Trouble Check List

Below is a list of common problems and the probable causes.
Refer to Operation & Maintenance Manual for further information.

CONDITION	PROBABLE CAUSE
Pump will not start.	1. No power to the motor. Check for blown fuse or open circuit breaker. 2. Selector switch may be in the off position. 3. Control circuit transformer breaker may be tripped. Push to reset. 4. Constant speed - overload heater on starter may be tripped. Push to reset. 5. Variable speed - check that the drives are in auto (says auto on drive screen). 6. Low suction switch set incorrectly - low suction switch should be set to 10-15 psi. This switch shuts down everything. The switch could also be bad.
Pump will not start and over-load heaters trip.	1. Grounded motor - turn off power and check motor leads with megger or ohm-meter for possible ground. - Check resistance of motor windings - see diagrams. 2. Bearing failure. 3. Start-up debris.
Pump operates with selector switch in hand position, but will not operate in auto position.	1. Pressure transducer failure (if installed). Verify proper pressure reading on operator interface. 2. Low suction switch failure. With power off, set selector switch to auto and install jumper between terminals for low suctio switch. Turn power on; if pump runs, replace low suction switch. 3. Variable Frequency Drive (VFD) failure or VFD not in auto. 4. Intellipump failure. 5. Control power failure. Inspect fuses/circuit breakers on secondary of control transformer.
Pump runs but will not shut off.	1. Pump may be air locked. Turn pump off. Bleed air from system. After several minutes, restart pump. 2. Selector switch may be in the hand position. 3. Constant speed - pressure switches not set properly. 4. Variable speed - minimum speed adjustment not set properly.
Pump does not deliver proper capacity.	1. Discharge valve may be partially closed. 2. Pump may be running in wrong direction. Low speed pumps can operate in reverse direction without much noise or vibration. 3. Discharge head may be too high. Check total head with gage when pump is operating. 4. If pump has been in service for some time and capacity falls off, remove pump and check for wear on impeller. 5. Bleed air from system

Checking Voltage of Motors

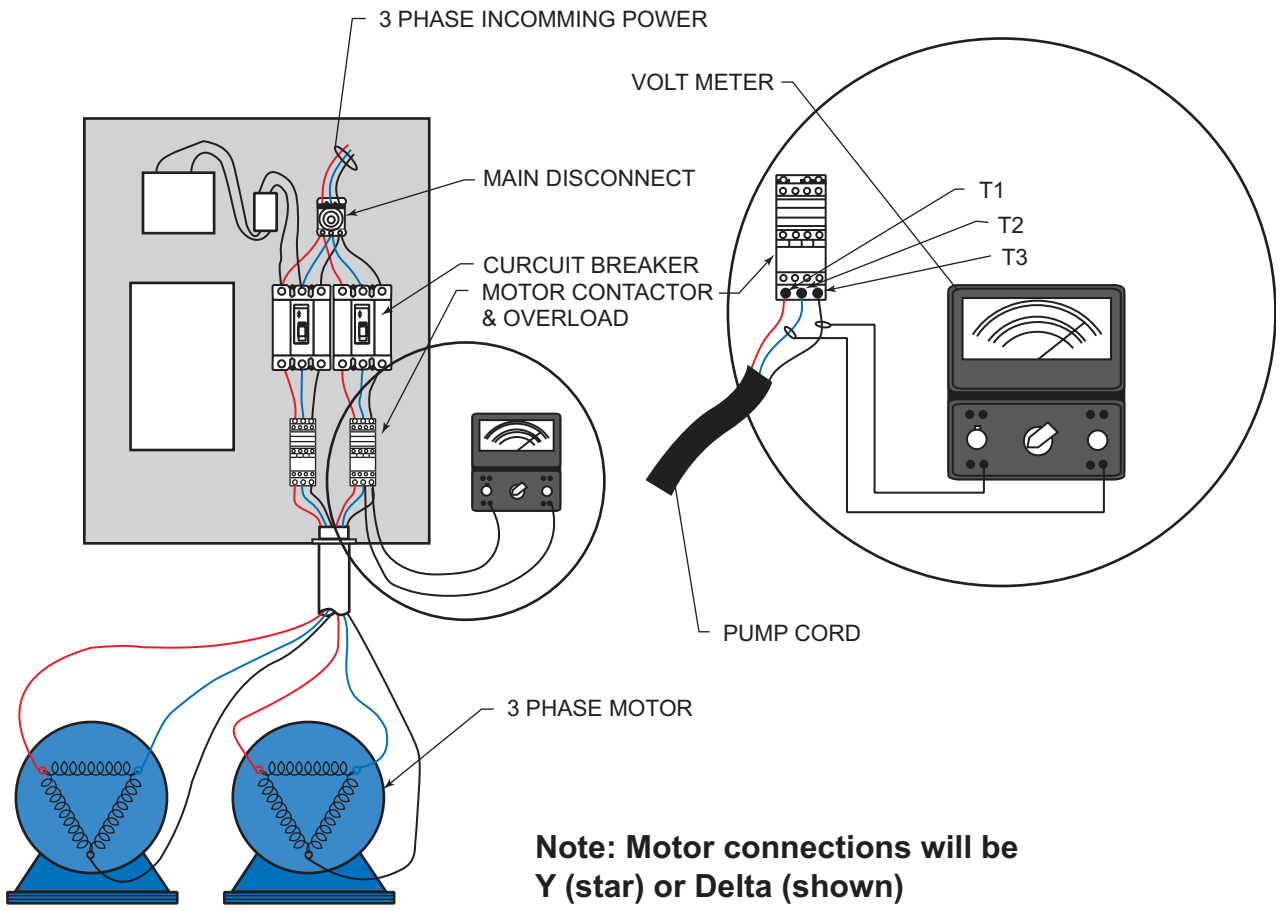
NOTE: With power disconnected, check connections and make sure they are tight!

