The following equipment is required to completely test and align modern high-fidelity amplifiers, tuners, and receivers.

- Line Voltage Auto-transformer or Voltage Regulator
- DC Vacuum Tube Voltmeter
- Accurately Calibrated AC Vacuum Tube Voltmeter
- Oscilloscope (IFlat to 100 kHz Minimum)
- Low-Distortion Audio Sine Wave Generator
- Intermodulation Distortion Analyzer
- Harmonic Distortion Analyzer
- 2 – Load resistors, 8-Ohms, 100 Watt (Minimum Rating)
- 10.7 MHz Sweep Generator
- Multiplex Generator (preferably with RF output – FISHER 300)
- 455 kHz Sweep Generator
- Ferrite Test Loop Stick
- 2 – Full Range Speakers for Listening Tests
- Stereo Source – Tunable, Tape Recorder, etc.
- Soldering Iron with Small Tip, Fully Insulated from AC Line
- Suction Desoldering Tool

Many of these items are included only as a reminder – they are normal procedures for experienced technicians. Shortcuts may be taken, but these often cause additional damage to transistors, circuit components, or printed circuit boards.

**SOLDERING:** A well-tinned, hot, clean soldering iron tip will make soldering easier, without causing damage to the printed circuit board or the components mounted on it. Regular use of a sponge cleaner will maintain a clean soldering surface. The heat available at the tip, not the wattage of the iron, is important. Some 50-watt irons reach temperatures of 1,000°F, while others will hardly melt solder. Small-diameter tips should be used for single solder connections, pyramidal and chisel tips for large areas. Always disconnect the AC power cord from the line when soldering. Turning the power switch OFF is not sufficient. Power-line leakage paths, through the heating element of the iron, may destroy transistors.

**PARTS REMOVAL:** If a part is not being returned for warranty factory replacement, it may be cut in half (with diagonal cutting pliers) to make removal easier. Multiple terminal parts, such as IF transformers, or electrolytic capacitors, should be removed using special de-soldering tips made especially for this purpose. Removing solder from terminals, reduces the possibility of breaking the printed circuit board when the part is removed.

**ACCIDENTAL SHORTS:** A clean working area, free of metal particles, screws, etc., is an important preventative in avoiding servicing problems. Screws, removed from the chassis during servicing, should be stored in a box until needed. While a set is operating, it takes only an instant for a base-to-collector short to destroy a transistor (and others direct-coupled to it). In the time it takes for a dropped machine screw, washer, or screwdriver, to contact a pair of socket terminals (or terminal chassis), a transistor can be ruined.

**SOLID-STATE DEVICES:** Integrated Circuits contain the equivalent of many circuit parts, including transistors, diodes, resistors, and capacitors. The preferred troubleshooting procedure requires isolating the trouble to one stage using AC signal tracing methods. Once the suspected stage is located, the DC voltages at the input and output leads are measured to give an accurate indication of the operating conditions of the IC. DO NOT use an ohmmeter to check continuity with the IC mounted on the printed circuit board. Forward biasing the input junctions within the IC may burn out the transistors. Do not replace a defective IC until all external resistors, capacitors, and transformers are checked first, to prevent the replacement IC from failing immediately due to a defect in the connecting components. Solder and unsolder each lead separately using a pincers or other heat sink on the lead to prevent damage from excessive heat. Check that the leads are connected to the correct locations on the printed circuit board before turning the set on.

Whenever possible, a transistor tester should be used to determine the condition of a transistor or diode. Ohmmeter checks do not provide conclusive data, and may even destroy the junctional within the device.

Never attempt to repair a transistor power amplifier module until the power supply filter-capacitors are fully discharged.

If an output or driver transistor becomes defective (open or shorted), always check ALL direct-coupled transistors and diodes in that channel. In addition, check the bias pot, and other parts in the bias network, before replacing transistors. All output and driver transistors in one channel may be destroyed if the bias network is defective. After parts replacement, always check the bias adjustment for specified idling current.

In some applications, replacement of transistors must be made from the same beta group as the original type. The beta group is indicated by a colored marking on the transistor. Be sure to include this information when ordering replacement transistors.

When mounting a replacement power transistor, be sure the bottom of the flange, mica insulator, and the surface of the heat sink, are free of foreign matter. Dust and grit will prevent flat contact, reducing heat transfer to the heat sink. Metallic particles can puncture the insulator, cause a short, and destroy the transistor.

