Tightening Motor Lead Connector Jam Nut

4" Motors with Jam Nut:
15 to 20 ft-lb (20 to 27 Nm)

4" Motors with 2 Screw Clamp Plate:
35 to 45 in-lb (40 to 51 Nm)

6" Motors:
40 to 50 ft-lb (54 to 68 Nm)

8" Motors with 1-3/16" to 1-5/8" Jam Nut:
50 to 60 ft-lb (68 to 81 Nm)

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 Nm) is reached.

Jam nut tightening torques recommended for field assembly are shown. Rubber compression set within the first few hours after assembly may reduce the jam nut torque. This is a normal condition which does not indicate reduced seal effectiveness. Retightening is not required, but is permissible and recommended if original torque was questionable.

A motor lead assembly should not be reused. A new lead assembly should be used whenever one is removed from the motor, because rubber set and possible damage from removal may prevent proper resealing of the old lead.

All motors returned for warranty consideration must have the lead returned with the motor.

Pump to Motor Coupling

Assemble coupling with non-toxic FDA approved waterproof grease such as Mobile FM222, Texaco CYGNUS2661, or approved equivalent. This prevents abrasives from entering the spline area and prolongs spline life.

Pump to Motor Assembly

After assembling the motor to the pump, torque mounting fasteners to the following:

4" Pump and Motor: 10 lb-ft (14 Nm)

6" Pump and Motor: 50 lb-ft (68 Nm)

8" Pump and Motor: 120 lb-ft (163 Nm)

Shaft Height and Free End Play

Table 43

MOTOR	NORMAL SHAFT HEIGHT		DIMENSION SHAFT HEIGHT		FREE END PLAY	
					MIN.	MAX.
4"	1 1/2"	38.1 mm	1.508" / 1.498"	38.30 / 38.05 mm	0.010" 0.25 mm	0.045" 1.14 mm
6"	2 7/8"	73.0 mm	2.875" / 2.869"	73.02 / 72.88 mm	0.030" 0.76 mm	0.050" 1.27 mm
8" TYPE 1	4"	101.6 mm	4.000" / 3.990"	101.60 / 101.35 mm	0.008" 0.20 mm	0.032" 0.81 mm
8" TYPE 2.1	4"	101.6 mm	4.000" / 3.990"	101.60 / 101.35 mm	0.030" 0.76 mm	0.080" 2.03 mm

If the height, measured from the pump-mounting surface of the motor, is low and/or end play exceeds the limit, the motor thrust bearing is possibly damaged, and should be replaced.

Submersible Leads and Cables

A common question is why motor leads are smaller than specified in Franklin's cable charts.

The leads are considered a part of the motor and actually are a connection between the large supply wire and the motor winding. The motor leads are short and there is virtually no voltage drop across the lead.

In addition, the lead assemblies **operate under water**, while at least part of the supply cable must **operate in air.** Lead assemblies running under water operate cooler.

CAUTION: Lead assemblies on submersible motors are suitable only for use in water and may overheat and cause failure if operated in air.