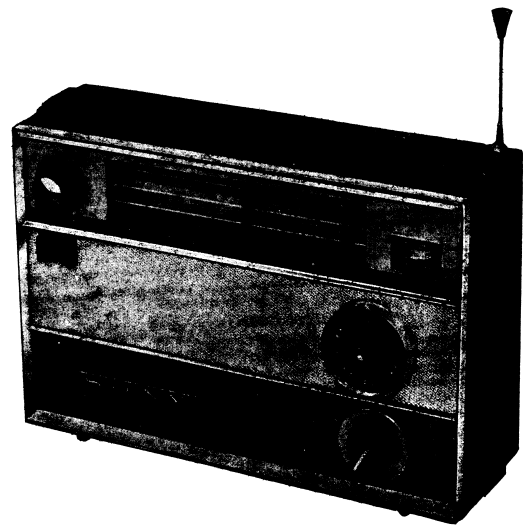
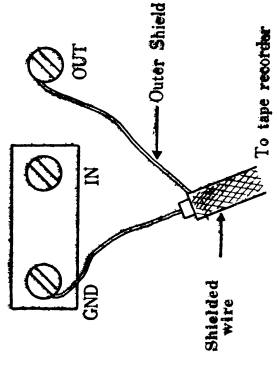
# SONY SERVICING GUIDE

# TR-812

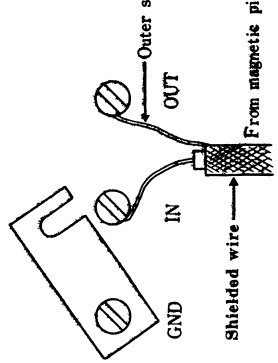


## Specifications for TR-812

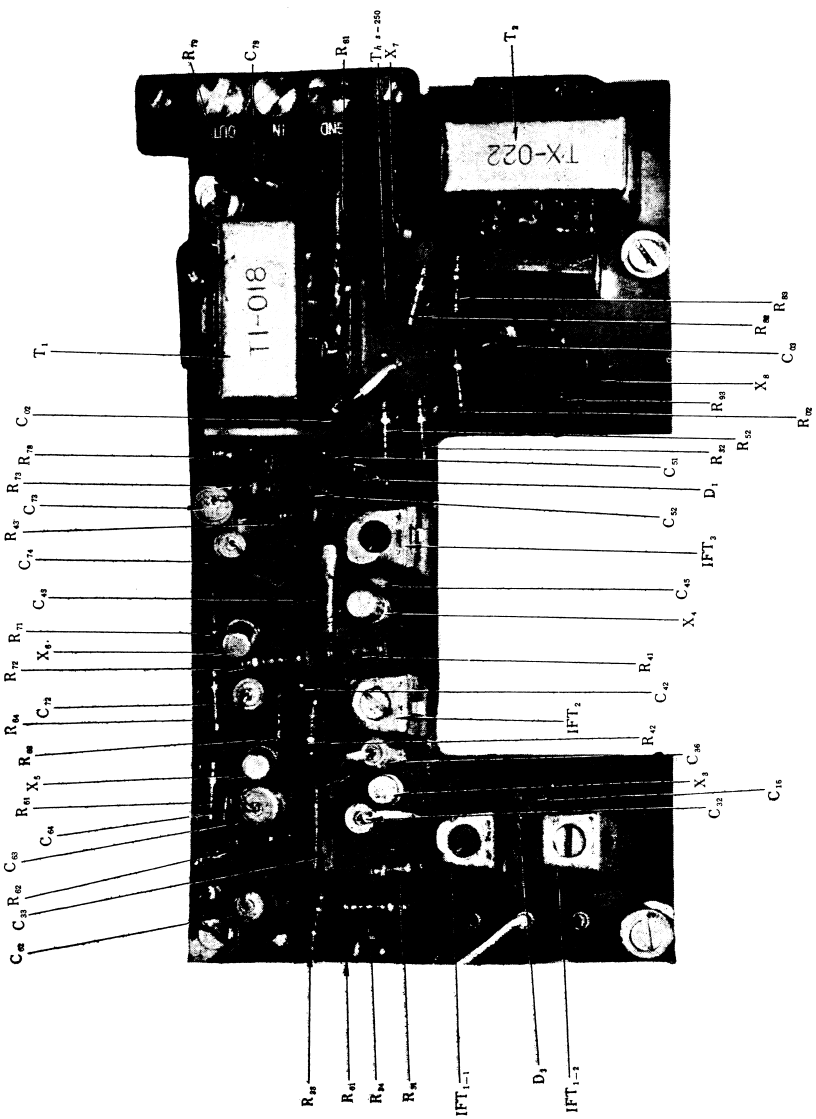
| | | |
|---|---|---|
| **Circuit** | : | 8 transistor superheterodyne |
| **Covering frequency:** | | MW 535 - - - -1,605 kc |
| | | SW1 2 - - - - 6 Mc |
| | | SW2 6 - - - - 18 Mc |
| **IF frequency** | : | 455 kc |
| **Sensitivity** | : | MW 40 $\mu$V/m with built-in ferrite bar antenna |
| | | SW 1 52$\mu$V/m with built-in ferrite bar antenna |
| | | SW 2 58 $\mu$V/m with built-in ferrite bar antenna |
| **Selectivity** | : | 33 dB (10 kc off) |
| **Antenna system** | : | Built-in ferrite bar antenna and 7 section telescopic antenna |
| **Output power** | : | 220 mW (undistorted) |
| **Current drain** | : | 12 mA±20% at zero signal |
| **Speaker** | : | 4″×6″ oval type PM dynamic 8 Ω |
| **Battery** | : | 4 size "D" flashlight batteries (6 volts) |
| **Dimensions** | : | 6⅞″×10⅜″×3⅞″ (147×264×97 mm) |
| **Weight** | : | 5.3 lbs. (2.4 Kg) |
| **Color** | : | Black |




