





## Cold Forming

Delroyd Worm Gear pinch roll drives stand up to severe shock loads and potential damage in mill environments. The drives feature fabricated steel housings with up to 48" center distances which allow for higher horsepower ratings when compared to cast iron housings. Durable Ameridrives Power Transmission universal joints provide a high degree of strength with minimum distortion under load. Units feature one-piece yolk and bearing housing construction.

Bauer BF Series gear motors feature grey cast iron gearbox and motor housings, a reinforced fan, high temperature seals, and a heavy duty fan cover. TB Wood's Dura-Flex elastomeric couplings are often utilized in cold forming applications. The couplings are easy to assemble and provide superior fatigue resistance in tough steel mill environments.

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

**TB Wood's** Dura-Flex® couplings

**Ameridrives** Amerigear® couplings (AGMA) and SL & SF Series mill spindles

**Bauer Gear Motor** BF Series shaft-mounted geared motors

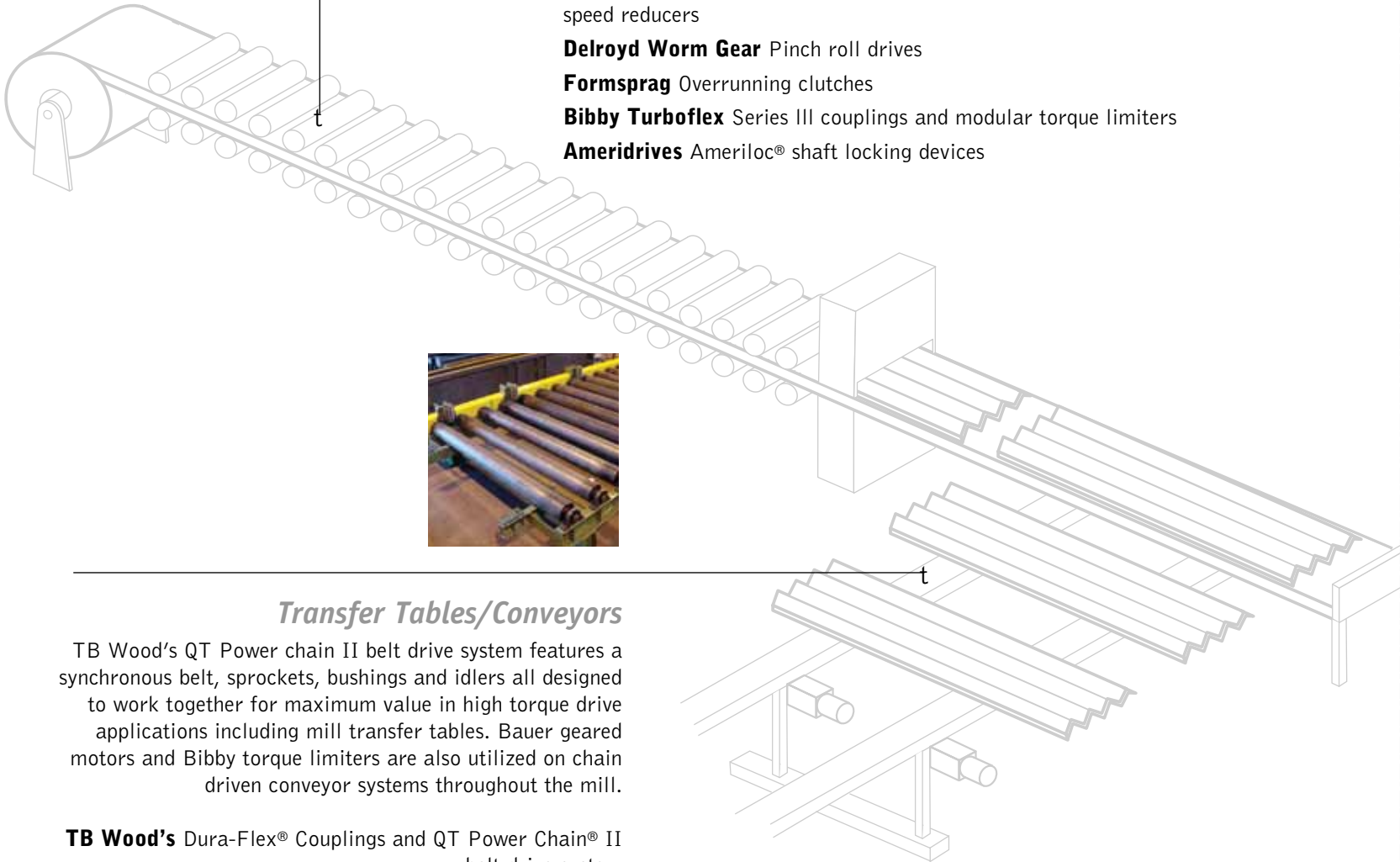
**Nuttall Gear** TDS/HPD parallel shaft and Moduline® concentric shaft speed reducers

