

**MIXING
CONVEYING
BLENDING
COMPOUNDING**



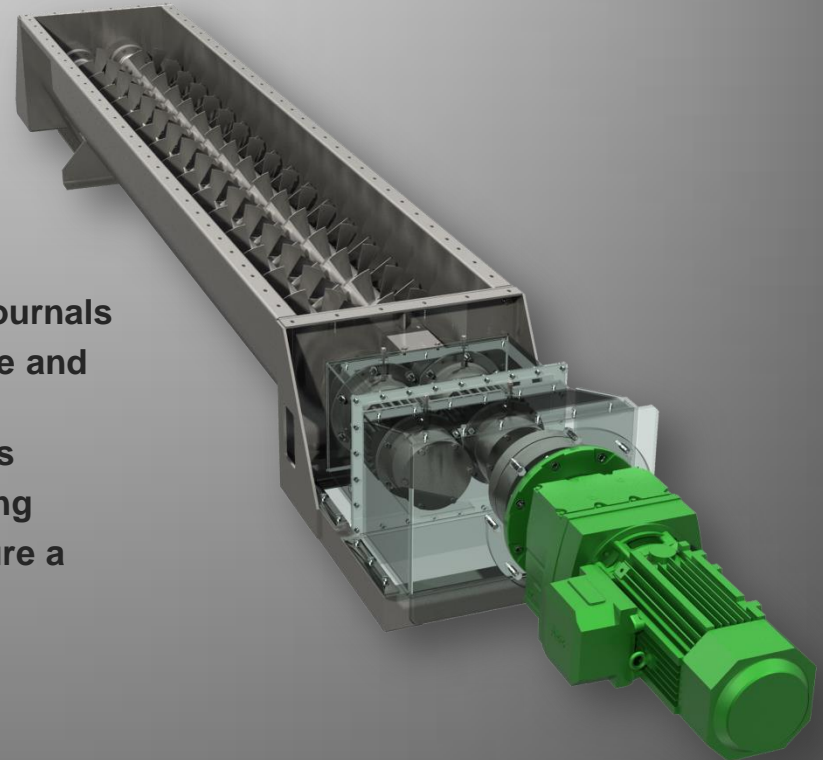
PROCESS TECHNOLOGY

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-HDPE & PP MIXERS

- Our Design Features
 - Highest mixing quality
 - Adjustable mixing-tools
 - Multi-shaft design with double bearings
 - Shrunk-in and additionally welded shaft journals
 - Bolted shaft passages for easy maintenance and easy shaft replacement
 - Special KÖLLEMANN type bearing-housings
 - Customizable instrumentation for N2 flushing
 - Conservatively designed shafts which ensure a long lasting service-life



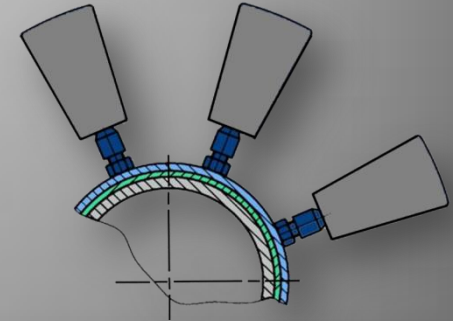
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-HDPE & PP MIXERS

