

**TB Wood's
& Ameridrives
Products
for the
Oil and Gas
Industry**



WITH THOUSANDS OF OIL AND GAS RIGS ACROSS NORTH AMERICA AND THE WORLD, THE RIG MARKET IS BROAD AND EXTREMELY IMPORTANT.

TB Wood's has a long history of providing superior quality V-belt drives, elastomeric couplings and metallic couplings to the oil and gas industries. From rigs to refineries, TB Wood's provides superior products to meet general and specific application requirements including Rotary Drilling Rigs, Artificial Lift, Gas Production and Coal-Bed Methane Extraction. Typical applications moving air and liquid use V-belt drives, elastomeric couplings and metallic couplings.



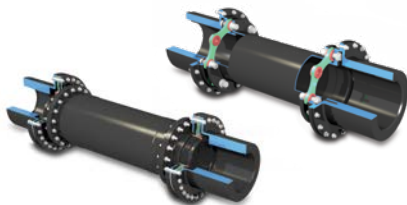
Sheaves and Synchronous Sprockets

- 3V, 5V, and 8V Narrow belt sheaves – QD bushed.
- B, C and D Classical belt sheaves – QD bushed.
- Synchronous Sprockets.
- Premium and Banded belts also available.

Made-to-Order (MTO Sheaves)

TB Wood's combines the widest range of belted drives, V-belt or Synchronous, with unmatched made-to-order capabilities to accommodate the oil and gas industry.

- Offset Series for Mud Pumps
- GE 752 Series Sheaves
- Large Bushings (P, W, & S)



Ameriflex® Couplings

9,000,000 in.lbs torque capacity and higher available

Ameriflex® Diaphragm Couplings

Unique diaphragm design permits high-torque density and low weight.

- API-671 compliant
- Best for high travel requirements

Ameriflex® Disc Couplings

Optimized disc profile for even stress distribution. Proprietary disc coating to prevent fretting and corrosion.

- API-671 compliant
- Best for reduced moment applications



Form-Flex® and Torsiflex-i

Available in sizes .01 to 3,000 HP at 100 RPM

Flexible disc couplings transmit torque with zero backlash while compensating for angular and parallel misalignment. No lubrication – ideal replacement for high-maintenance lube couplings.

Available in numerous materials and coatings including a composite shaft version used in cooling tower floating-shaft couplings. Close-coupled, spacer and floating-shaft designs available.



Dura-Flex®

Available in sizes 1 to 1,000 HP at 1,750 RPM

Dura-Flex® couplings "split-in-half" element design allows for easy element installation/ replacement without moving connected equipment or disturbing the shaft connection. Spacer design can accommodate a large range of shaft spacing with few parts. Patented design minimizes bond stress for long coupling life. Highly flexible and able to accommodate shaft misalignment while minimizing vibration and preventing damage to connected equipment.



Amerigear

Up to 6,680 kNm; 60,000,000 in.lbs

Fully-crowned gear teeth provide operational benefits including maximum load-carrying capacity with minimum size, maximum reliability and long life.

- Both "O" ring and metal seal models are available
- Strong, rigid floating sleeve
- Precision-machined identical hub
- Positive dust-tight seals



Sure-Flex® Plus

Available in sizes 1 to 2,000 HP at 1,750 RPM

Sure-Flex Plus is a TB Wood's original! Sure-Flex Plus Couplings utilize a rubber (EPDM or Neoprene) or Hytrel™ thermoplastic flex element (sleeve) to transmit torque and accommodate shaft misalignments. Sure-Flex Plus couplings have exceptional torsional flexibility, and the 4-way flexing action absorbs virtually all types of shock, vibration, misalignment, and end float. Sure-Flex Plus couplings are an excellent choice when low cost, high flexibility, vibration damping, and easy installation are primary concerns.



ROTARY DRILLING RIGS

Rotary drilling rigs range from 1,000 HP to 4,000 HP and are either electric or mechanical. Rig components will vary with HP and customer specifications.

Components for every petroleum job including oil pumping, pipeline mud service and more. You'll find our MTO and standard V-belt drives are ideal for most pumping applications including:

- Mud pumps, configured up to 1,600 HP
- Hydraulic pumps
- Centrifugal pumps
- Charging pumps
- Cooling pumps
- Fresh water pumps
- Mud mixing pumps
- Mud cleaning pumps
- Duplex pumps
- Triplex pumps

Our high quality Sure-Flex® Plus, Dura-Flex® and Form-Flex® couplings fit most liquid pumping applications.

MTO and standard V-belt drives for blower setups.

V-belt drives with Sure-Flex® Plus and/or Dura-Flex® couplings fit most cooler jobs.



5V Sheave UC



Centrifugal Pumps



**Cooler Jack Shaft with
Sure-Flex® Plus Coupling**



Form-Flex® 8-Bolt



OIL PRODUCTION AND ARTIFICIAL LIFT APPLICATIONS

In many cases, a new well can move oil to the surface due to gas pressure in the well reservoir. The oil is regulated by a series of valves and piping called a "Christmas Tree".