**Delroyd Worm Gear** Pinch roll drives

**Formsprag** Overrunning clutches

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

**Ameridrives** Ameriloc® shaft locking devices



## 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 transfer tables. Bauer geared 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

**Twiflex Limited** MX pneumatic caliper disc brakes

**Bibby Turboflex** Bibbigard torque limiters

**Wichita Clutch** AquaMaKKs™ clutches and brakes

**The industry-leading brand names of Altra Industrial Motion offer power transmission solutions for a wide variety of metal processing applications**

As industry leaders in electromechanical power transmission products, the companies of Altra Industrial Motion have been helping metal processing equipment manufacturers and mills 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 annealing, pickling and coating lines, levelers, temper mills, slitters, accumulators, cold forming mills, chain conveyors, coilers and uncoilers.

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

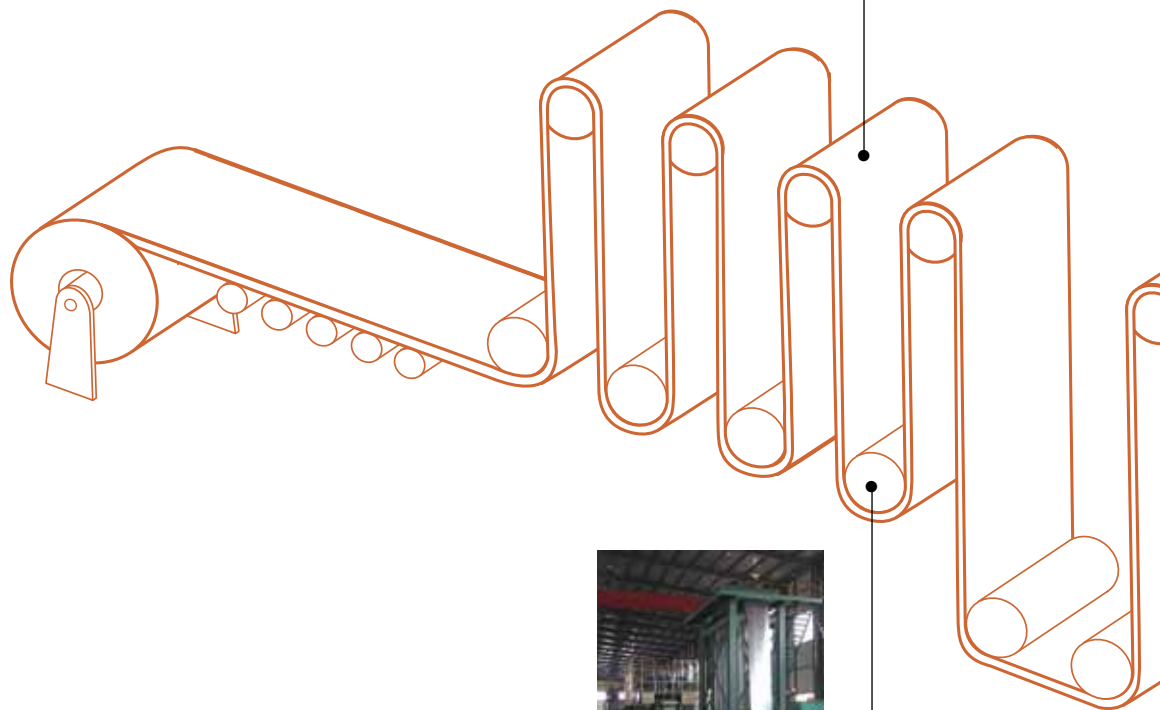
The companies of Altra Industrial Motion offer advanced technologies together with exceptional engineering capability. Our experienced mill application engineers analyze every application challenge in order to provide the optimal power transmission solutions for our customers.

