FIELD SERVICE PROCEDURE
SIGNA QUADRATURE T/L SPINE COIL WITH POSITIONER
DIRECTION 46-003005

DOCUMENT NUMBER - 87305-T-140

REVISION 0 FEBRUARY 27, 1991

FIELD SERVICE PROCEDURE FOR SIGNA QUADRATURE T/L SPINE COIL WITH POSITIONER

1.0 TOOLS AND EQUIPMENT

SPECIAL TOOLS

ITEM	PART #	DESCRIPTION	QTY
1	46-317048P1	Decoupling Test Phantom - 2 Liter	1
2	46-194427P49	Beckman 3030 DVM	1
3	46-255836P40	Vector Impedance Meter	1
4	46-306712G1	Torque driver kit including:	1
	46-282782P1	Torque Driver	1
	46-282782P7	3/16" Flat Blade Driver	1
	46-282782P8	11/32" Nut Driver	1
5	46-307307G1	Daniels Crimp Tool Kit including:	1
	46-255841P1	Crimp Tool	1
	46-255841P100	Die Insert RG58/223	1

FIELD SUPPLIED TOOLS

ITEM	DESCRIPTION	QTY
1	15 MM open end wrench	1
2	3/4 inch open end wrench	1
3	7/16 inch open end wrench	1
4	3/8 inch open end wrench	1
5	5/16 inch open end wrench	1
6	3/32 transfer punch	1
7	Small hammer	1
8	Utility knife	1
9	6 foot ruler	1
10	Pliers	1
11	Loctite	As required

TABLE 1
REQUIRED TOOLS AND EQUIPMENT

2.0 SIGNA SCANNER VERIFICATION

2.1 Prior to testing the performance of the Surface Coil, the performance of the scanner in the Body Coil mode should be verified. Additionally, the RF power level calibration from the Body Coil mode is used to verify the Surface Coil decoupling.

NOTE

The Surface Coil decoupling phantom must be filled according to the procedure in the Operator Manual - 87305-T-137, prior to performing the next step.

2.2 Position the Surface Coil decoupling phantom on the patient table. See Figure 1. Do not place the Quadrature T/L Spine Coil with Positioner under the decoupling phantom at this time. Use a pad to raise the phantom to the same height as the Quadrature T/L Spine Coil with Positioner. Using the positioning alignment lights, set the decoupling phantom at isocenter. **LANDMARK** the position, and advance the phantom to isocenter using the **ADVANCE SCAN** button.

2.3 Set up a scan on the MRI system using the parameters in Table 2. Perform an **AUTO PRESCAN** to set the value for TA or TG. Record in Data Table 1 the TA or TG values for reference in Section 3.0 and 4.0.

2.4 Perform the scan. Observe the resulting images. Ensure that there are no artifacts of any sort on any of the resulting images.

SCAN PRESCRIPTION

MAIN MENU	[NEW STUDY]
PATIENT STUDY PARAMETERS	
ID:	TEST
Patient Weight:	100 LBS
	[NEXT PAGE]
	[NEXT PAGE]
PATIENT POSITION	
Patient Entry:	[HEAD FIRST]
Coil Type:	[BODY]
Axial/Sag Landmark:	[Sternal Notch]
	[NEXT PAGE]
IMAGING PARAMETERS	
Image mode:	[Multi Scan]
Scan Mode:	[Axial]
Pulse Sequence:	[Spin Echo, Multi Echo]
Imaging Options:	[None]
Graphic Prescan:	[No]
Enter PSD Filename:	
	[NEXT PAGE]

SCAN TIMING	
Number of Echos:	[4]
Echo Time (TE):	[20 ms]
Rep Time (TR):	[600 ms]
	[NEXT PAGE]
SCANNING RANGE	
Field of View:	[30 cm]
Slice Thickness:	[5 mm]
Slice Locations:	(S/I) S0, I0
FOV Center:	(R/L) R0 (A/P) A0
	[NEXT PAGE]
ACQUISITION TIME	
Acq. Matrix:	[256 x 128]
Imaging Time:	[1 Nex]
Frequency Direction:	[R/L]

TABLE 2
SIGNA VERIFICATION SCAN PARAMETERS

SCAN PRESCRIPTION

MAIN MENU	[NEW STUDY]
PATIENT STUDY PARAMETERS	
ID:	TEST
Patient Weight:	100 LBS
	[NEXT PAGE]
	[NEXT PAGE]
PATIENT POSITION	
Patient Entry:	[HEAD FIRST]
Coil Type:	[QUAD TL]
Axial/Sag Landmark:	[Sternal Notch]
	[NEXT PAGE]
IMAGING PARAMETERS	
Image mode:	[Multi Scan]
Scan Mode:	[Axial]
Pulse Sequence:	[Spin Echo, Multi Echo]
Imaging Options:	[None]
Graphic Prescan:	[No]
Enter PSD Filename:	
	[NEXT PAGE]

SCAN TIMING	
Number of Echos:	[4]
Echo Time (TE):	[20 ms]
Rep Time (TR):	[600 ms]
	[NEXT PAGE]
SCANNING RANGE	
Field of View:	[30 cm]
Slice Thickness:	[5 mm]
Slice Locations:	(S/I) S0, I0
FOV Center:	(R/L) R0 (A/P) A0
	[NEXT PAGE]
ACQUISITION TIME	
Acq. Matrix:	[256 x 128]
Imaging Time:	[1 Nex]
Frequency Direction:	[R/L]
REVIEW PAGE:	[NEXT PAGE]

TABLE 3
SIGNA VERIFICATION SCAN PARAMETERS

3.0 SIGNA QUADRATURE T / L SPINE COIL WITH POSITIONER QUADRATURE POLARITY VERIFICATION

3.1 Install the Quadrature T/L Spine Coil with Positioner and the phantom on the patient transport table as illustrated in Figure 1. Connect the Surface Coil cable to the appropriate port on the patient transport. Use the Head Coil Port on Linear Head Coil Systems or use the **SURFACE COIL QUICK DISCONNECT BOX** for Quadrature Head Coil Systems.

3.2 Repeat the scan using the parameters listed in Table 3. Use **AUTO PRESCAN** to calibrate the system TA and RA on 3.X systems or TG and R1/R2 values on 4.X systems Record the values in Data Table 2.

3.3 Ensure the resulting images are free of artifacts.

3.4 Disconnect and remove the Quadrature T/L Spine Coil with Positioner from the system. Reverse the device on the patient table. Reconnect the coil to the scanner. Ensure that the cable from the Quadrature T/L Spine Coil with positioner does not touch the Body Coil or the Quadrature T/L Spine Coil with Positioner as it passes the side of the device.

