

**SERIES 231.50**

SELF-PRIMING VERTICAL SCREW PUMP FOR NON LUBRICATING LIQUIDS

**PRODUCTS**

WATER

SEAWATER

OILS

HEAVY FUEL OILS

LIGHT PRODUCTS

CHEMICALS

**LABELLING**

CARGO PUMPS

TRANSFER PUMPS

BILGE/BALLAST PUMPS

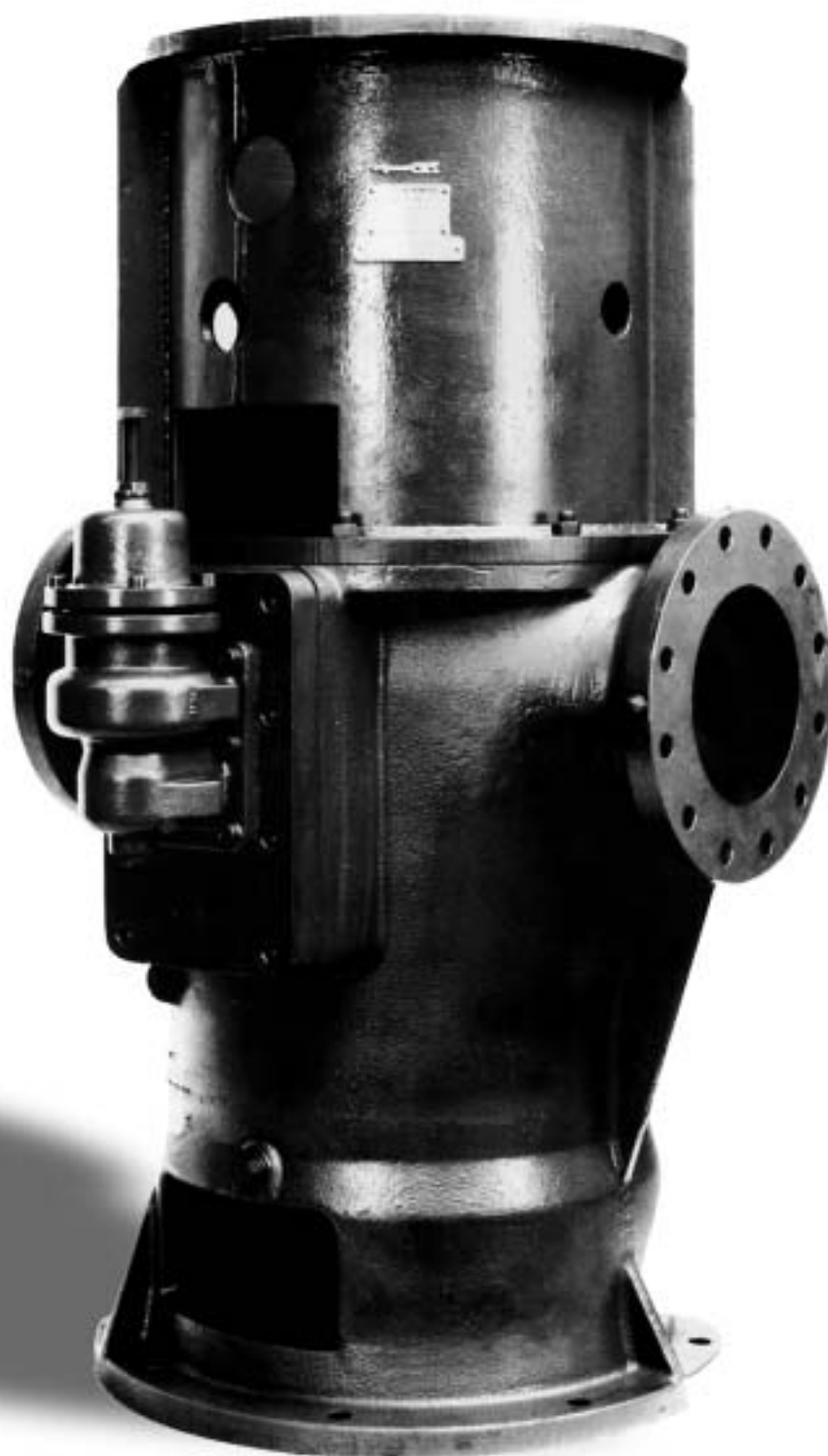
STRIPPING PUMPS

TRIM PUMPS

COOLING WATER PUMPS

FIREFIGHTING PUMPS

GENERAL SERVICE PUMPS





**Principle**

The Houttuin double entry twin screw pumps series 231 are vertical rotating self priming positive displacement pumps.

