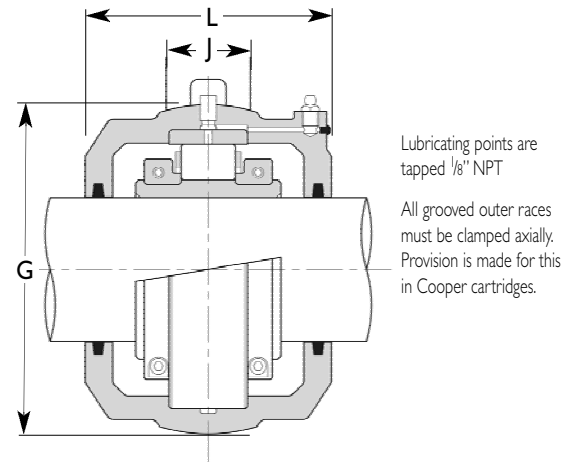
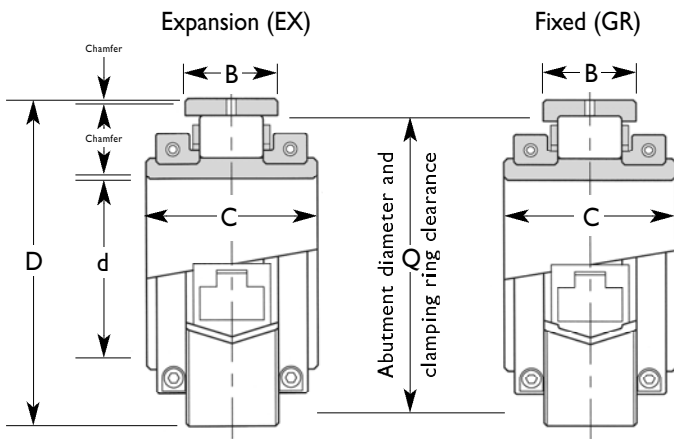


**Pedestals**

Shaft diameter (d)	References (Note 1)		Pedestal only	H	N	O	P	Bolts	R		Ro	S	T	Mass (BCP) (kg) (lb)	
	mm	inches							millimeters	inches					Min
360 380	15	01 BCP 360M 01 BCP 380M	01 BCP 1500	P20	397 15 <sup>5</sup> / <sub>8</sub>	902 35 <sup>1</sup> / <sub>2</sub>	254 10	60 2 <sup>3</sup> / <sub>8</sub>	4-M36 (1 <sup>1</sup> / <sub>2</sub> inch)	658 25 <sup>7</sup> / <sub>8</sub>	695 27 <sup>3</sup> / <sub>8</sub>	-	166 6 <sup>1</sup> / <sub>2</sub>	795 31 <sup>1</sup> / <sub>4</sub>	500 1100
400	16	01 BCP 400M	01 BCP 1600	P21	432 7	940 37	254 10	67 2 <sup>5</sup> / <sub>8</sub>	4-M36 (1 <sup>1</sup> / <sub>2</sub> inch)	705 27 <sup>3</sup> / <sub>4</sub>	743 29 <sup>1</sup> / <sub>4</sub>	-	166 6 <sup>1</sup> / <sub>2</sub>	865 34	545 1200
420	17	01 BCP 420M	01 BCP 1700	P22	445 17 <sup>1</sup> / <sub>2</sub>	966 38	254 10	67 2 <sup>5</sup> / <sub>8</sub>	4-M36 (1 <sup>1</sup> / <sub>2</sub> inch)	737 29	775 30 <sup>1</sup> / <sub>2</sub>	-	166 6 <sup>1</sup> / <sub>2</sub>	890 35	570 1250
440 460	18	01 BCP 440M 01 BCP 460M	01 BCP 1800	P23	464 18 <sup>1</sup> / <sub>4</sub>	1042 41	280 11	70 2 <sup>3</sup> / <sub>4</sub>	4-M42 (1 <sup>3</sup> / <sub>4</sub> inch)	768 30 <sup>1</sup> / <sub>4</sub>	806 31 <sup>3</sup> / <sub>4</sub>	-	190 7 <sup>1</sup> / <sub>2</sub>	925 36 <sup>1</sup> / <sub>2</sub>	635 1400
480	19	01 BCP 480M	01 BCP 1900	P24	483 19	1092 43	304 12	73 2 <sup>7</sup> / <sub>8</sub>	4-M42 (1 <sup>3</sup> / <sub>4</sub> inch)	797 31 <sup>3</sup> / <sub>8</sub>	835 32 <sup>7</sup> / <sub>8</sub>	-	188 7 <sup>3</sup> / <sub>8</sub>	965 38	750 1650
500	20	01 BCP 500M	01 BCP 2000	P25	489 19 <sup>1</sup> / <sub>4</sub>	1092 43	304 12	76 3	4-M42 (1 <sup>3</sup> / <sub>4</sub> inch)	826 32 <sup>1</sup> / <sub>2</sub>	864 34	-	216 8 <sup>1</sup> / <sub>2</sub>	980 38 <sup>1</sup> / <sub>2</sub>	770 1700
530	21	01 BCP 530M	01 BCP 2100	P26	533 21	1194 47	304 12	80 3 <sup>1</sup> / <sub>8</sub>	4-M42 (1 <sup>3</sup> / <sub>4</sub> inch)	886 34 <sup>7</sup> / <sub>8</sub>	924 36 <sup>3</sup> / <sub>8</sub>	-	206 8 <sup>1</sup> / <sub>8</sub>	1065 42	885 1950
560	22	01 BCP 560M	01 BCP 2200	P27	552 21 <sup>3</sup> / <sub>4</sub>	1220 48	304 12	83 3 <sup>1</sup> / <sub>4</sub>	4-M42 (1 <sup>3</sup> / <sub>4</sub> inch)	918 36 <sup>1</sup> / <sub>8</sub>	956 37 <sup>5</sup> / <sub>8</sub>	-	206 8 <sup>1</sup> / <sub>8</sub>	1110 43 <sup>1</sup> / <sub>2</sub>	1000 2200
-	23	-	01 BCP 2300	P28	578 22 <sup>3</sup> / <sub>4</sub>	1347 53	304 12	90 3 <sup>1</sup> / <sub>2</sub>	4-M36 (1 <sup>1</sup> / <sub>2</sub> inch)	857 33 <sup>3</sup> / <sub>4</sub>	896 35 <sup>1</sup> / <sub>4</sub>	102 4	220 8 <sup>3</sup> / <sub>8</sub>	1156 45 <sup>1</sup> / <sub>2</sub>	1100 2400
600	24	01 BCP 600M	01 BCP 2400	P29	597 23 <sup>1</sup> / <sub>2</sub>	1372 54	304 12	90 3 <sup>1</sup> / <sub>2</sub>	4-M36 (1 <sup>1</sup> / <sub>2</sub> inch)	889 35	927 36 <sup>1</sup> / <sub>2</sub>	105 4 <sup>1</sup> / <sub>8</sub>	220 8 <sup>3</sup> / <sub>8</sub>	1200 47	1220 2700

(1) Add 'EX' or 'GR' to reference for expansion or fixed type respectively  
e.g. 01BCP420MEX.

Pedestals are common between expansion and fixed units.



## Roller Bearing

Shaft diameter (d)	Reference (Note 1) Bearing only		D	C	B	Q	Mass (kg) (lb)	
	mm	inches						
50	1 <sup>15</sup> / <sub>16</sub>	02 B 50M	02 B 115	107.95	67.5	35.0	98.0	2
	2		02 B 200	4.250	2.656	1.375	3.859	4.5
60	2 <sup>3</sup> / <sub>16</sub>	02 B 60M	02 B 203	127.00	72.3	38.9	116	3
	2 <sup>1</sup> / <sub>4</sub>	02 B 65M	02 B 204	5.000	2.844	1.531	4.567	7
65	2 <sup>7</sup> / <sub>16</sub>		02 B 207					
	2 <sup>1</sup> / <sub>2</sub>		02 B 208					
70	2 <sup>11</sup> / <sub>16</sub>	02 B 70M	02 B 211	149.22	82.6	46.1	138	5
	2 <sup>3</sup> / <sub>4</sub>	02 B 75M	02 B 212	5.875	3.250	1.813	5.433	11
75	2 <sup>15</sup> / <sub>16</sub>		02 B 215					
	3		02 B 300					
80	3 <sup>1</sup> / <sub>16</sub>	02 B 80M	02 B 303	169.86	89.7	48.4	156	7
	3 <sup>1</sup> / <sub>4</sub>	02 B 85M	02 B 304	6.688	3.528	1.906	6.141	16
85	3 <sup>7</sup> / <sub>16</sub>	02 B 90M	02 B 307					
	3 <sup>1</sup> / <sub>2</sub>		02 B 308					
100	3 <sup>11</sup> / <sub>16</sub>	02 B 100M	02 B 311	193.68	92.1	51.6	178	9
	3 <sup>3</sup> / <sub>4</sub>	02 B 105M	02 B 312	7.625	3.622	2.031	7.008	19.8
105	3 <sup>15</sup> / <sub>16</sub>		02 B 315					
	4		02 B 400					
110	4 <sup>1</sup> / <sub>16</sub>	02 B 110M	02 B 403	228.60	100.0	57.2	202	16
	4 <sup>1</sup> / <sub>8</sub>	02 B 115M	02 B 407	9.000	3.938	2.250	7.953	35.3
115	4 <sup>1</sup> / <sub>2</sub>		02 B 408					
120	4 <sup>5</sup> / <sub>16</sub>	02 B 120M	02 B 415	254.00	114.3	63.5	224	20
	4 <sup>3</sup> / <sub>8</sub>	02 B 125M	02 B 500	10.000	4.500	2.500	8.819	44.1
125	4 <sup>7</sup> / <sub>16</sub>	02 B 130M						
	5							
140	5 <sup>1</sup> / <sub>16</sub>	02 B 140M	02 B 503	10.750	4.625	2.625	9.449	53
	5 <sup>1</sup> / <sub>8</sub>	02 B 145M	02 B 507	273.05	117.5	66.7	240	24
145	5 <sup>1</sup> / <sub>2</sub>		02 B 508					
150	5 <sup>15</sup> / <sub>16</sub>	02 B 150M	02 B 515	11.500	4.875	2.688	10.156	64
	6	02 B 155M	02 B 600	292.10	123.8	68.3	258	29

## Cartridge Unit

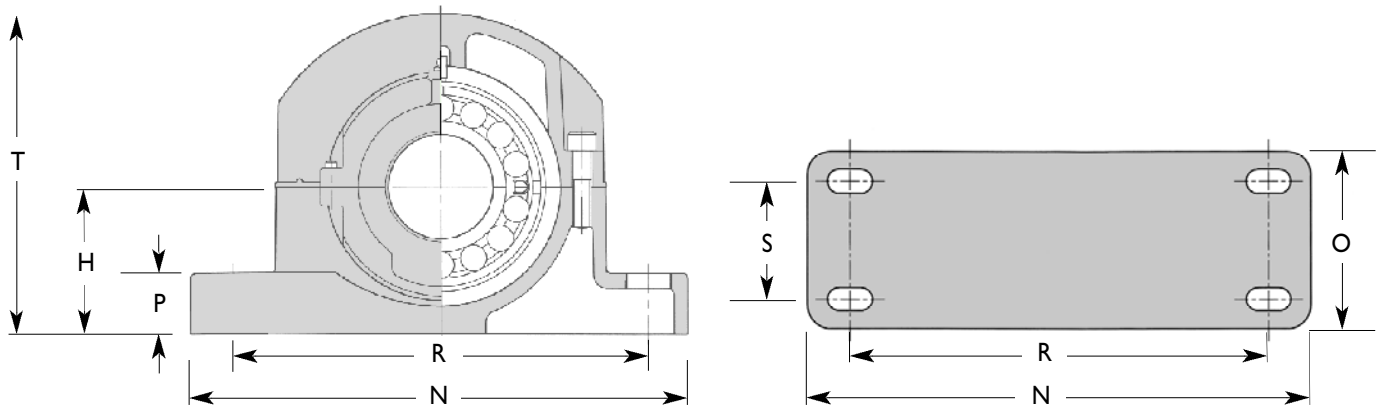
Cartridge and standard seals	References (Note 1) TL cartridge (without seals)	G	J	L (Note 3)	Available axial movement Note (2)	Mass (bearing + cartridge) (kg) (lb)	
02 C 50M	02 C 115 02 C 200	02 C 03	134.94 5 <sup>5</sup> / <sub>16</sub>	32 1 <sup>1</sup> / <sub>4</sub>	114 4 <sup>1</sup> / <sub>16</sub>	11.1 7 <sup>1</sup> / <sub>16</sub>	6 13
02 C 60M	02 C 203 02 C 204	02 C 04	157.16 6 <sup>3</sup> / <sub>16</sub>	38 1 <sup>1</sup> / <sub>2</sub>	126 4 <sup>15</sup> / <sub>16</sub>	11.9 15 <sup>15</sup> / <sub>32</sub>	10 22
02 C 65M	02 C 207 02 C 208						
02 C 70M	02 C 211 02 C 212	02 C 05	177.80 7	50 2	140 5 <sup>1</sup> / <sub>2</sub>	13.5 17 <sup>15</sup> / <sub>32</sub>	14 30.9
02 C 75M	02 C 215 02 C 300						
02 C 80M	02 C 303 02 C 304	02 C 06	203.20 8	50 2	154 6 <sup>1</sup> / <sub>16</sub>	14.3 9 <sup>1</sup> / <sub>16</sub>	17 37.5
02 C 85M	02 C 307 02 C 308						
02 C 90M							
02 C 100M	02 C 311 02 C 312	02 C 07	231.78 9 <sup>1</sup> / <sub>16</sub>	64 2 <sup>1</sup> / <sub>2</sub>	146 5 <sup>3</sup> / <sub>4</sub>	13.5 17 <sup>15</sup> / <sub>32</sub>	21 43.3
02 C 105M	02 C 315 02 C 400						
02 C 110M	02 C 403 02 C 407	02 C 08	266.70 10 <sup>1</sup> / <sub>2</sub>	76 3	162 6 <sup>3</sup> / <sub>16</sub>	13.5 17 <sup>15</sup> / <sub>32</sub>	35 77.2
02 C 115M	02 C 408						
02 C 120M	02 C 415 02 C 500	02 C 10	295.28 11 <sup>5</sup> / <sub>16</sub>	82 3 <sup>1</sup> / <sub>4</sub>	184 7 <sup>1</sup> / <sub>4</sub>	15.9 5 <sup>1</sup> / <sub>16</sub>	46 101.4
02 C 125M	02 C 500						
02 C 130M							
02 C 135M	02 C 503 02 C 507	02 C 30	323.85 12 <sup>3</sup> / <sub>4</sub>	90 3 <sup>1</sup> / <sub>2</sub>	188 7 <sup>3</sup> / <sub>16</sub>	15.9 5 <sup>1</sup> / <sub>16</sub>	57 125.7
02 C 140M	02 C 508						
02 C 150M	02 C 515	02 C 31	336.55 13 <sup>1</sup> / <sub>4</sub>	95 13 <sup>3</sup> / <sub>4</sub>	204 8	15.9 5 <sup>1</sup> / <sub>16</sub>	68 150
02 C 155M	02 C 600						

(1) Add 'EX' or 'GR' to reference for expansion type or fixed type respectively, e.g. (bearing) 02B60MEX (cartridge) 02C60MEX

For bearing and cartridge together insert 'C' into bearing reference, e.g. 02BC60MEX or 02BC508GR

Chamfers  
 Inner race: Sizes to 90mm/3<sup>1</sup>/<sub>2</sub>" : 1.5mm/1<sup>1</sup>/<sub>16</sub>", over 90mm/3<sup>1</sup>/<sub>2</sub>" : 2.5mm/3<sup>1</sup>/<sub>32</sub>"  
 Outer race: Sizes to 105mm/4" : 1.0mm/1<sup>1</sup>/<sub>32</sub>", over 105mm/4" : 1.5mm/1<sup>1</sup>/<sub>16</sub>"

(2) Offset from centreline to accommodate axial movement should not exceed half this amount.

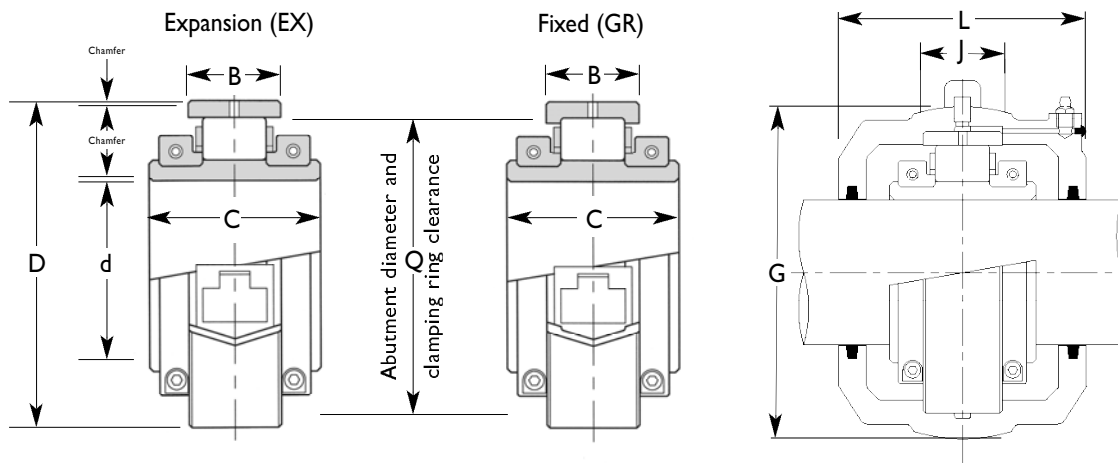


**Pedestals**

Shaft diameter (d)	References (Note 1)	Pedestal unit complete	Pedestal only	H	N	*O	P	Bolts	R		S	T	Mass (BCP)
									mm	inches			
50	02 BCP 115 02 BCP 200	02 BCP 50M	P03	80 3 <sup>1</sup> / <sub>2</sub>	280 11	70 *2 <sup>3</sup> / <sub>4</sub>	32 1 <sup>1</sup> / <sub>4</sub>	2-M16 (5/8 inch)	226 8 <sup>7</sup> / <sub>8</sub>	242 9 <sup>1</sup> / <sub>2</sub>	-	180 7	12 26.4
60 65	02 BCP 203 02 BCP 204 02 BCP 207 02 BCP 208	02 BCP 60M 02 BCP 65M	P04	95 3 <sup>3</sup> / <sub>4</sub>	330 13	76 *3	38 1 <sup>1</sup> / <sub>2</sub>	2-M20 (3/4 inch)	260 10 <sup>1</sup> / <sub>4</sub>	280 11	-	208 8 <sup>1</sup> / <sub>8</sub>	18 39.6
70 75	02 BCP 211 02 BCP 212 02 BCP 215 02 BCP 300	02 BCP 70M 02 BCP 75M	P05	112 4 <sup>1</sup> / <sub>2</sub>	380 15	90 *3 <sup>5</sup> / <sub>4</sub>	44 1 <sup>3</sup> / <sub>4</sub>	2-M24 (7/8 inch)	312 12 <sup>1</sup> / <sub>2</sub>	328 12 <sup>2</sup> / <sub>2</sub>	-	252 10	30.8 67.8
80 85 90	02 BCP 303 02 BCP 304 02 BCP 307 02 BCP 308	02 BCP 80M 02 BCP 85M 02 BCP 90M	P06	125 4 <sup>5</sup> / <sub>16</sub>	420 16 <sup>1</sup> / <sub>2</sub>	102 *4 <sup>1</sup> / <sub>6</sub>	52 2	2-M24 (7/8 inch)	342 13 <sup>1</sup> / <sub>2</sub>	366 14 <sup>1</sup> / <sub>2</sub>	-	272 10 <sup>3</sup> / <sub>4</sub>	39.2 86.2
100 105	02 BCP 311 02 BCP 312 02 BCP 315 02 BCP 400	02 BCP 100M 02 BCP 105M	P07	143 5 <sup>5</sup> / <sub>8</sub>	466 18 <sup>3</sup> / <sub>4</sub>	120 *4 <sup>2</sup> / <sub>2</sub>	60 2 <sup>1</sup> / <sub>8</sub>	2-M24 (7/8 inch)	374 14 <sup>2</sup> / <sub>2</sub>	410.0 16 <sup>1</sup> / <sub>4</sub>	-	314 12 <sup>3</sup> / <sub>8</sub>	47.6 104.8
110 115	02 BCP 403 02 BCP 407 02 BCP 408	02 BCP 110M 02 BCP 115M	P08	162 6 <sup>1</sup> / <sub>8</sub>	508 20	178 7	38 1 <sup>1</sup> / <sub>2</sub>	4-M24 (7/8 inch)	438 17 <sup>1</sup> / <sub>4</sub>	462 18 <sup>1</sup> / <sub>16</sub>	120 4 <sup>3</sup> / <sub>4</sub>	372 14 <sup>3</sup> / <sub>4</sub>	80 176
120 125 130	02 BCP 415 02 BCP 500	02 BCP 120M 02 BCP 125M 02 BCP 130M	P10	181 7 <sup>1</sup> / <sub>8</sub>	558 22	178.0 7	40 1 <sup>5</sup> / <sub>8</sub>	4-M24 (7/8 inch)	484 19	508 20	120 4 <sup>3</sup> / <sub>4</sub>	415 16 <sup>1</sup> / <sub>4</sub>	101.5 223
140 145	02 BCP 503 02 BCP 507 02 BCP 508	02 BCP 140M 02 BCP 145M	P30	203 8	610 24	178.0 7	50 2	4-M24 (1 inch)	533 21	559 22	120 4 <sup>3</sup> / <sub>4</sub>	460 18	132.3 291
150 155	02 BCP 515 02 BCP 600	02 BCP 150M 02 BCP 155M	P31	210 8 <sup>1</sup> / <sub>4</sub>	636 25	204 8	50 2	4-M24 (1 inch)	546 21 <sup>1</sup> / <sub>2</sub>	572 22 <sup>1</sup> / <sub>2</sub>	127 5	470 18 <sup>1</sup> / <sub>2</sub>	154.5 340

(1) Add 'EX' or 'GR' to reference for expansion or fixed type respectively  
e.g. 02BCP60MEX.

