MODELS 6MH889, Ch. 6E89;
DB-48, Hudson

SPECIFICATIONS AND CIRCUIT FEATURES

MODEL 6MH889—CHASSIS 6E89

TUBE COMPLEMENT: 7A7 R.F., 7B8 Converter, 6BA6 I.F., 7B6 Detector, A.V.C., 1st Audio, 6V6GT Beam Power Output, 7Y4 Rectifier.

TUNING RANGE: 540 to 1600 Kilocycles.

AUTOMATIC POSITIONS: 6.

SPEAKER: 6" x 9" Oval Permanent Magnet externally mounted behind instrument panel. Voice coil impedance 3.2 ohms at 400 cycles.

TONE CONTROL: Continuously variable.

POWER OUTPUT: Maximum 4.5 watts. Measured at voice coil.

VIBRATOR: Non-synchronous.

POWER RATING: Current drain 6 amperes.

FUSE: 14 amperes. Type SFE-14.

SENSITIVITY: 4 Microvolts at one watt output.

I.F. FREQUENCY: 265 Kilocycles.

WARRANTY AND SERVICE

The DB48 Hudson Receiver is covered by warranty against defect in material and workmanship for a period of 90 days after retail delivery.

This warranty covers a receiver installed at the factory or a receiver installed in the field as an accessory.

IMPORTANT

A warranty registration tag is furnished with each receiver. This tag must be filled in and attached to the unit at the time of retail delivery and must accompany the receiver when service during the warranty period is expected by the customer or dealer. Otherwise regular charges for labor and material prevail. All warranty labor claims must be made to the Hudson Dealer. Do NOT send claims to the radio manufacturer. Defective parts in warranty will be replaced, no charge to you, by the nearest Zenith Distributor.

OPERATING INSTRUCTIONS

OFF-ON SWITCH AND VOLUME CONTROL

To turn the receiver on, turn the volume control knob to the right until it clicks and the dial is illuminated. Allow the receiver to reach operating temperature. (Approximately 20 seconds.) To increase the volume, continue to turn this control knob to the right. To turn the receiver off turn the volume control knob to the left until it clicks.

TONE CONTROL

The tone control is located directly behind the volume control knob (Fig. 1). Rotating this control to the right or left will change the tone of the receiver. Tuning to the right will emphasize the high notes, while turning to the left will emphasize the bass notes.

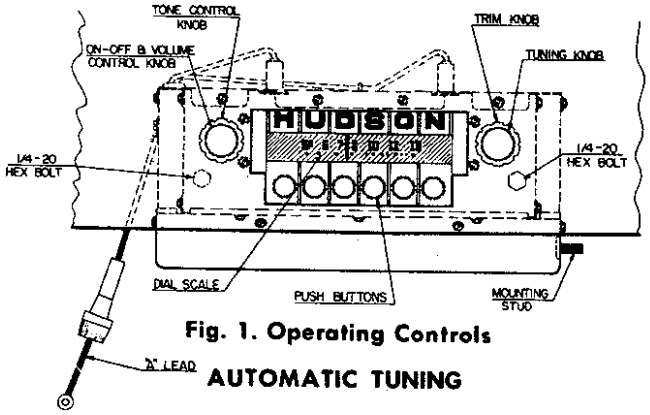

Fig. 1. Operating Controls

AUTOMATIC TUNING

There are six automatic tuning positions, each of which may be adjusted to any desired station. In order to simplify the identification of the stations, it is advisable to set the automatic tuning mechanism in sequence according to frequencies of the stations, beginning with the station broadcasting on the lowest frequency, and progressing to the station broadcasting on the highest frequency. If the positions have not been previously adjusted, proceed as follows:

1. Loosen the first push button by turning it counter-clockwise with your fingers, not more than two turns. If the push button is completely unscrewed, the plunger assembly, inside the receiver, may fall apart. Then it will be necessary to remove the radio from the car, open the case, and reassemble the plunger.

2. Turn the manual tuning control knob (Fig. 1) to tune in the desired station. Carefully tune to the middle of the signal for clearest reception.

3. Push the first push button in as far as it will go. Release the button, and tighten securely by turning it clockwise with the fingers.

4. Repeat the above procedure for the remaining five push buttons.

MANUAL TUNING

To tune manually it is only necessary to turn the manual tuning knob (on the right side of the receiver, see Fig. 1). Tune to exact frequency for the best tone quality. This can be done at any time without disturbing the automatic setting

