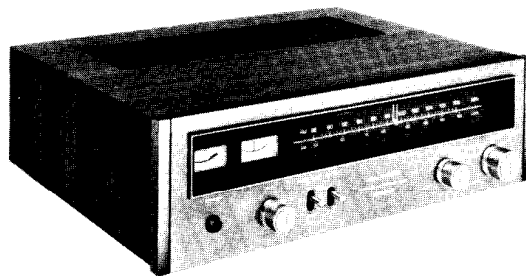


ONKYO SERVICE MANUAL

SOLID STATE AM/FM STEREO TUNER

model T-4055



INDEX

Item	Page
model T-4055	
Specifications	10
Component Locations	11
Chassis Layout	12
Dial Cord Arrangement	12
Alignment Procedure	13~14
Caution	14
Parts List	15~16
Circuit Board-Component Location	17~18
Circuit Diagram	20~21
Line Voltage and Fuse	22
Packing Procedure	22

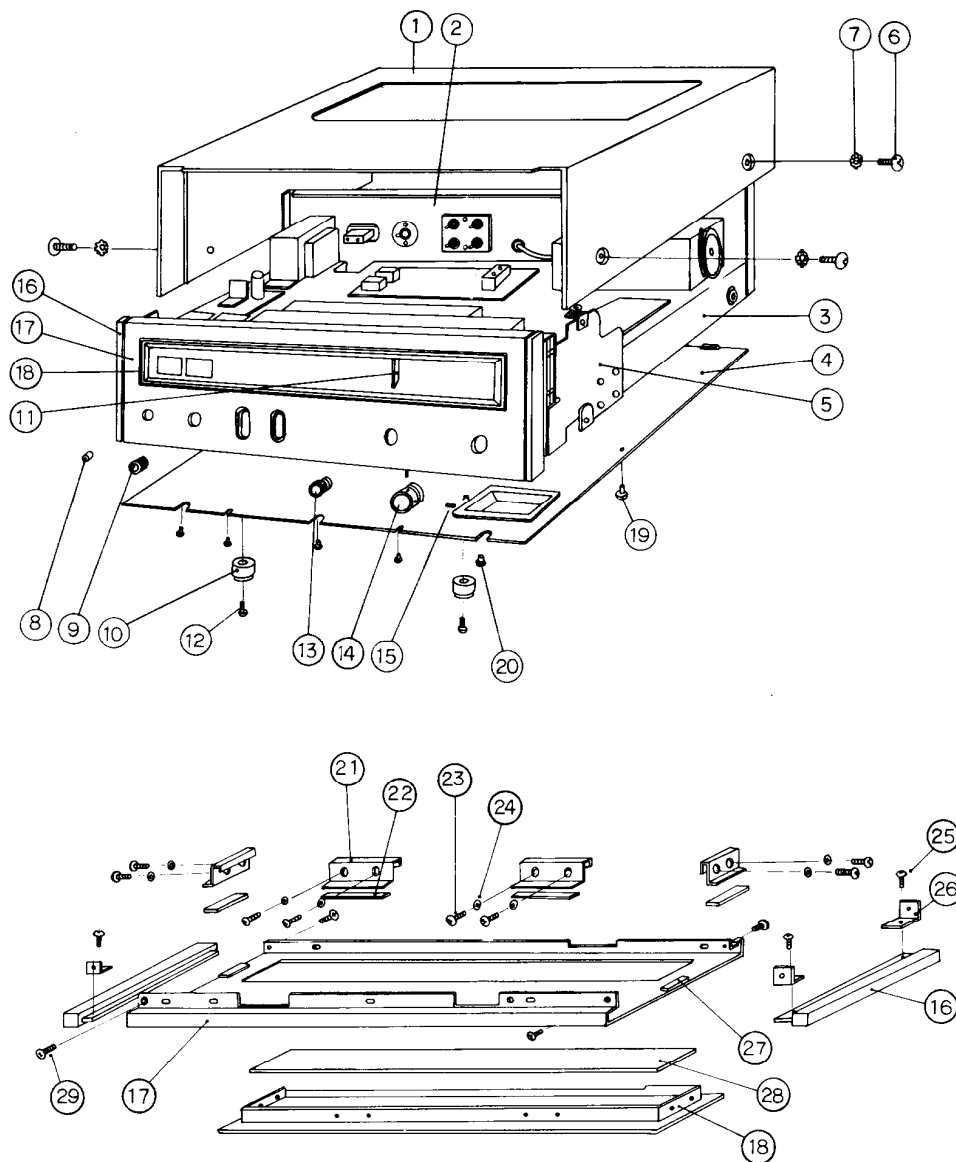


model T-4055

SPECIFICATIONS

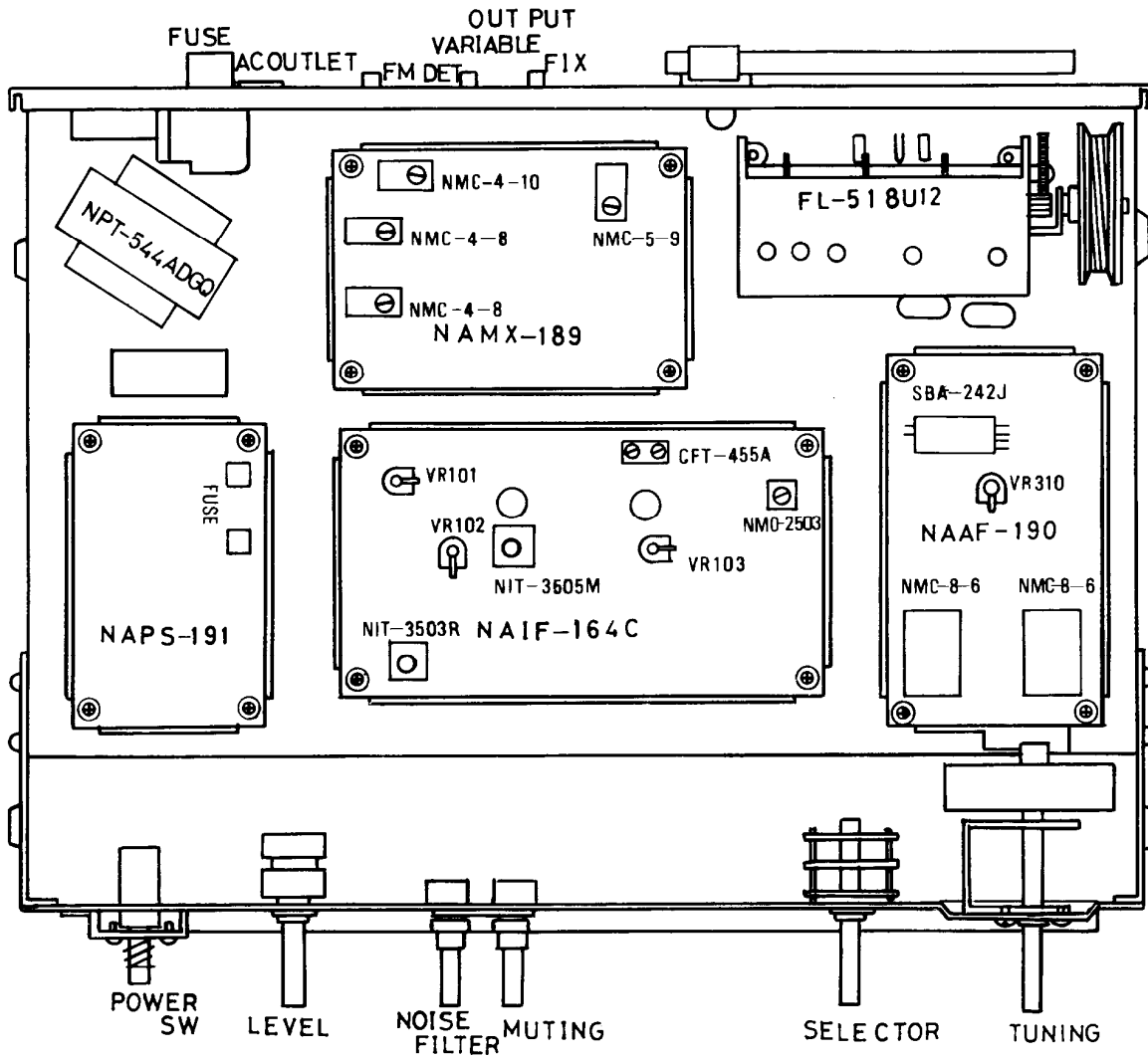
Tuning Range	FM:88-108MHz AM:530-1605kHz	LEVEL
Sensitivity	FM:1.7 μ V(IHF) AM:20 μ V, 150 μ V/m	MUTING
Intermediate Frequency	FM:10.7MHz AM:455kHz	NOISE FILTER
Capture Ratio	FM:1.2dB	AUDIBLE SWITCH(MULTIPATH)
Image Rejection Ratio	FM:90dB(108MHz) AM:50dB(1MHz)	Antenna
IF Rejection Ratio	FM:95dB(98MHz) AM:33dB(1MHz)	FM:300 & 75ohm AM:Ferrite Core antenna
AM Suppresion Ratio	FM:55dB	Outputs
Signal to Noise Ratio	FM:70dB(IHF) AM:50dB(30%, 1mV input)	OUTPUT FIXED & VARIABLE