3.5 Repeat steps 3.1, 3.2, and 3.3. Record the values for the RA or R1/R2 in Data Table 3.

3.6 For 4.X systems, compare signal levels to determine the proper quadrature polarity. If the value of R2 is not the same for both scans, repeat the second scan using the MANUAL PRESCAN function to set R2 equal to Data Table 2.

3.7 If Data Table 2 gives a higher value of RA, or a lower value of R1, the coil polarity is properly set. If Data Table 3 gave the higher value for RA or lower value for R1, the coil polarity is improperly set, or the coil is not functioning properly.

3.8 To change the coil polarity, remove the access cover shown in Figure 4 by unscrewing the six nylon screws. Remove the internal cable SMA connector from J1 or J2 on the balun board and reconnect to the other fitting. Repeat steps 3.1 to 3.7 to verify the polarity is now correctly set.

4.0 SIGNA QUADRATURE T/L SPINE COIL WITH POSITIONER IMAGING PERFORMANCE VERIFICATION

4.1 Verify that the coil polarity is correct using the procedure in Section 3.0. If it is improperly set, correct it before continuing.

TA (3.X) _____
TG (4.X) _____

DATA TABLE 1
VERIFICATION SCAN POWER LEVELS

RA (3.X) _____	**RA (3.X)** _____
R1 (4.X) _____	**R1 (4.X)** _____
R2 (4.X) _____	**R2 (4.X)** _____

DATA TABLE 2 **DATA TABLE 3**
QUADRATURE POLARITY CHECKS

FIELD SERVICE PROCEDURE FOR SIGNA QUADRATURE T/L SPINE COIL WITH POSITIONER

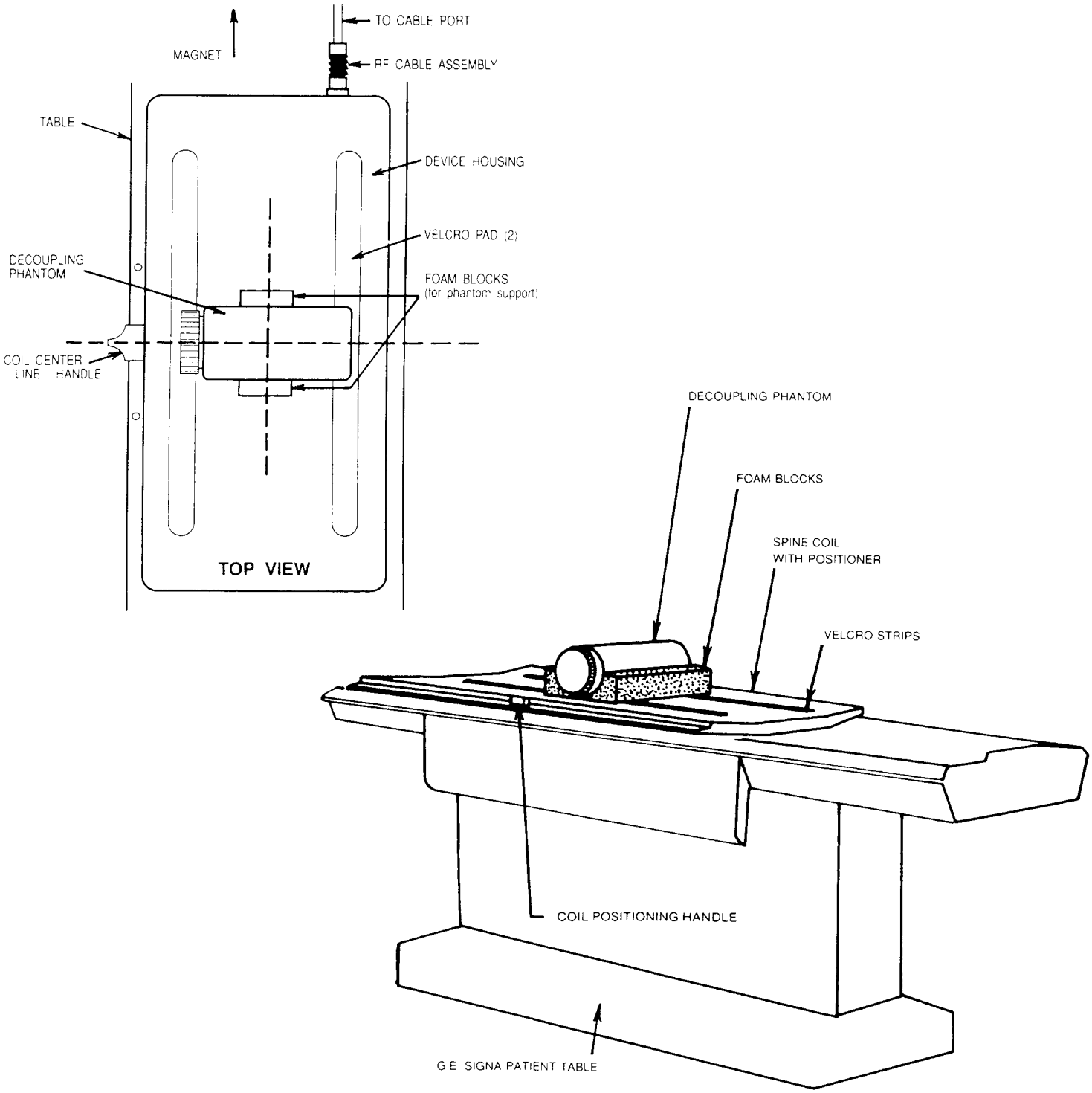


FIGURE 1
QUADRATURE T/L COIL WITH POSITIONER AND PHANTOM

4.2 Set up the Quadrature T/L Spine Coil with Positioner and the phantom (part #46-317048P1) on the patient transport table as illustrated in Figure 1. Connect the Surface Coil cable to the appropriate port on patient transport.

4.3 Repeat the scan using the scan parameters listed in Table 3. Use **MANUAL PRESCAN** to set up Receiver Gain. **DO NOT RECALIBRATE THE RF POWER**. Use the TA or TG from Data Table 1.

4.4 Perform the scan. Ensure that there are no artifacts of any sort on any of the resulting images. If any artifacts are observed, refer to Section 5.0 for Test and Troubleshooting Procedures.

4.5 Study the third and fourth echoes using a WINDOW of 200 to 250, and a LEVEL of 1100 to 1150. A properly functioning coil will produce an image with a smooth signal pattern, gradually dropping in intensity as the distance from the coil increases, as shown in Figure 2. A decoupling failure will cause holes, distortions, or "zebra" patterns as seen in Figure 3. Refer to Section 5.0, step 5.4 to troubleshoot decoupling failures.

