BARNES®

Solid State Switch Replacement Service Manual for Franklin Motor 117763BG

SGPC 1 HP

Models Effected:

SGPC10S4L
SGPC10S4AUF
SGPC10S4AUE
SGPC10S4AU
SGPC1014L

ultra CAV™

IMPORTANT! ***Read all instructions in this manual before operating pump. As a result of Crane Pumps & Systems, Inc., constant product improvement program, product changes may occur. As such Crane Pumps & Systems reserves the right to change product without prior written notification.***

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Submersible Wastewater Pump Association SWPA MEMBER

Form No. SM121616-Rev. B

Oil Removal, Pressure Check

Set unit on its side and remove plug from motor housing, drain all oil from motor chamber.

1

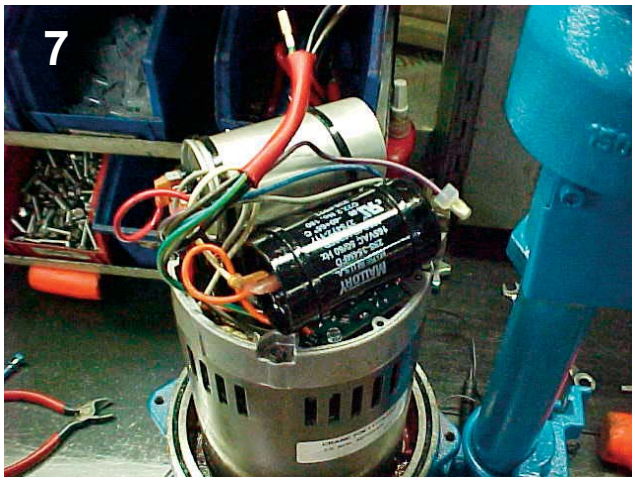
Motor Housing

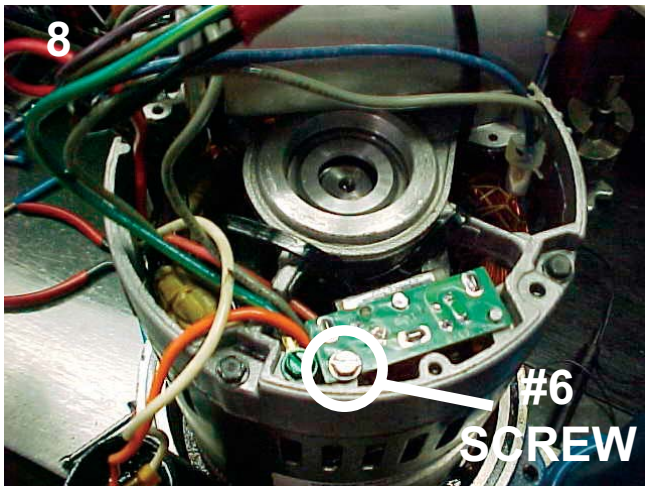
NOTE: Position unit upright, using wooden blocks to avoid resting unit on the lower shaft.
Loosen cable clamp bolts and lock washers from motor housing. Remove cord from motor housing by pulling straight up while using a rocking motion.

Remove retaining snap ring with a medium flat tip screwdriver. Using a 1/4-20 bolt, thread it into the center of the terminal block. Pull straight up with a rocking motion to remove the terminal block. Disconnect all wire connections noting where each wire is connected. The bottom of the block has a number located next to each pin for reference. If pump is equipped with closed valve protection, remove in same manner as the power cord.

