



All Motors

MOTOR MAINTENANCE

Table 46 Preliminary Tests - All Sizes Single- and Three-Phase

TEST	PROCEDURE	WHAT IT MEANS
Insulation Resistance (Fig. 10)	<ol style="list-style-type: none"> 1. Open master breaker and disconnect all leads from control box or pressure switch (QD type control, remove lid) to avoid electric shock hazard and damage to the meter. 2. Use a megohmmeter set to 1000 Volt (500 Volt minimum). If using an ohmmeter, set to R X 100k. Zero the meter. 3. Connect one meter lead to any one of the motor leads and the other lead to the metal drop pipe. If the drop pipe is plastic, connect the meter lead to ground. 	<ol style="list-style-type: none"> 1. If the ohms value is normal (Table 47), the motor is not grounded and the cable insulation is not damaged. 2. If the ohms value is below normal, either the windings are grounded or the cable insulation is damaged. Check the cable at the well seal as the insulation is sometimes damaged by being pinched.
Winding Resistance (Fig. 11)	<ol style="list-style-type: none"> 1. Open master breaker and disconnect all leads from control box or pressure switch (QD type control, remove lid) to avoid electric shock hazard and damage to the meter. 2. Use a multi-meter set to 20 ohms or an ohmmeter set to R X 1 for values under 10 ohms. Use next scale up for values over 10 ohms. Zero the meter. 3. On 3-wire motors measure the resistance of yellow to black (main winding) and yellow to red (start winding). <p>On 2-wire motors: measure the resistance from line-to-line.</p> <p>Three-phase motors: measure the resistance line-to-line for all three combinations.</p>	<ol style="list-style-type: none"> 1. If all ohms values are normal (Tables 13, 22, 24, 25, & 27), the motor windings are neither shorted nor open, and the cable colors are correct 2. If any one value is less than normal, the motor is shorted. 3. If any one ohm value is greater than normal, the winding or the cable is open, or there is a poor cable joint or connection. 4. If some ohms values are greater than normal and some less on single-phase motors, the leads are mixed. See page 48 to verify cable colors.

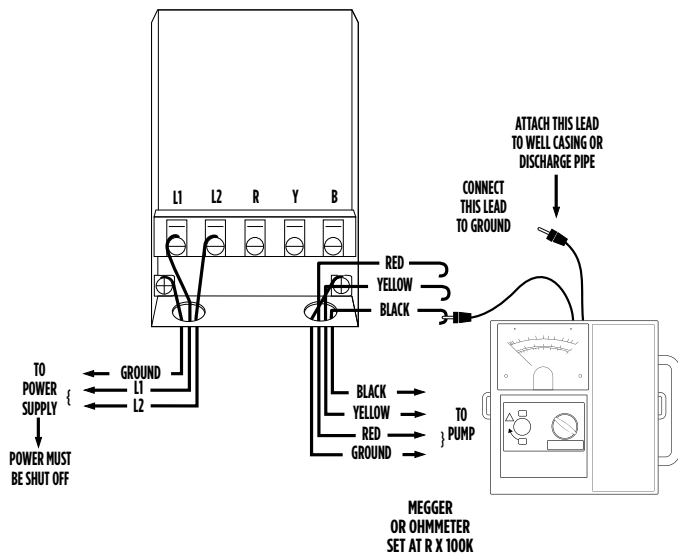


FIG. 10

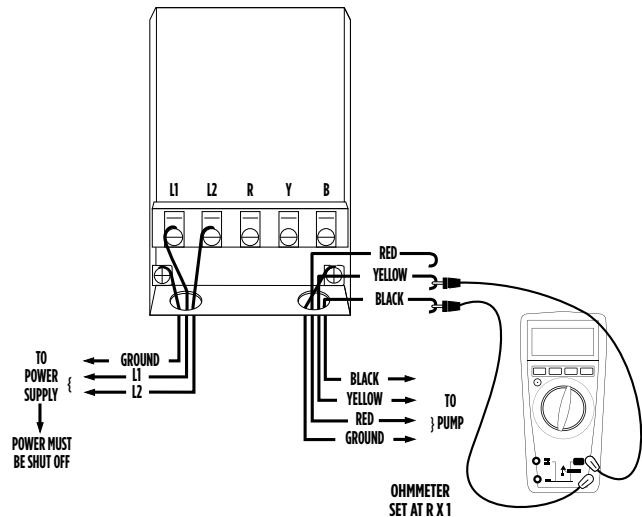


FIG. 11