

High performance series

Micro annular gear pump mzr®-11507

For industrial production and process technology



- **High dosage precision**
precision CV < 1% at low volumes
- **Long service life**
wear-resistant tungsten carbide
- **Broad viscosity range**
methanol, water, solvents, adhesives, grease, gel
- **High-power motor**
AC-motor for use with external frequency inverter
- **Compact dimensions**
length 303 mm
- **High differential pressures**
achievable even for low viscosity liquids
- **Low pulsation delivery, low shear stress**
rotary micro annular gear technology

The micro annular gear pump mzr-11507 is equipped with tungsten carbide rotors and bearings. Hard construction material and precision manufacturing techniques guarantee excellent dosage precision, high service life and wear resistance for low volume

dosage of non-lubricating liquids. Driven by a high-power three-phase AC-motor the pump has a compact design and covers the flow range from 29 ml/min to 1152 ml/min. The mzr-11507 is suitable for continuous delivery and discrete dosage of low and

high viscosity liquids. It achieves high differential pressures and provides a low pulsation flow. Its robustness and the available accessories make it suitable for challenging applications.

Applications

- Chemical processing
- Industrial and plant engineering
- Packaging
- Medical and pharmaceutical industry
- Mini plant technology
- Spraying
- Dispensing of adhesives
- Ink and paint dosage
- Vacuum applications

Even if single parameters are within the indicated performance range of technical data, certain parameter combinations may not be achievable. Single parameters may exceed their indicated performance range under adequate circumstances. For detailed evaluation please contact HNP Mikrosysteme. Actual performance may vary. Specifications are subject to change without notice.

Customized solutions on request.

Technical data

Flow rate	29 – 1152 ml/min
Smallest dosage volume	100 µl
Displacement volume	192 µl
Differential pressure range	0 – 40 bar (1 mPas); 0 – 140 bar (> 16 mPas)
Max. inlet pressure	10 bar (145 psi)
Ambient temperature range	-5 ... +40 °C
Liquid temperature range	-5 ... +60 °C (-20 ... +120 °C **)
Viscosity range	0.3 – 150,000 mPas
Dosage precision	< 1 % Coefficient of Variation CV
Pulsation	6 %
Speed range	150 – 6000 rpm
Fluid connection	3/8" NPT internal thread, lateral optional 3/8" NPT internal thread, frontal
Wetted parts	stainless steel 316L (1.4435), tungsten carbide Ni-based; shaft seal: graphite-reinforced PTFE, alloy C276 (2.4819); static seals: FPM, optional: EPDM, FFPM
Motor	AC motor, IEC-Size 056, 4 poles, IP 55, rated voltage 240/400 V, rated frequency 100 Hz, 240 W
Temperature protection	thermal contact (NC)
Dimensions (L x W x H)	303 x 110 x 171 mm
Weight	approx. 9,3 kg