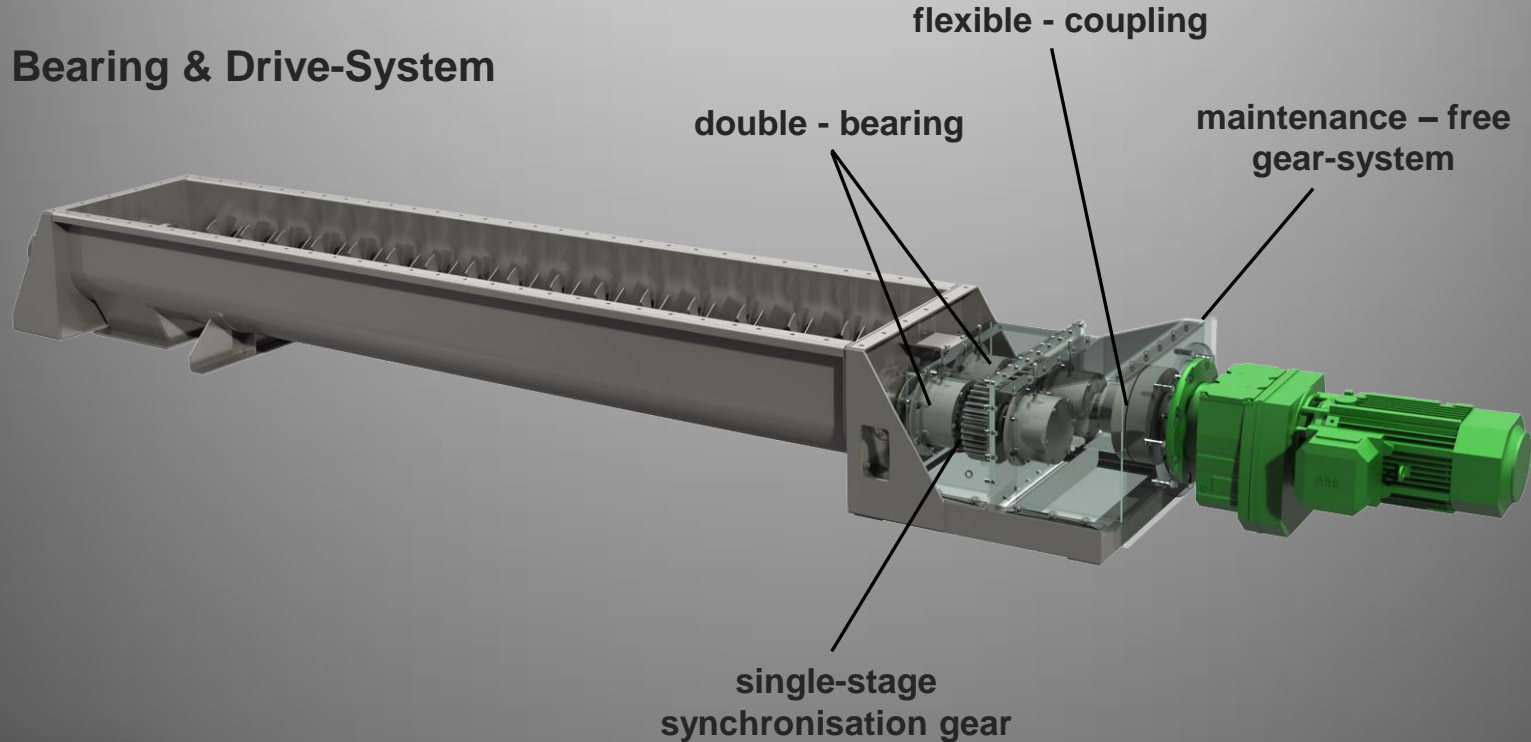
- **Mixing-Blades / Shafts**
 - Adjustable to specific product and additive conditions
 - Wear-free (while operating with polyolefins)
 - Not heat input into the bulk-solid
 - No carbon-steel in contact with bulk-solid
 - No intermediate-bearing up to a mixing-length of 12.000 mm
 - Suitable for HDPE / PP (plus additives)



