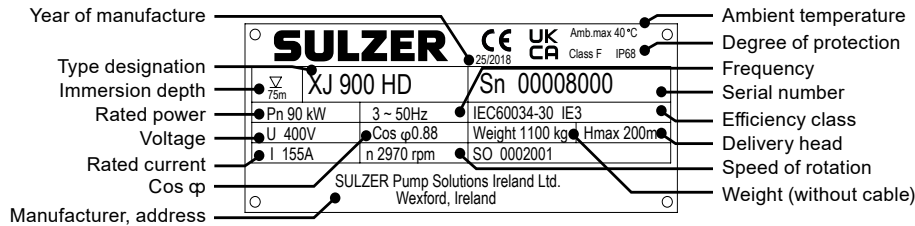

Submersible drainage pump XJ 900



Example of rating plate



Applications

These starting and operating instructions are applicable to the electric submersible pump specified on the cover. The pumps are intended for pumping water that may contain abrasive particles. Pumps can be used partly or fully submersed.



DANGER! The pump must not be used in explosive or flammable environments or for pumping flammable liquids.

The pumps conform to the EU machine directive. See rating plate. The manufacturer guarantees that a new pump will not emit airborne noise in excess of 70 dB(A) during normal operation, when either fully or partially submerged.



CAUTION! The pump must not be run if it has been partially dismantled.



CAUTION! Earth leakage detector (RCD Residual-current device) is recommended to be used when a person can come in contact with either the pump or the pumped media. Special regulations apply for permanent installation of pumps in swimming pools.

Product description

Limitations: Immersion depth: up to 80 m / 260 ft. Liquid temperature: up to 40 °C / 104 °F.

Motor: 3-phase AC squirrel-cage induction motor for 50 Hz or 60 Hz.

Motor protection: For motor protection, the thermal limiters in the motor shall be fitted to an external motor protection. Temperature limiter (bimetallic) in winding = 140 °C / 284 °F (PT 100 can be delivered on special customer order).

Monitoring: For monitoring, motors are equipped with DI-electrodes monitoring ingress of moisture in oil chamber, motor housing and connection chamber. PT100s can be fitted to bearings to add an extra level of protection to the motor.

Electric cable: H07RN8-F, NSSHOEU, SOOW or equivalent cable. If the cable is longer than 50 m, the voltage drop must be taken into account. Note that the pumps can be supplied with different cables and for different connection methods.

Lifting and transport

ATTENTION! Observe the total weight of the Sulzer units and their attached components (see nameplate for weight of base unit).

The duplicate nameplate provided must always be located and visible close to where the unit is installed (e.g. at the terminal boxes / control panel where the cables are connected).

NOTE! Lifting equipment must be used if the total unit weight and attached accessories exceeds local manual lifting safety regulations.

The total weight of the unit and accessories must be observed when specifying the safe working load of any lifting equipment! The lifting equipment, e.g. crane and chains, must have adequate lifting capacity. The hoist must be adequately dimensioned for the total weight of the Sulzer units (including lifting chains or steel ropes, and all accessories which may be attached). The end user assumes sole responsibility that lifting equipment is certified, in good condition, and inspected regularly by a competent person at intervals in accordance with local regulations. Worn or damaged lifting equipment must not be used and must be properly disposed of. Lifting equipment must also comply with the local safety rules and regulations.

NOTE! The guidelines for the safe use of chains, ropes and shackles supplied by Sulzer are outlined in the Lifting Equipment manual provided with the items and must be fully adhered to.

Handling

The pump can be transported and stored either vertically or horizontally. Make sure that it is secured and cannot roll.



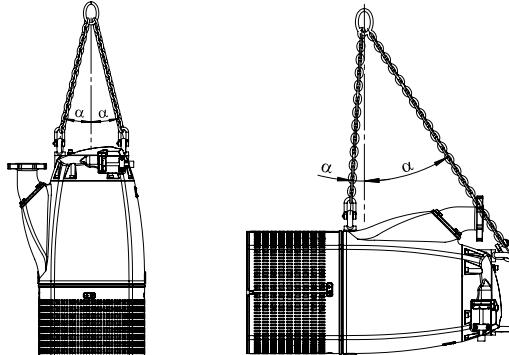
CAUTION! The pump must always rest on a firm surface so that it will not overturn. This applies to all handling, transport, testing and installation.



