

SURE-FLEX® PLUS COUPLINGS

OIL PIPELINE INJECTOR PUMPS



PROBLEM

Viking Pump, a global leader in positive displacement pumping solutions, needed a replacement coupling for its crude oil pipeline injector pumps. The 210 GPM pumps are installed on Leased Automatic Custody Transfer (LATC) units that measure and monitor oil flow at individual well sites. The pumps raise the pressure of the oil and inject it into a feeder pipeline that pushes the oil to a larger pipeline for transport to a terminal. Large, extremely rigid grid couplings had been used to connect the pumps to the electric drive motors on the LATC packages. Unfortunately, alignment practices are very poor when these couplings are installed at the well-site. The stiff couplings and tight misalignment requirements of the grid couplings were resulting in pump failures. In some cases, the pump shafts were breaking. Replacement advantages save maintenance crews an average of 15 minutes and reduce pump seal replacement time by 50%.

SOLUTION

Based on years of positive experience using TB Wood's Sure-Flex® Plus couplings, one of Viking's customers asked if the Sure-Flex coupling might be a solution to the pump failure problems. Viking contacted TB Wood's to explore the coupling's suitability for the injection pump application and determined that the Sure-Flex couplings met the performance requirements. Viking engineers had recently redesigned their generation II pipeline injection pump by increasing the shaft size from 1-1/4" to 1-3/8". That previous design change, along with a slight lengthening of the shaft, allowed for easy mounting of the Sure-Flex coupling. The 5-piece Sure-Flex Plus conventional spacer couplings supplied are designed for easy "drop-out" replacement. Units feature two hubs along with two flanges that hold an elastomeric sleeve. EPDM and Hytrel sleeves were utilized depending on pump size and motor HP. The EPDM sleeve is made of improved rubber compounds that offer a 30% increase in torque ratings when compared to previous sleeves and competitor offerings. The coupling's easy installation and replacement advantages save maintenance crews an average of 15 minutes and reduce pump seal replacement time by 50%.

HIGHLIGHTS

- Original design, best-in-class performance and value
- Hytrel and EPDM sleeve materials
- Improved rubber compounds offer a 30% increase in torque ratings
- 4-way flexing action absorbs virtually all types of shock, misalignment and end float
- Easy to install
- No lubrication or maintenance required
- Economical and reliable

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