4.6 Compare the Signal-to-Noise ratio of the Surface Coil scans of 4.4 to the Body Coil scans of 2.4. The Surface Coil scans should display significantly improved Signal-to-Noise ratio over the Body Coil scans. Refer to Section 5.0 to troubleshoot poor Signal-to-Noise ratio.

4.7 Inspect the images for visible ghosting (similar to motion artifacts) in the phase encode direction. If the images contain ghosting in the phase encode direction, an intermittent connection or component is suspected. Refer to Section 5.0 for the appropriate Surface Coil troubleshooting procedure.

5.0 TEST AND TROUBLESHOOTING PROCEDURES

5.1 Coil Impedance Measurements

5.1.1 Detach the patient table and remove it from the scan room to an area where the magnetic field from the Signa magnet is below 5.0 gauss. Position the coil on the scanner patient table. Place a human subject on the Quadrature T/L Spine Coil with Positioner. Follow the procedure outlined in the **OPERATION MANUAL** (part number 87305-T-137) to properly locate the patient on the coil.

5.1.2 Connect the coil output cable to the Vector Impedance Meter probe using the BNC adaptor supplied with the Vector Impedance Meter. Use the Vector Impedance Meter to measure the coil impedance at 63.86 MHz. Ensure that the cable does not pass close to or touch the housing of the coil while making this measurement.

5.1.3 The value of impedance magnitude should be nominally 50.0 ohms under loaded conditions. Under test conditions, it should fall within the range of 37.5 to 62.5 ohms.

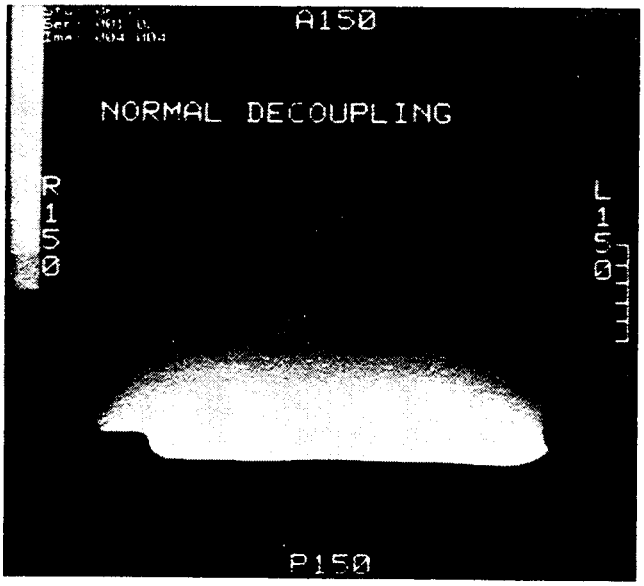


FIGURE 2
IMAGE FROM A PROPERLY FUNCTIONING COIL

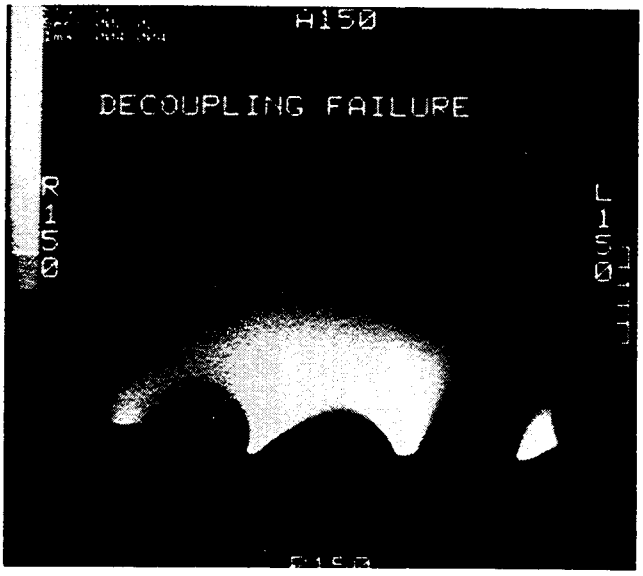


FIGURE 3
IMAGE REPRESENTING DECOUPLING FAILURE

5.1.4 The value of the phase magnitude should be nominally 0.0°. Under test conditions, it should fall within the range of -17° to +17°. If proper readings can not be obtained, the Signal-to-Noise ratio of the coil will be reduced.

CAUTION

The Quadrature T/L Spine Coil with Positioner can not be tuned in the field. If the coil under test falls outside of the coil impedance measurement limits, proceed to Section 5.2. Coil Integrity Checks.

5.2 Coil integrity tests

5.2.1 Repeat the steps in Section 5.1 while flexing the coaxial cable near the BNC fitting and the coil housing strain relief. Note any erratic fluctuations in the coil impedance. Use the HIGH SPEED mode on the Vector Impedance Meter. Any erratic or unstable readings may indicate a defective cable or connector. Refer to Section 6.2 and 6.7 for cable and connector replacement procedures.

5.2.2 Repeat the steps in Section 5.1 while sliding the coil over the range of the positioning device travel. Note any erratic fluctuations in the coil impedance. Use the HIGH SPEED mode on the Vector Impedance Meter. If the coil under evaluation falls outside of the impedance test limits or exhibits erratic fluctuations, the coil or the internal coaxial cable **MUST BE REPLACED**. Refer to Section 6.0 for a list of replacement parts and procedures.

5.3 Preamplifier protection PIN diode tests [Figure 4]

NOTE

Diodes are not field replaceable. Coils with diode failure must be replaced with a new coil assembly.

5.3.1 Use the diode test function of the DVM. Measure across the BNC connector on the coil output cable; positive to the center pin, negative to the connector shell. See Figure 4. The reading should fall between .500 and 1.000. Reverse the DVM leads to test the circuit with the opposite polarity. An overrange reading should be observed.

5.3.2 An overrange indication on the DVM in both directions indicates two open diodes or an open cable. Refer to Sections 6.2 and 6.4 for further information.

5.3.3 A near zero reading on the DVM indicates one or more shorted diodes or a shorted cable. This will not change the SAR but will cause the Signal-to-Noise ratio to be very poor. This condition also upsets the T/R switch bias network on 3.X level systems. The coil or defective cable must be replaced.

5.4 Decoupling diode tests [Figure 4]

WARNING

Do not move the balun board components when making these measurements. Any movement of the Quadrature T/L Spine Coil components will detune the coil circuits.

