

COOPER MARINE SOLUTIONS

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COOPER[®]

an SKF Group company **SKF**

DECADES OF EXPERTISE IN THE MARINE SEGMENT

Since inventing the split cylindrical roller bearing in 1907, "Cooper" products have gained worldwide recognition as the ideal alternative to solid roller element and split hydrodynamic or sleeve bearings for a range of marine applications.

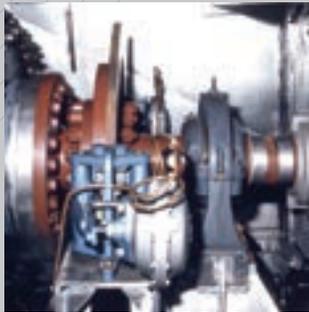
Indeed, for many designers, manufacturers and fleet maintenance staff, the "Cooper" split bearing is the best choice for a range of applications including Z-drive and water jet propulsion, marine generators and thrusters as well as numerous on-deck applications such as winches and conveyors.

The thousands of Cooper bearing units in service across the world on tugs, fast ferries, super yachts and offshore support vessels, amongst others, are testimony to both their quality and long service life.

Unlike hydrodynamic or sleeve bearings, the Cooper product needs only simple grease lubrication, hence eliminating the need for ancillary oil-circulation or cooling systems. This affords significant advantages in terms of cleanliness, simplicity and power consumption, not to mention eliminating the risk of damage to the shaft in the event of loss of lubricant between the shaft and the sleeve bearing.

Direct, specialised engineering support is available from our offices in the UK, USA, Germany, India and Australia. Together with the local support of a global network of prestigious authorised distributors, customers worldwide can be assured of "First in Class" service and attention.

The quality of Cooper products is underlined by numerous marine inspectorate approvals including Lloyd's, DNV, Germanischer Lloyd, RINA etc. as well as by ISO9001 and ISO14001.

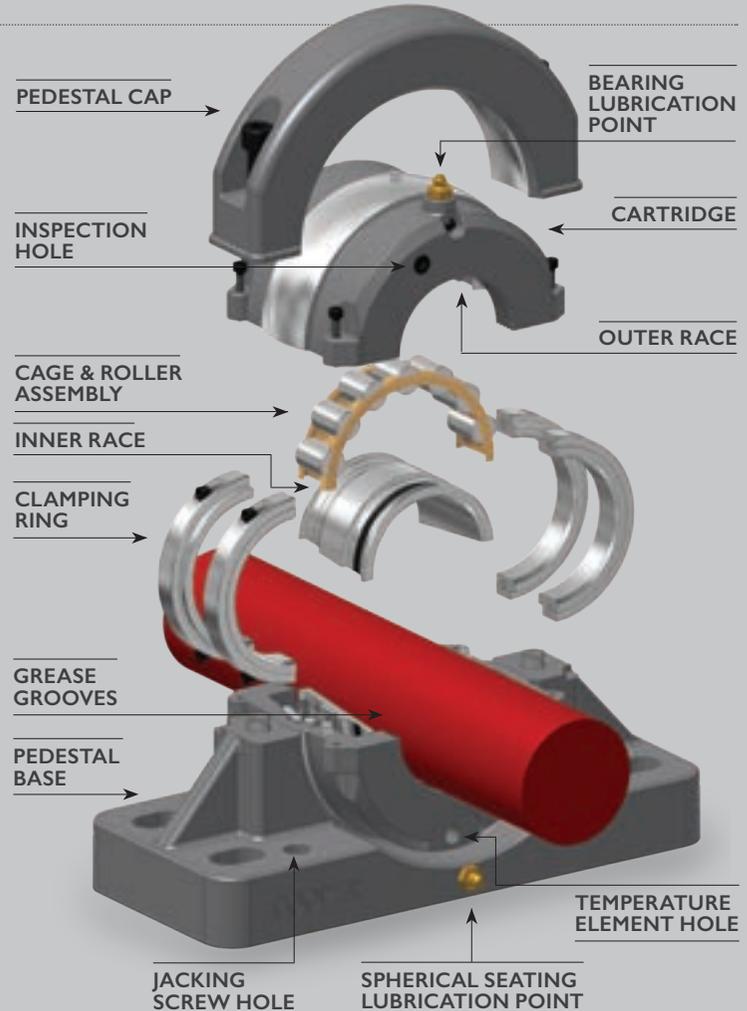


SIMPLE TO INSTALL, INSPECT OR REMOVE

Split to the shaft bearings disassemble into smaller components easing the tasks of lifting and handling and making assembly or change-out simple in even the most cramped positions. Clearances are pre-set so no on-board adjustment is needed and no specialist fitting tools are required.