Recording of radio program

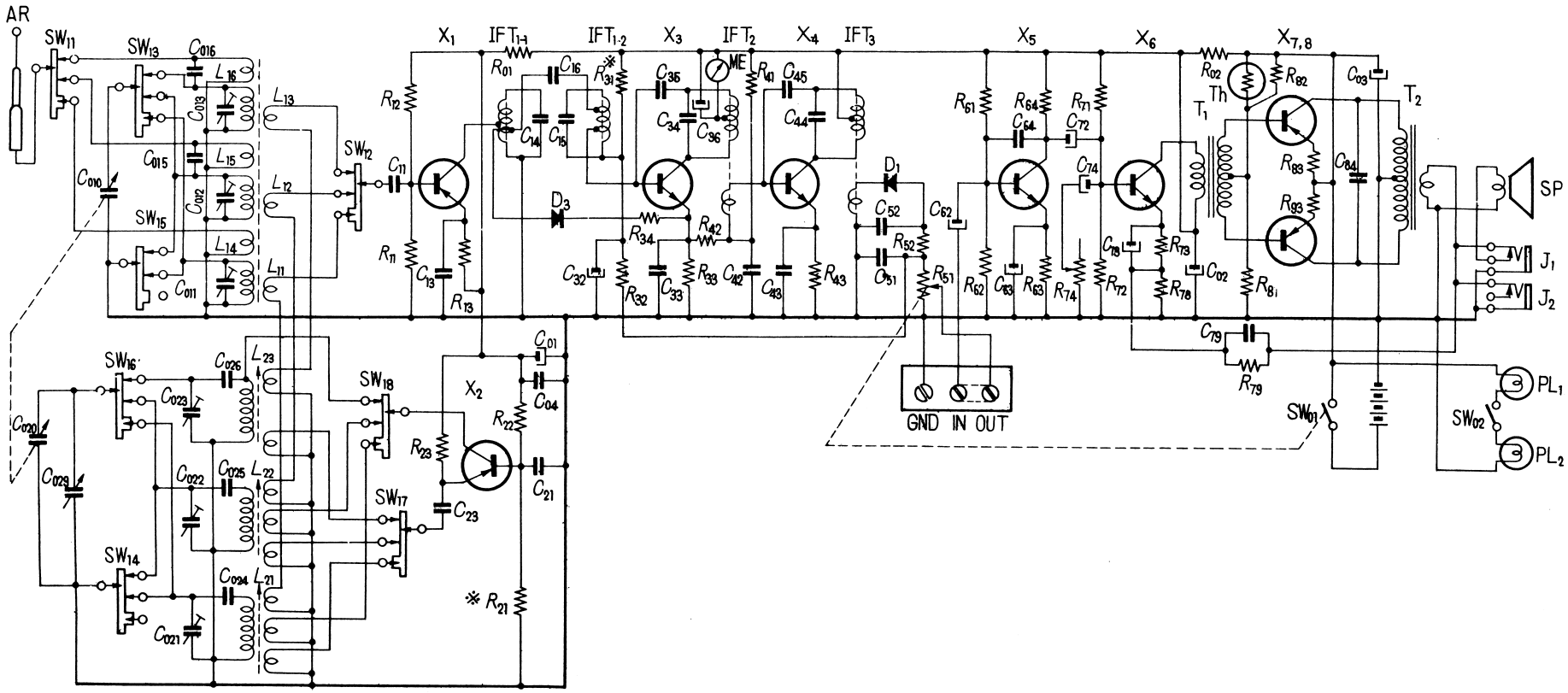



Playing back of record




Mounted side of TR-812 (IF and AF section)

# SONY CIRCUIT DIAGRAM FOR TR—812




| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $X_1$ | Transistor 2T20 | $L_{11}$ | BC Band Oscillator Coil | RA | Rod Antenna | $R_{11}$ | 470 Ω RD¼L ±10% | $R_{61}$ | 3.3KΩ RD¼L ±10% | $C_{11}$ | 5pF | $C_{31}$ | 180pF (inside $IFT_2$) |
| $X_2$ | 〃 2T20 | $L_{12}$ | SW 〃 〃 〃 | ME | Tuning Meter | $R_{12}$ | 100 Ω 〃 〃 | $R_{62}$ | 1KΩ 〃 〃 | $C_{12}$ | 2pF | $C_{32}$ | 2pF |
| $X_3$ | 〃 2T76 | $L_{13}$ | SW 〃 〃 〃 | | | $R_{13}$ | 27KΩ 〃 ±5% | $R_{63}$ | 1KΩ 〃 〃 | $C_{13}$ | 370pF | $C_{33}$ | 30μF 6V |
| $X_4$ | 〃 2T76 | $IFT_{1-1}$ | Dual Tunning I.F.Trans. | | | $R_{14}$ | 8.2KΩ 〃 〃 | $R_{64}$ | 6.8KΩ 〃 〃 | $C_{14}$ | 1200pF | $C_{34}$ | 0.02μF |
| $X_5$ | 〃 2T6 | $IFT_{1-2}$ | 〃 〃 | | | $R_{15}$ | 3.3KΩ 〃 ±10% | $R_{65}$ | 3.3KΩ 〃 〃 | $C_{15}$ | 4000pF | $C_{35}$ | 0.05μF |
| $X_6$ | 〃 2T6 | $IFT_2$ | I.F.Trans. | | | ※ $R_{16}$ | 4.2KΩ 〃 ±5% | $R_{66}$ | 470 Ω 〃 〃 | $C_{16}$ | Midget Tuning Capacitor | $C_{36}$ | 180pF (inside $IFT_2$) |
| $X_7$ | 〃 2T3 | $IFT_3$ | 〃 | | | $R_{17}$ | 3.3KΩ 〃 ±10% | $R_{67}$ | 5KΩ VR (T Curve) | $C_{17}$ | 100μF 6V | $C_{37}$ | 2pF |