Silicone grease must be used between the transistor and the mica insulator, and between the mica and the heat sink, for best heat transfer. Use Dow-Corning 3-37, or an equivalent compound made for power transistor heat conduction.

Use care when making connections to speakers and output terminals. To reduce the possibility of shorts, lugs should be used on the exposed ends, or stranded wire should be tied to prevent frayed wire ends. Current in the speakers and output circuitry is quite high – poor contacts, or small sized wire, can cause significant power losses in the system. For wire lengths greater than 30 feet, 16 AWG, or heavier, should be used.

**VOLTAGE MEASUREMENTS:** All voltages are measured with the line voltage adjusted to 120 volts. All measured voltages are ±10%. DC voltages are measured to ground with a VTM, with no signal input unless otherwise noted. AC signal voltages are measured under the conditions specified on the schematic.

**ALIGNMENT PROCEDURES:** DO NOT attempt realignment unless the required test equipment is available, and the alignment procedure is thoroughly understood.

*BECAUSE ITS PRODUCTS ARE SUBJECT TO CONTINUOUS IMPROVEMENT, FISHER RADIO CORPORATION RESERVES THE RIGHT TO MODIFY ANY DESIGN OR SPECIFICATION WITHOUT NOTICE AND WITHOUT INCURRING ANY OBLIGATION.*
**REMOVING DRESS PANEL**

1. Disconnect AC power cord.
2. Remove the screws which hold the top and bottom covers to the chassis. (On 260-1, 248 chassis, also remove screws holding top cover to heat sink.) Remove the covers.
3. Gently pull the eight leads off the terminal pins behind the TUNEOMATIC dial assembly. These push-on terminal leads connect the panel-mounted dial assembly to the chassis circuitry and must be disconnected in order to remove the dress panel. Label each lead with its associated pin location to make replacement easier later.
4. Gently pull all knobs off the front Dress panel control shafts. Remove the hex nuts from the shafts and remove panel by pulling forward over the shafts.
5. Reverse procedure for reassembly.

**REPLACING DIAL LAMPS**

1. Remove dress panel. Refer to REMOVING DRESS PANEL procedure.
2. Snap out the defective lamp from the spring clip. Place the new lamp in the socket making sure the unsoldered side of the lamp faces the edge of the glass lens.
3. Replace the front dress panel and secure with the hex nuts removed previously. Replace the knobs on the control shafts.
4. Reconnect the terminal leads (removed previously) to their respective terminal pins behind the TUNEOMATIC assembly.

**REMOVING DIAL GLASS ASSEMBLY**

1. Remove dress panel. Refer to REMOVING DRESS PANEL procedure.
2. Remove dial glass assembly. Refer to REMOVING DIAL GLASS ASSEMBLY procedure.
3. Gently pry the meter off the dial glass panel, and scrape the residual adhesive off the panel.
4. Peel the backing from one side of the replacement adhesive mounting pad (IFC Part No. 87142191), and affix it to the replacement meter. Peel the backing from the remaining side of the adhesive, align the meter face over the dial panel Outline, and firmly press the meter to the back of the glass panel.
5. Remove the dial glass assembly.
6. Reinstall the dress panel. Reconnect all leads (removed previously) to their respective terminal pins.
7. Check meter calibration. Refer to TUNING METER CALIBRATION procedure.
8. Remove top and bottom covers removed previously.

**REPLACING METER**

1. Remove dress panel. Refer to REMOVING DRESS PANEL procedure.
2. Remove dial glass assembly. Refer to REMOVING DIAL GLASS ASSEMBLY procedure.
3. Gently pry the meter off the dial glass panel, and scrape the residual adhesive off the panel.
4. Peel the backing from one side of the replacement adhesive mounting pad (IFC Part No. 87142191), and affix it to the replacement meter. Peel the backing from the remaining side of the adhesive, align the meter face over the dial panel Outline, and firmly press the meter to the back of the glass panel.
5. Remove the dial glass assembly.
6. Reinstall the dress panel. Reconnect all leads (removed previously) to their respective terminal pins.
7. Check meter calibration. Refer to TUNING METER CALIBRATION procedure.
8. Remove top and bottom covers removed previously.

