Altra Industrial Motion provides power transmission solutions for metal producers

As industry leaders in electromechanical power transmission products, the companies of Altra Industrial Motion have been helping metal mill equipment manufacturers and metal producers worldwide achieve great success by increasing their efficiency while at the same time reducing their costs and downtime. Altra engineered power transmission products are installed in a wide array of mill applications including blast furnaces, continuous casters, roughing mills, finishing mills, cold mills and coilers.

Altra companies provide a comprehensive offering of mill spindles, couplings, U-joints, gear motors, speed reducers, brakes, torque-limiting devices and backstopping clutches to meet the specific needs of the metal mill industry. Altra products are designed to withstand harsh mill environments including dirt, dust and high temperatures, while providing exceptional personnel safety and equipment protection.

The companies of Altra Industrial Motion offer advanced technologies together with unparalleled engineering capability. Our experienced mill application engineers analyze every application challenge in order to provide the optimal power transmission solutions for our customers.

To help mills control inventories, Altra teams work hard to achieve short lead times and on-time deliveries. Our products are designed to reduce downtime throughout a mill by meeting the requirements for long service intervals, easy maintenance and fast interchanges.

For more information about application-specific power transmission solutions for the metal mills from Altra Industrial Motion, including case studies and literature, visit:

www.AltraMetalProducers.com
Altra offers a full drivetrain solution to keep metal mills running efficiently... worldwide.

**Couplings and Shaft Locking Devices**

Slab and strip quality and thickness control can be influenced by the performance of a mill’s universal joints and mill drive gear spindles. Major mills rely on Altra’s innovative mill spindle advanced gearing technology and operating efficiency to keep their mills running smoothly. Altra U-joints feature swing diameters up to 1200 mm to provide exceptional endurance and reduced vibration on metal shredders, continuous casters and roughing, finishing, cold and pipe mills worldwide. Durable shaft locking devices and gear couplings are used on variety of mill equipment. Altra elastomeric couplings are often found on roller table applications due to their superior environmental performance.

**ALTRA COUPLINGS:** Ameridrives Couplings • Ameridrives Power Transmission
TB Wood’s • Bibby Turboflex

**Gear Motors and Enclosed Gearing**

As the leading innovator of worm and helical gear technologies, Altra continues to improve product performance by developing features, designs and custom-engineered solutions to meet the demands of the metal mills market. Altra offers a full range of geared motor solutions for various applications throughout metal mills including a model specifically designed for use on roller tables. Altra custom-designed speed reducers and gear motors are built for rugged duty on all types of mill stands, recoilers, straighteners, levelers, flatteners, slitters, shears and scrap choppers.

**Bauer Gear Motor • Delroyd Worm Gear • Nuttall Gear**

**Clutches and Brakes**

Twiflex caliper brakes are typically found on cranes and hoists, processing lines, coke barrel reclaimers, and various rail car applications. Altra backstops and CECON overrunning clutches are utilized to prevent backward rotation during power-off situations on iron ore, coal coke and scrap conveyors. Heavy-duty water-cooled brakes from Wichita are designed for continuous slip tension applications such as coilers and recoilers, and their clutches are frequently used on presses and shear drives.

**Twiflex Limited • Marland Clutch • Wichita Clutch • Formsprag Clutch**

**Belted Drives and Torque Limiters**

Rugged TB Wood’s sheaves and V-belts are utilized on certain types of large metal shredders as well as cranes and conveyors. TB Wood’s also provides unmatched made-to-order capabilities accommodating special drive requirements. TB Wood’s variable speed sheaves incorporate a proven lubrication system that eliminates fretting, corrosion, freezing, and sticking. Exclusive cam followers exert side wall pressure on the belt in proportion to the torque required to carry the load. Bibby Torque Limiters, with up to 95% torque setting accuracy, are also found in many metals applications including divide shears, torque limiter with brake discs, plate turnover devices, crop shear drives, mill drive shears, tube mill drives and high speed rod mill drives.