Set meter for 500 volt AC scale, or a voltage range above the highest expected voltage. With motor running, check voltage between T1-T2, T2-T3, T1-T3. Voltage should be within +/- 10% of nameplate voltage between all legs.

⚠ WARNING

Electric Shock Hazard!

Tests should be conducted by qualified personnel in accordance with all codes and ordinances.



Note: Motor connections will be Y (star) or Delta (shown)

Checking Amperage of Motor

NOTE: With power disconnected, check connections and make sure they are tight!

With motor running, check all three power leads to motor with an amp probe or other meter. All readings must be within +/- 10% of nameplate rating.

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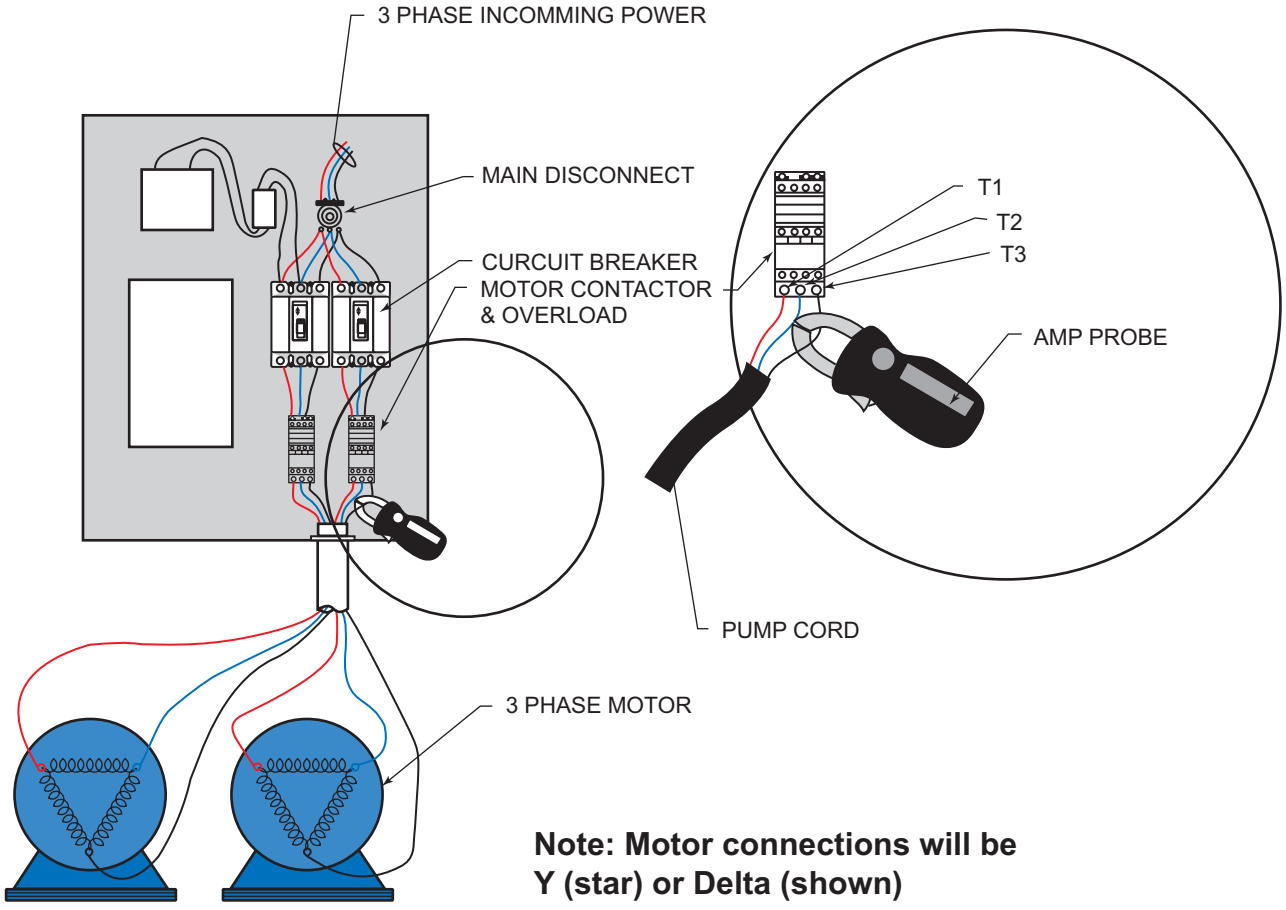