Pedestals are common between expansion and fixed units.



Lubricating points are tapped 1/8" NPT up to 170mm/6 1/2".  
 Lubricating points of 180mm/6 15/16" bore size and over are tapped 1/4" NPT.  
 All grooved outer races must be clamped axially. Provision is made for this in Cooper cartridges.

**Roller Bearing**

Shaft diameter (d)		References (Note 1)		D	C	B	Q	Mass (kg) (lb)
mm	inches	Bearing only (millimeters)	inches					
160	6 <sup>1</sup> / <sub>16</sub>	02 B 160M	02 B 607	317.50	140	83.3	280	39
165	6 1/2	02 B 165M	02 B 608	12.500	5.500	3.281	11.024	85
180	6 <sup>15</sup> / <sub>16</sub>	02 B 180M	02 B 615	330.20	140	83.3	294	45
	7		02 B 700	13.000	5.500	3.281	11.575	100
190	7 <sup>15</sup> / <sub>16</sub>	02 B 190M	02 B 715	368.30	156	90.5	328	59
195	8	02 B 195M	02 B 800	14.500	6.141	3.563	12.913	130
220	9	02 B 220M	02 B 900	393.70	163	90.5	354	68
				15.500	6.402	3.563	13.938	150
240	10	02 B 240M	02 B 1000	431.80	170	96.8	388	77
260		02 B 260M		17.000	6.668	3.813	15.276	170
280	11	02 B 280M	02 B 1100	463.55	186	101.6	420	86
				18.250	7.323	4.000	16.535	190
300	12	02 B 300M	02 B 1200	495.30	193	103.2	448	123
				19.500	7.594	4.063	17.638	270
320	13	02 B 320M	02 B 1300	527.05	192	106.4	478	150
				20.750	7.559	4.188	18.819	330
340	14	02 B 340M	02 B 1400	565.15	200	115.9	514	182
360		02 B 360M		22.250	7.875	4.563	20.236	400

**Cartridge Unit**

Cartridge and standard seals (millimeters)	References (Note 1) TL cartridge (without seals) (inches)	G	J	L (Note 3)	Available axial movement (Note 1)	Mass (bearing + cartridge) (kg) (lb)	
							02 C 160M
02 C 170M	02 C 608		14 1/2	3 3/4	8 1/8	I	210
02 C 180M	02 C 615	02 C 33	381.0	95	222	25.4	111
	02 C 700		15	3 3/4	8 3/4	I	244
02 C 190M	02 C 715	02 C 34	425.5	105	235	28.6	143
02 C 200M	02 C 800		16 3/4	4 1/8	9 1/4	1 1/8	314
02 C 220M	02 C 900	02 C 35	457.2	110	242	28.6	166
			18	4 7/8	9 1/2	1 1/8	365
02 C 240M	02 C 1000	02 C 36	495.3	118	248	29.0	182
02 C 260M			19 1/2	4 7/8	9 5/8	1 5/8	400
02 C 280M	02 C 1100	02 C 37	527.1	130	264	29.0	217
			20 3/4	5 1/8	9 3/4	1 5/8	478
02 C 300M	02 C 1200	02 C 38	552.5	128	268	31.0	252
			21 3/4	5	10 9/16	1 7/8	556
02 C 320M	02 C 1300	02 C 39	587.4	128	248	-	322
			23 1/8	5	11 3/4	-	710
02 C 340M	02 C 1400	02 C 40	628.7	146	305	-	368
02 C 360M			24 3/4	5 3/4	12	-	810

(1) Add 'EX' or 'GR' to reference for expansion type or fixed type respectively, e.g. (bearing) 02B160MEX (cartridge) 02C160MEX

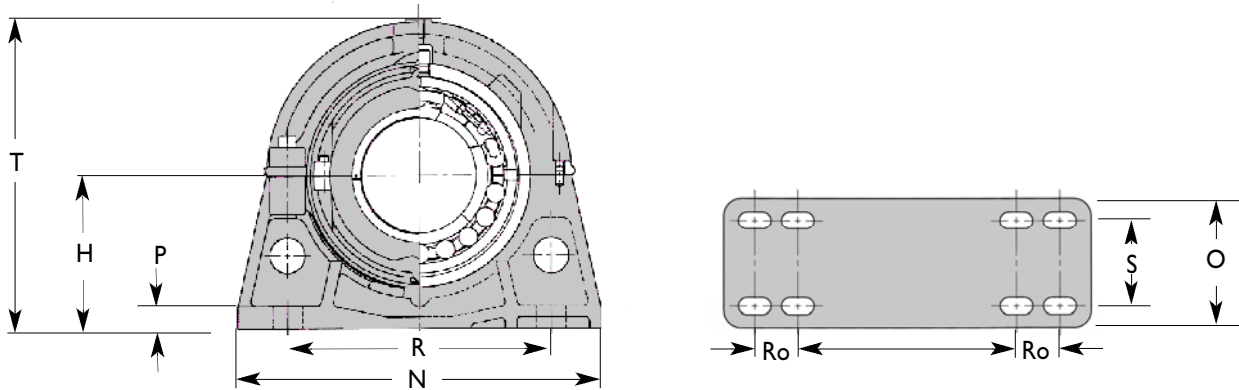
For bearing and cartridge together insert 'C' into bearing reference, e.g. 02BC160MEX or 02BC800GR

Chamfers  
 Inner race: 3mm/1/8"  
 Outer race: 3mm/1/8"

- (2) Offset from centerline to accommodate axial movement should not exceed half this amount.
- (3) Dimension differs for TL cartridge. Please refer to our technical department.

For these dimensions please consult our technical department



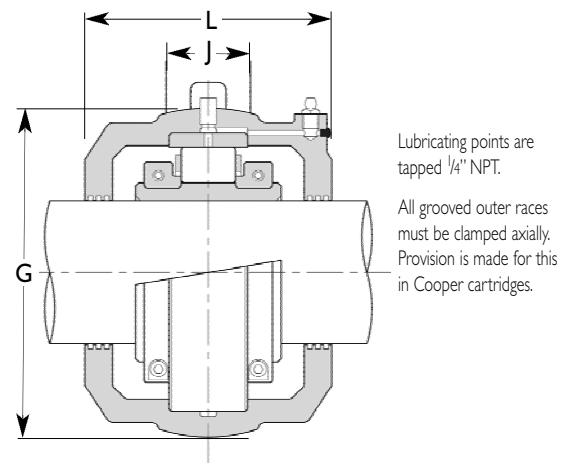
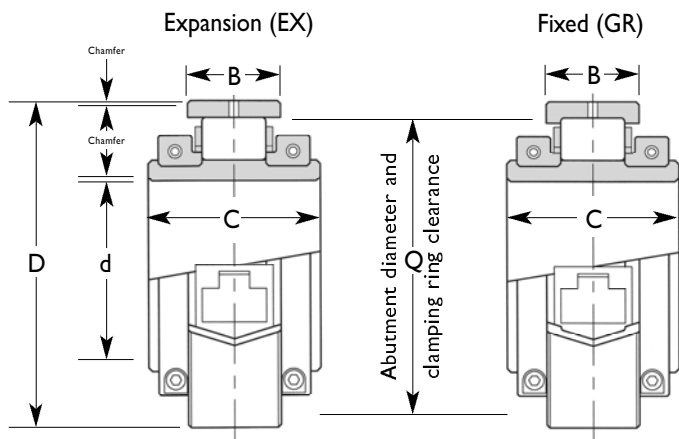


**Pedestals**

Shaft diameter (d)	References (Note 1)		Pedestal	H	N	O	P	Bolts	R		Ro	S	T	Mass (BCP) (kg) (lb)
	mm	inches							millimeters	inches				
160	6 <sup>7</sup> / <sub>16</sub>	02 BCP 160M	02 BCP 607	267	596	242	44	4-M30	429	467	-	172	535	209
170	6 <sup>1</sup> / <sub>2</sub>	02 BCP 170M	02 BCP 608	10 <sup>1</sup> / <sub>2</sub>	23 <sup>1</sup> / <sub>2</sub>	9 <sup>1</sup> / <sub>2</sub>	1 <sup>3</sup> / <sub>4</sub>	(4-1 <sup>1</sup> / <sub>2</sub> inch)	16 <sup>7</sup> / <sub>8</sub>	18 <sup>3</sup> / <sub>8</sub>	-	6 <sup>3</sup> / <sub>4</sub>	21	460
180	6 <sup>15</sup> / <sub>16</sub>	02 BCP 180M	02 BCP 615	273	636	242	44	4-M30	438	476	-	166	545	245
200	7 <sup>15</sup> / <sub>16</sub>	02 BCP 190M	02 BCP 700	10 <sup>3</sup> / <sub>4</sub>	25	9 <sup>1</sup> / <sub>2</sub>	1 <sup>3</sup> / <sub>4</sub>	(4-1 <sup>1</sup> / <sub>2</sub> inch)	17 <sup>1</sup> / <sub>4</sub>	18 <sup>3</sup> / <sub>4</sub>	-	6 <sup>1</sup> / <sub>2</sub>	21 <sup>1</sup> / <sub>2</sub>	540
190	7 <sup>15</sup> / <sub>16</sub>	02 BCP 190M	02 BCP 715	305	686	266	50	4-M30	489	527	-	190	610	331
200	8	02 BCP 200M	02 BCP 800	12	27	10 <sup>1</sup> / <sub>2</sub>	2	(4-1 <sup>1</sup> / <sub>2</sub> inch)	19 <sup>1</sup> / <sub>4</sub>	20 <sup>3</sup> / <sub>4</sub>	-	7 <sup>1</sup> / <sub>2</sub>	24	730
220	9	02 BCP 220M	02 BCP 900	324	750	280	50	4-M36	530	568	-	190	650	390
240	9 <sup>1</sup> / <sub>2</sub>	02 BCP 220M	02 BCP 900	12 <sup>3</sup> / <sub>4</sub>	29 <sup>1</sup> / <sub>2</sub>	11	2	(4-1 <sup>1</sup> / <sub>2</sub> inch)	20 <sup>7</sup> / <sub>8</sub>	22 <sup>3</sup> / <sub>8</sub>	-	7 <sup>1</sup> / <sub>2</sub>	25 <sup>1</sup> / <sub>2</sub>	860
240	10	02 BCP 240M	02 BCP 1000	356	812	292	54	4-M36	578	616	-	204	710	454
260	10 <sup>1</sup> / <sub>2</sub>	02 BCP 260M	02 BCP 1000	14	32	11 <sup>1</sup> / <sub>2</sub>	2 <sup>1</sup> / <sub>8</sub>	(4-1 <sup>1</sup> / <sub>2</sub> inch)	22 <sup>3</sup> / <sub>4</sub>	24 <sup>1</sup> / <sub>4</sub>	-	8	28	1000
280	11	02 BCP 280M	02 BCP 1100	378	914	330	60	4-M30	514	552	102	254	760	545
300	11 <sup>1</sup> / <sub>2</sub>	02 BCP 280M	02 BCP 1100	14 <sup>7</sup> / <sub>8</sub>	36	13	2 <sup>3</sup> / <sub>8</sub>	(8-1 <sup>1</sup> / <sub>2</sub> inch)	20 <sup>1</sup> / <sub>4</sub>	21 <sup>3</sup> / <sub>4</sub>	4	10	30	1200
300	12	02 BCP 300M	02 BCP 1200	394	958	330	60	4-M30	546	584	102	254	790	625
320	12 <sup>1</sup> / <sub>2</sub>	02 BCP 300M	02 BCP 1200	15 <sup>1</sup> / <sub>2</sub>	37 <sup>3</sup> / <sub>4</sub>	13	2 <sup>3</sup> / <sub>8</sub>	(8-1 <sup>1</sup> / <sub>2</sub> inch)	21 <sup>1</sup> / <sub>2</sub>	23	4	10	31	1380
320	13	02 BCP 320M	02 BCP 1300	419	1016	292	64	4-M30	591	629	102	210	840	705
340	13 <sup>1</sup> / <sub>2</sub>	02 BCP 320M	02 BCP 1300	16 <sup>1</sup> / <sub>2</sub>	40	11 <sup>1</sup> / <sub>2</sub>	2 <sup>1</sup> / <sub>2</sub>	(8-1 <sup>1</sup> / <sub>2</sub> inch)	23 <sup>1</sup> / <sub>4</sub>	24 <sup>3</sup> / <sub>4</sub>	4	8 <sup>1</sup> / <sub>4</sub>	33	1550
340	14	02 BCP 340M	02 BCP 1400	451	1092	368	67	4-M36	641	679	102	280	900	840
360	14 <sup>1</sup> / <sub>2</sub>	02 BCP 360M	02 BCP 1400	17 <sup>3</sup> / <sub>4</sub>	43	14 <sup>1</sup> / <sub>2</sub>	2 <sup>5</sup> / <sub>8</sub>	(8-1 <sup>1</sup> / <sub>2</sub> inch)	25 <sup>1</sup> / <sub>4</sub>	26 <sup>3</sup> / <sub>4</sub>	4	11	35 <sup>1</sup> / <sub>2</sub>	1850

(1) Add 'EX' or 'GR' to reference for expansion or fixed type respectively e.g. 02BCP160MEX.

Pedestals are common between expansion and fixed units.



**Roller Bearing**

Shaft diameter (d)		References (Note 1)		D	C	B	Q	Mass (kg) (lb)
mm	inches	Bearing only millimeters	Bearing only inches					
380	15	02 B 380M	02 B 1500	584.20 23.000	200 7.875	111.1 4.375	536 21.024	186 410
400	16	02 B 400M	02 B 1600	615.95 24.250	200 7.875	115.9 4.563	566 22.205	209 46
420	17	02 B 420M	02 B 1700	647.70 25.500	200 7.875	119.1 4.688	596 23.386	241 530
440	18	02 B 440M	02 B 1800	666.75	200	115.9	618	250
460		02 B 460M		26.250				
480	19	02 B 480M	02 B 1900	698.50 27.500	223 8.780	119.1 4.688	648 25.433	263 580
500	20	02 B 500M	02 B 2000	717.55 28.250	226 8.898	115.9 4.563	670 26.220	272 600
530	21	02 B 530M	02 B 2100	762.00 30.000	229 9.016	119.1 4.688	710 27.638	309 680
560	22	02 B 560M	02 B 2200	793.75 31.250	233 9.172	122.2 4.813	738 28.819	336 740
-	23	-	02 B 2300	813 32.000	232 9.134	119.1 4.688	754 29.685	341 750
600	24	02 B 600M	02 B 2400	838.20 33.000	214 8.425	119.1 4.688	786 30.630	381 840

**Cartridge Unit**

Cartridge, and standard seals millimeters	References (Note 1) inches	TL cartridge (without seals)	G	J	L (Note 3)	Available axial movement Note (2)	Mass (bearing + cartridge) (kg) (lb)
02 C 380M	02 C 1500	02 C 41	647.7 25 1/2	146 5 3/4	305 12	-	395 870
02 C 400M	02 C 1600	02 C 42	685.8 27	146 5 3/4	324 12 3/4	-	463 1020
02 C 420M	02 C 1700	02 C 43	717.6 28 1/4	146 5 3/4	324 12 3/4	-	505 1110
02 C 440M	02 C 1800	02 C 44	733.4	146	324	-	515
02 C 460M			28 7/8				
02 C 480M	02 C 1900	02 C 45	762.0 30	146 5 3/4	368 14 1/2	-	535 1180
02 C 500M	02 C 2000	02 C 46	787.4 31	146 5 3/4	368 14 1/2	-	595 1310
02 C 530M	02 C 2100	02 C 47	831.9 32 3/4	150 5 7/8	368 14 1/2	-	660 1450
02 C 560M	02 C 2200	02 C 48	866.8 34 1/8	152 6	374 14 3/4	-	715 1570
-	02 C 2300	02 C 49	883 34 3/4	152 6	374 14 3/4	-	727 1600
02 C 600M	02 C 2400	02 C 50	914.4 36	152 6	388 15 1/16	-	835 1840

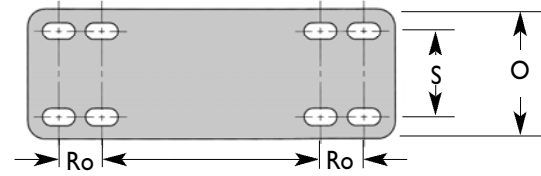
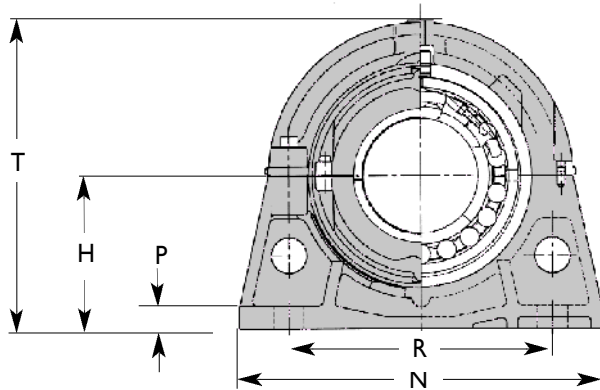
(1) Add 'EX' or 'GR' to reference for expansion type or fixed type respectively, e.g. (bearing) 02B420MEX (cartridge) 02C420EX

For bearing and cartridge together insert 'C' into bearing reference, e.g. 02BC420MEX or 02BC2000GR

Chamfers  
Inner race: 3mm/1/8"  
Outer race: 3mm/1/8"

- (2) Offset from centerline to accommodate axial movement should not exceed half this amount.
- (3) Dimension differs for TL cartridge. Please refer to our technical department.

For these dimensions please consult our technical department.

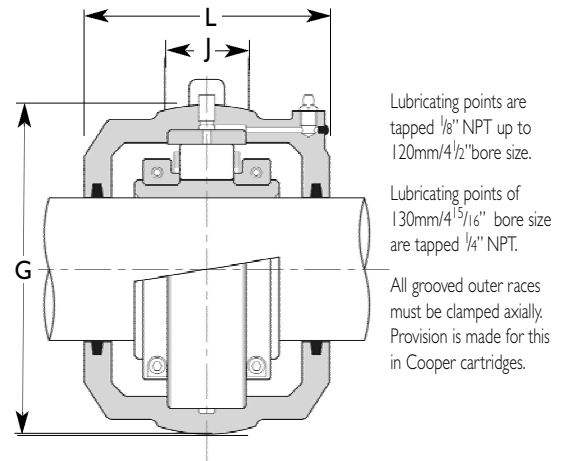
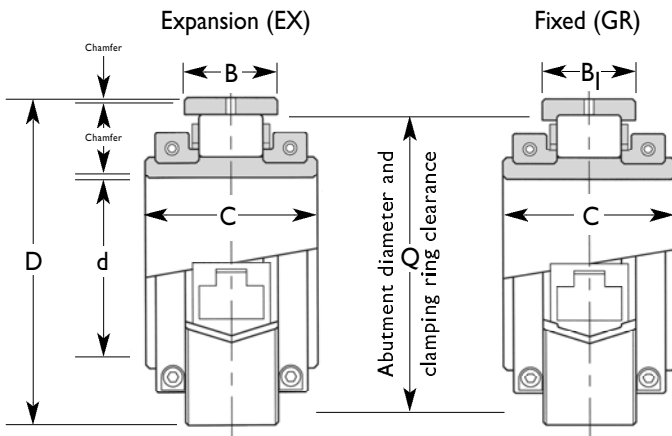


**Pedestals**

Shaft diameter (d)	References (Note 1)	Pedestal unit complete	Pedestal only	H	N	O	P	Bolts	R		Ro	S	T	Mass (BCP)
									mm	inches				
380	02 BCP 380M	02 BCP 1500	P41	464 18 <sup>7</sup> / <sub>32</sub>	1092 43	368 14 <sup>1</sup> / <sub>2</sub>	67 2 <sup>5</sup> / <sub>8</sub>	8-M36 (1 <sup>1</sup> / <sub>2</sub> inch)	664 26 <sup>1</sup> / <sub>8</sub>	702 27 <sup>5</sup> / <sub>8</sub>	102 4	280 11	925 36 <sup>1</sup> / <sub>2</sub>	885 1950
400	02 BCP 400M	02 BCP 1600	P42	495 19 <sup>1</sup> / <sub>2</sub>	1168 46	368 14 <sup>1</sup> / <sub>2</sub>	70 2 <sup>3</sup> / <sub>4</sub>	8-M36 (1 <sup>1</sup> / <sub>2</sub> inch)	711 28	749 29 <sup>1</sup> / <sub>2</sub>	102 4	280 11	990 39	1000 2200
420	02 BCP 420M	02 BCP 1700	P43	514 20 <sup>7</sup> / <sub>32</sub>	1194 47	368 14 <sup>1</sup> / <sub>2</sub>	70 2 <sup>3</sup> / <sub>4</sub>	8-M36 (1 <sup>1</sup> / <sub>2</sub> inch)	749 29 <sup>1</sup> / <sub>2</sub>	787 31	102 4	280 11	1030 40 <sup>1</sup> / <sub>2</sub>	1090 2400
440	02 BCP 440M	02 BCP 1800	P44	533 21	1244 49	368 14 <sup>1</sup> / <sub>2</sub>	73 2 <sup>7</sup> / <sub>8</sub>	8-M36 (1 <sup>1</sup> / <sub>2</sub> inch)	768 30 <sup>1</sup> / <sub>4</sub>	806 31 <sup>3</sup> / <sub>4</sub>	105 4 <sup>1</sup> / <sub>8</sub>	280 11	1070 42	1135 2500
460	02 BCP 460M			552 21 <sup>3</sup> / <sub>4</sub>	1270 50	368 14 <sup>1</sup> / <sub>2</sub>	76 3	8-M36 (1 <sup>1</sup> / <sub>2</sub> inch)	794 31 <sup>1</sup> / <sub>4</sub>	832 32 <sup>3</sup> / <sub>4</sub>	114 4 <sup>1</sup> / <sub>2</sub>	280 11	1110 43 <sup>1</sup> / <sub>2</sub>	1225 2700
500	02 BCP 500M	02 BCP 2000	P46	572 22 <sup>17</sup> / <sub>32</sub>	1296 51	368 14 <sup>1</sup> / <sub>2</sub>	80 3 <sup>1</sup> / <sub>8</sub>	8-M36 (1 <sup>1</sup> / <sub>2</sub> inch)	826 32 <sup>1</sup> / <sub>2</sub>	864 34	114 4 <sup>1</sup> / <sub>2</sub>	280 11	1145 45	1340 2950
530	02 BCP 530M	02 BCP 2100	P47	591 23 <sup>9</sup> / <sub>32</sub>	1398 55	368 14 <sup>1</sup> / <sub>2</sub>	83 3 <sup>1</sup> / <sub>4</sub>	8-M36 (1 <sup>1</sup> / <sub>2</sub> inch)	870 34 <sup>1</sup> / <sub>4</sub>	908 35 <sup>3</sup> / <sub>4</sub>	114 4 <sup>1</sup> / <sub>2</sub>	280 11	1180 46 <sup>1</sup> / <sub>2</sub>	1565 3450
560	02 BCP 560M	02 BCP 2200	P48	616 24 <sup>1</sup> / <sub>4</sub>	1422 56	382 15	86 3 <sup>3</sup> / <sub>8</sub>	8-M42 (1 <sup>3</sup> / <sub>4</sub> inch)	905 35 <sup>5</sup> / <sub>8</sub>	956 37 <sup>5</sup> / <sub>8</sub>	114 4 <sup>1</sup> / <sub>2</sub>	280 11	1230 48 <sup>1</sup> / <sub>2</sub>	1680 3700
-	-	02 BCP 2300	P49	635 25	1448 57	382 15	89 3 <sup>1</sup> / <sub>2</sub>	8-M42 (1 <sup>3</sup> / <sub>4</sub> inch)	933 36 <sup>3</sup> / <sub>4</sub>	984 38 <sup>3</sup> / <sub>4</sub>	114 4 <sup>1</sup> / <sub>2</sub>	280 11	1270 50	1727 3800
600	02 BCP 600M	02 BCP 2400	P50	673 26 <sup>1</sup> / <sub>2</sub>	1524 60	382 15	92 3 <sup>5</sup> / <sub>8</sub>	8-M42 (1 <sup>3</sup> / <sub>4</sub> inch)	984 38 <sup>3</sup> / <sub>4</sub>	1035 40 <sup>3</sup> / <sub>4</sub>	114 4 <sup>1</sup> / <sub>2</sub>	280 11	1345 53	1885 4150

(1) Add 'EX' or 'GR' to reference for expansion or fixed type respectively  
e.g. 02BCP420MEX.

