

**SUCCESS
STORY**



NORD and HUMMEL: Cooperation against corrosion

Corrosion resistance down to the last detail for drive solutions in harsh environments

With its nsd tupH geared motors, NORD DRIVESYSTEMS offers optimally protected and corrosion-resistant drives for the food industry and other demanding sectors. An innovative surface refinement process makes the aluminum housings of NORD drives as resistant as stainless steel, but offers additional advantages. NORD relies on the M 23 INOX circular connectors from HUMMEL AG for the necessary supply of the connecting cables.

In the beverage and food industry, the pharmaceutical industry, water treatment and waste water plants as well as applications in offshore and coastal areas, it is essential to efficiently protect machines and plants as well as the drive technology used against dirt, moisture, splash water and aggressive media. However, painted systems are susceptible to the slightest damage and do not offer permanent protection. Drives made of stainless steel are often relatively expensive and, due to the small product range, not very flexible in design. NORD DRIVESYSTEMS offers the corrosion protection treatment nsd tupH for aluminium drive housings as an economical alternative to significantly extend the service life of the installed components in harsh environments. In particular, drives that run in the wet area of production plants must be durable and easy to clean. nsd tupH drives represent a robust and durable alternative to painted geared motors or those made of stainless steel.

Housing with an unbelievable number of possibilities

A sensitive point of the smooth motors, which even comply with IP protection class 69K, is, as with any electrical machine, the passage of the cables for the power supply and signal transmission. Here NORD DRIVESYSTEMS relies on the experience of HUMMEL AG in Denzlingen, which offers a huge selection of electrotechnical components from its own development and production and is one of the leading suppliers of circular connectors. HUMMEL pursues a philosophy that the engineers at NORD DRIVESYSTEMS are only too familiar with: modularity. Each HUMMEL connector housing can be combined with numerous contact inserts. This allows almost any conceivable number of poles to be realized on the basis of a single housing design.

M 23 INOX - one connector for all applications

HUMMEL offers connector solutions for signal, power and Industrial Ethernet. For signal transmission alone, a total of 26 housing types are available. These, in turn, can be equipped with ten different contact inserts. Male and female inserts are also interchangeable. The result: customers have almost countless possible combinations. Depending on the number of poles and configuration, M 23 INOX connectors made of stainless steel 1.4404 can transmit rated currents from 2 to 28 amps. The rated voltage is graded from 60 to 600 volts. The robust circular

Drives used in the food industry must meet high requirements in harsh environments.

Photo: NORD DRIVESYSTEMS



connectors are designed for over 1,000 mating cycles and, with protection class IP 67 or 69 K and a temperature range from -40 °C to +125 °C, can easily withstand use in wet areas of the food industry or in other corrosive environments.

Product philosophy: two partners one thought

The modularity of the HUMMEL connectors has further advantages that immediately convinced NORD: storage is minimised, scheduling is simplified and assembly follows a uniform principle. This saves time, money and trouble. Flexibility is also the credo when it comes to pluggability. HUMMEL offers connectors with screw caps as well as with other common locking systems. This makes HUMMEL connectors virtually all-round geniuses on the connector market. They offer almost countless variants and convince NORD DRIVESYSTEMS' drive technology experts with their high-quality and robust V4A design.

Tests successfully passed

NORD DRIVESYSTEMS uses two of the many connector variants for its nsd tupH motors: a straight and an angled version of the M 23 INOX with an eight-pole in-

sert, which is used to transmit the power as well as the signals for motor monitoring and the brake. The NORD drive systems treated with nsd tupH and equipped with HUMMEL plug connectors have already been successfully used in various environments in the food processing industry and were able to convince all along the line. The finish gives the

drives high resistance to disinfectants or cleaning agents with pH values from 2 to 12 and to many other corrosive environmental conditions. nsd tupH complies with FDA Title 21 CFR 175.300 and is therefore approved for food applications.

NORD DRIVESYSTEMS

For more than 50 years, NORD DRIVESYSTEMS has been developing, producing and selling drive technology with more than 4,000 employees and is one of the leading international full-range suppliers in the industry. In addition to standard drives, NORD also supplies application-specific concepts and solutions for special requirements, such as energy-saving drives or explosion-proof systems. NORD now has its own subsidiaries and sales partners in 98 countries worldwide.



M 23 CIRCULAR CONNECTORS INOX

Straight connector, female & male thread, panel connector

- // modular system
- // compact designs
- // numerous housing designs
- // high resistance

Operating Temperature	-40 °C – +125 °C (-40 °F – 257 °F)
Sealing / O-Rings	Viton (FKM)
Housing material	1.4404 Stainless Steel V4A (AISI 316)
Protection	IP67 / IP 69 K plugged

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