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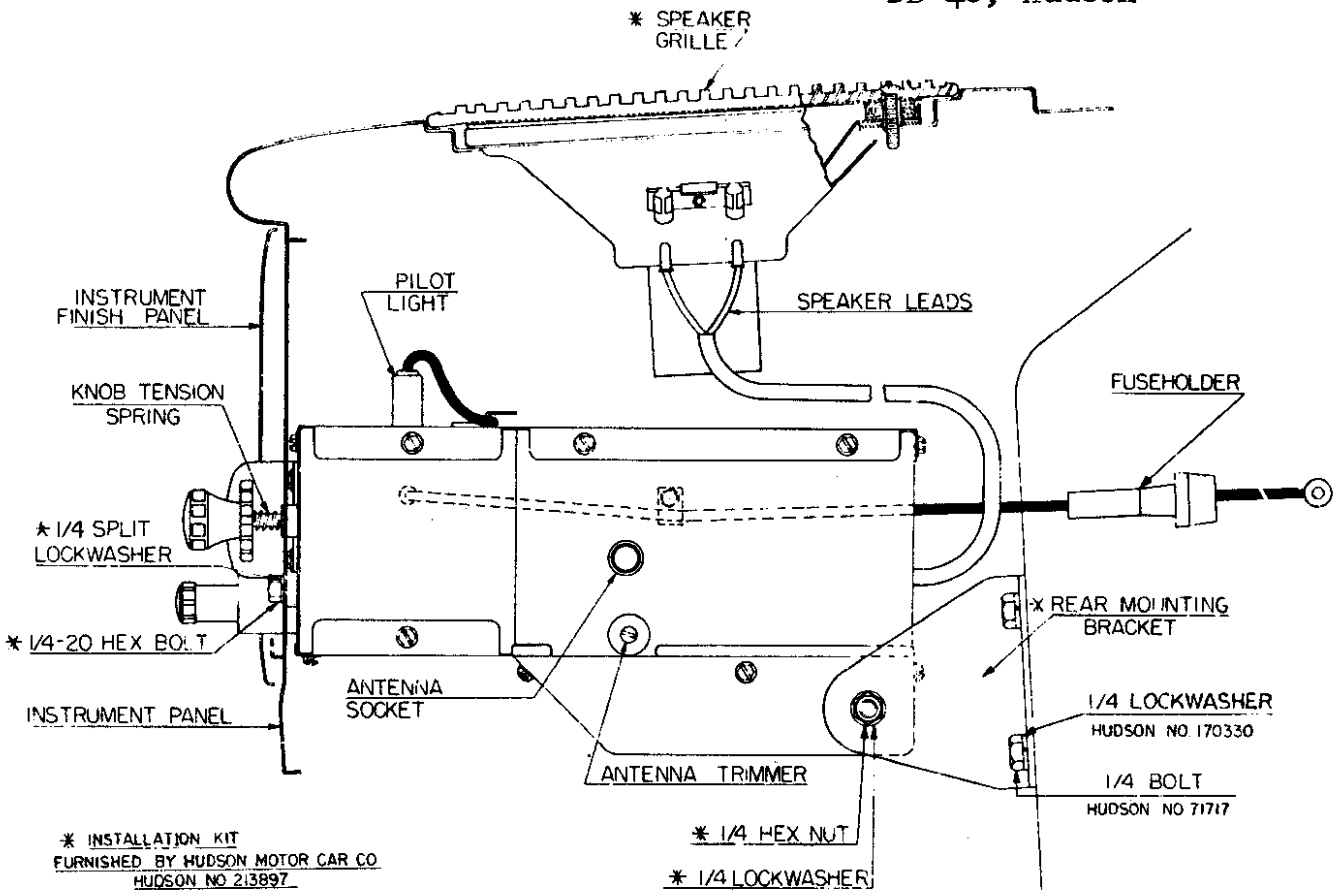

Fig. 2. Mounting Details and Connections

INSTALLATION INSTRUCTIONS

1. Install the antenna. (Complete instructions are furnished with each kit.)
2. Remove door on left hand side of instrument panel by removing the three screws from the back.
3. Remove ornament from center of trim panel above radio opening by means of removing the two face screws.
4. Remove the instrument finish panel and remove the escutcheon plug from the panel.
5. Remove the two bolts, Hudson No. 71717, from the fire wall and install the rear mounting bracket No. 12-1410. Do not tighten the bracket at this time. (Fig. 2.)
6. With the dial end of the receiver up, push the receiver up between the instrument panel and the air hopper. Turn the radio until the knob shafts slide through the openings in the instrument panel and the tapped spacers provided on the front plate of the set line up with the two corresponding holes in the instrument panel. Bring the receiver forward as far as it will go. (Fig. 2.)
7. With the receiver held in this position start the two ¼ x 20 x ½ fillister head screws, with lockwashers, into the holes.
8. Slip the elongated hole in mounting bracket over the stud on the set and install lockwasher and nut.
9. Before locking the receiver securely in position, place the instrument finish panel into position over the clock and speedometer and note whether or not the radio and trim panel are centered correctly. If not, move the radio until the dash trim panel and radio dial escutcheon assembly are in alignment. Then permanently fasten set in position by tightening the two front screws and the nut and bolts on the rear mounting bracket. Replace instrument finish panel and fasten securely.
10. Connect the "A" lead of the set to the battery terminal of the circuit breaker, mounted on the instrument panel brace over the steering column (Fig. 3).

