

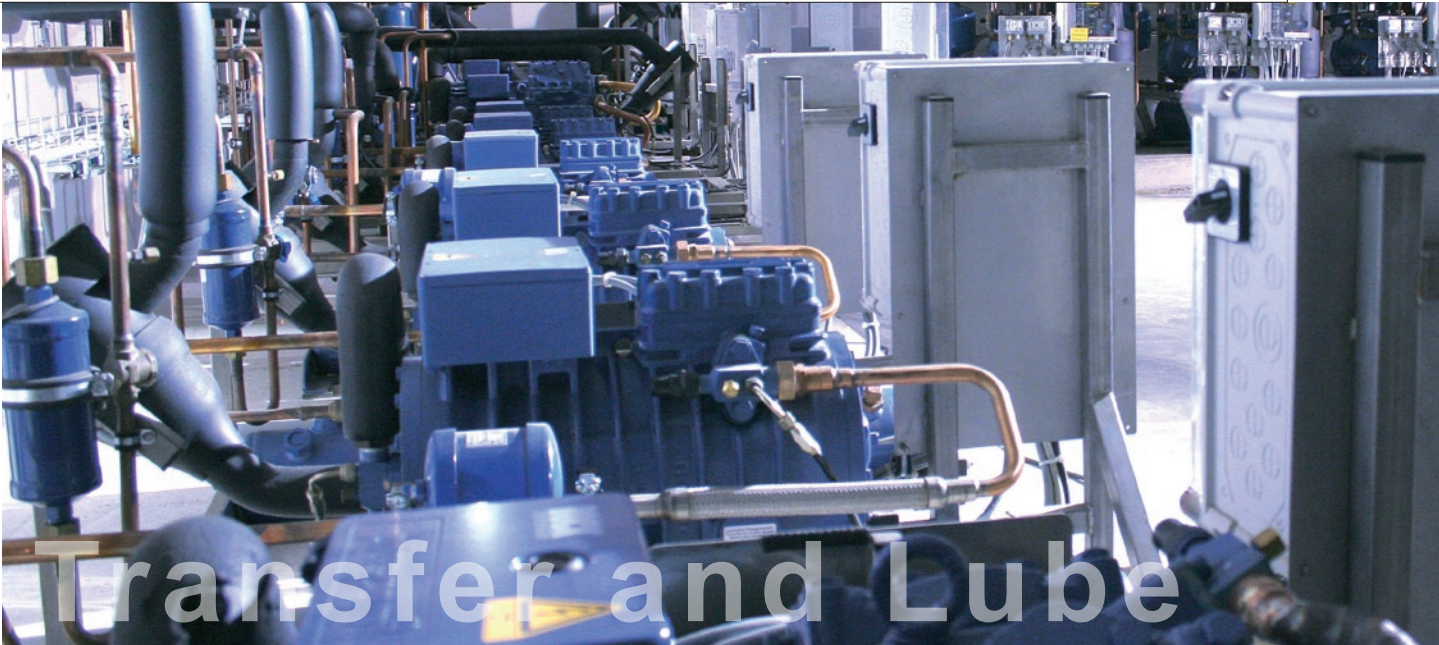


Performance Spectrum

Transfer and Lube



HEART OF HIGHTECH



Pumping Principle



Rotating positive displacement pumps are characterized by the use of two geared rotors. The rotor that is fixed on the drive shaft transmits its rotation onto the second rotor. The rotation displaces a defined volume, drawing in fluid and transferring it out against pressure.

Depending on gearing selection, Scherzinger Pump Technology offers External Gear Pumps, Internal Gear Pumps and Gerotor Pumps. Due to the simple, robust construction as well as the operational safety, the gear pump is the most common rotating displacement pump.

Engineers at Scherzinger consider the following criteria when designing these series of Gear Pumps for the Mechanical Industry:

- **The transferred fluid** defines the material to be used
- **The fluid temperature and the inlet pressure** influence the seal type
- **The differential pressure** defines the drive performance
- **The viscosity affects** the rotation speed
- **The application** influences the type of drive and design required

We guarantee you high quality standards through:

- Continuous development of material technology
- Cost effective manufacturing methods for even the most difficult material
- Constant advances in surface technology
- Miniaturisation of your products by adapted pump concepts
- The specific application of volume flow regulated oil pumps, allowing for a reduced drive performance



Applications

Scherzinger Gear Pumps described in this brochure are primarily used for lubricating fluids as well as partial use on other aqueous solutions.