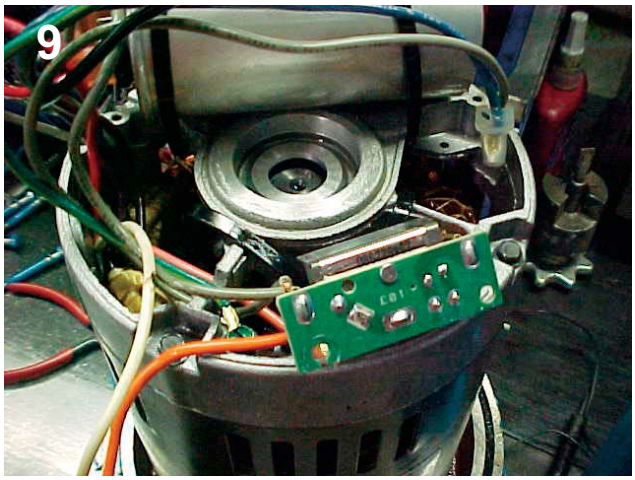
Pry Snap Ring out with a screwdriver

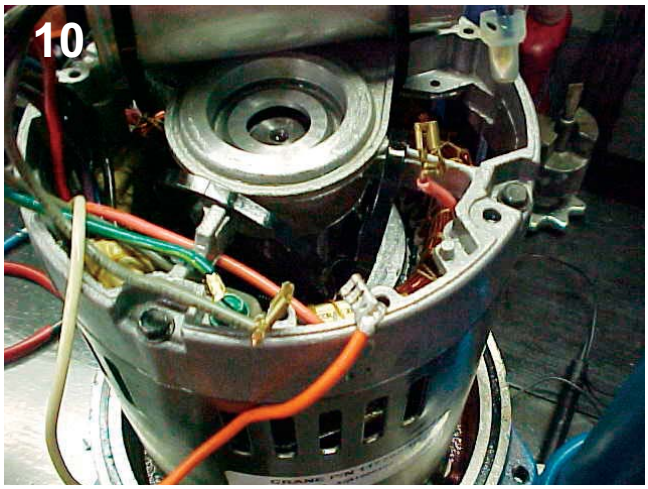
Switch Replacement





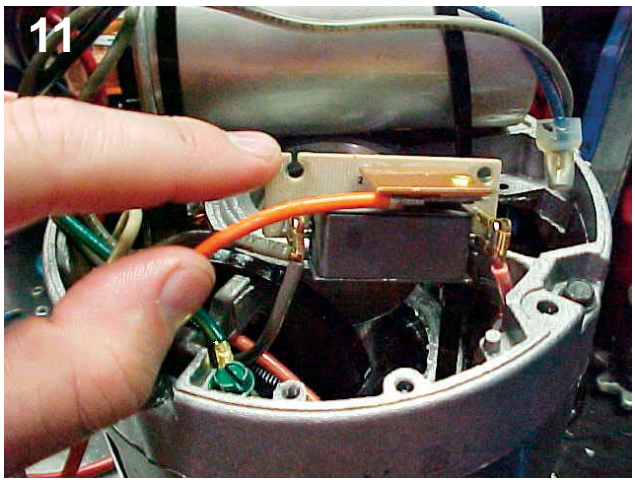
Remove motor housing to view the top end of the motor. Slide start capacitor out of the zip ties. Use extreme care not to damage the wires that run under the start capacitor. Verify solid state switch number to be removed is 294622911. This is printed on the top and side of the solid state switch. Remove the #6 screw holding solid state switch.

