



# SERVICE BULLETIN

**TOPIC: Sync Motor**

**Part Number:** 110561C, 110562A, 110561D

NUMBER: 12-15-009

SUPERSEDES:

DATE: December 15, 2015

**MODELS APPLICABLE TO: TEST METHOD:**

- F-1/F-2 Combination      D 2699, D 2700
- F-4 Supercharge            D 909
- F-5 Cetane                      D613

ROUTE TO Distributor/End User

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**SUBJECT: Synchronous Motor Voltage**

This service bulletin is to notify CFR users concerning a change of the 3 phase voltage supply requirements for the current synchronous reluctance motor. In the past, the recommended specification for customers voltage supply for the synchronous motors has been required to be held with 10% of the rated nameplate (for either high or low voltage) of the motor. The Synchronous Reluctance Motor now has a new specific supply voltage requirement which is tighter than what has been required in the past. Today per the current synchronous motor supplier's specification, the customer's three phase supply voltage must be within +/-5% of the rated nameplate voltage rather than the (+/-) 10% as required with past motors.

For example, during normal operation in a 220 VAC installation, the supply voltage must be between 209 and 231 VAC and in a 440 VAC installation it must be between 418 and 462 VAC. The voltage must also be stable and consistent.

In addition:

**For 60 Hz sources:** A 220 VAC system requires service adequate to handle 20 amps of line capacity and a maximum inrush current of 240 amps. A 440 VAC system requires service adequate to handle 10 amps of line capacity and a maximum inrush current of 120 amps. Voltage drop from three phase source to the motor starter mag switch should be no more than 2% and will also dictate the gauge of wire used.

**For 50 Hz sources:** A 380 VAC system requires service adequate to handle 9.6 amps line capacity and a maximum inrush current of 145 amps. Voltage drop from three phase source to the motor starter mag switch should be no more than 2% and will also dictate the gauge of wire used.

A fusible disconnect sized appropriately for the, single phase and three phase is recommended and should be placed at the wall in close proximity of the unit for each electrical service circuit. This will allow to safely lock out and tag out the unit prior to servicing major assemblies.

If you have any further questions or concerns please contact your local CFR Distributor.

Best regards,  
 Dan Bemis  
 CFR Service Manager  
 CFR Engines Inc.