

# ONKYO SERVICE MANUAL

SOLID STATE STEREO PRE MAIN AMPLIFIER

**model A-7055**

SOLID STATE AM/FM STEREO TUNER

**model T-4055**



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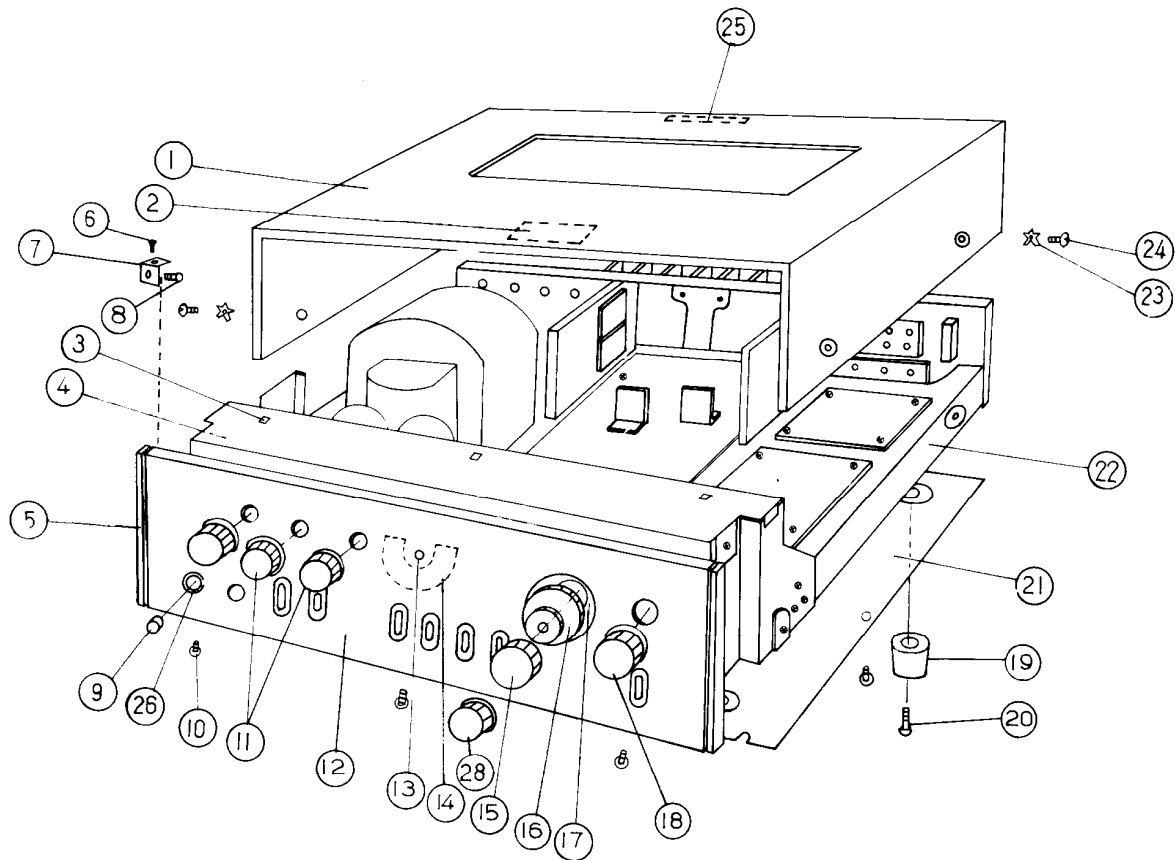