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-HDPE & PP MIXERS

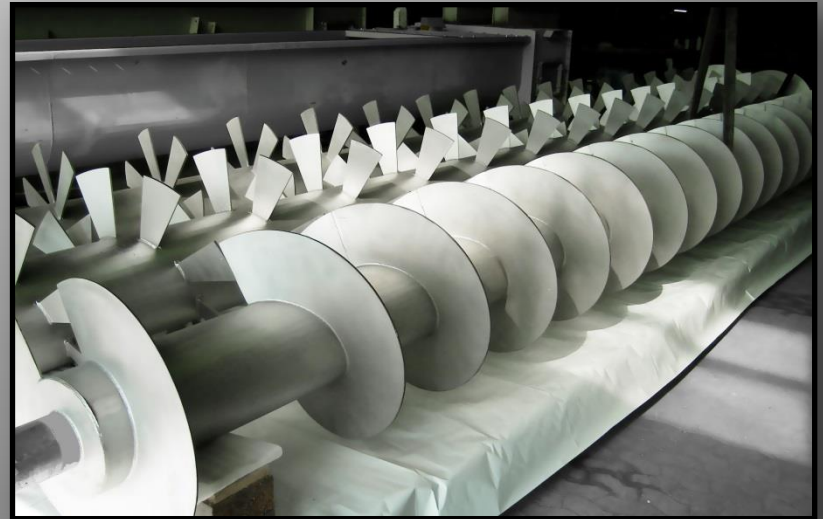
- Bearing & Drive-System



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-HDPE & PP MIXERS

- Variations / Options
 - Single-Shaft
 - Double-Shaft
 - Additional N2 instrumentation
 - Additional Degassing-Filter
 - Electronically lockable inspection doors
 - Temperature measurement
 - Pressure measurement



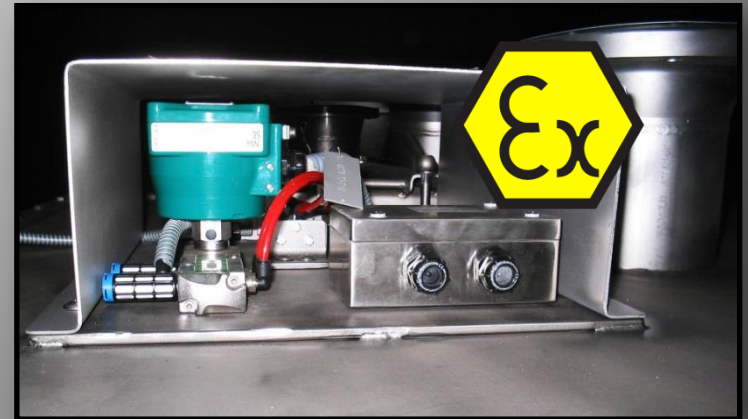
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-HDPE & PP MIXERS

- Safety / Operation
 - Explosion safe acc. to ATEX guidelines (inner zones as also outer zones)
 - Motors prepared for VFD operation
 - Inspection-door-locking-system available (optional)
 - Permanent rotation-control of both shafts
 - Leakage-test acc. to works-standard performed on all machines
 - Fully flushable with nitrogen
 - Optional viewing-gauge for observation of mixing activity



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-HDPE & PP MIXERS

- **Degassing-Filter:**
 - 8 filter cartridges with an length up to 1800mm
 - Bags made of polyester needle felt coated with PTFE
 - Cleaning by reverse gas flow with purging system
 - Differential-pressure control (optional)
 - Particle separation efficiency $<1\mu\text{m}$
 - Separating efficiency $>99\%$
 - Design temperature 100°C
 - Timer control (optional)