Two inter-meshing screws rotating in a pump casing insert 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 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**

In standard design the pump is fitted with single unbalanced mechanical seals, with fluid chamber if required.

**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 petro-chemical industry, soap and grease industry, paint and lacquer industry, food and beverage industry, plastics industry, sugar industry, environmental technology, in the shipbuilding industry.

**Products**

- Water
- Seawater
- Oils
- Heavy fuel oils
- Light products
- Chemicals

**Labelling**

- Cargo pumps
- Transfer pumps
- Bilge/ballast pumps
- Stripping pumps
- Trim pumps
- Cooling water pump
- Firefighting pumps
- General service pumps

**Performance data**

|                              |                |                             |
|------------------------------|----------------|-----------------------------|
| Capacity                     | Q              | up to 535 m <sup>3</sup> /h |
| Viscosity range              | V              | 0,6 to 5000 cSt             |
| Temperature of pumped liquid | t              | up to 140 °C                |
| Inlet pressure               | p <sub>s</sub> | up to 10 bar                |
| Outlet pressure              | p <sub>d</sub> | up to 16 bar                |
| Difference pressure          | Δp             | up to 16 bar                |
| Speed                        | n              | up to 2900 rpm              |
| Flanges                      |                | according to DIN or ANSI    |

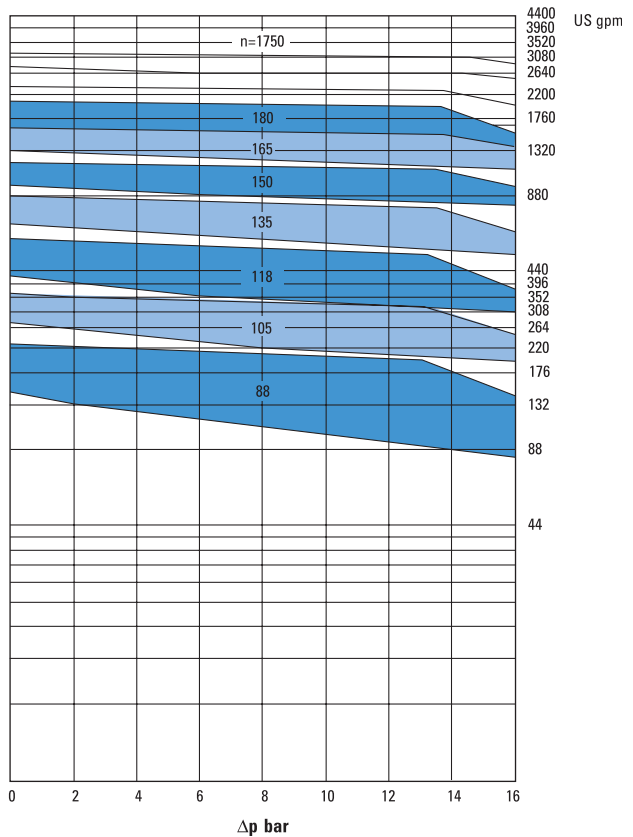
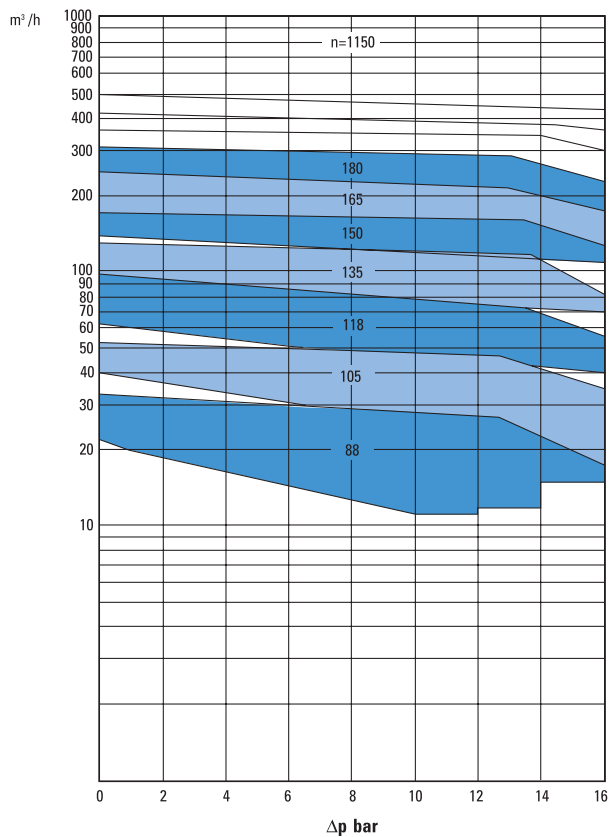
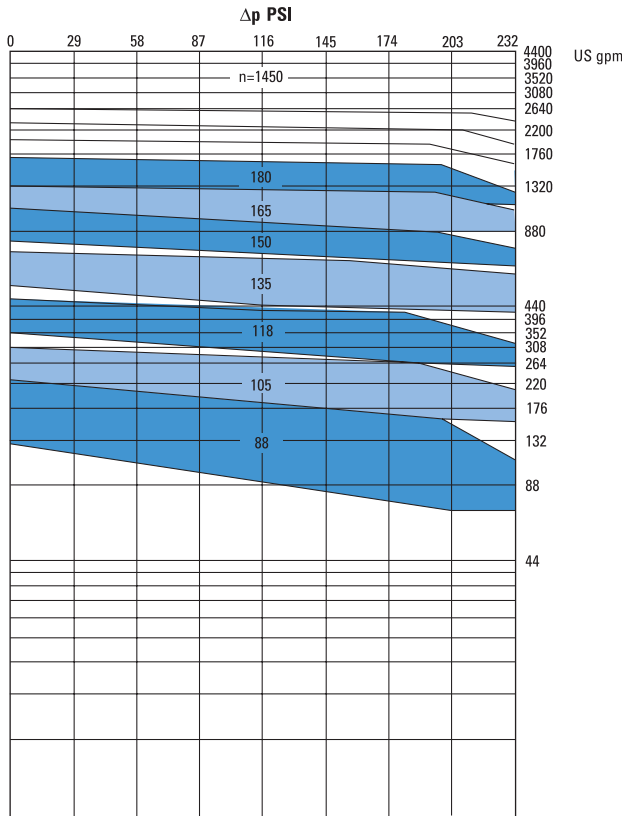
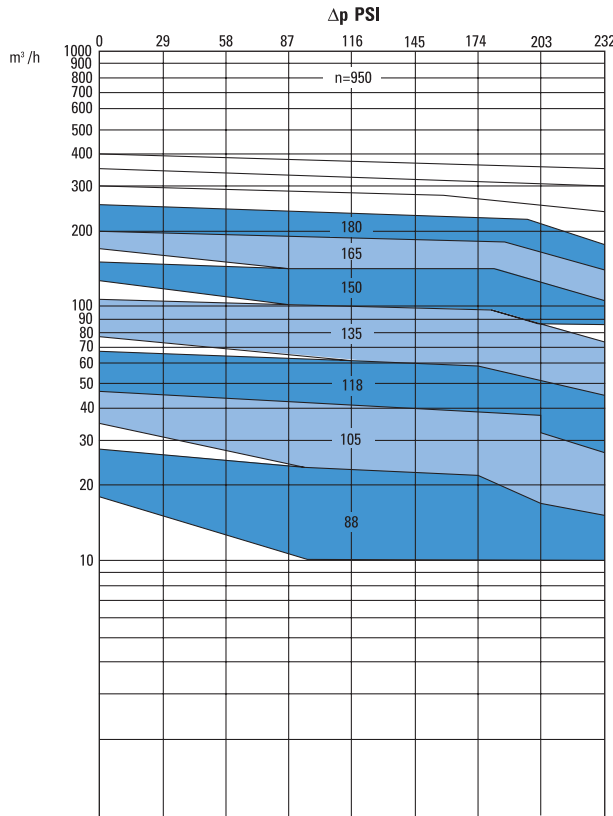
A preliminary pump selection can be effected by means of the performance graphs. For the exact performance data as function of the viscosity of the liquid to be pumped and the pump speed, please refer to the individual characteristics.

