

FIELD SERVICE KIT-395

for

High Frequency Transmitters

SCOPE: KIT-395 provides the materials and instructions for removal of the motor-drive assemblies for the tune and load capacitors and for their replacement with manual tuning assemblies, complete with counter readouts.

PURPOSE: The KIT-395 counter readouts on the manual tune and load capacitor assemblies allow accurate tuning charts to be established for the transmitter. Once established, the tuning charts will provide the references for presetting tune and load controls, even in a transmitter power-off condition. In an on-the-air condition, only slight fine tuning adjustments will be required, compensating for VSWR changes when different antennas are patched to the transmitter.

The reliability of the transmitter is greatly increased with the installation of KIT-395. Motor failure is eliminated. Transmitter mistuning is greatly reduced, thus minimizing overdissipation of tubes and increasing component lifespan.

COMPONENTS: KIT-395 consists of the following components:

- (1) A new load-capacitor drive assembly.
- (2) A new tune-capacitor drive assembly.
- (3) A new front panel assembly for the Main Control Panel section, complete with counter assemblies.
- (4) All mechanical parts (knobs, shafts, couplings, etc.) required for installation of the Kit.
- (5) KIT-395 Installation Instructions.
- (6) Technical Manual changes, incorporating KIT-395 as part of the transmitter.

Modification KIT395
for
High Frequency Transmitters
Models HFTM-10KJ and HFTM-10KJS

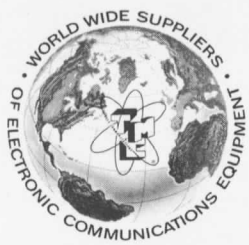
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THE TECHNICAL MATERIEL CORPORATION

KIT _____

Removal of cap motor drives for ease of tuning.

This Kit provides the customer with manual knob tuning with counter readout for ease of operation and maintenance this allows operators to have accurate tuning reference charts with xmitters being able to be tune to preset freqs. with power off.

The reliability of the xmitter is greatly increased as motor failure is eliminated. Xmitter mistuning is greatly reduced lending to longer life of components such as tubes (overdissaption) minimized, and after accurate tuning charts are established only a slight fine tune will be necessary when different antennas are patched to xmitter (changes in SWR).

The Kit consists of:

- 1 New load cap mounting assy.
- 2 New tone cap mounting assy
- 3 New front panel assy with counters
- 4 Knobs, shafts, coupling, etc.
- 5 Instruction (assembly of Kit)
- 6 Upgrade of Manuals



PARTS LIST
FIELD SERVICE KIT 395

TMC PART NUMBER	DESCRIPTION		QTY.	U/M
**BB1C1	BEARING	104075004	2	EA.
**EB1C6	BEARING	141535003	4	EA.
**BB11E-3	BEARING	104079003	2	EA.
**CA1714	CABLE ASSEMBLY, BRANC	138711003	1	EA.
**CY1C7-1	CCOUNTER, ROTATING, FX.	141536003	2	EA.
**GR116	GEAR	110340004	2	EA.
**GR139	GEAR	110355003	2	EA.
**HA111	HANDLE	110492003	2	EA.
**LC2518/MS6360		131141003	1	EA.
**MP127-1FB	KNCE	113837003	1	EA.
**MP127-8NB	KNCE	113785005	2	EA.
**MP134	KNCE	141537003	2	EA.
**MS3284-25	STRAP	131142003	1	EA.
**MS5236	KNCE	117107003	2	EA.
**MS6360	BEARING PLATE	141538002	1	EA.
**MS6363	BEARING PLATE	130405003	2	EA.
**PM316	CELLAR	119469008	4	EA.
**PM691FD6.00CS	SHAFT, ROUND	141324003	2	EA.
**RC2CGF1C2J	RESISTOR, FIXED, COMPC	121777089	1	EA.
**RV4NAYS1C2A	RESISTOR, VARIABLE, NO	122515003	1	EA.
**SCRP1024BN14	SCREW, MACHINE	142246001	4	EA.
**TE111-2	TERMINAL, LUG	125012040	1	EA.



