

Product Test Report

Stainless Steel Brushless Servo Motors SSBSM-Series

Baldor's Stainless Steel Brushless Servo Motors provide excellent performance, and represent the industry's most durable, rugged design in a cost effective package. They are specifically designed for applications with special requirements such as constant high moisture and frequent wash down with high pressure and caustic chemicals.

Endurance testing was performed on Baldor's Stainless Steel Brushless Servo Motors (SSBSM series). The testing and investigation was to determine if there would be any ingress of water into the motors.

The SSBSM series are available in 5 frame sizes, in standard and low inertia models. Continuous torque ranging from 3 lb-in up to 280 lb-in (0.3 - 31.6 Nm) with peak torques 3-4 times continuous. Numerous models available from stock.

Design Specs:

- Stainless steel 303 housing, 416 shaft
- Durable to handle 1500 psi high pressure washdown and caustic chemicals
- Designed for IP67 moisture and high water content applications
- FDA shaft seal
- H1 classification bearing grease
- UL, CSA, CE, TUV, BISSC (Baking Industry)
- Laser etched nameplate



SSBSM Features:

- Operation with either 115, 230 or 460 volt controls
- Resolver, incremental and absolute encoders and custom feedback devices
- Premium 200 C moisture resistance wire
- Internal thermal switch provides safeguard against overheating
- Integral 24 volt brake option
- Potted stator provides environmental protection
- Superior high voltage and current spike protection
- High energy magnets

Test Conditions:

The test conditions represented applications with constant wet environments by a continuous misting water spray (24/7). Motors remained wet throughout the entire test, which exceeded six months. The motors were operated to their hot condition, and then allowed to cool.

- Continuous 24 hour water mist
- Spray tests conducted for continuous 6 months
- Motors run 12 hours on/12 hours off (to create hot/cold motor conditions)
- Continuous operation start-stop to 1000 rpm CW and CCW
- Loaded at rated motor current
- Ambient air temperature 14.6 deg C

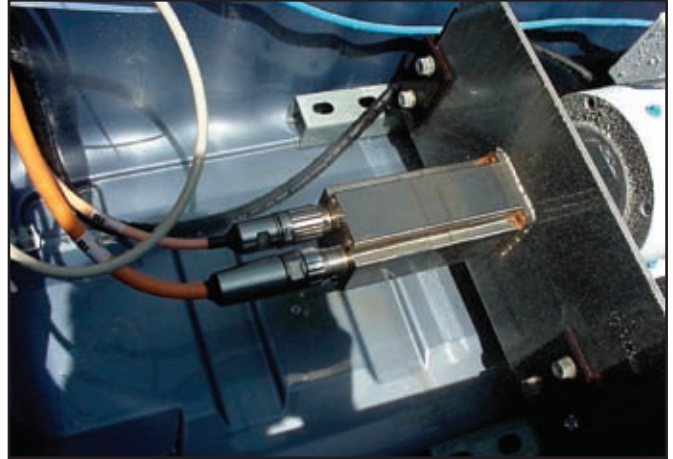
Test Results:

Motors were removed from test brackets and weighed, to detect any weight gain attributed to water - results revealed no increase in any motor. Then the motors were disassembled, to observe and detect any infiltration of water - observations revealed no water and no indications of water. The entire inside cavities were dry.

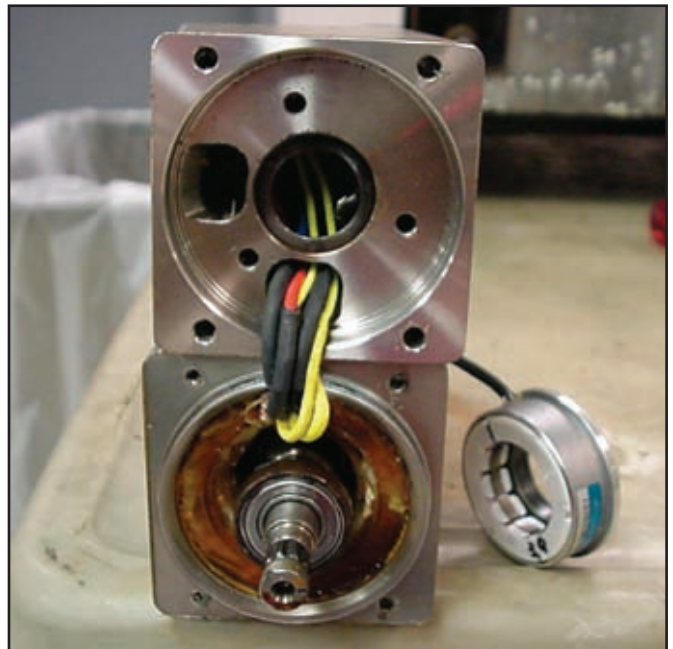
Drive-end seals were in good condition and still in place. The drive-end bearings were in good condition, exhibiting no moisture. The feedback cavity and the bearing in that section did not have any moisture, and the feedback still appeared new. There was no rust or oxidation on internal shafts. Internal connector areas showed no water or moisture, nor corrosion or sign of water entry.

Conclusion:

Motors ran the length of 6 month testing without failure and without ingress of water.



Stainless steel servo motor mounted in mist chamber for continuous 6 months. Note standard (non-stainless) mounting screws exhibit rust. There was no moisture contamination on, or in, the SSBSM's.



Shaft, internal housing and feedback device is rust/corrosion and moisture free - no water entered the motor. The potted stator provides additional moisture resistance, as well as current spike and high voltage protection for the application.