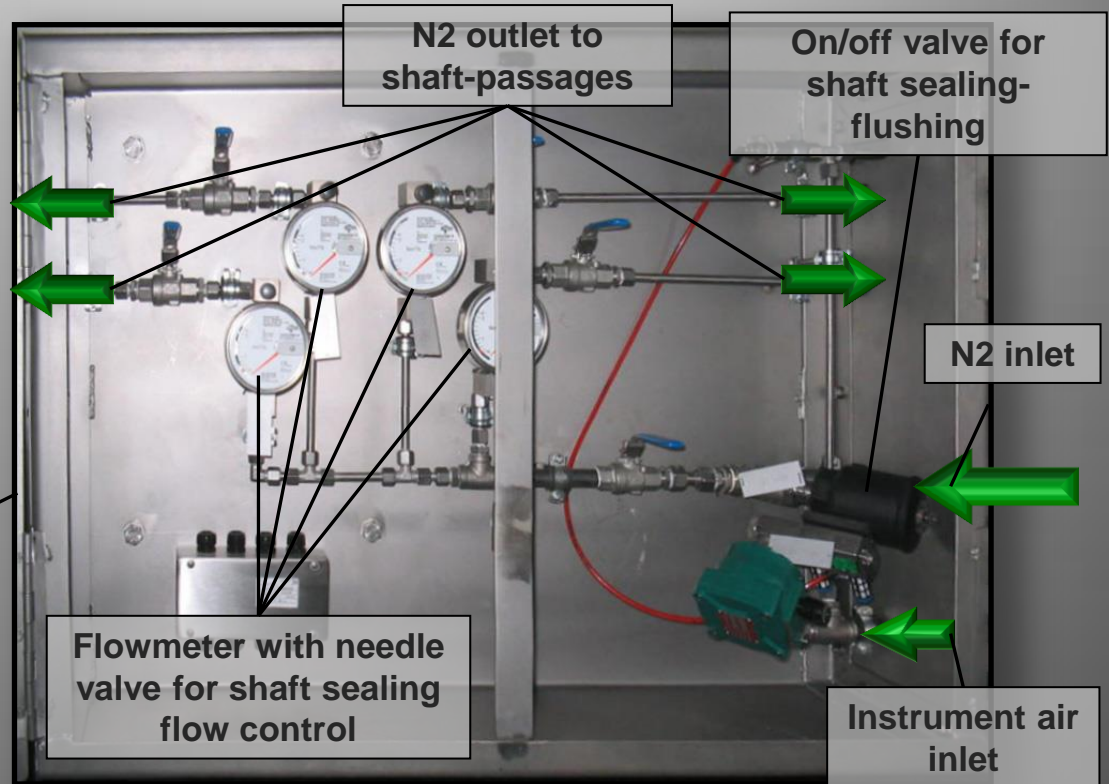


Purging & cleaning system



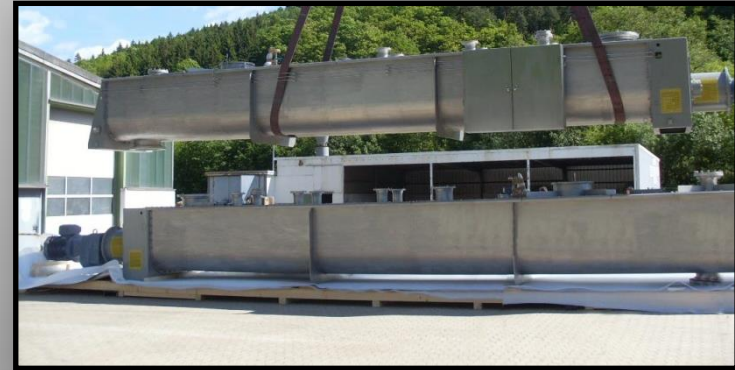
-HDPE & PP MIXERS

- Instrumentation (typical) - further options available:
 - Pressure regulator
 - Flow-Transmitter
 - Pressure-Transmitter
 - Further options on special request