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**BB1C1	BEARING	104075004	2	EA.
**EB1C6	BEARING	141535003	4	EA.
**BB118-3	BEARING	104079003	2	EA.
**CA1714	CABLE ASSEMBLY, BRANC	1387110C3	1	EA.
**CY1C7-1	COUNTER, ROTATING, FX.	141536003	2	EA.
**GR116	GEAR	110340004	2	EA.
**GR139	GEAR	110355003	2	EA.
**HA111	HANDLE	110492003	2	EA.
**LC2518/MS6360		131141003	1	EA.
**MP127-1FB	KNCB	1138370C3	1	EA.
**MP127-8NB	KNCB	113785005	2	EA.
**MP134	KNCB	1415370C3	2	EA.
**MS3284-25	STRAP	131142003	1	EA.
**MS5236	KNCB	1171070C3	2	EA.
**MS6360	BEARING PLATE	1415360C3	1	EA.
**MS6363	BEARING PLATE	1304050C3	2	EA.
**PM316	CELLAR	1194690C8	4	EA.
**PM691FD6.00CS	SHAFT, ROUND	1413240C3	2	EA.
**RC2CGF1C2J	RESISTOR, FIXED, COMPC	121777089	1	EA.
**RV4NAYSA1C2A	RESISTOR, VARIABLE, NC	1225150C3	1	EA.
**SCRP1024BN14	SCREW, MACHINE	142246001	4	EA.
**TE111-2	TERMINAL, LCC	12501204C	1	EA.

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**CY1C7-1	COUNTER, ROTATING, FX.	141536003	2	EA.
**GR116	GEAR	110340004	2	EA.
**GR139	GEAR	110355003	2	EA.
**HA111	HANDLE	110492003	2	EA.
**LD2518/MS6360		131141003	1	EA.
**MP127-1FB	KNCE	113837003	1	EA.
**MP127-8NB	KNCE	113785005	2	EA.
**MP134	KNCE	141537003	2	EA.
**MS3284-85	STRAP	131142003	1	EA.
**MS5236	KNCE	117107003	2	EA.
**MS6360	BEARING PLATE	141538003	1	EA.
**MS6363	BEARING PLATE	130405003	2	EA.
**PM316	CCLLAR	119469008	4	EA.
**PM691FD6.00CS	SHAFT, ROUND	141324003	2	EA.
**RC2CGF1C2J	RESISTOR, FIXED, COMPC	121777089	1	EA.
**RV4NAYSA1C2A	RESISTOR, VARIABLE, NC	122515003	1	EA.
**SCRP1024BN14	SCREW, MACHINE	142246001	4	EA.
**TE111-2	TERMINAL, LDC	12501204C	1	EA.



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STAGE FOR 1E KIT-395

ORDER # 202645000

*NOTE-PLCD COPY 1/ RETURN COPY 2/ TO DATA PROCESSING.

IMC PART NUMBER	DESCRIPTION		REQD	SHORT	STAGED
**BB1C1	BEARING	104075004	2	2E	2
**EB1C6	BEARING	141535003	4	4E	4
**BE118-3	BEARING	104079003	2	2E	2
**CA1714	CABLE ASSEMBLY, BRANC	138711003	1	1E	1
**CY1C7-1	COUNTER, ROTATING, FX.	141536003	2	2E	2
**GR116	GEAR	110340004	2	2E	2
**GR139	GEAR	110355003	2	2E	2
**FA111	HANDLE	110492003	2	2E	2
**LD2518/MS6360		131141003	1	1E	1
**MP127-1FB	KNCB	113837003	1	1E	1
**MP127-8NB	KNCB	113785005	2	2E	2
**MP134	KNCE	141537003	2	2E	2
**MS3284-25	STRAP	131142003	2	2E	1
**MS5236	KNCE	117107003	2	2E	?
**MS6360	BEARING PLATE	141538003	1	1E	1
**MS6363	BEARING PLATE	130405003	2	2E	2
**PM316	CELLAR	119469008	4	4E	4
**PM691FD6.00CS	SHAFT, ROUND	141324003	2	2E	2
**RC2CGF1C2J	RESISTOR, FIXED, COMPC	121777089	1	1E	1
**RV4NAYSA1C2A	RESISTOR, VARIABLE, NC	122515003	1	1E	1
**SCRP1C24BN14	SCREW, MACHINE	142246001	4	4E	4
**TE111-2	TERMINAL, LUG	125C1204C	1	1E	1

① KIT 395 202645

TMC SPECIFICATION

NO. 1357

REV:

COMPILED:

CHECKED:

APPD:

