

SANYO

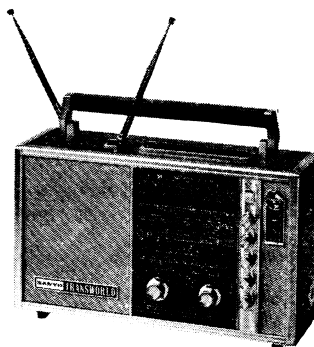
**18-transistor, 6-band
Portable Radio**

MODEL 18H-815

SERVICE MANUAL

SANYO ELECTRIC CO., LTD.

INTERNATIONAL DIVISION: SANYO ELECTRIC TRADING CO., LTD.
OSAKA, JAPAN



S249a

Sanyo 18H-815

SPECIFICATIONS

Frequency Range.....	FM 87 - 108 MC	(16) 2SB405R	Power Amplifier
	SW 1 2.3 - 7.3 MC	(17) 2SD72R	Power Amplifier
	SW 2 8.0 - 22.0 MC	(18) 2SC537Z	Voltage Stabilizer
	49m 5.95 - 7.3 MC	(1) 1S553	A.F.C.
	MW 520 - 1605 KC	(2) 1S188	FM Limiter
	LW 150 - 350 KC	(3) 1S188	FM A.G.C.
Intermediate Frequency.....	FM 10.7 MC	(4) 1S188	Discriminator
	AM 455 KC	(5) 1S188	Discriminator
Transistors	(1) 2SC668E	(6) SIA3	AM Biasing
	(2) 2SC545C	(7) 1S188	AM Detector
	(3) 2SC668C	(8) SIA3	FM Oscillator Stabilizer
	(4) 2SC545E	(9) SZ-8	Voltage Detector
	(5) 2SC537		
	(6) 2SC537	Output Power	Maximum 3,000 mW
	(7) 2SA222	Undistorted 2,000 mW	
	(8) 2SC537	Power Supply	12 volts, 8×UM-1 (size "D" flashlight battery)
	(9) 2SC537E	or AC adaptor (D12-815)	
	(10) 2SC537	Current Drain	No signal 30 mA
	(11) 2SD187	Maximum 420 mA	
	(12) 2SB303	Speaker	5"×7" oval type permanent dynamic
	(13) 2SB186A		4 ohm voice coil impedance
	(14) 2SB186A	Cabinet Dimensions	15 1/4" (390mm) wide × 9 1/2" (240mm) high
	(15) 2SB187		× 4 3/4" (240mm) deep
		Net Weight	10 lbs. (4.5 kg)

ALIGNMENT PROCEDURES

AM ALIGNMENT

Sequence of Alignment	Wave Range	Dial Pointer	Signal Generator Frequency	Modulation	Connection high side of Signal Generator	Coil Adjustment	Dial Pointer	Signal Generator Frequency	Modulation	Trimmer Adjustment	Indication
I.F.T. T15	MW	1600KC	455KC	AM 30%	Thru. Loop Antenna						Max. Output
I.F.T. T14	MW	1600KC	455KC	AM 30%	"						"
I.F.T. T13	MW	1600KC	455KC	AM 30%	"						"
Oscillator LW	LW	160KC	160KC	AM 30%	"	T-12	320KC	320KC	AM 30%	Ct 8	"
Antenna LW	LW	160KC	160KC	AM 30%	"	L-9	320KC	320KC	AM 30%	Ct 3	"
Oscillator MW	MW	600KC	600KC	AM 30%	"	T-11	1400KC	1400KC	AM 30%	Ct 9	"
Antenna MW	MW	600KC	600KC	AM 30%	"	L-11	1400KC	1400KC	AM 30%	Ct 4	"
Oscillator SW1	SW 1	2.5MC	2.5MC	AM 30%	"	T-10	6.5MC	6.5MC	AM 30%	Ct 10	"
Antenna SW1	SW 1	2.5MC	2.5MC	AM 30%	"	L-13	6.5MC	6.5MC	AM 30%	Ct 5	"
Oscillator SW2	SW 2	9.0MC	9.0MC	AM 30%	"	T-9	20MC	20MC	AM 30%	Ct 11	"
Antenna SW2	SW 2	9.0MC	9.0MC	AM 30%	"	L-14	20MC	20MC	AM 30%	Ct 6	"
Oscillator 49m	49m	6.0MC	6.0MC	AM 30%	"	T-8	6.2MC	6.2MC	AM 30%	Ct 12	"
Antenna 49m	49m	6.0MC	6.0MC	AM 30%	"	L-16	6.2MC	6.2MC	AM 30%	Ct 7	"