Note: Motor connections will be Y (star) or Delta (shown)

Checking Continuity of Motor Windings

NOTE: Turn power off, disconnect motor leads from terminal block.

Use Rx1 on your ohm meter. Take readings between T1-T2, T2-T3, T1-T3. All readings should be within limits of the motor. Consult chart for pump manufacturer for your motor size and voltage.

Normal readings are between 0 and 10 ohms. The three readings should be identical. *Make sure that the connections are firm.*

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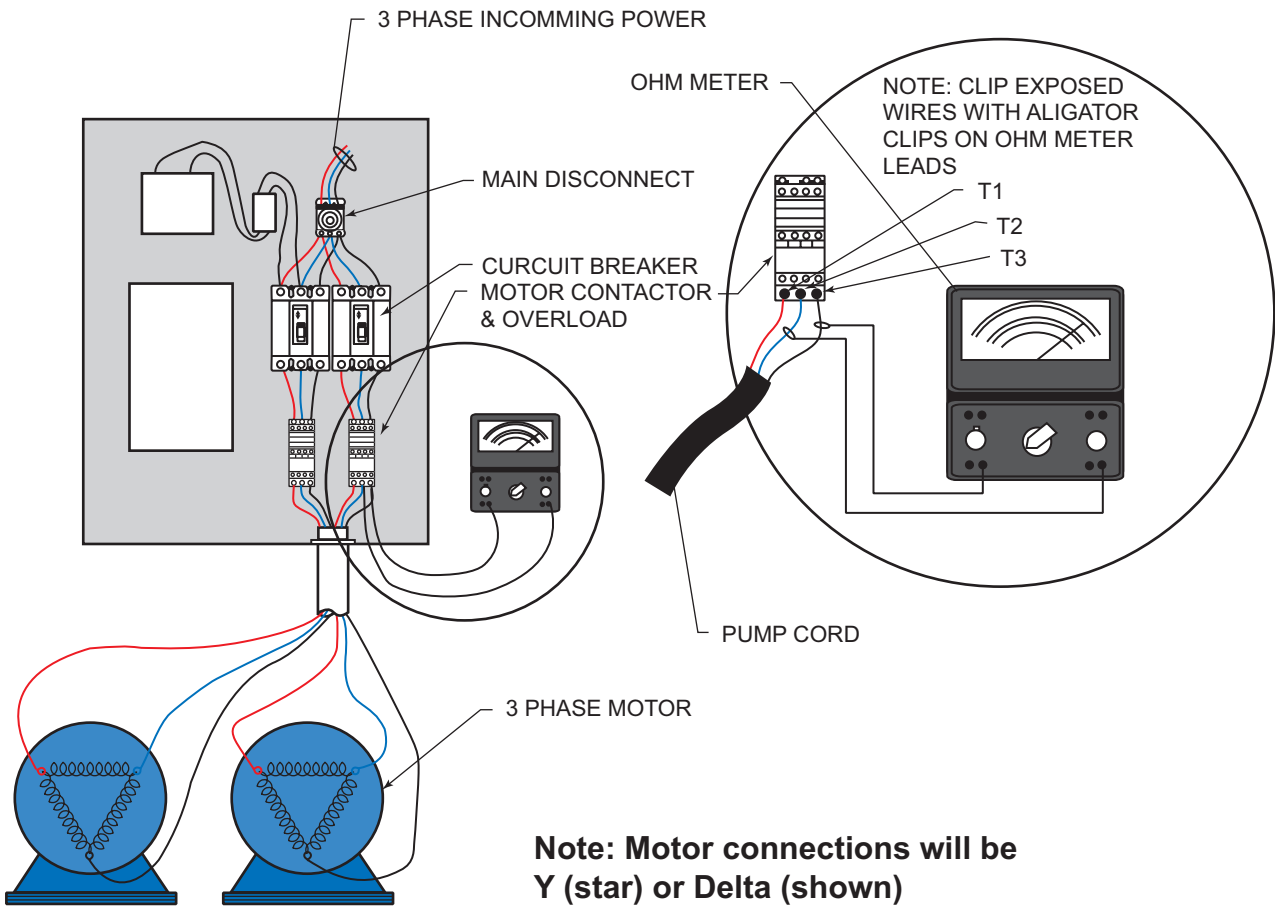

Note: Motor connections will be Y (star) or Delta (shown)

Motor Insulation Test with Megger

CAUTION: Disconnect all power to panel!

