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# SERVICE MANUAL 8-CHANNEL SHOULDER COIL

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## Revision History

Rev	Date	Author	Primary Reason for Change
A	03/20/2008	G. Wells	Initial revision
B	03/27/2009	G. Wells	Update for MR450/750
C	04/29/2009	G. Wells	Change torque spec requirement note



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## TROUBLE SHOOTING GUIDE

Follow the table below for possible troubleshooting tips. Otherwise, refer to Instructions for use to contact a service advisor.

Note\* There are no service parts in the coil.

Issue	Probable Cause	Resolution
Coil becomes unrecognizable to system	Coil ID issues, bent or broken ID pins	Check Error log and confirm coil ID is read. If not, replace cable and recheck. If still not resolved, replace coil.
Multicoil Bias Failure	DC path broken/open to PIN diodes	Run Diagnostics. *See procedure below.
Coil connector does not fully engage into system interface	Bent pins on connector	Visually check for bent pins. If bent pins are found, replace cable
System housing Red light turns on when coil is plugged into system	Bent or broken contact pins	Visually check for bent pins. If bent pins are found, replace cable
Artifact in image	Magnetic material in scan volume	Remove foreign material from scan room

Table 1. Troubleshooting Guide

## DIAGNOSTICS

Gather Load Data – For Excite (14.0 and 15.0) based systems

1. From the Tools menu: Utilities → Service Browser → Diagnostics → Manual Diags → Driver Module
2. Click on Gather Load Data, 5 volts, Enter “5” for file name, Click on “Run”
3. Open new window (Right click) → Service Tools → Command Window
4. Enter into command window: gedit
  - a. Open → Filesystem → usr → g → service → log → 5\_mc.txt
5. View open and short circuit results
  - a. Ensure no open circuit values are  $\leq -20\text{mA}$
  - b. Ensure no short circuit values are  $\geq 200\text{mA}$
6. Run TPS reset after test complete

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## Multicoil Bias Diagnostics – For Discovery (20.0) based systems

1. From “Common Service” desktop, select Diagnostics → Hardware → Location → Magnet Room → Multicoil Bias Diagnostic.
2. Click “Run”. Diagnostics will indicate pass/fail.

## SNR Test [Multi-Coil Quality Assurance (MCQA) Tool]

Description	1.5T HD 8CH Shoulder Coil	3.0T HD 8CH Shoulder Coil
Coil - GE/NeoCoil Part #	5308343-2/NC008901	5271265-2/NC009901
Phantom Holder - GE/NeoCoil Part #	5271265-5/NC008026	5271265-5/NC008026
Phantom - GE Part #	46-265826G6	2359877

Table 2. Tools Required

## MCQA Setup and Procedure

*\*Note – All images below show 3.0T phantoms. 1.5T phantoms contain green solution*

1. Place the base plate on the table and place phantom in the provided slot in the base plate as shown in Figure 1.



Figure 1. Phantom on Phantom Holder    Figure 2. Landmark Position

2. Note the Coil Serial Number and place the coil over the phantom as shown in Figure 2.

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**Note: Ensure the cable rests in the cable guide notch (Figure 1) at the bore-end of the phantom holder and the coil fits snug against notch.**

3. Connect the coil to the Hypertronics Connector-A on the Low Profile Carriage Assembly (LPCA) as shown in Figure 3 for HDv systems or as shown in in Figure 4 for HDx/HDx2 systems.



Figure 3. LPCA & Connector for HDv

Figure 4. LPCA & Connector for HDx/HDxt

4. Landmark the phantom at the position shown in Figure 2 and advance to scan.
5. From Common Service Desktop (CSD) select [Image Quality], *Multi-Coil QA Tool* and *Click here to start tool*. Follow applicable service document to run MCQA test. For HDx/HDxt systems instructions can be found in the path:  
Troubleshooting → Image Quality → Multi-Coil Quality Assurance Tool.  
For Discovery systems instructions can be found in the path:  
Troubleshooting → System → Multi-Coil Quality Assurance Tool.

## SPARE PARTS

There are no spare parts included with this coil. Field Replaceable Units may be purchased.

