

Glas-Craft MH, MH2. MH3 and Guardian Machines Hose Heat Testing and Repairs

CAUTION! Make sure that the main breaker to your machine is OFF and all of the pressure has been bled off the system before attempting any repairs. If you are not comfortable performing these tests and repairs please contact your supervisor for technical assistance.

Note: The electrical tests (fuses, breakers & relays) confirming that the machine is producing the correct power for the hose heat needs to be done prior to proceeding with the hose repairs listed in this document.

With usage over time, the hose heat on these Glas-Craft machines will fail due to a breakage in the copper winding. The breaks are usually found in a couple common spots and are easily repaired.

You will need: a multi-meter, torch and rosin-core solder, un-insulated #6 butt-connectors, razor knife, electrical and/or friction tape and duct tape.

The breaks are usually found within a few inches of the solder connection to the #6 wire for the twist-lock connectors.

Electrical current flows from the machine to the end of the hose and back to the machine completing the circuit. On a 50 foot hose with a 10 foot heated whip there are 8 spots where the copper straps have a soldered connection to the #6 wire, these are all possible problem areas. With a couple of simple continuity tests you should be able to locate a break in the heating circuit.

Testing: unplug the twist-lock connectors at the front of the machine and also where the main hose and whip meet. Test for continuity between #1 and #1 as seen in the picture. If you have continuity then move on to test between #2 and #2 and then #3 and #3 until you find a break in the circuit. As you test, wiggle the hose/wire to help find the break as the two broken ends may be touching giving you a false reading.

(Caution! Be very careful! Do not cut into the high pressure hose!) Once you have located a fault in test 1,2 or 3 then carefully cut open the insulation at the end of the hose (about 6 inches) with a razor knife to expose the solder

connection and copper straps. The breaks will generally be either at the hose to whip area or within a foot from the gun, these are areas where the hose will see a lot of back and forth movement causing fatigue and failure. Breakage on the machine side of the hose is very rare due to limited hose movement here.

Repair: the repairs will vary but are simple. Clean and trim the ends, crimp on a butt connector, solder the butt connector for a good connection then re-tape the whole connection using electrical and duct tape.

Note: The “Twist-lock” connectors are another area where we have seen problems. Make sure that you have these connectors twisted for a secure connection then tape the connection to keep the plugs from coming undone.

If you find any of the twist-lock connectors that have heat damage or if you are un-able to open them, even with pliers, then they are probably shot from electrical arcing.

Remove and discard the burnt twist-lock connector and replace it with a soldered in butt connector then sealed up with electrical tape.

For additional information refer to these documents on the dealers section of the web-site www.turboliner.com

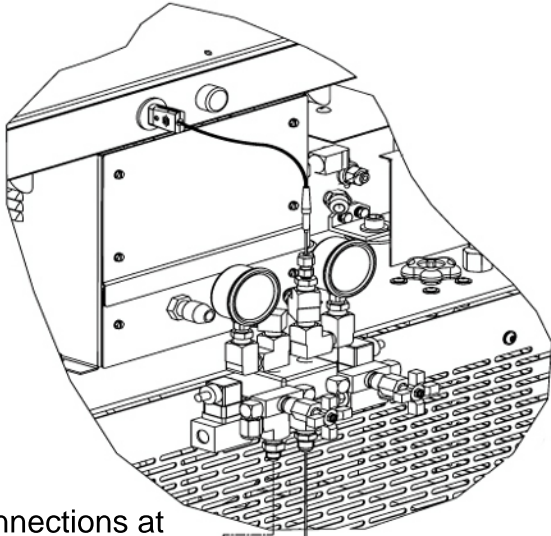
[MH-II ELECTRICAL TROUBLESHOOTING REV.06_04](#)
[TRUE FLOW HOSE TWIST LOCK ELECTRICAL CONNECTORS 08-14-06](#)
[MH AND MHII HOSE HEAT TROUBLESHOOTING](#)
[WHIP HOSE SERVICE BULLETIN 12_23_2005](#)

Please call Turboliner tech support if you need additional assistance.

877-678-8726 Ext 2

John Powers

Heated hose & Whip hose splice locations



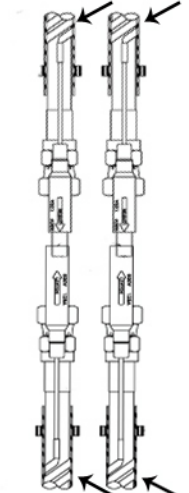
Shown above is the location for common hose heat issues. Notice the break in the copper strap that wraps around the length of the 50' or the whip hose assembly. This copper strap connects to the twist lock lead. Its location can be found in the picture below shown as the solder connection.

Connections at the machine

2 1

50' Main section

Copper Strap

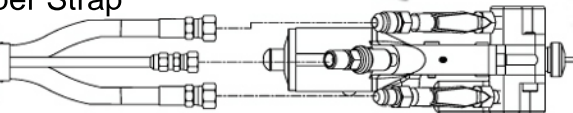


The Twist Lock Connectors Must be twisted arrows should be offset when they are properly connected

2 1 3 3

10' Whip section

Copper Strap



Hose fitting connections

Crimped solder connection appears as a bump shown here



CAUTION

Hose assemblies are constructed of durable, rugged materials, however they are not indestructible. To provide precisely controlled heated material, the hoses have electrical wiring wrapped between layers. Avoid dragging hoses over or around sharp, abrasive edges and corners. Exercising caution and common sense will give long, and reliable service from the hoses.