| $X_8$ | 〃 2T3 | $T_1$ | Input Trans. | | | $R_{18}$ | 2.2KΩ 〃 ±5% | $R_{68}$ | 5 Ω RD¼L ±5% | $C_{18}$ | 100μF 6V | $C_{38}$ | 0.02μF |
| $D_1$ | Diode 1T23G | $T_2$ | Output Trans. | | | ※ $R_{19}$ | 7.5KΩ 〃 〃 | $R_{69}$ | 100 Ω 〃 ±10% | $C_{19}$ | 100μF 6V | $C_{39}$ | 0.02μF |
| Th | Thermistor S—250 | SP | Speaker —10×15cm 8Ω | | | $R_{20}$ | 5.6KΩ 〃 ±10% | $R_{70}$ | 5KΩ 〃 ±5% | $C_{20}$ | 0.02μF | $C_{40}$ | 10μF 6V |
| $D_2$ | Diode 1T23G | $SW_{16,17}$ | Band Switch | | | $R_{21}$ | 470 Ω 〃 〃 | $R_{71}$ | 5Ω 〃 ±5% | $C_{21}$ | 0.005μF | $C_{41}$ | 30μF 6V |
| $L_{11-14}$ | BC Band Bar Antenna | $PL_{1,2}$ | Pilot Lamp 3V/30mA | | | $R_{22}$ | 1KΩ 〃 〃 | $R_{72}$ | 5Ω 〃 〃 | $C_{22}$ | 0.005μF | $C_{42}$ | 0.005μF |
| $L_{21-24}$ | SW 〃 〃 〃 | $J_{1,2}$ | Earphone Jack | | | $R_{23}$ | 2.7KΩ 〃 ±5% | $R_{73}$ | 220 Ω 〃 〃 | $C_{23}$ | 180pF (inside $IFT_{1-1}$) | $C_{43}$ | 10μF 6V |
| | | | | | | $R_{24}$ | 3.3KΩ 〃 ±10% | | | $C_{24}$ | 〃 (inside $IFT_{1-2}$) | $C_{44}$ | 30μF 6V |
| | | | | | | $R_{25}$ | 470KΩ 〃 〃 | $C_{25-26}$ | Tuning Capacitor | $C_{25}$ | 0.005μF | $C_{45}$ | 1μF 6V |
| | | | | | | $R_{26}$ | 5KΩ VR (T Curve) | $C_{27-28-29}$ | Gang Trimmer | $C_{26}$ | 0.005μF | $C_{46}$ | 0.02μF |
| | | | | | | $R_{27}$ | 1KΩ RD¼L ±10% | $C_{30-31-32}$ | | $C_{27}$ | 10μF 6V | $C_{47}$ | 0.1μF |
| | | | | | | $R_{28}$ | 1.5KΩ 〃 〃 | | | $C_{28}$ | 0.05μF | $C_{48}$ | 10PF |