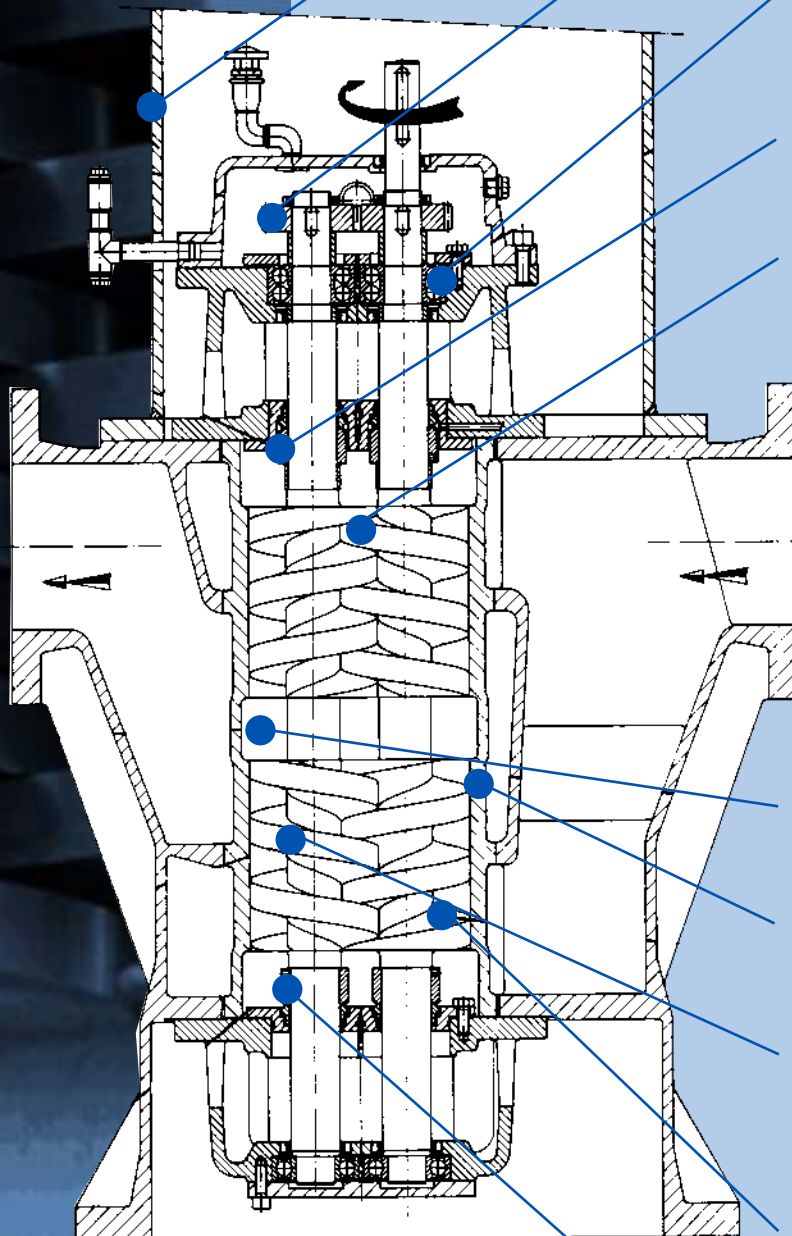
**AVAILABLE MATERIALS**

**FOR PUMP AND MECHANICAL SEALS:**

| Pump                            |               |                             |              | Mechanical seal according to DIN 24960 / API |             |            |
|---------------------------------|---------------|-----------------------------|--------------|--|-------------|------------|
| Screw shafts                    | Casing insert | Casing                      | Covers       | Seal faces                                   | Springs     | 'O' -rings |
| - Carbon Steel                  | - Cast Iron   | - Cast Iron                 | - Cast Iron  | - Chrome Steel or                            | - Stainless | - Viton    |
| - Carbon Steel                  | - Nodular     | - Nodular                   | - Cast Iron  | - Silicon Carbide                            | Steel       | - Teflon   |
| - Stainless Steel<br>(Type 400) | Cast Iron     | Cast Iron                   | with coating | against                                      | (Type 300)  |            |
| - Stainless Steel<br>(Type 300) | - Ni-Resist   | - Ni-Resist                 |              | - Carbon                                     |             |            |
|                                 | - Bronze      | - Cast Iron<br>with coating |              |  |             |            |
|                                 |               | - Bronze                    |              |  |             |            |

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.