Sample applications include:

- **Drive Technology:**
Hydraulic actuation for revolving doors systems
- **Chiller- and Air Compressors:**
Lubrication of bearings
- **Drives:**
Increased drive performance possible by specific pressure oil supply

- **Industrial Process Heat Generation:**
Charging and draining of thermal oil systems
- **Wind Power Stations:**
Lubrication of large drives
- **Steam Turbine:**
Specific reduction of friction by bearing lubrication
- **Spread of Moist Salt:**
Moisturization of dry salt for road de-icing

The Scherzinger Advantage



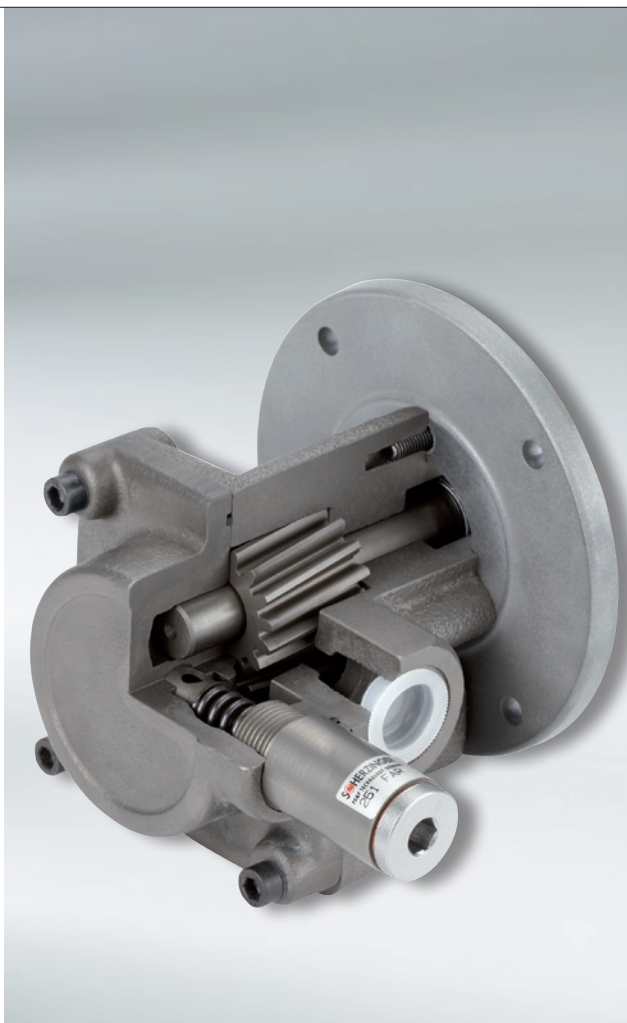
Over 70 years of experience and cross-generation knowledge reflect on the high quality of Scherzinger Gear Pumps.

Due to a constant focus on customer-oriented solutions, we guarantee you highest technological competence.

Customers worldwide trust in our high quality standards and rely on Scherzinger as an innovation partner for intelligent transfer applications and systems for Mechanical Engineering.

- Specific series product solutions adapted to the application
- Certification ISO 9001, TS 16949 and DIN EN ISO 14001
- Production machinery designed for high performance manufacturing
- Demanding product testing to guarantee highest quality
- Professional and competent development team
- Comprehensive product consultancy and service
- Continuous promotion of innovation processes

External Gear Pumps



Design

Positive Displacement External Gear Pumps transfer fluid by means of two rotating gears. The gear that is fixed on the Drive Shaft (Drive Gear) transmits its rotation onto the second (Driven) gear. As the gears revolve, a suction zone is created on the inlet port side and fluid is drawn into the gears.

As gear teeth mesh, a defined volume of fluid is displaced around the outside of both gears and is forced out through the discharge port side against pressure.