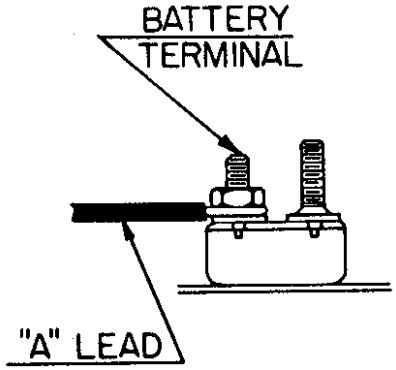

Fig. 3

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11. Plug in antenna cable (Fig. 2).
12. Remove speaker cover plate, and pull speaker leads through opening in dash.
13. Plug speaker leads into pin jack mounted on speaker. Make sure green lead plugs into green spotted pin jack.
14. Lower speaker into position, and line up with holes in the instrument panel. Place speaker grille, included in radio package, over speaker, making sure the mounting holes line up, then fasten securely with the four chrome plated screws provided in kit.
15. Place tone control knob onto shaft, put on volume control knob, tighten set screw (Fig. 1). Be sure there is no binding.
16. Place knob tension spring No. 80-594 over the tuning shaft. Put on trim ring and press on tuning control knob as far as it will go. Tighten set screw (Fig. 1).
17. Replace ornament and door.
18. **IMPORTANT:** Turn the receiver on and allow it to operate for approximately fifteen minutes in order for it to reach normal operating temperature. Tune in a weak station near 1200 Kc. With a small screw driver adjust the antenna trimmer, located on the right side of the receiver for maximum volume (Fig. 2).

INTERFERENCE ELIMINATION

IMPORTANT: Use the utmost care in the following operations to insure freedom from motor noise. Be sure that good ground contacts are made between the interference condensers and the car body. If necessary, clean away paint or dirt with emery paper. Tighten all nuts and bolts securely.

1. Remove the mounting screw of the voltage regulator and under this screw mount the condenser No. 22-1537. Connect the lead to the voltage regulator "A" terminal. (Fig. 4.)
2. Install suppressor No. 63-1252 in center of hole of distributor cap. Place high tension lead in top of suppressor. Be sure the suppressor and the lead are fastened securely. (Fig. 5.)
3. Remove bolt on the right side of the ignition coil. Mount condenser No. 22-1537 under this bolt. Connect lead to coil terminal marked (—). (Fig. 6.)

