

Application Success Story



HIGHLIGHTS

Ameridrives Ameriflex Couplings

Designed for the rigorous demands of the turbo-machinery industry

Ameridrives/Bibby Torsiflex Couplings

Specifically developed for process pump and general industrial applications

TB Wood's Sure-Flex® Couplings

4-way flexing action absorbs virtually all types of shock, misalignment, and end float

Ameriflex, Torsiflex and Sure-Flex Couplings Chemical Processing Facility

PROBLEM

A wide range of coupling solutions were needed for use throughout the world's largest integrated chemical facilities built in a single phase. The \$20 billion complex, located in the Middle East, started partial production in late 2015 and was fully operational in 2016.

The massive facility is comprised of 26 processing units producing more than 3 million metric tonnes per year of 10 major categories of chemical products and specialty plastics, such as polyurethanes (isocyanates, polyether polyols), propylene oxide, propylene glycol, elastomers, linear low-density polyethylene, low-density polyethylene, glycol ethers, and amines.

The chemicals are used in a wide variety of industries including consumer goods such as foam for furniture, packaging, construction adhesives & sealants, oil & gas pipeline coatings, electronic and electrical wire and cable insulation, and automotive parts and fluids.

SOLUTION

Regal Rexnord was designated as the exclusive "single-source" coupling supplier for the facility. Ameridrives, TB Wood's and Bibby Turboflex, all brands of Regal Rexnord, worked closely with over 20 independent global OEM's to deliver 3 coupling types with different specifications for a wide range of applications throughout the chemical complex.

- For critical compressor and pump applications requiring API 671 couplings, or operating over 3,600 RPM, the full range of Ameridrives Ameriflex HP diaphragm coupling variations were supplied in 7 sizes up to 70" long with torque ratings up to 2,575,000 in.lbs. 15-5 PH stainless steel diaphragm packs were specified due to their resistance to chlorine and hydrogen sulfide corrosion.
- Over 950 Torsiflex couplings in 13 different sizes were shipped for pump, fan, and screw compressor applications over 75 HP operating at less than 3600 RPM. 625 Inconel disc packs were required for this project for their resistance to chloride stress cracking.

Continued

Continued from front

Torsi-Lock® hubs, which provide the secure torque transmission and balance repeatability of an interference fit, were installed on the oil-flooded screw compressor side of the couplings allowing for easy hub installation and removal. This allows for easy hub removal during seal maintenance without the need for “Hot Work” permits.

- TB Wood's Sure-Flex elastomeric couplings were provided for general purpose pump applications throughout the facility in both spacer (SC) and close-coupled (J/S) configurations. EPDM, Neoprene, and Hytrel sleeves were all selected to suit specific application requirements.

Ameridrives Ameriflex Couplings

Unique diaphragm design permits high-torque density and low weight. Designed for years of dependable, low-maintenance performance. Multiple, separated, convoluted diaphragms in a pack, provide a built-in, fail-safe feature while allowing the greatest design flexibility for the most demanding applications. Units are API 671 compliant. Diaphragms are shot-peened for improved fatigue strength and stress corrosion resistance.



Ameridrives/Bibby Torsiflex Couplings

Specifically designed for the process pump and general industrial applications. Standard coupling is fully compliant with the requirements of API 610 / ISO 14691 Plug-in spacer design allows installation and removal without disturbing the hubs.



Robust disc pack design allows for greater torque load in a smaller coupling, resulting in lower weight. Max bores matched to NEMA motor shafts, resulting in up to 60% weight savings per application. ATEX compliance is standard — ExII 2GDc135degC(T4) Compliance with API 671 / ISO 10441 is available.

TB Wood's Sure-Flex Couplings

Sure-Flex couplings, a TB Wood's original, utilize a rubber (EPDM or Neoprene) or Hytrel™ thermoplastic flex element (sleeve) to transmit torque and accommodate shaft misalignments. Sure-Flex couplings have exceptional torsional flexibility, and the 4-way flexing action absorbs virtually all types of shock, vibration, misalignment, and end float.



Sure-Flex couplings are an excellent choice when low cost, high flexibility, vibration damping, and easy installation are primary concerns. Flexible design accommodates misalignment and protects equipment. Units are easy to assemble with spacers, bushed hub, and clamping hub designs in stock.

Ameridrives

US (Customer Service)
1-888-449-9439
ameridrives.com

TB Wood's

US (Application Assistance)
1-888-829-6637 press #7
tbwoods.com

Bibby Turboflex

Europe
+44 (0) 1924 460801
bibbytransmissions.co.uk