

FRANKLIN AID



Franklin Electric



Franklin Application/Installation Data (AID) ... For The Professional Driller-Installer

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THE SUPER 90 SUBMERSIBLE MOTOR

An Exciting New 6" Specialty Product With Many Proven Features

The **Super 90** premium grade encapsulated submersible motor is a problem solver for the geothermal market and for other applications that have temperature, cooling flow, or thrust conditions that exceed the design limits of standard submersible motors.



Super 90 submersible motors are available in three-phase ratings of 5 hp through 40 hp.

- Excels in low-flow or no-flow applications such as reservoirs, wet wells, large diameter well casings, and lake or pond installations (typical of golf course and irrigation systems) with ambient water temperatures of up to 86°F (30°C).
- Operates in water temperatures up to 195°F when water flow past the motor is at least ½ foot per second. No need to down-rate the motor.
- Franklin Electric's newly developed high temperature encapsulation technology permits the motor to operate at elevated temperature levels.
- Allows for a 25% increase in the capacity of the down-thrust bearing when compared to standard submersible motors. The design change to an upthrust bearing results in 100% more upthrust capacity than standard motors.
- Lead assembly features 125°C cross-link polyolefin (XPLO) wire and is designed to be field replaceable.
- Available in standard 300 series stainless steel or 316 stainless steel Corrosion Resistant models.

The **Super 90** motor is a blend of Franklin's time-tested, field-proven technology with innovative new processes and premium materials. The result is a product not only with expanded capabilities but also with many facets that are familiar to Franklin submersible motor users, among them

- SAND FIGHTER™ Sealing System with silicon carbide mechanical face seal at the shaft.
- Exclusive Water Bloc™ lead connection.
- Double flange design for easy pump mounting.
- Full 3450 rpm for superior pump head and flow yield.
- Stainless steel splined shaft for maximum shaft/coupling contact.

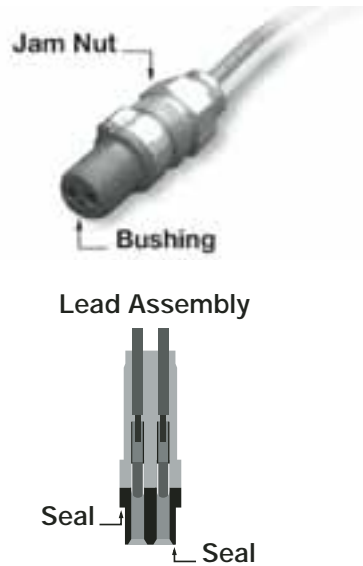
Franklin does not manufacture three-phase controls. Three-phase ambient-compensated quick-trip overload protection in all three legs is required for motor protection. **WARRANTY IS VOID** where this protection is not used.

2004 Franklin Tech Dates Announced

The dates and locations of the FRANKLIN TECH submersible motor training classes for 2004 are shown below. General motor sessions concentrate on 4" motors while Large motor sessions focus on 6" and 8" three-phase motors. Call the Submersible Hotline toll free at 800-348-2420 for information and to register.

JAN 27 – 28	(General) Siloam Springs	JUN 8 – 9	(General) Siloam Springs
FEB 17 – 18	(Large) McAlester/Wilburton	SEP 14 – 15	(General) Siloam Springs
MAR 2 – 3	(Large) McAlester/Wilburton	OCT 12 – 13	(Large) McAlester/Wilburton
APR 6 – 7	(General) Siloam Springs	NOV 16 – 17	(Large) McAlester/Wilburton
MAY 4 – 5	(General) Siloam Springs	DEC 7 - 8	(General) Siloam Springs

LEAD ASSEMBLY JAM NUTS REQUIRE CORRECT TORQUE FOR PROPER SEALING



If a lead assembly is damaged and you have to install a replacement lead in the field, it is critical for the jam nut to be tightened to the correct torque value to ensure a tight seal.

If the seal is not made correctly, water can seep into the lead receptacle and cause a grounded motor. The lead seals as the bushing seats against the bottom of the receptacle and the lip seats against the top of the connector boss.

To achieve the proper seal, tighten the jam nut to the torque settings shown here.

4" Motors – 15 to 20 ft-lb. (20 to 27 N-m)

6" Motors – 50 to 60 ft-lb. (68 to 81 N-m)

8" Motors – 1-1/6" to 1-5/8" Jam Nut - 50 to 60 ft-lb

8" Motors – With 4 screw clamp plate: Apply increasing torque to the screws equally in a criss-cross pattern until 80 to 90 in-lb. (9.0 to 10.2 N-m) is reached.

PROPER GROUNDING OF EQUIPMENT IS ESSENTIAL FOR USER SAFETY

The primary purpose of grounding the metal drop pipe and/or metal well casing in an installation is safety. It is done to limit the voltage between non-electrical (exposed metal) parts of the systems and ground, thus minimizing dangerous shock hazards. Using wire at least the size of the motor cable wires provides adequate current-carrying capability for any ground fault that might occur. It also provides a low resistance path to ground, ensuring that the current to ground will be large enough to trip any overcurrent device designed to detect faults (such as a ground fault interrupter, or GFCI).

The ground wire to the motor would normally provide the primary path back to the power supply ground for any ground fault. There are conditions, however, where the ground wire connection could become compromised. One such example would be the case where the water

in the well is abnormally corrosive or aggressive. In such an instance, a grounded metal drop pipe or casing would then become the primary path to ground. The many installations that use plastic drop pipes and/or casing require further steps to be taken for safety purposes, so that the water column itself does not become the conductive path to ground.

When an installation has unusually corrosive water AND the drop pipe or casing is plastic, Franklin Electric recommends the use of a GFCI with a 10 mA set-point. In this case, the motor ground wire should be routed through the current-sensing device along with the motor power leads. Wired in this way, the GFCI will trip only when a ground fault has occurred AND the motor ground wire is no longer functional.

TOLL-FREE HELP FROM A FRIEND

Phone Franklin's toll-free SERVICE HOTLINE for answers to your installation questions on submersible pump motors. When you call, a Franklin expert will offer assistance in troubleshooting submersible systems and provide immediate answers to your motor application questions.

Franklin Electric SERVICE HOTLINE 800-348-2420 FAX 260-827-5102
www.franklin-electric.com