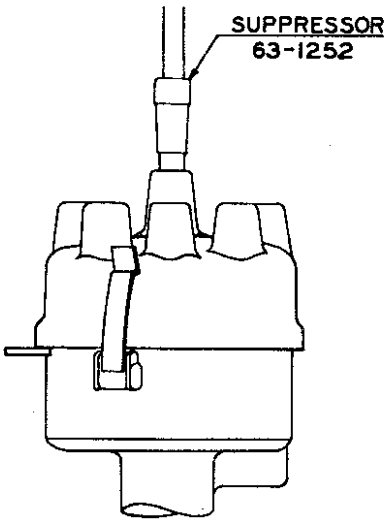

Fig. 5

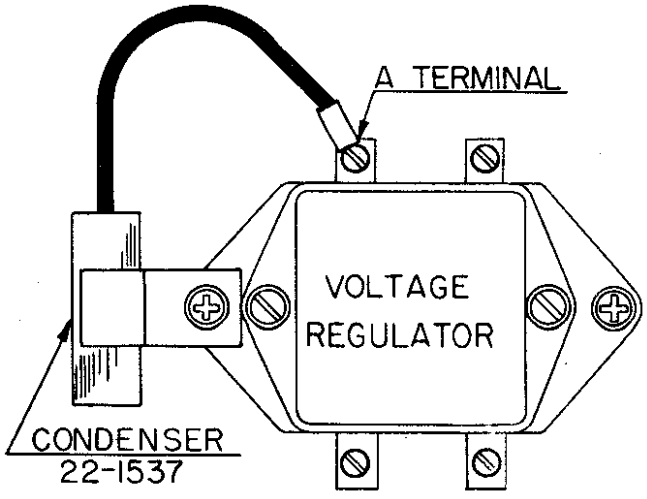

Fig. 4

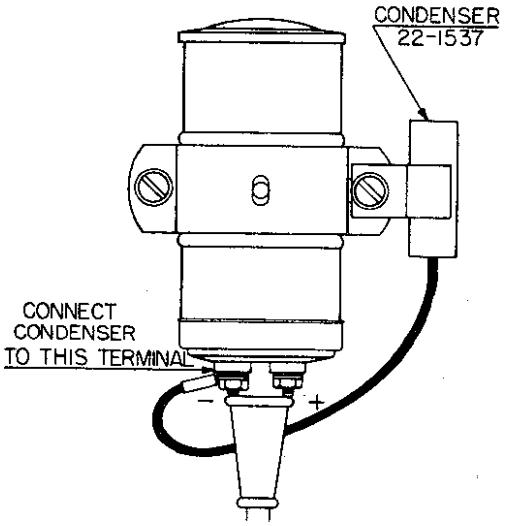

Fig. 6

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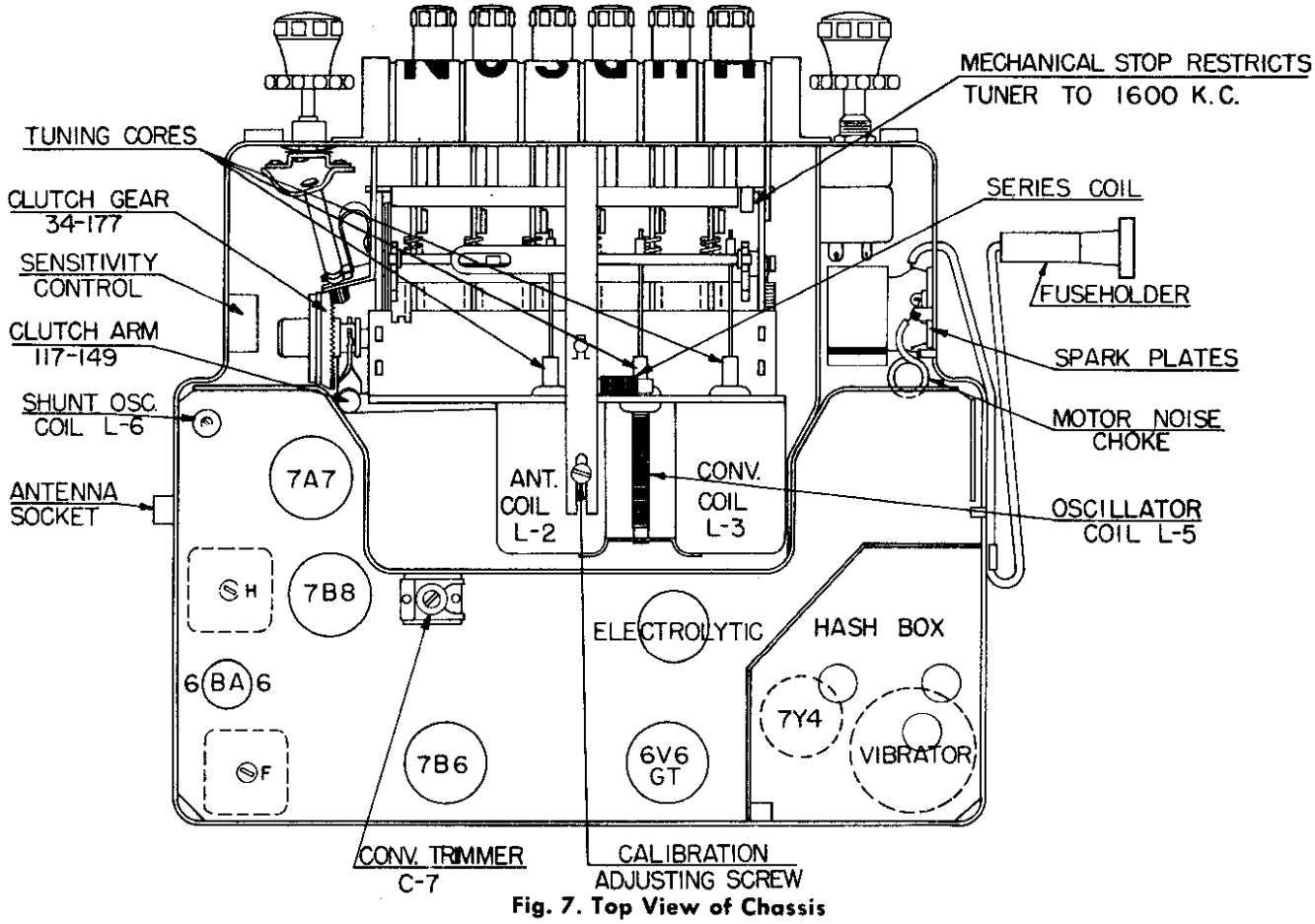

