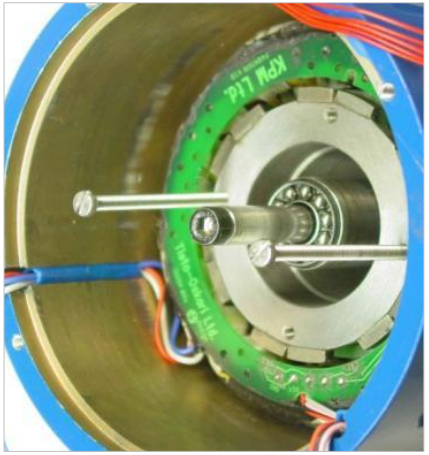
KC/5 Rotary Consistency Transmitter

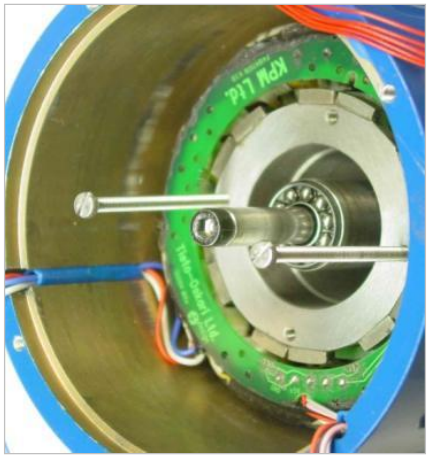
Features

- Direct drive servo motor
- No motor maintenance
  - No wearable drive belt
  - No wearable motor parts
    - no bearings
    - no brushes
- Light weight – only 15kg / 33lbs
  - Easily handled by one person



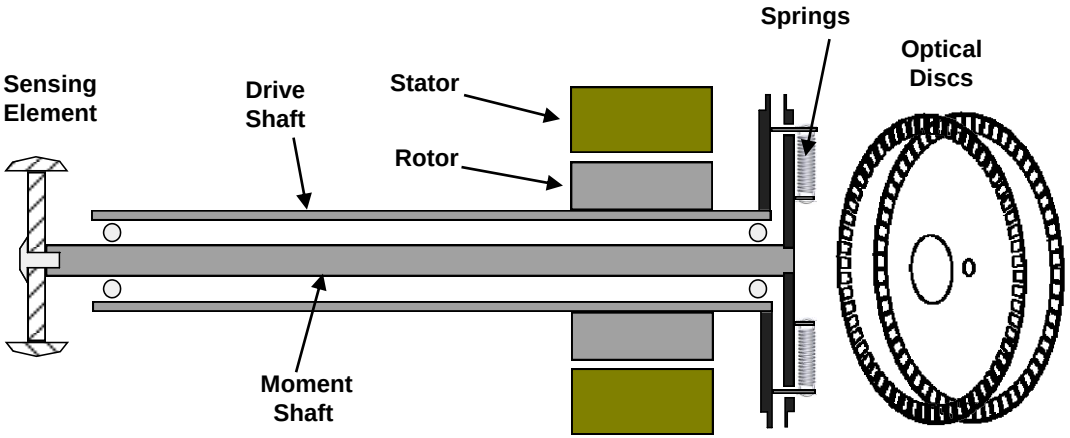
Only one single phase AC supply needed

- Single phase supply 85–264 VAC/320W
  - No 3-phase power needed
  - Motor run by 48 VDC Power 320W
    - Supplied from the power/display unit
    - Full overload protection



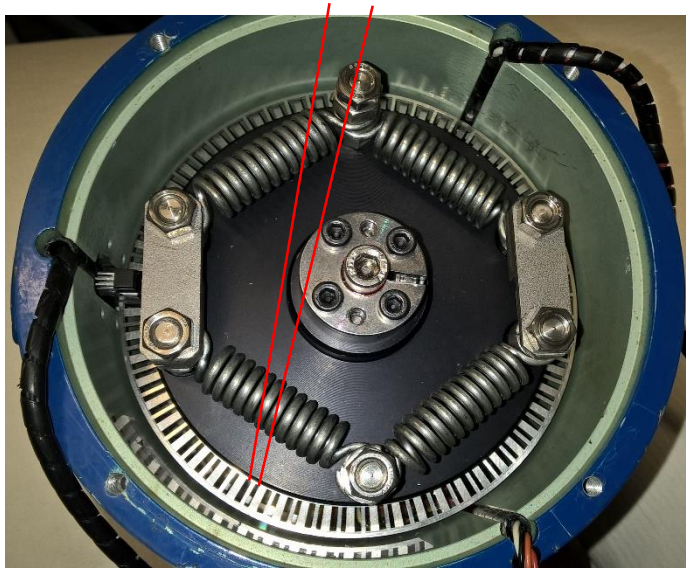
Measurement principle

- Precision torque measurement
  - Measurement is based on the phase shift of the windows in the discs
  - KC/5-S 2–16%, KC/5-100 1,5–6%
  - Sensitivity better than 0,003 %
  - Springs not in contact with process