### Annealing Lines

Bauer BG Series gear motors are a popular choice for use on annealing furnace lines. The units feature grey cast iron gearbox and motor housings, a reinforced fan, high temperature seals, and a heavy duty fan cover. 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. Heavy-duty Delroyd Worm Gear speed reducers provide exceptional performance when installed on annealing line drivetrains.



- Bauer Gear Motor** BG Series gear motors
- Ameridrives Power Transmission** Americardan 2000 & 3000 Series universal joints
- Ameridrives** Amerigear® couplings (AGMA) and SL & SF Series mill spindles
- TB Wood's** Dura-Flex® couplings
- Bibby Turboflex** Series III couplings and modular torque limiters
- Wichita Clutch** AquaMaKKs™ clutches and brakes
- Delroyd Worm Gear** Speed reducers
- Nuttall Gear** TDS/HPD parallel shaft and Moduline® concentric shaft speed reducers
- Twiflex Limited** MX pneumatic caliper disc brakes



### Accumulators

Nuttall Gear provides custom-designed drive solutions to meet high tension conditions in accumulator applications including annealing and coating lines.

- Nuttall Gear** Accumulator drives
- Ameridrives** Amerigear® couplings(AGMA)
- Bibby Turboflex** Series III couplings
- TB Wood's** Dura-Flex® couplings

## Levelers



Nuttall Gear custom designs multi-shaft leveler drives to meet our customer's specific roll separation requirements. Ameridrives mill spindles can handle high misalignment due to changes in material thickness.



**Ameridrives Power Transmission** Americardan 2000 & 3000 Series universal joints

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

**Nuttall Gear** Leveler drives

**Twiflex Limited** MX Pneumatic caliper disc brakes

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



## Slitters

Heavy-duty AquaMaKKs water cooled clutches and brakes are utilized to control tension on coil slitters and unwinders. Nuttall "zero backlash" slitter drives are custom-designed to accommodate specific slitter performance requirements. Formsprag overrunning clutches are used in threading drives to protect the low speed drives from over speeding when the process is run at full production speeds.

**Nuttall Gear** Slitter drives

**Delroyd Worm Gear** Speed reducers

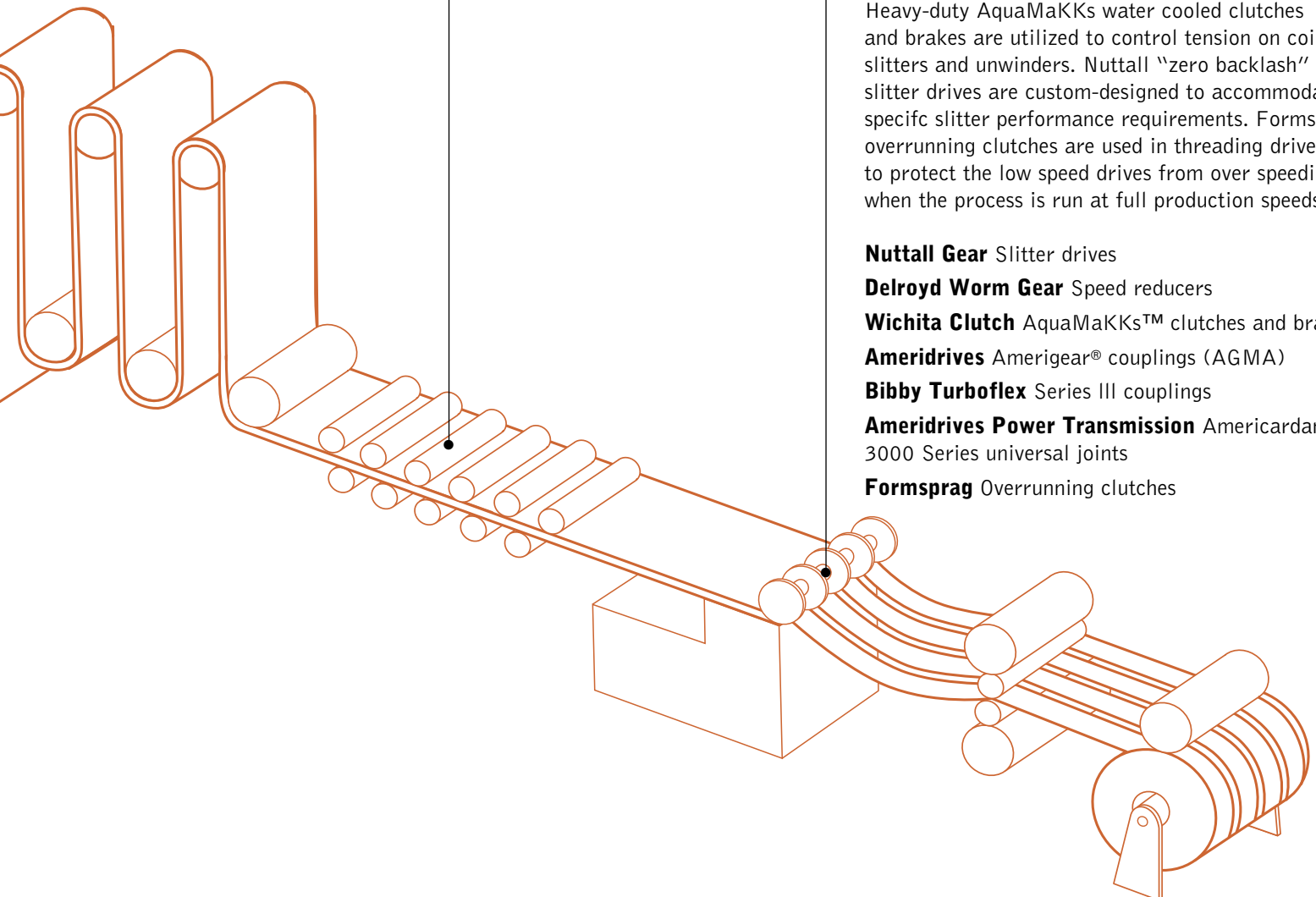
**Wichita Clutch** AquaMaKKs™ clutches and brakes

