

Gears and Gear Drives

Durst

COMPACT TWO-PUMP DRIVE TARGETS OIL, AGRICULTURE AND RAIL APPLICATIONS

The model 2PD05 further expands the broad portfolio of Durst modular hydraulic pump drives to include a two-pad design with 10-inch pump centers and 5-inch gear centers. Durst engineered the 2PD05 specifically for mobile off-highway applications requiring a compact footprint, lighter weight and versatile mounting configuration. The new pump drive affords a cost-effective drive solution including, but not limited to, construction, mining, forestry, agriculture, rail maintenance and oil field equipment. Weighing approximately 200 pounds, the 2PD05 measures 8 inches deep x 11 inches high x 21 inches wide. The 2PD05 meets SAE and AGMA standards and is compatible with SAE pump shafts up to a 13 tooth - 8/16 spline (SAE D). It can be used as a drop-in replacement for Funk's 28000 series pump drives. The simple, one-piece modular format allows for easier assembly and installation. The 2PD05 has a maximum torque rating of 700 lb-ft. The

pump drive is rated for a maximum input power of 370 horsepower. It offers a choice of gear ratios from 1:1 to 2:1.

One of the most important benefits of the 2PD05 is its flexible mounting options. The pump drive can be mounted horizontally or vertically to overcome space constraints and restrictive limitations in equipment design. Long life and reliable performance are hallmarks of Durst's modular pump drive line. The 2PD05 runs cooler and is simpler to service. The class 10 spur gears run on heavy-duty ball bearings. Bearings and gears are self-contained within the housings. Durst's patented casting design keeps oil constantly flowing through the bearings and provides for wet spline operation, even at startup, thereby preventing fretting corrosion. Pump pads and input adapters can be easily changed without disturbing bearings. Because of the single seal, bearing, gear and adapter group design, there are fewer parts to inventory.

"The 2PD05 adds depth and breadth to Durst's product offerings," said John Locarno, global sales and marketing manager. "We leveraged our strength in heavy-duty pump drive applications to develop a system that is ideal for applications up to 370 horsepower. Introducing this new drive moves us closer to our goal of becoming the single source for all our customers' pump drive needs."

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Bauer Gear Motor

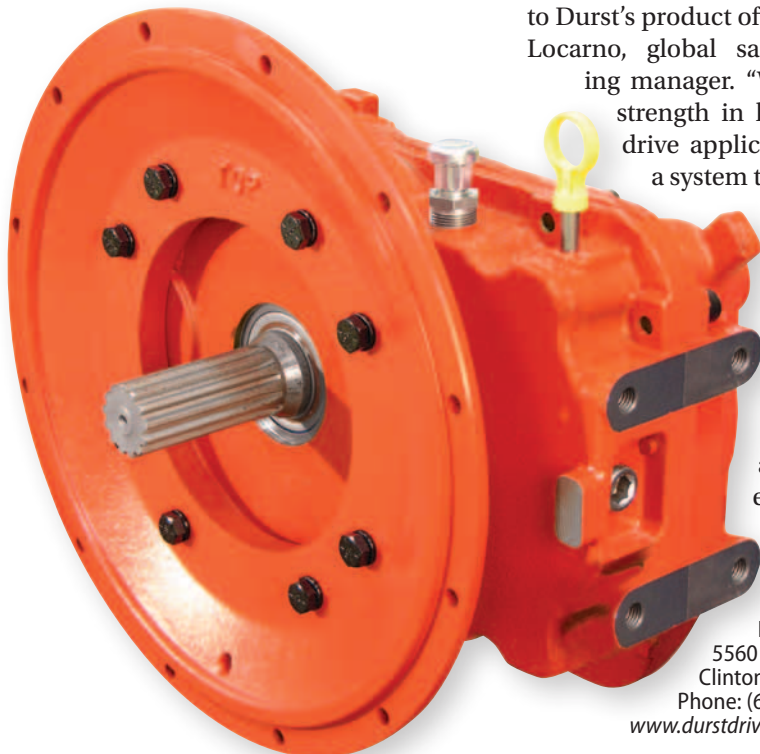
DEVELOPS NEW PMSM TECHNOLOGIES

Bauer Gear Motor has welcomed the results from a direct product comparison test to see how its latest IE4, super premium efficiency permanent magnetic synchronous motor (PMSM) performed against a standard asynchronous motor. The test was carried out on a Hüber disc thickener at a waste water treatment plant in Germany in partnership with inverter drive specialist Danfoss. Once installed the motor from Bauer was found to operate with 87.7 percent efficiency and delivered energy savings of almost 40 percent.

Bauer Gear Motor, part of the global Altra Industrial Motion Group, has stated a commitment to developing new technologies with a desire to improve energy efficiency and reduce costs for its customers. It is this commitment to efficiency that has led to the introduction of a new range of PMSMs which meet the requirements of the IE4 (Super Premium Efficiency) classification.

