

# Technical Bulletin

## 32/64V 50MT starters with solenoid used in dual starter applications.



**WAI carries two 32/64V starters, 3299N and 6762N, which are used in dual starter engine applications.**

Due to the specific applications used with these starter solenoids, they have different designs when compared to traditional solenoids used in a regular single starter application.

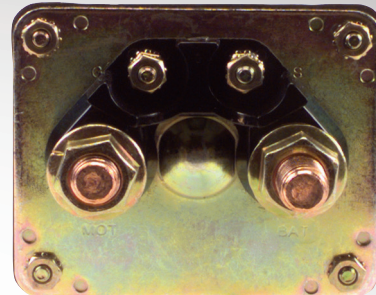
In the below images, the battery and motor terminal studs are reversed, when compared. Also note that on one, the single starter application, the battery post is longer. On the dual starter application, it is the motor terminal that is longer.

**For Dual Starter Applications**



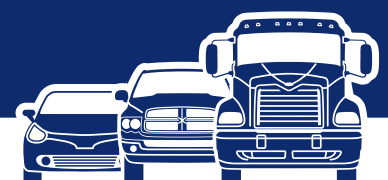
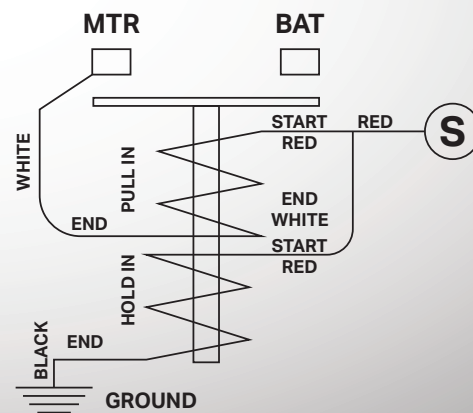
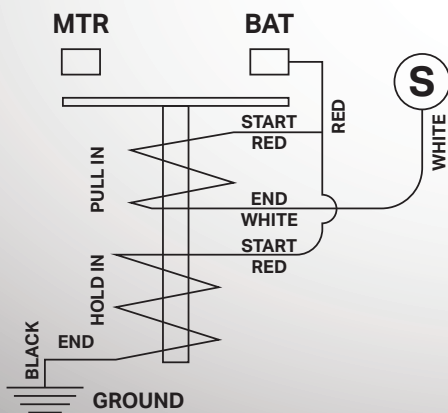
**66-137**

**For Single Starter Applications**



**66-107-1**

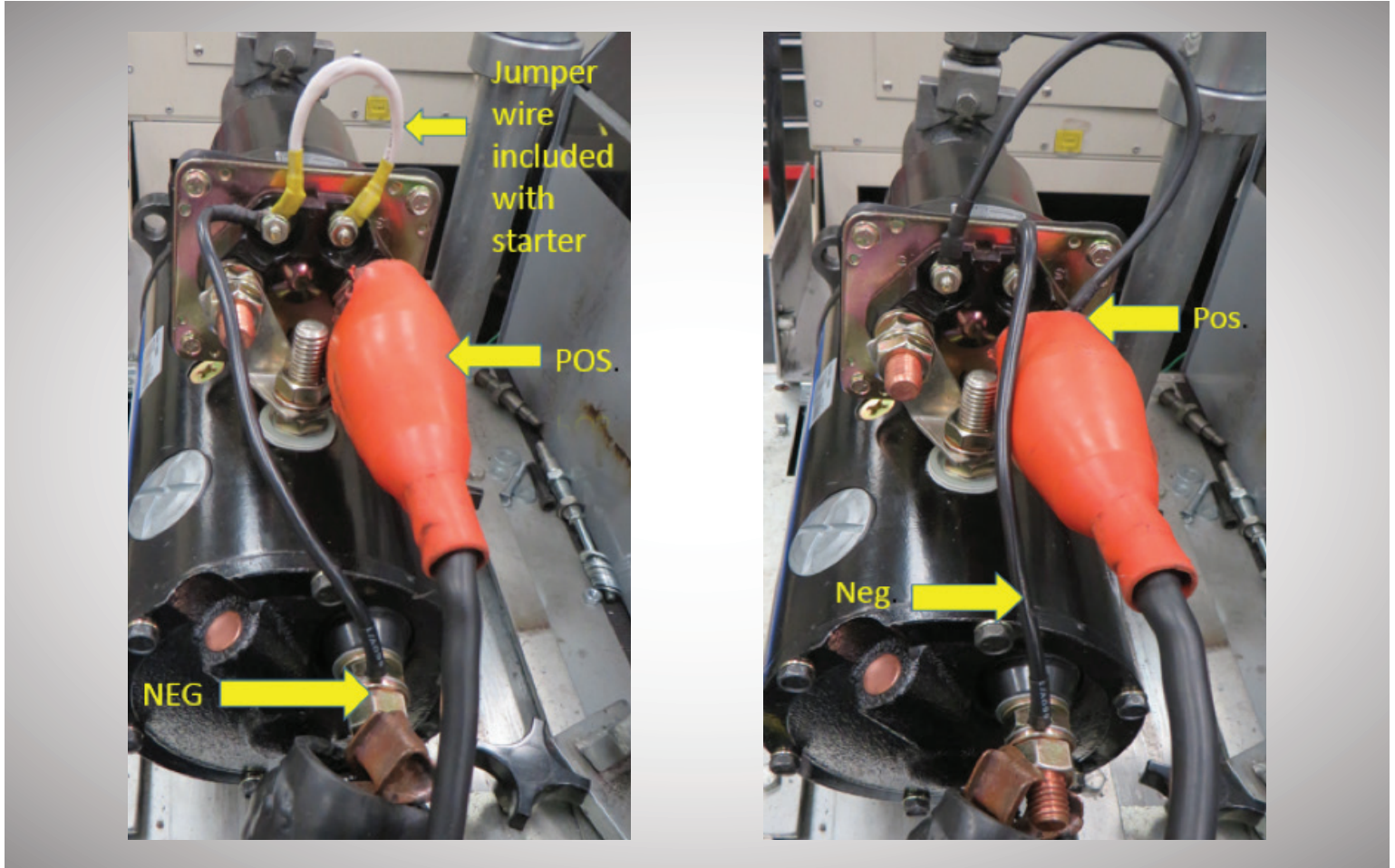
There is also a significant difference in coil windings and coil connections. The schematic below shows the difference in direction of the pull-in coil winding that significantly changes operational features of the solenoid switch used in dual starter engine applications.



# Bench Testing ...

Evident differences are dictated by connection on functionality of electrical installation in engine application. However they also have a significant impact on methodology and connections required to process starter bench testing with this type of solenoid switch.

**There are two different ways these applications can be tested on the test bench.**



The pictures above show these two different methods for testing the dual starter units. Please note that the jumper wire and motor strap are included with our starters for the purpose of testing only. The picture on the left shows the ground connection going to the "G" terminal of the solenoid, which is then jumpered to the "S" terminal. In order to provide the same current direction in both coils (Pull-in and Hold-on, please see electric schematic) current must flow from "BAT" terminal to "S" terminal of solenoid.

The picture on the right shows the ground lead being connected to "S" terminal of the solenoid and additional lead connecting "BAT" terminal to "G" terminal of the solenoid. This type of connecting mimics application setup. Starter will work instantly as soon as power is supplied. In application the magnetic switch activates both starters simultaneously. Both methods provides the same current flow and both can be used for bench testing.

Bench testing can be performed at 24V if 32V power supply is not available, however readings must be interpolated accordingly to the test voltage.



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