**Ameridrives** Amerigear® couplings (AGMA)

**Bibby Turboflex** Series III couplings

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

**Formsprag** Overrunning clutches



## Pickling Lines

TB Wood's Dura-Flex elastomeric couplings are often mounted between the drive motors and table rollers. These 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 motors are designed for the heavy shock loads of mill pickling line applications. The units feature grey cast iron gearbox and motor housings, a reinforced fan, high temperature seals, and a heavy-duty fan cover. Formsprag overrunning clutches are used in threading drives to protect the low speed drives from over speeding when the process is run at full production speeds.

**Bauer Gear Motor** BF Series shaft-mounted gear motors

**Ameridrives Power Transmission** Americardan 2000 & 3000 Series universal joints

**Ameridrives** Amerigear® couplings (AGMA) and SL & SF Series mill spindles

**TB Wood's** Dura-Flex® couplings

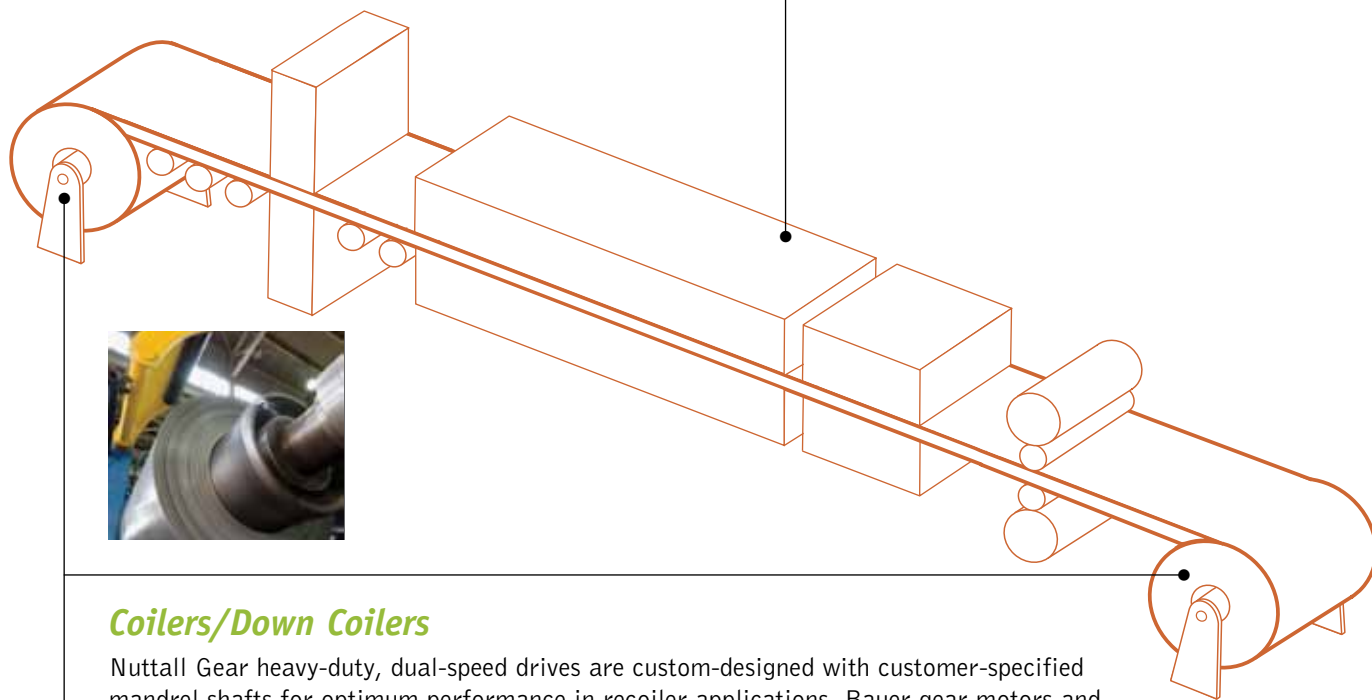
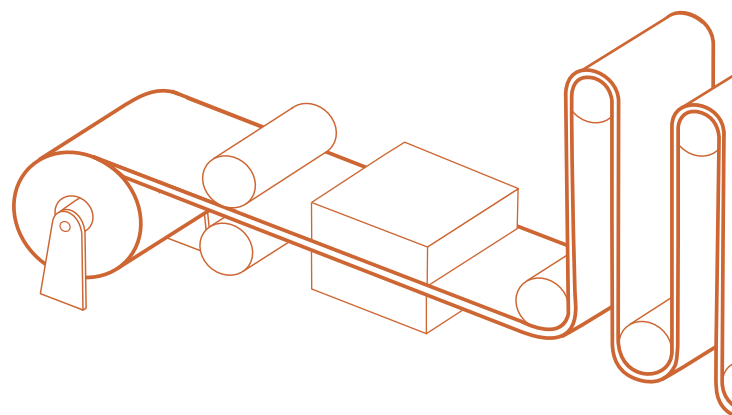
**Nuttall Gear** TDS/HPD parallel shaft and Moduline® concentric shaft speed reducers

**Wichita Clutch** AquaMaKKs™ clutches and brakes

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