Pedestals are common between expansion and fixed units.



**Roller Bearing**

Shaft diameter (d)		References (Note 1) Bearing only		D	C	B (B <sub>1</sub> ) (Note 4)	Q	Mass (kg) (lb)
mm	inches	millimeters	inches					
100	3 <sup>15</sup> / <sub>16</sub> 4	03 B 100M	03 B 315 03 B 400	254.00 10.000	136 5.354	84.2 3.313	219 8.622	30 66
110	4 <sup>7</sup> / <sub>16</sub>	03 B 110M	03 B 407	266.70	147	87.3	232	36
120	4 1/2	03 B 120M	03 B 408	10.500	5.787	3.438	9.134	79
130	4 <sup>15</sup> / <sub>16</sub> 5	03 B 130M	03 B 415 03 B 500	279.40 11.000	140 5.500	73.1 2.875 (84.2) (3.313)	245 9.646	36 80
140	5 <sup>7</sup> / <sub>16</sub> 5 1/2	03 B 140M	03 B 507 03 B 508	304.80 12.000	147 5.787	79.4 3.125 (90.5) (3.563)	270 10.630	44 97 90.5
150	5 <sup>15</sup> / <sub>16</sub> 6	03 B 150M	03 B 515 03 B 600	330.20 13.000	160 6.299	81.0 3.188 (96.9) (3.813)	292 11.496	57 125
160	6 <sup>15</sup> / <sub>16</sub>	03 B 160M	03 B 607	355.60	171	103.2	308	72
170	6 1/2	03 B 170M	03 B 608	14.000	6.720	4.063	12.125	158
180	6 <sup>15</sup> / <sub>16</sub> 7	03 B 615M 03 B 700M	03 B 180	374.65 14.750	178 7.008	92.1 3.625 (108.8) (4.280)	326 12.835	79 175
190	7 <sup>15</sup> / <sub>16</sub>	03 B 715M	03 B 190	419.10	191	97.7	366	105
200	8	03 B 800M	03 B 200	16.500	7.520	3.844 (118.3) (4.656)	14.409	232
220	9	03 B 220M	03 B 900	469.90 18.500	212 8.346	109.6 4.311 (131.8) (5.185)	410 16.141	145 320
240	10	03 B 240M	03 B 1000	482.60	211	105.6	430	150
260		03 B 260M		19.000	8.307	4.156 (124.6) (4.906)	16.929	330

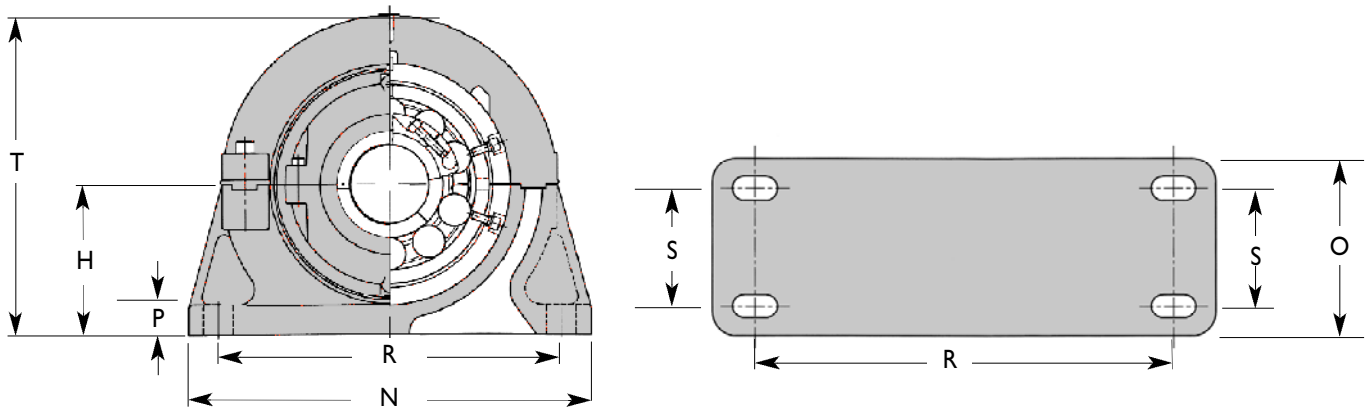
**Cartridge Unit**

Cartridge and standard seals	References (Note 1)	TL cartridge (without seals)	G	J	L (Note 3)	Available movement Note (2)	Mass (bearing + cartridge) (kg) (lb)
millimeters	inches						
03 C 100M	03 C 315 03 C 400	03 C 54	308.00 12 1/8	95 3 3/4	200 7 7/8	29.4 1 1/2	71 156
03 C 110M	03 C 407		323.85	102	210	29.4	82
03 C 120M	03 C 408	03 C 55	12 3/4	4	8 1/4	1 1/2	181
03 C 130M	03 C 415 03 C 500	03 C 56	323.85 12 3/4	102 4	214 8 1/8	19.1 3/4	84 185
03 C 140M	03 C 507 03 C 508	03 C 57	355.60 14	108 4 1/4	216 8 1/2	19.1 3/4	96 211
03 C 150M	03 C 515 03 C 600	03 C 58	393.70 15 1/2	114 4 1/2	232 9 1/8	16.7 2 1/2	127 280
03 C 160M	03 C 607 03 C 608	03 C 59	422.30 16 5/8	120 4 3/4	244 9 5/8	31.8 1 1/4	153 338
03 C 180M	03 C 615 03 C 700	03 C 60	431.80 17	132 5 1/4	254 10	16.7 2 1/2	166 365
03 C 190M	03 C 715		489.00	146	270	16.7	214
03 C 200M	03 C 800	03 C 61	19 1/4	5 3/4	10 5/8	2 1/2	472
03 C 220M	03 C 900	03 C 62	546.10 21 1/2	165 6 1/2	298 11 3/4	19.1 3/4	300 660
03 C 240M	03 C 1000	03 C 63	558.80 22	165 6 1/2	298 11 3/4	15.1 1 9/16	311 685

(1) Add 'EX' or 'GR' to reference for expansion type or fixed type respectively, e.g. (bearing) 03B160MEX (cartridge) 03C160EX  
For bearing and cartridge together insert 'C' into bearing reference, e.g. 03BC160MEX or 03BC508GR

Chamfers  
Inner race: Sizes to 150mm/6": 2.5mm/3/32", over 150mm/6": 3mm/1/8"  
Outer race: 3mm/1/8"

(2) Offset from centerline to accommodate axial movement should not exceed half this amount.  
(3) Dimension differs for TL cartridge. Please refer to our technical department.  
(4) Where only one dimension is given, this applies to both B and B<sub>1</sub>.

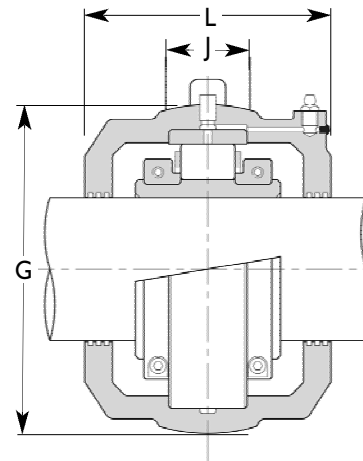
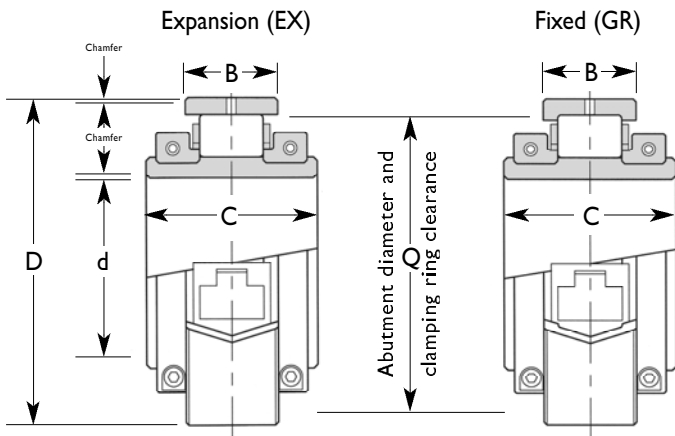


**Pedestals - 4 Bolt**

Shaft diameter (d)	References (Note 1)		Pedestal only	H	N	O	P	Bolts	R		S	T	Mass (BCP) (kg) (lb)	
	mm	inches							Pedestal unit complete inches	Min				Max
100	3 <sup>15</sup> / <sub>16</sub>	03 BCP 100M	03 BCP 315 03 BCP 400	P54	191 7 <sup>17</sup> / <sub>32</sub>	514 20 <sup>1</sup> / <sub>4</sub>	152 6	38 1 <sup>1</sup> / <sub>2</sub>	4-M24 (7/8 inch)	425 16 <sup>3</sup> / <sub>4</sub>	451 17 <sup>3</sup> / <sub>4</sub>	82 3 <sup>3</sup> / <sub>4</sub>	405 16	145 320
110 120	4 <sup>7</sup> / <sub>16</sub> 4 <sup>1</sup> / <sub>2</sub>	03 BCP 110M 03 BCP 120M	03 BCP 407 03 BCP 408	P55	197 7 <sup>7</sup> / <sub>8</sub>	534 21	166 6 <sup>1</sup> / <sub>2</sub>	38 1 <sup>1</sup> / <sub>2</sub>	4-M24 (1 inch)	445 17 <sup>1</sup> / <sub>2</sub>	470 18 <sup>1</sup> / <sub>2</sub>	88 3 <sup>1</sup> / <sub>2</sub>	425 16 <sup>3</sup> / <sub>4</sub>	168 370
130	4 <sup>15</sup> / <sub>16</sub> 5	03 BCP 130M	03 BCP 415 03 BCP 500	P56	203 8	546 21 <sup>1</sup> / <sub>2</sub>	166 6 <sup>1</sup> / <sub>2</sub>	48 1 <sup>7</sup> / <sub>8</sub>	4-M24 (1 inch)	457 18	482- 19	96 3 <sup>3</sup> / <sub>4</sub>	435 17 <sup>1</sup> / <sub>8</sub>	182 400
140	5 <sup>7</sup> / <sub>16</sub> 5 <sup>1</sup> / <sub>2</sub>	03 BCP 140M	03 BCP 507 03 BCP 508	P57	229 9	622 24 <sup>1</sup> / <sub>2</sub>	178 7	54 2 <sup>1</sup> / <sub>8</sub>	4-M30 (1 <sup>1</sup> / <sub>4</sub> inch)	495 19 <sup>1</sup> / <sub>2</sub>	533 21	102 4	485 19	222 490
150	5 <sup>15</sup> / <sub>16</sub> 6	03 BCP 150M	03 BCP 515 03 BCP 600	P58	254 10	666 26 <sup>1</sup> / <sub>4</sub>	204 8	57 2 <sup>1</sup> / <sub>4</sub>	4-M30 (1 <sup>1</sup> / <sub>4</sub> inch)	540 21 <sup>1</sup> / <sub>4</sub>	578 22 <sup>3</sup> / <sub>4</sub>	120 4 <sup>1</sup> / <sub>4</sub>	535 21	302 665
160 170	6 <sup>7</sup> / <sub>16</sub> 6 <sup>1</sup> / <sub>2</sub>	03 BCP 160M 03 BCP 160M	03 BCP 607 03 BCP 608	P59	267 10 <sup>1</sup> / <sub>2</sub>	736 29	228 9	60 2 <sup>3</sup> / <sub>8</sub>	4-M30 (1 <sup>1</sup> / <sub>4</sub> inch)	610 24	648 25 <sup>1</sup> / <sub>2</sub>	140 5 <sup>1</sup> / <sub>2</sub>	570 22 <sup>1</sup> / <sub>2</sub>	340 750
180	6 <sup>15</sup> / <sub>16</sub> 7	03 BCP 180M	03 BCP 615 03 BCP 700	P60	279 11	762 30	254 10	64 2 <sup>1</sup> / <sub>2</sub>	4-M30 (1 <sup>1</sup> / <sub>4</sub> inch)	616 24 <sup>1</sup> / <sub>4</sub>	654 25 <sup>3</sup> / <sub>4</sub>	152 6	580 22 <sup>7</sup> / <sub>8</sub>	385 848
190 200	7 <sup>15</sup> / <sub>16</sub> 8	03 BCP 190M 03 BCP 190M	03 BCP 715 03 BCP 800	P61	311 12 <sup>1</sup> / <sub>4</sub>	838 33	266 10 <sup>1</sup> / <sub>2</sub>	67 2 <sup>5</sup> / <sub>8</sub>	4-M36 (1 <sup>1</sup> / <sub>2</sub> inch)	616 24 <sup>1</sup> / <sub>4</sub>	654 25 <sup>3</sup> / <sub>4</sub>	172 6 <sup>1</sup> / <sub>4</sub>	655 25 <sup>3</sup> / <sub>4</sub>	515 1132
220	9	03 BCP 220M	03 BCP 900	P62	349 13 <sup>3</sup> / <sub>4</sub>	952 17 <sup>1</sup> / <sub>2</sub>	280 11	76 3	4-M42 (1 <sup>3</sup> / <sub>4</sub> inch)	718 28 <sup>1</sup> / <sub>4</sub>	756 29 <sup>3</sup> / <sub>4</sub>	178 7	730 28 <sup>3</sup> / <sub>4</sub>	715 1580
240 260	10	03 BCP 240M 03 BCP 260M	03 BCP 1000	P63	394 15 <sup>1</sup> / <sub>2</sub>	914 36	406 16	76 3	4-M42 (1 <sup>3</sup> / <sub>4</sub> inch)	651 25 <sup>5</sup> / <sub>8</sub>	689 27 <sup>1</sup> / <sub>8</sub>	304 12	790 31	815 1800

(1) Add 'EX' or 'GR' to reference for expansion or fixed type respectively  
e.g. 03BCP160MEX.

Pedestals are common between expansion and fixed units.



Lubricant points are tapped 1/4" NPT.  
All grooved outer races must be clamped axially. Provision is made for this in Cooper cartridges.

**Roller Bearing**

Shaft diameter (d)	References (Note 1)		D	C	B	Q	Mass (kg) (lb)
	Bearing only	Bearing only					
mm inches	millimeters	inches					
280 11	03 EB 280M	03 EB 1100	495.30 19.500	244 9.606	139.7 5.500	452 7.797	182 400
300 12	03 B 300M	03 B 1200	558.80 22.000	244 9.606	139.7 5.500	496 19.528	238 525
320 13	03 B 320M	03 B 1300	622.30 24.500	272 10.709	160.4 6.311	550 21.653	327 720
340 14	03 EB 340M	03 EB 1400	615.95 24.250	279 10.984	158.0 6.221	556 21.890	318 700
380 15	03 B 380M	03 B 1500	685.80 27.000	292 11.496	166.7 6.563	610 24.016	431 950
420 17	03 EB 420M	03 EB 1700	700.00 27.560	284 11.181	160.0 6.299	640 25.197	395 870
460 18	03 EB 460M	03 EB 1800	740.00 29.136	294 11.575	170.0 6.693	680 26.772	431 950
500 20	03 B 500M	03 B 2000	850.90 33.500	300 11.813	187.4 7.375	765 30.118	730 1610
560 22	03 EB 560M	03 EB 2200	863.60 34.000	310 12.203	196.9 7.748	800 31.496	635 1400
600 23	03 EB 600M	03 EB 2300	890.00 35.040	310 12.203	184.0 7.244	826 32.520	680 1500

**Cartridge Unit**

Cartridge and standard seals	References (Note 1)		TL cartridge (without seals)	G	J	L (Note 3)	Available axial movement (Note 2)	Mass (bearing + cartridge) (kg) (lb)
	millimeters	inches						
03 EC 280M	03 EC 1100	03 EC 83	571.50 22 1/2	165 6 1/2	356 14 1/2	35.7 1 13/32	386 850	
03 C 300M	03 C 1200	03 C 65	641.40 25 1/4	165 6 1/2	346 13 5/8	43.7 1 23/32	468 1030	
03 C 320M	03 C 1300	03 C 66	717.60 28 1/4	170 6 3/4	368 14 1/2	- -	600 1320	
03 EC 340M	03 EC 1400	03 EC 86	704.90 27 3/4	196 7 3/4	432 17	- -	703 1500	
03 C 380M	03 C 1500	03 C 68	774.70 30 1/2	202 8	400 15 3/4	- -	830 1830	
03 EC 420M	03 EC 1700	03 EC 89	788 31 1/2	200 7 7/8	440 17 3/8	- -	803 1770	
03 EC 460M	03 EC 1800	03 EC 90	840.00 33 1/8	200 7 7/8	450 17 3/4	- -	885 1950	
03 C 500M	03 C 2000	03 C 94	958.90 37 3/4	204 8	495 19 1/2	- -	1500 3300	
03 EC 560M	03 EC 2200	03 EC 94	958.90 37 3/4	204 8	490 19 1/2	- -	1306 2880	
03 EC 600M	03 EC 2300	03 EC 95	990.00 38 1/2	204 8	490 19 1/2	- -	1400 3090	

(1) Add 'EX' or 'GR' to reference for expansion type or fixed type respectively, e.g. (bearing) 03EB420MEX (cartridge) 03EC420MEX

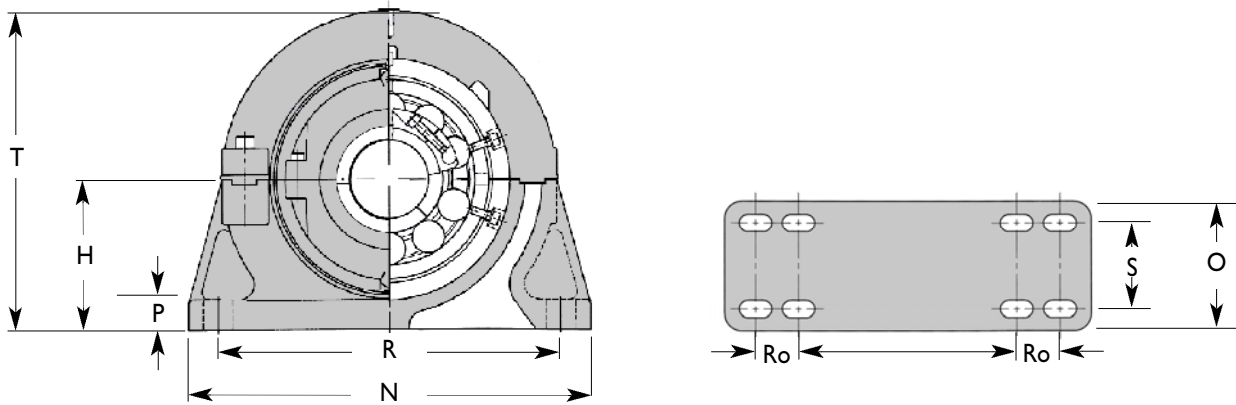
For bearing and cartridge together insert 'C' into bearing reference, e.g. 03EBC420MEX or 03BC2000GR

Chamfers  
Inner race: 3mm/1/8"  
Outer race: 3mm/1/8"

(2) Offset from centreline to accommodate axial movement should not exceed half this amount.