After the well has lost its ability to free flow, artificial lift equipment is required. "Beam Pumps," also called "Pump Jacks," are the most common with well over 800,000 units working in the US alone. Other lift systems are Progressive Cavity Pumps and Electric Submersible Pumps. All of these applications use VBDs and Couplings.

The ideal use of these artificial lift systems is to make sure the well cavity is not depleted of oil and has time to recover. Many undesirable results occur when a well is pumped off! This is the main reason these applications use duty-cycle timers or variable frequency drives to meet, but not exceed, the capabilities of the well.

PROGRESSIVE CAVITY PUMP

Identifying well conditions is challenging as each well requires experienced judgment to make certain the proper equipment is installed to optimize productivity. Progressive Cavity Pump (PCP) Systems are used in many applications.

- Medium to heavy sand laden crude oil
- Light crude oil with high aromatic content
- Dewatering gas wells
- Coal Bed Methane
- High water cuts
- Horizontal, slant and directional wells
- High temperatures such as SAGD projects (Steam Assisted Gravitational Drainage)

Beam Pumps

- V-belt Drives

Progressive Cavity Pumps

- V-belt Drives
- Couplings



Form-Flex® FSH

Jack Shaft with Dura-Flex®

Form-Flex® HSH

MTO GE 722 Sheave
-Item stocked in many cases

GAS PRODUCTION AND PROCESSING

With increasing restrictions on emissions, and governments around the world looking for clean energy sources, Natural Gas (NG) is playing an even larger role in meeting these demands. It is the cleanest burning fossil fuel, and abundantly available in most parts of the world. There is also demand in regions that do not have readily available NG, which has now started the trend of exporting Liquefied Natural Gas (LNG) around the world. NG is starting to replace oil based fuels in some parts of the world, and is also used as feed stock for some petrochemical processes.

With this increased demand for NG there is an associated increase in demand for drilling, compressing and processing equipment, as well as storage facilities. All of the equipment used will require some type of power transmission components.

Gear Couplings and V-Belt Drives are commonly used in drilling equipment. All types of couplings and V-Belt drives are used on auxiliary equipment. Flexible disc or engineered elastomer couplings are used on compressors and generator sets. V-Belt drives and elastomer couplings are also commonly used on cooler drives for compressor sets.

But without Gas Compressors the NG could not be economically transported to processing or storage facilities, transferred to power generation stations and petrochemical refineries, or liquefied for export. Without the Gas Compressor, NG would be basically unusable energy. This is why Gas Compressors are a critical component to the global economy.

GAS COMPRESSORS

Gas Compressors can be grouped into two basic categories; Rotary Compressors and Reciprocating Compressors. These types of compressors can be found in many applications such as:

- NG reinjection into oil reservoirs, when flaring excess gas is not an option
- Gas injection into depleted oil reservoirs to enhance oil production
- Underground NG storage
- Pressure boosting station along transport pipe lines
- NG gathering fields
- Processing Sour NG to clean and usable NG
- Transferring gas to petrochemical facilities
- Turning NG into LNG for easy transport
- Municipal and Commercial NG vehicle fueling stations
- Pulling negative pressure on low pressure or old wells

Reciprocating Gas Compressors

- Form-Flex® (GCF/GCH and FSH/HSB)

Coolers for Recips

- V-belt Drives
- Coupled Jack Shafts
- Dura-Flex®

Screw Compressors

- Form-Flex® (GP Series)
- Torsiflex-i

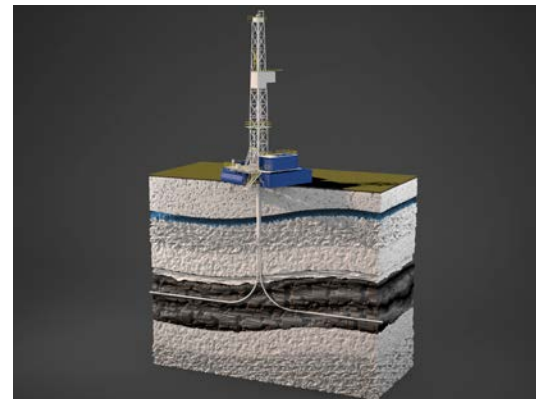
Blowers for Screw Compressors

- V-belt Drives



COAL BED METHANE

Coal bed methane travels with ground water in coal seams. The extraction of CBM involves pumping available water from the seam in order to reduce the water pressure that holds gas in the seam. CBM has very low solubility in water and readily separates as pressure decreases, allowing it to be piped out of the well separately from the water. Water moving from the coal seam to the well bore encourages gas migration toward the well. CBM producers try not to dewater the coal seam, but rather seek to decrease the water pressure (or head of water) in the coal seam to just above the top of the seam.



Coal bed methane extraction process

Centrifugal Pumps

- V-Belts
- Elastomeric Couplings

Blowers

- V-Belt
- Synchronous Drives

Beam Pumps (Pump Jacks)

- V-Belts



OIL AND GAS EQUIPMENT REPAIR

TB Wood's not only sells products for building rigs, we also supply parts for any type of repair or replacement you may have with equipment on your rig. Whether it's a duplex or triplex pump, jack shaft coupling, V-belts for blowers, cooling systems or centrifugal pumps — we have your part.

