

## 1 Main use

Progressive cavity pumps(PCP) type GP 60.24 are used on oil and gas fields in Romania, for specific applications:

- crude oil circulation
- circulation and injection of salt water
- circulation of crude oil and salt water mixture

## 2 Categories of pumps

- crude oil
- salt water

## 3 Recommendations regarding pump type selection, depending on the fluid

Suction from the crude oil compartment of the separator, oil content  $\geq 75\%$  → crude oil pump

Suction from the crude oil tank, oil content  $\geq 75\%$  → crude oil pump

Salt water injection → salt water pump

Salt water circulation → salt water pump

Cycle pumping of crude oil and salt water → salt water pump

Crude oil pumping, salt water in mixture  $\geq 75\%$  → salt water pump

Crude oil pumping, crude oil in mixture  $\geq 25\%$  → crude oil pump

## 4 Symbols

### Pump type GP 60.24

|             |                     |   |                         |
|-------------|---------------------|---|-------------------------|
| Symbol      | <b>GP</b>           | <b>60</b>                               | <b>24</b>               |
| Description | <b>Pumping unit</b> | <b>Maximum flow at maximum pressure</b> | <b>Maximum pressure</b> |

## 5 Technical characteristics

|                            |  |
|----------------------------|--|
| Motor                      | 37 ; 55 ; 75 kW / 400 ; 500 V / Ex.dII CT4 |
| Motor speed                | 980 rpm                                    |
| Belts type                 | XPB - 2800                                 |
| Number of belts            | 9  |
| Maximum discharge pressure | 24 bar                                     |



## 8 Nozzles

| No | Flanged nozzle | Thread nozzle | Purpose                       |
|----|----------------|---------------|-------------------------------|
| R1 | Dn200/Pn16     | -             | Suction connection            |
| R2 | Dn150/Pn25     | -             | Discharge connection          |
| R7 | -              | 1/2NPT        | Safety equipment on discharge |
| R8 | -              | 1"NPT         | Safety equipment on suction   |

## 9 Optional equipment

Optional equipment serves as a purpose the protection of pump at start and in operation, leading to an increase of the lifetime of the pump.

### Heat tracing

In case ambient temperature may drop below 5°C, it is recommended to use our 15 °C electrical heat tracing kit for the pump in order to protect the stator's elastomer.

### Pump protection equipment

Due to the fact that pump's stator is lined with elastomer, exceeding the limit temperature due to the friction between rotor and stator may result in permanent damage of the stator. The most frequent situation that may result in destroying the stator is running the pump with no liquid. In order to avoid this, it is mandatory to equip the pump with a sensor for liquid detection, that in case of operation with no liquid determines the motor stop.

In order to avoid exceeding the limit pressure on the discharge it is mandatory to equip the pump with a pressure sensor, that in case of excess, determines the motor stop.

In order to avoid back flow from the discharge line into the pump after motor stop, that leads to reversing the pump and possible damages on the transmission, it is mandatory to equip the discharge line, downstream of the pressure sensor, with a one way valve designed for the maximum pressure.

### Electrical panel

Pump can be delivered with a separate electric panel that can be installed outside the Ex zone and provide the following functions:

- soft starting, leading to a reduced effort on the fit area between the rotor and the stator, thus to an extended lifetime of the pump
- motor on/off
- warning and stop in case of overpressure on discharge
- warning and stop in case of no liquid at the inlet

### Mechanical sealing

In case it is not specifically requested, pumps are delivered with soft sealing. Upon request we can provide also mechanical sealing, cartridge type.