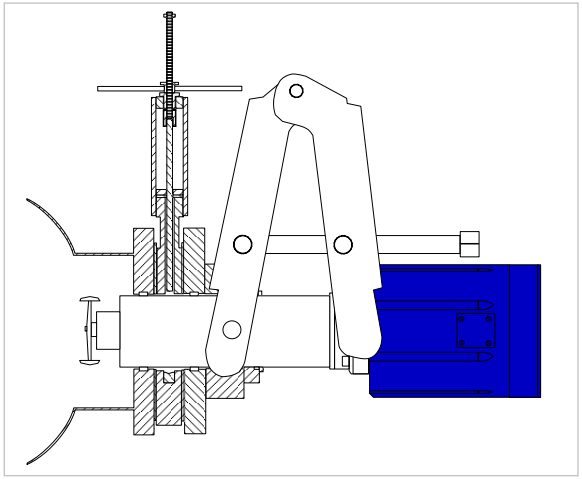
Optical sensor

Phase difference



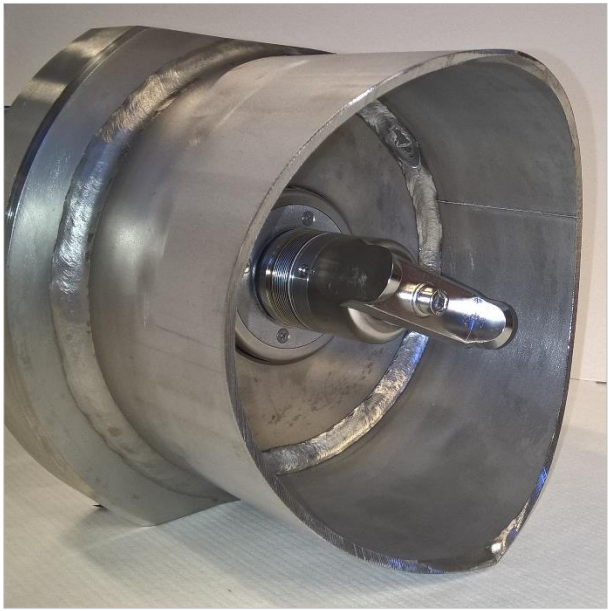
Removable without process shutdown

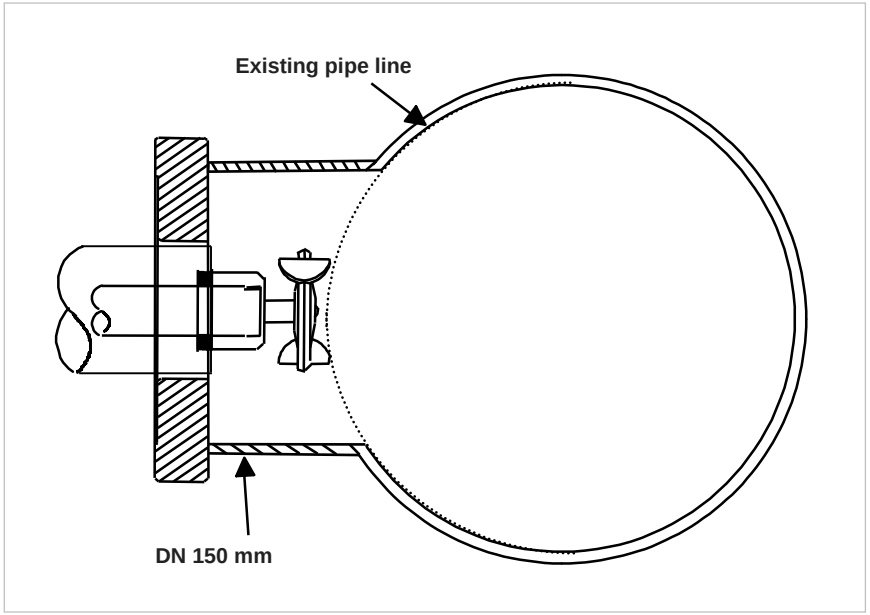
- Gate valve installation
  - KC/5-S: Gate valve DN80, PN16 and PN25
  - KC/5-100: Gate valve DN125 PN16
  - Sensor installation by one person
  - Adjustable insertion depth
  - Fixed installation available without gate valve