Drive by **commercial standard motors**, construction V1, all types of enclosure possible, therefore a motor bracket is optional.

**Safe transmission of torque** through the hardened and ground oil lubricated timing gears

**Amplly dimensioned** oil lubricated and **maintenance free ball bearings**, which additionally serve for the axial location of the spindles.

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

For **over load protection** a direct mounted pressure relief valve is optional

**Axial forces balanced** through double entry spindles

**Interchangeable casing insert** therefore different materials possible.

Rigid spindles of solid material therefore compared with multi-part spindles **no crevice corrosion**.

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

In standard design the pump is fitted with single unbalanced mechanical seals, **if required with fluid chamber for flushing or quenching**.



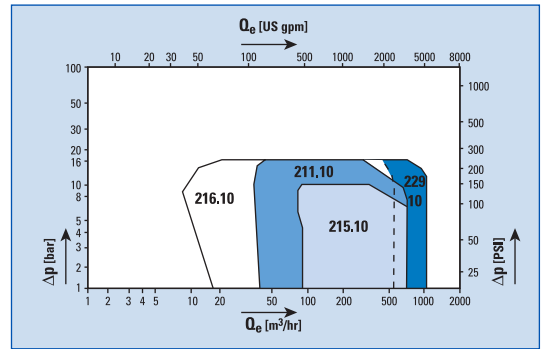


\*) The diagrams show the performance range of the different pump series in our pump program and are for information only.

**STANDARD PUMPS**

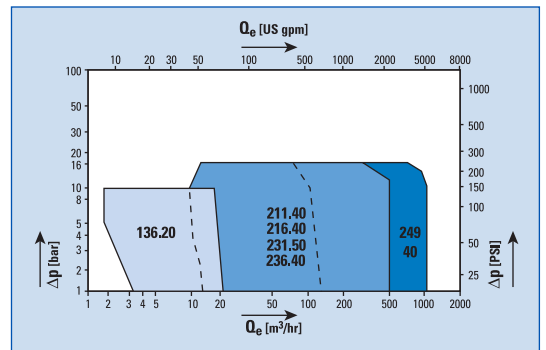
**With Internal Bearings**

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



**With External Bearings**

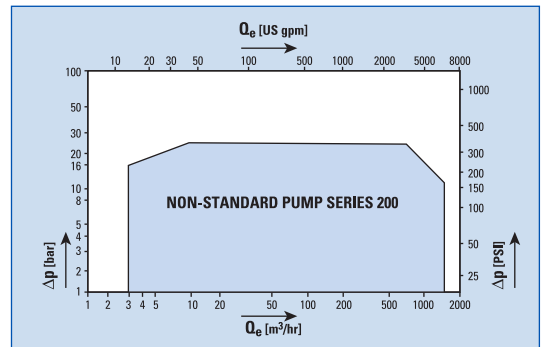
for non-lubricating liquids  
 viscosity range : 0,6 - 1500 cSt  
 : 32 - 7000 SSU



**NON-STANDARD PUMPS**

**With Internal and External Bearings**

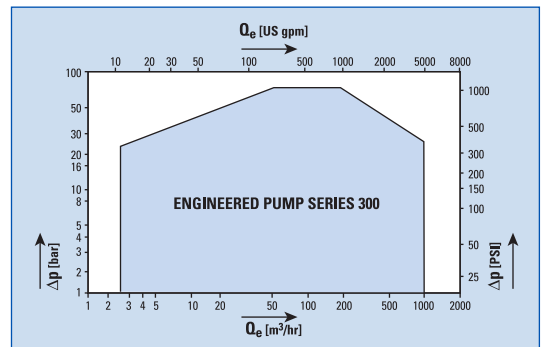
for lubricating and non-lubricating liquids  
 viscosity range : 0,6 - 100.000 cSt  
 : 32 - 466.000 SSU



**ENGINEERED PUMPS**

**With Internal and External Bearings**

for lubricating and non-lubricating liquids  
 viscosity range : 0,6 - 100.000 cSt  
 : 32 - 466.000 SSU



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