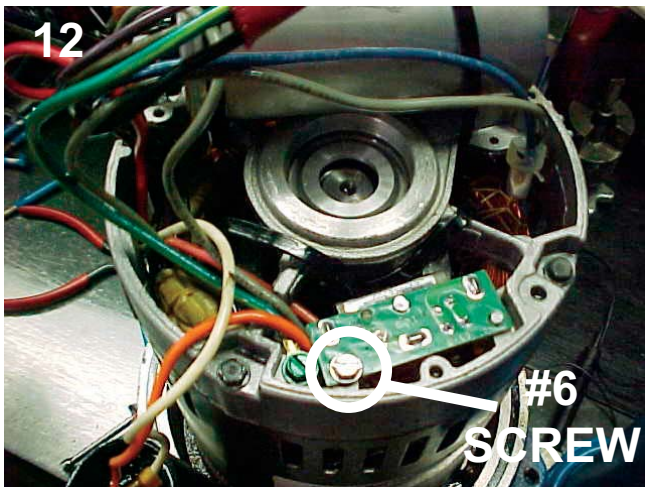




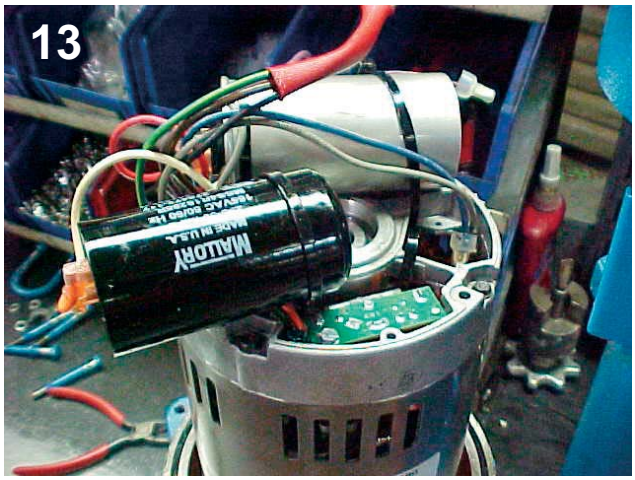
Pull the switch out slightly to access the terminals on the under side of the solid state switch.
Note the wire connections: Pink wire to terminal 3, Orange wire to terminal 2, and Grey wire to terminal 1. Remove the solid state switch.

Switch Replacement (con't)





Confirm new solid state switch number 294622980 located on the top and side of the solid state switch. Connect leads to the switch terminals. Pink wire to terminal 3, Orange wire to terminal 2, and Grey wire to terminal 1. Replace the solid state switch in the motor. Be sure not to pinch the wires connected to the switch against the thermal or motor windings under the switch. Tighten the #6 screw.

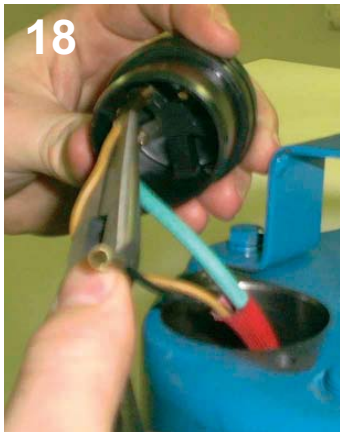


Slide the start capacitor through the zip ties again being careful not to damage the wires that run under it. Use new zip ties if desired. Motor solid state switch replacement is complete.

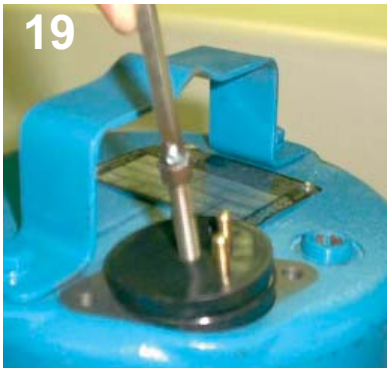
Motor Housing

Lubricate and set square ring into bore on seal plate.

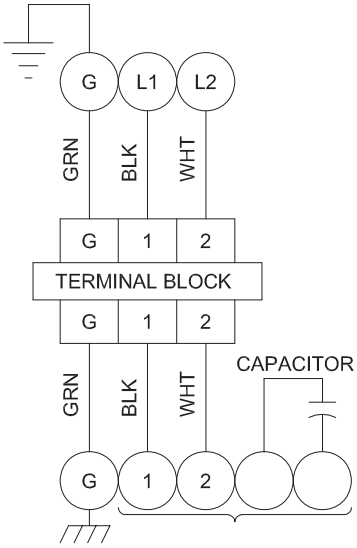
Pull wires through opening in top of motor housing while lowering motor housing onto seal plate and secure with two allen head bolts. Connect wires to pins in bottom of terminal block. (Check wiring diagram on next page to make sure all leads are connected to proper terminals) Lubricate O-ring and slide terminal block back into housing. Make sure terminal block is engaged and install snap ring to retain terminal block.



If there were optional pump features such as a float or pressure cutout, re-install those at this time also. Tighten bolts and lock washers into motor housing.

