RIG COOLING SYSTEM

Skid mounted Rig Cooling System complete with heavy duty submersible pump interconnected with 60m long armoured cables to explosion proof electric starter control panel. Classified for application in Class I, II Grp C, D, F and G hazardous environment, the suction in-line filters sea water and discharge up 60m of hydraulic hose to rig deck into pressure accumulator to be discharged throut copper nickel pipes into Wilson T48-170 non clog CuNi Spiral nozzles.

The equipments contained therein are as follows;

1) **Type : Deep Submersible Pump**
   - Model : 8080LM3.5
   - Driver Specifications : submersible electric motor
     - Power supply : 460VAC / 3phase / 60 Hz
     - Motor speed : 1800 rpm,  Motor rating : 75 kw
     - Running current at max kw : 123 ampere
     - Rig breaker required : 150 motor rated breaker
     - Starting system : electric soft start
   - Pump Specifications
     - Volume capacity : 8080 liters per minute @ 35m head (3.5bar)
     - Submersible pump cable spec : 60 metre 4 core armoured cable
     - Outlet connection : 6 inch ANSI 150# flange
     - Enclosure class : UL and CSA approved explosion proof
     - Insulation : F class insulation with 1.15 service service factor
     - Material : Cast Iron

2) **Starter system**
   - 2.1) **Type : Electric Starter Control Panel**
     - Manufacturer : Appleton c/w EJB684-N4 junction box,
       Appleton snap switch, Weldmuller Klippon SAK2.5 terminals
     - Classifications : Class I, Grp C and D,
       Class II, Grp F and G.
   - 2.2) **ABB Explosion Proof Armoured Cable**
     - Type : BFCU 0.6 / 1 KV, 4 core, 2.5 mm black terminated
       with Hawke type : ICG 653 flameproof barrier cable gland.

3) **Wilson Spray Nozzles**
   - Type : Spiral Non Clog
     - Model : T48-170
     - Flow rate : 404 liter/sec @3.5 bar
     - Spray angle : 170 degress Full Cone
     - Material : Copper Nickel (CuNi)
     - Connection : 1 inch (M) NPT
     - Qty : 20 pieces
     - Droplets Characteristics
       - D32 : 750u
       - Dv0.5 : 970u
       - Dv0.1 : 430u
       - Dv0.9 : 1800 microns

4) **Skid Construction**
   Constructed of ASTM A36 structural steel material, sandblasted to bare white SA 2.5 and hot dipped galvanised to BS728.
   c/w 30 liter/sec inline bladder accumulator, 60m heavy duty hydraulic hose and stainless steel chain and lifting winch for pump. Slide rail system provides easy removal of pump unit without disturbing discharge piping. Unique flow design utilizes a locking cam action with locator lugs and a large O-ring for positive sealing (no leakage) while allowing a tangential discharge for high efficiency. This is an important feature when pump sea water or slurries; if a tight seal is not achieved, leakage can cause rapid and excessive wear of the mating flanges resulting in reduction of performance as well as increased maintenance costs.
Submersible Motors

Model: 8080LM3.5

Rig Cooling submersible series motors are designed and built specifically for tough slurry pumping. Heavy-duty design features for reliability include:

- UL and CSA Approved Explosion Proof
- Epoxy encapsulated and butt-spliced cable entry system prevents liquid from entering top of motor and provides non-wicking design.
- Permanently lubricated and sealed ball bearings.
- F Class insulation and 1.15 service factor standard.
- Tandem mechanical seals provide complete protection for motor internals.
- Thermal protection standard.
- Dual moisture probes provide early warning of seal failure.
- Conforms to NEMA, IEEE, ANSI and NEC standards.
- High temperature option allows operation to 194°F (90°C).
- c/w 60 Metre Armoured Cable Type BFCU 0.6/1 kv, 4 core, 2.5 sq mm terminated with Hawke Type ICG 653 Flameproof Cable Barrier Gland.