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**FIELD REPLACEABLE UNITS (FRU)**

Description	GEHC Part #	NeoCoil Part #
1.5T HD 8Ch Shoulder Coil Assembly with Cable	5308343-2	NC008930
3.0T HD 8Ch Shoulder Coil Assembly with Cable	5271265-2	NC009930
HD 8Ch Shoulder Coil Cable Assembly	5271265-3	NC008931
8Ch Shoulder Coil Phantom Holder Assembly	5271265-5	NC008932

Table 2. FRU listings

**INSTALLATION PROCEDURES**

8-channel Shoulder coil system cable replacement (GEHC Part# 5271265-3)

**Tools required:**

Screw driver (Supplier recommended Torque screw driver set to 8in-lbs)

Anti-static station

1. Remove screws from preamp housing.
2. Carefully open housing halves and set aside cover.
3. Remove four (4) cable clamp screws from housing (See Figure 1)
4. Remove screws from four corner locations on the large PCB (See Figure 2).
5. Remove all eight cable connectors (See Figure 3)
  - a. Pull cable connector straight from socket to ensure no damage is done to the socket center pin. Check center pin for damage.
6. Remove DC connector (See Figure 4)
  - a. Use a flat screw driver to gently pry each side until loose
7. Discard cable.
8. Following color code in table 3, attach new cable connectors (See Figure 3) and DC connector (See Figure 4).
9. Set PCB assembly into housing and replace screws (See Figure 5 – Supplier recommended 8in/lbs torque – DO NOT OVER TIGHTEN).
  - a. Pay close attention positioning of cables as stated in Figure 5
10. Replace cable clamp screws. (Supplier recommended 8in/lbs torque – DO NOT OVER TIGHTEN).

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11. Carefully replace cover ensuring no cables or wires are pinched by the housing.
12. Replace housing screws. (Supplier recommended 8in/lbs torque – DO NOT OVER TIGHTEN).