Alternate Channel Att.	FM:80dB	FM DET
Harmonic Distortion	FM MONO:0.2% AM:0.5%	MULTIPATH-OSCILLOSCOPE VERT. HOR.
	FM ST :0.5%	Inputs
Frequency Response	FM:20-15,000Hz(+0, -2dB)	FM ANTENNA 300ohm, 75ohm, 75ohm M type Connector
MPX Separation	FM:40dB(400Hz), 35dB(100-10,000Hz)	AM ANTENNA
Carrier Leakage	FM:-70dB	Special Features
Output Impedance	2.5k Ω (Fixed), 1.5k Ω (Variable Max)	2 MOS FET, 4 Ganged Variavle Capacitor and
Output Variable	FM:0-2V AM:0-0.6V	Linear Scale Front End
Fixed	FM:0.75V AM:0.2V	2 Tuning Meters(Strength and Center tuning)
Power Supply Rating	AC110/120/220/240V 50/60Hz	Multipath Terminal W/Audible Switch
Controls	POWER	Blight Dial and Illuminated Pointer
	TUNING	75ohm M type Connector
	SELECTOR(AM-FM AUTO-FM MONO)	FM DET terminal for 4 Channel receiving
		Semiconductors
		39 TR.(2 FET) 36 Diode
		Dimension
		423W×355D×136Hmm 7.6kgr.
		(16 5/8"W×14"D×5 3/8"H 16.7lbs.)