TB WOOD'S SHEAVES

Available in Narrow, Classical and Light Duty

- 3V, 5V, and 8V Narrow belt sheaves – QD bushed.
- B, C and D Classical belt sheaves – QD bushed.
- Light Duty (FHP) – bushed and bored to size.

V-belt drives are available in four belt types:

- Cog V-belts, Cog Banded V-belts, V-belts and Banded V-belts.
- Classical Drives (Conventional).
- Classical, Classical Banded, Classical Cog and Classical Cog Banded Belts.
- Narrow Drives (Ultra V).6
- Light Duty (FHP) capacities to 15 HP.

Bore sizes from 1/2 to 1-1/2 inches, bushed and bored to size.

Our MTO capabilities and our stocked items are also available.

Dura-Flex® Couplings

- Available in sizes 1 to 1,000 HP at 1,750 RPM

Sure-Flex® Plus Couplings

- Available in Sizes 1 to 2,000 HP at 1,750 RPM

Gear Couplings

- Available Sizes .01 to 4,000 HP at 100 RPM

Form-Flex® Couplings

- Available in Sizes .01 to 3,000 HP at 100 RPM

TB Wood's Facilities

North America

USA

440 North Fifth Avenue
Chambersburg, PA 17201 - USA
888-829-6637 * 717-264-7161

Belted Drives and Elastomeric Couplings

Customer Service

1-888-829-6637 (Press #5)

For Application Support

1-888-829-6637 (Press #7)

2000 Clovis Barker Road
San Marcos, TX 78666 - USA
1-888-449-9439
General Purpose Disc Couplings

Customer Service

1-888-449-9439

4970 Joule St
Reno, NV 89502 - USA
775-857-1800

Canada

9779 45 Ave NW
Edmonton, AB T6E 5V8 - Canada
+1 780-439-7979

6305 Danville Road
Mississauga, ON L5T 2H7 - Canada
1-800-829-6631

1073 Rue Bégin
Saint-Laurent, QC H4R 1V8 - Canada
+1 514-332-4812

Mexico

Comisión Federal de Electricidad 850,
Industrial San Luis,
San Luis, S.L.P., 78395 - Mexico
+52 444 137 1500

Europe

Merchant Drive, Hertford
Hertfordshire SG13 7BL - England
+44(0)1992 501900
Elastomeric Couplings

Ameridrives Facilities

North America

USA

1802 Pittsburgh Avenue
Erie, PA 16502 - USA
814-480-5000

*Mill Spindles, Ameriflex, Ameridisc,
Universal Joints, Driveshafts,
Mill Gear Couplings*

2000 Clovis Barker Road
San Marcos, TX 78666 - USA
888-449-9439

*Gear Couplings, Small Industrial
Driveshafts*

300 Indiana Highway 212
Michigan City, IN 46360
219-874-5248
Irrigation Universal Driveshafts

The Brands of Altra Industrial Motion

Couplings

Ameridrives
www.ameridrives.com

Bibby Turboflex
www.bibbyturboflex.com

Guardian Couplings
www.guardiancouplings.com

Huco
www.huco.com

Lamiflex Couplings
www.lamiflexcouplings.com

Stromag
www.stromag.com

TB Wood's
www.tbwoods.com

Geared Cam Limit Switches

Stromag
www.stromag.com

Electric Clutches & Brakes

Inertia Dynamics
www.idicb.com

Matrix
www.matrix-international.com

Stromag
www.stromag.com

Warner Electric
www.warnerelectric.com

Linear Products

Warner Linear
www.warnerlinear.com

Engineered Bearing Assemblies

Kilian
www.kilianbearings.com

Heavy Duty Clutches & Brakes

Industrial Clutch
www.indclutch.com

Twiflex
www.twiflex.com

Stromag
www.stromag.com

Svendborg Brakes
www.svendborg-brakes.com

Wichita Clutch
www.wichitaclutch.com

Belted Drives

TB Wood's
www.tbwoods.com

Gearing

Bauer Gear Motor
www.bauergears.com

Boston Gear
www.bostongear.com

Delroyd Worm Gear
www.delroyd.com

Nuttall Gear
www.nuttallgear.com

Overrunning Clutches

Formsprag Clutch
www.formsprag.com

Marland Clutch
www.marland.com

Stieber
www.stieberclutch.com

Neither the accuracy nor completeness of the information contained in this publication is guaranteed by the company and may be subject to change in its sole discretion. The operating and performance characteristics of these products may vary depending on the application, installation, operating conditions and environmental factors. The company's terms and conditions of sale can be viewed at <http://www.altramotion.com/terms-and-conditions/sales-terms-and-conditions>. These terms and conditions apply to any person who may buy, acquire or use a product referred to herein, including any person who buys from a licensed distributor of these branded products.

©2018 by TB Wood's LLC. All rights reserved. All trademarks in this publication are the sole and exclusive property of TB Wood's LLC or one of its affiliated companies.

©2018 by Ameridrives LLC. All rights reserved. All trademarks in this publication are the sole and exclusive property of Ameridrives LLC or one of its affiliated companies.