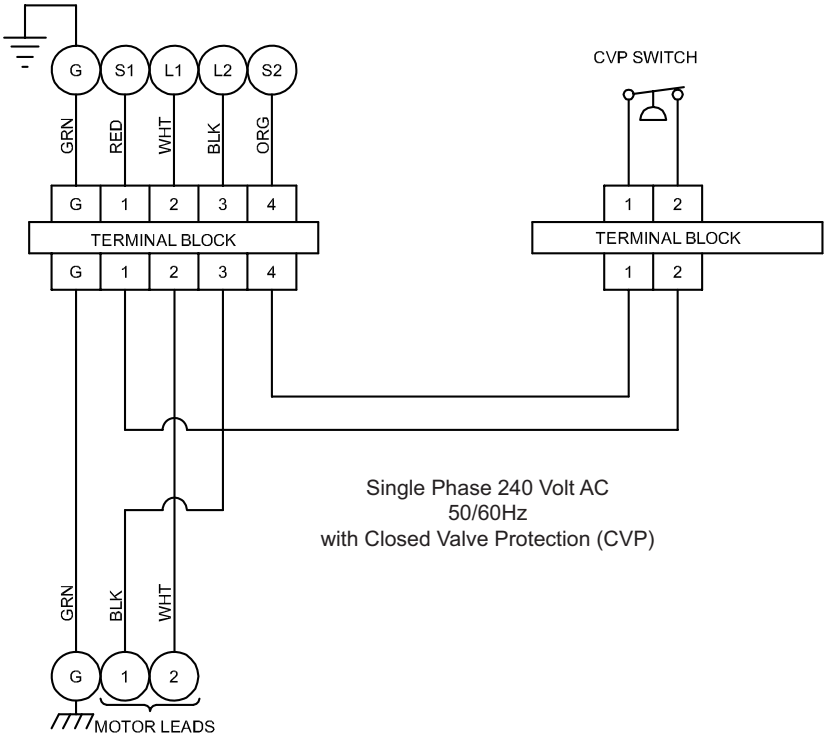


Pin Placement Diagram

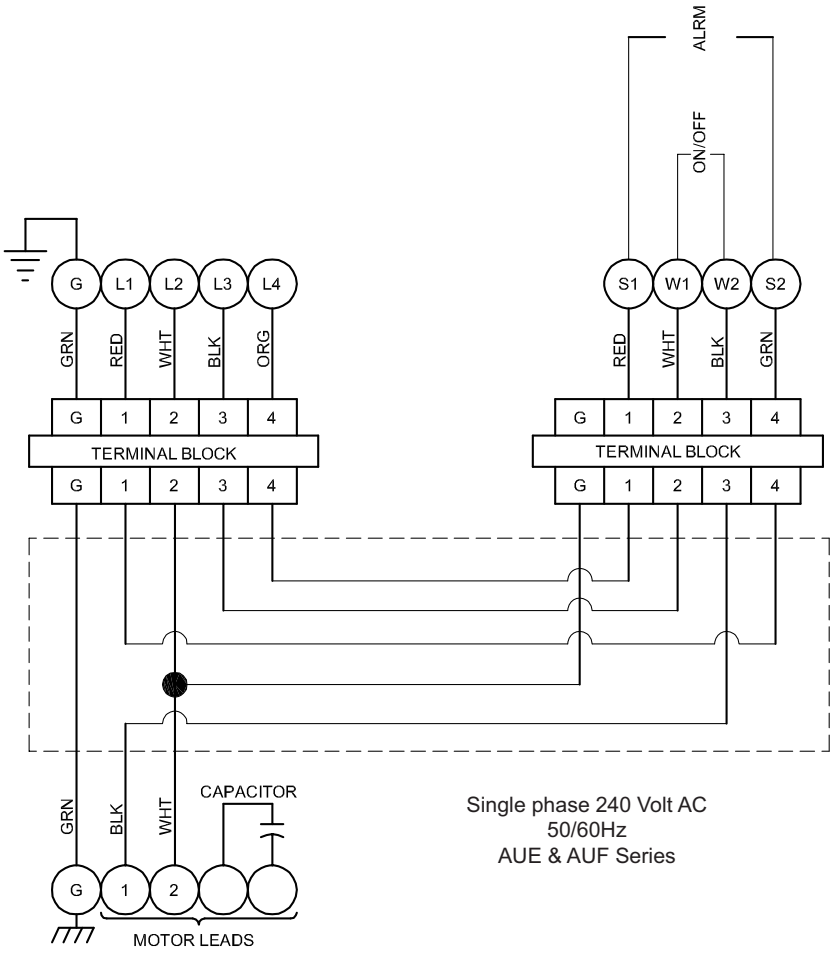


Single Phase
120/240 Volt AC / 50-60Hz

Wiring Schematic For Pumps With Dual Hole Motor Housing



Single Phase 240 Volt AC
50/60Hz
with Closed Valve Protection (CVP)