**TB Wood’s • Bibby Turboflex**
**Iron Ore, Coal, Coke and Scrap Conveyors**
Marland backstops and CECON clutches are found on horizontal and incline conveyors that feed coal to coke ovens and iron ore and coke to blast furnaces. Backstops are also utilized on conveyors that feed metal scrap from shredders to electric arc furnaces.

- **Marland Clutch** BCMA backstops and CECON clutches
- **Nuttall Gear** Helical speed reducers
- **Ameridrives** Amerigear® couplings (AGMA)
- **Bibby Turboflex** Series III couplings and modular torque limiters
- **Bauer Gear Motor** BF Series shaft-mounted gear motors
- **Ameridrives** Ameriloc® shaft locking devices

**Slag Granulators**
Custom-designed, heavy-duty Nuttall Gear reducers are often installed on slag granulator system creep drives.

- **Nuttall Gear** Slag granulator drives

**Coke Barrel Reclaimers**
Twiflex calipers are installed between the motors and gearboxes to provide a controlled and accurate stop while ensuring that the barrel reclaiming buckets remain clear of the reclaimed bed area.

- **Twiflex Limited** MXEA Electric caliper brakes
- **Delroyd Worm Gear** Speed reducers

**Rail Cars**
Twiflex caliper brakes are often installed on 20-ton locomotives that pull hot coke and pig iron wagons. The locomotives are typically controlled electrically through the drive motor, but in the event of an emergency or power failure, the brake calipers are applied to safely stop the wagon.

- **Twiflex Limited** Hydraulic brake calipers
- **Nuttall Gear** Helical speed reducers
- **Delroyd Worm Gear** Speed reducers
- **Ameridrives Power Transmission** Americardan 5000 & 3000 universal joints
- **Bauer Gear Motor** BF Series shaft-mounted gear motors and BG Series helical in-line gear motors
Shredders
Ameridrives Power Transmission provides state-of-the-art universal joint technologies including innovative torque overload designs and integrated shaft locking devices used on rotary metal shredder applications. TB Wood’s V-belts and sheaves combined with Wichita clutches featuring high energy, high temperature friction linings are often found on natural gas powered shredders.

Ameridrives Power Transmission Americardan 5000 & 3000 Series universal joints
Wichita Clutch Standard vent clutch
TB Wood’s Classical & narrow V-belt sheaves, QT Power Chain® II belt drive system
Ameridrives Amerigear® couplings (AGMA)
Bibby Turboflex Series III couplings and modular torque limiters
Ameridrives Ameriloc® shaft locking devices

Stackers/Reclaimers
Demanding applications like stacker/reclaimers require highly reliable brakes, high torque couplings and U-joints, torque limiters, and specialized enclosed gearing solutions. The bucket wheel is driven by an electric motor connected to a helical gear reducer via a high speed coupling. Large cooling fan system drives utilize enclosed helical gearing. Formsprag backstops are included to prevent reverse rotation of conveyors.

Ameridrives Amerigear® couplings (AGMA)
Delroyd Worm Gear Speed reducers
Formsprag Clutch LLH holdbacks
Marland Clutch BCMA holdbacks
Nuttall Gear Helical speed reducers
Twiflex Limited GMR-SD spring applied, air released caliper brakes
Bauer Gear Motor BF Series shaft-mounted gear motors and BG Series helical in-line gear motors
TB Wood’s G-Flex grid couplings
Industrial Clutch LKB spring set, air released brakes

Scrap Shears and Choppers
Nuttall Gear provides reducers in engineered package assemblies specifically for use on scrap shears and chopper drives and conveyors.

Nuttall Gear “Zero” or “Limited” backlash drives and TDS/HPD parallel shaft and Moduline® concentric shaft reducers
Bibby Turboflex Series III couplings and modular torque limiters
Ameridrives Amerigear® couplings (AGMA)
Cranes and Hoists

Bauer Gear Motors and Ameridrives Amerigear couplings are often used on overhead traveling bridge crane drives with torque capacity <18,500 Nm. Warner Electric ERD brakes are typically utilized for parking and emergency stopping on travel drives and holding on main hoist drives with torque capacity <10,000 Nm (7,325 ft.lbs.), 250-500 kW. Twiflex caliper brakes perform the same functions on overhead bridge cranes, including ladle hood winches, with capacity >10 tons. TB Wood’s sheaves are used in upper and lower blocks.