* for viscosity > 16 mPas

** with optional heat insulation module, heating module

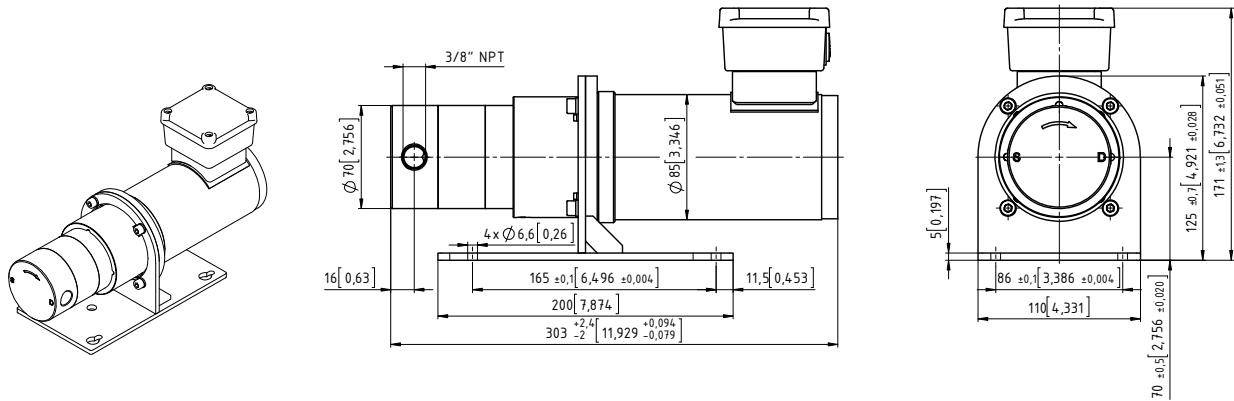
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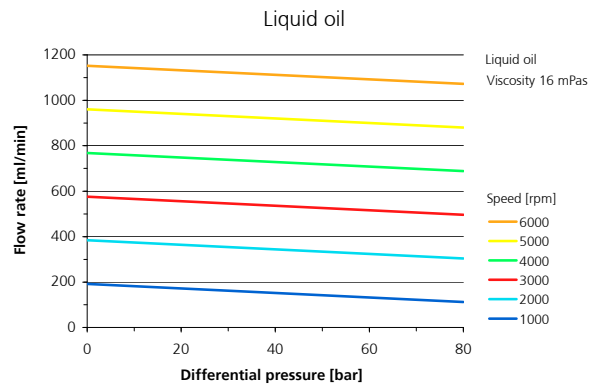
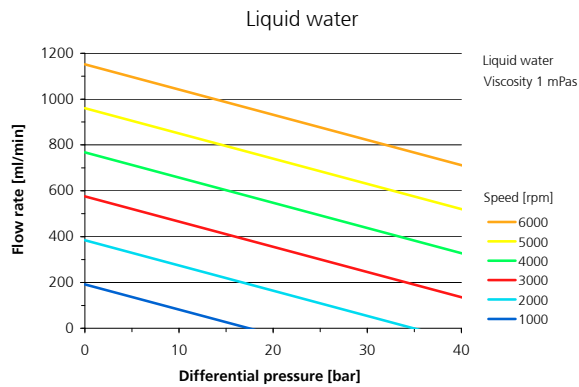
e-mail info@hnp-mikrosysteme.de
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Dimensions



Subject to technical changes.

Flow charts



Control (optional)



- frequency inverter S-FI-L1 for speed control for continuous dosage tasks
- nominal voltage 230 V AC
- power 250 W
- speed range 150 – 6000 rpm
- output frequency 0 – 240 Hz
- frequency resolution 1 Hz
- programmable analog input for speed set: 0-5 V, 0-10 V, 0-20 mA, 4-20 mA
- protective class IP 20
- internal radio interference suppression filter
- dimensions (H x W x D): 146 x 93 x 83 mm

Item number

10 03 01 39
10 03 01 40
66 04 01 04

pump mzr-11507 S with three-phase AC-motor, lateral fluid connection 3/8" NPT
pump mzr-11507 F with three-phase AC-motor, frontal fluid connection 3/8" NPT
frequency inverter S-FI-L1, 230 V AC, 250 W, IP 20, programmable analog input for speed set (0-5 V, 0-10 V, 0-20 mA, 4-20 mA)

Accessories

Liquid supply accessories
Fluidic seal module
Heat insulation module
Heating module

threaded fluid connectors, tubes, filters etc.
use of liquids sensitive to air or water or for vacuum applications
use for increased liquid temperature up to 120 °C
active heating of the pump head up to 120 °C operating temperature

Micro annular gear pumps (and housings) are protected by assigned patents: EP 1115979 B1, US 6,520,757 B1, EP 852674 B1, US 6,179,596 B1, EP 1354135, US 7,698,818 B2. Patents pending DE 10 2011 001 041.6, PCT/IB2011/055108, EP 11 81 3388.3, US 13/884,088, CN 2011 8006 5051.7, HK 13 11 2934.9, DE 10 2011 051 486.4, PCT/EP2012/061514, EP 12 728264.8, US 9,404,492 B2, CN 2012 8003 8326.2. In the US, Europe and China additional patents are pending. mzr®, MoDoS®, µ-Clamp®, HNPm® are registered German trademarks of HNP Mikrosysteme GmbH.