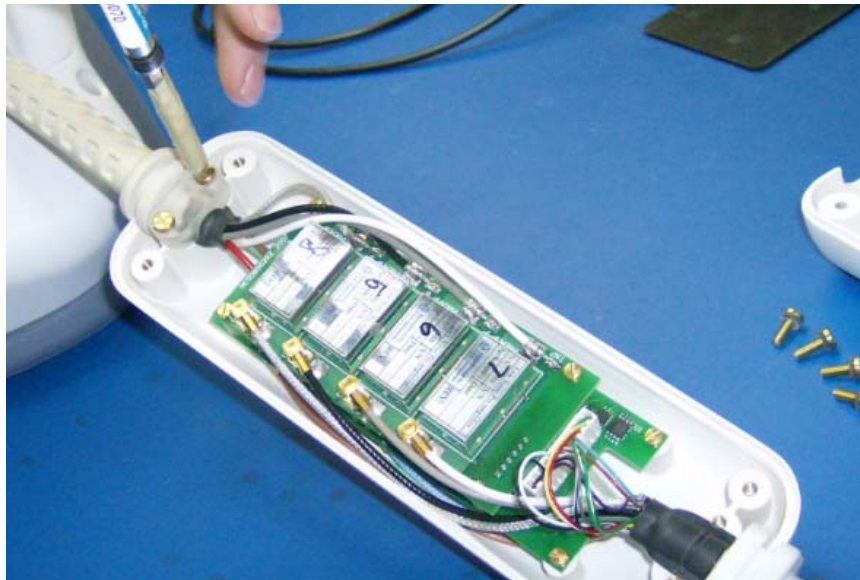


Figure 1. Cable clamp screws

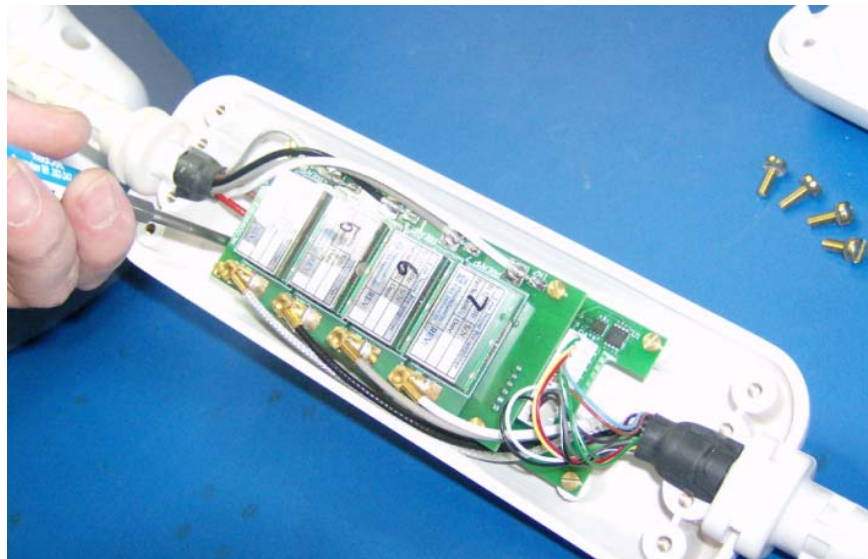


Figure 2. PCB screws

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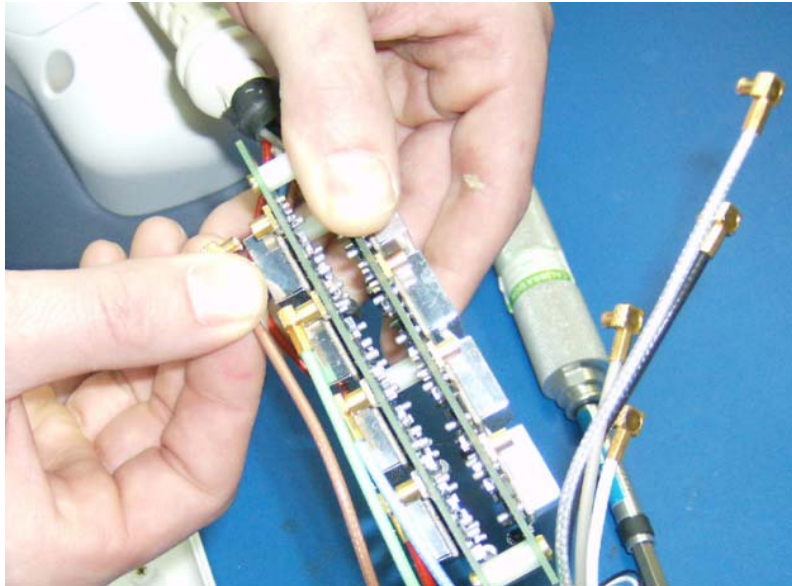


Figure 3. Cable connector removal/replacement

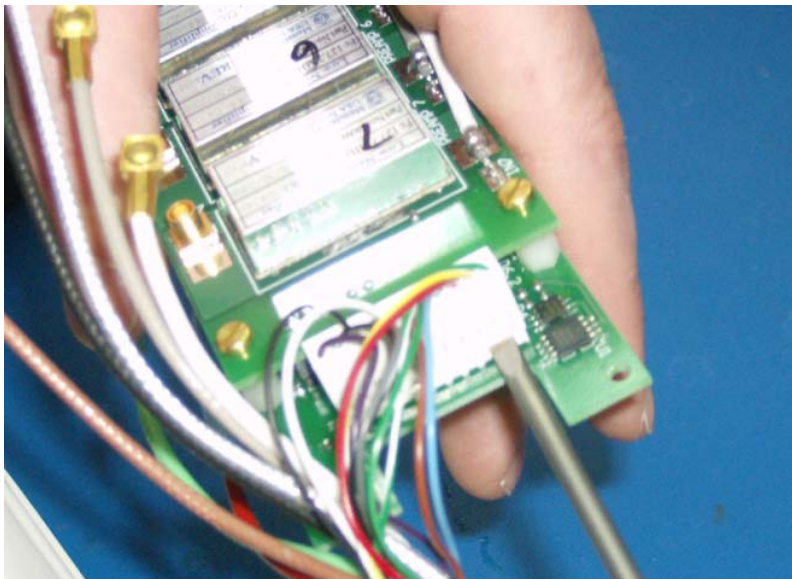


Figure 4. DC connector

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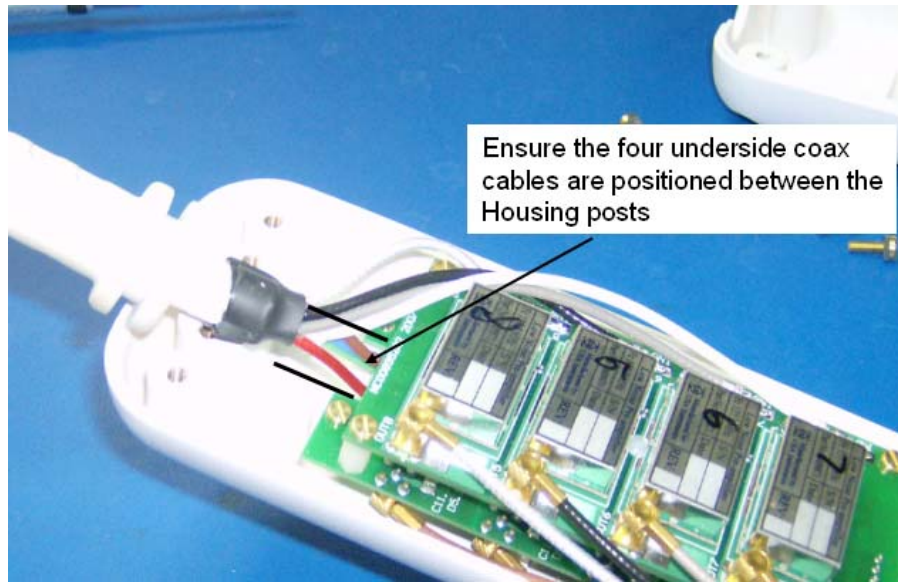


Figure 5. Coil cable placement

Channel	Coax Cable
1	BROWN
2	RED
3	GREEN
4	BLUE
5	BLACK
6	GRAY
7	WHITE
8	CLEAR

Table 3. System Cable Color Code

## COIL MAINTENANCE

See Instructions for Use manual