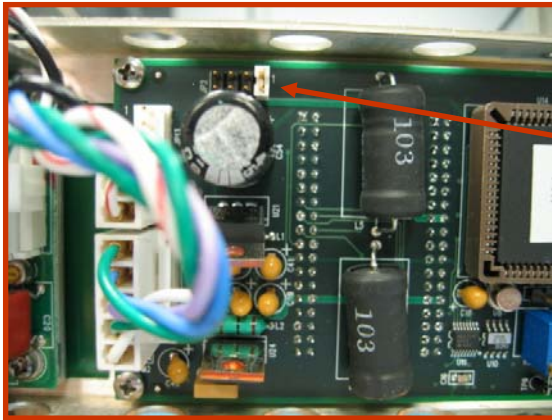


Auxiliary +28 VDC Power Supply Installation Guide

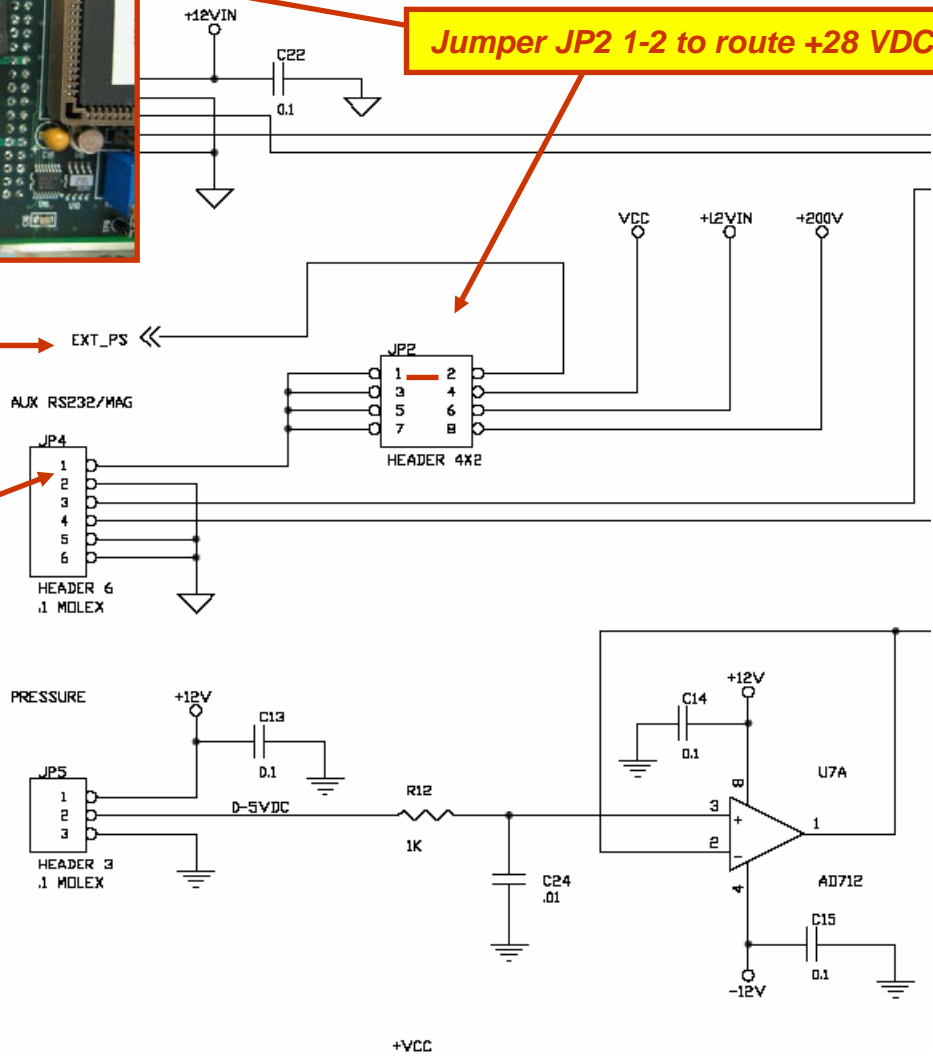
PN 14303226



Jumper JP2 1-2 to route +28 VDC to Magnetometer

+28 VDC from Aux. P/S

Monitor JP4-1 & 2 with a DVM when the Magnetometer is energized. Shut off if voltage drops significantly.



