

Ameridrives

Bauer Gear Motor

Bibby Turboflex

Boston Gear

Delevan

Delroyd Worm Gear

Deltran

Formsprag Clutch

Guardian Couplings

Huco

Jacobs Vehicle Systems

Kilian

Kollmorgen

Lamiflex Couplings

Marland Clutch

Matrix

Nuttall Gear

Portescap

Stieber

Stromag

Svendborg Brakes

TB Wood's

Thomson

Twiflex

Warner Electric

Wichita Clutch

Elastomeric Couplings Provide Reliable Performance on Pipeline Injector Pumps



As seen on
DesignWorldOnline.com
December, 2019



Elastomeric Couplings Provide Reliable Performance on Pipeline Injector Pumps

Viking Pump relies on TB Wood's Sure-Flex Plus® couplings for challenging injector pump applications.



Viking Pump LACT packages utilize TB Wood's Sure-Flex Plus® couplings with EPDM and Hytrel (shown) sleeves depending on pump size and motor HP.

Viking Pump, headquartered in Cedar Falls, Iowa, is a global leader in rotary positive displacement pumping solutions for applications, including oil and gas, petro-chemical, military, and food and beverage.

Viking is currently experiencing very strong growth in the oil and gas market, primarily due to increased drilling operations in the Permian Basin, which covers 86,000 square miles in Texas and New Mexico. The area produces approximately 1.3 million barrels of oil daily.

“As the pipeline infrastructure in West Texas expands, the demand for pipeline injection pumps has grown significantly since a pump is required at each injection site,” said Ryan Weide, Business Line Manager – Pipeline Injection Products at Viking.

Leased Automatic Custody Transfer (LACT) units that measure and monitor oil flow are typically installed at each well site. Viking pumps are utilized on LACT packages to raise the pressure of the oil (to 1500 PSI) and inject it into a feeder pipeline that pushes the oil to a larger pipeline for transport to a terminal. Couplings are used to connect the pumps to electric drive motors on the assemblies.

Large, extremely rigid grid couplings had been used for the pump/motor connections. Unfortunately, alignment practices are often very poor when the couplings are installed at the well site. The stiffness and tight misalignment requirements of the grid couplings were resulting in pump failures. In some cases, causing the pump shafts to break.

“Based on years of positive experience using TB Wood's Sure-Flex couplings, one of our customers suggested that Sure-Flex couplings might be a solution to the pump failure problems they were experiencing in the field,” Weide said.

Newer Sure-Flex Plus couplings utilize improved sleeve materials to provide exceptional torsional flexibility, while the 4-way flexing action absorbs virtually all types of shock, vibration, misalignment and end float. The couplings feature 7° to 21° torsional wind-up (depending

on sleeve material), torque ratings up to 8,20 kNm (72,480 in.lbs.), and fast and easy installation. Units require no lubrication and no maintenance.

“We contacted TB Wood’s to explore the couplings suitability for our injection pump applications. Ultimately, we determined that the Sure-Flex Plus couplings would meet the performance requirements on our GP414 pumps,” Weide explained. “We believe that by moving to the more forgiving Sure-Flex Plus coupling design (less rigid, higher misalignment limits), we could drive any potential drivetrain failures away from our pumps and back to the much less expensive coupling.”

Viking engineers had recently redesigned the generation II pipeline injection pump to make it more robust by increasing the shaft diameter 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 Plus 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 entire center section of the coupling (two flanges and sleeve) can be dropped out for replacement by simply removing the flange-to-hub bolts.

Sure-Flex Plus EPDM sleeves are made of improved rubber compounds that offer a 30% increase in torque ratings when compared to previous sleeves and competitor offerings.

“The Sure-Flex Plus coupling’s easy installation and replacement advantages (less hardware, no grease, more misalignment tolerance), can save maintenance crews an average of 15 minutes per installation and reduce pump seal replacement time by 50%,” said John Smihal, Product Manager – Elastomeric Couplings at TB Wood’s.



5-Piece TB Wood's Sure-Flex Plus® conventional spacer couplings are designed for easy replacement. The entire center section of the coupling (two flanges and sleeve) can be dropped out by simply removing the flange-to-hub bolts.

About Altra Motion

Altra is a leading global designer and producer of a wide range of electromechanical power transmission and motion control components and systems. Providing the essential control of equipment speed, torque, positioning, and other functions, Altra products can be used in nearly any machine, process or application involving motion. From engine braking systems for heavy duty trucks to precision motors embedded in medical robots to brakes used on offshore wind turbines, Altra has been serving customers around the world for decades.

Altra's leading brands include Ameridrives, Bauer Gear Motor, Bibby Turboflex, Boston Gear, Delevan, Delroyd Worm Gear, Deltran, Formsprag Clutch, Guardian Couplings, Huco, Jacobs Vehicle Systems, Industrial, Kilian, Kollmorgen, Lamiflex Couplings, Marland Clutch, Matrix, Nuttall Gear, Portescap, Stieber, Stromag, Svendborg Brakes, TB Wood's, Thomson, Twiflex, Warner Electric and Wichita Clutch.



US (Application Assistance)
888-829-6637 Press #7
www.tbwoods.com

Asia Pacific

For a list of our AP sales offices:
www.AltraMotion.com/ContactUs