			S 1307
REV: Ø			
COMPILED: B.NAP	CHECKED:	APPD:	SHEET OF
TITLE:			

KIT 333F

INSTALLATION INSTRUCTIONS

REPLACEMENT OF SBG-1 & 2 WITH SBGM-4

				S 1307
REV:	Ø			
COMPILED:	CHECKED:	APPD:	SHEET 1 OF 15	
TITLE: KIT333F INSTALLATION INSTRUCTIONS				

I. EQUIPMENT EFFECTED:

TMC Models GPT-10 and GPT-40 SYNTHESIZED TRANSMITTERS

II. PURPOSE:

To update the auxiliary frame by removal of the SBG-1 or SBG-2 and replacing it with an SBGM-4 exciter system.

III. MATERIALS REQUIRED:

Table 1 lists the material supplied with the field change Kit.

Table 2 lists the tools necessary to accomplish this modification. These are standard tools and are not supplied with the Kit.

TABLE 1

Item	Qty	P/N	Description
1	1	A-4930	Assy, Center Shield
2	1	AX5093	Pnl, Test
3	2	CA581-2	Cbl, Assy, Pwr
4	1	CA1723	Wrg, Harn, Main
5	1	CHGM-4	Translator, RF
6	2	CK1958	Diagram, Wiring
7	1	CMRM-4	GEN, Sideband
8	2	MS157-1H	Pnl, Blank, 1-3/4
9	1	MS157-2H	Pnl, Blank, 3-1/2
10	4	MS157-5S	Pnl, Blank, 8-3/4
11	1	MS4424	Brkt, Shield Mtg
12	1	MS4425	Shield, Protective
13	2	MS5965	Brkt, Retractor Mtg
14	1	NP362	Nameplate, Mod Kit
15	1	PJ051	Plug, Tele
16	2	SP137-2	Spring, Retractor
17	2	TK108-18A	Track and Slide Set
18	2	UG88*/U	Plug, RF, Bnc
19	48	CU142-2	Strap, CBL, Nylon
20	1		Bag Hardware, #1
21	1		Bag Hardware, #2
22	1		Bag Hardware, #3
23	1		Bag Hardware, #4
24	1		Bag Hardware, #5
25	1		Bag Hardware, #6

BAG, HARDWARE, #1 STEP IV B

ITEM	QTY	P/N	Description	Used to Mount
1	1	CU102-5	Clamp, Nylon, 3/8	
2	1	CU102-8	Clamp, Nylon, 1/2	
3	2	FW08HBN	Wash, Flat	Clamp
4	2	LWE08MRN	Wash, Lock, Ext	Clamp
5	2	NTH0832BN10	Nut, Hex	Clamp
6	2	SCBP0832BN8	Screw, Mach, 1/2	Clamp

BAG, HARDWARE, #2 STEP IV C

Item	Qty	P/N	Description	Used to Mount
1	2	CU102-3	Clamp, Nylon, 1/4	
2	2	CU102-5	Clamp, Nylon, 3/8	
3	2	CU102-8	Clamp, Nylon, 1/2	
4	2	CU102-10	CLamp, Nylon, 5/8	
5	2	CU102-12	Clamp, Nylon, 3/4	
6	4	FW06HBN	Wash, Flat	Shield
7	10	FW10HBN	Wash, Flat	Clamps
8	8	LWE06MRN	Wash, Lock, Ext	Shield,Ckt Bkr
9	10	LWE10MRN	Wash, Lock, Ext	Clamps
10	10	NTH1032BN12	Nut, Hex	Clamps
11	8	SCBP0632BN6	Screw, Mach, 3/8	Shield,Ckt Bkr
12	10	SCBP1032BN8	Screw, Mach, 1/2	Clamps

BAG, HARDWARE, #3 STEP IV D

Item	Qty	P/N	Description	Used To Mount
1	32	LWS10MRN	Wash, Lock, Split	
2	32	SCHH1032SS8	Screw, Hex, 1/2	

BAG, HARDWARE, #4 STEP IV E

Item	Qty	P/N	Description	Used To Mount
1	1	CU102-6	Clamp, Nylon, 7/16	
2	1	CU102-10	Clamp, Nylon, 5/8	
3	2	FW10HBN	Wash, Flat	Clamp
4	8	LWE06MRN	Wash, Lock, Ext	Spring
5	2	LWE10MRN	Wash, Lock, Ext	Clamp
6	4	LWS10MRN	Wash, Lock, Split	Bracket
7	2	NTH1032BN12	Nut, Hex	Clamp
8	8	SCBP0632BN5	Screw, Mach, 5/16	Spring
9	6	SCBP1032BN8	Screw, Mach, 1/2	Clamp, Bracket
10	4	TE104-4	Term Lug	