(3) Dimension differs for TL cartridge. Please refer to our technical department

For these dimensions please consult our technical department



**Pedestals - 8 Bolt**

Shaft diameter (d)	References (Note 1)	Pedestal unit complete	Pedestal only	H	N	O	P	Bolts	R		Ro	S	T	Mass (BCP) (kg) (lb)	
									mm	inches					millimeters
280	11	03 EBCP 280M	03 EBCP 1100	P83	368 14½	940 37	280 11	70 2¾	8-M36 (1½inch)	482 19	521 20½	121 4¾	178 7	785 30¾	600 1320
300	12	03 BCP 300M	03 BCP 1200	P65	457 18	1092 43	420 16½	76 3	8-M36 (1½inch)	654 25¾	692 27¼	102 4	330 13	915 36	1135 2500
320	13	03 BCP 320M	03 BCP 1300	P66	518 20¾	1194 47	356 14	80 3½	8-M36 (1½inch)	743 29¼	781 30¾	108 4¼	266 10½	1035 40¾	1270 2800
340 360	14	03 EBCP 340M 03 EBCP 360M	03 EBCP 1400	P86	470 18½	1220 48	318 12½	82 3¼	8-M42 (1¾inch)	635 25	686 27	133 5¼	190 7½	1000 39¼	1770 2540
380 400	15	03 BCP 380M 03 BCP 400M	03 BCP 1500	P68	559 22	1270 50	394 15½	92 3⅝	8-M42 (1¾inch)	781 30¾	832 32¾	114 4½	292 11½	1120 44	1770 3900
420 440	17	03 EBCP 420M 03 EBCP 440M	03 EBCP 1700	P89	508 20	1270 50	360 14¼	90 3½	8-M48 (2inch)	667 26¼	718 28¼	149 5⅞	210 8¼	1075 42¼	1325 2920
460	18	03 EBCP 460M	03 EBCP 1800	P90	550 21¾	1370 54	380 15	95 3¾	8-M48 (2inch)	756 29¾	806 31¾	149 5⅞	220 8⅝	1165 45¾	1590 3500
500 530	20	03 BCP 500M 03 BCP 530M	03 BCP 2000	P94	622 24½	1600 63	406 16	102 4	8-M56 (2¼inch)	914 36	965 38	165 6½	242 9½	1340 52¾	2500 5510
560	22	03 EBCP 560M	03 EBCP 2200	P94	622 24½	1600 63	406 16	102 4	8-M56 (2¼inch)	914 36	965 38	165 6½	242 9½	1340 52¾	2300 5080
600	23	03 EBCP 600M	03 EBCP 2300	P95	622 24½	1600 63	406 16	102 4	8-M56 (2¼inch)	914 36	965 38	165 6½	242 9½	1340 52¾	2330 5130

(1) Add 'EX' or 'GR' to reference for expansion or fixed type respectively  
e.g. 03EBCP420MEX.

Pedestals are common between expansion and fixed units.

## SNC Pedestals

The SN compatible pedestal range offers the advantages of quick access, ease of change and low maintenance cost benefits of Cooper split bearing technology to both OEM's and end users.

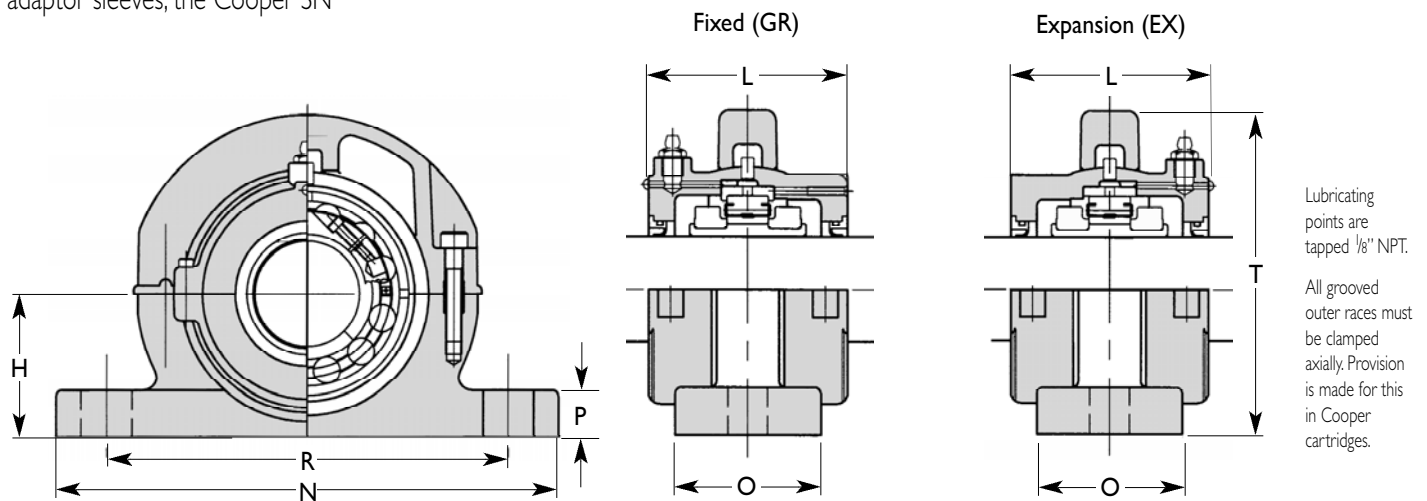
The housings have bolt hole centre distances and base to bearing centreline heights that conform to ISO 113-2. Suitable for replacement of solid, self aligning ball bearings with adaptor sleeves, the Cooper SN

compatible pedestal is available for bearings with shaft sizes from 60mm (SN513) to 140mm (SN532).

The pedestals use standard Cooper 01 Series bearings and cartridges. This gives the option of using the comprehensive range of Cooper sealing options suitable for almost any application. The seals remain concentric to the shaft under misaligned conditions.

The footprint area and total housing height differ from equivalent SN housings.

Pedestals are made from grey cast iron. Temperature and vibration mounting points may be specified.



Shaft Size (mm)	Pedestal only	SN Reference	Complete Assembly	H	R		Bolt size	L	N	O	P	T
					Min	Max						
60	SNC513	513	01EBC SNC513 60M	80	226	242	2 x M16	104	280	70	32	180
65	SNC515	515	01EBC SNC515 65M	80	226	242	2 x M16	104	280	70	32	180
70	SNC516	516	01EBC SNC516 70M	95	254	266	2 x M20	114	315	90	38	208
75	SNC517	517	01EBC SNC517 75M	95	254	266	2 x M20	114	315	90	38	208
80	SNC518	518	01EBC SNC518 80M	100	284	296	2 x M20	136	345	100	32	240
85	SNC519	519	01EBC SNC519 85M	112	284	296	2 x M20	136	345	100	44	252
90	SNC520	520	01EBC SNC520 90M	112	312	328	2 x M24	136	380	90	44	252
100	SNC522	522	01EBC SNC522 100M	125	342	366	2 x M24	134	420	102	52	272
110	SNC524	524	01BC SNC524 110M	140	344	356	2 x M24	142	410	120	45	310
115	SNC526	526	01BC SNC526 115M	150	372	388	2 x M24	142	450	130	50	320
125	SNC528	528	01BC SNC528 125M	150	414	426	2 x M30	156	500	150	50	359
135	SNC530	530	01BC SNC530 135M	160	444	456	2 x M30	168	530	160	56	386
140	SNC532	532	01BC SNC532 140M	170	462	478	2 x M30	168	558	178	41	391

(1) Add 'EX' or 'GR' to reference for expansion or fixed type respectively  
e.g. 01EBCSNC513 60MEX. Imperial sizes available on request.



**Flanges**

Flanges provide a simple means of mounting Cooper split roller bearings against a vertical or horizontal face. These housings embody standard swivel cartridges which may be assembled with expansion (EX) or fixed (GR) bearings.

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

The rear face of the flange is recessed for use with a spigot if required.

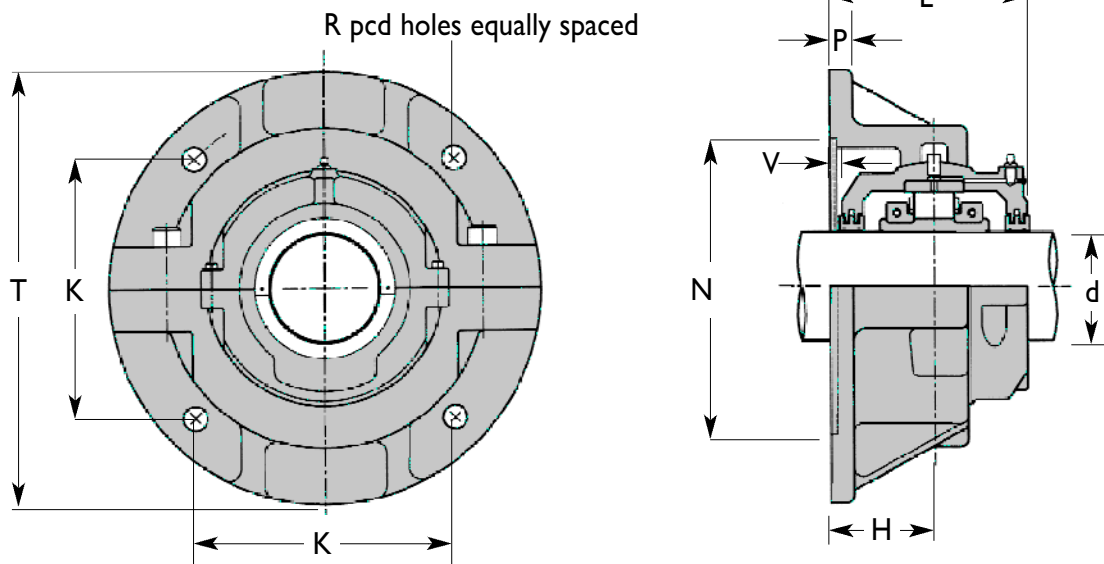
The top halves of both flange and cartridge can be lifted for inspection of rolling surfaces.

Standard cast iron flanges normally have drilled bolt holes with outer surface as cast. Fitting flat washers under the bolt heads is recommended. Cast steel flanges normally have drilled holes and are spotfaced.

Flanges over 12"/300mm available on request.

For vertical shafts, bearings and flanges may require modified construction, special seals and lubrication.

Maximum load on cast iron flanges is 0.26 C<sub>0r</sub> or 0.25C<sub>a</sub>. Higher loads and shock conditions require steel or nodular iron flanges and high tensile bolts. The support plate must be adequate. Please consult our technical department.



# O1 Series Flanges up to 300mm/12" Shaft Diameter



## O1 Series Flanges

Shaft diameter (d)		References (Note 1) Flange unit complete		Flange only	T	Bolts	R	K	P	H	N (Note 2)	V (Note 2)	L	Mass (kg) (lb)
mm	inches	millimeters	inches											
35	1 3/16	01 BCF 35M	01 BCF 103	F01	204	4-M12	164	116.0	13	51	119.06	3	94	8
40	1 1/4	01 BCF 40M	01 BCF 104											
	1 1/2		01 BCF 108											
45	1 7/16	01 EBCF 45M	01 EBCF 111	F02	216	4-M12	180	127.3	13	57	136.52	3	106	11
50	1 3/4	01 EBCF 50M	01 EBCF 112											
	2		01 EBCF 200											
60	2 3/16	01 EBCF 60M	01 EBCF 203	F03	260	4-M12	218	154.2	16	67	166.69	3	120	15
65	2 1/4	01 EBCF 65M	01 EBCF 204											
	2 1/2		01 EBCF 208											
70	2 11/16	01 EBCF 70M	01 EBCF 211	F04	286	4-M12	242	171.1	16	73	192.09	3	130	21
75	2 3/4	01 EBCF 75M	01 EBCF 212											
	3		01 EBCF 300											
80	3 3/16	01 EBCF 80M	01 EBCF 303	F05	330	4-M16	274	193.7	19	79	215.90	3	148	31
85	3 1/4	01 EBCF 85M	01 EBCF 304											
90	3 1/2	01 EBCF 90M	01 EBCF 308											
100	3 11/16	01 EBCF 100M	01 EBCF 311	F06	356	4-M16	302	213.6	19	86	244.47	3	154	37
105	3 3/4	01 EBCF 105M	01 EBCF 312											
	4		01 EBCF 400											
110	4 3/16	01 BCF 110M	01 BCF 403	F07	382	4-M16	334	236.2	22	92	276.22	3	164	51
115	4 1/2	01 BCF 115M	01 BCF 407											
	4 1/2		01 BCF 408											
120	4 5/16	01 BCF 120M	01 BCF 415	F08	432	4-M24	374	264.5	22	98	314.32	3	176	72
125	5	01 BCF 125M	01 BCF 500											
130	5	01 BCF 130M												
135	5 3/16	01 BCF 135M	01 BCF 503	F09	444	4-M24	384	271.5	25	98	317.50	3	182	78
140	5 1/2	01 BCF 140M	01 BCF 507											
	5 1/2		01 BCF 508											
150	5 5/16	01 BCF 150M	01 BCF 515	F10	470	4-M24	412	291.3	25	114	346.07	3	202	94
155	6	01 BCF 150M	01 BCF 600											
	6													
160	6 7/16	01 BCF 160M	01 BCF 607	F11	496	4-M24	426	301.2	25	105	352.42	3	202	100
	6 1/2		01 BCF 608											
	6 1/2													
170	6 5/16	01 BCF 170M	01 BCF 615	F12	508	4-M24	438	309.7	29	108	365.12	3	208	105
180	7	01 BCF 170M	01 BCF 700											
	7													
190	7 5/16	01 BCF 190M	01 BCF 715	F13	534	4-M24	474	335.2	32	108	400.05	3	208	126
200	8	01 BCF 190M	01 BCF 800											
	8													
220	9	01 BCF 220M	01 BCF 900	F14	584	4-M30	512	362.0	35	117	431.80	3	226	148
					23	(1 1/4 inch)	20 1/8	14 1/4	1 3/8	4 5/8	17	1/8	8 7/8	326
240	10	01 BCF 240M	01 BCF 1000	F15	610	4-M30	542	383.3	35	117	463.55	3	228	168
					24	(1 1/4 inch)	21 3/8	15 1/16	1 3/8	4 5/8	18 1/4	1/8	9	370
260	11	01 BCF 260M	01 BCF 1100	F16	660	4-M30	584	413.0	38	124	504.82	3	240	215
280	11	01 BCF 280M			26	(1 1/4 inch)	23	16 1/4	1 1/2	4 7/8	19 7/8	1/8	9 7/16	474
300	12	01 BCF 300M	01 BCF 1200	F17	712	4-M30	626	442.7	38	133	539.75	3	258	265
					28	(1 1/4 inch)	24 5/8	17 7/16	1 1/2	5 1/4	21 1/4	1/8	10 1/8	584

(1) Add 'EX' or 'GR' to reference for expansion type or fixed type respectively, e.g. 01EBCF60MEX  
Flanges are common between expansion and fixed units.

(2) Nominal dimensions of spigot. Flanges are machined to suit a spigot of diameter tolerance f8.

## 02 Series Flanges

Shaft diameter (d)		References (Note 1) Flange unit complete		Flange only	T	Bolts	R	K	P	H	N (Note 2)	V (Note 2)	L	Mass (kg) (lb.)
mm	inches	millimeters	inches											
50	1 <sup>5</sup> / <sub>16</sub> 2	02 BCF 50M	02 BCF 115 02 BCF 200	F03	260 10 <sup>1</sup> / <sub>4</sub>	4-M12 ( <sup>1</sup> / <sub>2</sub> inch)	218 8 <sup>5</sup> / <sub>16</sub>	154.1 6 <sup>1</sup> / <sub>16</sub>	16 <sup>5</sup> / <sub>8</sub>	67 2 <sup>5</sup> / <sub>8</sub>	166.69 6 <sup>9</sup> / <sub>16</sub>	3 <sup>1</sup> / <sub>8</sub>	124 4 <sup>7</sup> / <sub>8</sub>	15 33
60 65	2 <sup>3</sup> / <sub>16</sub> 2 <sup>1</sup> / <sub>4</sub> 2 <sup>7</sup> / <sub>16</sub> 2 <sup>1</sup> / <sub>2</sub>	02 BCF 60M 02 BCF 65M	02 BCF 203 02 BCF 204 02 BCF 207 02 BCF 208	F04	286 11 <sup>1</sup> / <sub>4</sub>	4-M12 ( <sup>1</sup> / <sub>2</sub> inch)	242 9 <sup>9</sup> / <sub>16</sub>	171.1 6 <sup>3</sup> / <sub>4</sub>	16 <sup>5</sup> / <sub>8</sub>	73 2 <sup>7</sup> / <sub>8</sub>	192.09 7 <sup>9</sup> / <sub>16</sub>	3 <sup>1</sup> / <sub>8</sub>	136 5 <sup>3</sup> / <sub>8</sub>	22 46
70 75	2 <sup>11</sup> / <sub>16</sub> 2 <sup>3</sup> / <sub>4</sub> 2 <sup>15</sup> / <sub>16</sub> 3	02 BCF 70M 02 BCF 75M	02 BCF 211 02 BCF 212 02 BCF 215 02 BCF 300	F05	330 13	4-M16 ( <sup>5</sup> / <sub>8</sub> inch)	274 10 <sup>3</sup> / <sub>4</sub>	193.7 7 <sup>7</sup> / <sub>8</sub>	19 <sup>3</sup> / <sub>4</sub>	79 3 <sup>1</sup> / <sub>8</sub>	215.90 8 <sup>1</sup> / <sub>2</sub>	3 <sup>1</sup> / <sub>8</sub>	150 5 <sup>7</sup> / <sub>8</sub>	33 72
80 85 90	3 <sup>3</sup> / <sub>16</sub> 3 <sup>1</sup> / <sub>4</sub> 3 <sup>7</sup> / <sub>16</sub> 3 <sup>1</sup> / <sub>2</sub>	02 BCF 80M 02 BCF 85M 02 BCF 90M	02 BCF 303 02 BCF 304 02 BCF 307 02 BCF 308	F06	356 14	4-M16 ( <sup>5</sup> / <sub>8</sub> inch)	302 11 <sup>7</sup> / <sub>8</sub>	213.6 8 <sup>3</sup> / <sub>8</sub>	19 <sup>3</sup> / <sub>4</sub>	86 3 <sup>3</sup> / <sub>8</sub>	244.47 9 <sup>9</sup> / <sub>8</sub>	3 <sup>1</sup> / <sub>8</sub>	164 6 <sup>7</sup> / <sub>16</sub>	40 88
100 105	3 <sup>11</sup> / <sub>16</sub> 3 <sup>3</sup> / <sub>4</sub> 3 <sup>15</sup> / <sub>16</sub> 4	02 BCF 100M 02 BCF 105M	02 BCF 311 02 BCF 312 02 BCF 315 02 BCF 400	F07	382 15	4-M16 ( <sup>5</sup> / <sub>8</sub> inch)	334 13 <sup>3</sup> / <sub>8</sub>	236.2 9 <sup>9</sup> / <sub>16</sub>	22 <sup>7</sup> / <sub>8</sub>	92 3 <sup>5</sup> / <sub>8</sub>	276.22 10 <sup>7</sup> / <sub>8</sub>	3 <sup>1</sup> / <sub>8</sub>	166 6 <sup>1</sup> / <sub>2</sub>	51 112
110 115	4 <sup>1</sup> / <sub>16</sub> 4 <sup>7</sup> / <sub>16</sub> 4 <sup>1</sup> / <sub>2</sub>	02 BCF 110M 02 BCF 115M	02 BCF 403 02 BCF 407 02 BCF 408	F08	432 17	4-M24 ( <sup>7</sup> / <sub>8</sub> inch)	374 14 <sup>3</sup> / <sub>4</sub>	264.5 10 <sup>3</sup> / <sub>8</sub>	22 <sup>7</sup> / <sub>8</sub>	98 3 <sup>7</sup> / <sub>8</sub>	314.32 12 <sup>3</sup> / <sub>8</sub>	3 <sup>1</sup> / <sub>8</sub>	180 7 <sup>1</sup> / <sub>16</sub>	75 165
120 125 130	4 <sup>15</sup> / <sub>16</sub> 5	02 BCF 120M 02 BCF 125M 02 BCF 130M	02 BCF 415 02 BCF 500	F10	470 18 <sup>1</sup> / <sub>2</sub>	4-M24 (1 inch)	412 16 <sup>1</sup> / <sub>4</sub>	291.3 11 <sup>1</sup> / <sub>2</sub>	25 1	114 4 <sup>1</sup> / <sub>2</sub>	346.07 13 <sup>5</sup> / <sub>8</sub>	3 <sup>1</sup> / <sub>8</sub>	206 8 <sup>1</sup> / <sub>8</sub>	100 220
140	5 <sup>1</sup> / <sub>16</sub> 5 <sup>7</sup> / <sub>16</sub> 5 <sup>1</sup> / <sub>2</sub>	02 BCF 140M	02 BCF 503 02 BCF 507 02 BCF 508	F30	508 20	4-M24 (1 inch)	444 17 <sup>1</sup> / <sub>2</sub>	314.0 12 <sup>3</sup> / <sub>8</sub>	25 1	114 4 <sup>1</sup> / <sub>2</sub>	377.82 14 <sup>7</sup> / <sub>8</sub>	3 <sup>1</sup> / <sub>8</sub>	208 8 <sup>3</sup> / <sub>16</sub>	120 265
150 155	5 <sup>15</sup> / <sub>16</sub> 6	02 BCF 150M 02 BCF 155M	02 BCF 515 02 BCF 600	F31	534 21	4-M24 (1 inch)	466 18 <sup>3</sup> / <sub>8</sub>	329.5 13	25 1	124 4 <sup>7</sup> / <sub>8</sub>	393.70 15 <sup>1</sup> / <sub>2</sub>	3 <sup>1</sup> / <sub>8</sub>	226 8 <sup>7</sup> / <sub>8</sub>	140 310
160 170	6 <sup>1</sup> / <sub>16</sub> 6 <sup>1</sup> / <sub>2</sub>	02 BCF 160M 02 BCF 170M	02 BCF 607 02 BCF 608	F32	584 23	4-M30 (1 <sup>1</sup> / <sub>4</sub> inch)	508 20	359.2 14 <sup>1</sup> / <sub>8</sub>	29 1 <sup>1</sup> / <sub>8</sub>	124 4 <sup>7</sup> / <sub>8</sub>	428.62 16 <sup>7</sup> / <sub>8</sub>	5 <sup>3</sup> / <sub>16</sub>	240 9 <sup>7</sup> / <sub>16</sub>	170 375
180	6 <sup>15</sup> / <sub>16</sub> 7	02 BCF 180M	02 BCF 615 02 BCF 700	F33	596 23 <sup>1</sup> / <sub>2</sub>	4-M30 (1 <sup>1</sup> / <sub>4</sub> inch)	524 20 <sup>3</sup> / <sub>8</sub>	370.5 14 <sup>9</sup> / <sub>16</sub>	32 1 <sup>1</sup> / <sub>4</sub>	130 5 <sup>1</sup> / <sub>8</sub>	444.50 17 <sup>1</sup> / <sub>2</sub>	5 <sup>3</sup> / <sub>16</sub>	252 9 <sup>7</sup> / <sub>8</sub>	210 463
190 200	7 <sup>15</sup> / <sub>16</sub> 8	02 BCF 190M 02 BCF 200M	02 BCF 715 02 BCF 800	F34	648 25 <sup>1</sup> / <sub>2</sub>	4-M30 (1 <sup>1</sup> / <sub>4</sub> inch)	572 22 <sup>1</sup> / <sub>2</sub>	404.5 15 <sup>13</sup> / <sub>16</sub>	32 1 <sup>1</sup> / <sub>4</sub>	137 5 <sup>3</sup> / <sub>8</sub>	492.12 19 <sup>9</sup> / <sub>8</sub>	5 <sup>3</sup> / <sub>16</sub>	266 10 <sup>7</sup> / <sub>16</sub>	290 640
220	9	02 BCF 220M	02 BCF 900	F35	712 28	4-M36 (1 <sup>1</sup> / <sub>2</sub> inch)	620 24 <sup>3</sup> / <sub>8</sub>	438.4 17 <sup>1</sup> / <sub>4</sub>	35 1 <sup>3</sup> / <sub>8</sub>	146 5 <sup>3</sup> / <sub>4</sub>	527.05 20 <sup>3</sup> / <sub>4</sub>	5 <sup>3</sup> / <sub>16</sub>	284 11 <sup>1</sup> / <sub>8</sub>	318 701
240 260	10	02 BCF 240M 02 BCF 260M	02 BCF 1000	F36	736 29	4-M36 (1 <sup>1</sup> / <sub>2</sub> inch)	660 26	466.7 18 <sup>3</sup> / <sub>8</sub>	38 1 <sup>1</sup> / <sub>2</sub>	149 5 <sup>7</sup> / <sub>8</sub>	568.32 22 <sup>3</sup> / <sub>8</sub>	5 <sup>3</sup> / <sub>16</sub>	290 11 <sup>3</sup> / <sub>8</sub>	340 750
280	11	02 BCF 280M	02 BCF 1100	F37	762 30	8-M30 (1 <sup>1</sup> / <sub>4</sub> inch)	682 26 <sup>7</sup> / <sub>8</sub>	482.3 19	38 1 <sup>1</sup> / <sub>2</sub>	159 6 <sup>1</sup> / <sub>4</sub>	603.25 23 <sup>3</sup> / <sub>4</sub>	5 <sup>3</sup> / <sub>16</sub>	310 12 <sup>1</sup> / <sub>8</sub>	395 870
300	12	02 BCF 300M	02 BCF 1200	F38	788 31	8-M30 (1 <sup>1</sup> / <sub>4</sub> inch)	708 27 <sup>7</sup> / <sub>8</sub>	500.6 19 <sup>11</sup> / <sub>16</sub>	41 1 <sup>5</sup> / <sub>8</sub>	162 6 <sup>3</sup> / <sub>8</sub>	628.65 24 <sup>3</sup> / <sub>4</sub>	5 <sup>3</sup> / <sub>16</sub>	316 12 <sup>3</sup> / <sub>8</sub>	446 984