Fig. 7. Top View of Chassis

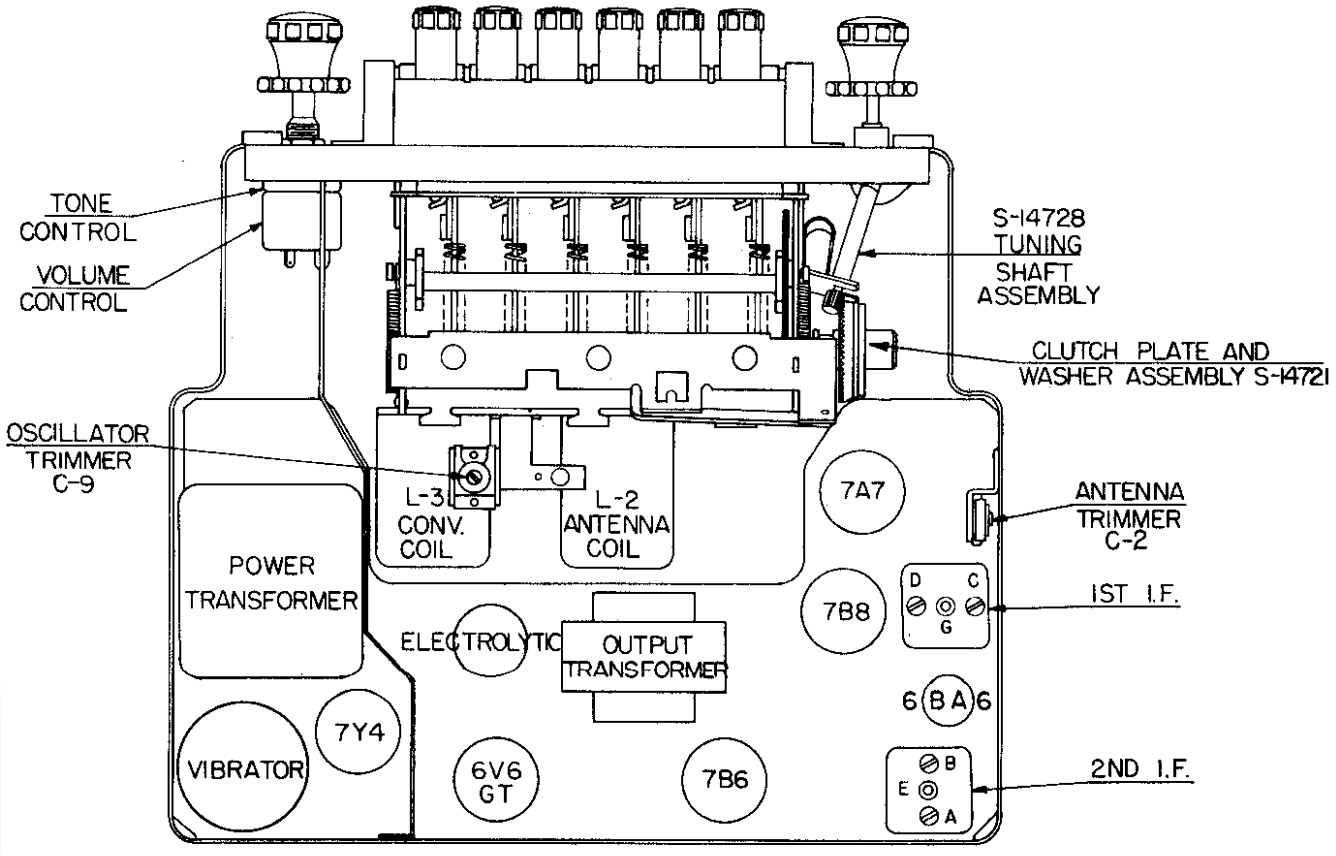

Fig. 8. Bottom View of Chassis

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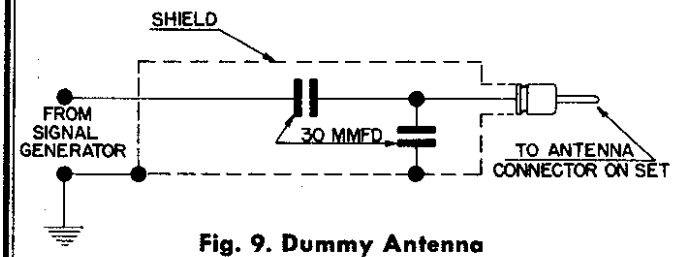

Fig. 9. Dummy Antenna

Fig. 9 shows the schematic of a recommended dummy antenna, closely resembling actual antenna capacity, to be used in series with signal generator leads when aligning the R.F. section of the receiver.

ALIGNMENT

Maximum performance depends on accurate alignment of the receiver; therefore follow these instructions carefully.

CAUTION: Make all alignment adjustment to the receiver with the volume control set at maximum, and the tone control in the treble position. Reduce the signal intensity as much as possible at the signal generator. Connect the output meter across the voice coil.

I.F. ALIGNMENT PROCEDURE

1. Remove top and bottom covers from receiver.
2. Set signal generator to 265 Kc.
3. Apply signal from generator through a .1 Mfd. dummy to 7B8 converter grid. (Pin No. 6 on socket.)
4. Adjust I.F. trimmers A, B, C, and D in order named for maximum output. Repeat the operation to assure accurate alignment. Some units have I.F. transformers that, are slug tuned. In this case adjust I.F. slugs E, F, G, and H in order named for maximum output and repeat the operation to assure accurate alignment. (Figs. 7-8.)

