

# Cages and Seals



## Radial Cage – Free and Fixed Bearings

Using engineering-grade 3D-printed Nylon-11 we have developed a design that allows much closer spacing of the cylindrical rollers compared to traditional designs, creating enough additional space around the roller track to incorporate more rollers, increasing the radial capacity of the bearing.



## Axial Cage – Fixed Bearings

GB Split Bearings use patented ROLLERTRAIN® technology to handle bi-directional axial loads via the use of two completely independent axial bearings – compared to existing manufacturers lipped race designs. Inserting an axial bearing either side of the GBsplits free bearing converts the bearing into a fixed bearing. GB Split Bearing inner housings (cartridges) are ALL machined to accept these axial bearings as standard. By utilising this design we are able to increase the axial capacity of the bearing by around 1000% as axial loads are now handled by true rolling element bearings, whilst also allowing an axial L10 life to be calculated.



By removing the axial locating lips from the bearing outer race, the radial roller length can be increased, and along with the previously mentioned increase in number of rollers, gives an approximate 70% increase in bearing capacity or an increase of 5X radial L10 life.

Both cages make use of ROLLERTRAIN®'s unique roller interlock jointing resulting in run-safe cage & roller assemblies as there are no cage clips, spring plates or cage joint screws added to the roller track.



## SEALTRAIN® Split Triple Labyrinth Seals

Our new range of split triple labyrinth seals are made from Nylon PA11. They are less than 40% of the weight of aluminium seals and can drop-in replace seals from existing manufacturers. Incorporating viton o-rings as standard. The SEALTRAIN® triple labyrinth seals are non-sparking and can be fitted/released in seconds using the handy release tool which comes as standard with every seal.



## SEALTRAIN® Extension - Patented Design

The new seal design has enabled an extended variation of the seal to be produced which solves the problem of badly worn shafts having to be removed and either machined or replaced. This causes serious down time immense cost which can now be avoided.

The novel design together with our 3D capabilities means the seal seating area on the shaft can be moved outwards to an undamaged area on the shaft.

# Customer Benefits

## Highest radial capacity of ANY split bearing:

The GB split bearing's radial capacity equates to either a 70% increase in radial load or 5x bearing radial L-10 life.

## Highest axial capacity of ANY split bearing:

1000% increased axial capacity and the very first split bearing to calculate an axial L-10 bearing life.

## Triple Labyrinth sealed inner housings (cartridges) only:

Triple Labyrinth sealed inner housings with variations to suit any sealing requirement as standard.

## Just ONE series:

The GB Split Bearing is manufactured in just one series of bearing, meaning that its capacities can replace all five series of existing split bearings.

## Just two sizes of inner housing (cartridge) required:

Current split bearings require up to 16 inner housings per size group per series; the GB Split Bearing only requires two, one to replace the 01/light series and one to replace the 02/medium series.

## Interchangeable parts:

All bearing components (match-marked races, match-marked clamp rings, and cage & roller assemblies) are interchangeable between bearings within the same size group. This enables bearings to be stocked as component parts rather than built-up items, maximising product availability whilst minimising stock holding.

## Nodular iron inner and outer housings as standard:

Necessary to deal with the increased loadings possible – at GBsplits we haven't just increased the bearing capacities, we've also uprated the inner and outer housings.

## Increased clamp force and dowel ability:

Increased clamp force of the bearing on the shaft as well as the ability to dowel the inner race to the shaft underneath the clamp ring.

## Compatibility:

GB split bearings can be used in the outer housings of other manufacturers.

## Independent loads:

Radial and (bi-directional) axial loads are handled independently by THREE independent sets of rolling elements – competitors use one (or two) sets of rolling elements to handle the three load directions. The GB Split Bearings suffer no loss of radial capacity with variation in axial load.

## Huge stock profile:

We hold approximately 0.5 million GBP of 1.5 inch to 6 inch units in stock as well as 0.5 million GBP of the 6.5 inch to 12 inch units.

## Fast delivery:

All stock is available with next day delivery - subject to customer location.

## Technical support:

Full technical support from our dedicated team, including engineering, 3D design and product support as well as site visits, service engineers and application engineers all over the globe.

## Bespoke design:

Bespoke bearing design and manufacturing service available with very short lead times. As bearing components are interchangeable, bespoke bearings can be 'built up' from stock items.

## Easy modifications:

Modifications to the core product are able to be carried out with ease and with extremely short lead times as the GB Split Bearing requires no tooling, making small quantities extremely cost-effective.