1. COMPONENT LOCATIONS

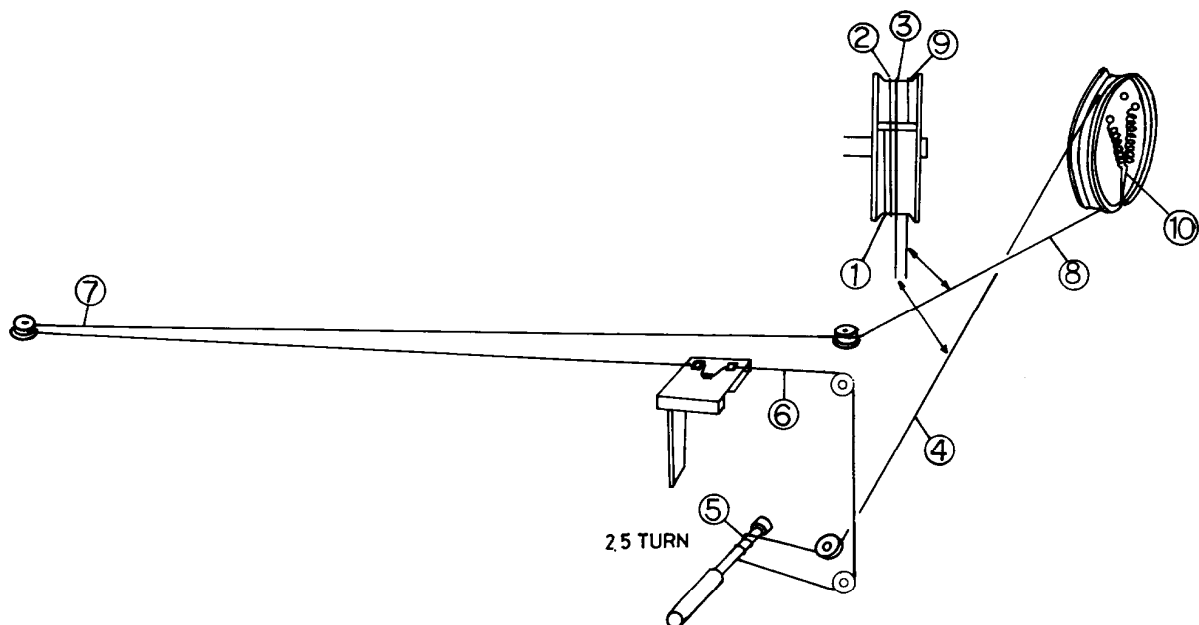


KEY NO.	DESCRIPTION	KEY NO.	DESCRIPTION
1	Amp Box assembly	16	End Cap
2	Rear Panel	17	Front Panel
3	Chassis	18	Dial Flame
4	Bottom Cover	19	Toothed Lock Screw(8W3P+6F)
5	Side Bracket	20	Binder Screw(3B+6F-N)
6	Truss Screw(3T+10F-N)	21	Flame Holder
7	Toothed Lock Washer(M5×AB)	22	Neoprene Sheet
8	Knob-Push Switch	23	Pan Screw(3P+4-N)
9	Knob-Tone(LEVEL)	24	Washer(W3×8B)
10	Rubber Cushion	25	Pan Screw(3P+8F-N)
11	Dial Pointer	26	Joiner
12	Tapping Screw	27	Fiber Board
13	Knob-Selector	28	Glass Plate
14	Knob-Tuning	29	Flat Screw(3S+5F-N)
15	Screw(M4×10)		

2. CHASSIS LAYOUT



3. DIAL CORD ARRANGEMENT



4. ALIGNMENT PROCEDURE

INSTRUMENT REQUIRED

1. AM and FM sweep generator
2. AM and FM signal generator
3. Vacuum tube voltmeter (V.T.V.M.) AC/DC
4. Oscilloscope
5. Distortion meter
6. Stereo Modulator

GENERAL ALIGNMENT CONDITIONS

1. Signal input should be kept low as possible.
2. Standard modulation is 400Hz 30% (AM)
400Hz 100% (FM/MONO), pilot 10% Sub & Main 90% (FM/ST)
3. Standard output is 500mW (2.0V, 8 Ω)

STEP	CONNECT SIGNAL SOURCE TO-	SET SIGNAL TO-	CONNECT OUTPUT INDICATOR TO-	SET RADIO DIAL TO-	ADJUST	ADJUST FOR	REMARKS	STEP
1	Set Radio Selector Switch to "AM"							1
2	AM Sweep Generator to- AM Ant.	455KHz	Oscilloscope to- across "AM OUT" terminal (NAIF-164C)	Quiet Point on Band	CFT- 455A	Maximum Symmetrical response	Usually not necessary to adjust	2
3	AM Signal generator to- AM Ant. through a standard radiating loop	515KHz (modulated)	V. T. V. M. or osilloscope to- across"VARIABLE" terminal	Lower end	NMO- 2503 (Red)	Maximum	Repeat steps 3 and 4 as necessary to obtain Maximum sensitivity on stations	3