BAG, HARDWARE, #5 STEP IV F

Item	Qty	P/N	Description	Used To Mount
1	1	CU102-3	Clamp, Nylon, 1/4	
2	1	CU102-6	Clamp, Nylon, 7/16	
3	1	DL100-2	Terminating, 47 ohm	
4	2	FW10HBN	Wash, Flat	Clamp
5	2	LWE10MRN	Wash. Lock, Ext	Clamp
6	2	PL171	Conn, Pl, AC	
7	2	SCBP1032BN8	Screw, Mach, 1/2	Clamp
8	2	UG274*/U	Adapter, RF, T	

BAG, HARDWARE, #6 FRONT PANEL

Item	Qty	P/N	Description	Used To Mount
1	48	SCBP1032BN8	Screw, Mach, 1/2	
2	48	WA101-5	Wash, Fiber	

TABLE 2

1. Screwdriver, Phillips
2. Pliers, Longnose
3. Pliers, Diagonal Cutting
4. Soldering Iron
5. Wrench, Open End, 1/4" x 5/16"
6. Wrench, Adjustable
7. Nutdriver, 5/16"
8. Nutdriver, 1/4"

IV. PROCEDURE:

A. PREPARATION OF TRANSMITTER

1. Turn off all power at transmitter and wall switch.
2. Remove the front panel screws from all the units in the front of the auxiliary frame except the meter panel and the auxiliary power panel, APP.
3. Before removing the units, mark the frame between the top of the CMO-1 and the bottom of the CHG. This will serve as the reference mark for the installation of the new SBGM-4 units. Refer to Fig. 1.
4. Extend the CBE on its slides. Disconnect all the cabling from the rear of the unit and remove the unit from the frame.
5. Repeat step 4 for the CHG, CMO, CLL, CSS, TIS, CHL and CPP-2.
6. In the rear of the auxiliary frame extend the CPP-1 or 5 on its slides and disconnect the cabling from the rear of the power supply. Remove the unit from the frame.
7. Observe the method of mounting the small slides noting the front of of slide to front of rack detail, the extension bracket to slide detail, the extension bracket to rear channel detail and the position of the locking tab hole in the extended portion of slide. This hole is <u>not</u> symmetrical on left and right slides. This hole should be in the lower portion of the slide. Another method of distinguishing left and right slides in the nameplate sticker on

the extended portion of the slide. This nameplate should be in the normal reading position and not be upside-down. When mounting the unit portion of the slide to the unit care should be taken that the locking tab is in the correct position (low).

8. Remove the slides from the front and rear of the auxiliary frame. Remove the retractor spring assemblies and the attenuator assembly from the front of the frame.
9. From the rear of the auxiliary frame disconnect all incoming signal and control lines from E3000, 3001, 3002 on the center shield. Disconnect the transmitter cabling (main frame interconnect) from E3000, 3001, 3002, the BNC connectors and the 10 feedthru connectors. Mark the wires removed from the feedthru connectors as these will be replaced on the new center shield. There should be no leads connected to the center shield. Remove the 4 screws securing CB3000 to the center shield.
10. From the front of the auxiliary frame cut the two wires from CB3000 to the main harness that feed the front fan and the fuse Do not remove the AC wiring from the circuit breaker. Remove the cable for the buzzer from the feedthru connectors and mark the leads.
11. Remove the connections on the main cable from the APP, Meter Panel, HV light terminal block and the front fan connector. Unclamp the main harness from the frame noting the method of mounting the cable. All connections and clamps to the cable should be disconnected except the center shield.
12. Remove the center shield hardware and remove the center shield and cable. Retain the hardware.
13. This completes the preparation of the transmitter.

B. PREPARATION OF NEW CABLE AND CENTER SHIELD

1. Refer to Fig. 2 and Bag #1 hardware.
2. Locate the Center Shield breakout on the cable supplied (CA1723) and position it on the Center Shield Assembly (A-4930) as shown in Fig. 2.

