

Heidenhain

INTRODUCES NEW VERSION OF STATEMONITOR

In answer to requests from machine tool users around the world, Heidenhain introduces version 1.4.0 of its popular *StateMonitor* software platform enabling remote monitoring and data evaluation during real-time manufacturing. First introduced in 2019, *StateMonitor* has become an important option with Heidenhain TNC controls to digitally connect and evaluate machine tool data on company networks as part of the Industry 4.0 initiative to boost efficiencies. Connected devices could include CNC control systems of varying brands as well as PCs and Web-based mobile devices such as tablets or smartphones.

Designed to highlight data usage and encourage time-saving workflow methods using clear-cut charts and graphs, the new *StateMonitor* V1.4.0 now offers even more benefits. One of the many new features often requested and now available in *StateMonitor* V1.4.0 is the ability to monitor tools within a connected machine. This now allows users to collect current tool usage data and avoid unnecessary costs due to premature tool replacement. The new software also now can view countdowns for any programs running.

Other important new functions include the ability to now view monitored signals on the Machine

Status page, as well as String Signal data. Also, users can now customize the machine status by adding additional ones and changing to their liking when the machine is considered “Productive”. All these were added per past users’ requests.

And unlike in past, an interested customer now has the option to purchase a single machine license and can add on the more common five-machine license (*StateMonitor* Option 1) later if desired. The *StateMonitor* Single Machine license already contains the “OPC UA Interface” so machines with 3rd-party CNCs can be connected as well.

Another significant offering with this new version is a provision of additional *StateMonitor* Software Maintenance and Support from Heidenhain. This software maintenance plan gives customers the ability to easily upgrade the software each time a new release is available.

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Mach III

CUSTOM TORQUE LIMITERS
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Mechanical Friction Torque Limiters from Mach III are designed to slip so that the torque never exceeds a pre-set amount during momentary overload, protecting the drive and other components from damage. A recent application involving pharmaceutical machinery demonstrates these principles and also highlights the company's ability to design and deliver custom torque limiters quickly.



Friction Creates Challenges on a Conveyor Belt

The company, a pharmaceutical equipment manufacturer, contacted Mach III after breaking four belts while testing a new machine they had designed for a customer. The issue involved a section of the conveyor where packaged pharmaceutical products accumulated against a hard stop. From there, a suction device was supposed to lift the products to another station for transport. However, whenever the products reached this hard stop, friction between the pharmaceuticals and the rollers created a spike in torque, causing the 20 mm textured belt that drove the rollers to break. This belt was driven by a pulley that connected to the output shaft on the gearbox.

After investigating the motor, gearbox and belting, engineers determined that a torque limiter, placed on the gearbox output shaft, would prevent the belt from breaking when set to a slip torque of approximately 100 lb-in. A big challenge, however, was the small amount of space available for this component. The output shaft of the gearbox had a diameter and length of 30 and 80 millimeters, respectively.

In addition, the torque limiter had to be able to withstand washdown.

Achieving the Required Torque in a Limited Installation Space

To meet these requirements, Mach III designed a torque limiter that utilizes a stack of Belleville springs to provide the required torque capacity. They mounted the pulley that drives the belt directly on the torque limiter. Due to this design, the company didn't have to alter the machine frame or reposition any existing components. Rather, the torque limiter fit within the existing space on the gearbox shaft. Outfitted with an enclosed aluminum housing, the torque limiter also successfully met the application's washdown requirements.

www.machiii.com

Eaton

INTRODUCES VARIABLE VALVE
ACTUATION TECHNOLOGIES FOR
COMMERCIAL TRUCK INDUSTRY

Eaton has announced its Vehicle Group has introduced a complete portfolio of variable valve actuation (VVA) technologies to help commercial vehicle manufacturers meet forthcoming emissions regulations in China. The regulations are expected to be significantly more stringent than current standards.