KC/5 Measurement chamber

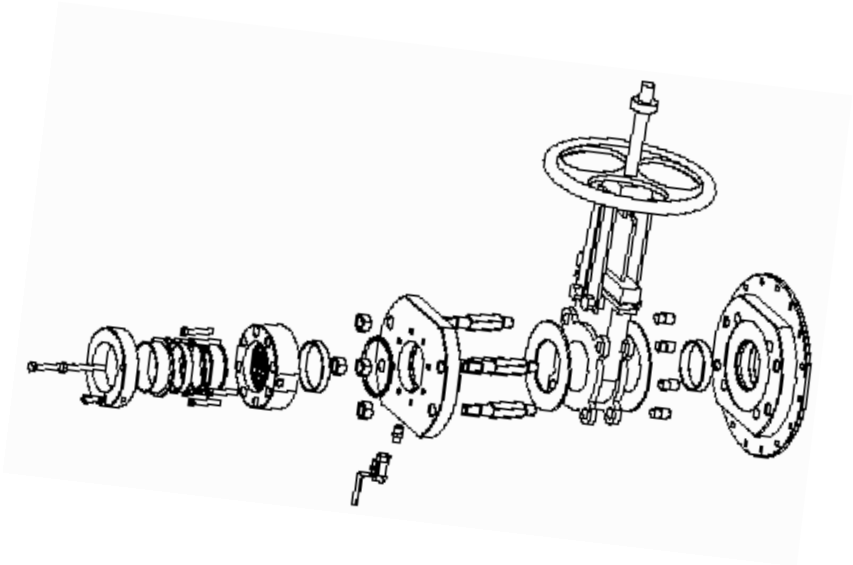
- KPM measuring chamber DN150 for KC/5-S and DN200 for KC/5-100
- Fits to pipe sizes DN150 (ANSI 6”) or bigger without expansion

