

## Technical specification for pumping set

**Quantity:** Five sets

**Type:** Horizontal Centrifugal Pump

**Pumped fluid:** heavy crude oil

**Climate Conditions:**

- Max. Temperature: 50°C
- Min. Temperature : -5 °C
- Humidity: Approx. 30% – 75%
- Atmosphere: desert-sandy

### **TECHNICAL SPECIFICATION OF THE REQUIRED PUMPING SET**

#### **Pump's Specification**

- Horizontal Centrifugal Pump According to API610.
- Flow Rate 50 m<sup>3</sup>/h , design flow 55 m<sup>3</sup>/h
- Suction Pressure 0,1 – 0.2 bar
- Discharge pressure : 5 bar
- Differential head not less than 30 m
- Suction/Discharge connection: Flang type RF #150
- Out door installation
- Pump's Material suitable for Oil and its Products S1 acc. To API610 annex (H) .  
Material Description must be shown in details in the offer.
- Connection pump/motor with flexible coupling or MFC Recommendation.
- Seals to be single mechanical Seal.

#### **Electrical Motor's Specification**

Motor Design ( Construction, Installation, wiring, Testing ..etc) According to latest edition of following international standards and codes IEC60034, IEC60072, IEC60079, IEC60085. in Hazardous area in addition to standard IEC60079 can be added the other European standard EN50014, EN50016, EN50019, EN50020.

The capacity of the Motor shall fit the capacity of the pump at different operation conditions to ensure pressure and flow rate revelant to main pump operation in pumping oil according to the attached performance curve of main pump and data shown above.

- Class : Class S1
- Voltage : 380 VAC

- Frequency: 50 Hz  $\pm$  2%,
- Power factor : not less than 85%
- Temperature rise: Class B,
- Insulation Protection: IP65 preferred / IP 55 acceptable.
- Insulation: Class F
- Enclosure: Explosion Proof EExdIIBT3
- Motor starting shall not cause voltage drop more than 15% of nominal voltage.
- Motor shall be capable of withstanding without damage overload not less than 10% of nominal capacity.
- Motor shall be capable of satisfactory operation without injuries when voltage drop to 85% of rated voltage in duration defined by MFC.
- Motor shall allow three cold starts in 30 minutes
- Terminal box shall be made of the same material of motor frame with the same IP.
- Fans made of material rust and spark proof.

### **Electrical Panel**

Including and not limited to the following:

- Fuse Switches
- Low Voltage switch Gear Including Open/Close Breaker with all required protection for the motor such : overcurrent , Undervoltage, Earth fault, Negative sequence, Locked Rotor, Thermal Overload.

### **Control & Operation Panel for Pump set ( Pump & Motor )**

#### **Scope of Work**

Required High quality Electrical Panel for Controlling and operation of Pumping set comprising of Pump and electrical Explosion proof Motor with the following specification of the Electrical Motor.

#### **Composition:**

- Start – stop- emergency Stop Push Button.
- Volt & Ampere Meter .
- Remote /Local selector switch
- Signal Lamp for operation Positions.
- Failurr display ( alarm)

**Offer for Spare Parts**

- Required Priced offer for Recommended Spare Parts sufficient for 5 Years for the Pump & Motor.

**Documentation:**

- PUMP's Illustrated catalog.
- Motor's Illustrated catalog .
- Motor's Connection Diagram
- Coupling Leaflet .
- Mechanical Seal Leaflet.
- Pump's data sheet
- Motor's data sheet.
- Dimensional & Sectional drawing with parts list
- Performance Curve.
- Up-To-Date ISO Certificate series 9001 for Pump's & Motor's Manufacturer.