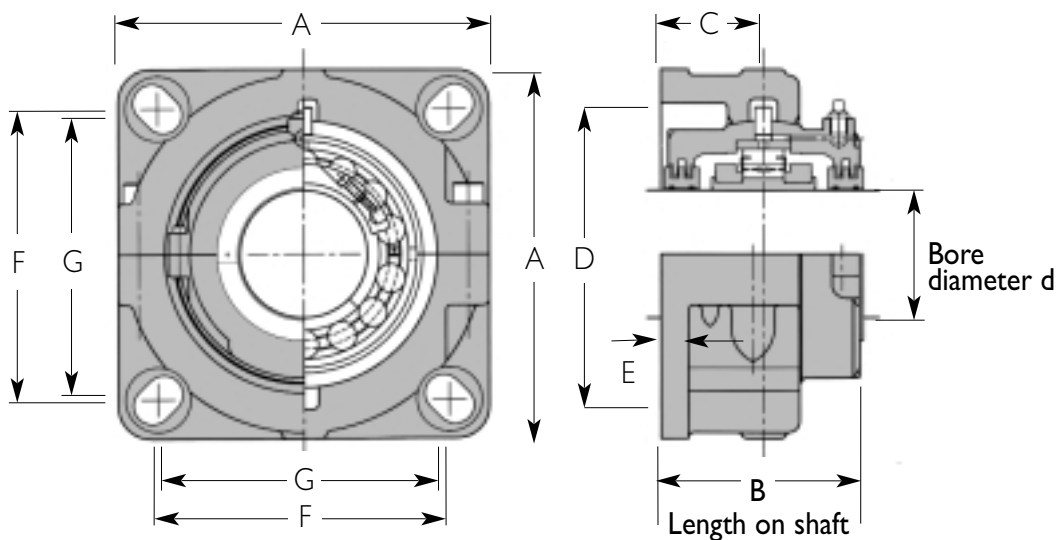
(1) Add 'EX' or 'GR' to reference for expansion type or fixed type respectively, e.g. 02BCF60MEX  
Flanges are common between expansion and fixed units.

(2) Nominal dimensions of spigot. Flanges are machined to suit a spigot of diameter tolerance f8.

## Flanges

The DF Line Flanges take less space than the standard 01 Series flanges and have the same capacity.

Flanges are made of nodular iron resulting in a more compact design with no loss of strength. Nodular iron is ideal for use on steel frames and skid mounted equipment. The square shape mounts in tight corners that are impossible with a round flange.



## 01 Series DF Line Flange Units

Shaft diameter (d)	Flange unit complete	References	Flange only	A	B	C	D	E	Hex head bolt size	'F' centres (hex head)	S.H.C.S. size	'G' centres (S.H.C.S.)
45	01 EBCDF 45	01 EBCDF 111 01 EBCDF 112	DF02	165	101	52	118	13	1/2"	118	M12	113 <sub>6</sub>
50	01 EBCDF 50	01 EBCDF 115 01 EBCDF 200		6 1/2	4	2	4 5/8	1 1/2		4 5/8		4 7/16
60	01 EBCDF 60	01 EBCDF 203 01 EBCDF 204	DF03	185	107	55	146	16	5/8"	141	M16	136
65	01 EBCDF 65	01 EBCDF 207 01 EBCDF 208		7 1/4	4 1/4	2 3/16	5 3/4	5/8		5 9/16		5 3/8
70	01 EBCDF 70	01 EBCDF 211 01 EBCDF 212	DF04	217	117	60	178.0	16	3/4"	171	M20	164
75	01 EBCDF 75	01 EBCDF 215 01 EBCDF 300		8 5/8	4 5/8	2 3/8	7.0	5/8		6 3/4		6 7/16

S.H.C.S. – Socket head cap screw

Add 'EX' or 'GR' to reference for expansion type or fixed type respectively,  
e.g. 01EBCDF60MEX

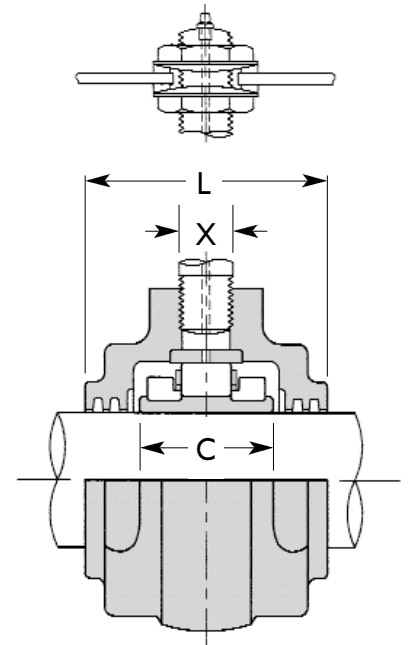
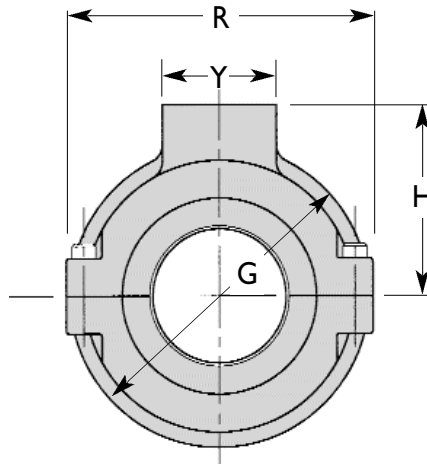
## Hangers

Hanger bearings are a compact means of supporting the shafts of screw conveyors and similar equipment. The hanger comprises of a split roller bearing in a cast iron split housing with a threaded boss to facilitate suspension from the conveyor cross bracing. A swivel fixing at the cross bracing joint is recommended to provide alignment of the bearings.

Double felt or lipped rubber seals are provided. Air purge seals are also available. The aspect of sealing should be carefully considered for each application.

Continuous grease feed is sometimes desirable and provision made through the hanger rods.

Hangers are suitable for EX bearings only.



## 01 Hanger Bearings

Shaft diameter (d)	References		C	G	L	H	X	Y	R	Mass (kg) (lb)								
	mm	inches									(Hanger unit complete) millimeters	inches						
40	1¼		50.1	100	108	66	M30	50	105	4								
	1½	01 BH 40M									01 BH 104	01 BH 108	1.972	3½	4¼	2½	4½	9
50	1⅞		55.7	117	108	76	M30	50	121	5								
	1¾	01 EBH 50M									01 EBH 111	01 EBH 112	2.192	4½	4¼	3	4¼	11
	1⅝										01 EBH 115	01 EBH 200						
	2																	
60	2⅞			55.7	135	108	82	M30	50	137	6							
	2½	01 EBH 60M	01 EBH 203									01 EBH 204	2.192	5½	4¼	3¼	5½	13
	2⅞		01 EBH 207									01 EBH 208						
	2½																	
70	2⅞			61.2	157	130	92	M30	50	162	8							
	2¾	01 EBH 70M	01 EBH 211									01 EBH 212	2.410	6½	5½	3½	6½	18
	2⅝		01 EBH 215									01 EBH 300						
	3																	
80	3⅞			70.7	178	146	114	M36	76	187	13							
	3¼	01 EBH 80M	01 EBH 303									01 EBH 304	2.781	7	5¼	4½	7½	29
	3⅞		01 EBH 85M									01 EBH 307	01 EBH 308					
	3½		01 EBH 90M															
100	3⅞			81	203	152	128	M36	76	200	17							
	3¾	01 EBH 100M	01 EBH 311									01 EBH 312	3.188	8	6	5	7½	37
	3⅝		01 EBH 105M									01 EBH 315	01 EBH 400					
	4																	
110	4⅞			84.9	232	156	140	M36	76	222	24							
	4⅞	01 BH 110M	01 BH 403									01 BH 407	3.342	9½	6½	5½	8¾	53
	4½		01 BH 115M									01 BH 408						
120	4⅝			89.7	276	162	156	M36	76	276	35							
	125	01 BH 120M	01 BH 415									01 BH 500	3.531	10¾	6½	6½	10¾	78
	130		01 BH 125M															
135	5⅞			98.4	280	158	160	M36	76	280	39							
	140	01 BH 135M	01 BH 503									01 BH 507	3.875	11	6¼	6½	11	86
	5½		01 BH 140M									01 BH 508						

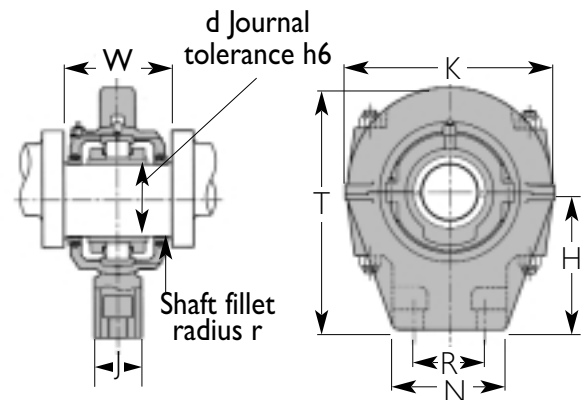
# 01 Series Rod Ends 'T' Type up to 155mm /6" Shaft Diameter



## Rod Ends

For solid crankshafts Cooper split roller bearings can be simply applied. Cooper rod ends are specially designed to form connecting units for these and other reciprocating mechanisms. Typical applications include shaker screens and classifiers.

Each rod end consists of a split outer casing which encloses a fixed bearing (GR) in a swivel cartridge. Normally made of cast iron, these housings are available in shoe type and 'T' type and can be modified to suit various rods and attachments. C2 clearance bearings and S1 fit (lower clearance between cartridge and rod end) are supplied as standard.



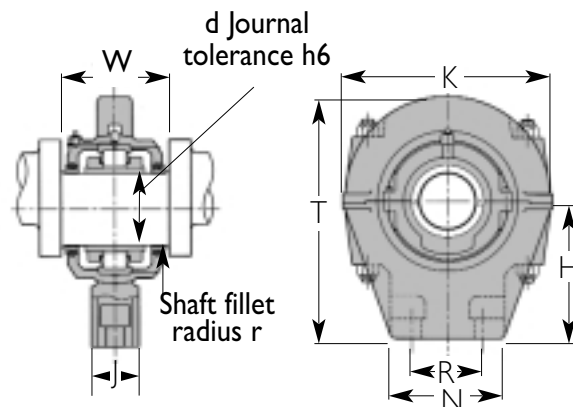
## 01 Series Rod End 'T' Type

Shaft diameter (d)		Rod end unit complete		Rod end housing only	W	r (max)	N	J	H	K	T	R (bolt centres)	Bolts	Mass (kg) (lb)
mm	inches	millimeters	inches											
40	1 1/4	01 EBCRET 40M	01 BCRET 104	RET01	92	3.0	86	30	76	140	152	57(1)	M12	6
	1 1/2		01 BCRET 108											
45	1 11/16	01 EBCRET 45M	01 EBCRET 111	RET02	104	3.0	102	32	102	166	190	70(1)	M10	8
	1 3/4		01 EBCRET 112											
50	1 15/16	01 EBCRET 50M	01 EBCRET 115	RET02	104	3.0	4	1 1/4	4	6 1/2	7 1/2	2 3/4	3/8	16
	2		01 EBCRET 200											
60	2 3/16	01 EBCRET 60M	01 EBCRET 203	RET03	113	4.5	115	38	95	197	194	76(1)	M16	9
	2 1/4		01 EBCRET 204											
65	2 7/16	01 EBCRET 65M	01 EBCRET 207	RET03	113	4.5	4 1/2	1 7/16	3 3/4	7 3/4	7 3/8	3	5/8	19
	2 1/2		01 EBCRET 208											
70 3/4	2 11/16	01 EBCRET 70M	01 EBCRET 211	RET04	126	6.0	128	44	108	216	220	89(1)	M16	13
	2 1/2		01 EBCRET 212											
75	2 15/16	01 EBCRET 75M	01 EBCRET 215	RET04	126	6.0	5	1 3/4	4 1/4	8 1/2	8 3/8	3 1/2	5/8	29
	3		01 EBCRET 300											
85	3 3/16	01 EBCRET 80M	01 EBCRET 303	RET05/1	148	6.0	146	48	127	248	256	102(1)	M20	20
	3 1/4		01 EBCRET 304											
80	3 7/16	01 EBCRET 85M	01 EBCRET 307	RET05/1	148	6.0	5 3/4	1 7/8	5	9 7/8	10 1/16	4	3/4	44
	3 1/2		01 EBCRET 308											
100	3 11/16	01 EBCRET 100M	01 EBCRET 311	RET06	146	6.0	170	76	200	308	356	124	M24	36
	3 3/4		01 EBCRET 312											
105	3 15/16	01 EBCRET 105M	01 EBCRET 315	RET06	146	6.0	6 3/4	3	7 7/8	12 1/8	14	4 7/8	1	79
	4		01 EBCRET 400											
110	4 3/16	01 BCRET 110M	01 BCRET 403	RET07/3	154	6.0	190	86	222	334	390	136	M30	52
	4 7/16		01 BCRET 407											
115	4 7/16	01 BCRET 110M	01 BCRET 408	RET07/3	154	6.0	7 1/2	3 3/8	8 3/4	13 1/8	15 3/8	5 3/8	1 1/8	114
	4 1/2		01 BCRET 408											
120	4 15/16	01 BCRET 120M	01 BCRET 415	RET08	168	6.0	190	86	222	375	425	136	M30	65
	5		01 BCRET 500											
125	4 15/16	01 BCRET 125M	01 BCRET 500	RET08	168	6.0	7 1/2	3 3/8	8 3/4	14 3/4	16 3/4	5 3/8	1 1/8	143
	130		01 BCRET 130M											
135	5 3/16	01 BCRET 135M	01 BCRET 503	RET09	187	9.5	204	102	279	442	502	140	M30	89
	140		01 BCRET 507											
140	5 7/16	01 BCRET 140M	01 BCRET 508	RET09	187	9.5	8	4	11	17 3/8	19 3/4	5 1/2	1 1/2	196
	5 1/2		01 BCRET 508											
150	5 15/16	01 BCRET 150M	01 BCRET 515	RET10	193	9.5	204	102	279	442	502	140	M30	99
	155		01 BCRET 600											

Illustrations are typical.

(1) Holes tapped in end face.

Dimensions should be confirmed before fixing design.



## 02 Series Rod End 'T' Type

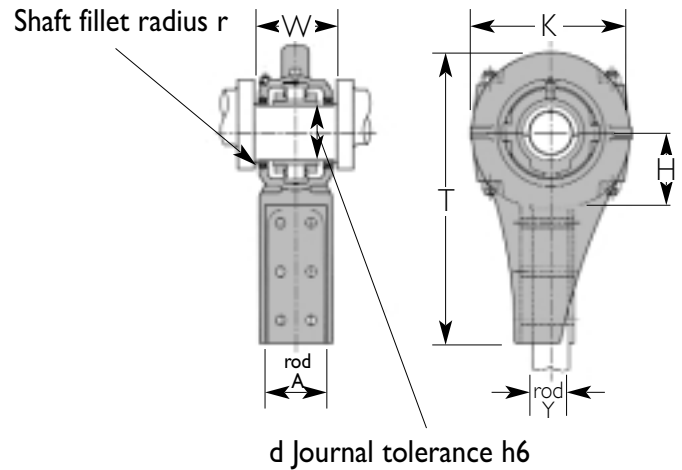
Shaft diameter (d)		Rod end unit complete		References	W	r (max)	N	J	H	K	T	R (bolt centres)	Bolts	Mass (kg) (lb)
mm	inches	millimeters	inches	Rod end housing only										
1 15/16 2	50	02 BCRET 50M	02 BCRET 115 02 BCRET 200	RET03	123 4 7/8	4.5 3/16	115 4 1/2	38 1 7/16	95 3 3/4	197 7 3/4	194 7 5/8	76(1) 3	M16 5/8	6 19
60 65	2 3/16 2 1/4 2 7/16 2 1/2	02 BCRET 60M 02 BCRET 65M	02 BCRET 203 02 BCRET 204 02 BCRET 207 02 BCRET 208	RET04	138 5 1/16	6.0 1/4	128 5	44 1 3/4	108 4 1/4	216 8 1/2	220 8 3/8	89(1) 3 1/2	M16 5/8	13 29
70 75	2 11/16 2 3/4 2 15/16 3	02 BCRET 70M 02 BCRET 75M	02 BCRET 211 02 BCRET 212 02 BCRET 215 02 BCRET 300	RET05/1	152 5 13/16	6.0 1/4	146 5 3/4	48 1 7/8	127 5	248 9 7/8	256 10 1/16	102(1) 4	M20 3/4	20 44
80 85 90	3 3/16 3 3/4 3 7/16 3 1/2	02 BCRET 80M 02 BCRET 85M 02 BCRET 90M	02 BCRET 303 02 BCRET 304 02 BCRET 307 02 BCRET 308	RET06	173 6 13/16	9.5 3/8	170 6 3/4	76 3	200 7 7/8	308 12 1/8	356 14	124 4 7/8	M24 1	36 79
100 105	3 11/16 3 3/4 3 15/16 4	02 BCRET 100M 02 BCRET 105M	02 BCRET 311 02 BCRET 312 02 BCRET 315 02 BCRET 400	RET07/3	171 6 3/4	12.5 1/2	190 7 1/2	86 3 3/8	222 8 3/4	334 13 1/8	390 15 3/8	136 5 3/8	M30 1 1/8	52 114
110 115	4 1/16 4 7/16 4 1/2	02 BCRET 110M 02 BCRET 115M	02 BCRET 403 02 BCRET 407 02 BCRET 408	RET08/1	187 7 3/8	12.5 1/2	190 7 1/2	86 3 3/8	222 8 3/4	375 14 1/4	425 16 3/4	136 5 3/8	M30 1 1/8	65 143
120 125 130	4 15/16 5	02 BCRET 120M 02 BCRET 125M 02 BCRET 130M	02 BCRET 415 02 BCRET 500	RET10	209 8 1/4	12.5 1/2	204 8	102 4	279 11	442 17 3/8	502 19 3/4	140 5 1/2	M30 1 1/4	99 217
140	5 3/16 5 7/16 5 1/2	02 BCRET 140M	02 BCRET 503 02 BCRET 507 02 BCRET 508	RET30	213 8 3/8	12.5 1/2	204 8	102 4	279 11	445 17 1/2	558 22	140 5 1/2	M30 1 1/4	119 262
150 155	5 15/16 6	02 BCRET 150M 02 BCRET 150M	02 BCRET 515 02 BCRET 600	RET31	229 9	12.5 1/2	204 8	102 4	279 11	445 17 1/2	558 22	140 5 1/2	M30 1 1/4	131 287

Illustrations are typical.

(1) Holes tapped in end face.

Dimensions should be confirmed before fixing design.