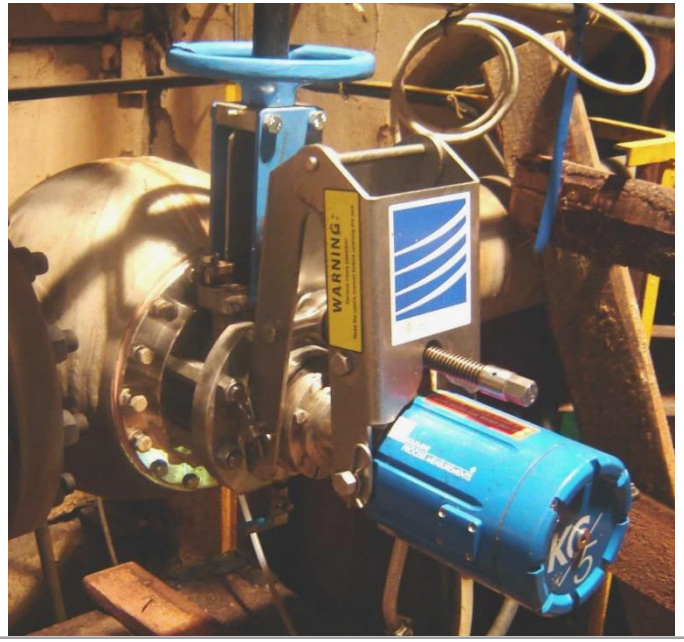




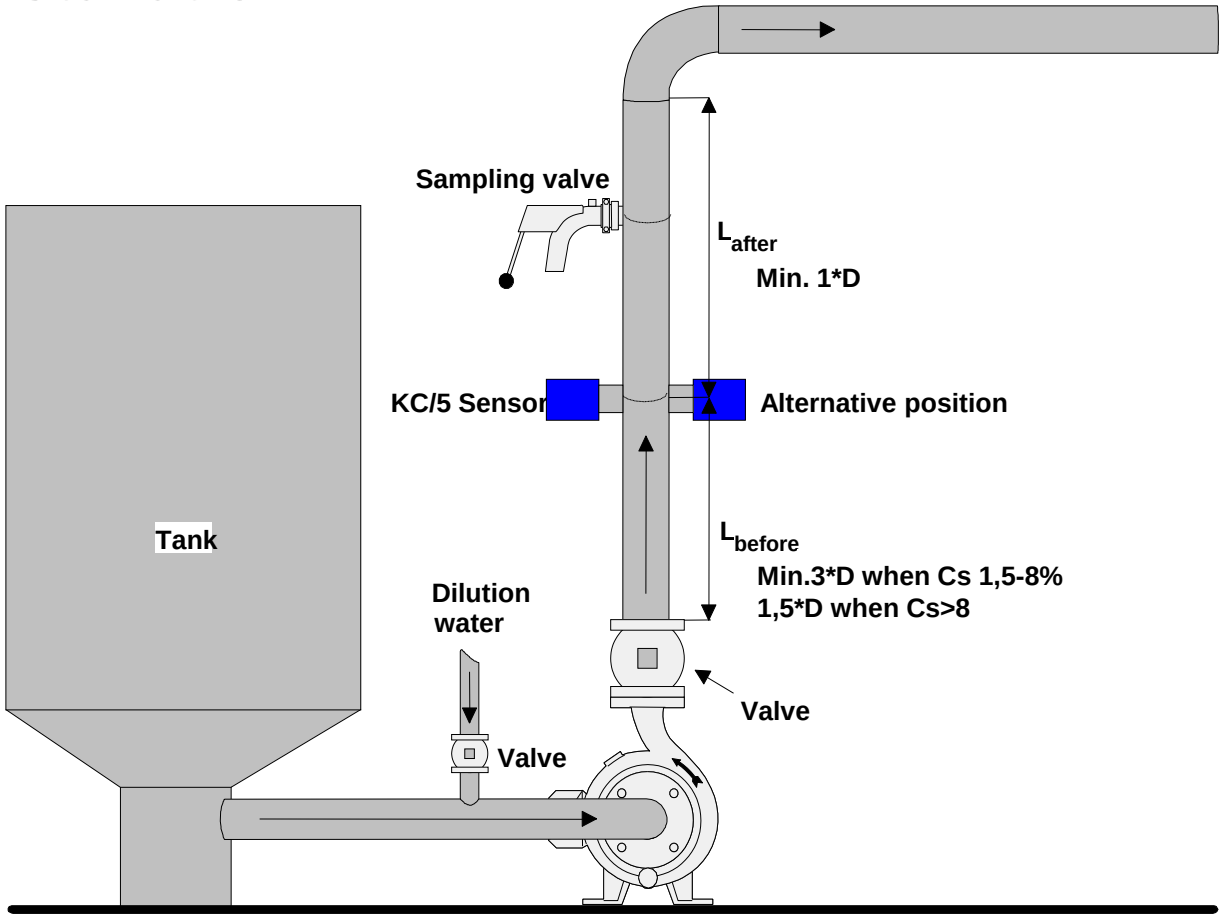
KC/5 Installation to MEK vessel

- Adapter available to fit KC/5 to existing measuring chamber without welding
- Valve installation enables removal from process without process shutdown and draining the line





KC/5 Installation

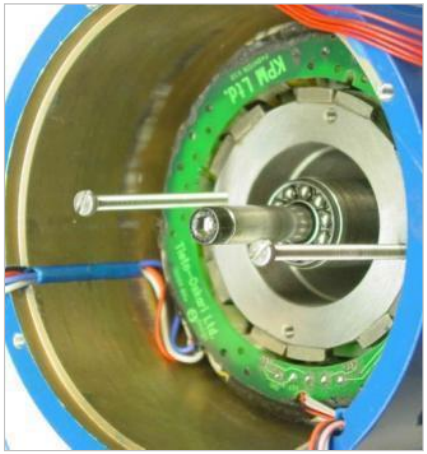


Installation location rules:

1. The axis of the sensor and the pump shaft should be perpendicular to each other
2. Align pump shaft with valve stem.

KC/5 for high performance and flexibility

- Adjustable rotation speed 300–650 RPM
  - Better performance over full consistency range (low speed at high Cs, high speed at low Cs)
- Auto-reverse rotation feature is programmable
  - Auto zero function
  - Automated cleaning to remove foreign material from sensing element while in service