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## Adjustment

### MW band

i. Set variable condenser at maximum and adjust signal generator to deliver 520 kc.

ii. Adjust $L_{21}$ core to receive 520 kc.
Set variable condenser at minimum and adjust signal generator to deliver 1,680 kc.
Adjust $C_{021}$ to receive 1,680 kc.

iii. Receive 620 kc and adjust position of $L_{11}$ along ferrite bar to obtain maximum output.

iv. Receive 1,400 kc and adjust $C_{011}$ to obtain maximum output.

### SW1 (SW2) band

i. Set variable condenser at maximum and adjust signal generator to deliver 1.85 Mc (5.85 Mc).
Adjust $L_{22}$ ($L_{23}$) core to receive 1.85 Mc (5.85 Mc).

ii. Set variable condenser at minimum and adjust signal generator to deliver 6.3 Mc (18.5 Mc).
Adjust $C_{022}$ ($C_{023}$) to receive 6.3 Mc (18.5 Mc).

iii. Receive 2 Mc (6 Mc) and adjust position of $L_{12}$ ($L_{13}$) along ferrite bar to obtain maximum output.

iv. Receive 6 Mc (16 Mc) and adjust $C_{012}$ ($C_{013}$) to obtain maximum output.

## To take out the set from the cabinet

i. Pull out volume control knob, tone control knob, band switch knob and tuning knob.
Fine tuning knob will come out as the main tuning knob is pulled out.

ii. Open back cover and take out battery.
Remove 6 nuts on the chassis, 2 on the upper left and right of coil pack and four below the battery.
Remove round nut on the right of volume control.

iii. Unsolder lead wire (red) from positive side battery contact plate and white wire from friction catch on back cover.

iv. Detach tuning indicator by removing fixing screw if necessary.