4		1680KHz (modulated)		Upper end	AM Trimmer (OSC. side)	Maximum		4
5	"	600KHz (modulated)	"	600KHz (Tuned to Signal)	NMA- 2507 (Coil Antenna)	Maximum	Repeat steps 5 and 6 as necessary	5
6		1400KHz (modulated)		1400KHz (Tuned to Signal)	AM Trimmer (Ant. side)	Maximum		6
7	Set Radio Selector Switch to "FM" Set Muting Switch to "OFF"							7
8	FM Sweep Generator to- TP terminal on FM Tuner	±0.3MHz Sweep Centered at 10.7MHz	Osilloscope to- across FMOUT" terminal (NAIF-164C)	Quiet Point on Band	NIT- 3503R Top Bottom	Maximum "S" curve Lineality	Not necessary to adjust for Symmetrical response or Zero Voltage	8
9	"	"	Osilloscope to- across "SQL" terminal (NAIF-164C)	"	NIT- 3505M Top	Symmetrical response		9
10	FM Signal Generator to- across FM Ant. terminal through a matching network	88MHz (100% Mod.)	V. T. V. M. to- across "VARIABLE" terminal	88MHz	LO on FM Tuner	Maximum	Repeat Steps 10 and 11 as necessary	10
11		108MHz (100% Mod.)		108MHz	TCO on FM Tuner	Maximum		11
12		90MHz (100% Mod.)		Tuned to Signal	LA LR (2 points) on FM Tuner	Maximum	Repeat Steps 12 and 13 as necessary	12
13		106MHz (100% Mod.)		"	TCA TCR (2 points) on FM Tuner	Maximum		13
14	No Signal		Tuning Indicator may be used as the output indicator	Quiet Point Where FM Signals are not received	NIT- 3503R Top	The needle of tuning indicator comes to the center		14
15	FM Signal Generator to - across FM Ant. terminal through a matching network	98MHz (100% Mod.)	Distortion meter to- across "VARIABLE" terminal	Tuned to Signal	NIT- 3503R Bottom	Minimum Distortion	Less than 0.2%	15
16			V. T. V. M (D. C.) to- across "SQL" terminal		NIT- 3505M	Minimum		16

