

TESTING OF MFDC POWER SUPPLY

The four most common reasons for MFDC power supply failure are:

- Overloading
- Lack of Coolant Water
- Leaking Coolant Water
- Double Grounding

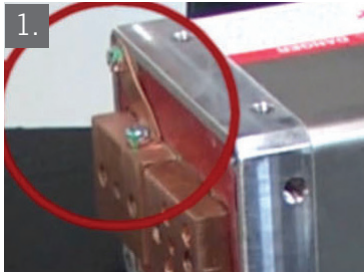
However, before assuming that welding issues are caused by a failure of the MFDC power supply, two very simple tests should be conducted. The Diode Test and the Standard MFDC Function Test will verify that the MFDC is functioning properly and it is not the cause of the welding issues; or that the MFDC is not functioning, and it is the cause of the welding issue.

Before starting the tests, make sure that the power supply is removed from tooling, wiring, and is on a dead circuit, and if in a weld cell, make sure that you're properly locked out.

Tools you will need to perform this test include:

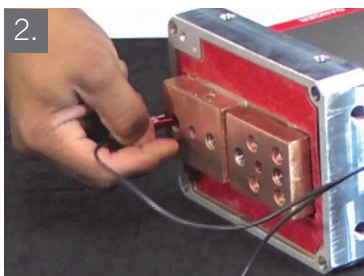
- Flathead Screwdriver
- Continuity Tester Flashlight (CTF)
- Jumper wire (22 gauge or larger)
- Megohmmeter with positive and negative leads
- Eye protection

DIODE TESTING PROCEDURE

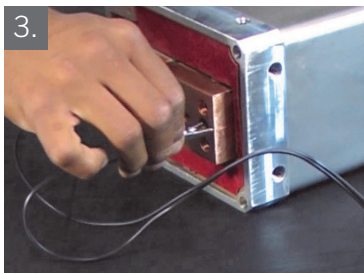


Be sure to remove the ground strap, as shown in figure 1, before any testing. The test results will not be accurate if the ground strap is left on. Also, be sure to clean off any weld flash and debris from the secondary pads and primary connections.

The first test is the diode testing procedure. The only way to confirm the polarity functionality of the diode is to properly connect the Continuity Tester Flashlight (CTF) leads to the power supply. Follow this simple procedure:



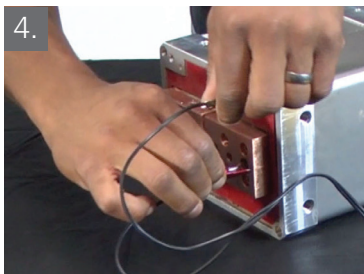
First, connect the CTF positive lead to the MFDC negative pad, as shown in figure 2.



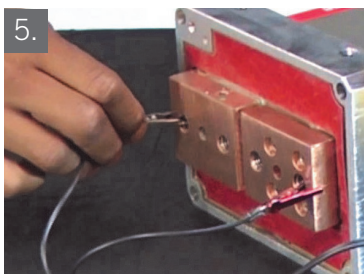
Follow by connecting the CTF negative lead to the MFDC positive pad, as shown in figure 3.

With both leads connected, turn on the CTF. If the light comes on, it indicates that the diodes are functioning in the right direction.

After the first test, reverse the CTF lead connections on the MFDC pads:



CTF positive to MFDC positive, as shown in figure 4.



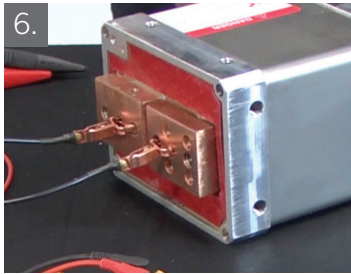
CTF negative to MFDC negative, as shown in figure 5.

With both leads connected turn on the CTF. If the diodes are working correctly, the light will not come on. If the light was to come on, it is an indication the diodes are not functioning correctly.

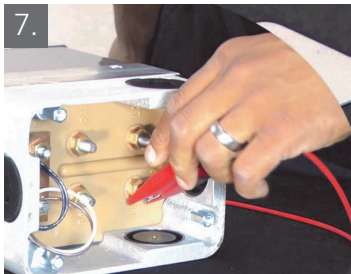
STANDARD MFDC FUNCTION TEST

The second test, is a three-part Standard MFDC function test that checks insulation between the primary, the secondary, and the case of the power supply.

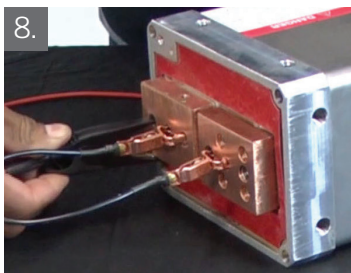
Making sure that the ground strap is still removed:



First, be sure to protect the MFDC diodes by connecting the jumper wires—one end to each of the two MFDC pads, as shown in figure 6.

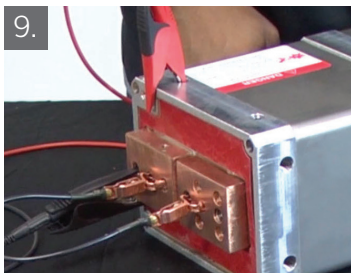


Once the first step is completed, connect the megohmmeter positive lead to either primary lead on the back of the MFDC power supply, as shown in figure 7.



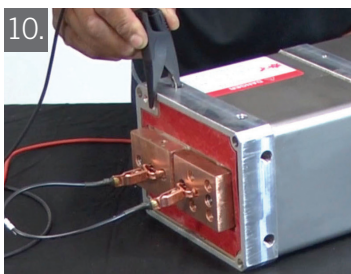
Next, connect the megohmmeter negative lead to the MFDC secondary pad, as shown in figure 8.

Once leads are secured, turn on the megohmmeter to the thousand-volt range and hold the test button down to take a reading. If the MFDC is working properly it will show a near infinite reading.



Next, disconnect the megohmmeter positive lead from the primary lead on the back of the MFDC power supply (see figure 7) and connect it to the case of the MFDC, as shown in figure 9.

Again, take a megohmmeter reading. If the MFDC is functioning properly, it will again yield a reading of near infinite.



Finally, during this last test, disconnect the megohmmeter positive lead connected to the MFDC case, as shown on figure 9, and connect it to either primary lead on the back of the MFDC power supply (see figure 7), then disconnect the negative lead from the pad, as shown on figure 9, and connect it to the case of the MFDC power supply, as shown on figure 10. Take another reading, and if the MFDC unit is working properly, the reading should be near infinite.

If for whatever reason any of the readings in the megohmmeter are less than 10 megaohms, the power supply needs repairing or replacing. However, if the tests indicate that the diode and MFDC power supply are functioning correctly, it is likely that the welding issue is other than the power supply.