

## Product Program Pumps:

### Pumps with Magnet Drive

- E Centrifugal Pumps acc. to DIN EN ISO 2858, SLM NV
- ▶ Centrifugal Pumps acc. to ANSI B73.3, SLM AVO
- ▶ Centrifugal Pumps for Petrochemical Applications acc. to API 685, SLM AVP
- ▶ Centrifugal Pumps for High Pressure Applications, SLM SV/SLM GV
- ▶ Centrifugal Pumps for High Temperature Applications, SLM NH0
- ▶ Centrifugal Pumps for Liquids Containing Solids, SLM NV
- ▶ Self-Priming Centrifugal Pumps, SLM SV
- ▶ Multistage Centrifugal Pumps, Tension-Rod or Barrel-Type Design, SLM GV
- ▶ Submerged Centrifugal Pumps, SLM NVT
- ▶ Double-Suction Centrifugal Pumps, SLM ZV

### Pumps with Shaft Sealing

- ▶ Twin Screw Pumps, DSP
- ▶ Centrifugal Pumps acc. to DIN EN ISO 2858, NOV
- ▶ Multistage Centrifugal Pumps, Tension-Rod or Barrel-Type Design, GOV/GOVT
- ▶ Horizontal and Vertical Propeller Pumps, P
- ▶ Bottom-Flange Propeller Pumps, UP
- ▶ Submerged Centrifugal Pumps, TP NO
- ▶ Double Suction Centrifugal Pumps, NZ

## Product Program Valves:

- ▶ Valves, T-Pattern
- ▶ Valves, Y-Pattern
- ▶ Gate Valves, Isomorphous Construction Series
- ▶ Gate Valves, Wedge or Wedge Plates
- ▶ Relief Valves
- ▶ Check Valves
- ▶ Sight Glasses
- ▶ Strainers
- ▶ Filters
- ▶ Bottom Valves

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# TWIN SCREW PUMPS SERIES DSP



# Klaus Union GmbH & Co. KG

## Experience – Responsibility – Passion

### Klaus Union Twin Screw Pumps

Klaus Union Twin Screw Pumps series DSP are double volute, self-priming positive displacement pumps for low (DSPN), medium (DSPM) and high pressure (DSPH) duty, suitable for transport of abrasive/non abrasive, corrosive/non corrosive, lubricating/non lubricating, high or low viscous fluids.

Selfpriming Screw Pump with two screws in double volute and hydraulically balanced design. The drive torque is transmitted from the double helix drive screw to the likewise double helix idler screw via herringbone gears.

The screws rotate closely meshing but without contact in the spindle bore of the interchangeable pump casing insert. As a result of the special profile geometry, sealed cavities are formed, which transport the pumped liquid continuously with low shear and without turbulences from both suction chambers axially to the discharge chamber.

For optimum strength and low shaft deflection both, drive screw and idler screw are manufactured from single piece bar stock.

The patented shape of the Klaus Union spindle profile requires 10 to 20% less power consumption compared to standard geometries of comparable pump designs.

### Quality Assurance

A major component of the Klaus Union ethos is to ensure highest product qualities. Existing quality assurance procedures with Klaus Union suppliers are constantly monitored from order placement to goods receipt and final assembly. This quality assurance system, developed on latest technologies, complies with the requirements of international regulations. Klaus Union is a DIN EN ISO 9001 certified Company.

### Twin Screw Pumps by Klaus Union are used in

- ▶ Oil & gas
- ▶ Tank storage
- ▶ Chemical and petrochemical industry
- ▶ Power generation and fuel oil systems
- ▶ Shipbuilding

### Twin Screw Pumps by Klaus Union are used for

- ▶ Crude oil and finished-products
- ▶ Low and high viscous products
- ▶ Clean or abrasive products
- ▶ Neutral or corrosive chemicals
- ▶ Fuel oil
- ▶ Lubricating oil
- ▶ Tar
- ▶ Bitumen
- ▶ Asphalt
- ▶ Fats
- ▶ Resins
- ▶ Residues





# Klaus Union Twin Screw Pump Design

Casted Pump Casing for Operating Pressures of 16, 40 and 100 barg (232, 580, 1450 psig)

Casted Replaceable Casing Insert (Liner)

Single or Double Acting Mechanical Seal, Conventional or Cartridge Design

Pump Screws from Single Piece Bar Stock, low Pulsation Design with optimized Screw Profile for minimized Power Consumption

Herringbone Type Timing Gears with Clamping Device. Reliable Torque Transmission and easy Screw Adjustment