**REPLACING STEREO BEACON AND METER LAMPS**

**WARNING:** Use only plain lukewarm water for moistening a freshly laundered, soft lint-free cloth to clean the front control panel.

1. Disconnect AC power cord.
2. Remove the screws which hold the top cover to the chassis. (On 260-1, 248 chassis, also remove screws holding top cover to heat sink.) Remove the cover.
3. Gently pull the four wires off the terminal pins on the top rear of the meter. Label each wire with its associated pin location to make replacement easier later.
4. Gently unwrap the compartment lamp assembly from the top rear of the meter.
5. Gently pull the replacement lamp assembly between the plastic flanges and press firmly into place.
6. Reconnect the four wires to their associated terminal pins on the replacement lamp assembly.
7. Replace the top cover on the chassis and secure with the screws removed previously.

**CLEANING FRONT PANEL**

**DIAL STRINGING**

1. Remove dress panel. Refer to REMOVING DRESS PANEL procedure.
2. Remove dial pointer.
3. Remove dial glass assembly. Refer to REMOVING DIAL GLASS ASSEMBLY procedure.
4. Rotate the tuning capacitor drive-drum to its maximum CW position. Locate the machined split line on the center of the drive-drum and remove the old dial cord.
5. Tie end of new dial cord to one end of dial spring. Fasten spring to bottom right ear inside drive-drum. See Figure 5.

**SERVICING INTEGRATED CIRCUITS**

Integrated Circuits are used in this unit to approach the theoretical maximum of AM suppression and noise limiting. These ICs contain the equivalent of many circuit parts, including transistors, diodes, resistors, and capacitors. These integrated circuits are high-reliability devices, requiring minimal servicing. In the unlikely event that an IC requires servicing, it should be serviced in the same way as a transistor.

The preferred troubleshooting procedure requires isolating the trouble to one stage using AC signal tracing methods. Once the suspected stage is located, the integrated circuit can be checked by measuring the DC voltages at the input and output leads of the IC using a DC VTM. These DC voltage measurements give the most accurate indications of the operating conditions of the integrated circuit.

WARNING: Do not use an ohmmeter to check continuity with the IC mounted on the printed circuit board. Forward biasing the internal junctions within the IC may burn out the transistor.
POWER OUTPUT MEASUREMENT

The output amplifier of this unit is designed to deliver its full-rated power with program material randomized into 0-bolt rms for an indefinitely long period of time. When a constant audio tone is used as a signal to measure the maximum continuous RMS power output, the following measurements must be taken:

1. Measure the power output of one channel at a time.
2. Limit the measurement period to 10 minutes with a load resistance of 8 ohms.
3. (A) 250T: Use a load resistor with a power rating of at least 50 watts.
   (B) 400T: Use a load resistor with a power rating of at least 100 watts.

**WARNING:** If the power output of both channels is measured simultaneously, use a load of 8 ohms per channel and limit measurements to a period not longer than 5 minutes.

The 400T uses a high-temperature output switch to protect the amplifier against damage resulting from overheating. The switch disables the amplifier by eliminating drive signal in the audio control amplifier. When the amplifier cools to normal operating temperature, the output switch automatically resumes.

**HARMONIC DISTORTION TEST**

Set BALANCE, BASS, and TREBLE controls to their center positions. Set SELECTOR switch to AUX. Depress MAIN SPKRS pushbutton switch; release all other pushbutton switches to off position.

1. Connect an 8-ohm, 100-watt resistor across the LEFT SPEAKERS MAIN terminals. In parallel with the load resistor, connect the input leads of an HD analyzer and the input leads of an accurately calibrated AC VTVM.
2. Connect a low-distortion 0.001% audio signal generator, set for 1,000 Hz, to the LEFT channel AUX IN jack.

**NOTE:** Allow at least 10 minutes warm-up time before making measurements.

3. Rotate VOLUME control to maximum.
4. (A) 250T: 224; Increase audio generator level for 30 watts output (10.5 V RMS across 8-ohm load). HD analyzer should read 0.5% or less.
5. 400T: Increase audio generator level for 50 watts output (20.0 V RMS across 8-ohm load). HD analyzer should read 0.5% or less.
6. Repeat preceding steps for right channel.