# 01 Series Rod Ends Shoe Type up to 155mm/6" Shaft Diameter



## 01 Series Rod End Shoe Type

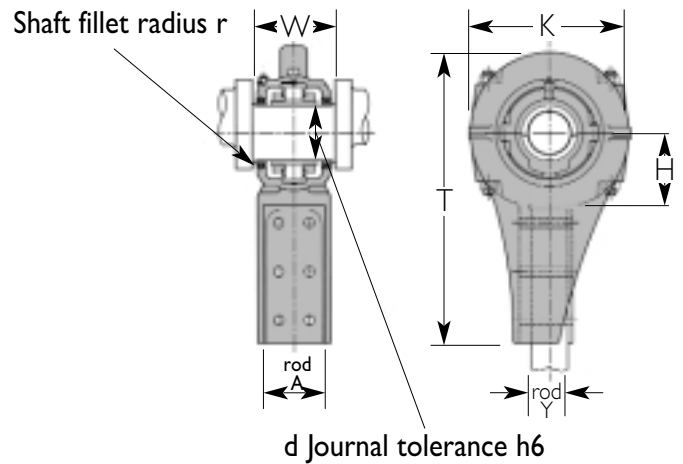
References												
Shaft diameter (d)		Rod end unit complete		Rod end housing only	W	r (max)	A (Rod)	Y (Rod)	H	K	T	Mass (kg) (lb)
mm	inches	millimeters	inches									
40	1 1/4 1 1/2	01 BCRES 40M	01 BCRES 104 01 BCRES 108	RES01	92 3 3/8	3.0 1/8	62 2 7/16	10 3/8	65 2 1/2	160 6 1/4	258 10 7/16	5 10
45 50	1 11/16 1 3/4 1 15/16 2	01 EBCRES 45M 01 EBCRES 50M	01 EBCRES 111 01 EBCRES 112 01 EBCRES 115 01 EBCRES 200	RES02	104 104	3.0 3.0	62 62	10 10	70 70	166 166	38 38	7 7
60 65	2 3/16 2 1/4 2 7/16 2 1/2	01 EBCRES 60M 01 EBCRES 65M	01 EBCRES 203 01 EBCRES 204 01 EBCRES 207 01 EBCRES 208	RES03/2	113 4 7/16	4.5 3/16	62 2 7/16	10 3/8	79 3 1/8	190 7 1/2	330 13	13 28
70 75	2 11/16 2 3/4 2 15/16 3	01 EBCRES 70M 01 EBCRES 75M	01 EBCRES 211 01 EBCRES 212 01 EBCRES 215 01 EBCRES 300	RES04	126 5	6.0 1/4	88 3 7/16	50 2	108 4 1/4	248 9 3/4	432 17	22 48
80 85 90	3 3/16 3 1/4 3 7/16 3 1/2	01 EBCRES 80M 01 EBCRES 85M 01 EBCRES 90M	01 EBCRES 303 01 EBCRES 304 01 EBCRES 307 01 EBCRES 308	RES05	148 5 13/16	6.0 1/4	100 3 15/16	50 2	133 5 1/4	264 10 5/8	602 23 3/4	43 94
100 105	3 11/16 3 3/4 3 15/16 4	01 EBCRES 100M 01 EBCRES 105M	01 EBCRES 311 01 EBCRES 312 01 EBCRES 315 01 EBCRES 400	RES06	146 5 3/4	6.0 1/4	100 3 15/16	58 2 5/16	125 4 15/16	308 12 1/8	572 22 1/2	44 94
110 115	4 3/16 4 7/16 4 1/2	01 BCRES 110M 01 BCRES 115M	01 BCRES 403 01 BCRES 407 01 BCRES 408	RES07	154 6 1/16	6.0 1/4	126 5	58 2 5/16	149 5 7/8	354 13 15/16	618 24 3/4	63 139
120 125 130	4 15/16 4 15/16	01 BCRES 120M 01 BCRES 125M 01 BCRES 130M	01 BCRES 415 01 BCRES 500	RES08	168 6 5/8	6.0 1/4	126 5	64 2 1/2	158 6 1/4	400 15 3/4	654 25 3/4	83 182
135 140	5 3/16 5 7/16 5 1/2	01 BCRES 135M 01 BCRES 140M	01 BCRES 503 01 BCRES 507 01 BCRES 508	RES09	187 7 3/8	9.5 3/8	152 6	76 3	177 7	442 17 3/8	696 27 7/16	98 214
150 155	5 15/16 6	01 BCRES 150M 01 BCRES 155M	01 BCRES 515 01 BCRES 600	RES10	193 7 5/8	9.5 3/8	152 6	76 3	177 7	442 17 3/8	696 27 7/16	107 234

Illustrations are typical.

Dimensions should be confirmed before fixing design.

Rod fixing varies from 2 to 6 bolts according to size.





## 02 Series Rod End Shoe Type

Shaft diameter (d)		Rod end unit complete		Rod end housing only	W	r (max)	A (Rod)	Y (Rod)	H	K	T	Mass (kg) (lb)	
mm	inches	millimetres	inches										
50	1 <sup>13</sup> / <sub>16</sub>	02 BCRES 50M	02 BCRES 115	RES03/1	123	4.5	62	32	76	190	330	10	
	2		02 BCRES 200		4 <sup>7</sup> / <sub>8</sub>	3 <sup>1</sup> / <sub>16</sub>	2 <sup>7</sup> / <sub>16</sub>	1 <sup>1</sup> / <sub>4</sub>	3	7 <sup>1</sup> / <sub>2</sub>	13	21	
60	2 <sup>3</sup> / <sub>16</sub>	02 BCRES 60M	02 BCRES 203	RES04	138	6.0	88	50	108	248	432	20	
	2 <sup>1</sup> / <sub>4</sub>		02 BCRES 204										5 <sup>7</sup> / <sub>16</sub>
65	2 <sup>7</sup> / <sub>16</sub>	02 BCRES 65M	02 BCRES 207		RES05/3	152	6.0	114	38	130	248	540	40
	2 <sup>1</sup> / <sub>2</sub>		02 BCRES 208										
70	2 <sup>11</sup> / <sub>16</sub>	02 BCRES 70M	02 BCRES 211	RES06/6	173	9.5	126	76	149	334	610	62	
	2 <sup>3</sup> / <sub>4</sub>		02 BCRES 212										6 <sup>13</sup> / <sub>16</sub>
75	2 <sup>15</sup> / <sub>16</sub>	02 BCRES 75M	02 BCRES 215		RES07/3	171	12.5	126	76	149	354	618	71
	3		02 BCRES 300										
80	3 <sup>1</sup> / <sub>16</sub>	02 BCRES 80M	02 BCRES 303	RES08/2		187	12.5	126	76	162	400	654	91
	3 <sup>1</sup> / <sub>4</sub>		02 BCRES 304										
85	3 <sup>7</sup> / <sub>16</sub>	02 BCRES 85M	02 BCRES 307		RES10	209	12.5	152	76	177	442	696	124
	3 <sup>1</sup> / <sub>2</sub>		02 BCRES 308										
100	3 <sup>11</sup> / <sub>16</sub>	02 BCRES 100M	02 BCRES 311	RES30		213	12.5	152	76	177	442	696	145
	3 <sup>3</sup> / <sub>4</sub>		02 BCRES 312										
105	3 <sup>13</sup> / <sub>16</sub>	02 BCRES 100M	02 BCRES 315		RES31	229	12.5	152	64	203	444	736	166
	4		02 BCRES 400										
110	4 <sup>1</sup> / <sub>16</sub>	02 BCRES 110M	02 BCRES 403	RES31		229	12.5	152	64	203	444	736	166
	4 <sup>7</sup> / <sub>16</sub>		02 BCRES 407										
115	4 <sup>1</sup> / <sub>2</sub>	02 BCRES 115M	02 BCRES 408		RES31	229	12.5	152	64	203	444	736	166
	4 <sup>1</sup> / <sub>2</sub>		02 BCRES 408										
120	4 <sup>15</sup> / <sub>16</sub>	02 BCRES 120M	02 BCRES 415	RES31		229	12.5	152	64	203	444	736	166
	5		02 BCRES 500										
125	5 <sup>1</sup> / <sub>16</sub>	02 BCRES 120M	02 BCRES 503		RES31	229	12.5	152	64	203	444	736	166
	5 <sup>1</sup> / <sub>16</sub>		02 BCRES 507										
130	5 <sup>7</sup> / <sub>16</sub>	02 BCRES 140M	02 BCRES 508	RES31		229	12.5	152	64	203	444	736	166
	5 <sup>1</sup> / <sub>2</sub>		02 BCRES 508										
140	5 <sup>15</sup> / <sub>16</sub>	02 BCRES 150M	02 BCRES 515		RES31	229	12.5	152	64	203	444	736	166
	6		02 BCRES 600										
155	6	02 BCRES 150M	02 BCRES 600	RES31		229	12.5	152	64	203	444	736	166
	6		02 BCRES 600										

Illustrations are typical.

Rod fixing varies from 2 to 6 bolts according to size.

Dimensions should be confirmed before fixing design.

# 01 and 02 Series Take-up Units up to 155mm/6" Shaft Diameter

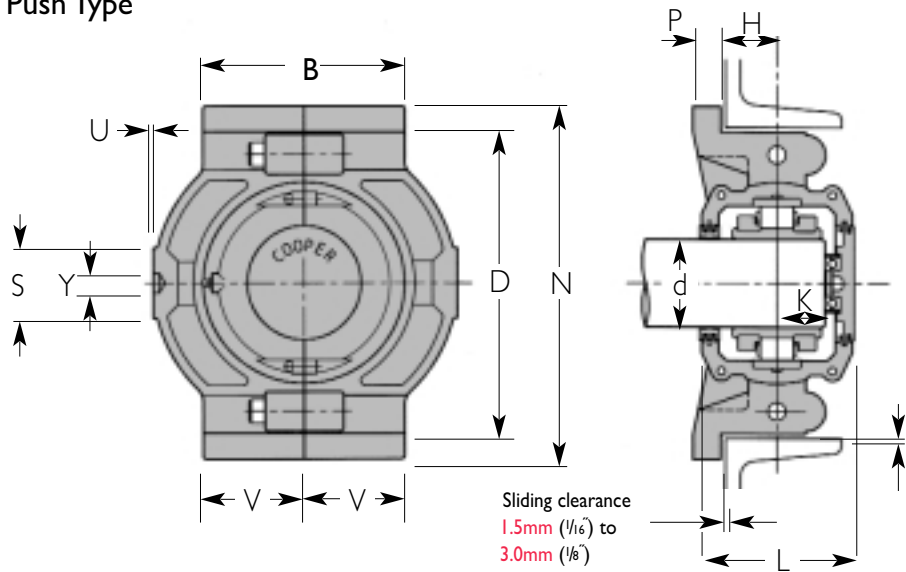


Take-up housings are an efficient means of tensioning the pulleys of conveyors and elevators.

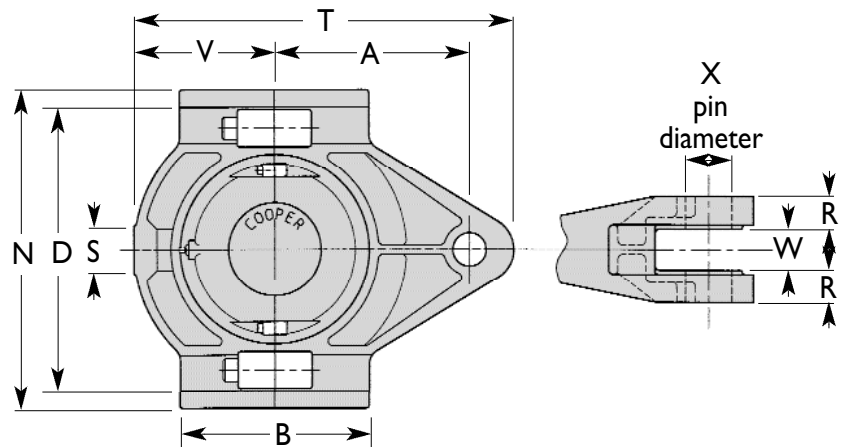
The unit consists of a standard fixed type Cooper split roller bearing and swivel cartridge mounted in the spherical bore of the cast iron sliding unit.

Take-ups are available as push type and tension type as illustrated.

## Push Type

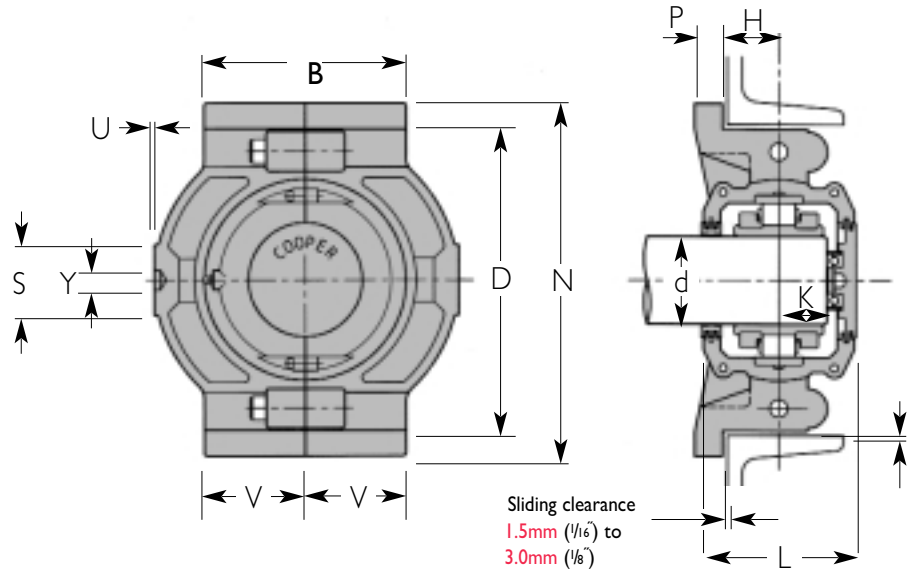


## Tension Type



Up to 90mm/3½" bore size, the standard arrangement is as illustrated, with two EX bearings (one each end of the shaft) fitted with blanking plates and ball thrust bearings for axial location.

Above 90mm bore size the standard arrangement is two GR bearings with plain blanking plates. If a through shaft is required, please consult our technical department.



## 01 Series Take-up Push Type

### References

Shaft diameter (d)		Take-up unit complete		Take-up housing only	B	N	D	V	K	P	H	L	S	Y	U	Mass (kg) (lb)
mm	inches	millimeters	inches													
40	1¼	01 BCTP 40M	01 BCTP 104	TP01	102	172	153	76	27	14	29	86	25	13	5	6
	1½		01 BCTP 108													
45	1⅞	01 EBCTP 45M	01 EBCTP 111	TP02	114	204	178	88	29	16	29	98	29	13	5	9
50	1⅝		01 EBCTP 112													
	2	01 EBCTP 115	01 EBCTP 200		4½	8	7	3½	1⅞	⅝	1⅞	3⅞	1⅞	½	⅜	20
60	2⅜	01 EBCTP 60M	01 EBCTP 203	TP03	128	235	203	102	30	20	32	104	38	16	6	12
65	2½		01 EBCTP 204													
	2½	01 EBCTP 65M	01 EBCTP 207		5	9¼	8	4	1⅜	¾	1¼	4	1½	⅝	¼	26
	2½		01 EBCTP 208													
70	2⅞	01 EBCTP 70M	01 EBCTP 211	TP04	152	266	229	114	35	22	40	114	41	16	6	17
75	2¾		01 EBCTP 212													
	2⅞	01 EBCTP 75M	01 EBCTP 215		6	10½	9	4½	1⅜	⅞	1⅞	4½	1⅝	⅝	¼	38
	3		01 EBCTP 300													
80	3⅜	01 EBCTP 80M	01 EBCTP 303	TP05	190	318	280	140	40	22	40	136	51	16	6	27
85	3¼		01 EBCTP 304													
90	3⅞	01 EBCTP 85M	01 EBCTP 307		7½	12½	11	5½	1⅞	⅞	1⅞	5⅜	2	⅝	¼	60
	3½	01 EBCTP 90M	01 EBCTP 308													
100	3⅞	01 EBCTP 100M	01 EBCTP 311	TP06	204	342	305	152	-	22	43	134	51	19	6	31
105	3¾		01 EBCTP 312													
	3⅝	01 EBCTP 105M	01 EBCTP 315		8	13½	12	6	-	⅞	1⅞	5¼	2	¾	¼	68
	4		01 EBCTP 400													
110	4⅜	01 BCTP 110M	01 BCTP 403	TP07	216	382	343	162	-	22	48	142	70	19	6	46
115	4⅞		01 BCTP 407													
	4½	01 BCTP 115M	01 BCTP 408		8½	15	13½	6⅜	-	⅞	1⅞	5⅜	2¼	¾	¼	101
120	4⅝	01 BCTP 120M	01 BCTP 415	TP08	254	420	381	190	-	25	51	156	76	19	6	65
125	4⅝		01 BCTP 125M													
130	5	01 BCTP 130M	01 BCTP 500		10	16½	15	7½	-	1	2	6⅞	3	¾	¼	143
135	5⅜	01 BCTP 135M	01 BCTP 503	TP09	266	438	400	196	-	25	54	168	76	23	8	80
140	5⅞		01 BCTP 507													
	5½	01 BCTP 140M	01 BCTP 508		10½	17¼	15¾	7¾	-	1	2⅞	6⅞	3	1⅝	⅜	176
150	5⅝	01 BCTP 150M	01 BCTP 515	TP10	266	464	426	204	-	25	57	174	86	23	8	91
155	6		01 BCTP 150M													

Illustrations are typical.

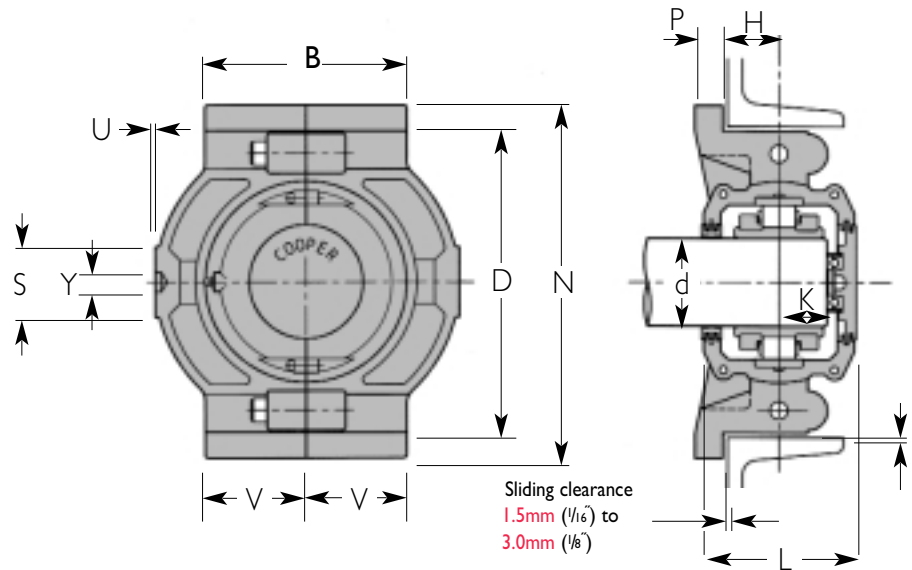
Dimensions should be confirmed before fixing design.

## 02 Series Take-up Push Type up to 155mm/6" Shaft Diameter



Up to 90mm/3½" bore size, the standard arrangement is as illustrated, with two EX bearings (one each end of the shaft) fitted with blanking plates and ball thrust bearings for axial location.

Above 90mm bore size the standard arrangement is two GR bearings with plain blanking plates. If a through shaft is required, please consult our technical department.



### 02 Series Take-up Push Type

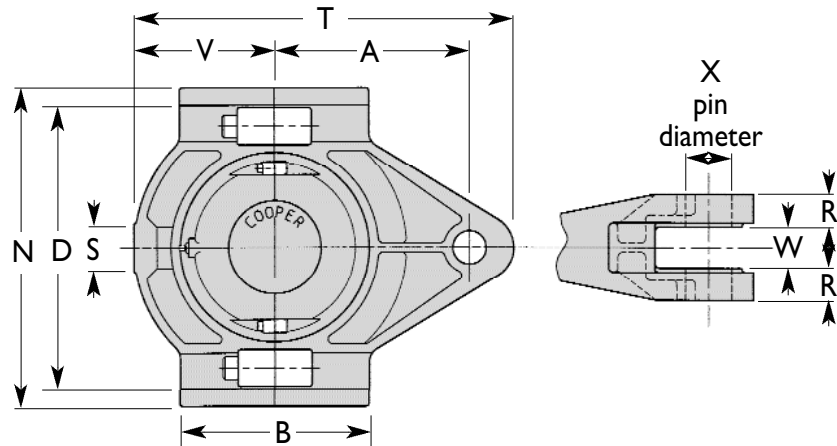
Shaft diameter (d)		Take-up unit complete		Take-up housing only	B	N	D	V	K	P	H	L	S	Y	U	Mass (kg) (lb)
mm	inches	millimeters	inches													
50	1 11/16	02 BCTP 50M	02 BCTP 111	TP03	128	235	203	102	35	20	32	114	38	16	6	12
	1 3/4		02 BCTP 112													
	1 15/16		02 BCTP 115													
	2		02 BCTP 200													
60	2 3/16	02 BCTP 60M	02 BCTP 203	TP04	152	266	229	114	38	22	40	126	41	16	6	17
	2 1/4		02 BCTP 204													
	2 7/16		02 BCTP 207													
	2 1/2		02 BCTP 208													
70	2 11/16	02 BCTP 70M	02 BCTP 211	TP05	190	318	280	140	41	22	40	140	51	16	6	27
	2 3/4		02 BCTP 212													
	2 15/16		02 BCTP 215													
	3		02 BCTP 300													
80	3 3/16	02 BCTP 80M	02 BCTP 303	TP06	204	342	305	152	48	22	43	154	51	19	6	31
	3 1/4		02 BCTP 304													
	3 7/16		02 BCTP 307													
	3 1/2		02 BCTP 308													
100	3 11/16	02 BCTP 100M	02 BCTP 311	TP07	216	382	343	162	-	22	48	146	70	19	6	46
	3 3/4		02 BCTP 312													
	3 15/16		02 BCTP 315													
	4		02 BCTP 400													
110	4 3/16	02 BCTP 110M	02 BCTP 403	TP08	254	420	381	190	-	25	51	162	76	19	6	65
	4 7/16		02 BCTP 407													
	4 1/2		02 BCTP 408													
120	4 15/16	02 BCTP 120M	02 BCTP 415	TP10	266	464	426	204	-	25	57	184	86	23	8	91
	5		02 BCTP 125M													
	5 1/8		02 BCTP 130M													
135	5 3/16	02 BCTP 135M	02 BCTP 503	TP30	280	502	464	222	-	25	60	188	92	23	8	109
	5 1/8		02 BCTP 507													
	5 1/2		02 BCTP 508													
150	5 15/16	02 BCTP 150M	02 BCTP 515	TP31	305	528	489	235	-	25	64	204	92	26	10	124
	6		02 BCTP 600													

Illustrations are typical.