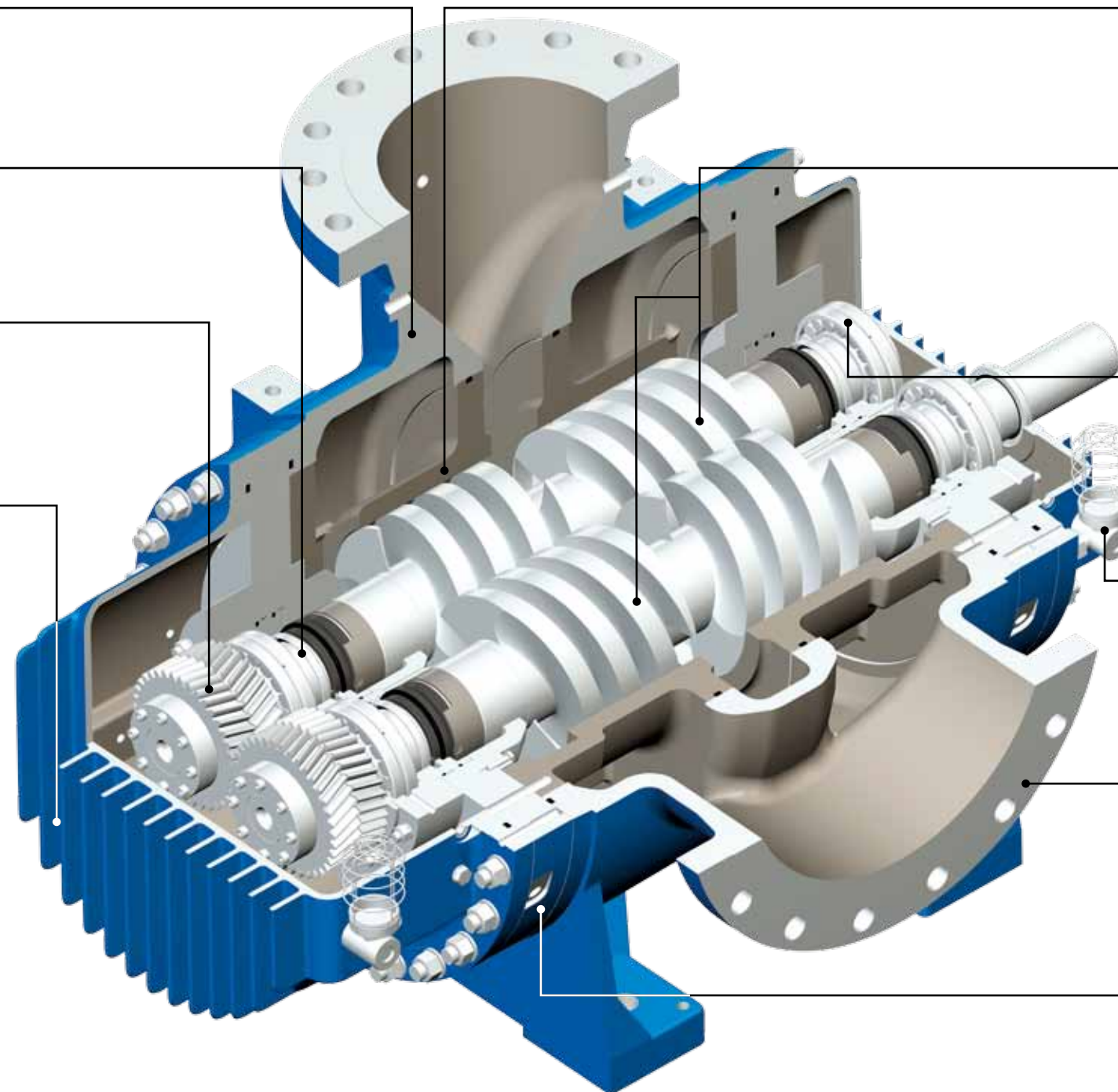
Heavy Duty Spherical Roller Bearings, Oil Lubricated

Large Bearing and Gear Covers with Oversized Cooling Fins. Reduced need for External Oil System

Constant Level Oilers for Visual Monitoring of the Oil Level

Flanges in accordance with ASME or EN 1092-1

Casing Covers with Connections for Seal Flushing, Quench and Instrumentation





# Klaus Union Performance Technology – Worldwide

### Performance Data

Flow Rate	max. 5.000 m3/h (22,000 GPM)
Differential Pressure	max. 100 bar (1,450 psi)
Viscosity	max. 100,000 mm²/s (cSt)
Temperature	max. 350°C (662°F)

Higher flow rates upon request.