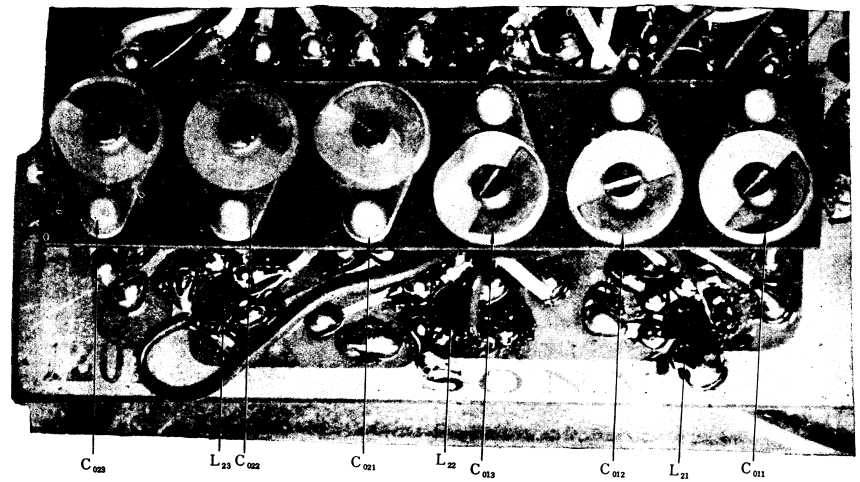
## Helpful informatious

i. When $L_{15}$ or $L_{16}$ is connected in wrong sense, sometimes sensitivity may decrease very much in lower frequency region in SW1 or SW2 band.

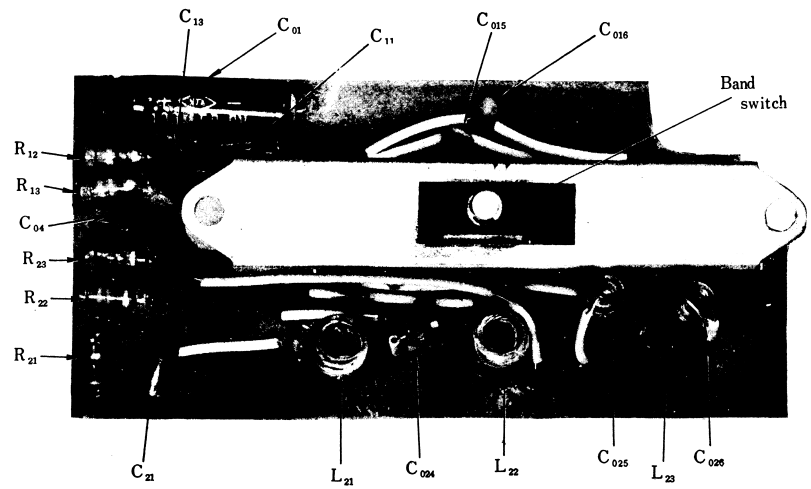
ii. Narrowed frequency coverage in SW1 or SW2 band is often due to excessive emitter current of $X_2$ or larger minimum capacity of trimmer condenser or stray capacity of oscillator coil.

iii. Any tap on volume control must be kept from touching the metal cover.

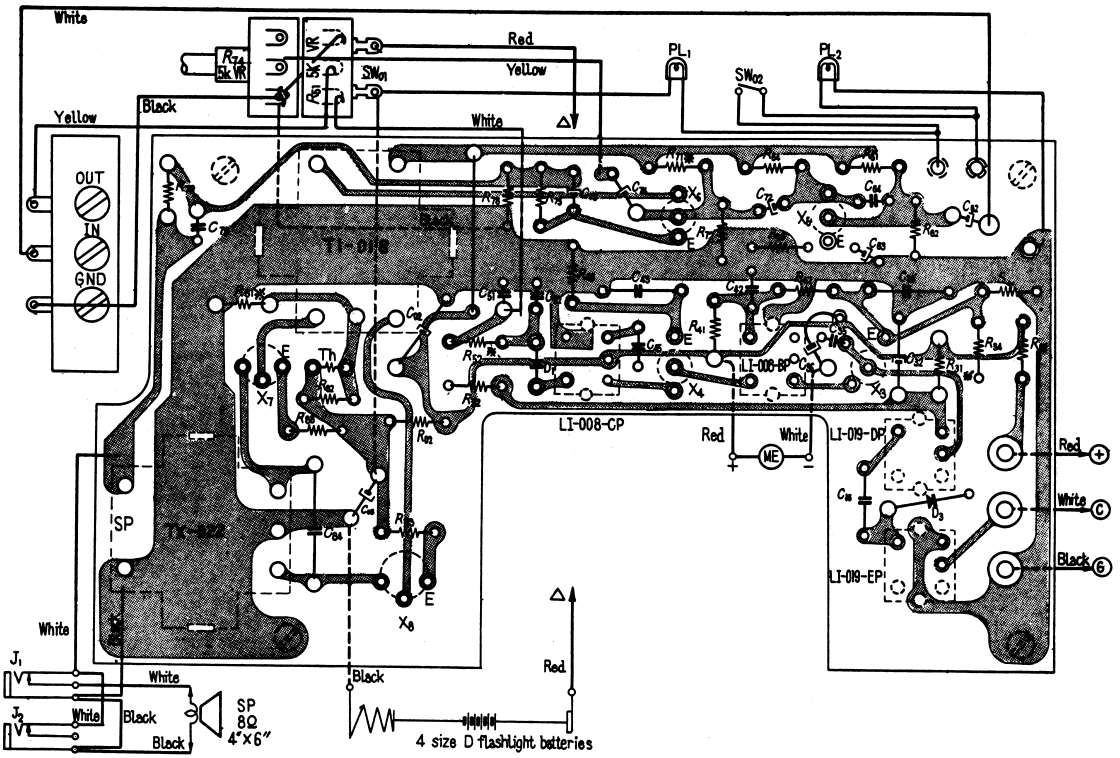
**Coilpack of TR-812 (Showing trimmer condensers)**