SHEET 1

OF 6

TITLE: INSTALLATION INSTRUCTIONS FOR KIT 395

INSTALLATION INSTRUCTIONS

for

KIT 395

TMC SPECIFICATION

NO. 1357

REV: _____

COMPILED: _____

CHECKED: _____

APPD: _____

SHEET 2 OF 6

TITLE: INSTALLATION INSTRUCTIONS FOR KIT 395

1. EQUIPMENT AFFECTED

TMC Models HFTM-10KJ and HFTM-10KJS

2. SCOPE

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4. MATERIAL SUPPLIED

<u>ITEM</u>	<u>QTY</u>	<u>PART NUMBER</u>	<u>DESCRIPTION</u>
1	6	BB101	Bearing
2	2	BB106-1	Bearing
3	2	BB117	Bearing
4	2	BB118-3	Bearing
5	1	CA17	Cable Assembly
6	2	CY107-1	Counter, Rotating
7	6	GR116	Gear
8	2	GR139	Gear
9	2	HA111	Handle
10	1	LD2518/MS6360	Front Panel
11	12	LWE06MRN	Lock Washer
12	10	LWE08MRN	Lock Washer
13	1	MC102	Coupling
14	2	MC131	Coupling
15	2	MP134	Knob
16	2	MS5236	Knob Crank
17	1	MS5526	Cover, Load Cap. Chassis
18	1	MS5606	Cover, Tune Cap. Chassis
19	1	MS6361	Bearing Plate
20	1	MS6362	Bearing Plate
21	2	MS6363	Bearing Plate
22	2	MS6364	Bearing Plate
23	8	NTH0632BN8	Nut
24	2	PM316	Collar
25	2	PM691FD6.000S	Shaft

TMC SPECIFICATION

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OF 6

TITLE: INSTALLATION INSTRUCTIONS FOR KIT 395

<u>ITEM</u>	<u>QTY</u>	<u>PART NUMBER</u>	<u>DESCRIPTION</u>
26	1	PM691FD11.250S	Shaft
27	1	PM691FD15.3125	Shaft
28	1	PM691FS7.000S	Shaft, Load Cap.
29	1	PM691FS8.000S	Shaft, Tune Cap.
30	12	SCBP0632BN8	Machine Screw
31	10	SCBP0832BN7	Machine Screw
32	32	SLHC0832SP2	Set Screw
33	1	TP113R-3/4	Chassis Hole Punch
34	1	WR100-4	Allen wrench

5. PROCEDURE

1. Remove all power from transmitter.
2. Remove right side cover and RF shield from transmitter frame.
3. Remove metal shield located immediately behind the P.A. compartment main control panel.
4. Remove A4791 (Bandswitch position indicator lamp assembly).
5. Identify, mark and unsolder all other wires from the rear of the main control panel.
6. Remove the tune and load capacitor assemblies.
7. Remove motor, motor control printed circuit board and capacitor shaft from both capacitor assemblies.
8. Drill two 13/16 inch holes on both sides of the capacitor mounting bracket assembly. See figure 1 for exact location.