**Delroyd Worm Gear** Speed reducers

**Twiflex Limited** MX pneumatic caliper disc brakes



## Coilers/Down Coilers

Nuttall Gear heavy-duty, dual-speed drives are custom-designed with customer-specified mandrel shafts for optimum performance in recoiler applications. Bauer gear motors and Bibby torque limiters are also utilized in coiler drive trains.

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

**Bauer Gear Motor** BF Series shaft-mounted gear motors and BG Series helical in-line gear motors

**Nuttall Gear** Two-speed recoiler drive

**Ameridrives** Amerigear® Couplings (AGMA)

**Wichita Clutch** AquaMaKKs™ Clutches and brakes

**Delroyd Worm Gear** Speed reducers

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

**Twiflex Limited** MX pneumatic caliper disc brakes



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## Coating/Galvanizing Lines

Formsprag overrunning clutches and TB Wood's elastomeric chemical-resistant couplings are found on a variety of coating and galvanizing lines. Formsprag overrunning clutches are used in threading drives to protect the low speed drives from over speeding when the process is run at full production speeds. In steel processing, low speed drives are used to power the drive rollers when threading the leading edge of a new roll through the process, or after a problem in the line and it has to be restarted. The overrunning clutch will transmit the low speed torque from the threading drive and automatically disconnect or overrun when the line is driven at full production speeds.