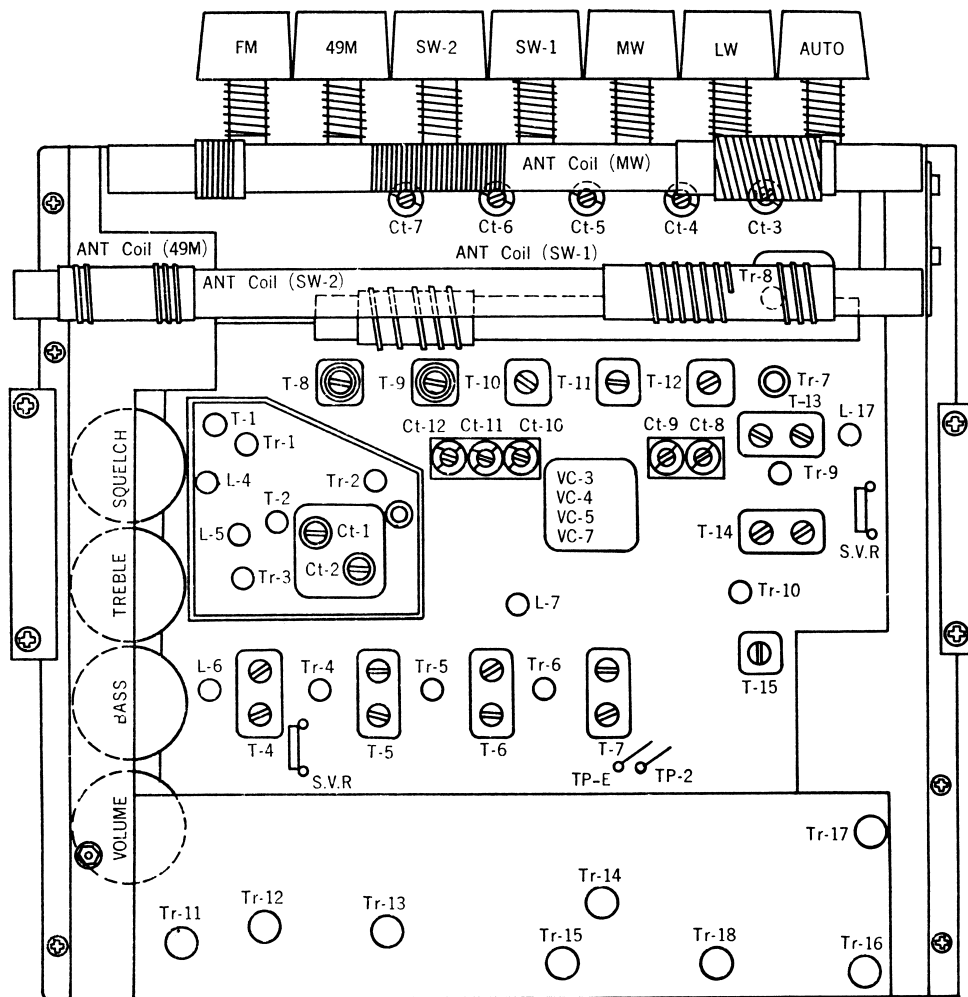
FM IF ALIGNMENT

Sequence of Alignment	Wave Range	Alignment Frequency	Testing Equipment Connection	Adjustment	Curve
1	T-6 (I.F.T.)	FM 10.7 MC	Connect sweep generator to test point TP-1 and oscilloscope to test point TP-2.	Detune T7 and tune T6 for max. gain and symmetry of response curve.	
2	T-5 (I.F.T.)	FM 10.7 MC	Same as above connection.	tune T-5 for max. gain and symmetry of response curve.	
3	T-4 (I.F.T.)	FM 10.7 MC	Same as above connection.	tune T-4 for max gain and symmetry of response curve.	
4	T-7 (I.F.T.)	FM 10.7 MC	Connect sweep generator to test point to TP-1 and oscilloscope to test point TP-3.	tune T-7 for symmetry and max. gain of response curve.	