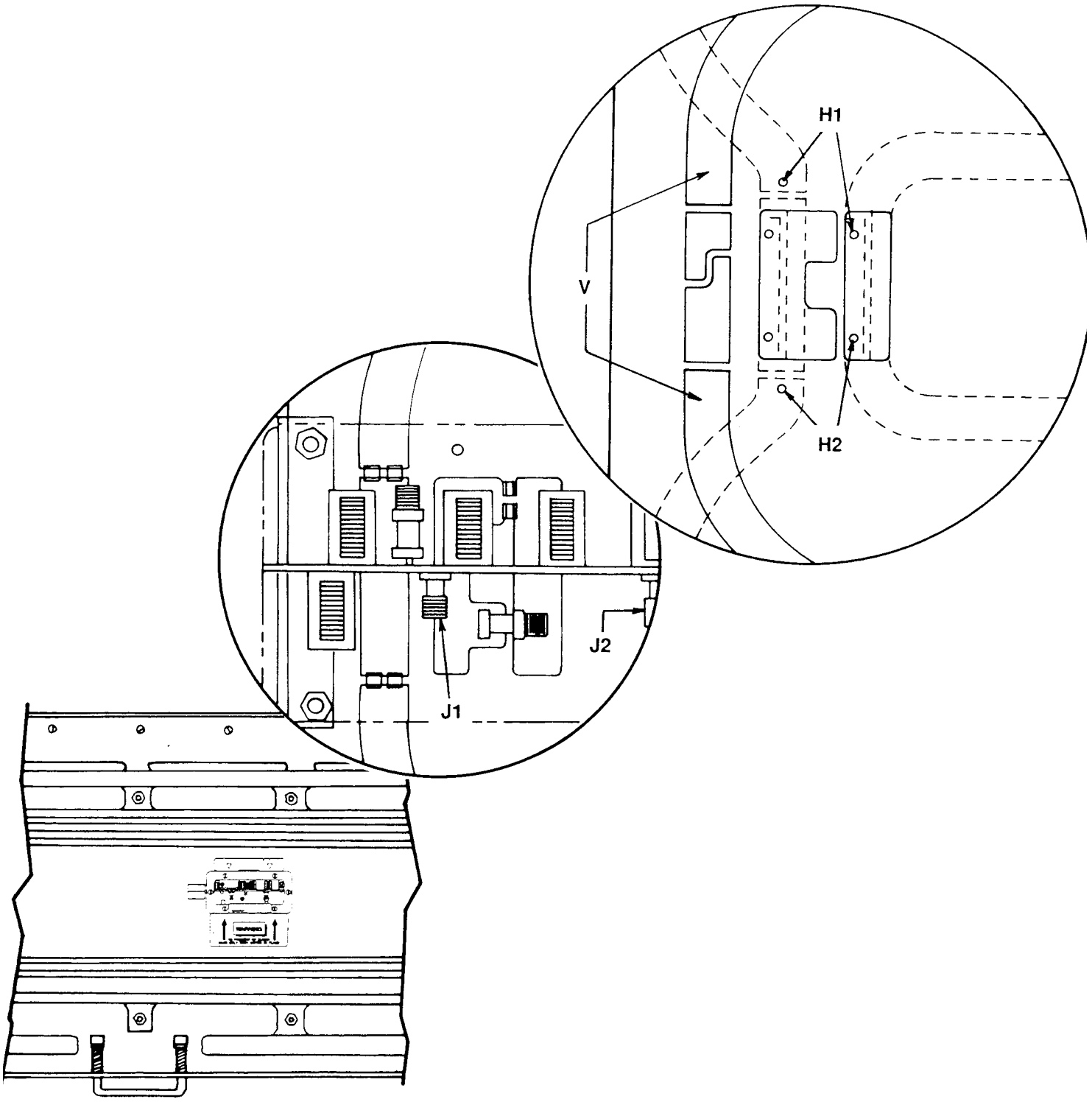


FIGURE 4
PREAMPLIFIER PIN AND DECOUPLING DIODE TESTS

NOTE

Diodes are not field replaceable. Coils with any type of diode failure must be replaced with a new coil assembly.

5.4.1 Remove the service access cover by carefully removing the six nylon screws. See Figure 4.

5.4.2 Locate the three pairs of test points for the 1N6638U decoupling diodes on Figure 4 labeled V, H1, and H2. The printed circuit board has no printing on it, use Figure 4 for the test point labels and locations.

5.4.3 Use the diode test function of the DVM to test the decoupling diodes, first across the points marked V, then across the pair marked H1, and lastly across the pair marked H2. See Figure 4. Test with the DVM polarity in both directions to test the condition of the diodes in both directions. A reading of .500 to 1.000 in both polarity directions is normal.

5.4.4 An overrange in both directions indicates that both diodes of a pair are open (an extremely unlikely failure mode). This condition causes a portion of the decoupling of the coil to be inoperative.

5.4.5 A reading near zero indicates one or more shorted diodes. This will cause the coil to remain partially decoupled at all times. SAR is not changed, however, the Signal-to-Noise ratio will be poor.

5.5 Verification of a drive cord problem

5.5.1 Turn device upside down, allowing it to rest on its top cover.

5.5.2 Slide positioning handle to end of device opposite cable exit.

5.5.3 While looking through clear access cover, slide handle back and forth and verify that the handle position is within ±0.250" from actual coil position.

5.5.4 If handle moves in excess of ±.250" from centerline, prior to coil movement, one or both drive cords have been stretched beyond specifications. If coil does not move in either direction, one or both cords have been broken. See Section 6.3 for the repair procedure. See Section 6.5 for drive cord tightening and replacement procedures.

6.0 SERVICE PROCEDURES

6.1 Service kits for the Signa Quadrature T/L Spine Coil with Positioner

6.1.1 Two service kits are available: **EXTERNAL CABLE ASSEMBLY KIT** - 46-317045P1 - Table 4, and **INTERNAL CABLE ASSEMBLY KIT -** 46-317047P1 - Table 5. The decoupling diodes are not field replaceable, as coil tuning may be affected.