**Bauer Gear Motor** BF Series shaft-mounted gear motors

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

**TB Wood's** Dura-Flex® elastomeric couplings

**Ameridrives Power Transmission** Americardan 2000 & 3000 Series universal joints

**Ameridrives** Amerigear® couplings (AGMA) and SL & SF Series mill spindles

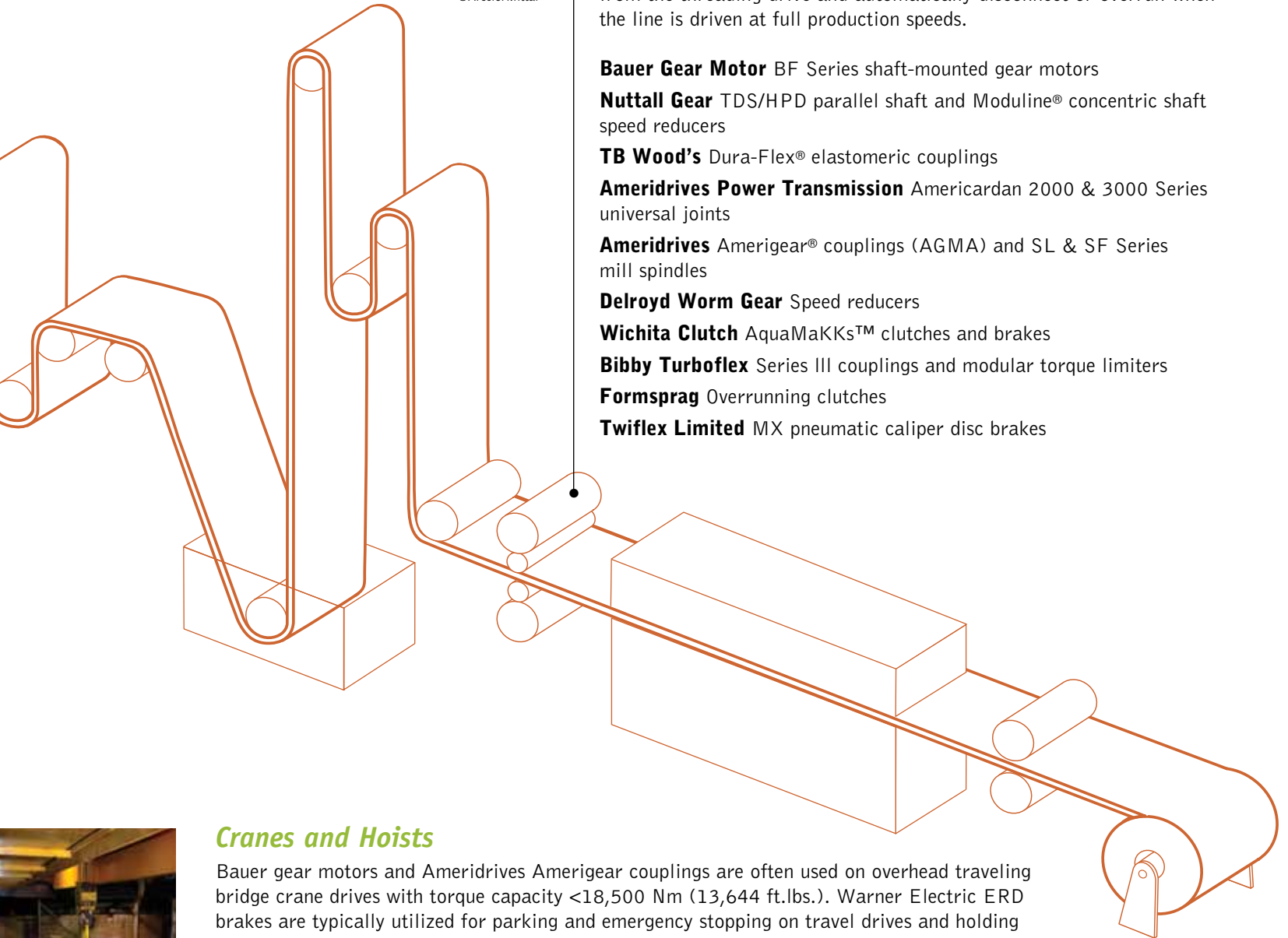
**Delroyd Worm Gear** Speed reducers

**Wichita Clutch** AquaMaKKs™ clutches and brakes

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

**Formsprag** Overrunning clutches

**Twiflex Limited** MX pneumatic caliper disc brakes



## Cranes and Hoists

Bauer gear motors and Ameridrives Amerigear couplings are often used on overhead traveling bridge crane drives with torque capacity <math><18,500 \text{ Nm}</math> (13,644 ft.lbs.). Warner Electric ERD brakes are typically utilized for parking and emergency stopping on travel drives and holding on main hoist drives with torque capacity <math><10,000 \text{ Nm}</math> (7,325 ft.lbs.), 250-500 kW. Twiflex caliper brakes perform the same functions on overhead bridge cranes, including ladle hood winches, with a 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 disc 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 style universal joints