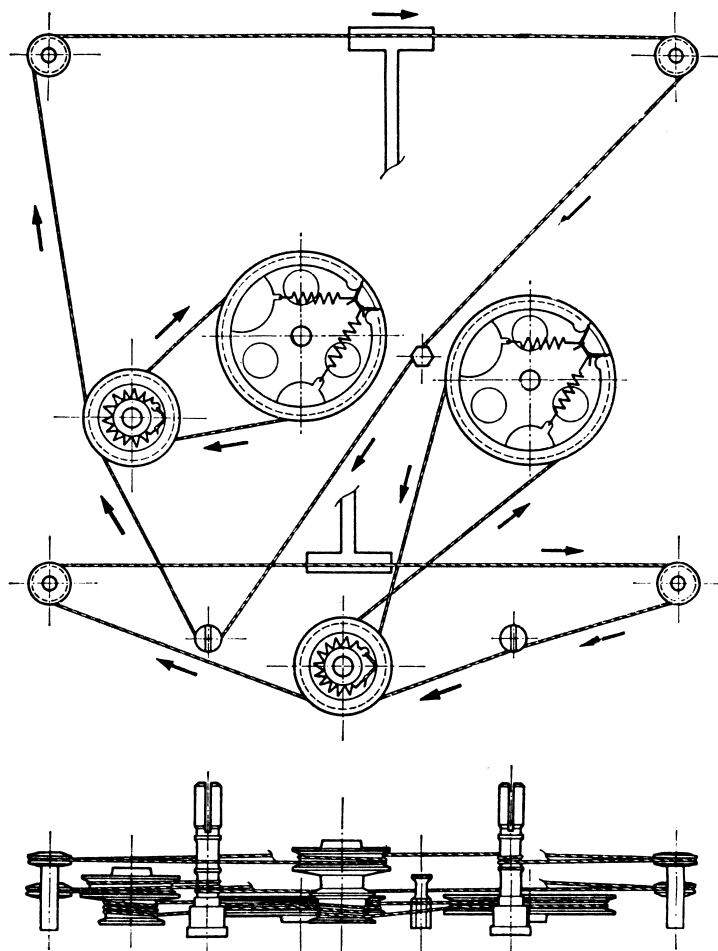
FM RF ALIGNMENT

Sequence of Alignment	Wave Range	Dial Pointer	Signal generator Frequency	Modulation	Connect high side of Generator to	Coil Adjustment	Dial Pointer	Signal Generator Frequency	Modulation	Trimmer Adjustment	Indicator
Oscillator	FM	87.0 MC	87.0 MC	22.5 KC	Signal generator to TP-1	T-3	104.0 MC	104.0 MC	22.5 KC	Ct-2	Max output
Antenna	FM	87.0 MC	87.0 MC	22.5 KC	Signal generator to TP-1	T-2	104.0 MC	104.0 MC	22.5 KC	Ct-1	Max output

LOCATION OF MAIN PARTS



DIAL STRING



AC ADAPTOR (D12-815)

