

DieQua offers more gearboxes

plus application experience to help select the best one for your needs

Helical Gearmotors



- 1-75 HP Capacity
- Motorized or Adapters
- Right Angle or Inline
- Shaft Mount Designs
- Multi-Stage Ratios
- Modular Design

Worm Reducers



- 7 sizes, 28-110mm CD
- Fret-free Connection
- NEMA or IEC Adapters
- Coupling Input
- Aluminum Housings
- 2-Side Worm Support

Planetary Gearheads



- Precision or Economy
- Inline or Right Angle
- 40-155mm Frames
- Low Backlash
- 1 and 2 Stage Ratios
- Lubricated for Life

Servo Worm Gearheads



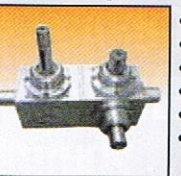
- 3 Backlash Levels
- Shafts or Hollow Bores
- Single or Dual Outputs
- 11 sizes, 25-200mm CD
- Capacity: 10-7000 Nm
- 20,000 Hour Ratings

Spiral Bevel Gearboxes



- 9 Sizes
- 1-250 HP Capacity
- Low Backlash Option
- Ratios from 1:1 to 6:1
- Output Shaft Options
- Machined Housings

Special Designs



- Add-On Options
- Modified Dimensions
- High Speed Applications
- Special Environments
- Special Duty Needs
- Custom Designs

DIEQUA
Corporation

www.diequa.com
630-980-1133



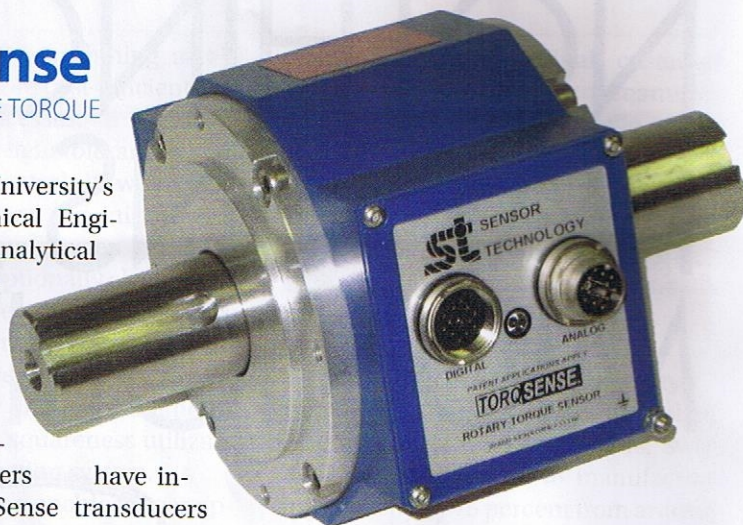
See our complete product line!

TorqSense

PROVIDES IN-LINE TORQUE METER

Manchester University's School of Chemical Engineering and Analytical Sciences is leading world class developments in energy efficiency in the process industries. Researchers have incorporated TorqSense transducers into a test rig that is analyzing losses in in-line mixers. The energy consumption involved with in-tank mixing processes is well researched and understood. But with in-line rotor-stator mixers the flow is often controlled independently of the rotor speed and collecting sufficient data to accurately model the process has to date required a large number of experiments. Now researchers Dr. Mike Cooke and T. L. Rogers at Manchester University have developed two simplified methods of obtaining the necessary information for particular stator-rotor mixers: one uses torque measurements, the other heat balance.

Dr. Cooke explains that high shear rotor-stator mixers are widely used in process industries, including the manufacture of many food, cosmetic, healthcare products, fine chemicals and pharmaceuticals. Rotor-stator devices provide a focused delivery of energy, power and shear to accelerate physical processes such as mixing, dissolution, emulsification and deagglomeration. "To reliably scale-up these devices from laboratory size to industrial scale, we need to understand the relationship between rotor speed, flow rate and the energy dissipated," he says. "The first step is to link the energy dissipation rate to desired process results."



The scientists created two mixing experiments and set about measuring the torque profile and heat balance. In the first experiment torque was measured by a Sensor Technology's TorqSense in-line torque meter fitted to the drive shaft. There are two main sources of potential error when measuring the torque on the rotor shaft, time-based zero-drift and bending moments on the shaft, both of which are easily counteracted with the TorqSense. Other corrections also have to be made for bearing losses, temperature fluctuations etc.

TorqSense proved a good choice for this work because its non-contact operation meant extra drag forces were not added to the system and also allowed rapid assembly and disassembly during the experiments. It uses two piezoelectric combs which are simply glued to the drive shaft at right angles to one another. As the shaft turns it naturally twists along its length very slightly and in proportion to the torque, which deforms the combs changing their piezo-signature. This change is measure by wirelessly by a radio frequency pick up and used to monitor the torque.

For more information:

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