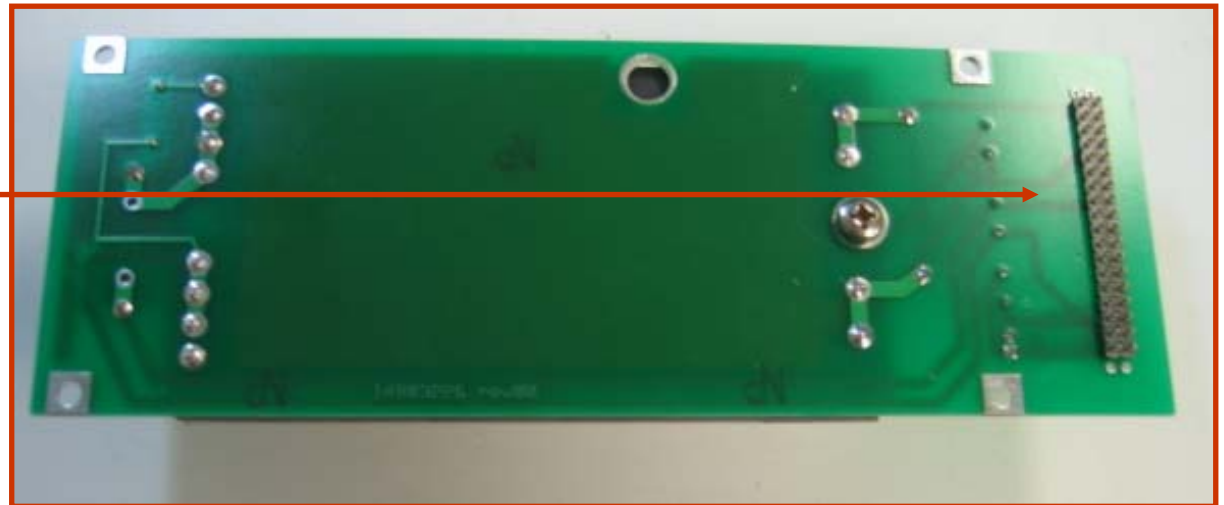
Above circuitry is on the Towfish Multiplexer PCB

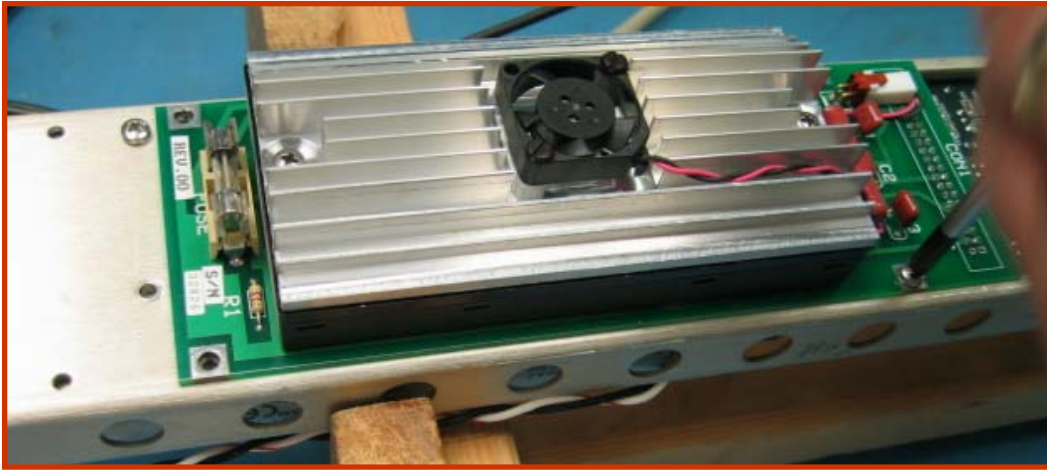


Top of Aux. 28 VDC Power Supply with connector to the right.

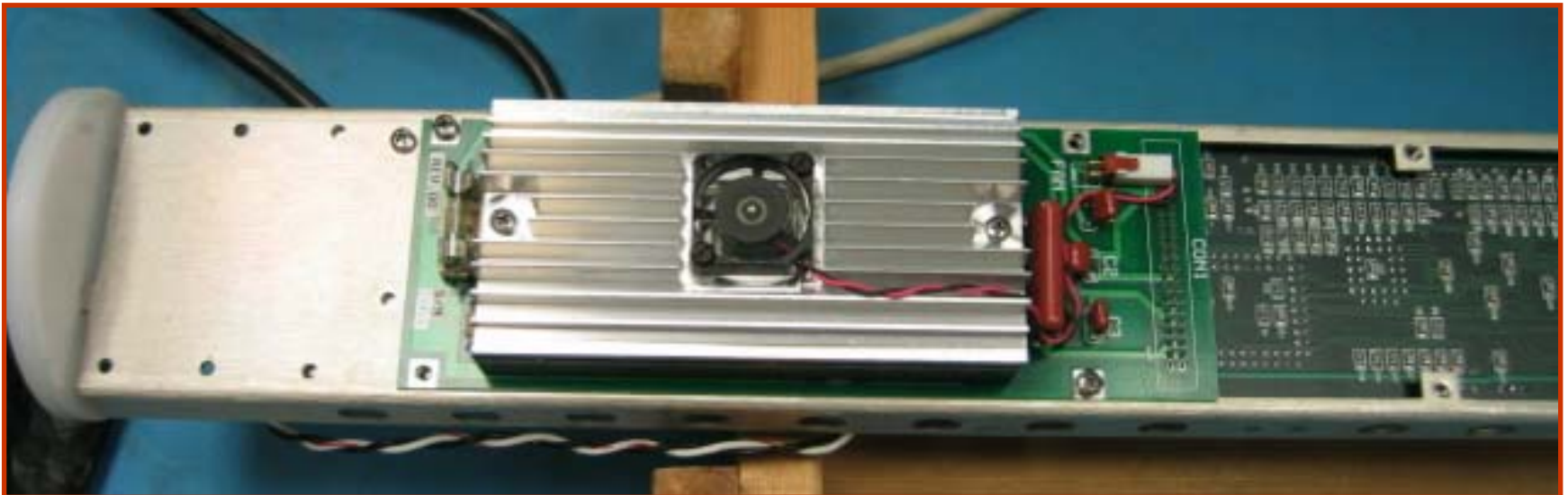
3 spare fuses are being shipped with the PCB along with 5 mounting screws.