"Automakers that manufacture vehicles for the China market are researching how to achieve future emissions regulations," said Fabiano Contarin, product director, Commercial Vehicle Valvetrain, Eaton's Vehicle Group. "Eaton is the right partner to support



this effort because of our considerable experience helping European and U.S. auto and truck makers develop emissions-reducing technologies."

Eaton's VVA solutions are based on two building blocks: 1) a rocker with a switchable capsule, and 2) a split rocker for full deactivation. By combining these two building blocks, several VVA strategies can be utilized in virtually any engine architecture—single and dual overhead cam, as well as cam-in-block engines—and engine displacement ranging from 2.0 liters to 15.0 liters.

Vehicle Group's CDA technology lowers CO₂ and NO_x simultaneously

Cylinder deactivation (CDA) is a VVA technology that involves deactivating the intake and exhaust valve opening, as well as the fuel injection on some cylinders when an engine is running at low load. This increases the temperature of the exhaust gases, allowing the nitrogen oxide (NO_x) aftertreatment to remain efficient at low load and decrease carbon dioxide (CO₂) emissions.

CDA is an ideal solution for commercial vehicles that make frequent stops, such as sanitation or delivery trucks. It decreases both NO_x and CO₂ simultaneously, making it more efficient than other technologies that cut NO_x at the expense of increased CO₂. CDA can reduce NO_x by more than 40% and CO₂ by 5%–8%.

Late intake valve closing technology reduces emissions

Eaton also offers Late Intake Valve Closing (LIVC), which delays the closing of the intake valve, so the effective compression ratio is lower than the expansion ratio. LIVC increases the thermal efficiency of the engine, improving fuel economy and reducing CO₂ emissions. Reducing the amount of airflow through the engine with a shorter intake stroke raises the exhaust temperature by 40 degrees Celsius, contributing to the thermal management of the aftertreatment. Overall, LIVC can reduce CO₂ by 1%–2%, and is most efficient for applications such as over-the-road trucks.

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Miki Pulley

COUPLING MODEL SUITABLE FOR BALL SCREW APPLICATIONS IN MACHINING CENTERS

Miki Pulley's latest model SFF Coupling is ideal for large ball screw applications on high performance machining centers. These couplings have a robust design providing high torque and high RPM operation.

The SFF Coupling offers exceptional torsional stiffness and strength. These couplings have rugged designed steel hubs with black oxide finish. This proven Miki Pulley coupling design assures accurate machining center shaft rotation with precise control. The coupling's flexible element gap dampens conductive heat transfer from motor to output shaft. Also important, the coupling provides limited shaft misalignment to alleviate premature system bearing wear.



The coupling's aerodynamic profile decreases noise while optimizing performance at high speeds. Simple yet reliable, SFF couplings are available in single and double element configurations. Bores can be arranged with clamp, taper-lock or keyed styles for specific application requirements. Basic SFF coupling specifications are:

- Maximum RPM: 18,000
- Maximum allowable torque: 221.27 ft-lbs (800 Nm)
- Bore size range: 0.709"–3.15" (918 mm–80 mm)
- Backlash: Zero
- Ambient operating temperature: -40°C–120°C (-40°F–248°F)

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NORD

OFFERS RELIABLE TECHNOLOGY FOR AIRPORT BAGGAGE HANDLING SYSTEMS

NORD's introduction of the DuoDrive integrated gear unit and motor, IE5+ synchronous motors, and NORDAC ON/ON+ variable frequency drives add to their intelligent drive solutions that satisfy the specific demands of the airport industry.

NORD is committed to meeting demands of existing and future airport baggage handling systems. Their units deliver reliable operation and control that is required in airport applications such as lifts, conveyors, pushers, and indexers. For applications such as angled belt conveyors, NORD decentralized electronic control products with external braking resistors control both speed and positioning with extreme precision. These complete, single-sourced units are also compact and easy to service and maintain, benefiting areas where space is limited.