Bauer Gear Motor BF Series shaft-mounted gear motors
Ameridrives Amerigear® couplings (AGMA)
Bibby Turboflex Series III couplings
Twiflex Limited Spring-applied Type VCS caliper brakes, MXEA Electric caliper brakes
Warner Electric ERD/ERDD VAR and ERD/ERDD Gen2 spring-operated, electromagnetically released brakes
Delroyd Worm Gear Speed reducers
TB Wood’s V-belt sheaves
Ameridrives Power Transmission Americardan C Series wing bearing universal joints

Ladle Hood Winches

Heavy-duty calipers, released by hydraulic pressure, are often utilized to provide control when raising and lowering ladle hoods. The units are installed on the winch barrel to primarily serve as emergency brakes. The calipers also lock and hold the winch drum when the driving motor is de-energized.

Twiflex Limited VCS spring-applied caliper brakes
Delroyd Worm Gear Speed reducers
**Continuous Casters**

Ameridrives Power Transmission universal joints are known throughout the industry for their reliable performance in continuous caster applications. A new integral key or face pad design for the drive end of the universal joints provides a more secure connection which prevents shifting and premature wear on segment rollers and bearings. In continuous casters, the inclined conveyor that is providing the raw material must not stop once the process is started so usually a dual drive is used to power the conveyor to assure uninterrupted flow of material into the caster. Formsprag and Marland overrunning clutches are used to connect the dual drives to the conveyor and Formsprag and Marland backstops are used to prevent the conveyor from running backwards when stopped.

- **Ameridrives Power Transmission** Americardan 5000 & 3000 Series universal joints
- **Ameridrives** Amerigear SF & SL Series mill spindles
- **Bauer Gear Motor** BG Series helical geared motors and BF Series shaft-mounted geared motors
- **Delroyd Worm Gear** Speed reducers
- **TB Wood's** Dura-Flex® couplings
- **Marland Clutch** BCMA holdbacks
- **Formsprag Clutch** LLH holdbacks and overrunning clutches
- **Bibby Turboflex** Modular torque limiters
- **Ameridrives** Ameriloc® shaft locking devices
Multi-Stand and Reversing Roughing Mills

High torque capacity Ameridrives SM Series mill spindles and robust Nuttall Gear pinion mill stand drives are designed to provide long-lasting service in tough mill environments. Ameridrives Power Transmission universal joints and Ameriloc shaft locking devices are also utilized.

**Ameridrives** Amerigear® couplings (AGMA) and Amerigear SM Series mill spindles

**Ameridrives Power Transmission** Americardan 5000 & 3000 Series universal joints

**Nuttall Gear** Pinion and twin pinion mill stand drives

**Bibby Turboflex** Series III couplings and modular torque limiters

**Delroyd Worm Gear** Mill stand screwdowns and adjustment drives

**Ameridrives** Ameriloc® shaft locking devices

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**Descaling Pumps**

Custom-designed Nuttall Gear high-torque drives are often installed on high horsepower water pumps utilized on descaling equipment.

**Nuttall Gear** Descaling pump drives
**Roller Tables**

Bauer offers a geared motor that is specifically designed for the heavy shock loads of mill roller table applications. The units feature grey cast iron gearbox and motor housings, a reinforced fan, high temperature seals, a heavy duty fan cover, and a motor design with circular fins as an option. TB Wood’s Dura-Flex elastomeric couplings are often mounted between the drive motors and table rollers. The couplings provide superior fatigue resistance in tough steel mill environments. Units are easy to assemble, have a high operating temperature and are moisture and chemical resistant.