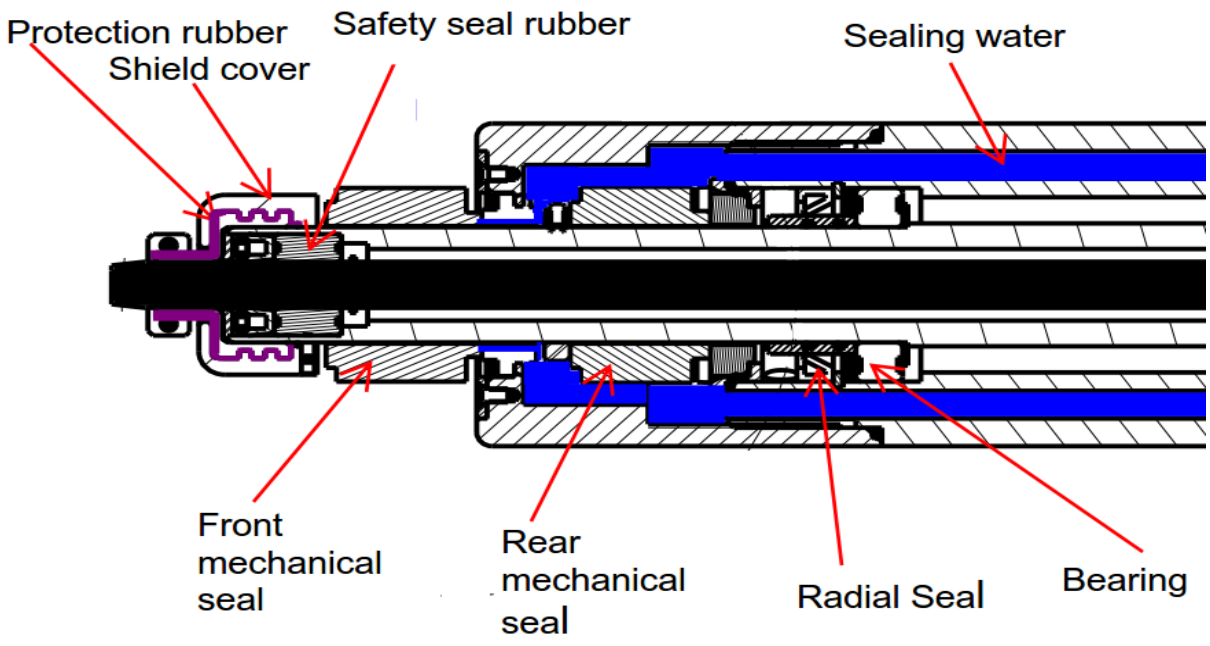


KC/5 Maintenance features

- On-line sensitivity check with torque brake while sensor is in line
- Powerful diagnostics
  - Data log helps to analyze if the problem is process or instrument related
  - Motor power measurement for bearing and seal condition monitoring

KC/5 – Sealing construction

- Double sealing between drive shaft and moment shaft
- Two mechanical seals in tandem system
- Economical standard stock 25mm mechanical seals



Quick and easy maintenance in the mill

- Easy maintenance with standard tools by mills instrument person
  - Mechanical seal change within one hour
  - Complete rebuild/repair in 4 hours
- Sensors interchangeable without recalibration
  - All sensors are measuring consistency same way

KC/5 Calibration alternatives

- 8 selectable pre-calibration grades with linear response to consistency
  - Sensor measures close to real consistency
    inline immediately after set up
- Quick-calibration procedure
  - Automatic calibration parameter tuning when laboratory consistency value is entered on transmitter setup
- Sample button
  - averages 10-30 seconds process consistency for a sample

Specifications

Output signals	4–20 mA + HART®, 1 BO for alarm, FDT/DTM Generic, Foundation Fieldbus - Profibus PA with converter
Input signals	Grade, sampling, process stop
Supply voltage	Single Phase 85 -264 VAC, 320W
Measuring range	KC/5-100 1,5–6% KC/5-S 2–16 %
Sensitivity	Better than 0.003 % Cs
Process pressure	PN16 or PN25
Process connection	KPM Measurement Chamber: KC/5-S min. pipe size DN150 (6”), KC/5-100 min. pipe size DN200 (8”) BTG MEK / Valmet adapter
Flow velocity	0–5 m/s (1.6–16 ft/s)

Specifications cont.

Weight	Transmitter 15 kg (KC/5-100, 20kg) Remote Unit 6 kg Installation parts 19 kg (KC/5-100, 28kg)
Materials	Sensor AISI 316L or Titanium, Installation parts and Gate valve, AISI 316L, Titanium or SAF2205
Process temperature	0–120 °C
Ambient temperature	Sensor 0–60 °C, Display unit 0–50 °C
Enclosure class	Sensor and display IP 66 (NEMA 4X)
Damping	Electronic 0–99 seconds
Low voltage & EMC	IEC 6100-4-3 and CISPR 11

Summary

- Direct Drive servo motor – No drive belt
- Light weight – only 15 kg / 33 lbs
- No 3-phase power;
  Only one single phase 85-264 VAC supply
- Removable without shutdown or
  draining the line: Gate Valve installation