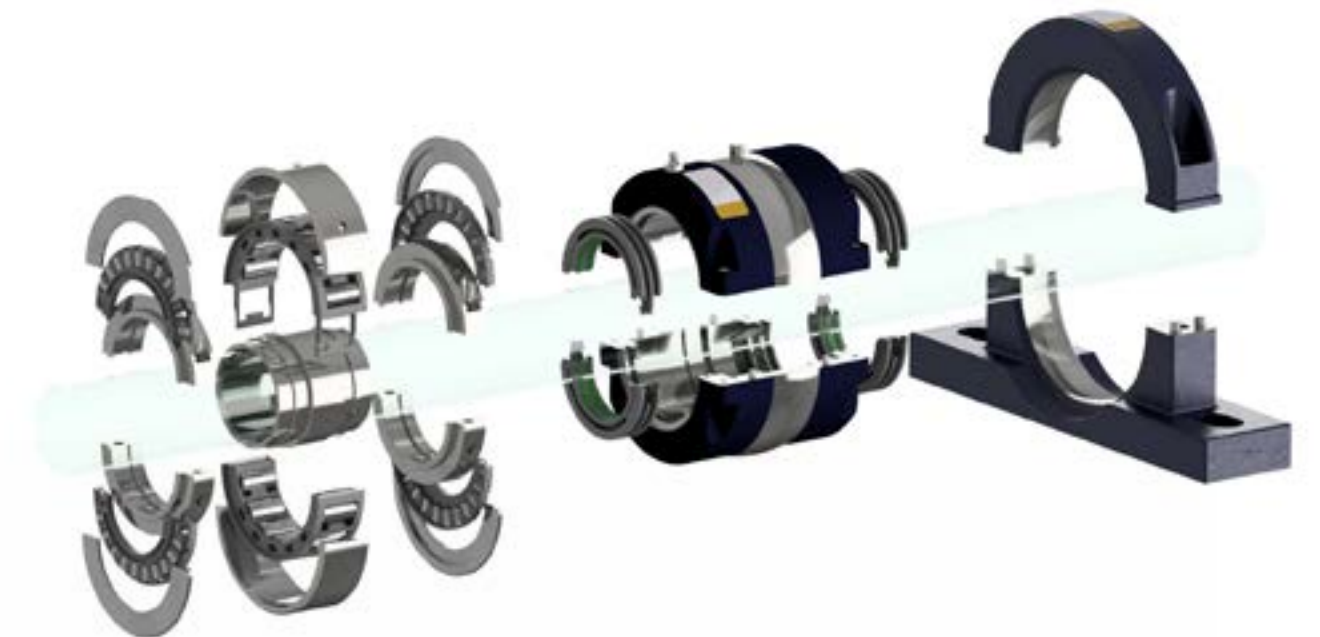
## Seal modifications:

Modifications such as non-standard bore, waterproof seals and flinger additions are all easily and quickly achievable.

## Easy fit cages and seals:

The SEALTRAIN® and ROLLERTRAIN® seals and cages have been designed for unprecedented ease of use. The seals are a simple click-fit and the cages employ unique jointing with no joint clips/spring plates.

# THE FUTURE OF SPLIT BEARINGS IS HERE...



[www.gbsplitbearings.co.uk](http://www.gbsplitbearings.co.uk)  
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# Introducing the NEW GB Split Bearing

## A Revolution in Design...

We are delighted to introduce our new range of split cylindrical roller bearings which offer a range of benefits and innovations across the board when compared to any other split bearings on the market.

The split bearing was invented in 1907 and its design has remained largely unchanged since then...until now! In a collaboration, we have taken the original design and updated it for the modern world, significantly extending its operating envelope. Through innovative new components the GB Split Bearing is able to offer significantly increased capacities, flexibility and simplicity of fitting & maintenance.

- ▶ Increased radial capacity of up to 70%
- ▶ Increased axial capacity of up to 1000%
- ▶ Designed & manufactured in the UK
- ▶ Axial and radial loads accommodated independently – allowing, for the very first time, the calculation of an axial L10 bearing life
- ▶ Simplified installation and maintenance
- ▶ Patented bearing cage, ROLLERTRAIN®, offers unparalleled ease of use with unique interlocking joint method
- ▶ Patented triple labyrinth seals, SEALTRAIN®, manufactured from non-sparking Nylon-11 material
- ▶ Patent Pending extended Triple Labyrinth Seals to accommodate worn shafts
- ▶ Reversible clamping rings for increased life and durability
- ▶ Available on next day delivery
- ▶ Interchangeable bearing components within size group
- ▶ Uniform design across entire range



## A Fresh Approach

GBsplitsUK has had the luxury of being able to partner with top end engineers and designers which has enabled us to explore the possibility of how they might improve and innovate on a bearing unit whose design has remained largely unchanged for the better part of 110 years. The end product is something that is almost inconceivably advanced compared to anything currently available.

The entire split bearing has been designed around the bearing cages and the numbers are quite breathtaking; the patent-pending bearing cage, Rollertrain®, has allowed an increased radial and axial capacity of up to **70% and 1000% higher** than any other split bearing in the world. The dramatic capacity increases allow our Split Bearing to replace **five series of split bearings** with a single series which covers almost all existing requirements.

