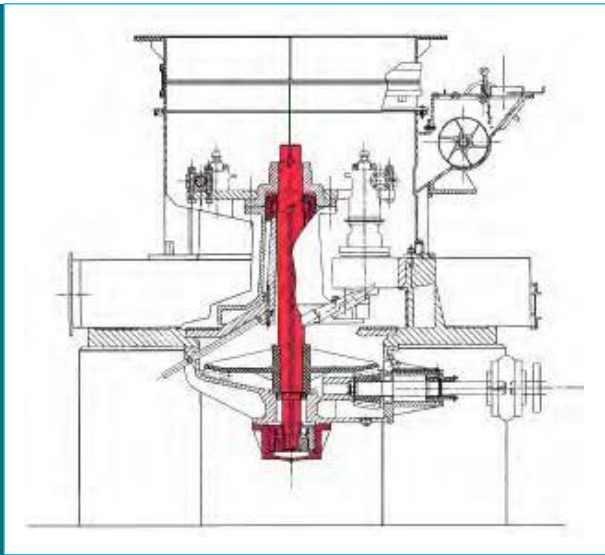


Raymond® Roller Mill

Vertical shaft conversion

- Reduced power consumption
- Improved bearing life
- Significant decrease in mill vibration and wear
- Overall mill mechanical reliability
- Lowers operating and maintenance costs



Owners of older Raymond® roller mills can realize substantial operating and maintenance cost savings by an on-site retro-conversion of the vertical shaft to the current design employing antifriction bearings.

Raymond® 50 to 73 inch roller mills manufactured prior to 1986 were supplied with bronze sleeve bushings and a lower thrust bearing on the vertical shaft/mill bottom assembly. This design requires frequent shutdown for lubrication of the vertical shaft upper bearing and periodic inspection and replacement of worn vertical shaft bushings. Increased mill vibration and accelerated wear to other components generally occur prior to replacement of these bushings.

The current design of these mills has incorporated an antifriction bearing design with internally circulated oil lubrication. This provides a continuous supply of lubricant to the upper bearings without need for frequent periodic shutdown and resupply of oil. Bearing life is greatly lengthened and mill vibration and wear is significantly reduced on the new design.

A package for converting older mills to the current state-of-the-art design has been developed. This retrofit design greatly increases the overall mill mechanical reliability and significantly reduces operating and maintenance costs, while producing a smoother running mill

Features

All of the parts required to implement the retrofit are provided, along with detailed instructions for the conversion to reuse the existing mill bottom and gear housing, which must be machined to accept the new components. Alternatively, a new mill bottom and gear housing can be supplied if desired.

The main features of the new design include a vertical shaft and internal oil pump which supplies continuous lubrication to a new upper radial roller bearing. The new lower tapered roller thrust bearing is bath lubricated. The existing mill bottom, if reused, must be machined to accommodate a new upper radial bearing housing. The existing mill gear housing, if reused, is machined to accept the new lower bearing and pump housing. The mill is then reassembled using the supplied parts.

Note that the retrofit uses the existing gearing and pinion shaft assembly, and no changes are required to the plow support assembly. The cost of the conversion is further minimized by machining the existing mill bottom and gear housing.

Advantages

Reduced power consumption

The reduced friction from the improved bearing design requires less “no load” power. With more power available for grinding, the mill operates at higher efficiency, with potentially increased capacity, and lower specific power consumption (kWh/ton).

Increased mechanical reliability

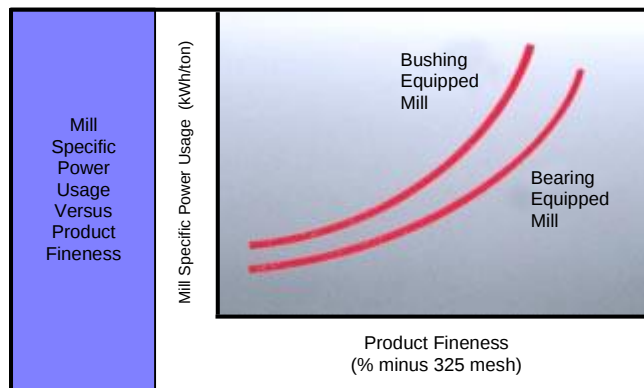
A converted mill is more mechanically reliable than the older mill design. With reduced downtime for maintenance and mill overhauls, this improved reliability can result in much greater “mill availability” and increased annual production from your milling system.

Improved mill performance

The tighter tolerances and greatly increased wear life of the new rolling components often result in substantial reduction in mill vibration. A smoother running mill is more quiet, wears out less and can deliver a more uniform product.

Reduced maintenance costs

There is no need to shut the mill down for upper bearing lubrication as in the past. The lubricant is now continuously supplied by the internal oil pump through the redesigned shaft from the lower sump. The new roller bearings have a significantly greater service life than the older sleeve bearings and, over the long term, that means fewer mill overhauls. Plus, the decrease in vibration will lengthen the service life in the mill as well.



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