Jens Gabel, vice president global sales and R&D for Bauer Gear Motor, comments: "In today's market energy efficiency has to be one of the key determining factors when specifying geared motor solutions. Energy prices are only going to go one way, so it is important that a drive's lifelong running costs are considered; rather than simply the cost of procurement. We have developed the new motor in anticipation of the new IE4 classification and to offer our customers the very best in terms of efficiency."

Bauer's PMSM series is an environmentally friendly range of motors, employing a highly efficient design of rotor that integrates embedded permanent magnets made from rare-earth metals, in place of a squirrel-cage rotor found in most LV induction motors. This design offers a number of key benefits. It reduces heat losses from the rotor by 100 percent, total losses by approximately 25 percent and increases total efficiency by 10 percent or more. For the PMSM user, this improved perfor-



mance translates into a lower total cost of ownership, a reduction in CO₂ emissions, and on-going savings that buffer against future increases in energy costs.

During the product's development, it was clear that the new PMSM would offer consumers impressive energy savings over conventional, inverter driven asynchronous motors (ASM). There has been a large amount of publicity recently about PM motors, but there is still reluctance in the market to buy them, as the purchase cost is higher than that of standard motors. In some light duty applications where the motor is rarely on, it is still more economical to specify a standard motor, but, if the duty cycle is high, then a PM motor can quickly meet its ROI figure and then go on to deliver savings for a long time to come.

Keen to prove the real life savings potential of using a PMSM, Bauer was a willing volunteer to take part in the direct product comparison test which was carried out at a live and operational waste water treatment plant in Landsberg am Lech, South West Germany. The disc thickener is in continuous operation for seven hours per day, seven days a week, so provided an excellent test opportunity.

Prior to the test, the existing ASM motor was running on a standard inverter. An inverter drive regulates power consumption based on load and frequency, as required by the application, which inherently makes a motor run more efficiently so, prior to the PMSM being installed, a Danfoss inverter drive was retro-fitted to the original system in order to ensure an accurate comparison.

The frequency inverter was programmed to monitor the loads on each motor to ensure that they ran at optimum efficiency. To ensure that any differences in efficiency could be attributed to the motors, each drive used the same Bauer gearbox, which had a reduction ratio of 381:5 at 94 percent

efficiency. It was found that with the frequency inverter installed, the ASM created 2.62 N-m torque at 1,350 rpm and operated with 61.5 percent efficiency using 0.26 kW/H.

Having completed the measurements on the ASM, the PMSM was installed. The new product from Bauer created 3.5 N-m at 1,500 rpm and operated with 87.7 percent efficiency using only 0.16 kW/H. The energy savings from installing the PMSM yielded a 40 percent saving in energy use over the ASM with the same inverter drive installed. Over a four-year period, it was estimated that, with an inverter used in both cases, an ASM would use 2,657 kW whereas Bauer's PMSM would use



1,635 kW; a total saving of 1,022 kW.

Gabel continues: "A lot of work has gone into developing our latest series of motors, and we had hoped to be able to offer the customer very real savings in terms of energy costs. We are very happy with the results of the test, as they show that super premium efficiency motors do deliver a real-life measurable benefit and in many higher demand applications should certainly be considered both by design engineers and maintenance engineers alike."

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Sumitomo

DEVELOPS MODEL GENERATOR
AND CONFIGURATOR

Sumitomo is pleased to announce the release of its new *Cyclo HBB CAD Model Generator*, which is designed to provide 3-D models and 2-D dimensional drawings online for the Cyclo Helical Buddybox product line. Available 24 hours a day, 7 days a week, this tool provides users with easy access to Cyclo HBB CAD models from Sumitomo's pre-existing CAD model library. 2-D Dimensional Drawings are available in DWG and DXF formats with scaling in either mm or inches, and 3-D models are available in SAT, STP and IGES formats. Users can log in at their convenience and retrieve their selected CAD model within minutes.

In addition, Sumitomo continues to enhance their customer service with the launch of their online *Cyclo HBB Product Configurator* application. The user-friendly application streamlines the selection process of Sumitomo's Cyclo Helical Buddybox, an innovative shaft mounted drive that combines the quiet, efficient and reliable performance of the Cyclo input with the rugged helical gear output. The modular design provides a compact, efficient product and the most flexible range of output speed and torque combinations available. Users quickly receive results that include downloadable 2-D and 3-D CAD files, product literature, and a Technical Specification Sheet, which includes weights and dimension data, dynamically generated from the actual configured unit.

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Maxon Motors

RELEASES DCX MOTOR LINE

The DCX motors have precious metal or graphite brushes and may be equipped with standard pre-loaded ball bearings or sintered bearings and cover a large voltage range with six different ironless windings. With the new housing, almost all mechanical configurations are possible. The mounting flange can be fully configured. This includes the thread diameter, position and number of mounting holes as well as the dimensions of the centering collar. For use in small spaces, the DCX motor is also available in a short configuration without a flange. The length and diameter of the output shaft can be selected, with or without flat. The DCX motors can also be ordered with cables or with terminals. Cables are available in various lengths and with connectors.

