

# Driving Gears 2019

Matthew Jaster, Senior Editor

Efficiency, power-loss reduction and enhanced performance are just a few examples of what the PT community wants from their gears and gear drives in 2019. Some companies are doubling down on service and assembly capabilities while others are integrating components in an effort to increase flexibility and control. The following article contains gear drive technology for winch systems, cooling towers and welding turntables in addition to the latest industry and product news in this growing market segment.

## Bonfiglioli

OFFERS PLANETARY DRIVES FOR EXCAVATOR WINCH SYSTEM

The Falcon Winch Assist is a winch system for excavators from the New Zealand engineering and manufacturing company DC Equipment and is achieving international success because of its outstanding safety, reliability and efficiency. Due to its many advantageous characteristics it is predestinated for tethered earthmoving machines to haul felled trees on slopes up to 45 degrees.



The hydraulic winch uses a pair of high-performance Bonfiglioli 715C crawler drives, which can be fitted to a broad range of excavators over 30 tons. The hydraulic winch assist machine is housed in the rear of the crawler vehicle where Bonfiglioli compact but torque-dense, 85,000 Nm capacity 715C crawler drive is the perfect fit for challenging tasks. In addition to being used in tethered applications for felled trees, it can be used for digging, loading and shoveling in demanding situations, with high levels of safety achieved by features and operating alerts built in to ensure the security of operators and enable them to concentrate on the task in hand.

The twin drives 715C in each Falcon Winch Assist unit are incorporated into an open loop, single-drum hydraulic system featuring brake safety. The Falcon Winch Assist has a primary hydraulic braking system for maximum control to achieve consistent rope tension minimize tension spikes. An

emergency backup braking system utilizes two Bonfiglioli integrated planetary gear box brakes for a double redundancy backup braking system. The hydraulic and electrical safety system of the Falcon Winch Assist were designed to ensure the system remains in a safe operating state and to prevent shock loading, thanks to a system communication monitoring, drum speed control and alerts that warn of machine failures and activate automatic emergency braking.

Reliability of the multipurpose Falcon Winch Assist is advanced by the use of twin Bonfiglioli 715C planetary gearboxes proven globally in tough industrial applications, including mobile cranes and milling machines employed in industries including agriculture, construction equipment, mining and energy, forestry, food processing, primary production, land and water transportation, power generation and transmission and renewable energy. Bonfiglioli drives are designed to withstand the widely varying operating conditions you may have in New Zealand region, including temperature fluctuations and particularly demanding applications, where reliability is paramount. The high reliability combined with the global reputation of these gearmotors has been instrumental in their choice by DC Equipment for this application.

The strong local presence and prompt delivery were the other important factors in the choice of Bonfiglioli drives. The company is expanding its organization in New Zealand with a focus on engineering and service to offer increasingly customized solutions tailored to the needs of individual customers.

The new CAE team, Customer Application Engineering, of Bonfiglioli operating in Australia and New Zealand, supported by a strong global R&D and a group with 3,770 professionals, 20 branches and 14 production plants, is able to better support the innovative companies New Zealanders, combining engineering skills for local applications with extensive global experience.

### For more information:

Bonfiglioli  
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[www.bonfiglioli.com](http://www.bonfiglioli.com)



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## Rexnord

CT SERIES DELIVERS LOW-NOISE, RELIABLE OPERATION

Rexnord introduced the Cooling Tower (CT) Series earlier this year. Designed specifically for induced draft, wet cooling tower applications, the Falk CT-Series is capable of withstanding harsh cooling tower operating conditions. Combined with Addax Composite Couplings and Addax Mechanical Brakes, Rexnord offers customers a complete power transmission product solution. The Falk CTA gear drive is designed to directly replace comparable Amarillo double reduction gearboxes, with matching footprint and critical mounting dimensions to reduce installation costs. Featuring spiral bevel gears, finished using



a state-of-the-art hard cut process and precision-machined helical gears, the Falk CTA delivers low noise and reliable, low vibration operation. The vertically-orientated cooling fins, combined with standard marine grade paint, ensure long service life in the harshest of cooling tower environments. The Falk CTA gear drive is also a part of Rexnord's digital productivity platform, DiRXN (pronounced "Direction")—integrating the innovative Industrial Internet of Things and e-commerce technologies with Rexnord's leading portfolio of tools, products and services. The attached Smart Tag provides users with an intuitive experience designed to increase overall customer value through on-demand support, including maintenance and installation manuals, videos, troubleshooting guides and opportunities to register the product directly to expedite reorder and support asset management.