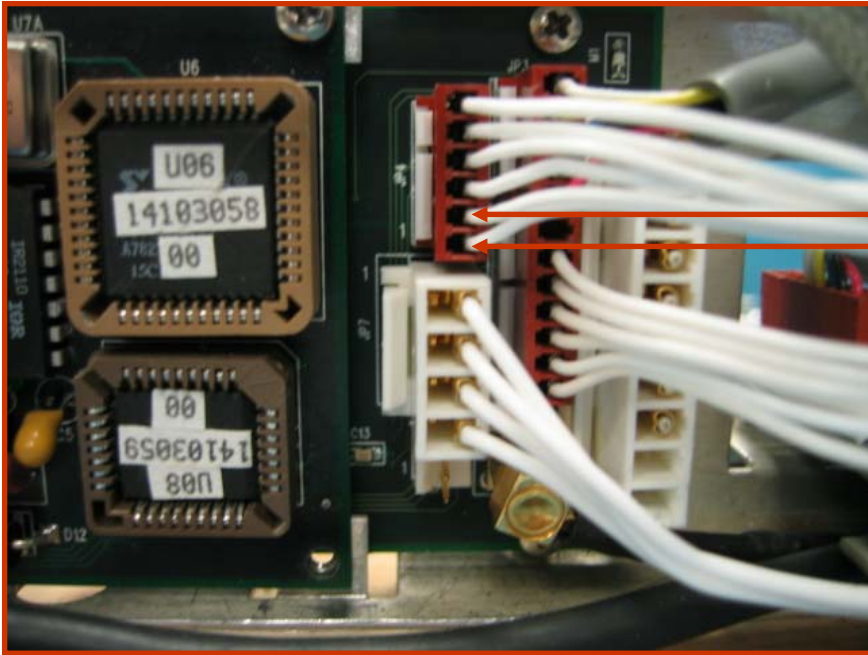
Bottom of Aux. 28 VDC Power Supply with the connector to the right.