SPECIFICATIONS

AC Input Power Supply : 100-120V & 220-240V

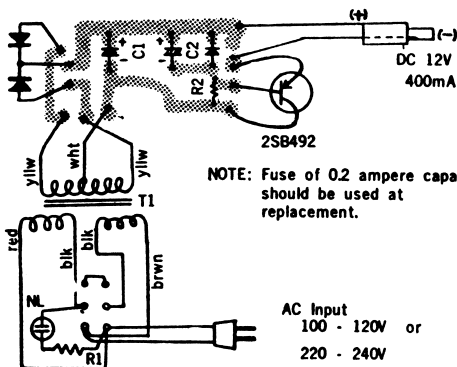
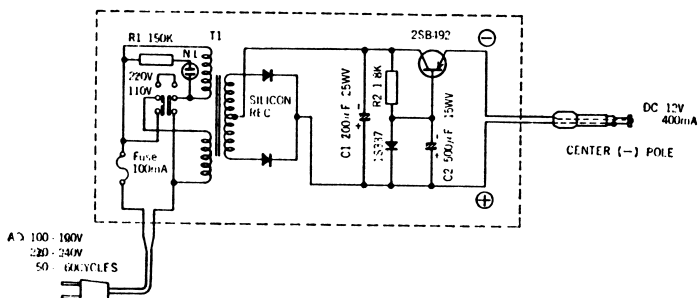
DC Output : 12V 400mA