46-317822P1

CABLE KIT ~~46-317045P1~~ - Consisting of the following items:

ITEM	VENDOR PART#	DESCRIPTION	QTY
1	30511C17001	External Cable Assembly	1
2	87305-T-140	Service Manual - SIGNA 1.5T	1
3	87305-T-147	Service Manual - MR MAX 0.5T	1

TABLE 4
EXTERNAL CABLE ASSEMBLY SERVICE KIT

CABLE KIT 46-317047P1 - Consisting of the following items:

ITEM	VENDOR PART#	DESCRIPTION	QTY
1	708-0003-009	Drive Cord	12 ft
2	616-0218-450	Drive Rivets	9
3	670-0140-140	Binding Post Fastener	2
4	651-0440-381	4-40 Nylon Fastener	2
5	651-0150-260	Black Indicator Cap	2
6	30511C17002	Internal Cable Assembly	1
7	30519B15001	Clip-Audio Cable - MR MAX 0.5T only	2
8	87305-T-140	Service Manual - 1.5T	1
9	87305-T-147	Service Manual - MR MAX 0.5T	1

TABLE 5
INTERNAL CABLE ASSEMBLY SERVICE KIT

6.2 External Coaxial Cable Replacement [Figure 5]

6.2.1 Loosen the strain relief body from the strain relief base using a 15 millimeter open end wrench. Slide the strain relief body down the cable away from the base.

6.2.2 Loosen the retaining nut from the strain relief base using a 3/4 inch open end wrench.

6.2.3 Loosen and remove the strain relief base from the tapped hole in the top cover using a 15 millimeter open end wrench.

6.2.4 Disconnect the external cable by unscrewing the cable SMA connector from the SMA connector mounted to the bottom cover.

6.2.5 Remove the external cable by withdrawing it through the strain relief mounting hole in the top cover.

6.2.6 Remove the new retaining nut from the external cable assembly (part number 30511C17001). Insert the new external cable through the strain relief mounting hole. Thread the SMA fitting end of the new cable through the new retaining nut.

6.2.7 Reconnect the external cable by screwing the cable SMA connector to the SMA connector mounted on the bottom cover.

6.2.8 Attach the strain relief base by screwing it into the tapped hole in the top cover using a 15 millimeter open end wrench. Tighten the strain relief base one quarter turn beyond its point of initial contact with the surface of the top cover. Reinstall and retighten the retaining nut on the threads of the strain relief body using a 3/4 inch open end wrench. Hold the strain relief base assembly securely and tighten the nut one half turn beyond the point of initial contact with the surface of the Positioner top cover.

6.2.9 Using a 15 millimeter open end wrench, tighten the strain relief body to the strain relief base until the base begins to turn (8 in-lb).

6.2.10 Repeat the tests in Sections 3.0, 4.0, and 5.0 to verify proper coil operation.

6.3 Signa Quadrature T/L Spine Coil with Positioner Disassembly Instructions [Figure 6]

6.3.1 Remove comfort pad from top of device.

6.3.2 Turn the device over, allowing it to rest on its top cover.

6.3.4 Using a flat blade screwdriver, remove the six access cover screws that attach the clear access cover to the bottom cover of the device.

6.3.5 Disconnect internal cable fitting from the SMA fitting on balun board. Note polarity setting for future assembly of the coil.

6.3.6 Remove the external cable from the device by following the instructions outlined in Section 6.2.

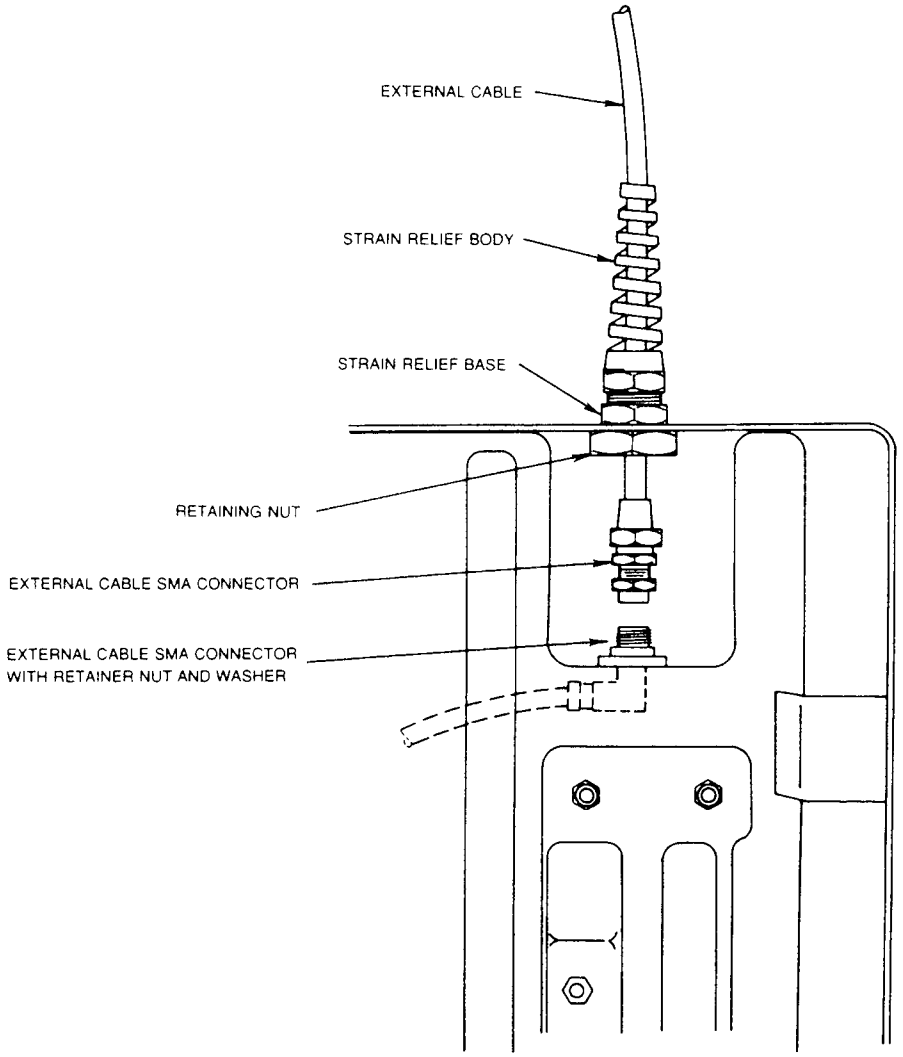


FIGURE 5
EXTERNAL COAXIAL CABLE REPLACEMENT

6.3.7 Using a flat blade screwdriver, remove the seven nylon screws located beneath the scale on the positioning handle side of the device.

6.3.8 Remove the carrying handle and springs by removing the two knurled nuts which retain the handle.

6.3.9 Remove the nine nylon drive rivets located two on each end and five on carrying handle side. Using a 3/32 inch transfer punch and small hammer, drive the center pin into the device. Once the center pin is dislodged, pull the rivet body out of the hole using a flat blade screwdriver. See Figure 6A.

6.3.10 Remove the ten brass nuts and washers located on the bottom cover of the device using a 11/32 inch nut driver.

6.3.11 Rest the device on its bottom cover (normal position), and position the coil to centerline. Spread the slot open enough to push the positioning handle inside the device. Remove the top cover from the bottom cover.