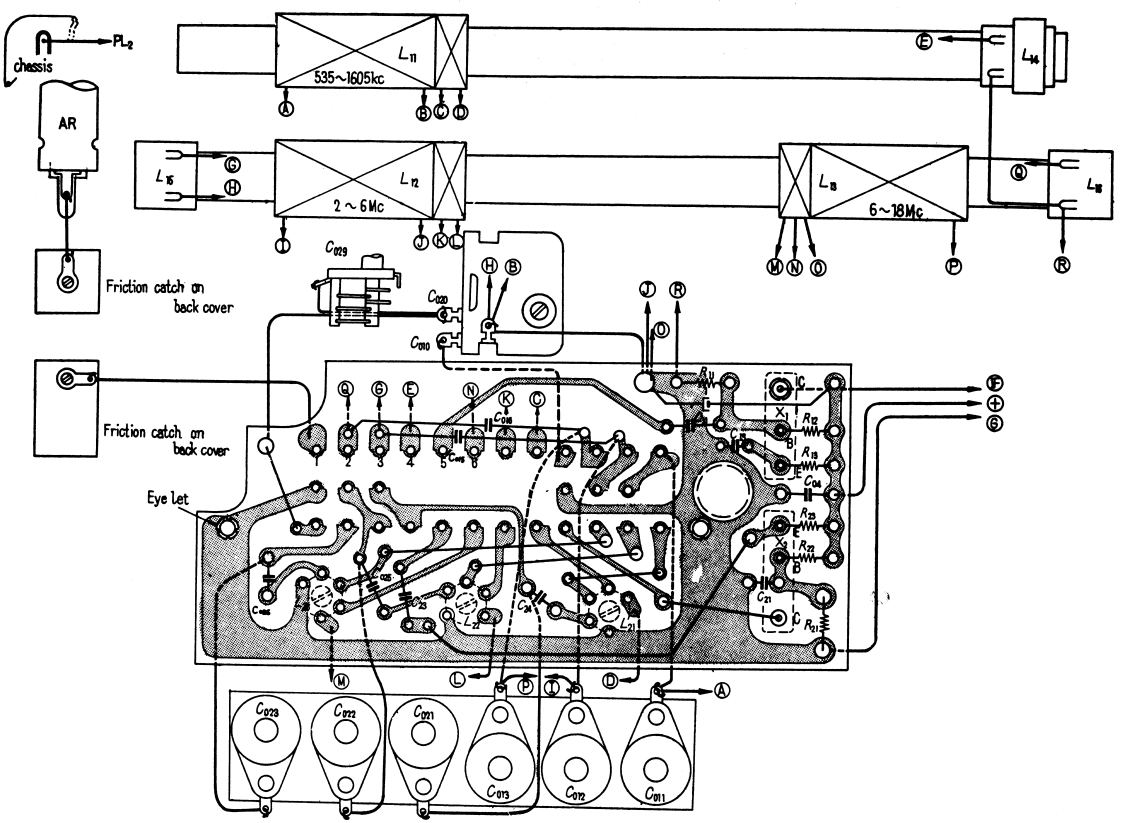



**Coilpack of TR-812 (Mounted side)**



## Mounting diagram of TR-812 (IF and AF section, Printed side)




## Mounting diagram of TR-812 (Coilpack, printed side)