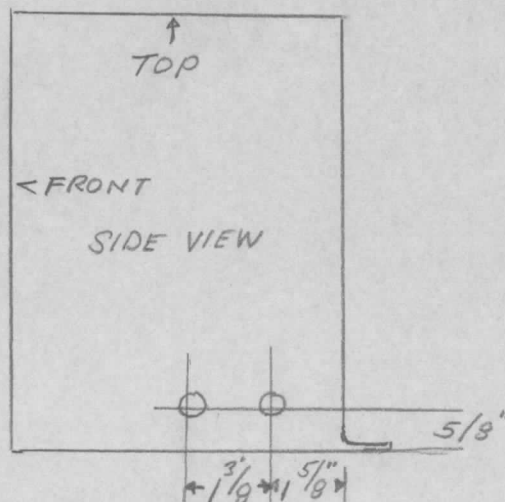


FIGURE 1

TMC SPECIFICATION

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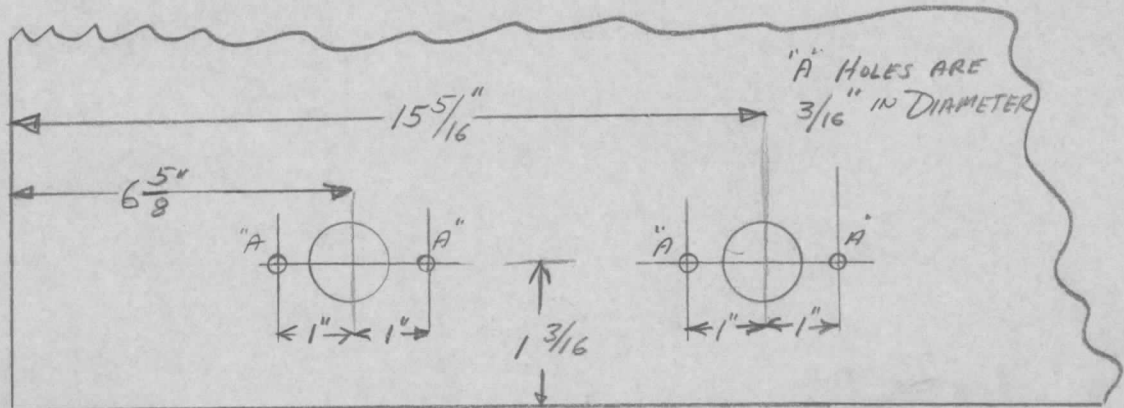
SHEET

4

OF 6

TITLE: INSTALLATION INSTRUCTIONS FOR KIT 395

9. Locate and make six holes in the Main Control Panel Shield as shown in Figure 2 using a drill and the chassis punch that is provided with this kit.



REAR VIEW OF MAIN CONTROL PANEL SHIELD

FIGURE 2

10. Mount the two counters (item 6) and the two bearing plates (item 21) on the new front panel (item 10) using (items 11, 23 and 30) hardware.
11. Assemble both control knob, shafts and gears as shown in figure 3.

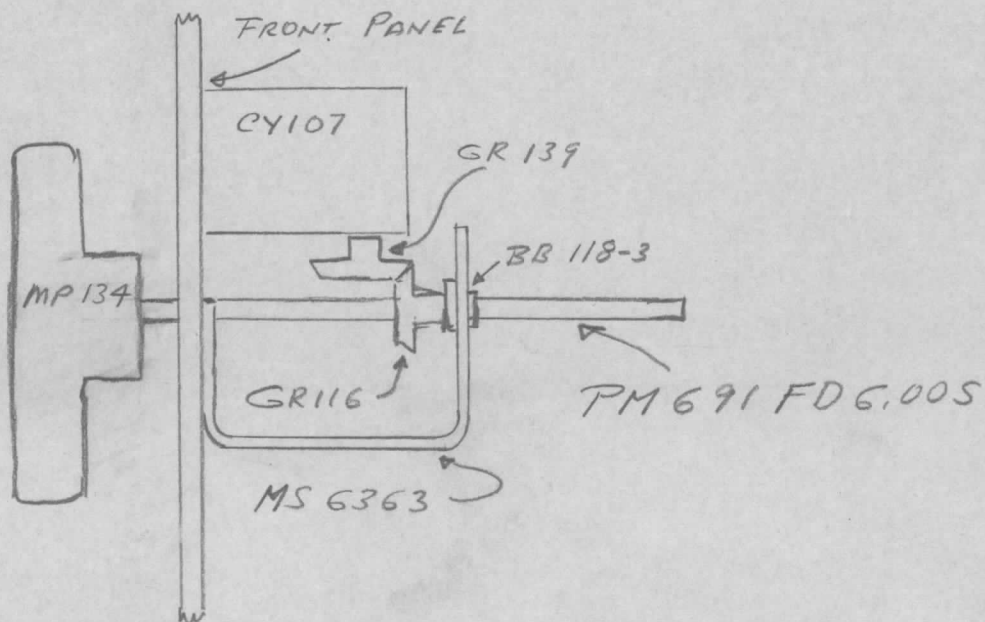


FIGURE 3

TMC SPECIFICATION

NO. 1357

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TITLE: INSTALLATION INSTRUCTIONS FOR KIT 395

12. Remove the old control panel from the transmitter and relocate all switches (except the TUNE & LOAD toggle switches) and lamps on to the new front panel (item (10)).
13. Install the new front panel on the transmitter and reconnect all of the wires previously disconnected in step 5, except those wires that were connected to the TUNE and LOAD switches. These wires should be cut back so that no bare wire is exposed and then taped to the wiring harness.
14. Mount the two bearing plates (item 22) on inner surface of the main control panel shield using item 23 hardware.
15. Reinstall the main control panel shield and fasten one half of the shaft coupling (item 14) on the ends of the control shafts.
16. Attach the load capacitor shaft (item 28) on to the end of the load capacitor using the rigid coupling (item 13) and (item 32) set screws.
17. Assemble the bearing plate gears and long shaft as shown in figure 4.