- **Bauer Gear Motor** BF Series shaft-mounted gear motors
- **TB Wood's** Dura-Flex® couplings (AGMA)
- **Ameridrives** Amerigear® couplings
- **Delroyd Worm Gear** Speed reducers
- **Nuttall Gear** TDS/HPD parallel shaft and Moduline® concentric shaft reducers
- **Bibby Turboflex** Series III couplings and modular torque limiters

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**Finishing Mills**

Ameridrives Power Transmission universal joints and Ameridrives SM Series mill spindles are designed for long-lasting performance in heavy-load, continuous-duty rolling mill applications. The spindles feature Ameridrives fully-crowned advanced gear tooth design. Units can accommodate high misalignment angles due to the constant change in material thickness, roll size and roll change requirements. Caliper brakes and pinion mill stand drives are also used.

- **Ameridrives Power Transmission** Americardan 5000 & 3000 Series universal joints
- **Ameridrives** Amerigear® couplings (AGMA) and Amerigear SM Series mill spindles
- **Twiflex Limited** MX pneumatic caliper disc brakes
- **Nuttall Gear** Pinion and twin pinion mill stand drives
- **Bibby Turboflex** Series III couplings and modular torque limiters
- **Delroyd Worm Gear** Mill stand screwdowns and adjustment drives
Roller Tables

Bauer offers a geared motor that is specifically designed for the heavy shock loads of mill roller table applications. The units feature grey cast iron gearbox and motor housings, a reinforced fan, high temperature seals, a heavy duty fan cover, and a motor design with circular fins as an option. TB Wood’s Dura-Flex elastomeric couplings are often mounted between the drive motors and table rollers. The couplings provide superior fatigue resistance in tough steel mill environments. Units are easy to assemble, have a high operating temperature and are moisture and chemical resistant.

- **Bauer Gear Motor**: BF Series shaft-mounted gear motors
- **TB Wood’s**: Dura-Flex® couplings
- **Ameridrives**: Amerigear® couplings (AGMA)
- **Delroyd Worm Gear**: Speed reducers
- **Nuttall Gear**: TDS/HPD parallel shaft and Moduline® concentric shaft reducers
- **Bibby Turboflex**: Series III couplings and modular torque limiters

Multi-Stand Roughing Mills

High torque capacity Ameridrives SM Series mill spindles and robust Nuttall Gear pinion mill stand drives are designed to provide long-lasting service in tough mill environments. Ameridrives Power Transmission universal joints and Ameriloc shaft locking devices are also utilized.

- **Ameridrives**: Amerigear® couplings (AGMA) and SM Series mill spindles
- **Ameridrives Power Transmission**: Americardan 5000 & 3000 Series universal joints
- **Nuttall Gear**: Pinion and twin pinion mill stand drives
- **Bibby Turboflex**: Series III couplings and modular torque limiters
- **Delroyd Worm Gear**: Mill stand screwdowns and adjustment drives
- **Ameridrives**: Ameriloc® shaft locking devices

Descaling Pumps

Custom-designed Nuttall Gear high-torque drives are often installed on high horsepower water pumps utilized on descaling equipment.

- **Nuttall Gear**: Descaling pump drives

Altra Industrial Motion

CALL NOW 800-985-6929
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Finishing Mills

Ameridrives Power Transmission universal joints and Ameridrives SM Series mill spindles are designed for heavy-load, continuous-duty bar mill applications. The spindles feature Ameridrives fully-crowned advanced gear tooth design. Units can accommodate high misalignment angles due to the constant change in material thickness, roll size and roll change requirements. Caliper brakes and pinion mill stand drives are also used.

Ameridrives Power Transmission Americardan 5000 & 3000 Series universal joints
Ameridrives Amerigear® couplings (AGMA)
Twiflex Limited MX pneumatic caliper disc brakes
Nuttall Gear Pinion and twin pinion mill stand drives
Bibby Turboflex Series III couplings and modular torque limiters
Delroyd Worm Gear Mill stand adjustment drives

Transfer Tables/Conveyors

TB Wood's QT Power chain II belt drive system features a synchronous belt, sprockets, bushings and idlers all designed to work together for maximum value in high torque drive applications including mill chain conveyors. Bauer gear motors and Bibby torque limiters are also utilized on chain driven conveyor systems throughout the mill.

