



Storage

Franklin Electric submersible motors are a water-lubricated design. The fill solution consists of a mixture of de-ionized water and Propylene Glycol (a non-toxic antifreeze). The solution will prevent damage from freezing in temperatures to -40°C; motors should be stored in areas that do not go below this temperature. The solution will partially freeze below -3°C, but no damage occurs. Repeated freezing and thawing should be avoided to prevent possible loss of fill solution.

There may be an interchange of fill solution with well water during operation. Care must be taken with motors removed from wells during freezing conditions to prevent damage.

When the storage temperature does not exceed 37°C, storage time should be limited to two years. Where temperatures reach 37° to 54°C, storage time should be limited to one year.

Loss of a few drops of liquid will not damage the motor as an excess amount is provided, and the filter check valve will allow lost liquid to be replaced by filtered well water upon installation. If there is reason to believe there has been a considerable amount of leakage, consult the factory for checking procedures.

Frequency of Starts

The average number of starts per day over a period of months or years influences the life of a submersible pumping system. Excessive cycling affects the life of control components such as pressure switches, starters, relays and capacitors. Rapid cycling can also cause motor spline damage, bearing damage, and motor overheating. All these conditions can lead to reduced motor life.

The pump size, tank size and other controls should be selected to keep the starts per day as low as practical for longest life. The maximum number of starts per 24-hour period is shown in Table 3.

Motors should run a minimum of one minute to dissipate heat build up from starting current.

TABLE 3 Number of Starts

Motor Rating		Max Starts Per 24 Hr. Period	
HP	KW	Single-Phase	Three-Phase
Up to .75 HP	Up to .55	300	300
1 thru 5.5	.75 thru 4	100	300
7.5 thru 30	5.5 thru 22	50	100
40 and over	30 and over		100

Mounting Position

Franklin submersible motors are designed primarily for operation in the vertical, shaft-up position.

During acceleration, the pump thrust increases as its output head increases. In cases where the pump head stays below its normal operating range during startup and full speed condition, the pump may create upward thrust. This creates upward thrust on the motor upthrust bearing. This is an acceptable operation for short periods at each start, but running continuously with upthrust may cause excessive wear on the upthrust bearing.

With certain restrictions, motors are also suitable for operations in positions from shaft-up to shaft-horizontal.

As the mounting position becomes further from vertical and closer to horizontal, the probability of shortened thrust bearing life increases. For normal thrust bearing life expectancy with motor positions other than shaft-up, follow these recommendations:

1. Minimize the frequency of starts, preferably to fewer than 10 per 24-hour period.
2. Do not use in systems which can run even for short periods at full speed without thrust toward the motor.