Our long experience in the requirements of the marine segment means that the standard product can incorporate a range of customised features to suit individual requirements and specifications. Examples of these are shown in our Z line pedestal unit opposite.

- > Spherical cartridge lubrication allows extra movement to handle flexing of the vessel hull.
- > Flat, solid underside of the pedestal base affords the perfect surface for chocking compounds.
- > Jacking screws enable simple alignment of bearings along the shaft.
- > Inspection holes for in-place measurement of shaft axial position.
- > Tapped holes for temperature and vibration sensors





BEARING SERIES

The current offering is the broadest on the market and caters to a wide range of loading conditions

IDT

Unique to Cooper, these medium angle split taper roller bearings are an ideal solution for transient axial loading caused by temperature gradients, hull movement or reactions in couplings. The two rows of opposed rollers can handle axial loading from either direction in addition to radial loading.

100SERIES

Compact and light, the 100 Series packs a high capacity into a small envelope and is specifically designed for applications where the radial loading can be too low for other bearing types.

02SERIES

A rugged bearing for more demanding applications, the 02 series is frequently found in the "locating" bearing positions and on heavier shafting.

01SERIES

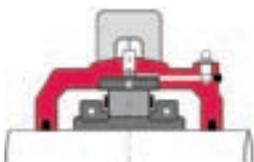
The most popular of all the bearing series, these robust units can handle the majority of load and speed conditions encountered with propulsion shafts.

03SERIES

Designed to handle extreme loading conditions present on vessels such as icebreakers, the 03 series is the heavyweight of the Cooper range of cylindrical roller bearings



BEARING TYPES



EXPANSION (EX)

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.



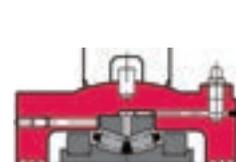
FIXED (GR)

Provides axial location to the rotating elements of machinery. Can sustain axial and radial loads.



EXILOG

Used where the axial movement is greater than is possible with the EX type due to the use of long shafts or high temperature variation. Axial expansion takes place between the lengthened inner race and the rollers, maintaining the load central to the cartridge to help preserve bearing alignment



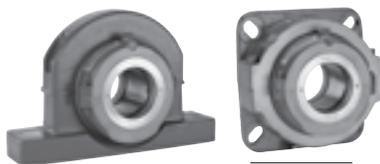
SPLIT TAPER

Intended for the fixed bearing position where there is both radial axial loading and the GR type is unsuitable. Two rows of opposed rollers to take axial loading in either direction.

HOUSING TYPES

Cooper is the only manufacturer of split bearings to have its own integrated foundry, ensuring attention to quality of both the bearing and its housing.

Housings are produced and machined in a variety of configurations and in a variety of materials, e.g.: grey cast iron grade 250, nodular iron, steel, aluminium and stainless steel.



TWO BOLT BASE

SQUARE FLANGE UNITS



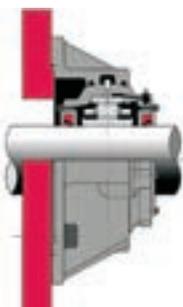
ROUND FLANGE UNITS

LARGE BORE BASE

BULKHEAD SEALING

Cooper can offer sealing options so that the housed bearing also functions as a bulkhead seal. This combined unit is generally cheaper than separate bearings and seals.

The close proximity of the bearing and seals ensures that problems associated with poor shaft-seal alignment, when the bulkhead seal is separated from the bearing, are avoided.

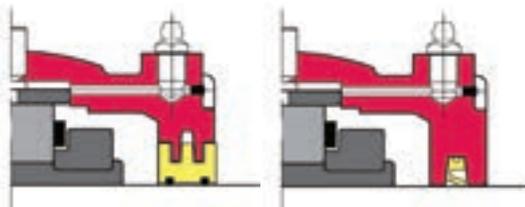


BULKHEAD SEALING

SEALING TYPES

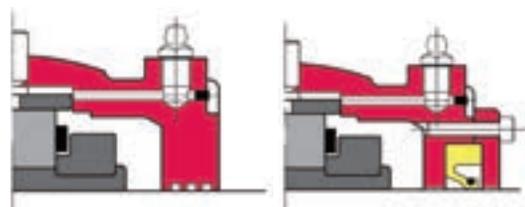
Cooper offers a wide range of sealing options to suit different requirements and operating environments.

Due to the external alignment via the seal-carrying cartridge, the seals on Cooper bearings always work perpendicular to the shaft affording optimum protection.



ALUMINUM TRIPLE LABYRINTH (ATL)

SYNTHETIC RUBBER SINGLE LIP (SRS)



GREASE GROOVE (LAB)

SPRING-LOADED SINGLE LIP WITH RETAINING PLATE (SRSRP)



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