**INTERMODULATION DISTORTION TEST**

**NOTE:** Bypass C20 and C21 with direct connections for IM test on 24-hour chassis. Bypass C17 and C18 on 26R.

Set BALANCE, BASS, and TREBLE controls to their center positions. Set SELECTOR switch to AUX. Depress MAIN SPKRS pushbutton switch; release all other pushbutton switches to off position.

1. Connect an 8-ohm, 100-watt resistor across the LEFT SPEAKERS MAIN terminals. In parallel with the load resistor, connect the input leads of an HD analyzer and the input leads of an accurately calibrated AC VTVM.
2. Connect an IM-analyzer generator output to the LEFT channel AUX IN jack.

**NOTE:** Allow set to warm up at least 10 minutes before making measurements.
3. Rotate VOLUME control to maximum.
4. (A) 250T: 24; Increase IM-analyzer generator output for 30 watts output (12.7 V RMS across 8-ohm load). IM meter reading should be 1.0% or less.
5. 400T: Increase IM-analyzer generator output for 50 watts output (16.4 V RMS across 8-ohm load). IM meter reading should be 1.0% or less.
6. Repeat preceding steps for right channel.

**NOTE:** If any of the preceding instructions differ from those in the IM-analyzer instruction manual, it is best to follow those in the manual. If a load resistor of 100 watts (or higher) rating is built into the IM analyzer, a separate load resistor is not required.

**POWER AMPLIFIER CENTER VOLTAGE TEST**

**NOTE:** Allow set to warm up at least 10 minutes before making measurements or adjustments. Power amplifier center voltage test should be performed before starting this procedure.

Set VOLUME control to minimum. Depress MAIN SPKRS pushbutton switch; release all other pushbutton switches to off position.

1. Connect DC VTVM across the LEFT SPEAKERS MAIN terminals. Meter should read 0 volts (less than 1.000 mv).
2. Connect DC VTVM across the RIGHT SPEAKERS MAIN terminals. Meter should read 0 volts (less than 1.000 mv).

**POWER AMPLIFIER IDLING CURRENT ADJUSTMENT**

**NOTE:** Allow set to warm up at least 10 minutes before making measurements or adjustments. Power amplifier center voltage test should be performed before starting this procedure.

Set VOLUME control to minimum. Depress MAIN SPKRS pushbutton switch; release all other pushbutton switches to off position.

1. Connect ground lead of DC VTVM to pin 2C on left channel of predriver/driver board. Connect probe of DC VTVM to pin 2Z on predriver/driver board.
2. 250T: 24R; Adjust pot. R815 (OUTPUT BIAS ADJUST) for DC VTVM reading of 1.8 mV.
3. 400T: Adjust pot. R815 (OUTPUT BIAS ADJUST) for DC VTVM reading of 1.5 mV.
4. Connect ground lead of DC VTVM to pin 8B on right channel of predriver/driver board. Connect probe of DC VTVM to pin 8D on predriver/driver board.
5. (A) 250T: 24R; Adjust pot. R816 for DC VTVM reading of 1.6 mV.
6. 400T: Adjust pot. R816 for DC VTVM reading of 1.15 mV.

**FM IF AND DETECTOR ALIGNMENT**

Set SELECTOR switch to FM, and AFC switch to OFF. Turn VOLUME control to minimum. Depress MUTING OFF pushbutton switch.

1. Disconnect all 807 leads from Test Point 301 (pin 3N on AM/FM IF, MBX board) and connect vertical AC input of scope to FM Test Point 301. Connect ground lead of scope to pin 30.
2. Connect an R72 resistor across scope input and set scope vertical amplification to 10 times.
3. Connect 10.7 MHz sweep generator to Test Point 501 (pin 3N on FM IF board). Connect ground lead of generator to pin 5H. Adjust detector level and sweep to observe IF response curve.
4. Adjust top and bottom cores of 2305, 2304, and 2302 (on AM/FM IF, MBX board) for symmetry and maximum gain.
5. Adjust top and bottom cores of L505 (on FM RF board) for maximum gain and symmetry. Repeat adjustment until maximum gain and symmetry are obtained (see Figure 4).
6. Increase detector level full output approximately 100,000 uv, if necessary, slightly right of top core of 2305 to center 10.7 MHz marker (see Figure 5).
7. Reconnect the jumper lead to FM Test Point 301 (pin 3N on AM/FM IF, MBX board). Disconnect the R72 resistor across scope input connected previously.
8. Reduce generator sweep to zero (sweep off). Adjust FM METER ADJ. pot. R318 (on AM/FM IF, MBX board) for front panel tuning meter reading of 4.5.
9. Connect a 100k resistor in series with the vertical input of the scope and connect to FM Test Point 405 (pin 4A on AM/FM IF, MBX board). Use same AC scope sensitivity setting (1.000 mv/cm).
10. Adjust detector level and sweep to observe detector "S" curve. Adjust bottom core of 2306 first, then top core for maximum gain and symmetry (see Figure 6).
11. Connect DC VTVM to Test Point 405 (pin 4A on AM/FM IF, MBX board). Use most sensitive meter scale setting.
12. Readjust top core of 2305 for zero (reading within .500 mv) on DC VTVM.