NORD solutions for the airport industry include:

IE5+ Synchronous Motors

NORD's new generation of IE5+ motors utilize a reduced noise, high efficiency design suited to areas in airports that are acoustically sensitive, such as check-in or baggage pick up. The motors present flexible mounting solutions whether it is direct mounted to a gearbox or mounted to a NEMA or IEC adapter. These motors meet the highest efficiency standards and are designed for reducing variants and lowering operating costs. The two frame sizes, 70 and 90, offer a power range from 0.5–3 hp and a speed range from 0–2100 rpm. IE5+ synchronous motors are outfitted with an integrated encoder that can be programmed for precise control over speed, synchronization, and position.

DuoDrive Gear Unit and Motor in One Design

NORD's DuoDrive is an innovative unit that combines the high efficiency of IE5+ motors with a single-stage helical gear unit, all in one housing. DuoDrive is optimized for the airport

industry through the significant high system efficiency of up to 92%, high power density, and quiet operation. The compact, smooth design allows for easy installation and optimal space utilization. Thanks to the integration of IE5+ motor technology, this design results in reduced Total Cost of Ownership and fast Return of Investment. DuoDrive provides power ranges from 0.5–2 hp and has flexible attachment options of a B5 flange or B14 flange.

NORDAC ON/ON+ Compact Variable Frequency Drive

An economic solution for IIoT environments, NORDAC ON was developed with the specific requirements of hori-

to ensure baggage is not getting lost, damaged, or backed up. A breakdown in a baggage handling system could result in a backlog as well as costly repairs and delays. NORDAC ON provides the ability to customize the electronic controls specifically to airport application and conveyor needs, resulting in a highly reliable and efficient system with less downtime.

NORDAC PRO SK 500P Variable Frequency Drive

The NORDAC PRO is a compact, centralized variable frequency drive that provides versatility for all applications. The integrated Ethernet interface can be configured for each parameter, al-



zontal conveyor technology in mind as well as complete interaction with the new IE5+ synchronous motor (NORDAC ON+). This frequency drive can be wall-mounted or motor-mounted and comes equipped with an integrated Ethernet interface and full Plug-&-Play capabilities for fast and simplified installation. Airport conveyor lines must operate with precision and reliability

allowing for precise control of drive systems. A USB interface allows for voltage-free parametrization and is usable even if the main power is disconnected. The parameter structure is compatible with all NORD variable frequency drives and there is an SD card slot for storage and transfer of the parameter data.

LogiDrive Complete Drive System Solution

The LogiDrive solution combines a highly efficient 2-stage bevel gear unit with an IE5+ Permanent Magnet Synchronous Motor (PMSM), and a decentralized variable frequency drive. This modular system reduces the number of variants and saves on Total Cost of Ownership through standardization of geared motor versions. The inclusion of the IE5+ motor minimizes overall costs for the lifespan of the unit, achieves greater efficiency, and provides a faster return on investment. NORDAC LINK provides a decentralized VFD solution that has full Plug-&-Play capabilities for easy commissioning and low maintenance. LogiDrive works especially well with baggage handling systems due to maintaining high efficiency even in partial load ranges and low speeds.

NORDCON APP with NORDAC ACCESS BT

The NORDCON APP is a visualization solution that enables drive monitoring, fault diagnosis, analysis, and quick access to parameters from a Bluetooth-enabled device. The app also features a Help function, video tutorials, and direct contact options to send service requests straight to the NORD support team. In combination with the NORDAC ACCESS BT Bluetooth stick, this solution offers convenient mobile visibility of drive data while still granting full drive control. The Bluetooth stick also allows users to access and upload parameters drive to drive, drive to PC, and PC to drive.