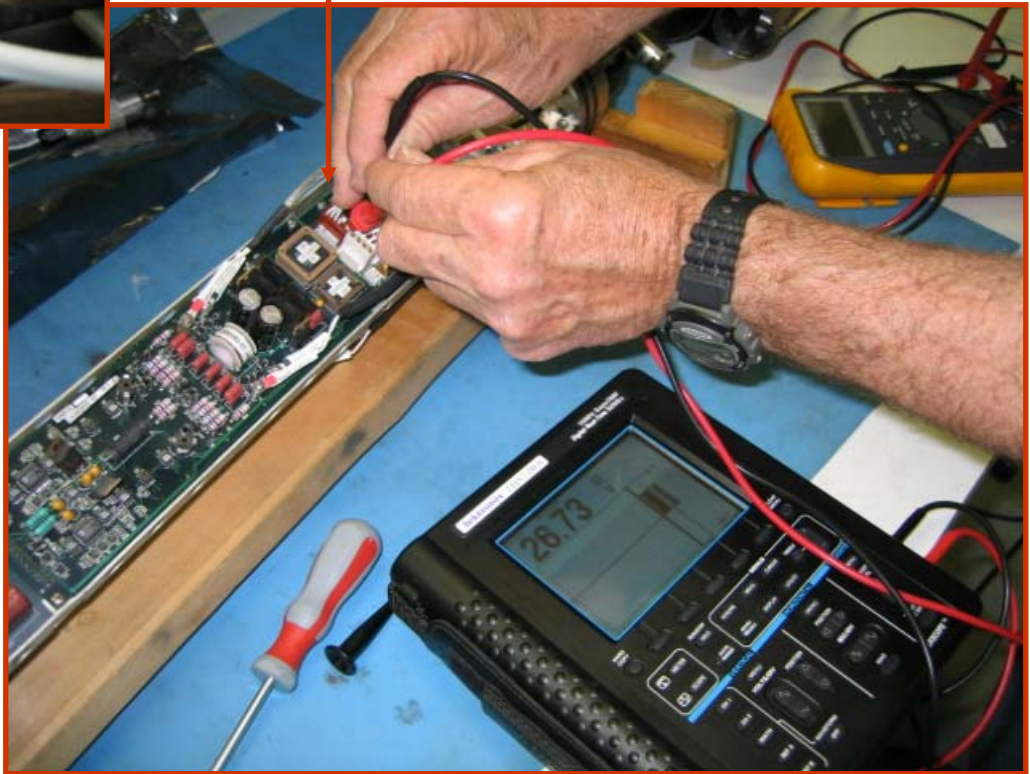


Install the Aux. 28 VDC Power Supply with the edge connector carefully connected into the proper jack on the Multiplexer PCB as shown. The four screw holes will line up and four screws can be installed to secure the PCB. Put a light coat of Locktite on the screws to keep them secured.





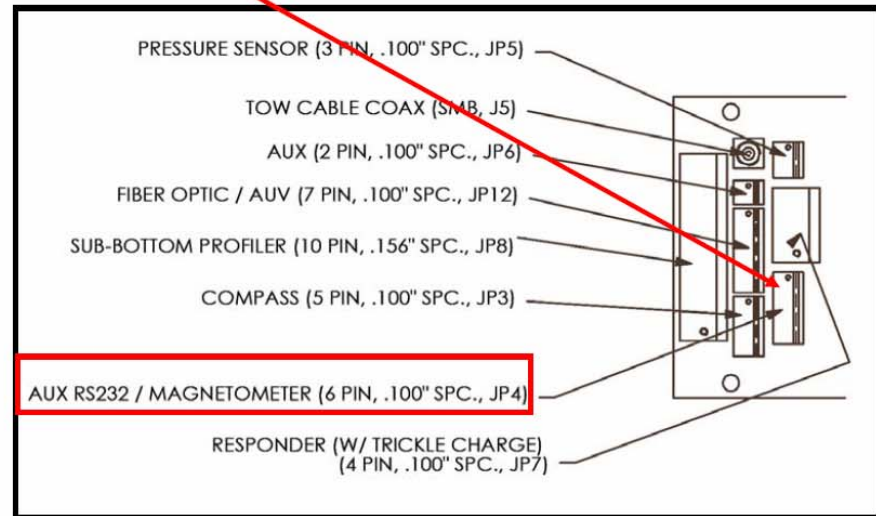
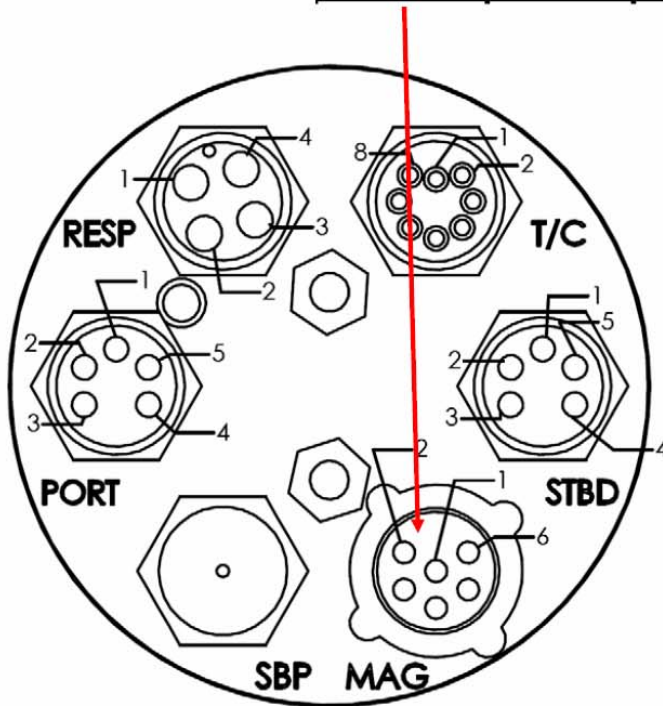
Measure +28 VDC nominal at JP4 1 & 2 with the Towfish energized. Be sure that the transducers are connected to put a load on the Transceiver PCB's. This Power Supply measured 26.7 VDC with no load on it.





Please confirm that the Towfish Transducers are always connected whenever the Towfish is energized. This puts a load on the Transceiver PCB's and prevents damage to the Transceiver PCB's. When the Towfish is closed it should only be run for 10-15 minutes to prevent overheating. When it is open as above, it can be run for longer periods to aid troubleshooting, etc.