**FM FRONT END ALIGNMENT**

**NOTE:** FM IF alignment should be performed before starting this procedure.

Set SELECTOR switch to FM, and AFC switch to OFF. Turn VOLUME control to minimum. Depress MUTING OFF, and MONO MODE pushbutton switches. Depress MANUAL pushbutton on TUNE-O-MATIC dial assembly.

1. Set TUNING dial pointer to zero (0) calibration mark on the logging scale. If the dial pointer is not centered on the 0 at the extreme end of the knob rotation, repolish the pointer assembly on the dial cord and cement the pointer in place to prevent slippage. Allow cement to thoroughly dry.

**NOTE:** Repolishing the dial pointer may require realignment of AM RF board for correct AM station calibration.

2. Connect an accurately calibrated DC VTVM to Test Point 9B (on TUNE-O-MATIC circuit board). DO NOT USE DC VOM.
3. Rotate TUNING knob to center dial pointer on 88 MHz calibration mark on dial glass.
4. Using a small screwdriver, adjust R28, FM ALIGNMENT POT, for DC VTVM reading of exactly 4.3 volts Disconnect DC VTVM.
5. Connect an FM generator to the FM AN/TRA terminals. Use a 120-boltm comparison with each of the generators (see Figure 7).
6. Connect a scope and an AC VTVM to either LEFT or RIGHT RCOR OUT jack.

**Set FM generator frequency to receiver frequency, 90 MHz, modulated with 400 Hz, 375 kHz deviation. Set generator output level to low as possible.

4. Align (oscillator trimmer) C201 first, then (mixer trimmers) L503, and (IF coil) L502 for maximum reading on AC VTVM and tuning meter, and maximum waveform amplitude and symmetry.
5. Set generator frequency and TUNING dial pointer to 106 MHz. Align (oscillator trimmer) C201 first, then (mixer trimmers) L503, and (IF coil) L502 for maximum reading on AC VTVM and tuning meter, and maximum waveform amplitude and symmetry.
6. Repeat alignment several times until accurate dial calibration and maximum gain are obtain. Keep generator output level as low as possible during all adjustments.
NOTE: If the FM IF AND DETECTOR ALIGNMENT procedure (including the calibration of tuning meter) has been completed, omit the following procedure. Use the following procedure to calibrate the tuning meter without IF alignment; i.e., after meter replacement.

Set SELECTOR switch to FM. Turn VOLUME control to minimum.
(1) Connect an FM generator to the FM ANTenna terminals. Use a 120-ohm composition resistor in series with each lead from the generator (see Figure 7).
(2) Set generator frequency to same frequency as receiver. Set generator RF output level to full output (approximately 100,000 volts) with audio modulation removed.
(3) Adjust generator frequency for peak tuning meter reading.
(4) Adjust FM METER ADJ. pot. R328 on AM/FM IF, MPX board) for tuning meter reading of 4.5.

ALT: Two methods of aligning the multiplexer decoder are given. The preferred procedure uses a multiplexer generator with RF and IF kHz outputs and with 1 kHz modulation, such as the Fisher 300 Multiplexer Generator. This is the better method of alignment because the front-end IF and IF stages are also checked through the use of this procedure. An alternate procedure for use with multiplexers not having an RF output is also given.