3. Using the 3/8" x 1/2" clamps, 0832 x 1/2" screws, #8 flat, lock and nut from Hardware Bag #1 clamp the cable to the Center Shield as shown.
4. Insert the BNC jacks into their respective holes and secure.
5. Solder the WHI/VIO wire to the rear terminal of the fuseholder and the VIO wire to the side terminal.
6. Solder the wires to the feedthru connections as shown in Fig. 2.
7. Solder the wires to E3000 and E3002 as shown in Fig. 2.
8. This completes connecting CA1723 to A-4930.

C. INSTALLATION OF CABLE AND CENTER SHIELD

1. Insert the cable and center shield into the auxiliary frame in the same manner as the old set.
2. Using the existing hardware secure the center shield to the frame.
3. Secure the cable to the frame channel in the same manner as the original cable was mounted using the 1032 hardware and clamps from Hardware Bag #2.
4. Make the connections to the meter panel, HV light terminal block, front fan connector and APP as per marking on the cable and CK1958, Wiring Diagram.
5. Slip the circuit breaker shield bracket, MS4424 over the front of the breaker and secure to the center shield using four(4) 0632 x 3/8" screws and #6 lockwashers.
6. Connect the WHI and WHI/VIO wires to the load side of the circuit breaker.
7. Mount the protective shield, MS4425, to the circuit breaker shield bracket using four (4) 0632 x 3/8" screws and #6 flat washers and lockwashers.
8. Connect the buzzer cable to the feedthru connectors.
9. This completes the installation of the cable and center shield assembly.

D. INSTALLATION OF SLIDES

1. Refer to Fig. 3 and Hardware Bag #3.

2. Open the slide set carton and determine the left and right side slides.
3. Mount the inner section of the slide to the CHGM-4 and CMRM-4.
4. Remove two sets of extension brackets from the old slides and mount to the new slides.
5. Mount the slides in the frame using Fig. 3 for location.
6. Slide the units into the frame and check alignment of the front panels. Adjust the hardware as necessary to allow units to be pulled in and out without hitting the other front panels.
7. Extend both units all the way out to check slide locks.
8. Remove units from the frame.
9. This completes the installation of the slides.

E. INSTALLATION OF CABLE RETRACTORS

1. Refer to Fig. 4 and 5 and Hardware Bag #4.
2. Mount the bracket (MS5965) to the spring retractor (SP137-2) with four (4) 0632 x 5/16 screws, and #6 lockwashers.
3. Slip two terminal lugs (TE104-4) over each eyelet on the retractors.
4. Mount the retractor and bracket to the right side rear channel of the frame using four (4) 1032 x 1/2 screws and #10 split lockwashers. Mount the retractor so the eyelet is approximately 3 inches above the slide.
5. Locate the cable breakouts for the CHGM-4 and the CMRM-4. Check to see that the breakouts are located above the respective unit slides. Clamp the breakouts to the retractor using the nylon clamps (5/8 & 7/16), 1032 x 1/2 screws, #10 flat washers, lockwashers and nuts.
6. The location of the clamp may have to be moved upon final assembly to provide for better retraction of the cable without binding.
7. This completes the installation of the retractors.

F. CABLE TO UNIT CONNECTIONS

1. Slide the CHGM-4 into the frame, extend and tilt.
2. Connect the plug to J119. Remove one of the corner screws from the chassis and connect the ground strap lug. Connect the BNC connectors

as per the cable marking and wiring diagram.

3. Connect the power cord to J116 and the AC strip, if the AC strip is the type with twist-lock connectors, change the plug on the power cord with the plug provided.
4. Slide the CHGM-4 into the frame.
5. Slide the CMRM-4 into the frame, extend and tilt.
6. Connect the fanning strips to the terminal blocks. Clamp the fanning strip breakouts to the brackets using the nylon clamps (1/4 & 7/16), 1032 x 1/2 screws, #10 flat washers and lockwashers from Hardware Bag #5. Connect the ground strap under the cable clamp. Connect a BNC T connector to J1014, RF OUT. Connect the cable to one side and the BNC terminator to the other. Connect the other plug. Connect the AC power cord. Check to see that the T connector and plug clear the frame.
7. Slide the CMRM-4 into the frame.
8. Connect the BNC T connector to the RF MONITOR jack on the AX5093 TEST PANEL. Connect the fanning strips to the terminal blocks and connect the BNC plugs to the T connectors.
9. Mount the AX5093 to the frame as per Fig. 1 using the front panel hardware from Bag #6.
10. This completes the cable connections.

