KLAUS UNION
When Leakage is no Option!
Sealless Magnet Drive Mixers
Schedule Of The Presentation

- Introduction – Technology Pyramid
- Typical Applications
- Torque Capabilities
- Sealless Mixer Type SLM - RA
- Features and Benefits
- Functional Description of the Sealless Mixer Drive
Introduction
Technology Pyramid

- Critical
- Hazardous
- Special Chemical
- General Chemical
- General Service

Severity of Service:
- High
- Low

Seal Options:
- Sealless
- Sealed
Why Mag Drive?

Typical Applications for Sealless Mixers

- Lethal
- Toxic
- Carcinogenic
- Corrosive
- Pure
- Aggressive
- Fire Risk
- Explosive
- Hot
- Noxious
- Poisonous
- Contaminated
- Cold
- High Pressure
- Pyrogenic
- Cryogenic
- Acid
- Valuable
Transmittable Torque
Advancement of the Magnetic Coupling

<table>
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<tr>
<th>Year</th>
<th>Torque ft-lbf</th>
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<td>1955</td>
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<tr>
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Legend:
- AlNiCo
- SmCo-S
- SmCo-SE
Sealless Mixer
Type SLM – RA
With Magnetic Coupling

- Torque up to 3,500 ft-lbs (without gear reduction)
- Pressure up to 4,500 psi
- Temperature range – 84 °F to 840 °F (-120 to 450 °C)
- For Chemical & Pharmaceutical Industry
Why Sealless? Features and Benefits

- Low maintenance
- Greased for life time bearings
- Replacing motor/gear without breaking the process seal
- No barrier fluid arrangement required
Purge Flow

- Purge flow keeps process liquid/gas from entering bearing area
- Low purge flow (1-2 gpm)
- Purge flow cools isolation shell and by-passes anti friction bearings
Purge Flow

- Purge flow cools isolation shell and by-passes anti friction bearings
- The purge flow passes a lip seal and a labyrinth seal before entering the process area
Monitoring RPM

- RPM Sensor picks up rpm signal from rotating magnets
- Removing RPM Sensor does not break process seal
Monitoring Temperature with TPS System

- Available option for high torque couplings and high rpm
Thermoelement:

- Spot-welded to isolation shell
- Insulation and coverage of wire through temp. resistant foil
- Contact with isolation shell and wire through spring-loaded pins
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Partner Of The Chemical Industry

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