Advantages

- Most common gear pump principle
- Low mechanical friction resistance
- Low circumferential speed
- Temporarily resistant to dry running operation
- Appropriate for high viscosity fluids

Operating Range

Δp :	max. 70 bar
Flow Rate:	max. 200 RPM
Inlet Pressure:	- 0.8 bar to 50 bar (depending on seal type)
Suction Lift:	max. 8 m
Temperature Range:	- 30 °C to + 300 °C
Viscosity Range:	0.6 to 500,000 mPas*

* Variable on speed

Design Principle



Area of Application

The Pumps Can Be Used:

- for low to medium-viscous, particle-free liquids
- for lubricating fluids
- for light and heavy fuel oils
- for variable rotation applications via reversing feature option
- for speeds von 0 – 6,000 RPM
- for use in normal or hazardous environments (ATEX II 2G and II 2D)

Frequently Handled Fluids:

- Lube Oils
- Thermal Oils
- Hydraulic Oils
- Varnish and Inks
- Emulsions
- Cocoa Mass
- Liquid Soap
- Heat Transfer Fluids
- Vegetable Oils
- Diesel Fuel
- Aqueous Solutions

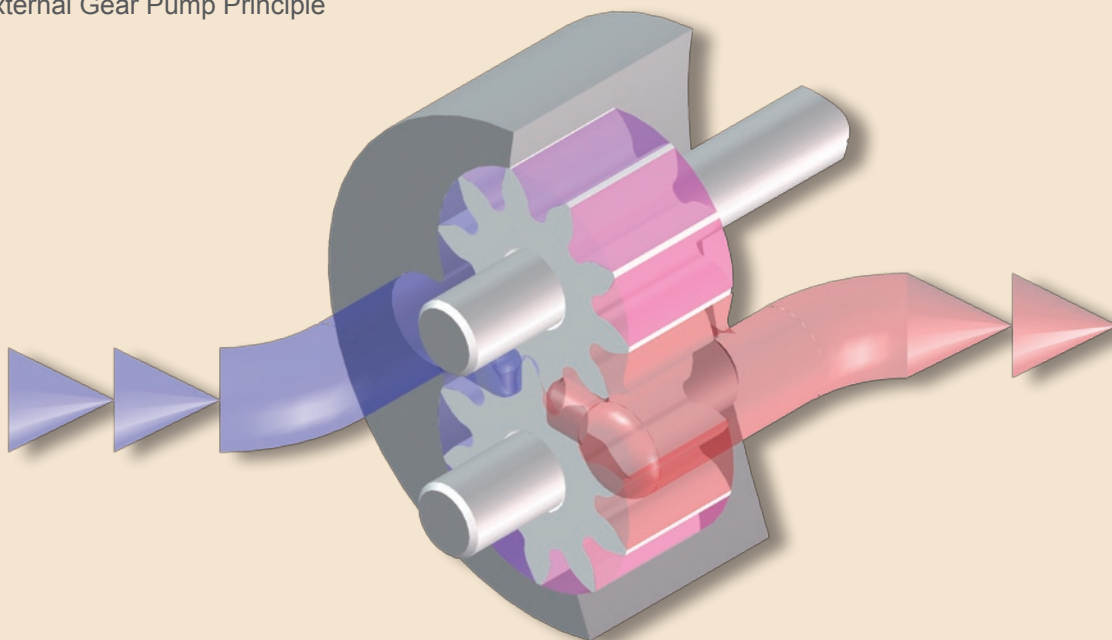


Versions

- Shaft Seals: Packed Stuffing Box, Single or Double Rotating Mechanical Seals, Radial Shaft Seals, Magnetically Coupled Sealless
- Metallic Materials: Gray Cast Iron, Modular Graphite Casting, Brass, Aluminium, Bronze, Steel
- Bearings and Gears: Steel, Aluminum, Brass, Gray Cast Iron, Multi-Layer Sleeve Bearing
- Threaded Connections: Metric, BSP, NPT or UNF
- Variable Flow Rates - Different Pump Head Sizes
- Air Motors, DC and EC Motors, AC Single and Three-Phase Drive, Hydraulic Motors

4
5

External Gear Pump Principle



Internal Gear Pumps



Design

The centralized external gear is driven by a shaft. The internal annular gear is positioned in the pump casing. A crescent shaped partition separates the suction from the pressure side.