R.F. AND OSCILLATOR ALIGNMENT

1. Connect signal generator leads through dummy, illustrated in Fig. 9, to antenna lead in socket on receiver. This is important.
2. Set signal generator to 535 Kc.
3. Tune set to 535 Kc.
4. Adjust oscillator trimmer C-9 (Fig. 8) for maximum response.
5. Set signal generator to 1400 Kc.
6. Tune set to 1400 Kc.
7. Adjust converter trimmer C-7 (Fig. 8) and antenna trimmer C-2 (Fig. 7) for maximum response.
8. If dial calibration is off after making above adjustments, a correction can be made by tuning eccentric screw at fulcrum of dial pointer. (Fig. 7.)

CORE OR COIL REPLACEMENT ONLY

WARNING: The following adjustments are to be made ONLY if a core or coil is replaced.

The steel clamp collar normally grips the core spring and before a core is screwed in or out this tension must be released.

TO REMOVE CORE:

Remove the steel clamp collar using stubby nosed pliers by pressing the lugs of the collar together. Using core alignment tool, part number S-13064, screw the core spring down to the support bracket. With your fingers, screw the core spring past the bracket and lift out of the coil.

TO REPLACE CORE:

Place the core in the coil, screw the core spring into and past the support bracket. Use core tuning wrench, part number S-13064.

1. Set signal generator to 1675 Kc.
2. Connect signal generator leads through dummy, illustrated in Fig. 9, to antenna receptacle on the receiver.
3. Set receiver dial to 1600 Kc. (maximum high frequency end of dial).
4. Screw the cores completely out of the antenna coil, the converter coil, and the oscillator coil.
5. Adjust oscillator trimmer C-9 (Fig. 8) at 1675 Kc.
6. Adjust converter trimmer C-7, and antenna trimmer C-2 (Figs. 7 and 8) for maximum output reading.
7. Replace cores to their approximate original position.
8. Set signal generator dial and receiver dial to 1400 Kc.
9. Adjust oscillator core L-5 (Fig. 8) to scale at 1400 Kc.
10. Adjust the antenna core L-2, and converter core L-3 (Fig. 7) for maximum output reading.
11. Set signal generator to 600 Kc.
12. "Rock in" shunt oscillator coil L-6 (Fig. 8) for maximum output reading. This should be done only as a last resort. This is the same as rocking in the padder condenser on a general condenser receiver.
13. Check receiver at 1400 Kc. for calibration and gain. If the receiver is off scale or weak, repeat operations 9, 10 and 11.
14. After alignment is complete, the maximum high frequency tuning range should be checked. If the range is greater or less than 1605 Kc., the lug stop near the volume control should be bent to limit the frequency coverage to 1605 Kc.
15. Replace the steel clamp collar over the threaded insulating bushing.

IMPORTANT: After reinstalling the receiver in the car, allow it to operate for approximately 15 minutes to reach normal operating temperature. Extend antenna to maximum. Check the antenna trimmer alignment on a weak station at approximately 1400 Kc.

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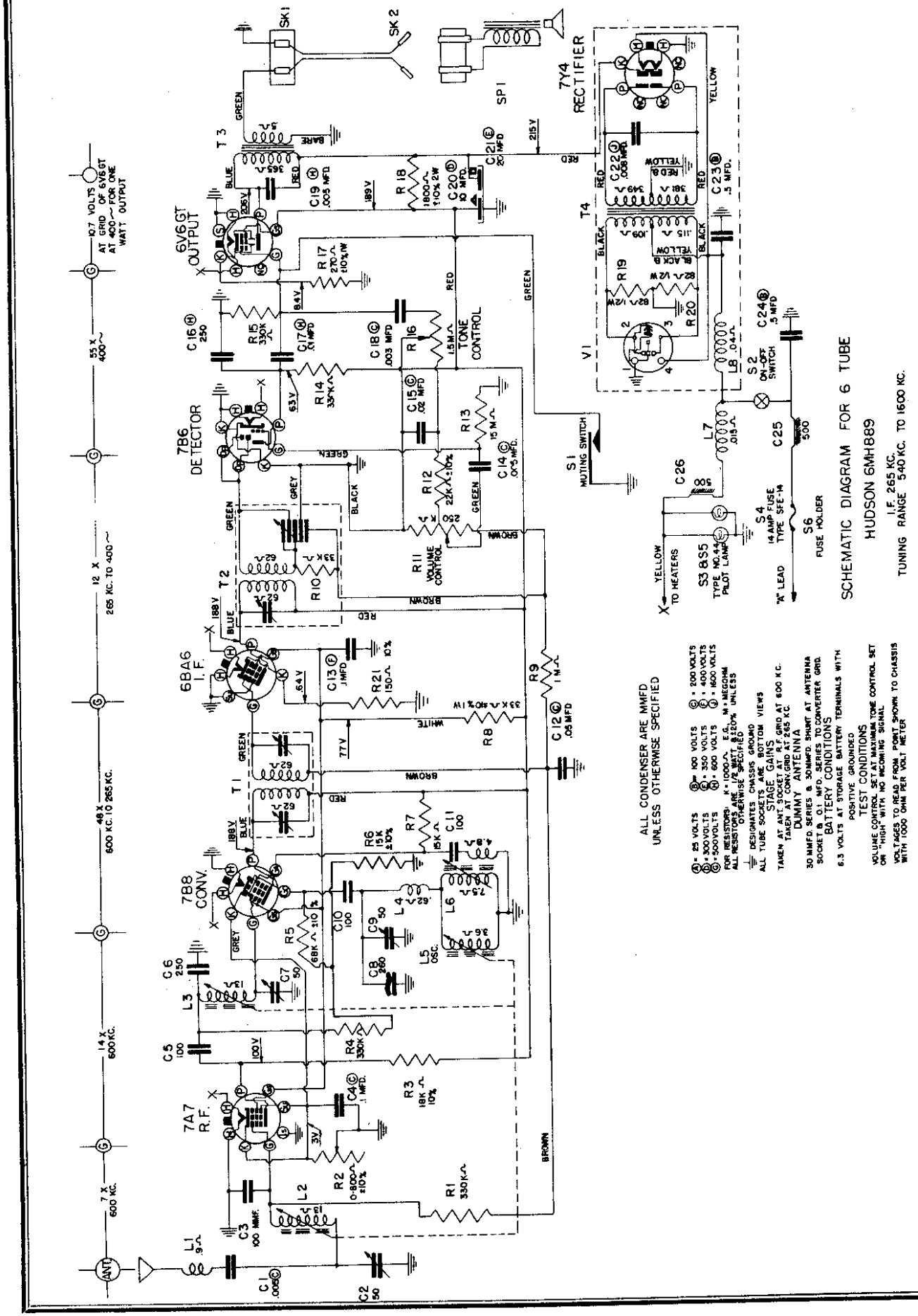