**Electromagnetic Clutches and Brakes****Warner Electric***Electromagnetic Clutches and Brakes*New Hartford, CT - USA  
**1-800-825-6544***For application assistance:*  
1-800-825-9050St Barthelemy d'Anjou, France  
**+33 (0) 2 41 21 24 24***Precision Electric Coils and Electromagnetic Clutches and Brakes*Columbia City, IN - USA  
**1-260-244-6183****Matrix International***Electromagnetic Clutches and Brakes, Pressure Operated Clutches and Brakes*Brechin, Scotland  
**+44 (0) 1356 602000**New Hartford, CT - USA  
**1-800-825-6544****Inertia Dynamics***Spring Set Brakes; Power On and Wrap Spring Clutch/Brakes*New Hartford, CT - USA  
**1-800-800-6445****Linear Products****Warner Linear***Linear Actuators*Belvidere, IL - USA  
**1-800-825-6544***For application assistance:*  
1-800-825-9050St Barthelemy d'Anjou, France  
**+33 (0) 2 41 21 24 24****Couplings****Ameridrives Couplings***Mill Spindles, Ameriflex, Ameridisc*Erie, PA - USA  
**1-814-480-5000***Gear Couplings*San Marcos, TX - USA  
**1-800-458-0887****Bibby Turboflex***Disc, Gear, Grid Couplings, Overload Clutches*Dewsbury, England  
**+44 (0) 1924 460801**Boksburg, South Africa  
**+27 11 918 4270****TB Wood's***Elastomeric Couplings*Chambersburg, PA - USA  
**1-888-829-6637** – Press #5*For application assistance:*  
1-888-829-6637 – Press #7*General Purpose**Disc Couplings*San Marcos, TX - USA  
**1-888-449-9439****Ameridrives Power Transmission***Universal Joints, Drive Shafts, Mill Gear Couplings*Green Bay, WI - USA  
**1-920-593-2444****Huco Dynatork***Precision Couplings and Air Motors*Hertford, England  
**+44 (0) 1992 501900**Chambersburg, PA - USA  
**1-800-829-6637****Lamiflex Couplings***Flexible Couplings, Bearing Isolators, and Coupling Guards*São Paulo, SP - Brasil  
**(11) 5679-6533****Altra Industrial Motion (Changzhou) Co., Ltd.***Universal Joints, Gear Couplings, Ameriflex and Ameridisc Couplings*Changzhou, Jiangsu Province  
- China  
**+86 519 8510 3020****Heavy Duty Clutches and Brakes****Wichita Clutch***Pneumatic Clutches and Brakes*Wichita Falls, TX - USA  
**1-800-964-3262**Bedford, England  
**+44 (0) 1234 350311****Twiflex Limited***Caliper Brakes and Thrusters*Twickenham, England  
**+44 (0) 20 8894 1161****Industrial Clutch***Pneumatic and Oil Immersed Clutches and Brakes*Waukesha, WI - USA  
**1-262-547-3357****Gearing****Boston Gear***Enclosed and Open Gearing, Electrical and Mechanical P.T. Components*Charlotte, NC - USA  
**1-800-825-6544***For application assistance:*  
1-800-816-5608**Bauer Gear Motor***Geared Motors*Esslingen, Germany  
**+49 (711) 3518 0**Somerset, NJ - USA  
**1-732-469-8770****Nuttall Gear and Delroyd Worm Gear***Worm Gear and Helical Speed Reducers*Niagara Falls, NY - USA  
**1-716-298-4100****Overrunning Clutches****Formsprag Clutch***Overrunning Clutches and Holdbacks*Warren, MI - USA  
**1-800-348-0881** – Press #1*For application assistance:*  
1-800-348-0881 – Press #2**Marland Clutch***Roller Ramp and Sprag Type Overrunning Clutches and Backstops*South Beloit, IL - USA  
**1-800-216-3515****Stieber Clutch***Overrunning Clutches and Holdbacks*Heidelberg, Germany  
**+49 (0) 6221 30 47 0****Belted Drives and Sheaves****TB Wood's***Belted Drives*Chambersburg, PA - USA  
**1-888-829-6637** – Press #5*For application assistance:*  
1-888-829-6637 – Press #7**Engineered Bearing Assemblies****Kilian Manufacturing***Engineered Bearing Assemblies*Syracuse, NY - USA  
**1-315-432-0700***For information concerning our sales offices in Asia Pacific check our website*  
[www.altramotion.com.cn](http://www.altramotion.com.cn)