6.3.12 Remove all drive rivet center pins from inside of bottom cover.

6.4 Internal Coaxial Cable Replacement [Figure 7]

6.4.1 Remove the external coaxial cable following external cable replacement instructions in Section 6.2.

6.4.2 Remove the 90° connector retaining nut and washer using a 3/8 inch open end wrench.

6.4.3 Disassemble the unit. See Section 6.3.

6.4.4 Using a flat blade screwdriver and 5/16 inch open end wrench, remove the binding post fastener (Figure 7, Items 1 and 2) from the PC board and cable management bracket.

6.4.5 Using a flat blade screwdriver, remove the cable clip (Figure 7, Item 3) from the PC board.

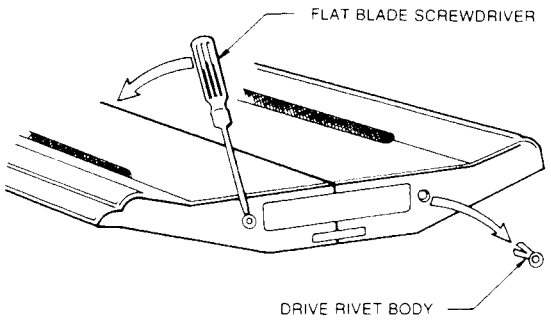
6.4.6 Detach the 90° connector from the bottom cover.

6.4.7 Remove the internal cable by withdrawing it from the cable management system. Begin by retracting the SMA, which connects to the PC Board, through the cable management tubes. Discard the old internal cable assembly.

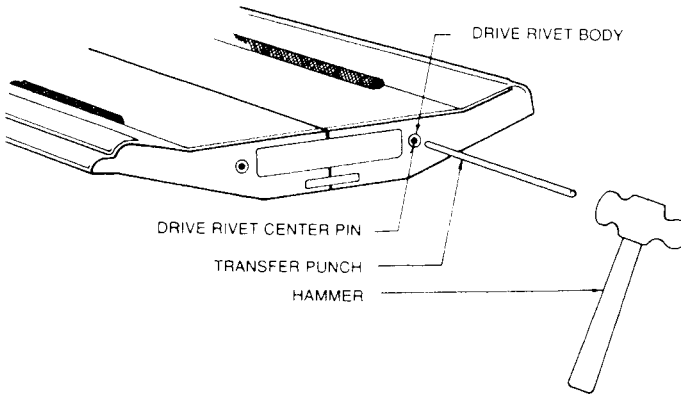
6.4.8 Feed the new cable (part number 30511C17001) through the cable management system and attach the 90° connector to the bottom cover using the washer and retaining nut.

6.4.9 Place the cable clip on the cable and board 5 1/4 inches from the end of the cable. Orient clip as shown in Figure 7 and tighten the 6-32 brass pan head fastener to 3 in-lb.

FIELD SERVICE PROCEDURE FOR SIGNA QUADRATURE T/L SPINE COIL WITH POSITIONER



RIVET BODY REMOVAL



DRIVE RIVET CENTER PIN REMOVAI

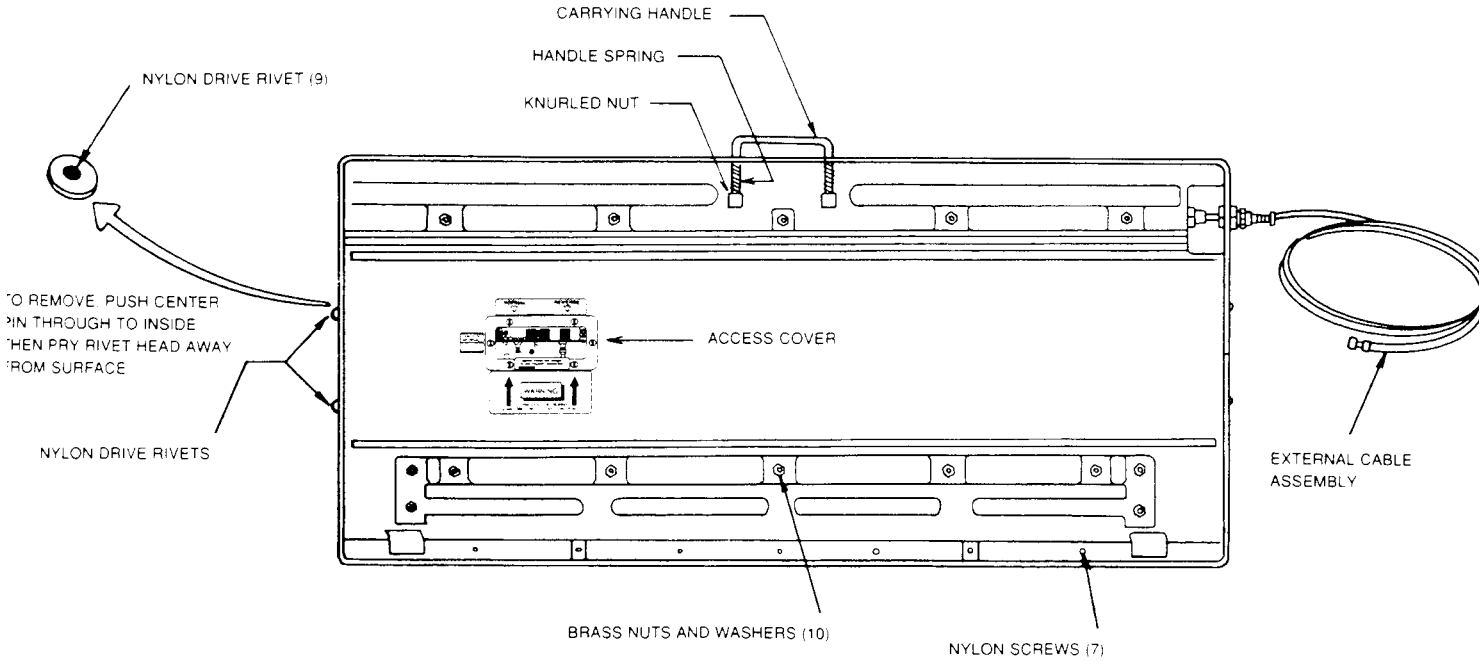


FIGURE 6 AND 6A
SIGNA QUADRATURE T/L SPINE COIL REPLACEMENT

6.4.10 Install the new 1/4" binding posts and screws to connect the cable management system to PC board and mounting bracket. This can be done by pushing the screw into the post. **DO NOT THREAD OR SCREW TOGETHER.**

NOTE

Cable management linkage bar must be attached to bottom side of PC board and mounting bracket.