As gears rotate, a partial vacuum is created on the suction side and fluid is drawn into the pump. The fluid between gear teeth is transported alongside the crescent wall. In the area where gear teeth mesh, the fluid is displaced through the outlet zone of the pump.

Advantages

- Applicable for noise-sensitive area
- High dosing precision
- Constant flow due to low pulsation
- High differential pressures

Operating Range

Δp :	max. 120 bar
Flow Rate:	max. 1.5 RPM
Inlet Pressure:	- 0.7 bar to 100 bar (depending on seal type)
Suction Lift:	max. 9 m
Temperature Range:	- 40 °C to + 200 °C
Viscosity Range:	0.5 to 2,000 mPas*

* variable on speed

Design Principle



Area of Application

The Pumps Can Be Used:

- For low to medium-viscous, particle-free liquids
- For lubricating fluids
- For light and heavy fuel oils
- For variable rotation direction via installed reversing valve
- For speeds of 0 – 5,000 RPM

Frequently Handled Fluids:

- Lube Oils
- Hydraulic Oils
- Emulsions
- Liquid Soap
- Heat Transfer Fluids
- Vegetable Oils
- Diesel Fuel
- Glycols

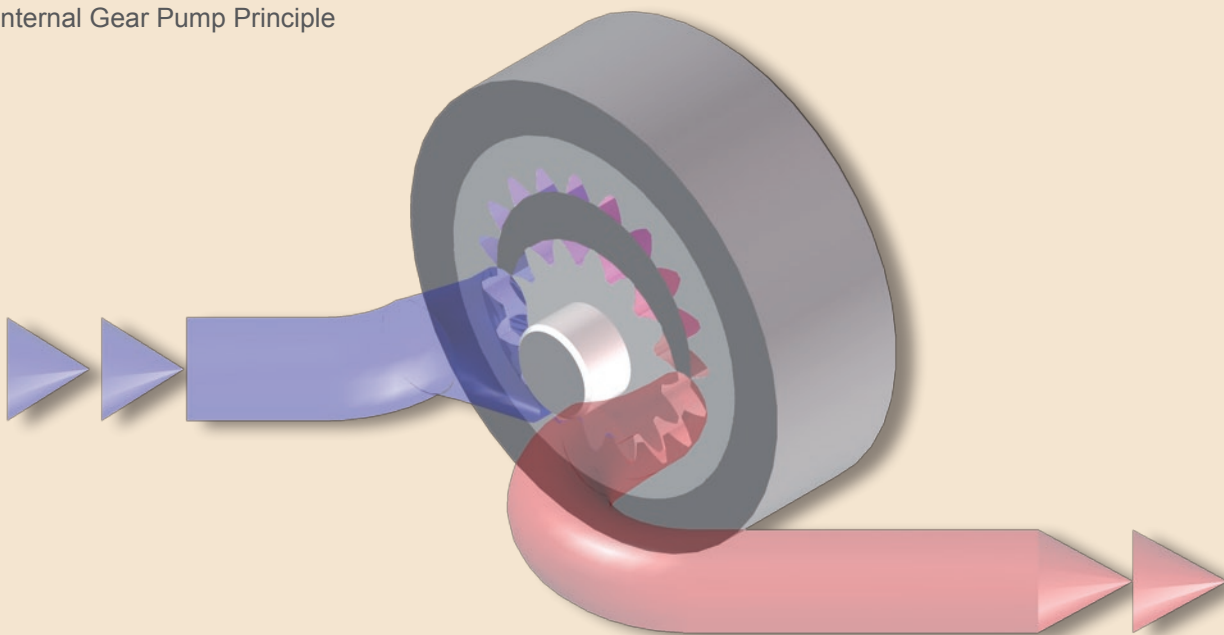


Versions

- Shaft Seals: Packed Stuffing Box, Single or Double Rotating Mechanical Seals, Radial Shaft Seals, Magnetically Coupled Sealless
- Metallic Materials: Gray Cast Iron, Modular Graphite Casting, Aluminium, Brass
- Bearings: Brass Plastic Bronze, Multi-Layer Sleeve Bearing
- Gears: Steel, Sintered Metal
- Threaded Connections: Metric, BSP or UNF
- Variable Flow Rates - Different Pump Head Sizes
- Air Motors, DC and EC Motors, AC Single and Three-Phase Drives, Hydraulic Motors

6
7

Internal Gear Pump Principle



Gerotor Gear Pumps



Design

A set of gear like elements called Gerotors produce a flow rate by the opening and closing of spaces between the teeth. The inner (drive) gerotor element is driven by a shaft which in turn drives the outer (driven) gerotor element within the pump casing.