G. FINAL ASSEMBLY

1. Check the cable retractor operation. Move the clamp to assure proper operation. Secure the clamp location by mounting a nylon cable strap on each side of the clamp on the cable.
2. Mount the Blank Panels using Fig. 1 and the hardware from Bag #6.
3. Mount the Modification Kit nameplate to the transmitter next to the transmitter nameplate.
4. In the rear of the auxiliary frame reconnect the main frame interconnect cable to the center shield.
5. Connect external signal and control lines to the center shield.
6. Turn on the power and check the unit operation as per the instruction manuals.

7. Test connections for audio input and RF Monitor can be made on the front of the TEST PANEL, AX5093, for easy connection to an analyzer or other test equipment.
8. This completes the installation of the Kit.

SBG-1,2

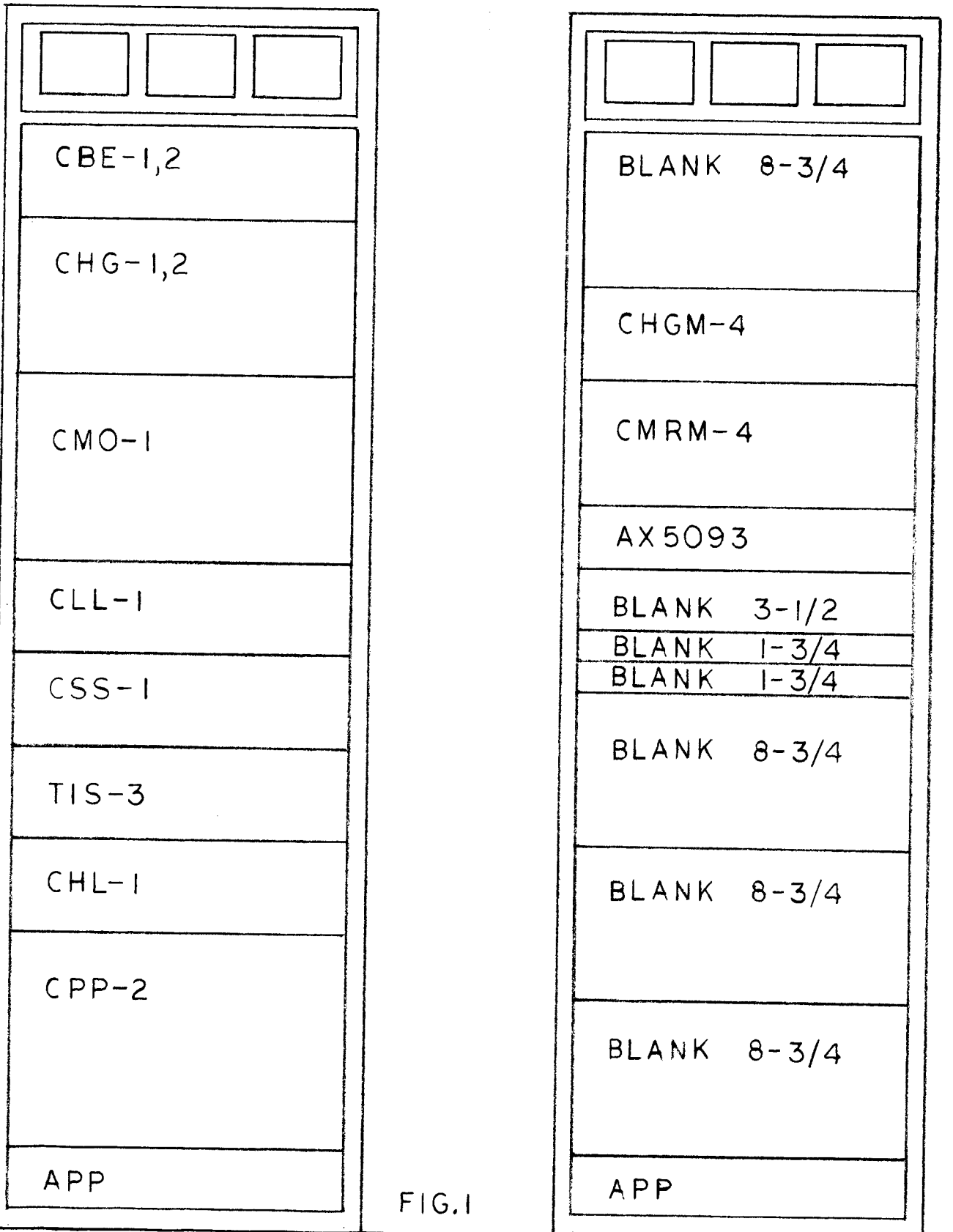
CBE-1,2
CHG-1,2
CMO-1
CLL-1
CSS-1
TIS-3
CHL-1
CPP-2
APP
BLANK 8-3/4
CHGM-4
CMRM-4
AX5093
BLANK 3-1/2
BLANK 1-3/4
BLANK 1-3/4
BLANK 8-3/4
BLANK 8-3/4
BLANK 8-3/4
APP