Dimensions : 4"wide×2" high×2½" deep

Weight : 1.5 pound

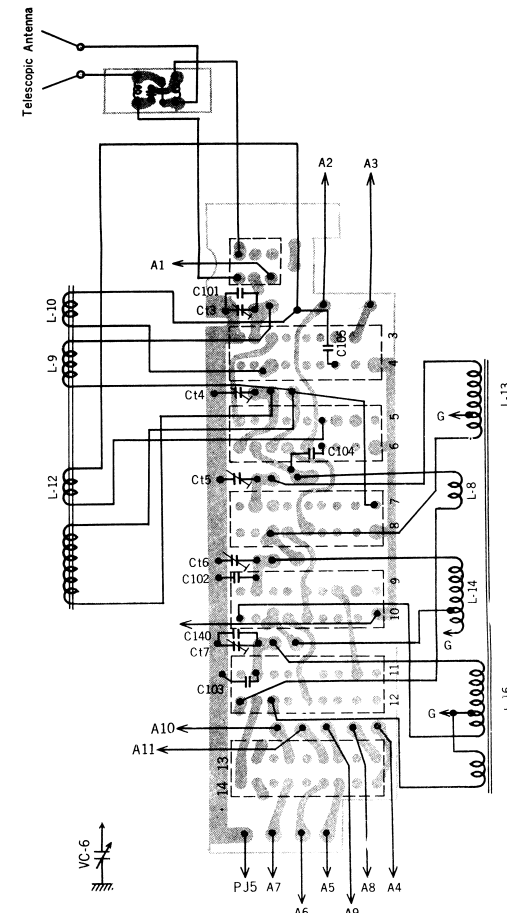
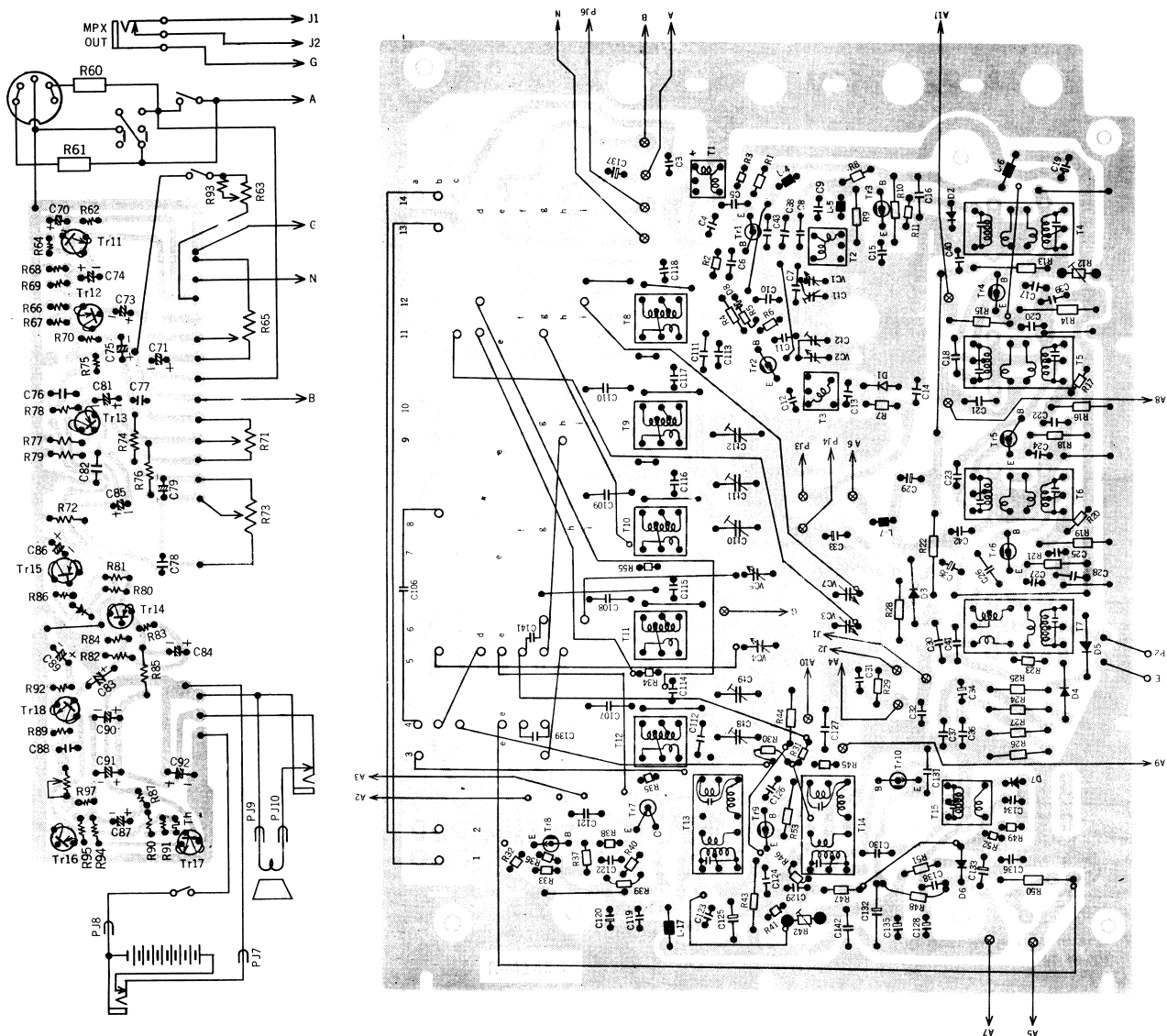
CIRCUIT DIAGRAM

D12-815 CIRCUIT DIAGRAM



NOTE: Fuse of 0.2 ampere capacity should be used at replacement.

AC Input
100 - 120V or
220 - 240V



ADJUSTMENT OF SEMI-FIXED RESISTORS

- R88 (10K ohms)**
Appl. audio signals into first audio stage and observe the amplified waveform of them with oscilloscope. Adjust R88 for the operating point on which waveforms are clipped equally at both tops and bottoms of waves.
- R42 (100K ohms)**
Make the unit into MW reception and set the dial pointer at 1000KC. Adjust R42 for 400 μ A ($\pm 50\mu$ A) current circulation thru collector of Tr9 (2SC537E)
- R12 100K ohms**
Make the unit into FM reception and adjust R12 for 400 μ A current circulation thru collector of Tr4 (2SC545).

Tr-1 2SC668 (E)

Tr-3 2SC668 (C)

Tr-4 2SC545 (E)

Tr-5 2SC537 (D,E)

Tr-6 2SC537 (D,E)