When elements rotate, a partial vacuum is created as teeth begin to separate, drawing fluid into the inlet port. As teeth begin to engage reducing the space between elements, fluid is displaced out through the discharge port.

Advantages

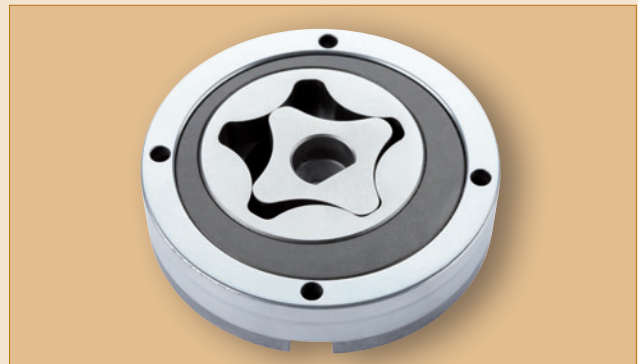
- Cost-effective Gear Pump concept for low differential pressures
- Retention of flow direction with changing rotating direction via eccentric ring
- Few rotating parts
- Small Size

Operating Range

Δp :	max. 30 bar
Flow Rate:	max. 200 RPM
Inlet Pressure:	- 0.7 bar to 100 bar (depending on seal type)
Suction Lift:	max. 7 m
Temperature Range:	- 40 °C to + 150 °C
Viscosity Range:	0.5 to 50,000 mPas*

* variable on speed

Design Principle



Area of Application

The Pumps Can Be Used:

- For low to medium-viscous, particle-free liquids
- For lubricating fluids
- For light and heavy fuel oil
- For variable rotation direction via installed reversing valve
- For speeds of 0 – 10.000 RPM

Frequently Handled Fluids:

- Lube Oils
- Hydraulic Oils
- Emulsions
- Liquid Soap
- Heat Transfer Fluids
- Vegetable Oils
- Diesel Fuel
- Wax