-HDPE & PP MIXERS

- Example-Pictures



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-HDPE & PP CONVEYORS

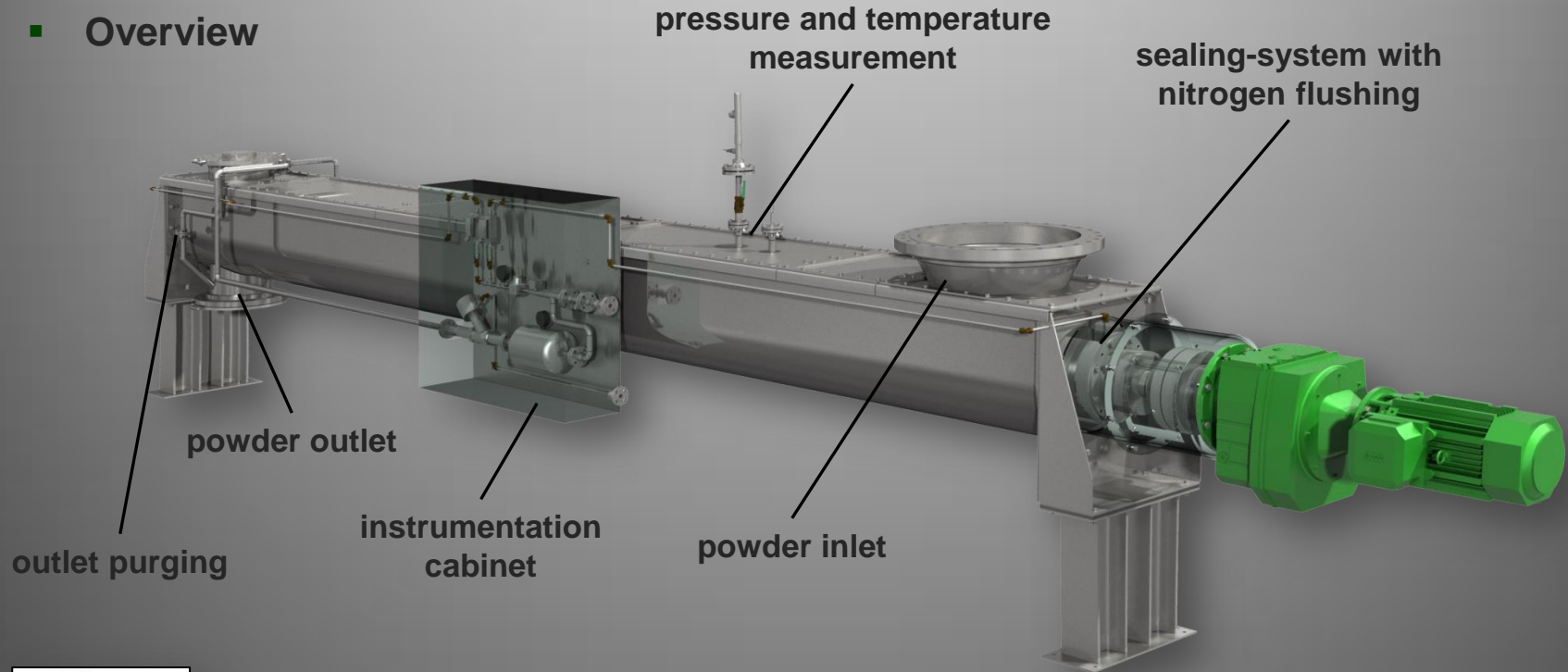
- Our Design Features
 - Process-safe conveying of wet bulk-solid
 - Retention of any evaporation from solvents
 - Shrinked-in and additionally welded shaft journals
 - Bolted shaft passages for easy maintenance and easy shaft replacement
 - Special KÖLLEMANN type bearing-housings
 - Customizable instrumentation for N2 flushing
 - Temperature resistant
 - Conservatively designed shafts which ensure a long lasting service-life



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-HDPE & PP CONVEYORS

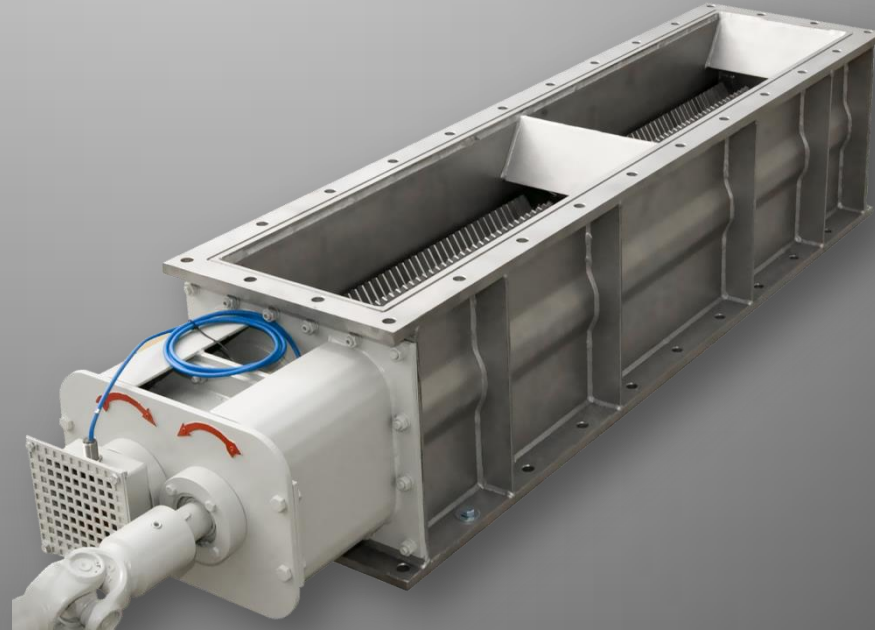
- Overview



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-HDPE & PP CONVEYORS

- Variations / Options
 - Single-Shaft
 - Double-Shaft
 - Additional lump-breaker
 - Additional N2 instrumentation
 - Additional viewing-gauge
 - Temperature measurement
 - Pressure measurement
 - N2 purging of outlet section