LOAD CAPACITOR
SIDE VIEW

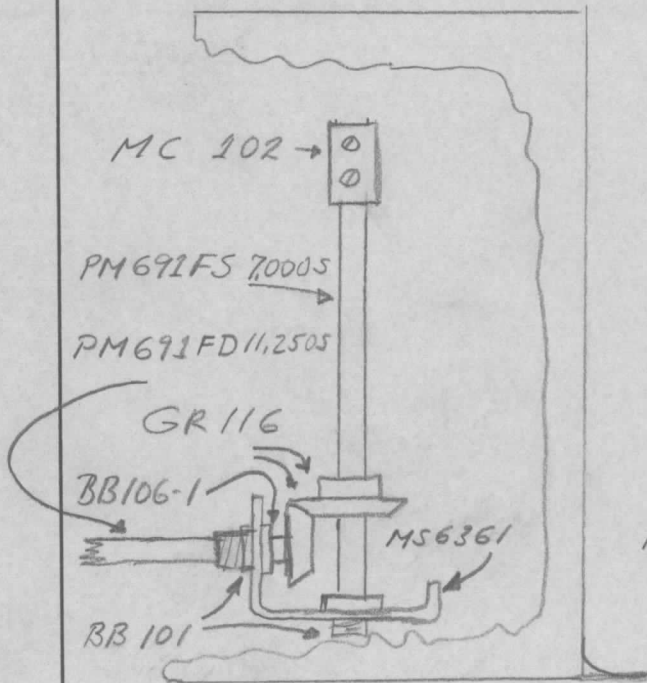


FIGURE 4

TUNE CAPACITOR
SIDE VIEW

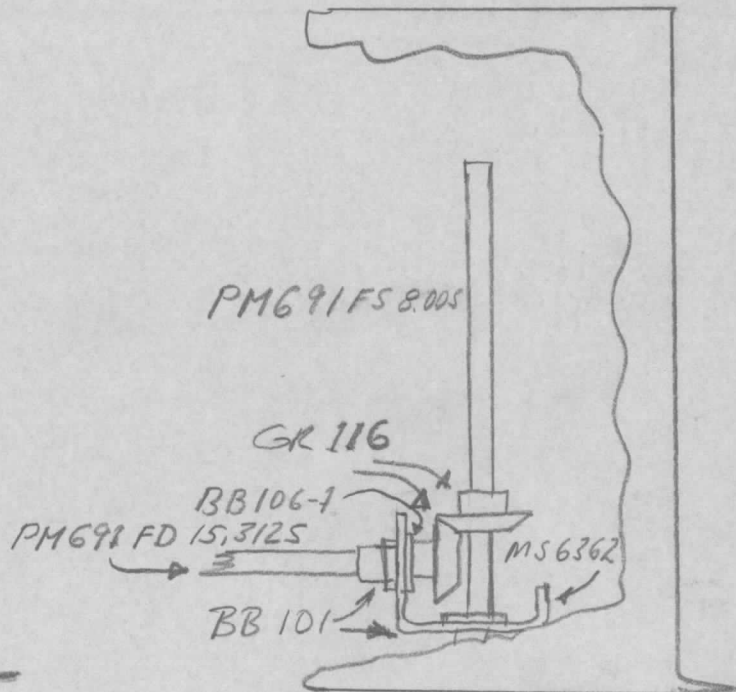


FIGURE 5

TMC SPECIFICATION

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OF 6

TITLE: INSTALLATION INSTRUCTIONS FOR KIT 395

18. Assemble the TUNE capacitor assembly as shown in figure 5. and reinstall in the transmitter.
19. Reinstall the LOAD capacitor assembly in the transmitter.
20. To align the counters with the capacitors, loosen one section of shaft couplings rotate each counter to 000. Rotate the long shafts of the capacitor assemblies in a clockwise direction towards minimum capacity. Minimum capacity on the TUNE capacitor is reached when the shaft can not be rotated anymore in the clockwise direction. Minimum capacity on the LOAD capacitor is reached when the lower plate has withdrawn from the upper plate by 1/8 inch. Rotate both of the long shafts $\frac{1}{2}$ turn counter-clockwise and tighten the couplings.

NOTE: This completes the modification of the transmitter.