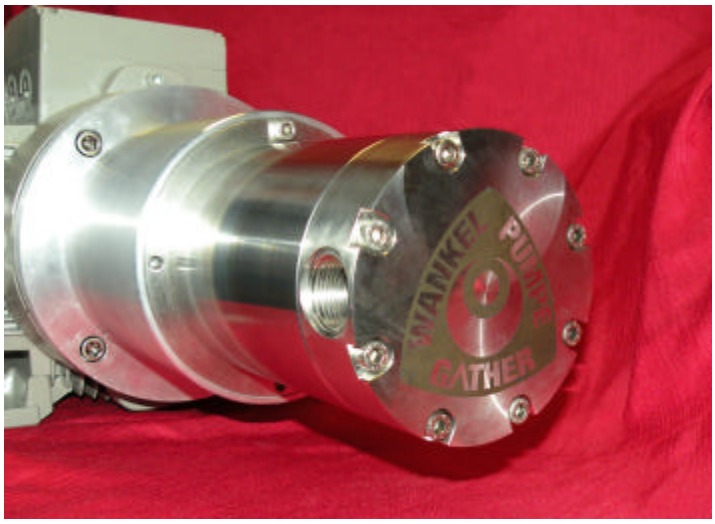
The Wankel pump

The legend of "Wankel" is still alive!
Pulsation free 5m^3/h water up to 25 bar

The Wankel pump is a modern process pump which can be used with water, salt solutions, acid, bases and solvents.
The idea is based on the rotating piston machine of Felix Wankel whose principal was used in the rotating piston motor (DKM) and NSU rotary engine (KKM) which is still used by Mazda today.

In cooperation with Mr Dankwart Eiermann (former leading development engineer of Felix Wankel), GATHER Industrie GmbH developed the principal of the magnetically driven, hermetically sealed internal gear pump by combining the robust gear pump technology for non-lubricating liquids with the simple rotary piston technology by Wankel.
The difference to the classical internal gear pump is not to use an involute form of the gear, but a trochoide form. Therefore a sickle separating the gear chambers is no longer needed. The trochoide operates much softer than the involute reducing the shearing stress to the liquid. The trochoide slides much better than the involute gear which reduces wear by transferring non-lubricating liquids like water and solvents.



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The new high performance pump has been developed by using proved, robust and chemical resistant materials which have self lubricating abilities and very good dry running features.

This development is a classic example of new product creation based on approved technology "Made in Germany". It shows the importance of short communication lines between supplier and use. Many wishes of users found their way into the design. The Wankel pump is a synthesis of engineering and the needs of the chemical industry.

In addition, the result of simple design and the fact that the main parts will be produced at the headquarters of GATHER in Mettmann, the Wankel pump is highly competitive and supplied at the usual short delivery times.

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Pump Technology
Metering Systems
Coupling Technology