Condition Monitoring for Predictive Maintenance

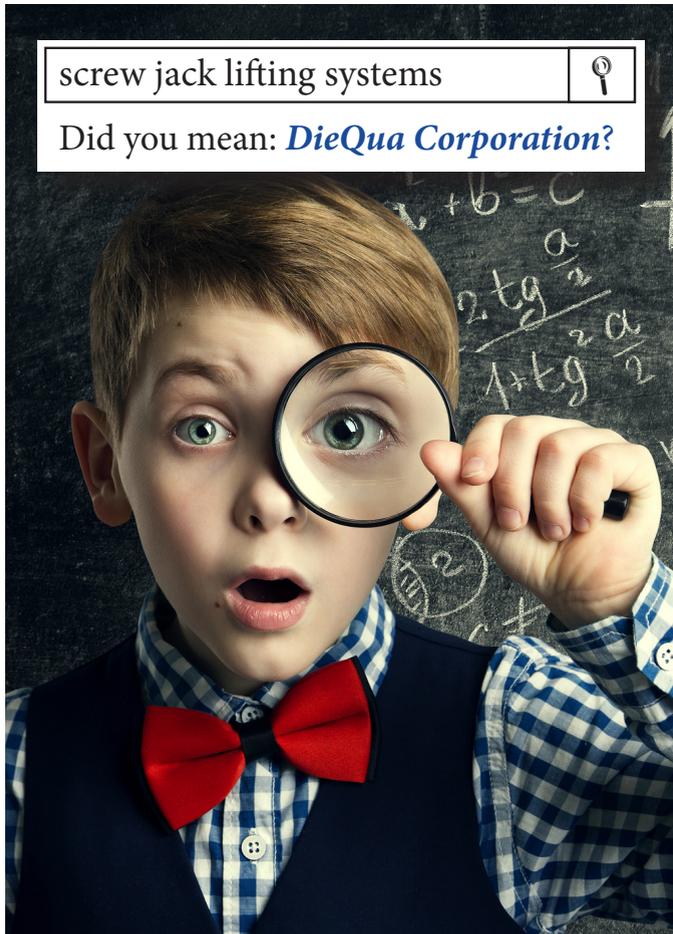
NORD's condition monitoring solution records drive and status data with the objective of maintaining machines and plant productivity. Data is collected from analog, digital, or virtual sensors to determine when there is a drive

issue and allows for scheduled downtimes before they turn into unplanned, costly repairs. This system is also able to calculate the optimal time to change the oil by measuring its temperature over time. This enables the drive to run effectively and efficiently with minimal wear on the components.

Two-Stage Helical Bevel Gear Units Performance and Design

NORD's two-stage helical bevel gear units feature a significant power range of 0.16–12.5 hp, making them ideal for conveyor applications where high speeds are required. Two-stage helical bevel units support high axial and radial load capacities with a torque range of 443–5,842 lb-in and the innovative high-strength aluminum alloy design enables a wash-down ready surface at a remarkably light weight. NORD's two-stage helical bevel gear units are robust, reliable, and offer high efficiency with smooth operation ideally suited for airport baggage systems.

www.nord.com



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Beckhoff Automation

ANNOUNCES COMPACT, COST-EFFECTIVE STEPPER MOTOR TERMINAL

With the new EL7062 dual-channel EtherCAT Terminal, Beckhoff enables the direct connection of two stepper motors in the medium power range of up to 3 A and for a voltage range of 8–48 V. With flexible parameterization and minimized channel costs, the flexible motion interface is ideal as a low-cost drive for a wide range of stepper motor applications.

In an extremely compact form factor, the 24-mm-wide EL7062 EtherCAT Terminal contains two stepper motor output stages, two digital inputs for limit switches and one encoder interface per channel for a wide range of 5 V encoders. Via parameterization, the EL7062 flexibly adapts to the connected stepper motor and its corresponding application requirements. With regard to the input encoder signal, the module supports the entire spectrum of TTL encoders (5 V differential, single-ended/open collector). Very high-resolution microstepping ensures extremely smooth and precise motor operation.