STEP	CONNECT SIGNAL SOURCE TO-	SET SIGNAL TO-	CONNECT OUTPUT INDICATOR TO-	SET RADIO DIAL TO-	ADJUST	ADJUST FOR	REMARKS	STEP
17	Set Radio Selector Switch to "FM" Set Muting Switch to "ON"							17
18	"	"	Oscilloscope to across "VARIABLE" terminal	Tuned and Detuned to Signal	Variable Resistor VR102	No noise when Detuned but less effective for Signal Output when tuned	Signals are not necessarily Squelching by turning VR102 counterclockwise	18
19	Set Radio Selector Switch to "FM AUTO" Set Muting Switch to "OFF"							19
20	"	98MHz (Pilot Sig. 19KHz 10% 1mV input)	V. T. V. M. to - across TP terminal (NAMX 189)	Tuned to Signal	NMC 4-8 (2 points) NMC 4-10	Maximum		20
21	"	98MHz (Pilot Sig. 19KHz 10% 10KHz R ch 90%)	V. T. V. M. to - across "VARIABLE" terminal (R ch)	"	NMC 4-8 NMC 4-10 NMC 5-9	Maximum		21
22	"	98MHz (Pilot Sig. 19KHz 10% 1KHz R ch 90%)	"	"	NMC 5-9	Maximum		22
23	"	98MHz (Pilot Sig. 19KHz 10% Main & Sub Sig. 1KHz L ch 90%)	" (R ch)	"	Variable Resistor R310	Minimum	Retouch slightly Repeat Steps 23 and 24 as necessary	23
24	"	" (R ch 90%)	" (L ch)	"	"	"		24

The movement of Signal Indicator may be adjusted by Variable Resistor VR101 (AM) or VR103 (FM).

5. CAUTION

(1) Muting relay (S7)

The muting relay switch (S7) is stored in the slender glass tube. Any twisting of leads will easily damage the relay and can easily cause the glass tube to crack. It is important to isolate the relay from shock and lead twists.

Do not cut the lead wire as it causes undesirable effects to the function of muting switch at actuating current.

(2) Tuning meter adjustment.

Adjust the Tuning meter to the center position using the variable transformer (NIT-3503R).

When changing or adjusting this variable transformer, check distortion factor, separation and muting balance.

(3)

This tuner has been factory set a de-emphasis rating of 50 μ s.

If the local de-emphasis rating is 75 μ s (mainly in the USA), open the bottom cover and push the slide switch is adjacent to the front end to 75 μ s.

For USA shipment, this tuner has been set a de-emphasis rating of 75 μ s before shipment.

