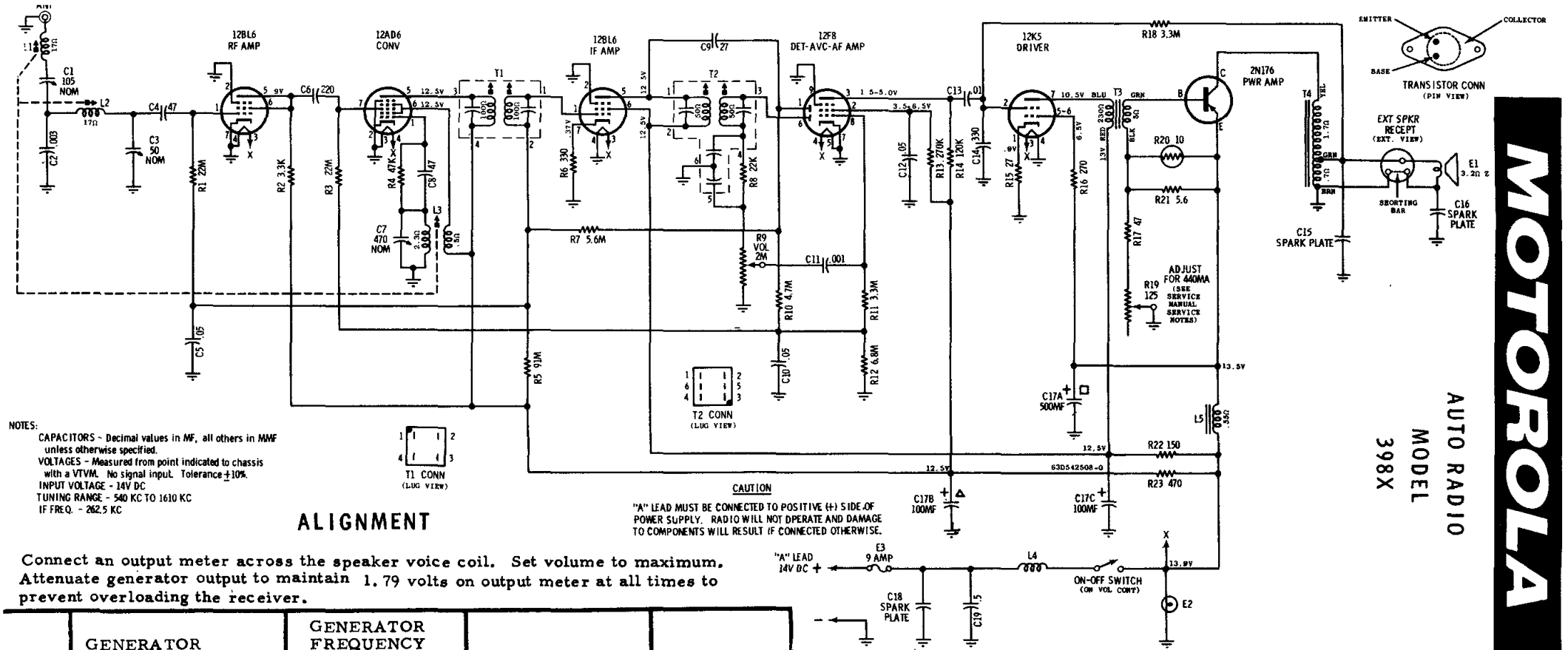

NOTES:
CAPACITORS - Decimal values in MF, all others in MMF unless otherwise specified.
VOLTAGES - Measured from point indicated to chassis with a VTVM. No signal input. Tolerance ±10%.
INPUT VOLTAGE - 14V DC
TUNING RANGE - 540 KC TO 1610 KC
IF FREQ. - 262.5 KC

CAUTION

"A" LEAD MUST BE CONNECTED TO POSITIVE (+) SIDE OF POWER SUPPLY. RADIO WILL NOT OPERATE AND DAMAGE TO COMPONENTS WILL RESULT IF CONNECTED OTHERWISE.

ALIGNMENT

Connect an output meter across the speaker voice coil. Set volume to maximum. Attenuate generator output to maintain 1.79 volts on output meter at all times to prevent overloading the receiver.

STEP	GENERATOR CONNECTION	GENERATOR FREQUENCY (400 cycle mod)	TUNER SET TO	ADJUST	REMARKS
IF ALIGNMENT					
1.	Conv grid (pin 7) thru .1 mf capacitor and chassis	262.5 Kc	Hi end stop	1, 2, 3 & 4	Peak for maximum.
RF ALIGNMENT					
2.	Ant recept through dummy (see Fig.)	1610 Kc	Hi end stop	5, 6 & 7	Peak for maximum.
NOTE: Do not perform steps 3, 4, 5 & 6 unless tuner has been tampered with or components have heen replaced. Before proceeding with step 3, back tuning cores 1" out of coils to eliminate their effect on trimmer adjustments. Construct c ore alignment tools as shown below.					
3.	Ant recept through dummy (see Fig.)	1610 Kc	Hi end stop	5, 6 & 7	Peak for maximum.
4.	"	1400 Kc	13/64" from hi end stop	8, 9 & 10	Peak for maximum.
5.	"	1610 Kc	Hi end stop	5, 6 & 7	Peak for maximum.
6. Repeat steps 4 and 5 until no further increase, then cement tuning cores in place.					
ANTENNA TRIMMER					
7.	-	-	Weak station around 1400 Kc	7	With radio installed in car and antenna fully extended, peak antenna trimmer for maximum.

TRANSISTOR REPLACEMENT - When replacing a transistor, be sure that the transistor insulator is in place and that the mounting screws are securely tightened. If insulator is not in place the transistor will be shorted to chassis and set will not operate. If mounting screws are not tight, the transistor will be damaged due to lack of proper heat dissipation. NOTE: When a transistor is replaced the current should be checked (see SERVICE NOTE 5 and 6).

TRANSISTOR CURRENT ADJUSTMENT - After a transistor has been replaced, the collector current should be checked and adjusted for proper operation.

A. Set R-19 to its maximum resistance position (fully counter-clockwise from wiring side) to avoid excessive collector current, then allow radio to warm-up for 15 minutes.

B. Open the output transformer T4 (speaker connected) by disconnecting the collector lead (Yel) from the center lug of transistor socket and insert an 0-1 amp DC Ammeter (.05 ohms internal resistance or less): (+) side of meter to lug of transistor socket and (-) to yellow lead of transformer.

C. Adjust R-19 for a collector current reading of 360 ma with 12.6 volts input to radio "A" lead.

NOTE: Two values of radio input voltage are given as a convenience to service personnel to accommodate different power sources. The schematic collector current value of 440 ma is stated with 14 volts DC input to receiver "A" lead.

MOTOROLA

AUTO RADIO
MODEL
398X