

# INNOVATION

## SPOTLIGHT

from the brands of Altra Industrial Motion Corp.



## ALTRA HIGH-PERFORMANCE COUPLING TECHNOLOGY PROVIDES ECONOMICAL SOLUTION FOR TURBOMACHINERY APPLICATIONS

High-performance couplings are a critical component on turbomachinery drivetrains that reach speeds in excess of 20,000 RPM. The couplings connect turbines and motors to compressors in a wide variety of oil and gas refineries and petrochemical facilities worldwide.

A coupling failure in these high-speed installations can cause costly downtime and lost productivity. For this reason, reliability and quality have traditionally been the leading criteria for coupling selection in these challenging turbomachinery applications. However, due to increasing competitive pressure to control costs, OEMs have recently begun to seek out more economical coupling solutions.

### ALTRA COST-REDUCED DISC COUPLING PROVIDES EXCEPTIONAL VALUE

Creative thinking by Altra coupling's engineering team, state-of-the-art manufacturing capabilities, plus higher volumes achieved by combining various products yielded a cost-reduced disc coupling that meets market demands for high performance at an economical price.

Altra's new Turboflex Plus couplings combine proven Bibby Turboflex and Ameridrives® Ameridisc disc coupling attributes together with the experience of the Ameriflex diaphragm coupling to create an engineered solution that is ideally suited for sensitive high-speed turbocompressor applications.



[www.ameridrives.com](http://www.ameridrives.com)

**Ameridrives®**  
Altra Industrial Motion

**Bibby Turboflex®**  
Altra Industrial Motion

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### FLEXIBLE ENGINEERED COUPLING SOLUTION

Three different Turboflex Plus coupling types are offered including marine style and reduced moment types for critical high-speed compressors used in refining and petrochemical processing. All models are fully API-671/ISO10441 compliant for critical oil and gas, energy and petrochemical applications.

Models are available with optional overload protection features to limit secondary damage in the event of a disc pack failure. Units also feature scalloped profile disc packs optimized for high-speed compressor applications, 300 series stainless discs, phosphate coated components, and shrouded fasteners for reduced windage. Optional Inconel disc material and coated discs are also available.

### CONTROLLING VIBRATION

When the optimal compressor train operating speed is close to a critical speed, high vibration can occur, making it impossible for the equipment to run. During the compressor train design process for each specific application, Altra engineers modify their coupling designs, resulting in the movement of lateral and torsional frequencies away from the operating speed.



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### ALTRA TURBOFLEX PLUS COUPLINGS SELECTED FOR USE IN LARGE CHINESE FERTILIZER PLANT

The largest turbomachinery OEM in China, Shenyang Blower Works (SBW), needed an economical, high-performance coupling solution for compressor applications used at an anhydrous ammonia (NH<sub>3</sub>) fertilizer processing facility. There are five major compressor trains at the plant including air, feed gas, syngas, CO<sub>2</sub>, and ammonia. Each train utilizes two to three couplings that connect drive motors and steam turbines to gearboxes.

Altra Couplings engineers, together with a local distributor, collaborated with SBW compressor designers to develop custom versions of the new Turboflex Plus high-performance disc coupling.

Various coupling models were designed with overall lengths up to 60.3 in., max. speeds up to 11,000 RPM, and max. torques up to 70,000 Nm for each of the specific compressor train applications.

\* Source: Eni.com



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