FIG.1

				S 1307
REV: Ø				
COMPILED:	CHECKED:	APPD:	SHEET 12 OF 15	
TITLE: KIT333F INSTALLATION INSTRUCTIONS				

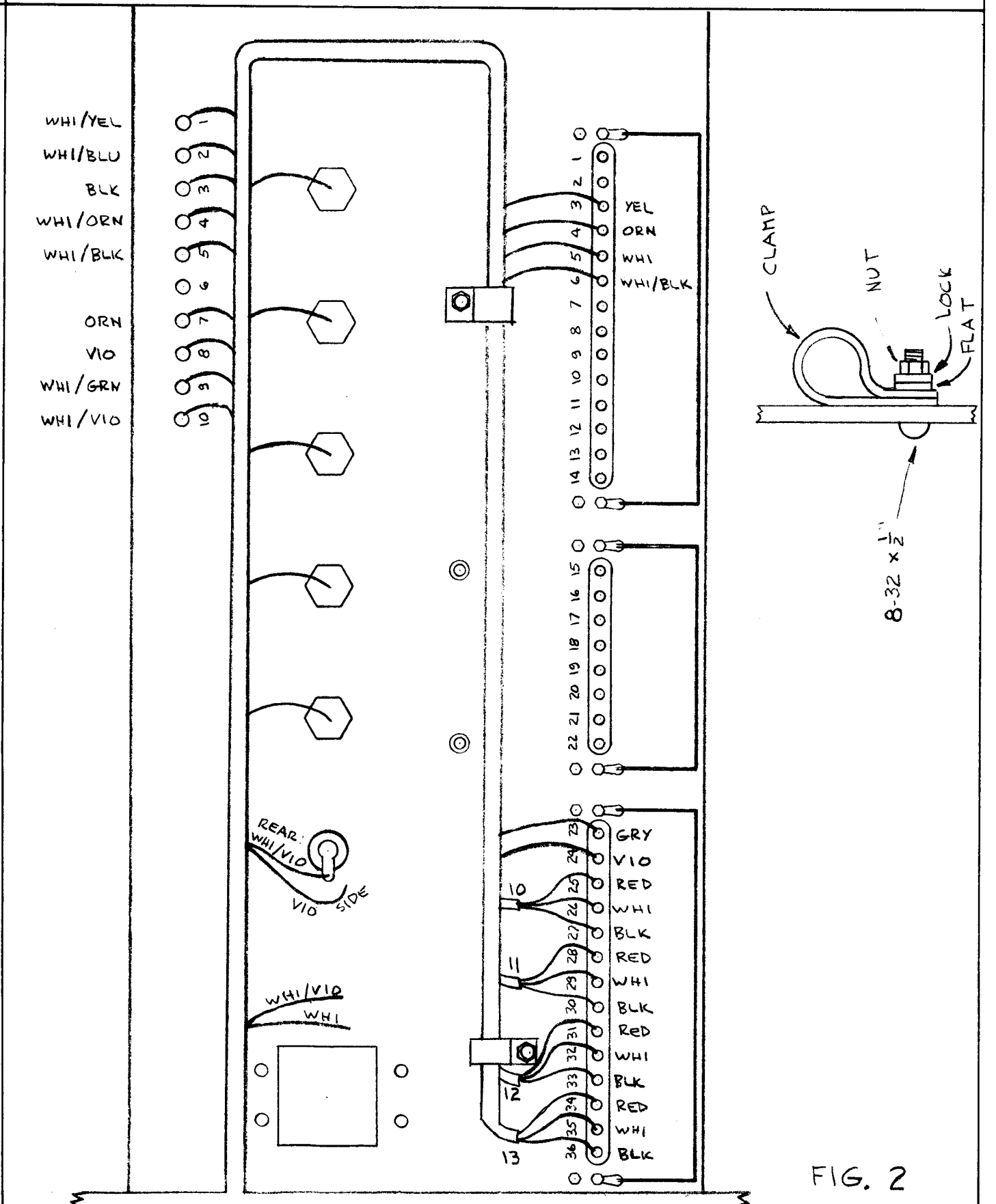

