Screw Pumps
Maximize your margins – with our twin screw, triple screw and multiphase pumping systems.
YOUR KEY ADVANTAGES:
▪ Built to DIN/ISO or API-676 standards
▪ Wide range of fluids
▪ High and low viscosities
▪ Handles low lubricity fluids
▪ Good self-priming and suction
▪ Low pressure and flow pulsation
▪ Low vibration and noise level
▪ Wide range of constructions
▪ Wide range of materials
▪ Multiphase pumping
▪ Handles fluid impurities
▪ Easy maintenance

TYPICAL APPLICATIONS:
▪ Upstream exploration and production
▪ Midstream transportation
▪ Downstream processing
▪ FLARE / KO DRUM
▪ Offshore platforms
▪ Power plants
▪ Cargo pumps
▪ Food, Cosmetic and Pharma industry
▪ Multiphase fluid pumping
▪ Stripping services
▪ Asphalt services
EXCELLENT PUMPING PERFORMANCE FOR ALMOST ALL FLUIDS:
Oil Dynamics Twin Screw Pumps

Oil Dynamics supplies you with pumping solutions that are high-quality and efficient. First-class pumping systems with the latest technology achieve reliable solutions which boost your productivity and meet all your requirements – with no ifs, ands or buts.

Our twin screw pumps are self-priming, double suction pumps designed for continuous service in high viscosity applications. Manufactured in many different sizes, their design provides complete axial balancing of the rotating elements and eliminates all metal-to-metal contact within the pump. They are designed for pulse-free flow and high suction lift / self-priming capabilities – and deliver smooth, constant flows across a wide range of viscosities, temperatures, and pressures.

Tackling the future with cutting-edge technology

Oil Dynamics is a technology leader for pumping systems. Whether it is a twin or triple screw pump, a multiphase pumping system or any other pumping application, our systems are built to produce the necessary head and flow combination, flexibly and efficiently. Most of our pumping systems can quickly be adapted to changing production requirements by using the Oil Dynamics ElektroMOTION Technology for process control and monitoring.

The result: Pumping systems that allow you to handle an extensive pressure and flow range for both single and multiphase fluids in many industries. High quality system components and first class technology partners enable us to supply state-of-the-art products assure our clients optimized production results in combination with outstanding life cycle results.

Built to boost your business:
the twin screw pump

With the twin screw pump, there is no metal-to-metal contact within the pump housing while pumping. This boosts your pumping performance – even with non-lubricating and corrosive and contaminated fluids.

As the pump rotates, the intermeshing of the two screws along with the pump housing form chambers. These chambers will move the fluid from the suction to the discharge side of the pump.

Simple change of the shaft direction

It’s as easy as it sounds: The twin screw pump allows a reverse flow by simply changing the shaft direction. The suction then becomes the discharge and vice versa – without any modifications to the pump.

MODULAR CONSTRUCTION:
- Safety first
- Cast or welded pumps
- Short or long versions
- With and without liners
- High temperature executions
- Multiple bearing arrangements
- Job specific designs
- Taylor made peripherals (seals, lube oil and cooling systems, valves, starting gear)
BEST SYSTEM TECHNOLOGY

High quality components are building a rugged pumping system for flexible operations and best operating efficiencies under any site conditions.
1. Heavy Duty Pump Skid
Oil field type construction including heavy-duty lifting lugs for ease of transportation on mobile trailers.

2. Main Flow Control Valve
Main flow control valve and other fittings according to site and application requirements.

3. Local Control Panel
Local information board to allow review of operational parameters and emergency shut-down of pumping system.

4. Piping and Instrumentation
Complete piping within skid limits to allow for easy plug and play options. Complete system instrumentation as per customer requirements according to API 614 and API 670.

5. Relief Valve
Relief valve as per API 527 and application requirements to safeguard pumping system against overpressure.

6. Pump Driver
Standard and special design electric motors in full compliance with international standards and site protection requirements.

7. Spacer Coupling and Coupling Guard
Flexatall or elastomer API 671 / ISO 10441 spacer coupling allows for easy replacement of mechanical seals, bearings and screws. No need to disconnect suction or discharge flanges. Coupling Guard non sparking and fully compliant with OSHA & ISO / ANSI requirements.

8. Liquid Knock-Out Drum & Suction Strainer
Protects screws from solids and other obstructive particles. Provides liquid for lubrication of screws and mechanical seals during operation.

9. Front Bearing Housing
Contains heavy-duty bi-directional bearings and mechanical sealing systems as per application and API 682/610 requirements.