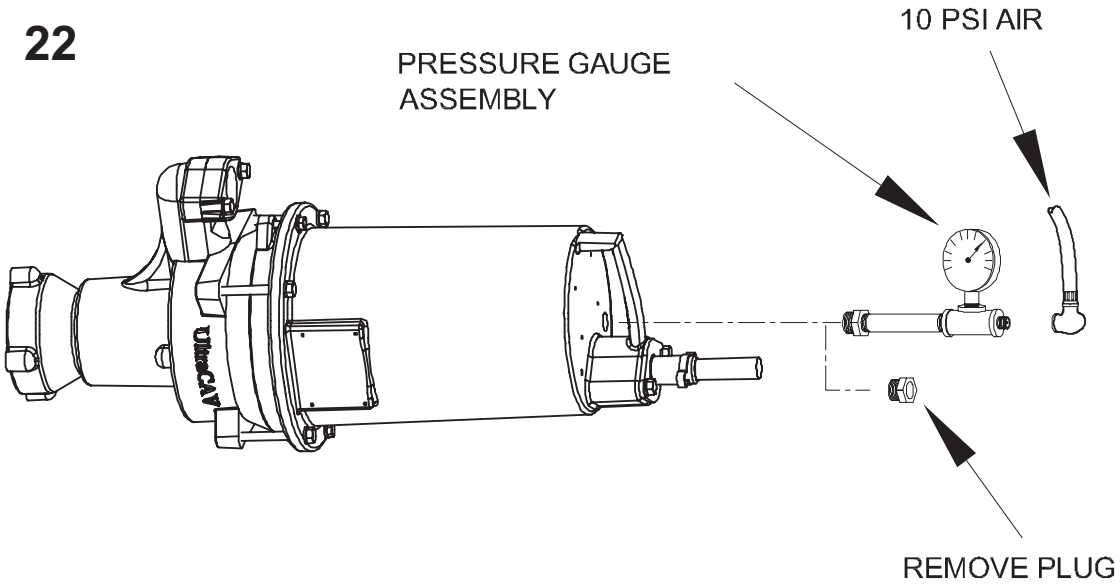
Single phase 240 Volt AC
50/60Hz
AUE & AUF Series

Perform Pressure Check

NOTE: This is to be performed with **NO** oil in the housing.

CAUTION: Make certain that cord set is attached to pump. Performing the pressure check without the cord set on may cause the terminal block to blow out.

To check the pump for any seal leaks, attach the pressure gauge assembly using pipe sealant. Tighten the fitting into the hole. Pressurize the gauge from 8 to 10 psi. Use a soap solution around the sealed areas and inspect joints for air bubbles. If, after five minutes the pressure is still holding constant, and no bubbles are observed, slowly bleed the pressure and remove the gauge assembly. Replace the pipe plug using sealant. If the pressure does not hold, then the leak must be located and repaired.



Visual Inspection of Pump

Hi-Pot (High Potential) Insulator Test (if required)

A Hi-Pot test of pump leads is more accurate than a megger test, either method will indicate the condition of cord insulation. In most cases, it is not necessary to do both.

This test detects non-visible insulator failures. To perform the HiPot test, a 500 VOC Megohmmeter is needed. Touch the green ground lead from the pump to one of the meter leads, and the other meter lead to one of the power leads. Repeat this test with all of the power leads. A resistance reading no less than 20mΩ ***IS ACCEPTABLE***.

CAUTION: After performing a Hi-Pot test, **ALWAYS** discharge cord set leads to ground.

Replacing Oil

NOTE: Repeat all electrical checks and pressure tests prior to replacing oil.

Motor housing - Set unit upright and refill with new cooling oil. Fill to 1” just above the top bearing of the motor as an air space must remain in the top of the motor housing to compensate for oil expansion. Apply pipe thread compound to threads of pipe plug and assemble to motor housing.

NOTE: Reference oil chart for suitable replacement oils.

COOLING OIL - Dielectric	
SUPPLIER	**GRADE**
BP	Enerpar SE100
Conoco	Pale Paraffin 22
Mobile	D.T.E. Oil Light
G & G Oil	Circulating 22
Imperial Oil	Voltesso-35
Shell Canada	Transformer-10
Texaco	Diala-Oil-AX
Woco	Premium 100

Notes

Notes

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