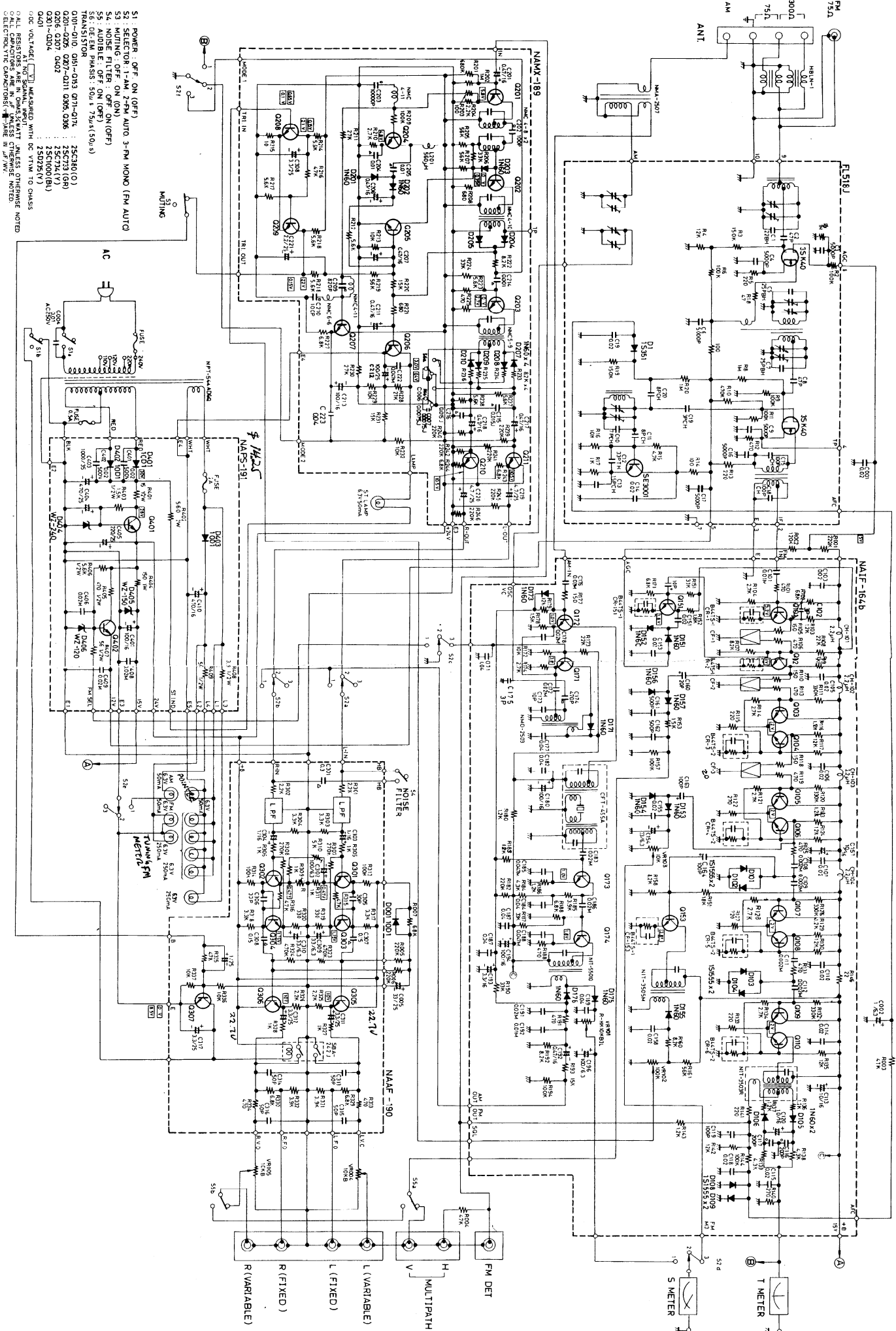
6. PARTS LIST

CIRCUIT NO.	DESCRIPTION	SPECIFICATION	QTY	STOCK NO.	
U 1	FM Front End	FL-518U12	1	240017	
U 2	IF Amp assembly	NAIF-164C	1	13969564C	
U 3	MPX assembly	NAMX-189	1	13969589	
U 4	Audio Amp assembly	NAAF-190	1	13969590	
U 5	Power Supply assembly	NAPS-191	1	13969591	
D001	Silicon Diode	10D1	1	223801	
	Pilot lamp	6.3V0.25A	6	210001	
	"	6.3V0.05AW-2	1	210014	
	"	6.3V0.05AW-3	2	210015	
	"	6.3V0.05AW-3S	1	210016	
T901	Transformer-Power	NPT-544ADGQ	1	230047	
T002	Coil-Antenna	NMA-2507(UL	1	232018	
T001	Transformer-Balloon	NBLN-1	1	233026	
C002	Electrolytic	CE02D16V1/F	1	351340101A	
C005	"	CE02D25V33/F	1	351353301A	
VR004 VR005	Variable Resistor	N24RG10KB35	1	5172010	
S 2	Switch-Rotary	NRS-263-35-Y-A	1	250135	(Selector)
S 3, 4	Switch-lever	NLS-122-29-SL	2	250119-1	(Muting (Noise Filter)
S 5, S 6	Switch-Slide	NSS-2225	2	250142	(Audible (De-emphasis)
S 1	Switch-Power	NPS-122LN2	1	250149	(Power)
	Socket-Pilot Lamp	PLS-G1	6	213002	