CAUTION! Always lift the pump by the lifting eyebolts - never by the motor cable or hose.



ATTENTION!



$\alpha \text{ max} \leq 45^\circ$. The angle α between the centre line of the unit and the lifting tools should not exceed 45° .

NOTE! Always protect the cable end so that no moisture will penetrate into the cable. Water could otherwise seep into the terminal compartment or into the motor through the cable.

If the pump is stored for a long period of time, protect it against dirt and heat. After a longer period of storage, the pump must be inspected and the impeller must be rotated by hand before the pump is taken into operation. Check the seals and cable entry particularly carefully.

Installation

Safety measures: In order to reduce the risk of accidents during service and installation work, take extreme care and bear in mind the risk of electrical accidents.



CAUTION! The lifting tackle must always be designed to suit the pump weight. See under the heading "Product description".

Pump installation: Arrange the cable run so that the cables will not be kinked or nipped. Connect the cable. Connect the delivery piping. Hoses, pipes and valves must be selected to suit the pump delivery head. Place the pump on a firm surface which will prevent it from overturning or burrowing down. The pump can also be suspended slightly above the surface by the lifting eyebolts.

Electrical connections

The pump must be connected to power installed at a level at which it cannot be flooded.



CAUTION! All electrical equipment must always be earthed (grounded). This applies both to the pump and to any monitoring equipment.



CAUTION! The electrical installation must conform to national and local regulations.

Check that the mains voltage, frequency, starting equipment and method of starting agree with the particulars stamped on the motor rating plate.

N.B. A pump designed for 400 V 50 Hz, 460V 60Hz can be used in the 380-415V 50 Hz, 440-480V 60Hz range.

Connection of stator and motor conductors

Wiring diagrams are included in the workshop manual.

Cable marking on pump cables:

U1/T1, V1/T2, U2/T3 U2/T4, V2/T5, W2/T6 = phase marking for stator (D.O.L. start).

"F" is used for motor protection, bi-metal limiters and PT100s.

"D" is used for moisture sensors. D1, D2, D3 = seal, motor and connection chamber.

The electrical installation shall be inspected by an authorized electrician.

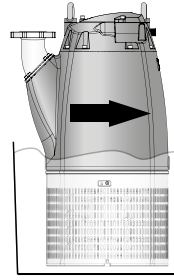
Operation




Before starting:

Check the direction of rotation of the pump (see figure). At the instant of starting, the pump will jerk anti-clockwise when viewed from above. If the direction of rotation is incorrect, transpose two phases.


Minimum submergence depth of 600 mm.

Starting Jerk:






-  **CAUTION!** The starting jerk may be violent. Don't hold the pump when checking the direction of rotation. Make sure that the pump is firmly supported and cannot rotate.
-  **CAUTION!** Reversal of the direction of rotation on a plug that has no phase transposing device may be done only by an authorized person.
-  **CAUTION!** If the bimetallic temperature limiter has tripped, the pump will stop but will restart automatically when it has cooled down.

Service and maintenance

-  **CAUTION!** Before any work is started, check that the pump is isolated from the power supply and cannot be energized.

Regular inspection and preventive maintenance will ensure more reliable operation. The pump should be inspected every six months, but more frequently if the operating conditions are difficult.

For a complete overhaul of the pump, please get in touch with an authorized Sulzer workshop or your Sulzer dealer.

-  **CAUTION!** If a cable is damaged, it must always be replaced.
-  **CAUTION!** A worn impeller often has sharp edges. Take care not to cut yourself on them.
-  **CAUTION!** In the event of inward leakage, the oil housing may be pressurized. When removing the oil plug, hold a piece of cloth over it to prevent oil from splashing.



End-of-life units can be returned to Sulzer or recycled in accordance with local regulations.

SULZER

Sulzer Pump Solutions Ireland Ltd., Clonard Road, Wexford, Ireland
Tel. +353 53 91 63 200, www.sulzer.com