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PARTS LIST

Diag. No.	Zenith Part No.	Hudson Part No.	Description
			COILS AND CHOKES
L8	20-213	204890	Main Hash Choke
T1	95-1087	215456	1st I.F. Transformer (or 95-1077)
T2	95-1088	215457	2nd I.F. Transformer (or 95-1060)
L1	S-8819	209741	Antenna Motor Noise Choke Assembly
L7	S-11232	209571	Motor Noise Choke Coil Assembly
L2, L3, L5	S-14219	215458	Tuner Coil Unit Assembly (Ant., R.F. and Osc.)
L6	S-14225	215459	Oscillator Shunt Coil Assembly
L4	S-14226	215460	Oscillator Series Coil Assembly
L2	S-14227	215462	Antenna Coil Assembly
L3	S-14227	215462	R.F. Coil Assembly
L5	S-14228	215461	Oscillator Coil Assembly
			CONDENSERS
C13	22-170	204901	.1 Mfd. . . . . 400 V.
C16	22-182	204902	250 Mmfd. . . . . 500 V.
C4	22-190	209577	.1 Mfd. . . . . 200 V.
C12	22-250	204904	.05 Mfd. . . . . 200 V.
C3	22-365	215465	100 Mmfd. . . . . 500 V.
C19	22-838	204905	.005 Mfd. . . . . 600 V.
C1, C14	22-906	204906	.005 Mfd. . . . . 200 V.
C6	22-1136	209505	250 Mmfd. . . . . 500 V.
C17	22-1170	204910	.01 Mfd. . . . . 600 V.
C18	22-1180	209587	.003 Mfd. . . . . 200 V.
C15	22-1270	215465	.02 Mfd. . . . . 200 V.
C22	22-1448	209579	.008 Mfd. . . . . 1600 V.
C20, C21	22-1644	215466	Electrolytic—20 Mfd. 350 V. x 10 Mfd. 300 V. (or 22-1554)
C8	22-1712	215467	260 Mmfd. Compensating
C2	22-1714	215468	Single Section Trimmer (Antenna—50 Mmfd.)
C7	22-1715	215469	Single Section Trimmer (Converter—50 Mmfd.)
C9	22-1716	215470	Single Section Trimmer (Oscillator—50 Mmfd.)
C23, C24	22-1728	215471	.5 Mfd. . . . . 100 V.
C5, C10, C11	22-1730	215472	100 Mmfd. (Ceramic) . . . . . 500 V.

