

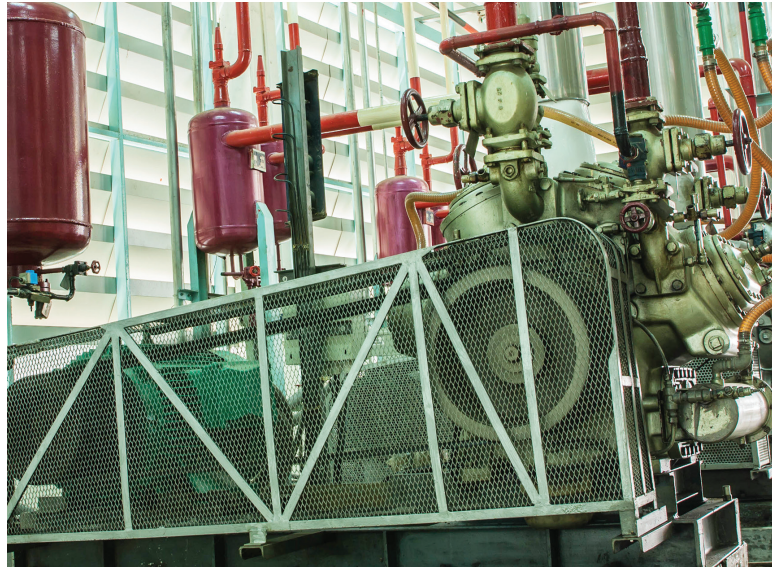


Product

Application

Highlights

- Paired Made-to-Order (MTO) sheaves
- Ductile iron
- 5 Grooves
- Dynamically balanced



MTO Sheaves

Mine Refrigeration Compressor

A major refrigeration system manufacturer required a custom sheave solution for a large belt-driven mine refrigeration compressor. The belted drive transfers power from the electric motor to the compressor. The reciprocating compressor raises the temperature of the refrigerant gas before it is pumped into a condenser.

Rock face temperatures of more than 140° F (60° C) at some of the world's deepest mines contribute to ambient air temperatures in excess of 130° F (55° C). The use of refrigeration units is required to reduce the dangerously high mine air temperatures down to a more workable range for personnel as well as equipment.

TB Wood's engineers designed a Made-to-Order (MTO) solution that was manufactured to meet the challenging application requirements. A new 40" dia., non-standard 5-groove flywheel sheave was cast and mounted on the compressor shaft to accommodate the high inertia load generated. A mated 16" dia. sheave was cast and installed on the drive motor shaft.

Due to the high rim speed (FPM), both sheaves were cast using ductile iron instead of standard gray iron to assure maximum performance over a long life span. A special strain gage test stand was utilized to subject sheaves to tension and compression stresses far in excess of those encountered in the actual operation. Sheaves are two-plane balanced at the factory and are available with Sure-Grip QD type bushings for easy installation and removal.

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