Dimensions should be confirmed before fixing design.

Up to 90mm/3½" bore size, the standard arrangement is as illustrated, with two EX bearings (one each end of the shaft) fitted with blanking plates and ball thrust bearings for axial location.

Above 90mm bore size the standard arrangement is two GR bearings with plain blanking plates. If a through shaft is required, please consult our technical department.



## 01 Series Take-up Tension Type

### References

Shaft diameter (d)		Take-up unit complete housing inches	Take-up housing only	B	N	D	A	T	X	V	K*	P*	H*	W	R	L*	Mass (kg) (lb)															
mm	inches																															
40	1¼	01 BCTT 40M	TT01	102	172	153	114	216	20	76	27	14	29	25	24	86	7															
	1½																	01 BCTT 108	4	6¾	6	4½	8½	¾	3	1⅙	⅞	1½	1	1⅝	3⅝	15
45	1⅞	01 EBCTT 45M	TT02	114	204	178	128	242	24	88	29	16	29	25	25	98	10															
	1¾																	01 EBCTT 111	4½	8	7	5	9½	1⅝	3⅞	1½	⅝	1½	1	1	3⅞	22
	50																	01 EBCTT 115	01 EBCTT 207	01 EBCTT 200	01 EBCTT 203	01 EBCTT 204	01 EBCTT 207	01 EBCTT 208	01 EBCTT 211	01 EBCTT 212	01 EBCTT 215	01 EBCTT 300	01 EBCTT 303	01 EBCTT 304	01 EBCTT 307	01 EBCTT 308
60	2⅜	01 EBCTT 60M	TT03	128	235	203	146	280	24	102	30	20	32	30	29	104	13															
	2½																	01 EBCTT 65M	5	9¼	8	5¾	11	1⅝	4	1⅓	¾	1¼	1⅓	1½	4	29
70	2⅞	01 EBCTT 70M	TT04	152	266	229	158	305	24	114	35	22	40	30	32	114	19															
	2¾																	01 EBCTT 212	6	10½	9	6¼	12	1⅝	4½	1⅓	7⁄8	1⅞	1⅓	1¼	4½	42
	75																	01 EBCTT 215	01 EBCTT 300	01 EBCTT 303	01 EBCTT 304	01 EBCTT 307	01 EBCTT 308	01 EBCTT 311	01 EBCTT 312	01 EBCTT 315	01 EBCTT 400	01 EBCTT 403	01 BCTT 407	01 BCTT 408	01 BCTT 415	01 BCTT 500
80	3⅞	01 EBCTT 80M	TT05	190	318	280	190	368	30	140	40	22	40	38	35	136	30															
	3¼																	01 EBCTT 85M	7½	12½	11	7½	41½	1⅓	5½	1⅞	7⁄8	1⅞	1½	1½	5⅞	66
	85																	01 EBCTT 90M	01 EBCTT 303	01 EBCTT 304	01 EBCTT 307	01 EBCTT 308	01 EBCTT 311	01 EBCTT 312	01 EBCTT 315	01 EBCTT 400	01 BCTT 403	01 BCTT 407	01 BCTT 408	01 BCTT 415	01 BCTT 500	01 BCTT 503
100	3⅞	01 EBCTT 100M	TT06	8	13½	12	8¼	16¼	1⅓	6	-	7⁄8	1⅞	1¾	1⅞	5¼	75															
	105																	01 EBCTT 105M	204	342	305	210	414	36	152	-	22	43	44	35	134	34
110	4⅞	01 BCTT 110M	TT07	216	382	343	228	445	42	162	-	22	48	44	41	142	51															
	115																	01 BCTT 115M	8½	15	13½	9	17½	1⅞	6⅞	-	7⁄8	1⅞	1¾	1½	5⅞	112
120	4⅞	01 BCTT 120M	TT08	254	420	381	260	508	42	190	-	25	51	44	44	156	71															
	125																	01 BCTT 125M	10	16½	15	12¼	20	1⅞	7½	-	1	2	1¾	1¾	6⅞	157
	130																	01 BCTT 130M	01 BCTT 415	01 BCTT 500	01 BCTT 503	01 BCTT 507	01 BCTT 508	01 BCTT 515	01 BCTT 600	01 BCTT 515	01 BCTT 600	01 BCTT 515	01 BCTT 600	01 BCTT 515	01 BCTT 600	01 BCTT 515
135	5⅞	01 BCTT 135M	TT09	266	438	400	266	514	42	196	-	25	54	44	48	168	89															
	140																	01 BCTT 140M	10½	17¼	15¾	10½	20¼	1⅞	7¾	-	1	2⅞	1¾	1⅞	6⅞	196
150	5⅞	01 BCTT 150M	TT10	266	464	426	280	546	48	204	-	25	57	50	51	174	100															
	155																	01 BCTT 155M	10½	18¼	16¾	11	21½	1⅞	8	-	1	2¼	1⅞	2	6⅞	220

Illustrations are typical.

Dimensions should be confirmed before fixing design.

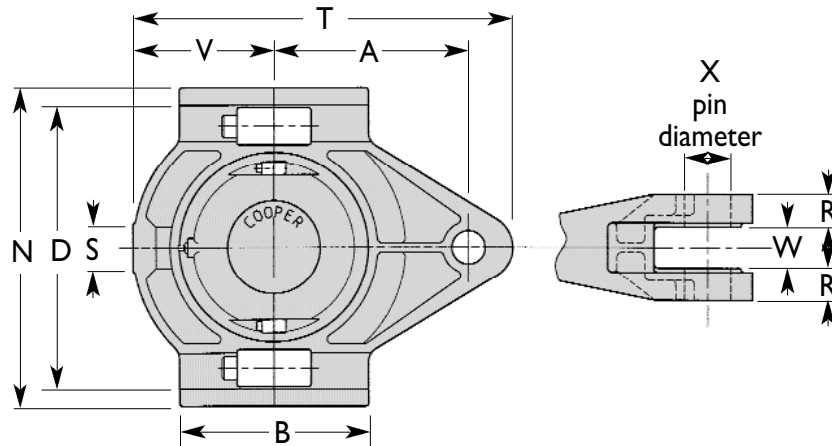
\* For dimensions K,P,H, and L see diagram of push-type unit.

# 02 Series Take-up Tension Type up to 155mm/6" Shaft Diameter



Up to 90mm/3 1/2" bore size, the standard arrangement is as illustrated, with two EX bearings (one each end of the shaft) fitted with blanking plates and ball thrust bearings for axial location.

Above 90mm bore size the standard arrangement is two GR bearings with plain blanking plates. If a through shaft is required, please consult our technical department.



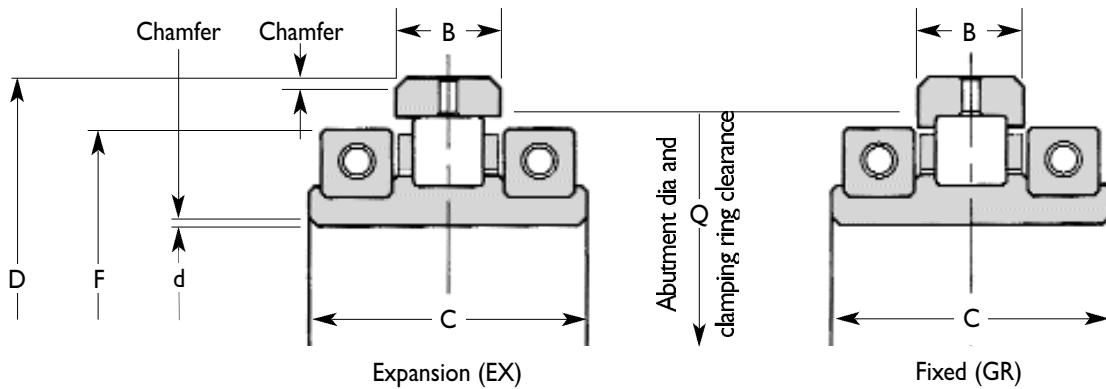
## 02 Series Take-up Tension Type

Shaft diameter (d)		References		Take-up housing only	B	N	D	A	T	X	V	K*	P*	H*	W	R	L*	Mass (kg) (lb)																
mm	inches	millimeters	inches																															
50	1 11/16	02 BCTT 50M	02 BCTT 111	TT03	128	235	203	146	280	24	102	35	20	32	30	29	114	13																
	1 3/4		02 BCTT 112																5	9 1/4	8	5 3/4	11	1 5/16	4	1 3/8	3/4	1 1/4	1 3/16	1 1/8	4 1/2	29		
	1 15/16		02 BCTT 115																															
	2		02 BCTT 200																															
60	2 3/16	02 BCTT 60M	02 BCTT 203	TT04	152	266	229	158	305	24	114	38	22	40	30	32	126	19																
	2 1/4		02 BCTT 204																6	10 1/2	9	6 1/4	12	1 5/16	4 1/2	1 1/2	7/8	1 7/16	1 3/16	1 1/4	5	42		
	2 1/8		02 BCTT 207																															
	2 1/2		02 BCTT 208																															
70	2 11/16	02 BCTT 70M	02 BCTT 211	TT05	190	318	280	190	368	30	140	41	22	40	38	35	140	30																
	2 3/4		02 BCTT 212																7 1/2	12 1/2	11	7 1/2	41 1/2	1 3/16	5 1/2	1 3/8	7/8	1 7/16	1 1/2	1 3/8	5 1/2	66		
	2 15/16		02 BCTT 215																															
	3		02 BCTT 300																															
80	3 3/16	02 BCTT 80M	02 BCTT 303	TT06	204	342	305	210	414	36	152	48	22	43	44	35	154	34																
	3 1/4		02 BCTT 304																8	13 1/2	12	8 3/4	16 1/4	1 7/16	6	1 7/8	7/8	1 5/8	1 3/4	1 3/8	6 1/16	75		
	3 1/8		02 BCTT 307																															
	3 1/2		02 BCTT 308																															
100	3 11/16	02 BCTT 100M	02 BCTT 311	TT07	216	382	343	228	445	42	162	-	22	48	44	41	146	51																
	3 3/4		02 BCTT 312																8 1/2	15	13 1/2	9	17 1/2	1 11/16	6 3/8	-	7/8	1 7/8	1 3/4	1 5/8	5 3/4	112		
	3 15/16		02 BCTT 315																															
	4		02 BCTT 400																															
110	4 3/16	02 BCTT 110M	02 BCTT 403	TT08	254	420	381	260	508	42	190	-	25	51	44	44	162	71																
	4 7/16		02 BCTT 407																10	16 1/2	15	12 1/4	20	1 11/16	7 1/2	-	1	2	1 3/4	1 3/4	6 3/8	157		
	4 1/2		02 BCTT 408																															
120	4 15/16	02 BCTT 120M	02 BCTT 415	TT10	266	464	426	280	546	48	204	-	25	57	50	51	184	100																
	5		02 BCTT 500																10 1/2	18 3/4	16 3/4	11	21 1/2	1 7/8	8	-	1	2 1/4	1 15/16	2	7 1/4	220		
135	5 3/16	02 BCTT 135M	02 BCTT 503	TT30	280	502	464	298	584	48	222	-	25	60	50	54	188	119																
	5 1/8		02 BCTT 507																11	19 3/4	18 1/4	11 3/4	23	1 7/8	8 3/4	-	1	2 3/8	1 15/16	2 1/8	7 1/4	263		
	5 1/2		02 BCTT 508																															
150	5 15/16	02 BCTT 150M	02 BCTT 515	TT31	305	528	489	312	616	48	235	-	25	64	50	57	204	141																
	6		02 BCTT 600																12	20 3/4	19 1/4	12 1/4	24 1/4	1 7/8	9 1/4	-	1	2 1/2	1 15/16	2 1/4	8	311		

Illustrations are typical.

Dimensions should be confirmed before fixing design

\* For dimensions K, P, H and L see diagram of push-type unit.



**04 Series High Speed Bearing**

Shaft diameter (d) mm inches	Reference (Note 1) (bearing only)	Max rpm	Bearing rating lb/kN			B	C	D (∅)	F (∅)	Q	Mass (kg) (lb)
			Dynamic C	Static C <sub>o</sub>	Axial C <sub>a</sub>						
152.4 6	04 B 600	3000	198 44,550	246 55,800	5.3 1,193	38.1 1½	79.4 3⅛	257.18 10⅞	210 8¼	231 9⅞	14 30
269.9 10⅝	04 B 1010	2470	336 75,600	367 82,575	11.1 2,498	48.4 1⅞	103 4⅛	365.13 14⅞	330 13	340 13⅞	27 60
342.9 13½	04 B 1308	1950	261 58,725	282 63,450	9.8 2,205	48.4 1⅞	103 4⅛	438.15 17¼	404 15⅞	414 16¼	34 75
400 -	04 B 400M	1650	214 48,150	235 52,875	11.6 2,610	36 1⅜	100 3⅝	505.00 19⅞	466 18⅞	475 18¾	34 75
444.5 17½	04 B 1708	1460	302 67,950	367 82,575	11.6 2,610	48.4 1⅞	108 4¼	546.10 21½	516 20⅞	524 20⅞	45 100
469.9 18½	04 B 1808	1370	316 71,100	395 88,875	12.5 2,813	48.4 1⅞	108 4¼	571.50 22½	542 21⅞	550 21⅞	50 110
527.1 20¾	04 B 2012	1210	326 73,350	423 95,175	12.9 2,903	48.4 1⅞	114 4½	635.00 25	602 23⅞	610 24	54 120
550 -	04 B 550M	1150	266 59,850	289 63,025	13.8 3,105	36 1⅜	98 3⅞	655.00 25⅞	624 24⅞	634 24⅞	54 120
558.8 22	04 B 2200	1130	361 81,225	452 101,700	21.8 4,905	38.1 1½	101 4	666.75 26¼	634 24⅞	644 25⅞	54 120
584.2 23	04 B 2300	1080	368 82,800	470 103,750	21.4 4,815	38.1 1½	101 4	692.15 27¼	660 25⅞	670 26⅞	59 130
609.6 24	04 B 2400	1020	413 92,925	543 122,175	26.2 5,895	38.1 1½	101 4	717.55 28¼	684 26⅞	696 27⅞	61 135
673.1 26½	04 B 2608	910	509 114,525	818 184,050	25.4 5,715	48.4 1⅞	114 4½	781.05 30¾	748 29⅞	755 29¾	77 170
762.0 30	04 B 3000	780	372 83,700	509 114,525	19.1 4,298	44.5 1¾	114 4½	882.65 34¾	844 33¼	856 33⅞	95 210
812.8 32	04 B 3200	730	394 88,650	579 130,275	19.6 4,410	44.5 1¾	114 4½	939.80 37	894 35⅞	906 35⅞	104 230
838.2 33	04 B 3300	705	403 90,675	602 135,450	20.5 4,613	44.5 1¾	114 4½	965.20 38	920 36⅞	932 36⅞	104 230
914.4 36	04 B 3600	620	418 94,050	556 125,100	24.5 5,513	44.5 1¾	114 4½	1041.40 41	996 39⅞	1008 39⅞	118 260
1060 -	04 B 1060M	560	954 214,650	1472 331,200	59.0 13,275	60 2⅞	127 5	1220.00 48⅞	1140 44⅞	1772 46⅞	180 395
1117.6 44	04 B 4400	140	1339 310,275	1822 409,950	150.8 33,930	76.2 3	168 6⅞	1295.40 51	1210 47⅞	1255 49⅞	200 440
1219.2 48	04 B 4800*	350	1094 246,150	1693 380,925	-	69.9 2¾	140 5½	1371.60 54	1298 51⅞	1334 52½	146 322
1295 -	04 B 1295AM*	340	988 222,300	1606 361,350	-	63.5 2½	127 5	1435.10 56½	1372 54	1404 55¼	193 425
1295 -	04 B 1295BM	120	1831 411,975	2877 647,325	238.0 53,550	76.2 3	168 6⅞	1473.20 58	1388 54⅞	1432 56⅞	313 690
1550 -	04 B 1550M	300	1364 306,900	2418 544,050	133.4 30,015	75 2⅞	140 5½	1720.00 67⅞	1652 65⅞	1672 65⅞	336 741

\* Only available in expansion type.

(1) Add 'EX' or 'GR' to reference for expansion type or fixed type respectively, e.g. 04B400MEX

**01 Series Screw Sizes, Wrench Sizes and Torque Values in Nm**

Shaft size	Clamping Ring Screw			Cartridge Joint Screw			Cartridge Radial Screw			Side Screw			Pedestal Joint Screw			Flange Joint Screw		
	Screw size	Key size A/F	Torque (Nm)	Screw size	Key size A/F	Torque (Nm)	Screw size	Key size A/F	Torque (Nm)	Screw size	Key size A/F	Torque (Nm)	Screw size	Key size A/F	Torque (Nm)	Screw size	Key size A/F	Torque (Nm)
<b>30 to 50mm</b> 1 <sup>3</sup> / <sub>16</sub> to 2 inches	M4X20	3	4.5	M4X25	3	3.5	-	-	-	M4X10	2	2.0	M8X45	6	26	M8X40	6	26
<b>55 to 65mm</b> 2 <sup>3</sup> / <sub>16</sub> to 2 <sup>1</sup> / <sub>2</sub> inches	M4X20	3	4.5	M4X25	3	3.5	-	-	-	M4X10	2	2.0	M10X55	8	52.5	M10X45	8	52.5
<b>70 to 75mm</b> 2 <sup>1</sup> / <sub>16</sub> to 3 inches	M4X20	3	4.5	M4X25	3	3.5	-	-	-	M4X10	2	2.0	M12X65	10	90	M12X55	10	90
<b>80 to 90mm</b> 3 <sup>3</sup> / <sub>16</sub> to 3 <sup>1</sup> / <sub>2</sub> inches	M5X25	4	8.5	M5X25	4	6.5	-	-	-	M4X10	2	2.0	M16X65	14	225	M12X55	10	90
<b>95 to 105mm</b> 3 <sup>1</sup> / <sub>16</sub> to 4 inches	M6X25	5	15	M6X25	5	11	-	-	-	M4X10	2	2.0	M16X65	14	225	M16X65	14	225
<b>110 to 115mm</b> 4 <sup>3</sup> / <sub>16</sub> to 4 <sup>1</sup> / <sub>2</sub> inches	M6X25	5	15	M6X25	5	11	-	-	-	M6X10	3	7.8	M20X80	17	420	M16X65	14	225
<b>120 to 130mm</b> 4 <sup>1</sup> / <sub>16</sub> to 5 inches	M6X25	5	15	M6X25	5	11	-	-	-	M6X10	3	7.8	M20X80	17	420	M20X80	17	420
<b>135 to 140mm</b> 5 <sup>3</sup> / <sub>16</sub> to 5 <sup>1</sup> / <sub>2</sub> inches	M8X30	6	35	M8X30	6	26	-	-	-	M6X10	3	7.8	M20X80	17	420	M20X80	17	420
<b>145 to 155mm</b> 5 <sup>1</sup> / <sub>16</sub> to 6 <sup>1</sup> / <sub>16</sub> inches	M8X30	6	35	M8X30	6	26	-	-	-	M6X10	3	7.8	M20X100	17	420	M20X100	17	420
<b>160mm</b> 6 <sup>1</sup> / <sub>4</sub> to 6 <sup>1</sup> / <sub>2</sub> inches	M8X30	6	35	M8X30	6	26	-	-	-	M6X10	3	7.8	M16X65	14	225	M20X100	17	420
<b>170 to 180mm</b> 6 <sup>1</sup> / <sub>16</sub> to 7 inches	M8X30	6	35	M8X30	6	26	-	-	-	M6X10	3	7.8	M16X65	14	225	M20X100	17	420
<b>190 to 200mm</b> 7 <sup>1</sup> / <sub>2</sub> to 8 inches	M8X30	6	35	M8X30	6	26	M10X20	8	35	M6X10	3	7.8	M16X65	14	225	M24X100	19	712.5
<b>210 to 230mm</b> 8 <sup>3</sup> / <sub>16</sub> to 9 <sup>1</sup> / <sub>16</sub> inches	M10X45	8	70	M10X45	8	52.5	M10X20	8	35	M6X10	3	7.8	M16X65	14	225	M24X100	19	712.5
<b>240 to 250mm</b> 9 <sup>1</sup> / <sub>16</sub> to 10 inches	M10X45	8	70	M10X45	8	52.5	M10X20	8	35	M6X10	3	7.8	M20X80	17	420	M24X100	19	712.5
<b>260 to 280mm</b> 10 <sup>1</sup> / <sub>16</sub> to 11 <sup>1</sup> / <sub>16</sub> inches	M10X45	8	70	M10X45	8	52.5	M10X25	8	35	M10X16	5	30	M20X100	17	420	M24X120	19	712.5
<b>300mm</b> 11 <sup>1</sup> / <sub>2</sub> to 12 inches	M10X45	8	70	M10X45	8	52.5	M10X25	8	35	M10X16	5	30	M20X100	17	420	M24X120	19	712.5
<b>320 to 350mm</b> 12 <sup>1</sup> / <sub>2</sub> to 14 <sup>1</sup> / <sub>16</sub> inches	M12X55	10	120	M12X55	10	90	M10X25	8	35	M10X16	5	30	M20X100	17	420	M24X120	19	712.5
<b>360 to 410mm</b> 14 <sup>1</sup> / <sub>2</sub> to 16 inches	M12X55	10	120	M12X55	10	90	M10X25	8	35	M10X16	5	30	M20X100	17	420	M24X100	19	712.5
<b>420 to 460mm</b> 16 <sup>1</sup> / <sub>2</sub> to 18 <sup>1</sup> / <sub>4</sub> inches	M12X55	10	120	M12X55	10	90	M12X25	10	60	M10X16	5	30	M20X80	17	420	-	-	-
<b>480mm</b> 18 <sup>1</sup> / <sub>2</sub> to 19 inches	M12X55	10	120	M12X55	10	90	M12X25	10	60	M10X16	5	30	M20X100	17	420	-	-	-
<b>500 to 600mm</b> 19 <sup>1</sup> / <sub>2</sub> to 24 inches	M16X65	14	300	M16X75	14	225	M12X30	10	60	M10X16	5	30	M20X100	17	420	-	-	-

\* For vertical shaft or high thrust load applications, the clamp ring torque value should be increased by up to 20%. All screws are metric coarse thread grade 12.9. All screw and allen key sizes are given in millimetres (mm).