The maximum total output current is 6 A, typically to operate two 3 A stepper motors. This can also be configured variably—for example, the motion interface could be configured for a 2 A and 4 A motor. With the ZB8610 fan module, which is available as an accessory, the maximum power even increases to 5 A per channel. The dual channels in the EL7062 significantly reduce the price compared to single-channel solutions.

www.beckhoff.com



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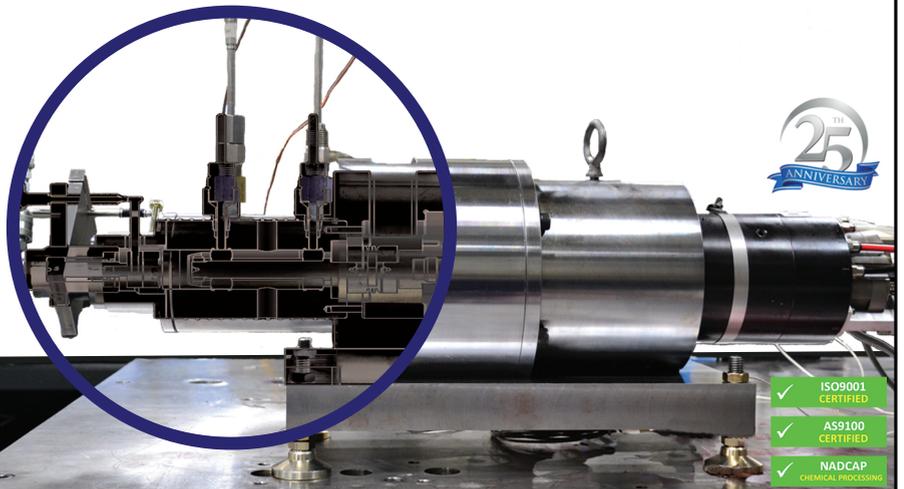
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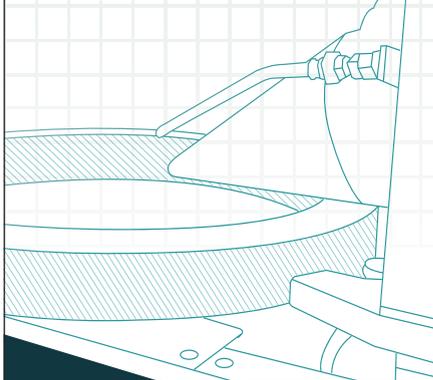
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NTN

RELEASES CERAMIC BALL BEARINGS FOR ELECTRIC MOTOR APPLICATIONS

NTN Bearing Corporation of America is pleased to announce ceramic ball bearings for electric motor applications as its latest product offering. NTN's new series of ceramic ball bearings has been specifically designed to prevent electrical arcing in a variety of applications.

"We are elated to offer yet another high-quality bearing solution to our customers," exclaimed James Misch, director of marketing and technical services, NTN. "The electric motor industry in particular presents numerous challenges due to the nature of the industry and the potential exposure of bearings to stray electric currents. This new product innovation is designed to combat multiple potential failure modes, giving our customers peace of mind that their operations will not be impacted by unexpected downtime."

Robustly designed with steel rings and cages but featuring ceramic balls instead of standard steel balls, NTN ceramic ball bearings are useful in many different applications found within a variety of industries including the electric motor industry. Due to ceramic being nonconductive, the material is ideal for applications where stray currents are present.

NTN's ceramic ball bearing offering comes with two shields, electric motor grease, and C3 clearance as standard. We stock some of the most common bearing sizes while offering bearings with bore diameters up to 65mm, and our entire offering has



ISO standard dimensions for easy interchangeability. Additionally, the ceramic material of these bearings generate less heat allowing longer service intervals than the steel ball equivalents. NTN's ceramic ball bearings offer a cost-effective solution to combat stray electric currents and other harsh operating conditions.

Additional information on ceramic ball bearings can be found on Bearing Finder. Designed to aid distributors, design engineers, and end users in finding the perfect bearing or related product to use in any application, Bearing Finder is hosted on a proprietary platform that offers a customizable part search tool, interactive and downloadable CAD illustrations, comprehensive part interchanges, and exhaustive data sets.

NTNAmericas.com