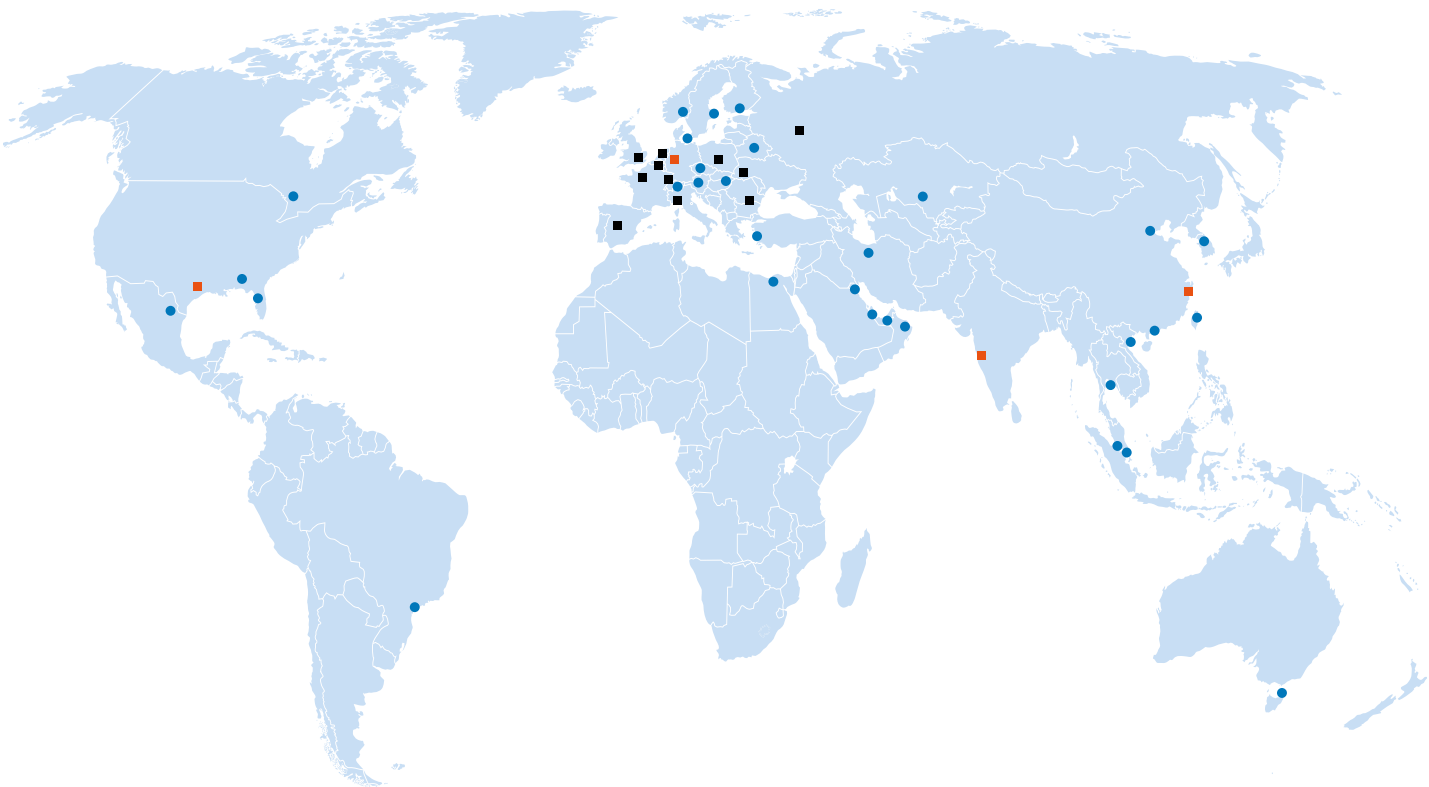
### Construction Materials

Pump Casing	Cast Carbon Steel 1.0619 (similar to A216WCB) Cast Stainless Steel 1.4408 (similar to A351 CF8M)
Casing Insert	Cast Carbon Steel 1.0619 (similar to A216WCB) Cast Stainless Steel 1.4408 (similar A351 CF8M)
Casing Cover	Carbon Steel or Stainless Steel 1.0425 (similar to A285C) Stainless Steel 1.4571 (similar to 316 Ti)
Screws	Carbon Steel 1.7139 (similar to A322-5117), hardened Stainless Steel 1.4542 (similar to UNS S17400), hardened
Shaft Seals	Depending on the actual operating conditions

Upon request, Klaus Union Screw Pumps, Series DSP, can be offered in special construction materials matching the particular application.

### User Advantages

- ▶ Twin screw rotors (screws and shafts) made of a single piece of bar stock
  - ▶ Maximum allowable rotor deflection limited to a minimum of the radial clearance between liner and rotor under max. operating conditions
  - ▶ Rotors manufactured in energy efficient design
- ▶ Rotors manufactured in low-pulsation-design
  - ▶ Rotors manufactured in low-NPSHR-design
  - ▶ Gear designs with helical gear teeth
  - ▶ Interchangeable liner
  - ▶ Seal design with integrated flushing plans available



- Australia
  - Austria
  - Belarus
  - Belgium
  - Brazil
  - Canada
  - China, Ningbo
  - Czech Republic
  - Denmark
  - Egypt
  - England
  - Klaus Union Center of Competence
- Finland
  - France
  - Germany, Bochum
  - Hungary
  - India, Pune
  - Indonesia
  - Iran
  - Italy
  - Kazakhstan
  - Kuwait
  - Malaysia
  - Klaus Union Subsidiary
- Mexico
  - Netherlands
  - Norway
  - Oman
  - Poland
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  - Romania
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