	Fuse	0.5A-T	2	252023	AC line)
	"	2A-T	1	252002	(Lamp)
	"	0.5A T	1	252030	
	Tuning Indicator	NIND-0200S21	1	243012	S METER
	"	NIND-0200S22	1	243013	T METER
	Dial Drum		1	270220-1	
	Drive Shaft assembly	G-3	1	270349	
	Slide Switch Bracket		1	270536	
	Dial Plate		1	270537	
	Back Plate		1	270321-1	
	Rating Plate				
	Dial Pointer		1	270273	
	Dial Pointer Case		1	270172-2	
	Front Panel		1	280692	
	Glass Plate		1	280395	
	Dial Flame		1	280394	
	End Cap		2	280367	
	Bottom cover		1	270324-1	
	Rubber Cushion		4	280379	
	Knob-Tone (LEVEL)		2	283061	
	Knob-Tuning		1	280420	
	Knob-Push Switch		1	283066	
	Amp Box assembly		1	280693	
	Master Carton Box		1	290331	
	Side Pad		2	290203	
	FM ANT AS	TFD-2US	1	253071	
	Fuse	1A-T	2	252001	
					AC line)
NAIF-164C					
Q101-Q110 Q151, Q153 Q171-Q174 D101-D104 D108-D109 D105-D106 D151-D157 D171, D173, D175, D176	Transistor	2SC380(0)	16	2210122	
	Silicon Diode	1S1555	6	223105	
	Germanium Diode	1N60(N)FM	13	2231031	