SERVICE BULLETIN: TURBO LINER INC.

For MH-II Whip Hoses produced before 12/20/05

CAUTION!! Before any work of any kind is performed, make sure that the power and air supplies are shut off and all of the pressure has been bled off of the lines. Special care must be taken when cutting the insulation back to expose these connections. **MAKE SURE THAT YOU DO NOT CUT INTO THE FLUID LINES!!** Also, use extreme caution when using a propane torch for soldering, **DO NOT OVERHEAT OR BURN THE FLUID LINES!!** Use a heat shield of some kind if necessary.

As you may or may not know there have been some problems with the Glas-Craft MH-II whip hose assembly that can cause hot spots and can result in burning through the 10' MH-II whip hose. We have been working with Glas-Craft to cure this problem and coming up with a quick fix solution that a spray technician can perform to avoid these conditions from happening to the whip you currently have in service.



The first area we will cover is the main section hose connection that adjoins the 50' material hose section. At the left you will see just what a hot spot will do to the whip hose, also shown here is an area that has been targeted as a bad wrap. If you look closely the flat copper lead that winds around the hose is folded backwards. In some cases, this positions the copper windings so they are lying against the hose like a knife edge. Over time these will cut into the hose causing a hose failure.

Our main task here is to open up the hose assembly and check all of the electrical connections in the heated whip. There are five connections in the whip. We will utilize a crimp butt connector, soldering it into place to insure a positive connection, alleviating the chance of a hot spot. Secondly, we want to isolate and insulate this connection from the hose for extra insurance.

This is a fairly simple procedure for most technicians, but if you are not comfortable performing this task, please seek the assistance of someone competent to make these upgrade repairs.

Here is what you will need: razor knife, propane torch, heavy duty side cutters, wire crimping pliers, heavy gauge non-insulated butt connectors, rosin core solder, electrical tape, cloth style electrical tape (friction tape), duct tape, zip ties and foam pipe insulation.

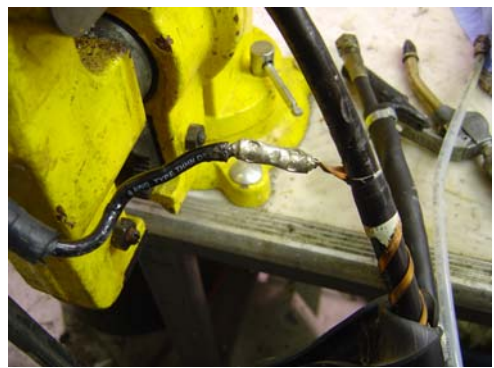
1) Cut and remove the metal crimp band. Carefully cut back the insulation and sheathing to expose the connections.

2) Figure 1 shows a good clean connection. If you find a connector that shows signs of heat or corrosion, replace the butt connector, trim back and /or clean up wire ends as needed prior to soldering.

Figure 1



Figure 2



NOTE: If your hose is using a two screw aluminum block connector as shown in Figure 3, remove and discard this connector and replace it with a crimp style as shown in Figure 1

3) Using a propane torch and rosin core solder, flow solder into the butt connector to make a good solid connection as shown in Figure 2.

Figure 3



Figure 4



4) Tape up the connection with electrical tape, Figure 4, then use two or three wraps of friction tape around the hose to isolate it from the connector as seen in Figure 5.

5) Tape the connector to the hose, and using the rubber sleeve that was cut open earlier, seal up the repair with electrical tape. Use a zip-tie to secure the end, Figure 6. Re-attach the heavy outer insulation using duct tape.

Figure 5



Figure 6



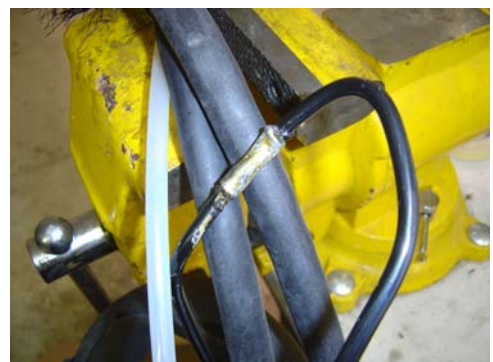
6) Use this procedure for the four ends of the whip. They may vary slightly but the principles apply.

7) The fifth connection is located a couple feet up from the gun end where the two hoses come together. Remove and discard the bolt and terminal connection, Figure 7. Trim one of the leads 4" to 6" shorter than the other (this will ensure that the new connection lays in-line with the hose). Crimp and solder a new connector in place, Figure 8. Tape up this connection and re-install outer insulation. Your updated hose is ready to be put to work.

Figure 7



Figure 8



Glas-Craft True Flow Twist Lock Electrical Hose Connectors MH, MH-II, MH-III & Guardian machines

Please follow the directions below to avoid electrical arcing that can result in hose heat or hose failure.

Plug hoses together, The TRU-FLOW hose plugs are a twist-lock design.

- a. Push plugs together.
- b. Twist to lock position.

Once connections are made, tape connections well enough to keep plugs from coming undone, damaged, etc.