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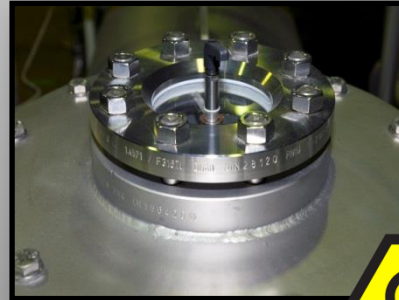
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-HDPE & PP CONVEYORS

■ Safety / Operation

- Explosion safe acc. to ATEX guidelines (inner zones as also outer zones)
- Motors prepared for VFD operation
- Inspection-glasses with wiper
- Permanent rotation-control of the shaft
- Leakage-test acc. to works-standard performed on all machines
- Fully flushable with nitrogen
- Lump-breaking-tool in the outlet-section of the shaft



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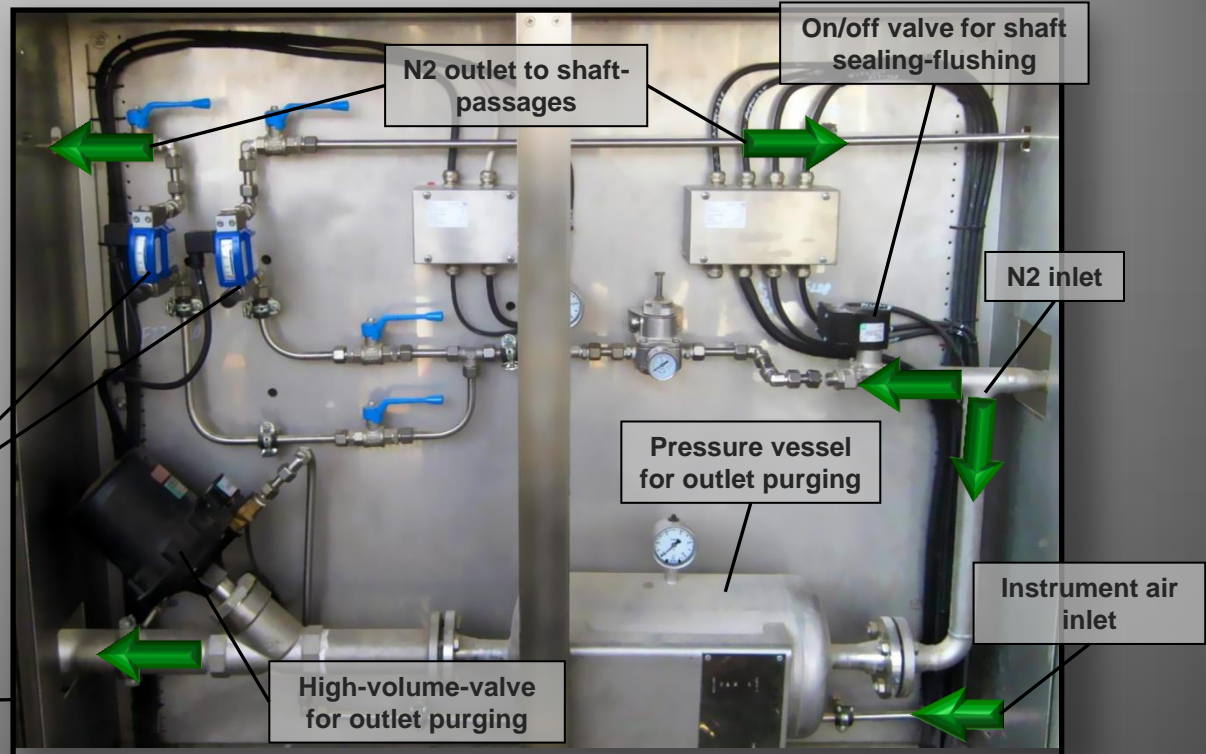
-HDPE & PP MIXERS