FIG. 2

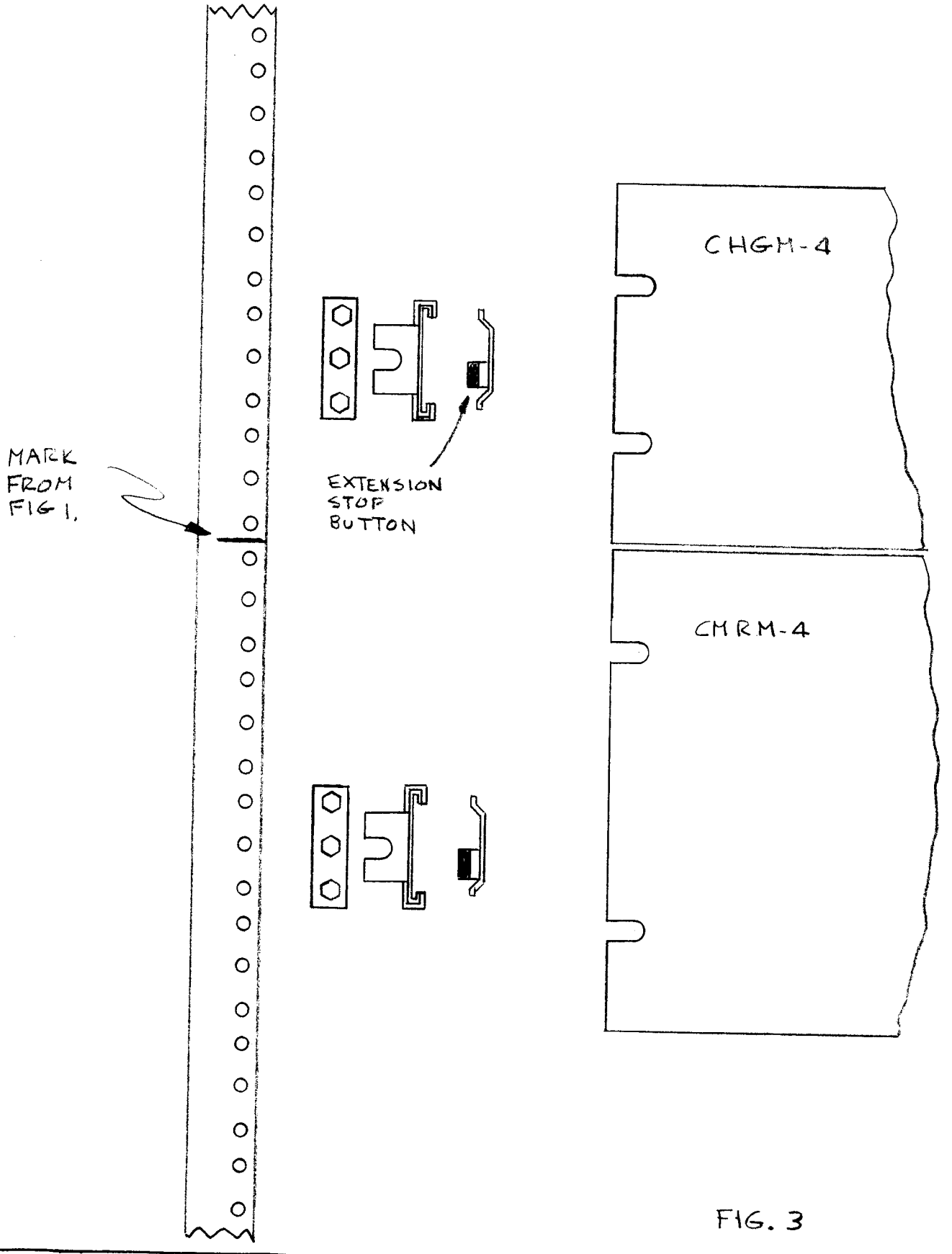

FIG. 3

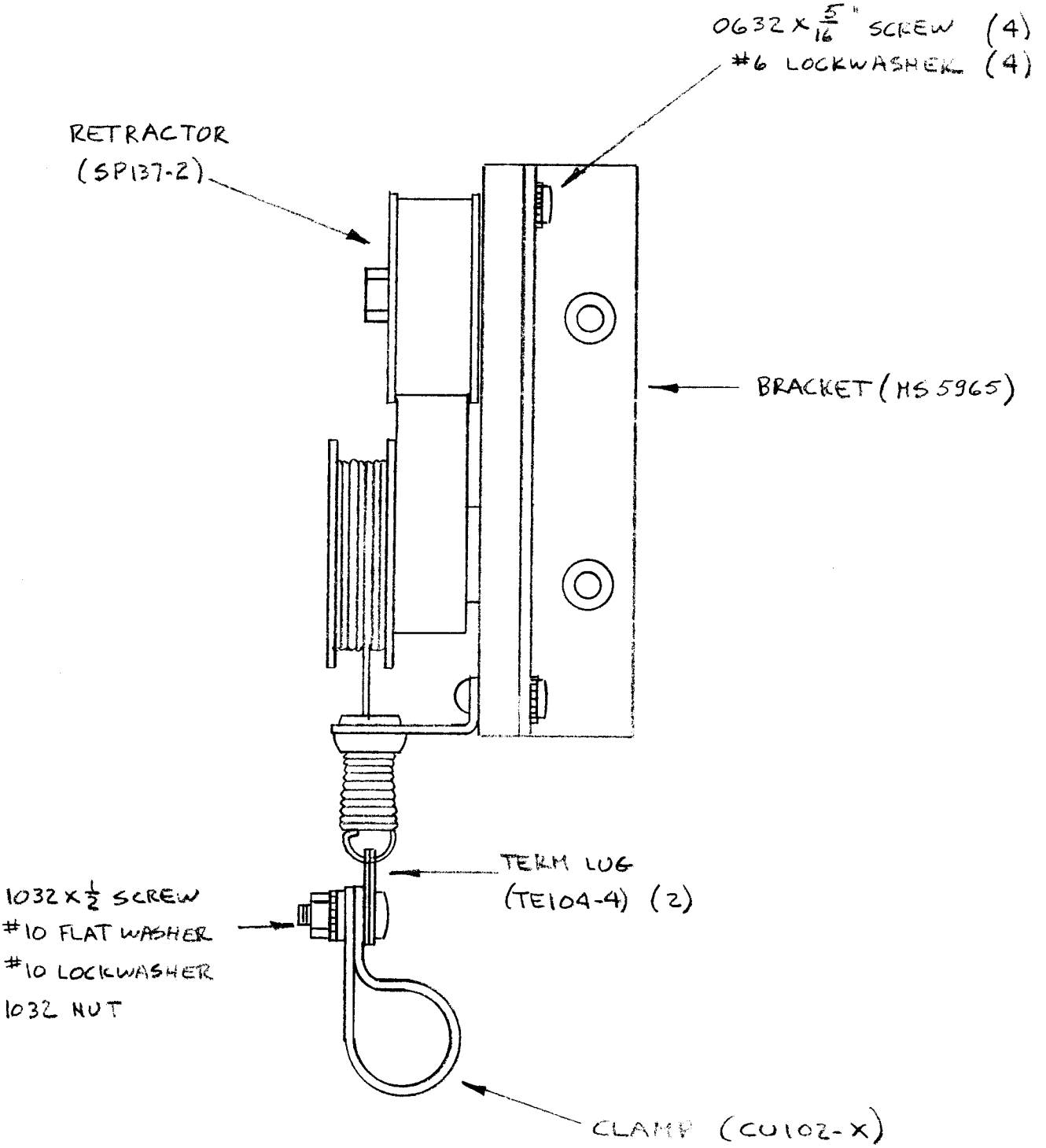
0632 X 5/16" SCREW (4)
#6 LOCKWASHER (4)
RETRACTOR (SP137-2)
BRACKET (MS5965)
TERM LUG (TE104-4) (2)
1032 X 1/2 SCREW
#10 FLAT WASHER
#10 LOCKWASHER
1032 NUT
CLAMP (CU102-X)