10. Twin Screw Pump
API 676 Radially split, fabricated or cast pump casing with heavy-duty twin screws and pump shafts. Internal liquid recirculation for secure lubrication. Materials of construction according to application requirements.

11. Rear Bearing Housing
Contains timing gear as per AGMA 6010, oil lubricated heavy-duty bi-directional bearings and mechanical sealing systems as per application and API 682/610 requirements.
INTelligent SYSTEMS FOR MULTIPHASE FLUIDS:
Multiphase Pumping Systems (MPS)

Our Multiphase Pumping Systems (MPS) allow you to move multiphase fluid streams with ease and efficiency – finally. The MPP technology is based on a fully API 676 compliant twin screw concept. The pumps are self/priming and near pulsation free. The MPP helps you greatly to enhance your production of Oil & Gas with a reliable and cost effective technology. Complex, space and operating cost consuming infrastructure and equipment can be widely eliminated.

YOUR KEY ADVANTAGES
- Increased production of oil and gas
- Simple process control
- Maximizes your margins
- Reduces complexity of maintenance
- Eliminates complex infrastructure
- Reduces operating costs
- Simplifies surface facilities
- Increases reliability

TYPICAL WELL APPLICATIONS FOR MPP
- Natural flow-Marginal fields/remote wells with unmanned facilities.
- Wells with increasing water cuts
- Mature wells with low wellhead or bottom hole flowing pressure

Well production increase using MPP technology

STANDARD TWIN SCREW DESIGN

<table>
<thead>
<tr>
<th></th>
<th>Flow</th>
<th>Differential Pressure</th>
<th>Fluid temperature</th>
<th>Viscosity</th>
<th>RPM max</th>
</tr>
</thead>
<tbody>
<tr>
<td>INTERNATIONAL</td>
<td>to 2,700 m³/h</td>
<td>to 5 MPa</td>
<td>to 400 °C</td>
<td>to 10 cSt</td>
<td>1,800</td>
</tr>
<tr>
<td>US UNITS</td>
<td>to 11,800 GPM</td>
<td>to 75 psi</td>
<td>to 750 °F</td>
<td>to 10 cSt</td>
<td>1,800</td>
</tr>
</tbody>
</table>
The conventional system requires multiple separation facilities, gas compressors, flaring systems and pipeline booster pumps. All of which comes with space, cost and maintenance intensive infrastructure.

The Multiphase Pumping System (MPS) eliminates cost and maintenance intensive infrastructure. The MPS will be delivered as stand-alone skid mounted system with a plug and play concept. Relocation to other well clusters is easy and fast. Central Gas Oil Separation Plants (GOSP) allow for larger scale and more efficient separation of gas, oil and water. In offshore environments, space consuming separation can be moved to less expensive onshore locations.
THEIR SMART DESIGN MAKE THEM RELIABLE AND EFFICIENT:

Triple screw systems

Our triple screw pumps are versatile pumps as they are able to handle fluctuating flow rates and pressures without losing efficiency.

Triple screw pumps are self-priming rotating positive displacement pumps and commonly used in offshore and marine industries to move high-pressure viscous fluids with a minimum lubricating quality.

The simple but smart design makes the triple screw pumps reliable and efficient: Three screws that rotate in opposite directions drive the liquid forward in a closed chamber and along the screws’ spindles.

The accurate hydraulic balance and the special profile of the screw thread guarantee a continuous flow with minimum pulsations and turbulence, resulting in extremely low noise levels even at high rotational speed.

TRIPLE SCREW FEATURES

- Variety of Materials: CI, SS grades, Bronze, Chrome or special coating
- Several sealing arrangements.
- Reliable bearings
- Smooth flow, pulse free
- Self priming
- No foams
- Mounting and Nozzle arrangement flexibility

OPTIONS

- Internal relief valves
- Hardened shafts or screws
- Painting to customers specifications
- Threaded or flanged ports / DIN or ANSI standards

STANDARD TRIPLE SCREW DESIGN

<table>
<thead>
<tr>
<th></th>
<th>Flow</th>
<th>Pressure</th>
<th>Fluid temperature</th>
<th>Ambient temperature min.</th>
<th>Ambient temperature max.</th>
<th>Max Drive Power</th>
<th>RPM min</th>
<th>RPM max</th>
</tr>
</thead>
<tbody>
<tr>
<td>INTERNATIONAL</td>
<td>550 m³/h</td>
<td>200 bar</td>
<td>250°C</td>
<td>-20°C</td>
<td>+60°C</td>
<td>300 KW</td>
<td>100 RPM</td>
<td>3,600 RPM</td>
</tr>
<tr>
<td>US UNITS</td>
<td>2,420 GPM</td>
<td>2,900 psi</td>
<td>482°F</td>
<td>-4°C</td>
<td>+140°F</td>
<td>402 HP</td>
<td>100 RPM</td>
<td>3,600 RPM</td>
</tr>
</tbody>
</table>
MORE LONG-TERM RELIABILITY AND EFFICIENCY

The smart drive system configuration with the ElektroMotion Technology™ by Oil Dynamics

For the most demanding operating conditions: the outstanding ElektroMotion Technology™ significantly improves the long-term functionality of your pumping systems.