6.4.11 Verify operation of drive system by moving Indicator Connector block several times from one end to the other.

6.4.12 Assemble device following the assembly instructions in Section 6.6.

6.4.13 Repeat the tests in Sections 3.0, 4.0, and 5.0 to verify proper coil operation.

6.5 Drive cord tightening and replacement [Figure 7]

6.5.1 Disassemble the unit. See Section 6.3.

6.5.2 To tighten the drive cord system, loosen the lock nuts (Figure 7, Item 4) with a 7/16 inch open end wrench and tighten the tension adjuster bolts (Figure 7, Item 5) using a 3/8 inch open end wrench sufficiently to permit alignment between coil and indicator to be within ±0.250". Tighten lock nuts one quarter turn beyond point of contact with the indicator block.

6.5.3 To replace the drive cord system, loosen the lock nut (Figure 7, Item 4) and remove the tension adjuster bolt (Figure 7, Item 5) from the connector block. Remove other portion of cord from PC Board carrier.

6.5.4 Place the new cord into the appropriate hole in the circuit board carrier from the top. Tie a double knot in the cord underneath the PC board carrier, cut excess cord.

6.5.5 Route the cord around the inner posts closest to the board and crisscross the two cords. Route around the outer posts on opposite sides of the device.

6.5.6 Feed the opposite end of the cord through the tension adjuster bolts and tie a double knot to achieve a finished length between two knots of 68 1/2" - add Loctite to knot. Cut the excess cord length.

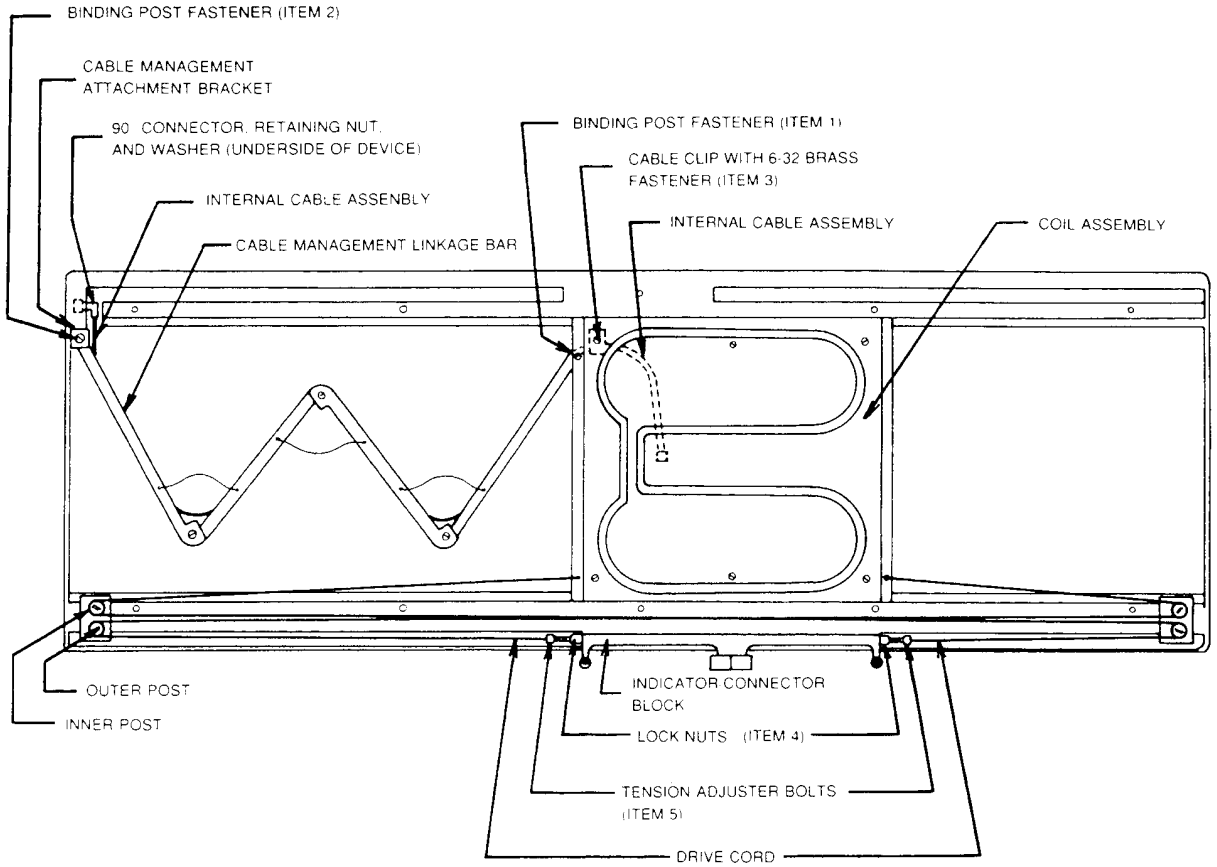
6.5.7 Thread tension adjuster bolts into the Indicator Connector block. Align ends of indicator block to edges of PC board ±0.250" and tighten lock nuts turn beyond point of contact.

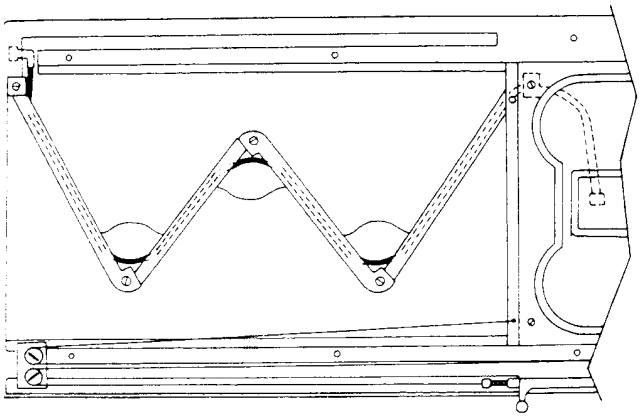
6.5.8 Verify operation of drive system by moving Indicator Connector block several times from one end to the other.

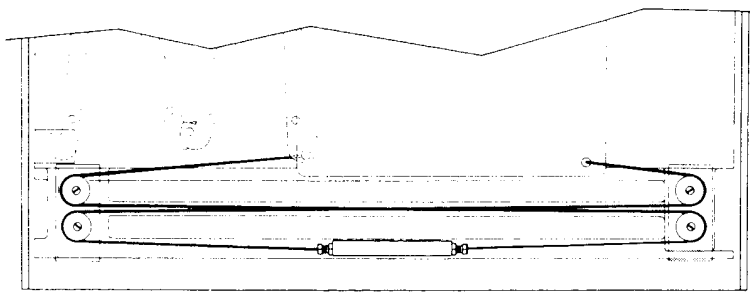
6.5.9 Assemble the device following the instructions in Section 6.6.