MAGNETOMETER (MAG)				
6 PIN SUBCONN TO 6 PIN MOLEX .100" SPC. (JP4)				
SUBCONN PIN #	WIRE LENGTH	MOLEX PIN #	DESC.	NOTES
1	9"	1	VS	ITEMS 25 & 29
2	9"	2	GND	ITEMS 25 & 29
3	9"	3	TX	ITEMS 25 & 29
4	9"	4	RX	ITEMS 25 & 29
5	9"	5	GND	ITEMS 25 & 29
6	9"	6	GND	ITEMS 25 & 29



Multiplexer PCB in Towfish

Note: The Magnetometer Jumper Cable is a six to eight pin jumper. On the eight pin end, pin 1 is VS, pin 2 is GND, pin 3 is TX and pin 4 is RX.

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SETTING UP THE TOWFISH TO BE "MAGNETOMETER READY"

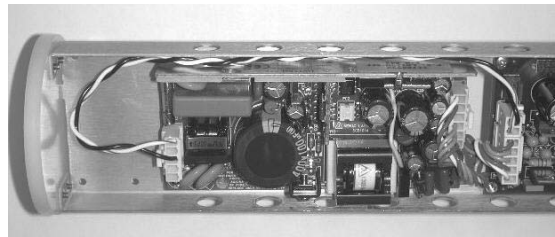
REVISIONS				
REV.	ECN	DESCRIPTION	DATE	APPROVED
00	2147	RELEASE TO PRODUCTION		
01	2499	CALL-OUT LOCKING SLEEVE	10/1/2004	K.S.
02	2539	ADDED 24 VDC SETTING & MISC UPDATES	11/12/04	

MAGNETOMETER VOLTAGE SELECTION JP2 AND 2 POSITION JUMPER (SHUNT) (ITEM 54)			
REQ. MAG. VOLTAGE	JUMPER ON PINS	NOTES	USED ON
NO MAG.	1 & 2	DEFAULT POSITION	NO MAG
5 VDC	3 & 4	5 VDC TO PIN 1 ON JP4	
12 VDC	5 & 6	12 VDC TO PIN 1 ON JP4	
24 VDC	1 & 2	24 VDC TO PIN 1 ON JP4	14103051-01
200 VDC	7 & 8	200 VDC TO PIN 1 ON JP4	14103051

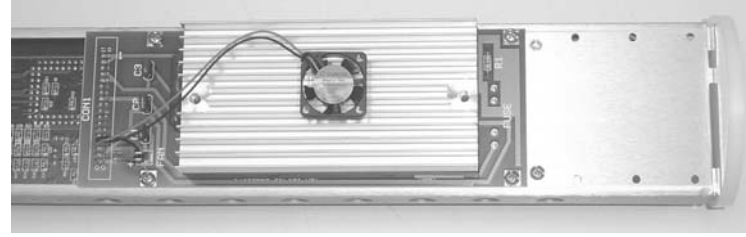
VOLTAGE SELECTION JUMPER (SHUNT)



VOLTAGE SELECTION JUMPER (SHUNT)



STEP 1A. REMOVE ELECTRONICS CHASSIS FROM TOWFISH HOUSING PER SYSTEM 3000 OPERATING MANUAL. SET MAGNETOMETER VOLTAGE SELECTOR TO APPROPRIATE VOLTAGE. A SPARE JUMPER (SHUNT) (ITEM 7) IS PROVIDED.



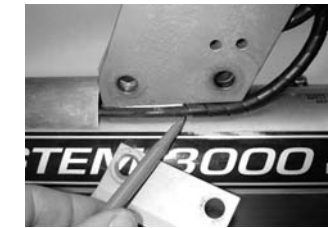
STEP 1B. ONLY FOR ASSEMBLIES REQUIRING A MAG. POWER SUPPLY PCB (ITEM 13) MOUNT PCB AS SHOWN, SECURE WITH 4 M3 PH SCREWS (ITEM 14).



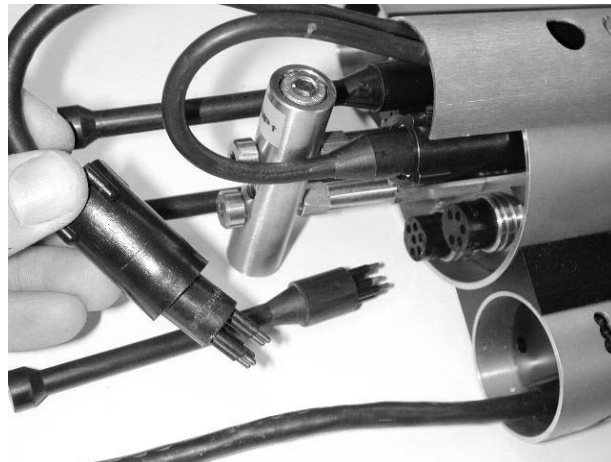
STEP 2. IF OLDER STYLE TOW BRACKETS (14201833) ARE USED THEN REMOVE THE .25 IN (6MM) DIA. SCREW, NUT & .50 IN (12MM) LONG SPACER, BAG PARTS AND PLACE IN VINYL POUCH. NOTE: OLDER STYLE BRACKETS CAN BE IDENTIFIED BY THE TOP TWO .390 IN (10MM) HOLES HAVING A 2.00 IN (50MM) CENTER LINE SPACING.