With variable frequency drives, switchboards, pump control systems and remote monitoring solutions, tailor-made for your HPS-system and intelligently configured for your special process conditions, ElektroMotion Technology™ stands for an outstanding technical solution and will enhance the long-term functionality, reliability and efficiency of your system.

The unique ElektroMotion Technology™

ElektroMotion is an innovative series of unique state-of-the-art electrical systems that can be combined to satisfy the requirements of any demanding application. All system components are tested under load and for full functionality in our facility before delivered to the field. All ElektroMotion products can be provided for indoor and the most demanding outdoor service including desert and offshore conditions.

For conventional operations: Screw pump smartSWITCHBOARD

THE HIGHLIGHTS:
- small foot print
- wide operating range
- robust design with variable enclosures
- full CE compliance
- many valuable options
- low maintenance
- economical investment

For 24/7 information at any location of choice: Screw pump smartMONITORING

THE HIGHLIGHTS:
- Maintenance Staff can monitor the operating condition of each single system component
- Production Engineers can monitor and predict station performance and the production of the past and upcoming weeks
- Field Managers can see the up-time of each pumping system and schedule necessary intervention
WE STRIVE TO MAKE YOU BETTER
The Oil Dynamics Service

The world has become smaller. Competition stronger. Service makes the difference. The Oil Dynamics Service not only keeps your pumping systems running: our service also helps you to exploit your full potential and to maximize the utilization of your production facilities.

Service makes the difference

At Oil Dynamics Service does not just come into play when things go bad; our service assures that everything goes well all the time, that your system produces with best efficiency, that you maintain your best possible MTBF.

We make sure your employees can utilize their experience in the best possible way. In short: Oil Dynamics’ service helps you to optimize your production and operational efficiency.

Onshore and offshore at the highest level: our Field Service

Oil Dynamics Field Service engineers have extensive industry and cross-OEM experience and hence the capability to work on many pump types and system components within the Oil & Gas market – onshore and offshore. Whether you require technical support on site, supervision service for your installation, inventory control and management or system optimization, Oil Dynamics will ensure that you will receive the right response with highly skilled and trained personnel.

OUR SERVICES:
- Field installation and start-up
- Field project management
- System troubleshooting
- Field engineering
- System and production optimization
- Emergency Field Response (EFR)
- System monitoring service
- Inventory management

WE STRIVE TO MAKE YOU BETTER
The Oil Dynamics Service
From individual components to best-in-class turnkey systems:

Oil Dynamics offers a full range of products and services. As technology leaders in Artificial Lift Systems, we provide complete solutions that are tailor-made to your requirements. Based on our many years of combined experience, we know the industry’s heartbeat: We know what you need. We know what fits to your requirements. You will get what you expect. As your perfect partner we will go out of our way to ease your path to success.

Your success is our success

A true partner: Our team wants to work in close and trustful relationships with our customers and suppliers – in order to develop long-term relations and solutions that fit your individual needs.

German quality culture

Oil Dynamics is a highly flexible company founded by a group of seasoned and experienced professionals from within the Pump- and Oil & Gas industry. We are focused to engineer, manufacture, test, supply and service premium products for the upstream industry both on- and offshore.

ISO certifications

Oil Dynamics has been certified according to the latest standards: ISO 9001:2015 (Quality Management System) and ISO 14001:2015 (Environmental Management System).

We are located in Heidelberg, Metropolitan Region Rhine-Neckar, one of Germany’s most attractive regions and close to the Frankfurt International Airport. Our factory is located in Hockenheim, just a few kilometers away from Heidelberg. It was designed with specific focus on the requirements of artificial lift applications and hence offers a unique range of testing facilities for all our products.

Knowledge is the most valuable asset: the Oil Dynamics Academy

Without knowing what, when or how to do something, even the best system will be useless. Therefore, we make our customers fit for any challenge by passing on our knowledge – with technical classes and hands-on training in our Oil Dynamics Academy.

Come and visit us: We will be happy to show you our testing facilities, our Oil Dynamics Academy and our team!