



FIELD REFERENCE MANUAL

SUBMERSIBLE MOTORS

This Field Reference Manual includes examples of some of the limitations presented in the Franklin Electric Standard Limited Warranty Policy.

Franklin Electric's Standard Limited Warranty can be found in the Standard Terms & Conditions Document M1571 01-15 at www.franklinwater.com/media/126203/FE_Terms_Conditions.pdf.

FIELD REFERENCE MANUAL

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For the most up-to-date product information, visit franklinwater.com.



MOTOR EXTERIOR DAMAGE

SOURCES OF DAMAGE



No Lead Installed - Sediment
Not Warrantable



Corrosion Damage
Refer to Next Page



Corrosion/Scale
Not Warrantable



Excessive Corrosion
Not Warrantable



No Lead Installed - Sediment
Not Warrantable



No Lead - Corrosion
Not Warrantable

To qualify for warranty, the motor must be evaluated with its original factory installed components. This includes the original factory installed lead assembly. Excessive sediment and/or corrosion may indicate the motor did not see proper cooling flow and the pumping media may be aggressive. Review 316SS motor construction as an alternative for added corrosion resistance. Water quality analysis may be required for proper motor construction determination.

MOTOR EXTERIOR DAMAGE

EXAMPLES OF EXCESSIVE CORROSION



Aggressive Environment Causes Corrosion



Corrosion and Rust in Prong Hole



End Bell Corrosion Damage



Corrosion in Lead Area



Excess Corrosion/Scale

This example is a result of corrosion damage caused by an aggressive environment. Corrosion caused damage in the lead connection area, shown bottom right, which allowed water entry resulting in the motor grounding. This motor is not warrantable. The added corrosion resistance of the 316SS motor construction may be needed in the application.

MOTOR SHAFT DAMAGE

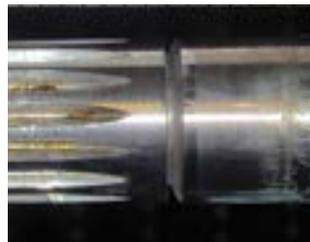
SOURCES OF DAMAGE



Shaft Broken by Excessive Torque (Ex: Back-Spinning Pump During Pump Start)



Motor Shaft Damaged by Gravel in the Pump Intake
Not Warrantable



Shaft Damaged Below Spline by Improper Coupling Installation
Not Warrantable



Debris in Bearing
Shaft Damage



Up Thrust
Not Warrantable

Refer to "Use of Check Valves" in the Franklin Electric Application, Installation, Maintenance (AIM) Manual.

Damage to the shaft by pumping media, improper coupling, and/or pump installation is not covered under warranty.

SPLINE DAMAGE

SOURCES OF DAMAGE



Threaded Hole in Shaft

All photos are examples of non-warrantable motors.

Damaged splines are not considered defects in material or workmanship and therefore are not covered under warranty. Splines can be damaged by improper installation of pump and/or pump coupling.

Any alteration of the shaft or splines outside Franklin Electric factory specifications voids warranty.

ABRASIVE DAMAGE

SOURCES OF DAMAGE



Abrasive Damage is Not Covered Under Warranty



Abrasive Worn Shaft End



Spline Wear by Abrasives



Abrasive Shaft Wear



External Abrasives



Sand Found On Components

All photos are examples of non-warrantable motors.

ABRASIVE DAMAGE

SOURCES OF DAMAGE



Abrasive Covered Seal/Worn ID
Not Visible



Worn Shaft Slinger Bushing ID
Not Visible



Severely Worn Shaft
Visible



Sand Worn Shaft Slinger Bushing
Visible

This is an example of the damage caused by abrasive entry. Abrasives damage the shaft's shaft seal and shaft slinger brass bushing, allowing damage to the bearings and stator bore including liner. In most cases, the sand slinger will be loose on the shaft.

The motor may exhibit excessive side play in the rotor.

MOTOR BOTTOM DAMAGE

SOURCES OF DAMAGE



Example of Diaphragm Cavity When Motor is Buried



Rust In Diaphragm Well Rusty



Diaphragm Cavity Full of Mud Motor Shown Above



Buried at Bottom of Well



Aggressive/Sandy Water or Motor in Sand



Diaphragm Cover Full of Mud



Buried at Bottom of Well

These photos document example installations that did not have 10 feet of clear water between the motor bottom and the bottom of the well. This will cause lack of flow by the thrust housing, creating a "hot spot" and damaging the bearings in the lower half of the motor. The diaphragm cavity can be checked through the hole in the plate/cover, or by removing bottom cover.

THRUST BEARING DAMAGE

SOURCES OF DAMAGE



Broken Thrust Bearing, Support, And Thrust Pads



Extreme Shock Required to Fracture/Split Bearings



Dimples From Water Hammer



Improper Cooling and Thrust Loads
Over Rated Capabilities

These photos document examples of water hammer damage to the thrust bearing system.

This damage is caused by rapid or failed check valve issues. The shock load associated with water hammer is generally well in excess of the rated thrust load.

YOU JUST GOT A LITTLE MORE HELP FROM A FRIEND.

FRANKLIN ELECTRIC TECHNICAL SERVICE HOTLINE
800-348-2420 | 260-827-5102 FAX

Option 1 - Franklin Water | Option 2 - Franklin Control System | Option 3 - Little Giant Commercial

Call Franklin's toll free TECHNICAL SERVICE HOTLINE for answers to your pump and motor installation questions. When you call, a Franklin expert will offer assistance in troubleshooting and provide immediate answers to your system application questions. Technical support is also available online.

franklinwater.com | franklin-controls.com | solar.franklin-electric.com | constantpressure.com