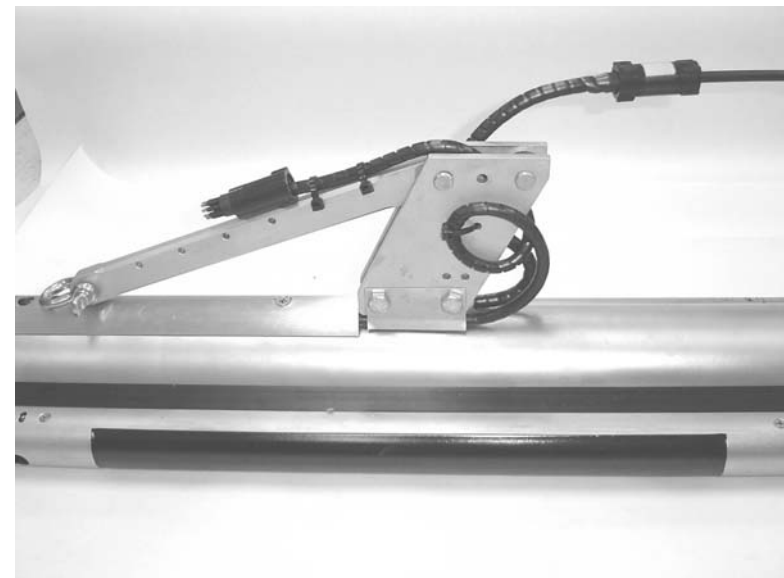
STEP 3. POSITION MAG (ITEM 1) & TOWCABLE JUMPERS TO EXTEND 8IN (200MM) FROM END OF METAL TOWFISH HOUSING. NOTE: NEWER TOWCABLE JUMPER CABLES (12900850) DO NOT HAVE OR REQUIRE SPIRAL WRAP.



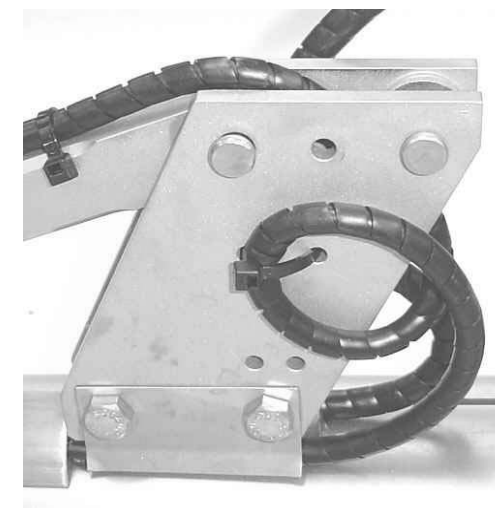
STEP 4. PLACE MAG. SPACER PLATE (ITEM 2) & CABLE RETAINING CLAMP (ITEM 3) AGAINST TOW BRACKETS AS SHOWN AND TIGHTEN NUTS. THE SPIRAL WRAP ON THE JUMPERS SHOULD EXTEND APPROX. 1 IN (25MM) BEHIND CABLE RETAINING CLAMP (ITEM 3).



STEP 5. INSERT ELECTRONICS CHASSIS UNTIL BULKHEAD CONNECTORS ARE NEAR END OF TOWFISH HOUSING. SEE PHOTO. INSERT CONNECTORS AND TIGHTEN LOCKING SLEEVES. THE MAG JUMPER (ITEM 1) IS PLUGGED INTO TO THE BULKHEAD CONNECTOR LABELED "MAG".

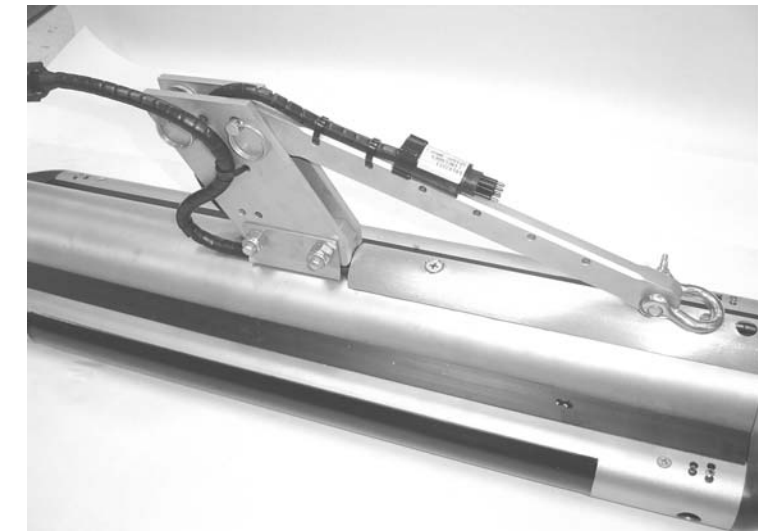


STEP 6. USE CABLE TIE (ITEM 6) TO SECURE JUMPER CABLES AS SHOWN. CHECK RANGE OF TOWARM (TOWBAR) MOTION. CABLES SHOULD NOT BIND OR PINCH.



