



BUCYRUS *Advantage*

When you purchase Bucyrus parts for your Bucyrus or Marion machines, you maximize the value of your investment in one of the world's finest mining machines. Bucyrus' quality assurance programs, which include certification to ISO 9001:2000, assures that parts meet or exceed worldwide quality standards for fit, form and function.

Bearings

Servicing Equipment with Bucyrus Parts

Bearings are a critical component in almost all aspects of mining equipment. You will find them in hoist, drag, swing, propel and many other applications. Bucyrus works closely with bearing manufacturers to design and build bearings to Bucyrus standards, suited specifically to meet the tough duty cycles associated with mining. In keeping with our commitment to continuous improvement, Bucyrus engineers are constantly analyzing bearing application and performance data. Bucyrus uses the latest technology and advancements in bearing design and manufacture to provide bearings that achieve the highest overall performance and value.

It's Buyer Beware

Be cautious and remember that "you can't tell a book by its cover." While you may match a bearing by boundary dimensions and type, it may not be the correct bearing for your application. Bucyrus Engineers have the responsibility to specify corner radii, lube holes, radial internal clearance, end play, heat treatment, material, cage designs and more. The specific critical aspects of a bearing's design are modified, when required, to assure maximum performance to the specific application.

Critical Design Considerations

The following lists several critical bearing design characteristics and the malfunctions that may occur if authorized parts are not incorporated during service:

A. Corner Radii – Bucyrus may apply a special fillet to strengthen a shaft step. To correspond with the special fillet, a special radius may be required on the bearing. The wrong radius may make it impossible to mount the bearing or result in improper installation. Improper installation can reduce bearing performance and may result in damage to corresponding components.

B. Lube Holes and Grooves – Depending on the specifics of design and lube medium, Bucyrus engineers may specify special lube accommodations

including a variation in size, quantity, location or any combination. A standard bearing may end up being starved for lube. Lube starvation can lead to decreased bearing life.

C. Radial Internal Clearance & End Play

– Operating clearances are calculated for each specific application. An off-the-shelf replacement may have too much or too little clearance or end play causing premature failure of the bearing and possibly associated equipment. Premature failure will result in increased costs.

D. Race and Roller Materials – There are several bearing quality steels and a variety of heat treatment possibilities. Often these are used to enhance performance for mining applications. It is impossible to determine what the original specification requirements were. Bucyrus replacement parts are the only sure solution.

E. Cages – There are a multitude of variations in cage designs. Material options are just the beginning; steel, bronze, composites, etc... Add manufacturing techniques; stamped, riveted, milled, pinned, molded, etc... Then consider tolerances. The chance of getting the wrong bearings is significant. The wrong cage can dramatically reduce bearing life particularly in heavy reversing application found in mining equipment.

F. Load Capacity – Includes both radial and thrust loads. Not all load capacities are the same. They can have differing internal geometry, quantity and diameter of rollers, cone angles and thrust factors. Bucyrus engineers know the loads and speeds of each machine and they select a specific capacity to achieve a desired life.

Considering the original machine investment and stringent uptime requirements, the only sure way of getting the correct bearing is by purchasing Bucyrus replacement parts. Through our supplier alliances, we have access to a large inventory of bearings at competitive prices, with off-the-shelf availability or greatly reduced lead times.