Dia. No.	Zenith Part No.	Hudson Part No.	Description
			RESISTORS
R2	63-1379	209877	Sensitivity Control (or 63-1267)
R8	63-1398	209929	33M Ohm . . . . . 1 W.
S2, R11, R16	63-1587	215473	Volume Contol, Switch and Tone Control
R18	63-1620	215474	1800 Ohm . . . . . 2 W.
R17	63-1621	215475	270 Ohm . . . . . 1 W.
R19, R20	63-1740	215476	82 Ohm . . . . . ½ W.
R21	63-1750	215477	150 Ohm . . . . . ½ W.
R7	63-1835	215478	15M Ohm . . . . . ½ W.
R3	63-1838	215479	18M Ohm . . . . . ½ W.
R12	63-1841	215480	22M Ohm . . . . . ½ W.
R10	63-1849	215481	33M Ohm . . . . . ½ W.
R5	63-1862	215482	68M Ohm . . . . . ½ W.
R1, R4, R14, R15	63-1891	215483	330M Ohm . . . . . ½ W.
R9	63-1912	215484	1 Megohm . . . . . ½ W.
R6	63-1834	215485	15M Ohm . . . . . ½ W.
R13	63-1961	215486	15 Megohm . . . . . ½ W.
			MISCELLANEOUS
	19-158		I.F. Transformer Mtg. Clip
SP1	49-623	213880	P.M. Speaker (6" x 9" Oval Type) (S-14205)
	52-455	215489	Volume Control Cable
	52-452	213873	Battery Cable—Fuse to Ammeter (or 52-474)
	52-472	215488	Speaker Cable and Plug
	52-473	215487	Battery Cable—Fuse to Set
	74-49	213881	Speaker Screen
	78-596	215490	Loktal Tube Socket (4 used)
	78-782	215492	Miniature Tube Socket
	78-796	215493	Antenna Connector Socket
	78-801	215491	Octal Tube Socket
	78-804	215494	Vibrator Socket
	93-888	215486	Vibrator Cushion Washer
T3	95-1030	215497	Output Transformer
T4	95-1066	215498	Power Transformer
	125-16	171277	Rubber Grommet
	125-63	171273	Rubber Grommet (3 used on S-14219)
	114-199	171252	6-32 x 3/16" Hex. H.D. Slotted S.T. Screw

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PARTS LIST (Continued)

Diag. No.	Zenith Part No.	Hudson Part No.	Description
	126-553	215499	Miniature Tube Shield
	138-24	211640	Speaker Grille (Hudson No. 211640)....Supplied by Hudson
	149-62	215436	Iron Core and Screw (used on S-14225)
V1	190-22	215495	Vibrator
	202-562	213879	Instruction Book (Owner's Manual)
	202-591	215438	Noise Suppression Supplement Sheet
	S-14205		Speaker and Screen Assembly
	S-14210	215439	Case Cover Set Mtg. Stud and Spring Assembly
	S-14458	213897	Installation Parts Kit (Hudson No. 213897). Supplied by Hudson
			INSTALLATION PARTS
	S-14203	213898	Installation Kit—Complete
	46-698	213896	Trim Knob
	46-699	213895	Tone Control Knob
	52-452	213873	Battery Cable—Fuse to Ammeter
	80-594	213894	Knob Tension Spring
S4	136-11	170480	14 Ampere Fuse—Type SFE-14
			DIAL AND TUNING MECHANISM ASSEMBLY
	S-14756	215434	Push Button Knob Assembly (6 required)
	26-391	215440	Dial Scale
	56-228	215442	Cross Arm Guide Rod
	57-1340	215443	Escutcheon
	57-1341	215445	Escutcheon Window Retaining Plate
	59-207	215446	Dial Pointer
	80-379	215447	Pointer Retaining Spring
	80-586	215455	Cross Arm Tension Spring (2 used)
	80-594	213894	Knob Tension Spring
	80-625	215448	Pointer Link Tension Spring

Diag. No.	Zenith Part No.	Hudson Part No.	Description
	93-885	215437	1/32 x .191 x 3/8" Bakelite Washer (2 used on S-14454)
S3 S5	100-36	171113	Dial Light Bulb—Mazda No. 44
	112-699	171251	No. 4-40 x 3/16" R.H.S.T. Screw—Stan-Tap-Cad. Pl. (57-1341)
	149-63	215453	Iron Core and Screw (3 used)
	192-114	215444	Escutcheon Window
	S-14212	215449	Tuner Unit Assembly
	S-14215	215451	Pointer Bracket and Stud Assembly
	S-14216	215452	Pointer Drive Link and Stud Assembly
	S-14217	215453	Dial Light Socket and Wire Assembly
	S-14224	215454	Cross Arm and Bushing Assembly
	S-14721		Clutch Plate and Washer
	S-14728		Tuning Shaft, Pinion Gear and Coupling Assembly
S1	S-14733		Muting Switch Assembly
	17-102		Cam Lock
	34-177		Clutch Gear
	64-162		.088 D x 5/32" Rivet
	73-118		No. 6-32 x 1/4" Hex Head Slotted Set Screw
	80-640		Yoke Tension Spring
	80-641		Clutch Release Bar Spring
	80-642		Clutch Spring
	93-921		Tuning Shaft Steel Washer
	93-922		Tuning Shaft Spring Washer
	93-923		Fishpaper Washer
	97-305		Clutch Arm Stud
	117-149		Clutch Lever
	188-111		Retaining Ring