



a **EKKI** Group brand

INSTRUCTION MANUAL FOR OPEN-WELL SUBMERSIBLES

INSTALLATION AND OPERATING INSTRUCTIONS

- Determine the Maximum depth of well and the draw down level at max pump capacity. Pump setting depth should be at least one meter below the max draw down level.
- The Motor should be filled with pure drinking water free of any silt or suspended particles. Replace the water filling drain plugs without fail.
- The Electrical Connections should be carried out by a qualified electrician.
- Earthing should be provided with the motor body.
- Ensure correct size of cable and suitable electrical protection devices like MCB, Cut-off relay, Contactors, etc. are provided.
- Relay should be set for full load current mentioned and single phasing, dry run protection should be used to avoid coil burning on account of dry running and single phasing.
- Check for free rotation of pump and motor before coupling. In case of close coupled/single shaft pump set check free rotation of pump only.
- Check for vertical play before and after coupling. In case of close coupled/single shaft pump set check vertical play only.
- Ensure that only recommended size of piping is used and the pump should be gripped by two flats of pipe wrench.
- The threaded joints of pipe must be well cut and fit together tightly to ensure they do not work loose.
- Ensure the motor cable is not damaged, when pump is lowered into the well.
- Ensure the pump is completely submerged in the liquid, before starting.
- Ensure the pump is not stopped till the water becomes clearer, free of impurities, otherwise pump parts and check valve gets clogged.
- Operate pump set for at least 5 Minutes daily to avoid pump jamming.
- Ensure the inbuilt non return valve, if provided is not removed which shall damage the pump parts.
- Ensure no oversize backup fuse wires are used. This will damage the motor winding in case of short circuiting.
- Ensure the valve is throttled to avoid dry running in case of low discharge.
- Do not test the pump set outside bore in dry conditions as this damages seals and bearings.
- Do not use pump to handle water containing solid / fibrous substances.

TROUBLE SHOOTING

| Fault | Cause | Remedy |
|--------------------------------------|--|--|
| 1. The pump does not run | a. The fuses are blown | Replace the blown fuses. If the new fuses blow too, check the electrical installation and drop cable |
| | b. The circuit breaker has tripped | Reset the circuit breaker |
| | c. No electricity supply | Contact the electricity provider |
| | d. The motor protection has cut off the electricity supply due to overload | Check for Motor / Pump blockage |
| | e. The drop cable is defective | Repair / Replace the pumps cable |
| | f. Overvoltage has occurred | Check the electricity supply |
| 2. The pump runs but gives no water | a. The discharge valve is closed | Open the valve |
| | b. No water or too low water level in well | Allow water to get collected |
| | c. Check valve is stuck in its closed position | Pull the pump and clean or replace the valve |
| | d. The suction strainer is closed | Pull the pump and clean the strainer |
| | e. The pump is defective | Repair / Replace the pump |
| 3. The pump runs at reduced capacity | a. The drawdown is larger than anticipated | Increase the installation depth of the pump Throttle the pump or replace it with a smaller capacity model |
| | b. The valves in the discharge pipe are partly closed / blocked | Check and Clean / Replace the valve as necessary |
| | c. The discharge pipe is partly choked by impurities | Clean / Replace the discharge pipe |
| | d. The non return valve of the pump is blocked | Pull the pump and clean or replace the valve |
| | e. The pump and the riser pipe are partly choked by impurities | Pull out, Check and clean/replace the pump, if necessary clean the pipes |
| | f. The pump is defective | Repair / Replace the pump |
| | g. Hole in discharge pipe | Check and repair the pipe |
| | h. The riser pipe is defective | Replace the riser pipe |
| | i. Under voltage has occurred | Check the electricity supply |
| 4. Frequent starts and stops | a. The differential of the pressure switch between the start & stop pressures is too small | Increase the differential however the stop pressure must not exceed the operating pressure of the pressure tank and the start pressure should be high enough to ensure sufficient water supply |
| | b. The water level electrodes or level switches in the reservoir have not been installed correctly | Adjust the intervals of the electrodes level switches to ensure suitable time between the cutting in and cutting out of the pump. See installation & operating instructions for the automatic devices used. If the intervals between start/stop cannot be changed via the automatics, the pump capacity may be reduced by throttling the discharge valve |
| | c. Non return valve is leaking, Stuck half-open or damaged | Pull the pump and clean / replace the non return valve |
| | d. The supply voltage is unstable | Check the electrical supply |
| | e. The motor temperature is too high | Check the water temperature |

VERTICAL OPEN-WELL SUBMERSIBLES - ASSEMBLED VIEW