PARTS LIST

CIRCUIT NO.	DESCRIPTION	SPECIFICATION	QTY	STOCK NO.	
CH101- CH104	Transformer-IF	NIT-3503R	1	233022	
	"	NIT-3503M	1	233023	
	"	NIT-5501D	1	232012	
	Coil-OSC	NMO-2503	1	232013	
	Coil-Choke	NCCH-1501	4	233024	
	Ceramic Filter	CFT-455A	1	3010001	
	"	CF-10M-12	3	3010002	
	CF1-CF3	CE04W16V100 μ F	2	358341011	
	C180, C194	" 16V10 μ F	3	358341001	
	C113	" 16V0.47 μ F	1	358344791	
	C120, C157	" 6.3V100 μ F	1	358321011	
	C192	" 6.3V33 μ F	1	358323301	
	C196	" 16V3.3 μ F	1	352740331A	
	C154	"			
	C193	"			
CR-1, CR-2 CR-151, CR-153	CR Composite	B44TS-1	4	3020001	
CR-3-CR-6	"	B44TS-2	4	3020002	
VR101 VR103	Resistor-Semi Fixed	R-HK10KB3L	2	5245002	
VR102	"	R-HK100KB3L	1	5245003	
NAMX-189					
Q201-Q205 Q207-Q211	Transistor	2SC733(GR)	10	2210082	
Q206	"	2SC734(Y)	1	2210064	
D201-D205 D207-D210	Germanium Diode	1N60(N)FM	9	2231031	
L201	Coil-MPX	NMC-4-8	2	233016	
	"	NMC-4-10	1	233017	
	"	NMC-4-11	2	233018	
	"	NMC-5-9	1	233019	
	"	NMC-6-6	1	233020	
	Coil-Choke	NCCH-1503	1	233025	
	Capacitor-Electrolytic	CE04W25V100 μ F	1	358351011	
	"	" 3.3 μ F	1	358350331	
	"	CE04W16V100 μ F	1	358341011	
	"	" 0.47 μ F	6	35834791	
C201, C206, C207 C211, C217, C218	"	" 4.7 μ F	2	358340471	
C219, C220	"	" 2.2 μ F	1	358340221	
C221	"	"			
NAAF-190					
Q301-Q304	Transistor	2SC1000(BL)	4	2210282	
Q305, Q306	"	2SC733(GR)	2	2210082	
Q307	"	2SC734(Y)	1	2210064	
C303, C304	Low pass Filter	NMC-8-6	2	233030	
	Capacitor-Electrolytic	CE04W16V1 μ F	2	358340101	
	"	" 6.3V100 μ F	1	358321011	
	"	" 33 μ F	2	358320631	
	"	" 25V3.3 μ F	3	358350331	
C309, C310 C311, C312 C317	"	" 1 μ F	1	358350101	
C318	"	"			
R310	Resistor-Semi Fixed	R-HK5KB3L	1	5245004	
	Lead Relay	SBA-242J	1	250138	
NAPS-191					
Q401	Transistor	2SD235(Y)	1	2200014	
Q402	"	2SC734(Y)	1	2210064	
D401-D403	Silicon Diode	10D1	3	223801	
D404	Zener Diode	WZ-240	1	223916	
D405	"	WZ-150	1	223915	
D406	"	WZ-120	1	223910	
C403	Capacitor-Electrolytic	CE04W35V1000 μ F	1	358361021	
C404	"	CE04W25V470 μ F	1	358354711	
C405	"	" 220 μ F	1	358352211	
C410	"	" 16V470 μ F	1	358344711	
C407	"	" 100 μ F	1	358341011	
	Radiator	"	1	270187	
	Fuse Holder	S-N5051	2	250113	

model T-4055



LINE VOLTAGE AND FUSE

Model T-4055 and Model A-7055 operate on one of the four line voltages, 110V, 120V, 220V and 240V.

Set the unit to the proper line voltage by following the procedure described below.

CHANGING LINE VOLTAGE SETTING AND FUSE

To remove the fuse, turn the fuse cap located on the line voltage selector in the direction of the arrow.

Then remove the fuse plug from the unit. Put the fuse plug back so that the proper line voltage marking can be seen through the cut in the edge of the plug.

Whenever the position of the selector is changed, check the rating of the fuse. A 0.5A fuse is to be used for either 220V or 240V operation and a 1A fuse for 110V or 120V operation. (Model T-4055)

A 2A fuse is to be used for either 220V or 240V operation and a 4A fuse for 110V or 120V operation. (Model A-7055)

If the rating of the fuse is correct, replace cap.

FUSE REPLACEMENT

When the fuse blows, remove the fuse cap and replace the fuse with a new one.

See Fig. 1.

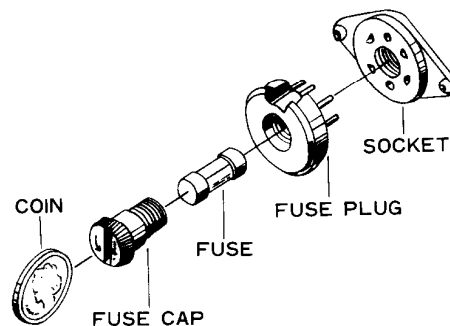


Fig 1

REPACKING PROCEDURE

Packing procedure is as follows.

- (1) Wrap the power cord with AC cord wrapper and bind it with rubber band.
- (2) Make sure to write serial number on the carton, to same as unit coincide with S.N on bottom or back of unit.
- (3) Wrap unit with the special plastic cover wrapper (AMP COVER) and attach foamed plastic pads (SIDE PAD) to both sides.
- (4) Place in carton box, make sure the front marks of the carton matches the unit front.
- (5) Put the accessory bag with all parts included into the box.
- (6) Close the carton box and seal.