Das COR Projekt.

1998 startete die Arnold Bierbrauer GmbH mit dem Standort in Stuttgart, um Pumpen und Kompressoren zu entwickeln auf der Basis der Cor Technologie. Die Cor Technologie ist eine neue Art der Zahnradverzahnung, die neue Möglichkeiten eröffnet .

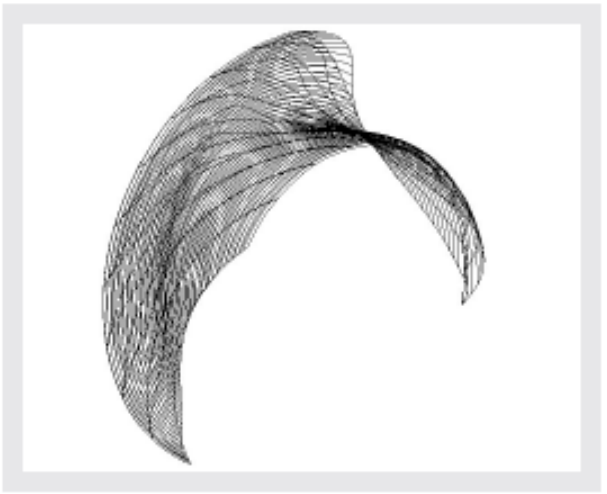
Speziell für die mathematischen Beschreibungen der Freiformflächen, die hierfür nötig sind, wurde die vimotion GmbH hinzugezogen.

Die Freiformflächen, die zugleich eine Verzahnung im Raum darstellen, wird über 13 Freiheitspararmeter gesteuert. Mit dem Fortschreiten des Projektes kamen dann auch Analysetools wie Druck und Wirbel, so wie CFM Modelle hinzu.

Dies ermöglichte erst eine Pumpe zu konzipieren, die einen großen Wirkungsgrad besitzt.

Auf der rechten Seite ist eine Raumkammer der Pumpe zu sehen.

Oben sind unverdrehte Pumpen Modelle dargestellt.



PUMPS
COR PUMPS

diesel pumps
(industrial, automotive)

gasoline pumps
(industrial, automotive)

chemical pumps for various liquids
(industrial)

transfer pumps for various liquids,
portable or stationary (residential, industrial)

pharmaceutical / hygiene pumps for various
liquids, portable/stationary (residential, industrial)

recyclable / one-way pumps
(residential, industrial)

constant / metering pumps for various liquids
(industrial, automotive)

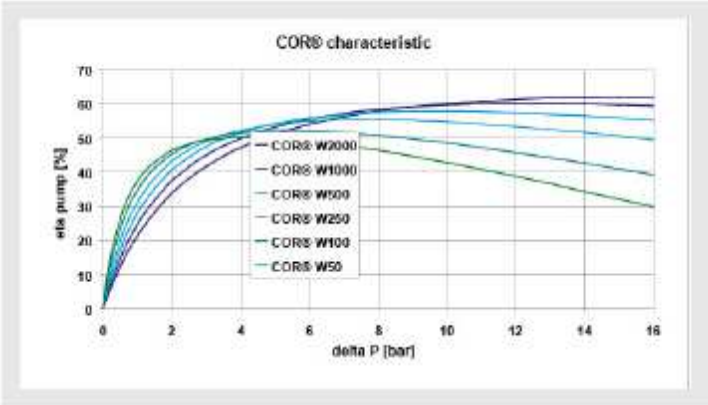
CONCEPT

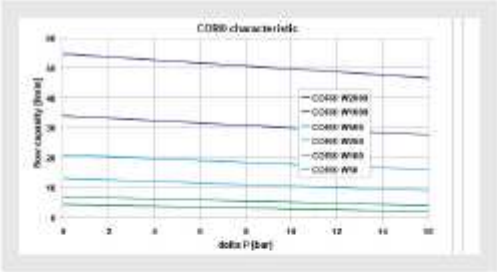
COR PUMPS NEED NO VALVES

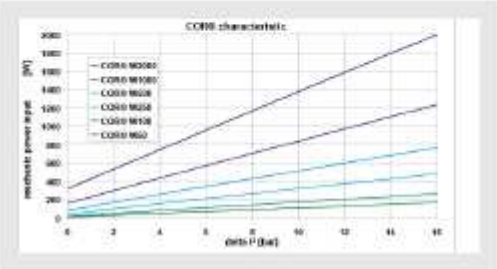
The COR pump consists basically of 4 pieces of which 2 are rotating. No valves are needed. Most of the torque is converted into useful work as only one of the two rotating pieces is driven. Due to its design the other one only needs torque to overcome its friction. The fluid is fed through the center of the pump and transferred with the help of moving cavities and centrifugal force to the outlet on the periphery. Pressures of up to 50 bar (725 PSI) as well as different fluids like water, oil and chemicals with higher viscosity can easily be handled.