6.5.10 Repeat tests in Sections 3.0, 4.0, 5.0 to verify proper coil operation.

FIELD SERVICE PROCEDURE FOR SIGNA QUADRATURE T/L SPINE COIL WITH POSITIONER







DETAIL OF DRIVE CORD ATTACHMENT

(NOT TO SCALE)

FIGURE 7
INTERNAL CABLE AND DRIVE CORD REPLACEMENT

Nylon 10-32 Flat Head Fasteners (7) - 2 in-lbs
Brass Hex Nuts on Bottom Cover (10) - 20 in-lbs
Nylon 6-32 Flat Head Fasteners (6) - 1.0 in-lbs

Table 6
Assembly Torque

6.6 Assembly of Signa Quadrature T/L Spine Coil with Positioner [Figure 6]

6.6.1 With the Surface Coil resting on its bottom cover, slide the coil to coil housing centerline. Place the top cover onto the bottom cover. Spread the slot open on top cover and pull the positioning handle through. Press the top and bottom covers together ensuring the ten brass studs protrude through the bottom cover.

6.6.2 Hold the top and bottom covers together securely and invert the surface coil. Place the ten brass washers and hex nuts onto the studs using a 11/32 inch nut driver and torque to 20 in-lb. Slide the coil to both extreme ends of the coil housing to ensure there is no binding or sticking. If binding is apparent, loosen the ten brass hex nuts, turn the surface coil on the bottom cover and slide the coil to both extremes. If binding is still apparent, disassemble covers, find and fix source of binding, and repeat step 6.6.2.

6.6.3 Push the nine nylon drive rivets into the five holes along carrying handle side of device and two holes on each end. Using a small hammer, drive the center pin into the rivet body until flush.

6.6.4 Attach the carrying handle using the two springs and knurled nuts.

6.6.5 Replace the seven nylon screws located beneath the scale. Torque to 2 in-lb.

6.6.6 Install the external cable following Steps 6.2.6 to 6.2.9 in the External Coaxial Cable replacement instructions

6.6.7 Connect the internal cable fitting to the appropriate SMA connector on the balun board to achieve the correct polarity as noted earlier in Step 6.3.5. This insures system and coil polarity match.

6.6.8 Attach the clear access cover to the bottom cover using six 6-32 x 1/4" Flat Head nylon screws. Torque to 1.0 in-lb.

6.6.9 Turn the device over, allowing it to rest on the bottom cover. Attach the comfort pad.

6.6.10 Repeat the tests in Section 3.0, 4.0, 5.0 to verify proper coil operation.

6.7 BNC Connector replacement [Figure 8]

6.7.1 Before replacing the BNC fitting, verify that the resulting cable length will be sufficient to permit correct operation of the surface coil. If the cable will be shortened significantly by a repair, it is recommended that the entire cable be replaced.

6.7.2 Replace the BNC connector using Figure 8 as a guide. Use a new BNC coaxial fitting (part number 46-271494P1), and crimp tool (part number 46-255841) with insert (part number 46-255841P100) to install the replacement connector on the cable.

6.7.3 Repeat the tests in Sections 3.0, 4.0, and 5.0 to verify proper coil operation.

6.8 Diode replacement

6.8.1 As coil tuning and decoupling tuning may be affected by diode replacement, field replacement of the decoupling diodes will not be performed.

6.9 Coil Indicator Cap Replacement

6.9.1 Remove the remainder of the 4-40 nylon screw from the connector block, using the tip of a utility knife or a pair of pliers.

6.9.2 Replace the broken 4-40 nylon screw with a new 4-40 nylon screw Torque to 1.0 in-lb.

6.9.3 Attach the new black indicator cap by pushing the cap over the 4-40 nylon screw.

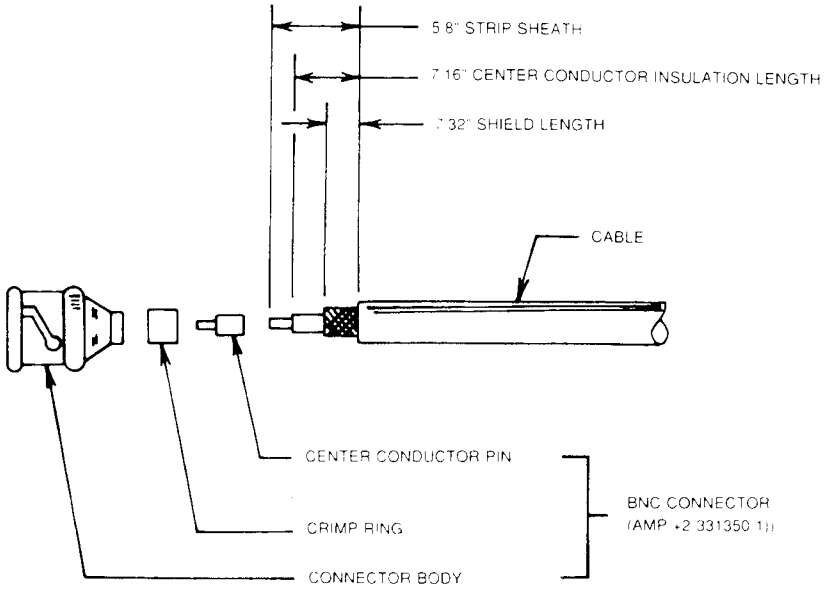


FIGURE 8
BNC CONNECTOR REPLACEMENT

DEFECTIVE SURFACE COIL RETURN FORM

NOTE

To allow for proper assessment of defective returned coils. this form must be completely filled out and ac company all returned coils. Include films or prints of any image quality complaints with a description of the scan prescription used.

DATE: _____

SITE NAME: _____

SITE ADDRESS: _____

_____

SERVICE ENGINEER: _____

COIL SERIAL NUMBER: _____

DATE COIL INSTALLED: _____

DESCRIPTION OF COIL PROBLEM:

ELECTRICAL CHECKS VECTOR IMPEDANCE METER TEST - COIL LOADED WITH HUMAN SUBJECT IN FREE SPACE	
MAGNITUDE AT 63.86 MHz	[50 OHMS]
PHASE AT 63.86 MHz	[0°]
VECTOR IMPEDANCE METER TEST - COIL UNLOADED IN FREE SPACE	
MAGNITUDE AT 63.86 MHz	
PHASE AT 63.86 MHz	