PREFERRED ALIGNMENT PROCEDURE
NOTE: Check the alignment of the IF amplifier before aligning the multiplexer decoder. Poor IF alignment may cause improper MPX adjustment impossible.
Set SELECTOR switch to FM. Turn VOLUME control to minimum. Depress MUTING OFF pushbutton switch. Depress MANUAL pushbutton on TUNE-OMATIC dial assembly. (1) Connect RF output of multiplexer generator to the FM ANTena terminals. Use a 120-ohm composition resistor in series with each lead from the RF output (see Figure 7). Set MPX generator for external modulation with 19 kHz pilot carrier (120 kH2o peak-to-peak) and 100 kH2o pilot (100 kH2o peak-to-peak) into audio. Tune receiver to RF frequency of MPX generator.
(2) Connect DC VTM to Test Point 403 (pin 4 on AM/FM IF, MPX board) for maximum reading on DC VTM (2.5 to 4 VDC).
(3) Connect output of audio generator, set for 1 kHz, to the external modulation input of MPX generator and to the external IF component input of oscilloscope. Adjust audio generator level for 1.2 volts peak-to-peak composite MPX input (100 kH2o pilot, 90% audio). See Figure 10. Module right channel only. Proceed with steps (5) through (10) of PREFERRED ALIGNMENT PROCEDURE.
(4) Replace the jumper lead going to pin 4A (on AM/FM IF, MPX board) removed previously.

NOTE: AM IF alignment should be performed before starting this procedure.
Set SELECTOR switch to AM, and VOLUME control to minimum.
(1) Connect 455 kHz sweep generator to pin 7A on AM RF board. Use a 0.1 uF capacitor in series with the generator lead. Connect generator ground to pin 7C.
(2) Connect vertical input of scope to Left Channel Modulation Probe. Connect scope ground to pin 3G. Set scope vertical input sensitivity to approximately 200 mV/Div.
(3) Adjust generator level and sweep to observe IF response curve. Set generator output as low as possible.
(4) Adjust top and bottom corners of Z303, Z301 on AM/FM IF, MPX board, and Z702 on (AM RF board) for maximum gain and symmetry. Repeat step until maximum gain and symmetry are obtained (see Figure 11).

NOTE: Repositioning the dial pointer may require realign-ment of FM RF board for correct FM station calibration.
(2) Open the AM ANTenna SMD link at the antenna termi-nals. Connect an AM generator to the AM ANTenna and ground terminals.
(3) Connect a scope on AC VTM to either the LEFT or RIGHT RCDR OUT jack.
(4) Set AM generator frequency and TUNING dial pointer to 600 kHz. Use 205 modulation with 400 Hz. Set generator output as low as possible.
(5) Align oscillator coil Z703 (AM RF board) for maxi-mum reading on AC VTM and maximum waveform amplitude and symmetry.
(6) Set AM generator frequency and TUNING dial pointer to 1400 kHz. Adjust oscillator trimmer C703 (AM RF board) for maximum reading on AC VTM and maximum waveform amplitude and symmetry.

NOTE: To align the antenna coil, match the wiring harness to the end of the ferrite loop antenna. Shift the coil back and forth for maximum audio indication. Secure the coil in position, remelt the wax.
(7) Repeat AM generator frequencies and TUNING dial pointer to 1400 kHz and 1200 kHz. Adjust antenna trimmer C701 (AM RF board) for maximum reading on AC VTM and maximum waveform amplitude and symmetry.
(8) Repeat steps (6) and (7) several times until accurate dial calibra-tion and maximum gain are obtained. Keep the generator output as low as possible during all adjustments.
(9) Reset AM generator frequency and TUNING dial pointer to 600 kHz. Adjust the position of the small coil on the ferrite loop antenna for maximum reading on AC VTM and maxi-mum waveform amplitude and symmetry.

NOTE: AM IF alignment should be performed before start-ing this procedure.
Set SELECTOR switch to AM, and VOLUME control to min-imum.
(1) Set TUNING dial pointer to zero (0) calibration mark on the logging scale. If dial pointer does not coincide with the 0 mark dial calibration, repeat the procedure outlined for alignment. Adjust AM RF output level to the point in place to prevent distortion. Allow cement to thoroughly dry.
SCHEMATIC SHOWN ON MAIN CHASSIS DIAGRAM

BOARD VIEWED FROM COMPONENT SIDE

+12V
+5.5V
+15V
+31.26V
PA LEFT
PA RIGHT
LEFT PHONES
RIGHT PHONES
STEREO BEACON
4+V
+30V
+25V
T+ TERMINAL LUG USED FOR EASE IN WIRING.