- Instrumentation (typical) - further options available:

- Flow-Transmitter
- Pressure-Transmitter
- Further options on special request

Flowmeter with needle valve for shaft sealing flow control

Stainless steel cabinet



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-HDPE & PP CONVEYORS

- Example-Pictures



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-HDPE & PP APPLICATIONS

■ Operating Worldwide

- Lyondell-Basell, Wesseling – Germany
- Jam Petrochemicals, Asaluyeh – Iran
- Kermanshah Petrochemicals, Kermansha – Iran
- Marun Petrochemicals, Mahschahr– Iran
- Basell Orlen, Plock – Poland
- Indelpro, Altamira - Mexico
- Petrochina, Fushun – China
- Petrochina, Sichuan – China
- Petrорabigh, Rabigh – Saudi-Arabia
- Tasnee, Al Jubail – Saudi Arabia
- Sabic, Gesenkirchen – Germany
- Lyondell-Basell, Müchnsmünster – Germany
- Lotte-Daesan, Dokgot-ri – South-Korea
- Indian Oil, Panipat – India




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- OUR CERTIFICATES

The American Society of Mechanical Engineers



CERTIFICATE OF AUTHORIZATION

The named company is authorized by the American Society of Mechanical Engineers (ASME) for the scope of activity shown below in accordance with the applicable rules of the ASME Boiler and Pressure Vessel Code. The use of the certification mark and the authority granted by this Certificate of Authorization are subject to the provisions of the agreement set forth in the application. Any construction stamped with this certification mark shall have been built strictly in accordance with the provisions of the ASME Boiler and Pressure Vessel Code.


COMPANY:
Koellemann GmbH
 Am alten Wehr 9-12
 Adenau 53518
 Germany

SCOPE:
 Manufacture of pressure vessels at the above location only

AUTHORIZED: March 26, 2013
EXPIRES: March 26, 2016
CERTIFICATE NUMBER: 44,490

Bygn A. Bode
 Vice President, Conformity Assessment

Dirk M. W. S. J.
 Director, Conformity Assessment



ASME (Pressure-Vessel Section 8)

Certificate

Standard ISO 9001:2008

Certificate Registr. No. 01 100 110157

TÜV Rheinland Cert GmbH certifies:

Certificate Holder:



Köllemann GmbH
 Förder- und Verfahrenstechnik
 Am alten Wehr 9-12
 D - 53518 Adenau

Scope: Distribution, Engineering and Manufacturing of Handling and Process Technology

An audit was performed, Report No. 110157. Proof has been furnished that the requirements according to ISO 9001:2008 are fulfilled.
 The due date for all future audits is 02-09 (dd.mm).

Validity: The certificate is valid from 2012-09-04 until 2014-09-05.

2012-09-05



DGA-ZM-58-95-00

[Signature]
 TÜV Rheinland Cert GmbH
 Am Grauen Stein 11108 Köln

 **TÜVRheinland®**
Precisely Right.

www.tuv.com

ISO 9001:2008

Certificate

Qualification of a production site for the manufacture of pressure equipment

Certificate No.: 01 202 362P-89922/000

Name and address of manufacturer: **Köllemann GmbH**
 Förder- u. Verfahrenstechnik
 53518 Adenau
 GERMANY


It is herewith certified that the manufacturer has furnished proof of the quality requirements for their welding production and also has experience in piece production in accordance with Directive 97/23/EC.

Specification: AD 2000-Merkblatt HP0 / DIN EN ISO 3834-3
Test Report No.: 01 202 362A-11 0212/Rev. 00
Scope: **Manufacture of containers**
 Köllemann GmbH
Production Sites: Förder- u. Verfahrenstechnik
 D-53512 Adenau
 GERMANY

Valid until: 01. Oktober 2014

Köln, 2011-10-14 *[Signature]* 

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AD2000 / HP0



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