PORT (LEFT) SIDE - CLOSEUP

STEP 7. PLACE THE MALE DUMMY PLUG (ITEM 8) AND MALE LOCKING SLEEVE (ITEM 9) ON THE FEMALE END OF THE MAG JUMPER CABLE. (PORT (LEFT) SIDE OF TOWFISH SHOWN.)



STARBOARD (RIGHT) SIDE

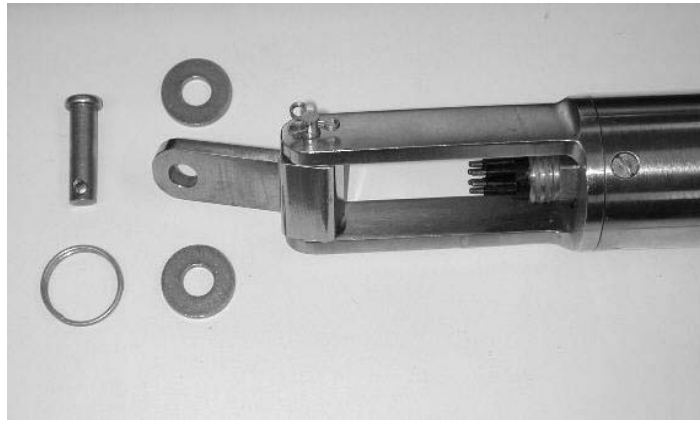
NOTES:
 1. PLACE REMAINING ITEMS AND ITEMS REMOVED FROM TOWFISH INCLUDING 6 PIN DUMMY PLUG AND LOCKING SLEEVE IN VINYL POUCH (ITEM 10).

14103051	USED ON
----------	---------

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCE ON		MATERIAL: N/A		KLEIN ASSOCIATES, INC. HIGH RESOLUTION SONAR SALEM * NEW HAMPSHIRE * 03079 U.S.A * (603)893-6131	
FRAC. : 1/16	DEC. : .XX ± .01	FINISH SPECS: N/A			
ANGLES : XXX ± .005 SURFACES		NAME	DATE	ASSY DWG, OPT KIT, MAGNETOMETER, 3200 TF	
METRIC REFERENCE IN INCHES(mm) & (mm)		DRAWN	C. DUNDORF	4/17/03	CODE IDENT NO. : 52315 SIZE : D DRAWING NO. : 15103051 DO NOT SCALE PRINT SCALE 1:1 SHT 1 OF 2
UNLESS OTHERWISE SPECIFIED COMMERCIAL PUBLISHED TOLERANCES SHALL APPLY TO TUBING, BAR, PLATE ETC. PARTS MUST FIT GAGES AND MEET SPECIFIED TOLERANCES.		CHECKED	-	-	REV 02
		APPROVED	-	-	
		BREAK ALL SHARP EDGES	DEBURR ALL HOLES		

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CONNECTING THE MAGNETOMETER TOWCABLE TO THE SSS TOWFISH



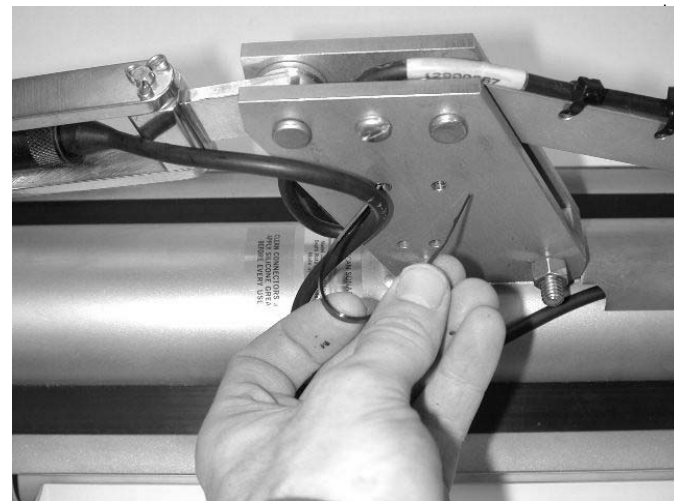
CONNECTION HARDWARE SHOWN WITH MARINE MAGNETICS MAG TOWCABLE TERMINATION. OTHER MANUFACTURERS PROVIDE SIMILAR .25 IN (6.2MM) OR .50 IN (12.5MM) THICK CONNECTION TAB.



STEP 1. SECURE MAG. TOWCABLE TERMINATION TO SSS TOWFISH BY INSERTING THE CLEVIS PIN (P/N 16200050) THROUGH THE TOWBRACKETS, FLAT WASHERS (ITEM 5), AND .25 IN THICK (6MM) CONNECTION TAB. INSTALL COTTER RING (P/N 16200044) AS SHOWN.