FIG. 4

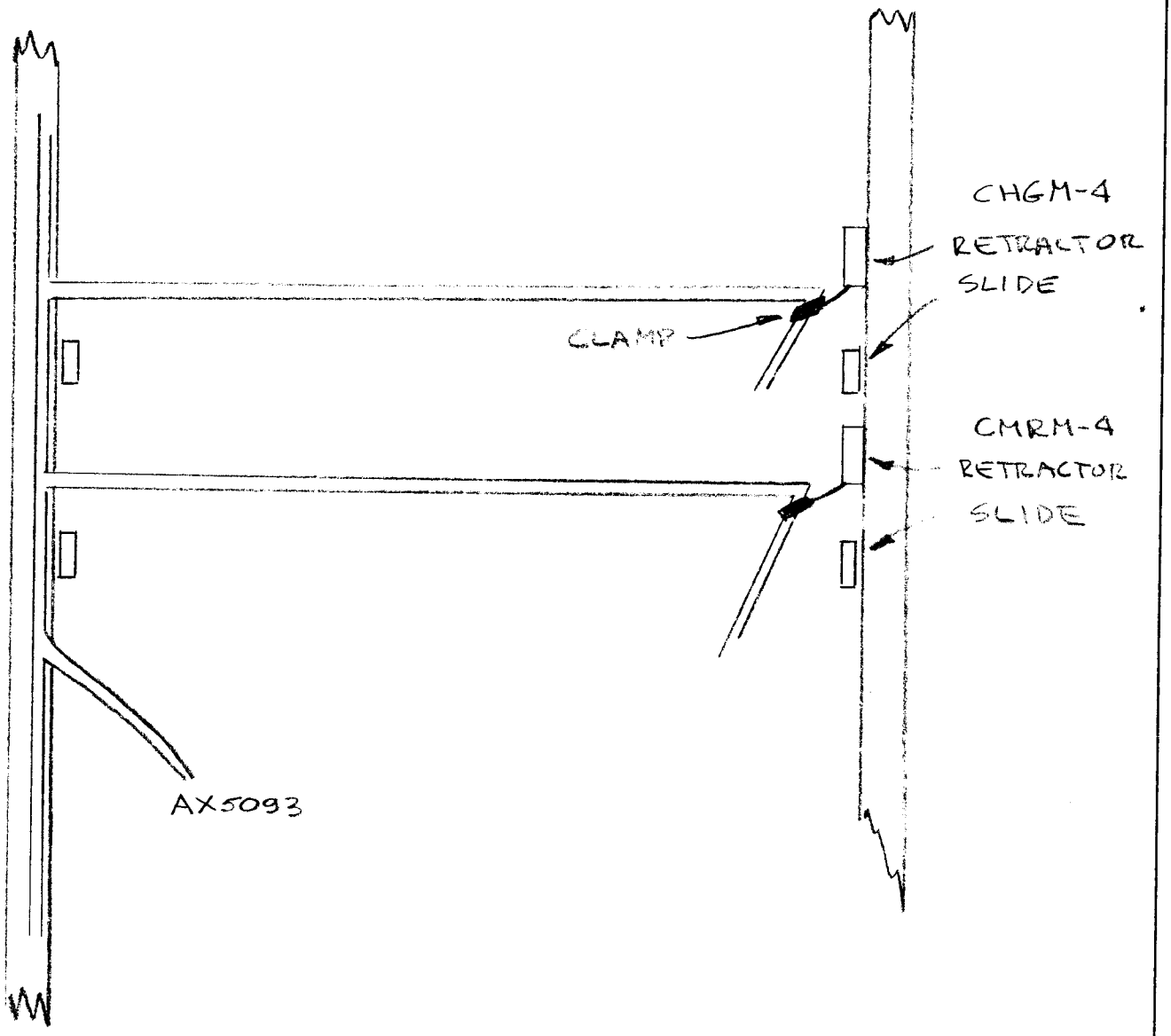

FIG. 5

REVISION SHEET

THE TECHNICAL MATERIEL CORP.
MAMARONECK NEW YORK

S 1307
LIST NO.

DATE	REV.	SHEET	EMN #	DESCRIPTION	APP.
11/13/72	Ø			ORIGINAL RELEASE FOR PRODUCTION	EJ

TMC FORM MLR-1 2-65—AINS.