**02 Series Screw Sizes, Wrench Sizes and Torque Values in Nm**

Shaft size	Clamp Ring Screw			Cartridge Joint Screw			Cartridge Radial Screw			Side Screw			Pedestal Joint Screw			Flange Joint Screw		
	Screw size	Key size A/F	Torque (Nm)	Screw size	Key size A/F	Torque (Nm)	Screw size	Key size A/F	Torque (Nm)	Screw size	Key size A/F	Torque (Nm)	Screw size	Key size A/F	Torque (Nm)	Screw size	Key size A/F	Torque (Nm)
1 <sup>11</sup> / <sub>16</sub> to 2 inches 45 to 50mm	M5X25	4	8.5	M5X25	4	6.5	-	-	-	M4X10	2	2.0	M10X45	8	52.5	M10X45	8	52.5
2 <sup>3</sup> / <sub>16</sub> to 2 <sup>1</sup> / <sub>2</sub> inches 55 to 65mm	M5X25	4	11	M5X25	4	6.5	-	-	-	M4X10	2	2.0	M12X55	10	90	M12X55	10	90
2 <sup>1</sup> / <sub>16</sub> to 3 inches 70 to 75mm	M6X25	5	15	M6X25	5	11	-	-	-	M4X10	2	2.0	M16X65	14	225	M12X55	10	90
3 <sup>3</sup> / <sub>16</sub> to 3 <sup>1</sup> / <sub>2</sub> inches 80 to 90mm	M6X25	5	15	M6X25	5	11	-	-	-	M4X10	2	2.0	M16X65	14	225	M16X65	14	225
3 <sup>1</sup> / <sub>16</sub> to 4 inches 95 to 105mm	M6X25	5	15	M6X25	5	11	-	-	-	M4X10	2	2.0	M16X65	14	225	M16X65	14	225
4 <sup>3</sup> / <sub>16</sub> to 4 <sup>1</sup> / <sub>2</sub> inches 110 to 115mm	M8X30	6	35	M8X30	6	26	-	-	-	M6X10	3	7.8	M20X80	17	420	M20X80	17	420
4 <sup>1</sup> / <sub>16</sub> to 5 inches 120 to 130mm	M8X30	6	35	M8X30	6	26	-	-	-	M6X10	3	7.8	M20X100	17	420	M20X100	17	420
5 <sup>3</sup> / <sub>16</sub> to 6 <sup>1</sup> / <sub>16</sub> inches 135 to 155mm	M8X30	6	35	M8X30	6	26	-	-	-	M6X10	3	7.8	M20X100	17	420	M24X100	19	712.5
6 <sup>1</sup> / <sub>16</sub> to 6 <sup>1</sup> / <sub>2</sub> inches 160 to 170mm	M10X45	8	70	M10X45	8	52.5	-	-	-	M6X10	3	7.8	M20X100	17	420	M24X120	19	712.5
6 <sup>1</sup> / <sub>16</sub> to 7 inches 180mm	M10X45	8	70	M10X45	8	52.5	M10X25	8	35	M6X10	3	7.8	M20X100	17	420	M24X120	19	712.5
7 <sup>1</sup> / <sub>2</sub> to 9 <sup>1</sup> / <sub>16</sub> inches 190 to 230mm	M12X55	10	120	M12X55	10	90	M10X30	8	35	M6X10	3	7.8	M20X100	17	420	M24X120	19	712.5
9 <sup>1</sup> / <sub>2</sub> to 10 inches 240 to 260mm	M12X55	10	120	M12X55	10	90	M10X30	8	35	M10X16	5	30	M20X100	17	420	M24X100	19	712.5
10 <sup>1</sup> / <sub>2</sub> to 12 inches 275 to 300mm	M16X65	14	300	M16X75	14	225	M10X30	8	35	M10X16	5	30	M20X100	17	420	M24X100	19	712.5
12 <sup>1</sup> / <sub>2</sub> to 13 inches 320 to 330mm	M16X65	14	300	M16X75	14	225	M10X30	8	35	M10X16	5	30	M20X100	17	420	M24X120	19	712.5
13 <sup>1</sup> / <sub>2</sub> to 15 inches 340 to 380mm	M16X65	14	300	M16X75	14	225	M12X30	10	60	M10X16	5	30	M20X100	17	420	-	-	-
15 <sup>1</sup> / <sub>2</sub> to 18 <sup>1</sup> / <sub>16</sub> inches 400 to 460mm	M16X65	14	300	M16X75	14	225	M12X35	10	60	M10X16	5	30	M20X100	17	420	-	-	-
18 <sup>1</sup> / <sub>2</sub> to 24 inches 480 to 600mm	M20X80	17	560	M20X100	17	420	M12X35	10	60	M10X16	5	30	M24X120	19	712.5	-	-	-

\* For vertical shaft or high thrust load applications, the clamp ring torque value should be increased by up to 20%.

All screws are metric coarse thread grade 12.9.  
All screw and allen key sizes are given in millimetres (mm).

## 03 Series Screw Sizes, Wrench Sizes and Torque Values in Nm

Shaft size	Clamping Ring Screw			Cartridge Joint Screw			Cartridge Radial Screw			Side Screw			Pedestal Joint Screw			Flange Joint Screw		
	Screw size	Key size A/F	Torque (Nm)	Screw size	Key size A/F	Torque (Nm)	Screw size	Key size A/F	Torque (Nm)	Screw size	Key size A/F	Torque (Nm)	Screw size	Key size A/F	Torque (Nm)	Screw size	Key size A/F	Torque (Nm)
3 <sup>1</sup> / <sub>16</sub> to 4 inches 95 to 105mm	M10X45	8	70	M10X45	8	52.5	M10X25	8	35	M6X10	3	7.8	M16X75	14	225	-	-	-
4 <sup>1</sup> / <sub>16</sub> to 4 <sup>1</sup> / <sub>2</sub> inches 110 to 120mm	M10X45	8	70	M10X45	8	52.5	M10X30	8	35	M6X10	3	7.8	M16X75	14	225	-	-	-
4 <sup>1</sup> / <sub>16</sub> to 5 inches 125 to 130mm	M10X45	8	70	M10X45	8	52.5	M10X25	8	35	M10X16	5	30	M16X75	14	225	M24X120	19	712
5 <sup>1</sup> / <sub>16</sub> to 5 <sup>1</sup> / <sub>2</sub> inches 135 to 145mm	M10X45	8	70	M10X45	8	52.5	M10X25	8	35	M10X16	5	30	M20X100	17	420	-	-	-
5 <sup>1</sup> / <sub>16</sub> to 6 <sup>1</sup> / <sub>16</sub> inches 150 à 155mm	M10X45	8	70	M10X45	8	52.5	M10X30	8	35	M10X16	5	30	M20X100	17	420	M24X120	19	712
6 <sup>1</sup> / <sub>16</sub> to 6 <sup>1</sup> / <sub>2</sub> inches 160 to 170mm	M12X55	10	120	M12X55	10	90	M12X35	10	60	M10X16	5	30	M20X100	17	420	-	-	-
6 <sup>3</sup> / <sub>4</sub> to 7 inches 180mm	M12X55	10	120	M12X55	10	90	M12X35	10	60	M10X16	5	30	M20X100	17	420	M24X100	19	712
7 <sup>1</sup> / <sub>2</sub> to 8 inches 190 to 200mm	M12X55	10	120	M12X55	10	90	M12X40	10	60	M10X16	5	30	M24X100	19	712	-	-	-
8 <sup>1</sup> / <sub>2</sub> to 9 inches 220 to 230mm	M16X65	14	300	M16X75	14	225	M12X40	10	60	M10X16	5	30	M20X100	17	420	-	-	-
9 <sup>1</sup> / <sub>2</sub> to 10 inches 240 à 260mm	M16X65	14	300	M16X75	14	225	M12X40	10	60	M10X16	5	30	M20X100	17	420	M24X120	19	712
10 <sup>1</sup> / <sub>2</sub> to 11 inches 280mm	M20X80	17	560	M20X100	17	420	M12X35	10	60	M10X16	5	30	M20X100	17	420	-	-	-
11 <sup>1</sup> / <sub>2</sub> to 12 inches 300mm	M20X80	17	560	M20X100	17	420	M12X55	10	60	M10X16	5	30	M20X100	17	420	-	-	-
13 inches 320mm	M20X80	17	560	M20X100	17	420	M12X55	10	60	M10X16	5	30	M24X120	19	712	-	-	-
14 inches 340 to 360mm	M24X100	19	950	M20X100	17	420	M12X40	10	60	M10X16	5	30	M24X100	19	712	-	-	-
15 inches 380 to 400mm	M24X100	19	950	M20X100	17	420	M12X55	10	60	M10X16	5	30	M24X120	19	712	-	-	-
17 inches 420 to 440mm	M24X100	19	950	M20X100	17	420	M12X40	10	60	M16X25	8	125	M24X120	19	712	-	-	-
18 inches 460mm	M24X100	19	950	M20X100	17	420	M12X55	10	60	M16X25	8	125	M24X120	19	712	-	-	-
20 inches 500 to 530mm	M24X100	19	950	M20X100	17	420	M16X65	14	150	M10X16	5	30	M24X120	19	712	-	-	-
22 to 23 inches 560 to 600mm	M24X100	19	950	M20X100	17	420	M12X55	10	60	M16X25	8	125	M24X120	19	712	-	-	-

\* For vertical shaft or high thrust load applications, the clamp ring torque value should be increased by up to 20%.

All screws are metric coarse thread grade 12.9.  
All screw and allen key sizes are given in millimetres (mm).

**Problem: Overheating**

Possible Cause	Solution
Shaft oversize. Bearing running tight	Provide shaft with correct tolerance. Contact Cooper technical department.
Aluminum triple labyrinth seal rubbing	Seal bore and labyrinth should be greased during installation.
Housing overpacked with grease or oil level too high	Bearing will purge excess grease through seals. Oil lubrication - reduce level to just below cage.
Wrong type of grease or oil causing lubricant breakdown.	Consult reliable lubricant manufacturer for proper type of lubricant or contact Cooper technical department.
Low oil level. Insufficient grease.	Oil level should be just below cage outside diameter. Add proper grease.
Inner race rubbing against seals.	Check clamping ring screws to make sure inner race is tight on the shaft. Make sure the expansion bearing is mounted properly with rollers positioned centrally on outer race.
Incorrect shaft alignment	Recheck alignment.
Bearing selected with inadequate internal clearance for high temperature operation.	Contact Cooper technical department.
Oil lubrication hole blocked. Grease passage blocked.	Inspect and clean holes. Refill to proper level.
Two fixed bearings on common shaft.	Remove one bearing and replace with an expansion bearing.
Excessive shaft expansion.	
Pinching of bearing.	Make sure entire area of pedestal base is supported.
Bearing cartridge not aligned.	Lubricate cartridge spherical with anti-seize compound, with pedestal cap in place and cap bolts loose, rotate or run shaft with a few revolutions while under load. Re-tighten cap bolts.

**Problem: Noisy Bearing**

Possible Cause	Solution
Foreign matter or corrosive agent entering bearing.	Remove and inspect bearing and seals. Clean and re-lubricate bearing and seals.
Undersize shaft.	Measure shaft for proper fit. Refer to Cooper technical department.
Inner race rubbing against seals.	Check clamping ring screws to make sure the inner race is tight on shaft. Make sure the expansion bearing is mounted correctly with roller positioned centrally on the outer race.
Improper mounting of bearing.	Inspect bearing. Check all match marks coincide. If parts are damaged, replace with new bearing.
Aluminum triple labyrinth seal rubbing	Seal bore and labyrinth should be greased during installation.
Low oil level. Insufficient grease.	Oil levels should be just below cage outside diameter. Add correct grease.

## Problem: Noisy Bearing - Continued

Possible Cause	Solution
Wrong type of grease or oil causing lubricant breakdown.	See lubrication section or contact Cooper technical department.
Bearing selected with incorrect internal clearance.	Contact Cooper technical department.
Shaft does not contain a fixed bearing.	Remove and replace with fixed bearing.
Two fixed bearings on common shaft.	Remove one and replace with an expansion bearing.
Unbalanced load.	Re-balance machine.
Bearing exposed to vibration while machine is idle.	Examine bearing for brinelling separated by the distance equal to spacing of rollers. Replace bearing. Rotate shaft at least once every two weeks to prevent brinelling.

## Problem: Vibration

Possible Cause	Solution
Foreign matter or corrosive agent entering bearing.	Remove and inspect bearing and seals. Clean and re-lubricate bearing and seals.
Pinching of bearing.	Make sure the entire area of the pedestal base is supported.
Shaft undersize.	Measure shaft size for correct fit. Refer to engineering section.
Unbalanced load.	Re-balance machine.
Flat on roller due to skidding.	Replace bearing.
Improper mounting of bearing.	Inspect bearing. Check that all match marks coincide. If parts are damaged, replace with new bearing.
Bearing cartridge not aligned.	Remove pedestal cap and lubricate cartridge spherical with anti-seize compound.
Excessive clearance in bearing resulting in vibration.	Use bearing with recommended internal clearance.
Failure to clean bearing before assembly.	Remove and carefully clean bearing and re-assemble with correct lubrication.

## Problem: Bearing Loose on Shaft

Possible Cause	Solution
Clamping rings not tightened sufficiently.	Make sure clamping rings are fully tightened. Refer to assembly procedure.
Undersize shaft.	Measure shaft size for proper fit. Refer to engineering section.
Shaft out of round or not parallel.	Measure shaft size for proper fit. Refer to engineering section.

## Who to Contact

At our European headquarters and Chinese, US and German operations, we have dedicated teams of specialists, sales managers and engineers with vast experience of industry requirements. Our Regional Sales Managers are located throughout the world and are backed by Cooper authorised distribution partners.

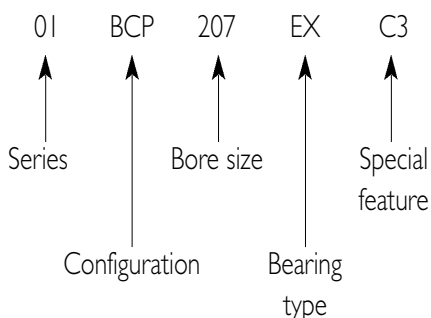
For a complete list of distributors, please contact us or visit our website at [www.CooperBearings.com](http://www.CooperBearings.com). This site contains the information shown in this catalogue and much more.

Just one call to any of the offices shown on the back cover will put you in touch with professional advice.

Contact us or any of our distributors by whatever method suits you and we'll be pleased to respond.

## Numbering System

For every Cooper bearing, there is a sequence of numbers and symbols that describe all the features of that bearing. An example would be as follows:



## Series Explanation

Cooper split roller bearings are classified into Series. Each Series is represented by a two digit number and in some cases by a three digit number. The three most common Series in the Cooper product line are as follows:

Series: 01  
Capacity: Medium  
Series replaced in 1967: MSP

Series: 02  
Capacity: Heavy  
Series replaced in 1967: HSP

Series: 03  
Capacity: Extra heavy  
Series replaced in 1967: XHS

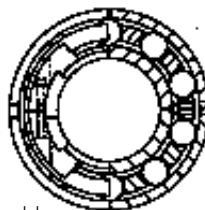
There are other Series in the Cooper product line that are considered non-stock items.

## Configuration of Components

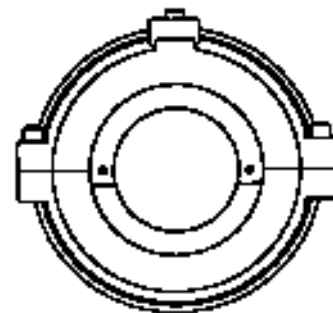
There are three main components in a standard Cooper bearing assembly. These are as follows:

### Bearing (B)

Consists of:  
An inner race.  
2 clamping rings.  
A roller and cage assembly.  
An outer race



The bearing is sold as a complete unit. (i.e., component parts cannot be exchanged with another bearing).

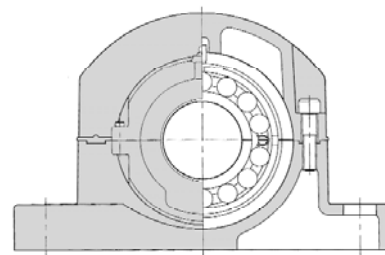


### Cartridge (C)

Allows for initial alignment and serves as the housing for bearing components and selected sealing option.

Cartridges are sold as complete units. (i.e., the cartridge halves are machined together and are match marked to ensure proper installation.) The halves cannot be interchanged with other cartridges.

### Mounting Arrangement



Holds the cartridge in place around the shaft by means of a spherical ball and socket joint. Available in the following:

Pedestal or pillow block	(P)
Nodular iron pedestal M line	(PM)
Steel pedestal	(PS)
Pedestal with thin steel cap	(PT)
Flange	(F)
Take up push type	(TP)
Tension type	(TT)
Rod ends shoe type	(RES)
T type	(RET)

For example:

A BCPS denotes a bearing and cartridge in a steel pedestal or pillow block. A BCRET denotes a bearing and cartridge in a T type rod end.

Mounting arrangements are also sold as complete units i.e., a pedestal (P) consist of a base and a cap which have been machined together and cannot be interchanged with other pedestals.

## Bore Sizes

Dimensions can be either in inches or millimetres. For bore sizes in inches, the last two digits indicate the number of sixteenths, the first one or two digits indicate the number of inches, for example:

Bearing number	Shaft size
1008	10" and $\frac{8}{16} = 10\frac{1}{2}$ "
2400	24" and $\frac{0}{16} = 24$ "
412	4" and $\frac{12}{16} = 4\frac{3}{4}$ "
204	2" and $\frac{4}{16} = 2\frac{1}{4}$ "
207	2" and $\frac{7}{16} = 2\frac{7}{16}$ "
315	3" and $\frac{15}{16} = 3\frac{15}{16}$ "

For bore sizes in metric units, the digits indicate the number of millimetres and mm indicates metric rather than inch size, for example:

Bearing number	Shaft size
200mm	200 millimetres
35mm	35 millimetres
600mm	600 millimetres

Bore sizes are categorised into bearing group sizes. The largest size (inches) in each group represents the name of the group.

For example:

Reference	Group	Metric
01 EBCP 203	208	60mm 65mm
01 EBCP 204		
01 EBCP 207		
01 EBCP 208		
01 EBCP 211	300	70mm 75mm
01 EBCP 212		
01 EBCP 215		
01 EBCP 300		
01 EBCP 303	308	80mm 85mm 90mm
01 EBCP 304		
01 EBCP 307		
01 EBCP 308		
01 EBCP 311	400	100mm 105mm
01 EBCP 312		
01 EBCP 315		
01 EBCP 400		

Bearings within a group size use a common mounting. If TL seals are used, the cartridge is also common to all bearings within a group size.

## Bearing Type

There are two main bearing types in the Cooper product line. These two types can be modified to apply to different applications.

## Expansion, Floating or Free Type (EX)

The expansion bearing allows axial movement of the shaft as expansion and contraction takes place due to temperature change. Axial movement takes place as the rollers spiral across the wide flat outer race, or in the case of the EXILOG, the inner race.

## Fixed, Held or Non-Expansion Type (GR)

The fixed (grooved race) bearing locates one end of the shaft and accepts axial (thrust) load. When axial load is applied, the roller ends slide against the shoulder or lip of the grooved outer race. A special type carries axial load only in one direction on a grooved outer race with a single lip (GROSL).

## Special Features

Characters placed after the bearing type indicate some special feature or features about the bearing. Special features include a different seal type, diametral clearance, cage or retainer material or heat treatment. Some common special features are as follows:

Designation	Feature
SRS	Synthetic rubber (lip type) seal - split
HTP	High temperature packing
C3	Greater than standard diametral clearance
C2	Less than standard diametral clearance
GM	Gunmetal (bronze) cage/retainer
ZN	Zinc cage/retainer
SPLTEMP	Special tempering of rollers and races
SI	Low clearance between cartridge and outer housing

It is recommended these two pages are retained in the Product Catalogue and are copied prior to submitting application details to Cooper

## User

Name	Name
Company	Company
Address	Branch
Fax	Fax
e-mail address	e-mail address
Telephone	Telephone
Equipment name and or number	Equipment name and or number
Equipment manufacturer	Equipment manufacturer

## Distributor

## Shaft

Shaft diameter	Current bearing
----------------	-----------------

## Life

Current bearing life	Expected bearing life
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## Speed

Bearing rpm	
or motor speed	and pulley diameters
or motor speed	and gear box ratio
or feet/min	and head pulley diameter

## Environment

Wet	Splashed/sprayed	Submerged	Exposed to elements
Temperature	Shaft temperature	Surrounding temperature	Other heat sources
Contamination	Material		
Extent	Light	Medium	Heavy
Do bearings fail due to contamination		Yes	No

## Load

Type of drive	Direct drive		
Coupling type	Flex	Rigid	
Reduction gear	Yes/no	with ratio	
Belt drive	Yes/no	with pulley diameter	
Gear drive	Gear diameter	Gear type	Pressure angle
Dead weight of rotating part		Thrust load	

Please continue on next page







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Locate your nearest distributor by visiting [CooperBearings.com](http://CooperBearings.com)