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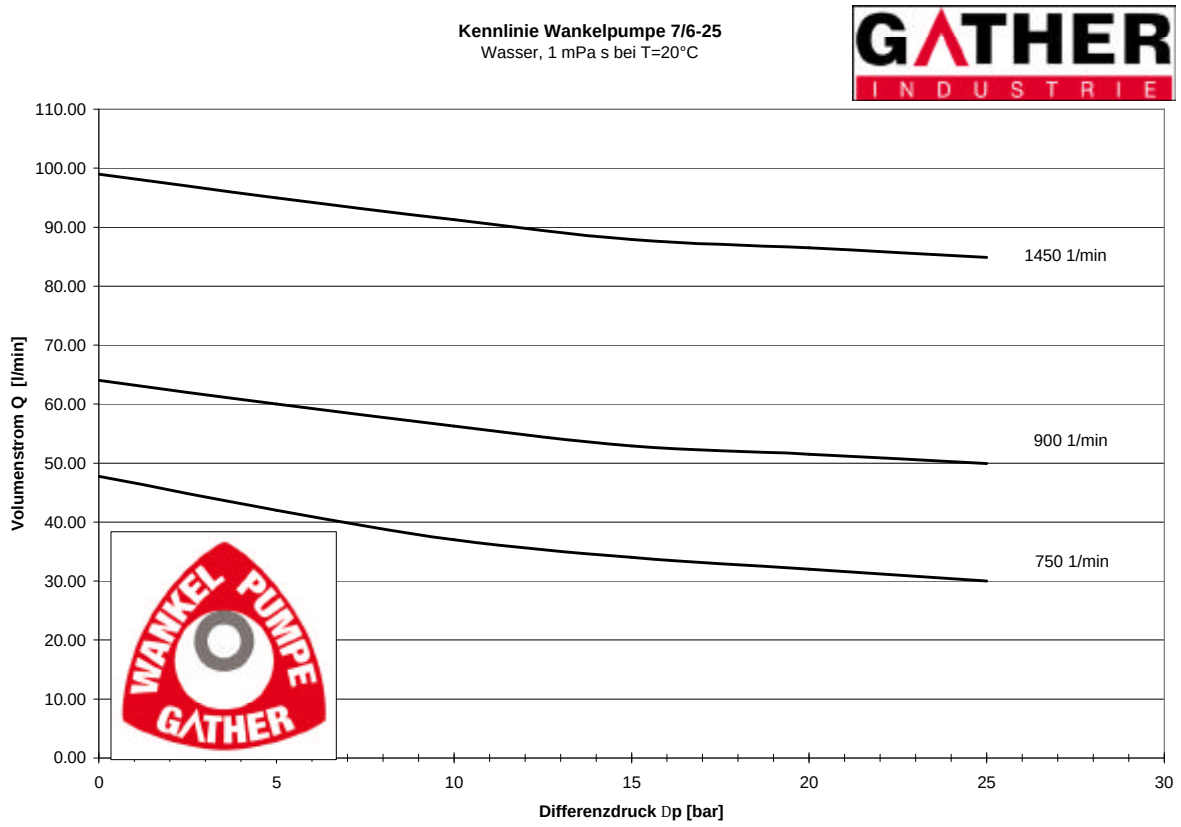

The Wankel pump features all needs of a modern and user-friendly process pump:

- Compact design in stainless steel (planned also in Hastelloy and Titanium)
- Very good availability with short delivery times
- High efficiency, long life time and low friction by i.e. fully ceramic ball bearings
- Very reasonable, compact design in stainless steel, “Made in Germany”
- Hermetically sealed, pulsation free, low shearing stress and maintenance-free*
- Transfer of critical or non-lubricating liquids
- Applications up to 25 bar or up to 200°C with two compatible sizes: up to 3.6 or 6.0 m³/h
- Use of materials that are highly wear-resistant and very well chemically resistant. Hence, in process planning this component can be handled very easily
- Easy integration in a complete process system due to the performance characteristics of the pump depending on motor speed only
- Easy exchange of the pump head for reparation or maintenance by simple tools
- Small eddy current losses by optimized magnet size and well-chosen materials for the magnet cap

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- Naturally fulfilling or meeting the machinery guideline as well as ATEX (zone 1, 2 and 22) and the pressure equipment guideline

*limited to wear and tear

Because of the longstanding know-how of GATHER with magnetic drive gear pumps, cooperation with Mr. Dankwart Eiermann and intensive communication with the users, a new sort of pump type has been created which will be used as a hermetically sealed, pulsation free multipurpose pump, especially by the chemical industry.

The Wankel pump will be introduced at the ACHEMA in Frankfurt (11.-15.05.2009) Hall 8.0 Stand H29 - H31. The first delivery is planned for July 2009.

Data overview

Overview about the data of the WANKEL PUMP:

- Materials: Stainless steel (Hastelloy, Titanium planed)
- Liquids: Non-lubricating and lubricating liquids
- Viscosity: η = 0.3 mPa s up to 2,000 mPa s
- Flow: Q = up to 3.6 m³/h or up to 6.0 m³/h (two compatible sizes)
- Temperature: T = -60°C up to +200°C
- Differential pressure: $\Delta p_{max.}$ = up to 25 bar
- System pressure: p_{System} = up to 40 bar
- Explosion proof area: Zone 1, 2 and 22, temperature classes T1…T6 or 100 K upon the glowing temperature of the dust (Zone 22)

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