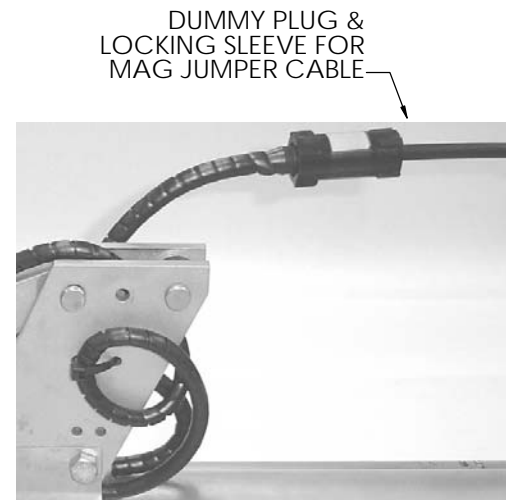
STEP 2. CLEAN AND APPLY LIGHT A COATING OF SILICONE GREASE TO THE CONNECTOR PINS (IF NEEDED) AND MATE CONNECTORS. TIGHTEN LOCKING SLEEVE AS SHOWN.



STEP 3. RE-ADJUST CABLE TIE (ITEM 6) ON TOW BRACKETS IF NECESSARY.



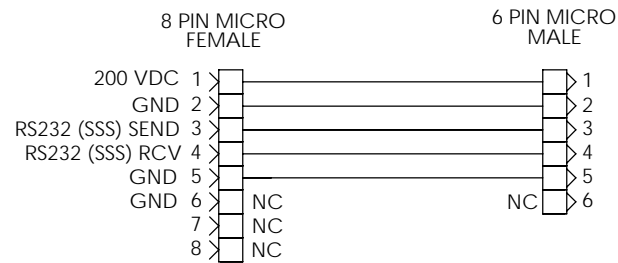
STEP 4. CHECK RANGE OF MAG. TOWCABLE TERMINATION MOTION. CABLES SHOULD NOT BIND OR PINCH. ADJUST CABLE LENGTHS AND POSITION AS NECESSARY.



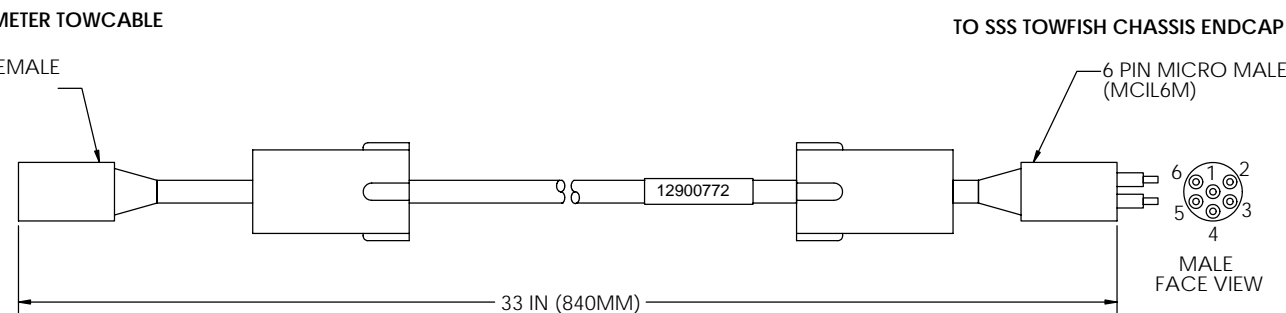
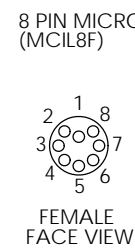
DUMMY PLUG & LOCKING SLEEVE FOR MAG JUMPER CABLE
WARNING: DUMMY PLUG & LOCKING SLEEVE (ITEMS 11 & 9) MUST BE CONNECTED TO MAG JUMPER CABLE WHEN USING THE SSS TOWFISH WITHOUT THE MAG TOWFISH. UPTO 200 VDC PRESENT ACROSS CONTACTS.



SSS TOWFISH AND MAGNETOMETER TOWCABLE INSTALLED.



TO MAGNETOMETER TOWCABLE



NOTES:
 1. WARNING IF TOWFISH IS USED WITHOUT MAGNETOMETER JUMPER CABLE (ITEM 1), INSTALL 6 PIN MICRO DUMMY PLUG (ITEM 11) ON ENDCAP BULKHEAD CONNECTOR. UPTO 200 VDC PRESENT ACROSS CONTACTS.

ASSY DWG, OPT KIT, MAGNETOMETER, 3200 TF

CODE IDENT NO.	SIZE	DRAWING NO.	REV
14103051	52315	D 15103051	02
USED ON	DO NOT SCALE PRINT	SCALE 1:1	SHT 2 OF 2