Disconnect power to leads from leads from pump motor and test T1 to G, T2 to G and T3 to G. If reading is below 2 megohms then pump should be removed from wet well and windings should be checked directly to determine if problem is in the motor or the cord.

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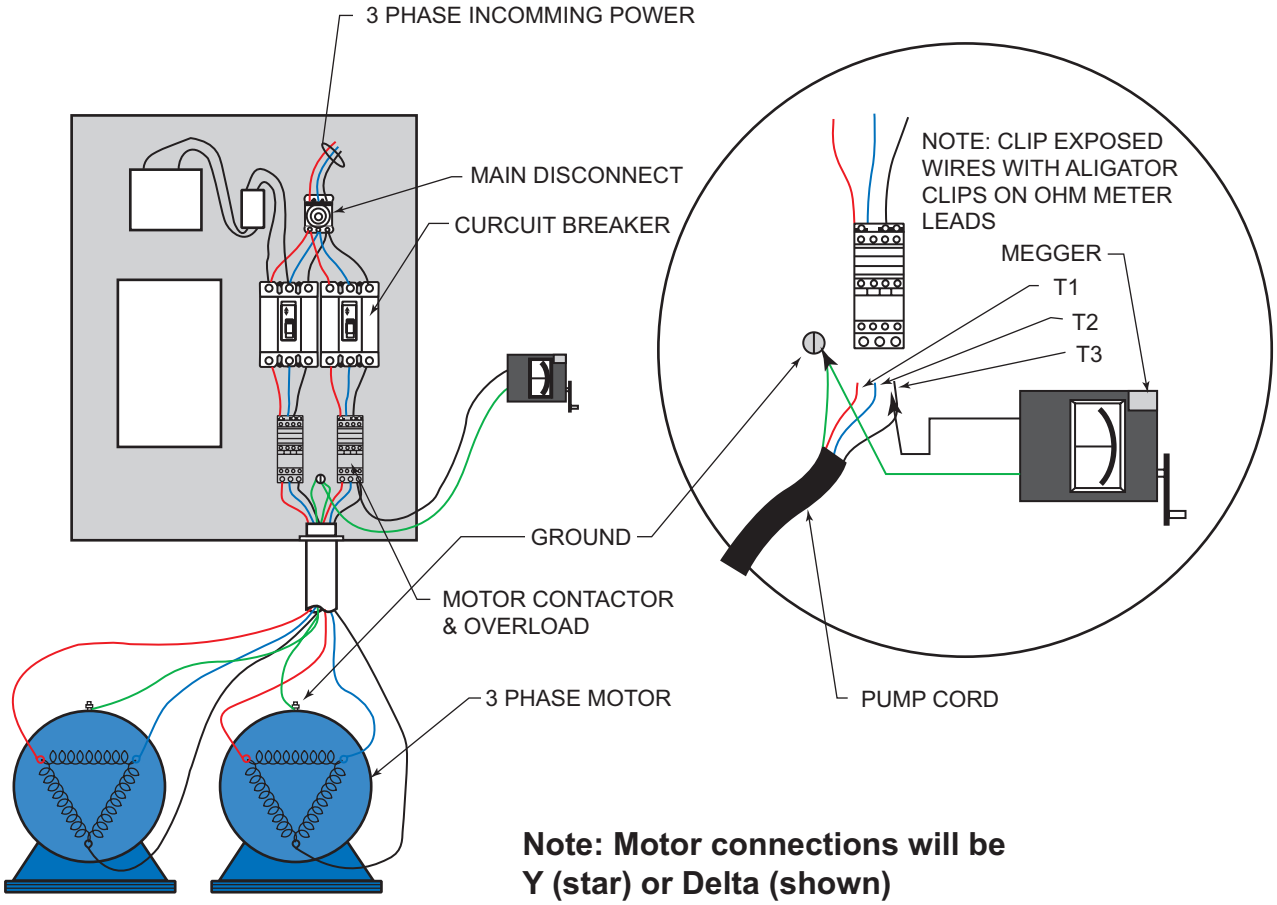

Note: Motor connections will be Y (star) or Delta (shown)

This Trouble Shooting Manual is intended for general informationonly. For specific application design assistance, please contact your Metropolitan Representative or call 800-323-1665.