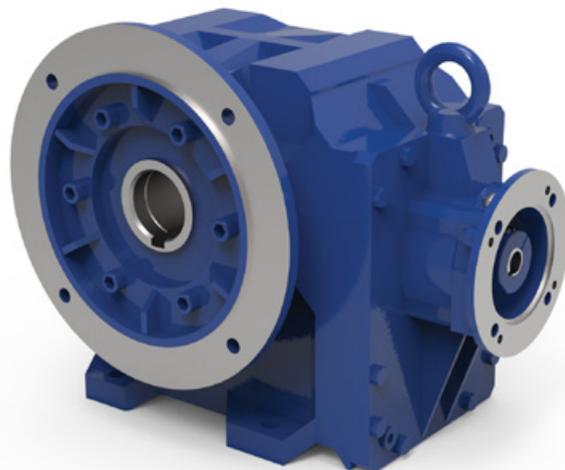
### For more information:

Rexnord  
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## Bauer

GEARBOX WITH CUSTOM ADAPTER OFFERS BENEFITS TO WELDING TURNTABLE DRIVE

A leading global aircraft engine manufacturer needed a robust replacement gear drive for use on a large plasma welding turntable. The table's 12 ft. diameter bed rotates and tilts to accommodate various sized parts. The bed is laser-aligned to ensure precise angles are established for accurate welds. The problem was that the original competitor worm gearbox's backlash allowed the welding bed to slip occasionally, causing the weld to be misaligned. The inability of the old gearbox to consistently hold the welding turntable in place created costly rework and reduced productivity.



The original gearbox manufacturer could only supply an identical replacement unit, which would eventually fail and not address the real problem. Faced with a tough challenge, the OEM's distributor contacted Bauer Gear Motor to help solve the problem.

After a review of the welding turntable requirements, Bauer engineers designed a modified BK70 gear box. Compact BK Series units feature helical gearing for increased torque capacity. BK models provide robust, backlash-free performance, which was critical for this demanding application.

A custom adapter was integrated into the design to allow fast and easy mounting directly to the table's servo motor drive.

### For more information:

Bauer Gear Motor  
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[www.bauergears.com](http://www.bauergears.com)

## Dana

TO OFFER NEW EXPANDED SERVICE AND ASSEMBLY CENTER FOR GEARBOXES

Dana Incorporated broke ground earlier this year on a nearly 32,000 square-foot facility in Slidell, Louisiana, for the repair, service, and assembly of industrial gearboxes.

The company's current operations in Slidell will transition to the larger facility in the nearby Fremaux Park to meet the growing demand for industrial gearbox service, repair, and refurbishment. Dana's service and assembly centers provide custom solutions for gearboxes used in a variety of applications such as mining, steel and metal, pulp and paper, power generation, food processing, marine, cement, wind power, water treatment and much more.

"Our industrial gearbox customers come to Dana for custom, highly engineered solutions that are able to handle the unique requirements of their applications," said Aziz Aghili, president of Dana's Off-Highway Drive and Motion Technologies. "Dana's service and assembly centers enable us to provide critical support for our customers throughout the lifecycle of their machinery to ensure maximum performance and uptime."

Dana offers customized gear drive solutions for special purpose applications, as well as drop-in replacements for obsolete units. From upgrading to higher quality or larger capacity, to completely reverse engineering for manufacturing new gears, Dana's service and assembly centers are equipped to address each of the challenges faced by its customers.



"Dana in Slidell has a highly experienced team of service and repair professionals who are committed to meeting the needs of our customers," said Dave Hunt, director of service and manufacturing operations for Dana Off-highway Drive and Motion Technologies. "This new facility will grow our service and repair business, while expanding our capabilities to manufacture gears on-site, reducing lead times for our customers."

As the original-equipment manufacturer for both Brevini and PIV brand products, Dana is able to offer an extensive inventory of service components, including bearings, seals, shafts, and gearing. The company also provides service and repair for a broad range of industrial gearbox brands ranging from small applications to large, 40,000-pound industrial gearboxes.

### For more information:

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## Wittenstein

OFFERS LATEST GEARBOX TECHNOLOGIES DURING EMO HANNOVER 2019



The following is a round-up of some of the latest engineering technologies from Wittenstein featured at EMO Hannover 2019:

The Galaxie Drive System performs exceptionally well in all key technical disciplines compared to the market standard—from freedom from backlash, synchronous running and stiffness to torque density and overload capacity. Dynamic teeth instead of a rigid gear ring, tangential and hydrodynamic tooth contact over the full surface when loaded and a new type of bearing with a segmented outer race ring are the decisive attributes of this radically redesigned gearbox. In most cases, Galaxie is more than simply a component: innovative machine concepts and generations are developed around its performance features and Galaxie forms the nucleus. Examples include the compact Galaxie D in size 085 for smaller cutting heads or handling axes where special requirements apply regarding torsional rigidity and freedom from backlash and the ultra-flat Galaxie DF in sizes 110 and 135.

Smart gearboxes with "cynapse" functionality have attracted considerable attention since making their debut at the Hannover Messe 2019. This functionality—comprised of a fully integrated sensor module, the data output using IO-Link and the resulting I4.0 connectivity,—comes hand in hand with logic functions for monitoring the actual and threshold values of selected parameters. Gearboxes with "cynapse" are capable of recording and storing different influencing quantities in the process and the environment which impact on gearbox operation, and communicating them to automation systems as well as to all standard IIoT platforms. Gearboxes with "cynapse" are identical to the existing models, so that a drive solution which has already been designed needs no further modification—an important argument for designers.

Matching the gearbox, pinion, rack and lubrication system enable optimized performance of the complete system. Three performance classes adapted to different smooth running, positioning accuracy and feed force requirements ensure a technically and commercially efficient design in the most diverse applications. **PTE**

### For more information:

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