TB Wood's Dura-Flex® couplings and QT Power Chain® II belt drive system
Bauer Gear Motor BF Series shaft-mounted gear motors and BG Series helical in-line gear motors
Ameridrives Amerigear® couplings (AGMA)
Twiflex Limited MX pneumatic caliper disc brakes
Bibby Turboflex Series III couplings and Bibbigard torque limiters
Wichita Clutch AquaMaKK™ clutches and brakes
**Temper Mills**

Ameridrives SM Series mill spindles are designed for long lasting performance in heavy-load, temper mill applications. The spindles feature Ameridrives fully-crowned advanced gear tooth design. Units can accommodate high misalignment angles due to the constant change in material thickness, roll size and roll change requirements. Caliper brakes and pinion mill stand drives are also used.

**Ameridrives Power Transmission** Americardan 5000 & 3000 Series universal joints  
**Ameridrives** Amerigear® couplings (AGMA) and SM Series mill spindles  
**Bibby Turboflex** Series III couplings  
**Twiflex Limited** MX pneumatic caliper disc brakes  
**Nuttall Gear** Pinion and twin pinion mill stand drives  
**Delroyd Worm Gear** Mill stand screwdowns and adjustment drives

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**Piercing Pipe Mills**

Ameridrives Power Transmission universal joints are installed between the drive motors and rollers on the piercing mill. Bauer Gear Motors and Bibby Turboflex couplings can be used on mill rollout tables.

**Ameridrives Power Transmission** Americardan 5000 & 3000 Series universal joints  
**Bauer Gear Motor** BG Series helical gear motors  
**Bibby Turboflex** E-Flex couplings and modular torque limiters  
**Delroyd Worm Gear** Speed reducers  
**Nuttall Gear** Helical speed reducers
**Cold Mills**

Due to superior engineering and mill expertise, Ameridrives Power Transmission universal joints often replace gear mill spindles on cold mill applications. Amerigear® gear couplings are often mounted between the drive motors and gear boxes. The couplings provide superior performance in tough steel mill environments. Nuttall Gear helical drives and Delroyd Worm Gear speed reducers are widely used on cold mill applications.

**Ameridrives Power Transmission** Americardan 5000 & 3000 Series universal joints

**Ameridrives** Amerigear® couplings (AGMA)

**Delroyd Worm Gear** Speed reducers

**Nuttall Gear** TDS/HPD parallel shaft and Moduline® concentric shaft reducers

**Bibby Turboflex** Series III couplings and modular torque limiters

**Ameridrives** Ameriloc® shaft locking devices

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**Coilers/Down Coilers**

Ameridrives gear couplings, universal joints and Bibby torque limiters are utilized in coiler drive trains. Nuttall Gear heavy-duty, dual-speed drives are custom-designed with customer-specified mandrel shafts for optimum performance in down coiler applications.

**Ameridrives Power Transmission** Americardan 5000 & 3000 Series universal joints

**Ameridrives** Amerigear® couplings (AGMA)

**Nuttall Gear** Two-speed recoiler drive

**Bibby Turboflex** Series III couplings and modular torque limiters

**Wichita Clutch** AquaMaKKs™ clutches and brakes

**Delroyd Worm Gear** Speed reducers

**Twiflex Limited** MXEA electric caliper brakes and MX pneumatic caliper disc brakes

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http://www.automatedpt.com

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The websites offer the global metals industries convenient, 24-hour access to the Altra brands, products and applications critical to virtually every operation in metal mills and metal processing facilities.

The websites are organized by application categories ranging from continuous casters and hot roughing mills to cold mills and pickling, coating and annealing lines.

Within these categories are the features and benefits of each Altra product solution that can be applied to improve efficiency, productivity and safety in the metal mill or processing operation. Each product contains a web link to one of the 11 Altra brands that support the Metals industry where engineers can access detailed product specifications. The websites also contain case studies and a literature portal.
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