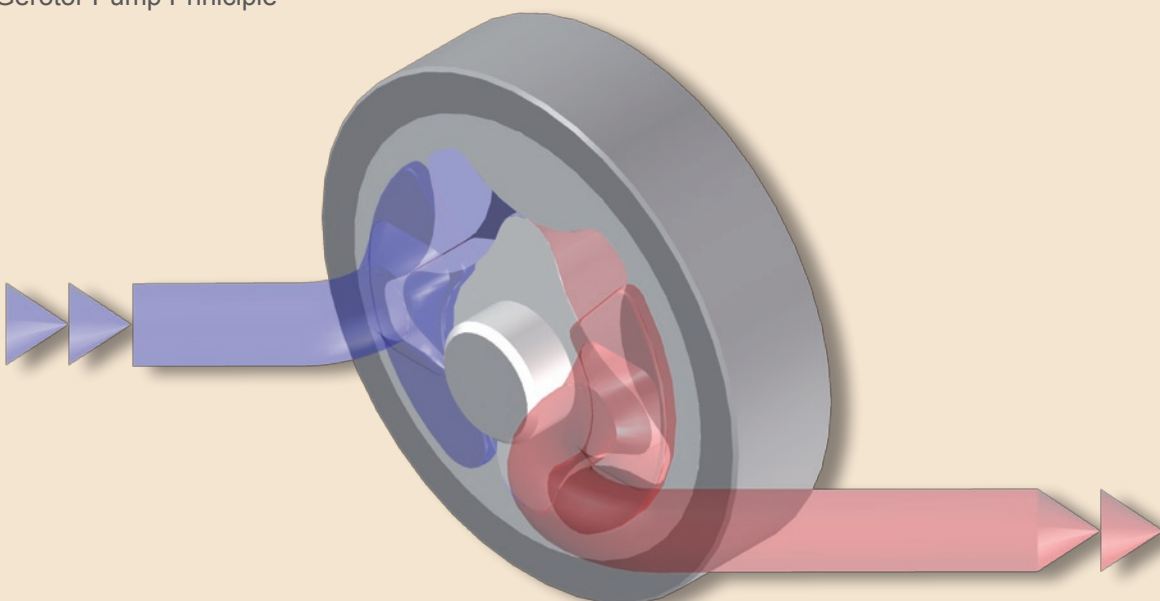
Versions

- Shaft Seals: Packed Stuffing Box, Single or Double Rotating Mechanical Seals, Radial Shaft Seals, Magnetically Coupled Sealless
- Metallic Materials: Gray Cast Iron, Modular Graphite Casting, Aluminium, Brass, Plastic
- Bearings: Brass, Plastic Bronze, Multi-Layer, Sleeve Bearing
- Rotors: Steel, Sintered Metal, Modular Graphite Casting
- Direct fit to existing driveshaft
- Can be supplied with filter unit
- Variable number of teeth for customized flow and pulsation characteristics

8

9

Gerotor Pump Principle



Services



As an innovation partner for intelligent transfer applications and systems, Scherzinger offers you a comprehensive service to fulfil your technical and logistic specifications.

Our worldwide representative network allows us to handle your specifications individually with flexibility in a prompt and reliable way.

Profit from:

- Product consultancy and order processing in your national language
- Our long-term experience in handling imports, exports and customs clearance
- High-quality repairs guaranteeing you reliable customer service
- Short notice and comprehensive replacements within one workday
- Individual pump training tailored to your application

Product Consultancy

Our long-term experience and our expertise in Mechanical and Plant Engineering allow us to offer you consultancy services specifically tailored to your application.

A competent and professional evaluation and engineering team supports you throughout the project phase. On the basis of your specifications we determine the perfect solution for your requirements.

Therefore you will profit from several advantages that will lead you faster and easier to your goal:

- Prompt development and production of prototypes
- Tested pump concepts provide the basis for a successful synchronized combination of materials required
- A comprehensive knowledge in development and production of our products guarantee you a precise and fast tender preparation



Customized Gear Pump Solutions

In order to reach specific design requirements, many customers need unique and specially tailored solutions.

We have identified this need and have focussed for over 70 years on developing customized results for clients. We place a very high emphasis on quality performance for your optimal benefit.

Benefit from a close and intensive cooperation with our project managers. As a client, you will receive prompt high-quality solutions that are specially designed for your application – reliable and precise.

You will profit from:

- A professional and competent engineering team
- The use of modern 3D-CAD production stations
- A fast and easy data transfer for almost all current CAD-systems
- Our core competence of chipping materials
- Manifold synergies between development and production during the design process

Verification and Testing

The quality of our products is fundamental to our ongoing success. "Heart of Hightech" represents reliability – reliability that we guarantee you by means of extensive testing. Not only do we test existing products prior to delivery, we also test new developments under field simulated conditions.

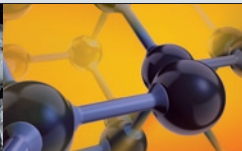
Your advantage: You will be able to reduce the number of field tests and save testing costs.

Additionally we guarantee you:

- A modern testing facility
- The execution of endurance test after individual coordination with you
- Testing under field simulated conditions
- Pre-production testing of your product
- Technicians with comprehensive application and product expertise



Automotive



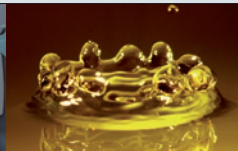
Chemical



Energy



Medical



Transfer and Lube



Services



HEART OF HIGHTECH

SCHERZINGER
PUMP TECHNOLOGY

**Pumpenfabrik
Ernst Scherzinger GmbH & Co. KG**
Bregstraße 23-25
D-78120 Furtwangen
Telefon +49 (0) 7723 6506-0
Fax +49 (0) 7723 6506-40
info@scherzinger.de
www.scherzinger.de