**Principle**
The Houptuin single entry twin screw pumps series 136 are horizontal rotating self priming positive displacement pumps. Two intermeshing screws rotating in a pump casing ensure high pumping efficiency with constant axial flow and unequalled suction power.

**Construction**
The spindles are supported and axially held in position by ball bearings. The axial thrust incurred is absorbed by the amply sized axial shaft bearings. The transmission of torque from the driven spindle to the idler spindle is effected by oil-lubricated timing gears located outside of the pumping area in an attached gearbox. The ball bearings and timing gears maintain a small clearance between the screws, thus preventing metal to metal contact.

**Shaft sealing**
Single unbalanced mechanical seals keep the liquid to be pumped isolated from the bearings and the gearbox.

**Overload protection**
For protection against overload a built-on spring loaded relief valve can be supplied.

**Applications**
For pumping contaminated or slightly abrasive, lubricating and non-lubricating liquids of low or high viscosity which do not chemically attack the pump materials (corrosion proof materials can be offered).

In the chemical and petrochemical industry, soap- and fat industry, paint and lacquer industry, food and beverage industry, plastics industry, sugar industry, shipbuilding, environmental engineering (e.g. for removal of wast oils, solvents and chemicals) etc.

**Products**
Polluted water  
Soap and fat  
Paint and lacquer  
Food and Beverage

**Labelling**
Slurry pumps  
Metering pumps  
Transfer pumps

**Performance data**

<table>
<thead>
<tr>
<th>Capacity</th>
<th>( Q )</th>
<th>up to 20 ( m^3/h )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Viscosity range</td>
<td>( V )</td>
<td>0.6 to 1500 cSt</td>
</tr>
<tr>
<td>Temperature of pumped liquid</td>
<td>( t )</td>
<td>up to 120 °C</td>
</tr>
<tr>
<td>Inlet pressure</td>
<td>( p_s )</td>
<td>up to 1 bar</td>
</tr>
<tr>
<td>Outlet pressure</td>
<td>( p_d )</td>
<td>up to 10 bar</td>
</tr>
<tr>
<td>Difference pressure</td>
<td>( \Delta p )</td>
<td>up to 11 bar</td>
</tr>
<tr>
<td>Speed</td>
<td>( n )</td>
<td>up to 3500 rpm</td>
</tr>
<tr>
<td>Flanges</td>
<td></td>
<td>according to DIN or ANSI</td>
</tr>
</tbody>
</table>

A preliminary pump selection can be effected by means of the performance graphs. For the exact performance data as function of the viscosity of the fluid to be pumped and the pump speed, please refer to the individual characteristics.

**Available Materials**

<table>
<thead>
<tr>
<th>Pump</th>
<th>Mechanical seal according to DIN 24960 / API</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Screw shafts</strong></td>
<td><strong>Casing and seal cover</strong></td>
</tr>
<tr>
<td>- Stainless Steel (Type 400)</td>
<td>- Cast Iron</td>
</tr>
<tr>
<td>- Stainless Steel (Type 300)</td>
<td>- Cast Steel</td>
</tr>
</tbody>
</table>
PERFORMANCE GRAPHS

Flow rate/pressure at minimum and maximum viscosity according to pump size. For exact performance data dependant of viscosity and rpm please refer to the individual characteristics per pump size.
For **over load protection** a direct mounted pressure relief valve is optional.

The bearing of the driving shaft and the idler shaft is in the gear box: on the pump side, one combined radial needle bearing/axial grooved ball bearing each and on the drive side an axial cylindrical roller bearing and a needle bearing. All bearings are oil-lubricated.

**Safe shaft sealing** by single unbalanced and product lubricated mechanical seals.

The special profile of the spindle flanks results in **continuously and nearly pulsation-free pumping, high efficiency, good NPSH-values and constant pressure course.**

**Safe transmission of torque** through the hardened and ground oil lubricated timing gears.
Suction and discharge flanges PN 16 DIN 2533

<table>
<thead>
<tr>
<th>AUXILIARY CONNECTIONS</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>FC</td>
<td>Filling</td>
<td>BSP 1/2&quot;</td>
</tr>
<tr>
<td>FD1</td>
<td>Drainage pump casing</td>
<td>BSP 1/2&quot;</td>
</tr>
<tr>
<td>FD2</td>
<td>Drainage pump casing</td>
<td>BSP 1/2&quot;</td>
</tr>
<tr>
<td>GC1</td>
<td>Oil filling and venting</td>
<td>BSP 1/2&quot;</td>
</tr>
<tr>
<td>GC2</td>
<td>Oil slight glass</td>
<td>BSP 1/2&quot;</td>
</tr>
<tr>
<td>GD</td>
<td>Oil drainage</td>
<td>–</td>
</tr>
<tr>
<td>PM1</td>
<td>Pressure gauge</td>
<td>BSP 1/2&quot;</td>
</tr>
<tr>
<td>PM2</td>
<td>Pressure gauge</td>
<td>BSP 1/4&quot;</td>
</tr>
<tr>
<td>QA 1 (1)</td>
<td>Quenching mechanical seal, inlet</td>
<td>BSP 1/4&quot;</td>
</tr>
<tr>
<td>QB 1 (1)</td>
<td>Quenching mechanical seal, outlet</td>
<td>BSP 1/4&quot;</td>
</tr>
</tbody>
</table>

(1) Connections on both sides (per shaft seal)

Dimensions in mm, dimensions are subject to alternations.
WEIGHT (CA); INCL. RELIEF VALVE: 80 KG.
STANDARD PUMPS

With Internal Bearings

for lubricating liquids
viscosity range : 20 - 760 cSt
     : 98 - 3500 SSU

With External Bearings

for non-lubricating liquids
viscosity range : 0.6 - 1500 cSt
     : 32 - 7000 SSU

With External Bearings

for lubricating and non-lubricating liquids
viscosity range : 0.6 - 100,000 cSt
     : 32 - 466,000 SSU

ENGINEERED PUMPS

With External Bearings

for lubricating and non-lubricating liquids
viscosity range : 0.6 - 100,000 cSt
     : 32 - 466,000 SSU

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