New gearheads and encoders have also been developed for the DCX motors. The GPX22 gearhead consists of individually configurable gear stages and is now even quieter and even more robust than equivalent sized gearheads. With a laser weld, the gearhead interface is joined seamlessly to the DCX motor. The GPX gearheads also come with a configurable flange. The output shaft is available in different lengths, with or without a flat, and even with cross holes or a key.

Matching Maxon ENX encoders feature a strong industrialized

design and high signal quality. The ENX Quad encoder is a single-pulse, 2-channel encoder. With a built in ESD protection network, reverse polarity protection, cable strain relief and the robust design, it is an economic choice for simple closed-loop tasks. The ENX Easy is a 3-channel encoder with line driver. A resolution of up to 1,024 pulses per revolution can be selected. The cables of the ENX encoder are configurable in seven lengths, from 50 mm to 1,000 mm.

When combined together, the Maxon DCX, GPX and ENX form a high-precision, robust drive system suitable for many applications, including aerospace, medical and robotics. With just a few clicks of the mouse, it is possible to configure a powerful DCX drive with reliable and fast delivery. In addition, detailed product data may be viewed immediately online and 3-D CAD data for the configuration is available for downloading.

For more information:

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Brevini

DISPLAYS RANGE OF PRODUCTS AT U.K. EXHIBITION

Brevini Power Transmission displayed a range of power transmission products and hydraulic motors from sister products and hydraulic motors from sister company, Brevini Fluid Power at the 2013 Subsea U.K. exhibition. Products included planetary gear units, helical and bevel helical gear units, hydraulic lifting winches and special lifting winches. With many years of experience working within the marine and offshore industries, a large part of the Brevini product range has DNV type approval and can be certified as required by other approval bodies, such as Lloyds and ABS. Brevini has an extensive history of supplying reliable and innovative solutions for deck machinery, including winches, cranes, tensioners, carousels and drilling equipment. Brevini Power Transmission also has experience refurbishing and repairing all models and makes of gearboxes through its service and repair center. As a gearbox manufacturer, it is able to draw on its many resources, from technical expertise to commercial purchasing power



to ensure that it delivers service at competitive rates. The partnership between Brevini and Brevini Fluid Power allows the company to form a hydraulic motor gearbox package that provides the reassurance of two well established brands.

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Siemens

LAUNCHES GEARED MOTOR SERIES

The new SIMOGEAR geared motor series encompasses an intricately stepped line of geared motors. Optimally designed for conveyor applications, the series features helical, parallel shaft and bevel gear unit types plus high efficient and NEMA Premium motors. As one example of engineered efficiencies, the two-stage helical bevel unit averages two percent higher efficiency than competitive three-stage units. SIMOGEAR geared motors smoothly integrate with other Siemens drivetrain components. These drive systems are specifically designed for the U.S. market. Siemens responded to what its customer base wants with compact and highly efficient motors, short delivery times and long-term, single-source service.

The new SIMOGEAR gear motor delivers performance from 0.09 kW up to 15 kW. It can achieve a gear unit torque up to 1,850 Nm with helical, parallel shaft and helical bevel gear units, additional types and sizes will follow. "With its SIMOGEAR range of geared motors, Siemens has further advanced the standard for geared motors used in industrial drive systems," says Dirk Bauer, Head of the Standard Gear Units and Couplings Segment at Siemens Drive Technologies. He further stated that "these geared motors are ideal for use in conveyor systems. They combine the benefits of exceptional energy efficiency, high power density and excellent quality." Conventional gear unit types which are classified according to fixed torque stages are available as well. The new SIMOGEAR family also offers supplementary gear unit sizes which are graded in a harmonized manner so as to reduce the differences in output between different sizes. As a result, it is possible to choose the right drive in terms of gear unit type, gear torque and gear ratio for any application.

The efficiency of two-stage bevel helical gear units which have been specially developed for use in conveyor systems is particularly high. The new helical and parallel shaft gear units also feature this outstanding efficiency. Due to their high gear ratios resulting from application of the plug-in pinion principle,

two-stage gear units with an efficiency of at least 96 percent can often be used instead of three-stage gear units with an efficiency of around 94 percent.

For more information:

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The Full Spectrum

Gear solutions made easy with one of the most comprehensive and versatile gear reduction lines in the Metric market. With over 45 years of proven performance, Lafert's power transmission products will let you push through even in the most demanding applications.

The advertisement features a central image of a large blue geared motor. Surrounding it is a grid of smaller images, each with a label for a different gear unit type:

- Right Angle Worm Gearboxes
- Helical Inline Gear Reduction
- Bevel Helical Gearboxes
- Mechanical Speed Variators
- Parallel Shaft Gearboxes
- Shaft Mounted Gearboxes
- Right Angle Worm Gearboxes
- Bevel Gearboxes
- Combination Right Angle Worm Gearboxes
- Double Wormwheel Gearboxes
- Shaft Mounted Helical Gearboxes
- Planetary Gearboxes

At the bottom left, there is the logo for **SITI** (Societa Italiana Trasmissioni Industriali) and the **LAFERT GROUP** logo, which includes the text "50 SINCE 1962".

At the bottom right, there is a QR code and contact information:

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