EFFICIENCY

COR'S OWN LAB SHORTENS DEVELOPMENT TIME





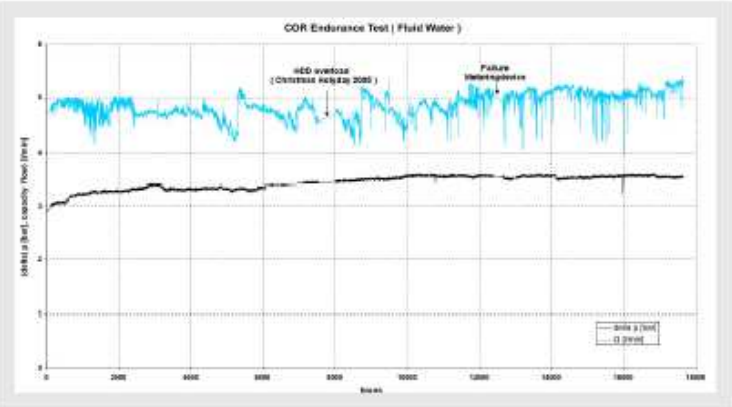


COR pumps+compressors AG has its own lab, which shortens development time and allows development and testing of the prototype to be provided by a single source. Pumps and compressors of up to 120 mm in diameter can be tested in water, air and (to some extent) in oil.

If required, COR pumps + compressors AG's partners can make testing in other media available as well. Long-term testing under PC supervision is provided as well.

RELIABILITY

COR PUMPS HAVE PROVEN THEIR RELIABILITY



COR pumps have proven their reliability in 21600 hours of polycyclic endurance testing, which represents 3,9 million on off cycles.

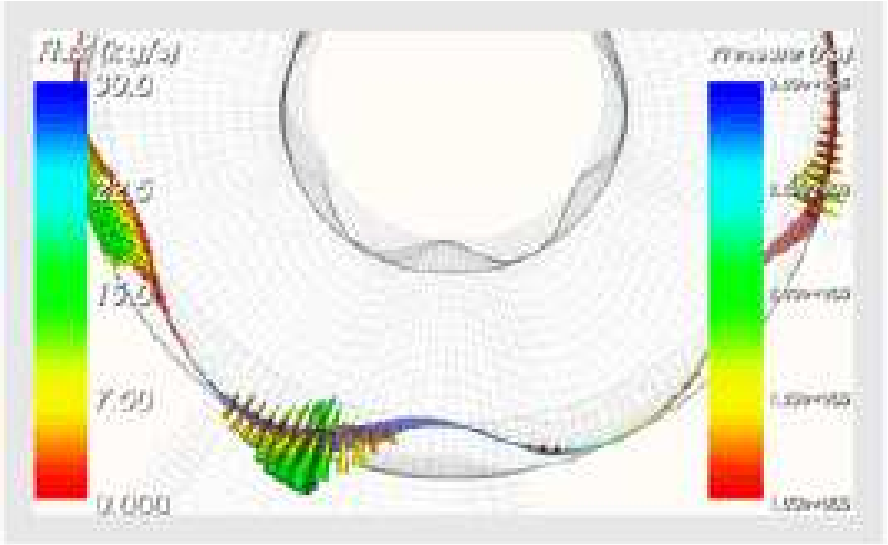
The pumps consist of only a few parts, all of which may be made of plastics produced in moulding machines. Other materials are possible, too.

SOFTWARE

THE COR SOFTWARE GENERATES THE NECESSARY DATA ...

The COR system includes a sophisticated software which enables the user to study the behaviour of the fluid in four dimensions and to optimize conditions with regard to a given specification. The software also generates the necessary CAD data for the production of a pump or a compressor.

The software handles all parallel, crooked and angled shaft rotary piston machines. The movement of the internal surfaces as well as pressure distribution and local speed of the fluid in the pump can be studied as function of time.



PUMPS

COR PUMPS

COR pumps are suited for - but not limited to - mobile and stationary applications using various drives (mechanical, electrical dry or wet running motors, others) as for example:

circulator pumps for water
(residential, industrial, automotive)

circulator pumps in solar applications
for water/glycol (residential, industrial)

pressure booster pumps for water
(residential, industrial, automotive)

carbonator pumps for water/syrup
(beverage)

oil pumps
(residential, industrial, automotive)

mechanically controlled oil pumps
(automotive)