# model A-7055

## SPECIFICATIONS

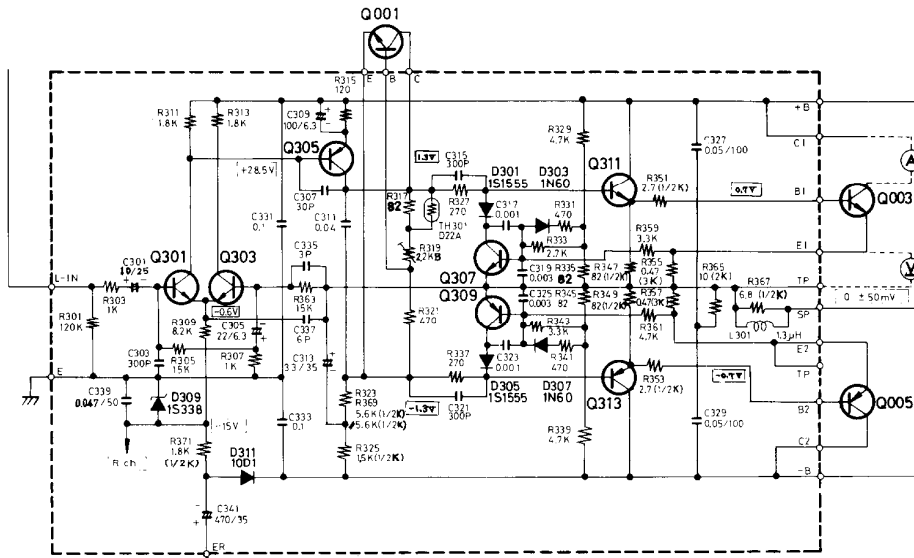
<b>Main amplifier section</b>		
Power Output, Dynamic	125W (IHF 4Ω) 82W (IHF 8Ω)	VOLUME/BALANCE
Continuous	45W/45W (4Ω each channel driven)	TREBLE
	33W/33W (8Ω each channel driven)	BASS
	36W + 36W (4Ω both channel driven)	FREQUENCY SHIFT SWITCH
	26W + 26W (8Ω both channel driven)	BASS: 400Hz, 125Hz
Total Harmonic distortion	0.1% at Rated Output	TREBLE: 2kHz, 8kHz
	0.03% at 10W Output	LOW FILTER
Intermodulation distortion	0.05% at Rated Output	HIGH FILTER
Frequency Response	10-70,000Hz (+0, -1dB)	LOUDNESS
Power Bandwidth	10-100,000Hz (IHF -3dB, THD 0.2%)	MODE (STEREO-MONO)
Signal to Noise Ratio	110dB (IHF A network)	MUTING
Damping Factor	80	PHONO GAIN (+6dB, NOR, -6dB)
Rated Input	1V	PRE MAIN SEPARABLE SWITCH
Input Impedance	100kΩ	(UNITE-SEPARATE)
Load Impedance	4-16Ω	PHONO-1, PHONO-2,
		TUNER, AUX,
		TAPE PLAY-1, TAPE PLAY-2,
		MAIN IN
<b>Pre amplifier section</b>		Outputs
Input sensitivity	PHONO-1/2: 1.2/2.4/4.8mV (50kΩ)	SPEAKER-A, SPEAKER-B
	TUNER/AUX/TAPE PLAY: 100mV (100kΩ)	TAPE REC-1, TAPE REC-2
Total Harmonic Distortion	0.03% at Rated Output	PRE OUT
Intermodulation Distortion	0.05% at Rated Output	AC OUTLET UNSWITCHED × 2,
Frequency Response	PHONO-1/2: ±0.5dB at	SWITCHED
	30-15,000Hz	PHONES
	TUNER/AUX: 10-70,000Hz	Features
	(+0, -1dB)	2 Phono inputs
Phono Overload	230mV RMS at 1kHz, 1.1V RMS at 10kHz	2 Tape Monitor and Printing
Signal to Noise Ratio	PHONO-1/2: 75dB (IHF A Network)	2dB Step Tone Controller
	TUNER/AUX/TAPE PLAY: 90dB (IHF A Network)	2 Choice of Turn over Frequency
Output Voltage	1V (2, 2kΩ) REC OUT: 100mV (10kΩ)	ASO type protection circuit
Tone Control with 2dB/step Switch and Frequency Shift type		Transient Killer Circuit
Frequency Shift	BASS: 400Hz, 125Hz	Main Amplifier incorporating
	TREBLE: 2kHz, 8kHz	OCL circuit
Bass Control	±5 steps Boost and Cut	Semiconductors
Filter HIGH	7kHz (6dB/oct)	39 TR, 18 Diode, 2 Thermistor
LOW	30Hz (6dB/oct)	Dimension
Muting	-20dB	423W × 136H × 358Dmm. 9.3kg.
Loudness	+5dB at 70Hz	(16 $\frac{3}{8}$ " W × 5 $\frac{3}{8}$ " H × 14 $\frac{1}{8}$ " D 20.4lbs.)
	+5dB at 10kHz	
Power Supply Rating	AC 110/120/220/240V 50/60Hz	
Controls	POWER	
	SPEAKERS (OFF, A, B, A+B)	
	SELECTOR (AUX, TUNER,	
	PHONO-1, PHONO-2)	
	TAPE MONITOR (PRINT 1-2,	
	TAPE-1, SOURCE, TAPE-2,	
	PRINT 2-1)	

# 1. COMPONENT LOCATIONS



KEY NO.	DESCRIPTION	KEY NO.	DESCRIPTION
1	Amp Box assembly	15	Knob-Volume
2	Soft Block	16	Knob-Balance
3	Front Fiber Board	17	Knob Sheet
4	Front Cover	18	Knob-Selector
5	End Cap	19	Rubber Cushion
6	Flat Screw (3 S + 5 F)	20	Tapping Screw (4 + 12)
7	Joiner	21	Bottom Cover
8	Pan head Screw (3 P + 8 F)	22	Chassis
9	Knob Push Switch	23	Toothed Lock Washer
10	Binder Screw (3 + 6)	24	Truss Screw (4 + 20)
11	Knob-Tone	25	Soft Block
12	Front Panel	26	Knob Guide
13	Facet	28	Knob-Tape
14	Soft Block		

## 2. ADJUSTMENT OF THE IDLING CURRENT



Instrument required; DC Ammeter 50mA or 100mA

When replacing POWER transistor(Q003, Q004, Q005, Q006) or DRIVER transistor(Q311, Q312, Q313, Q314), check the idling current of POWER transistor.

To adjust to normal value( $35 \pm 5\text{mA}$ ), proceed as follows:  
(Lch)

- (1) Cut the connection between B+ and collector of Q003 on Main Amp. assembly and connect DC Ammeter.
- (2) Adjust the current to ( $35 \pm 5\text{mA}$ ) with R319.
- (3) After adjusting, connect original wiring.

If a DC voltmeter(50mV) or VTVM is available, connect the voltmeter between EI and TP.

Adjust the voltage between 15 and 20mV with R319.

(Rch)

Using R320, adjust in the same manner as indicated above.

\*Note: Volume—Minimum. Open Load.

## 3. CAUTION

If there is an abnormal rise in the inside cabinet temperature, the thermal switch will cut off the AC power.

If this occurs, turn off the power switch.

Let the unit cool off approximately 30 minutes.

Then begin repair procedure.

After repairs are completed, turn on the power switch.

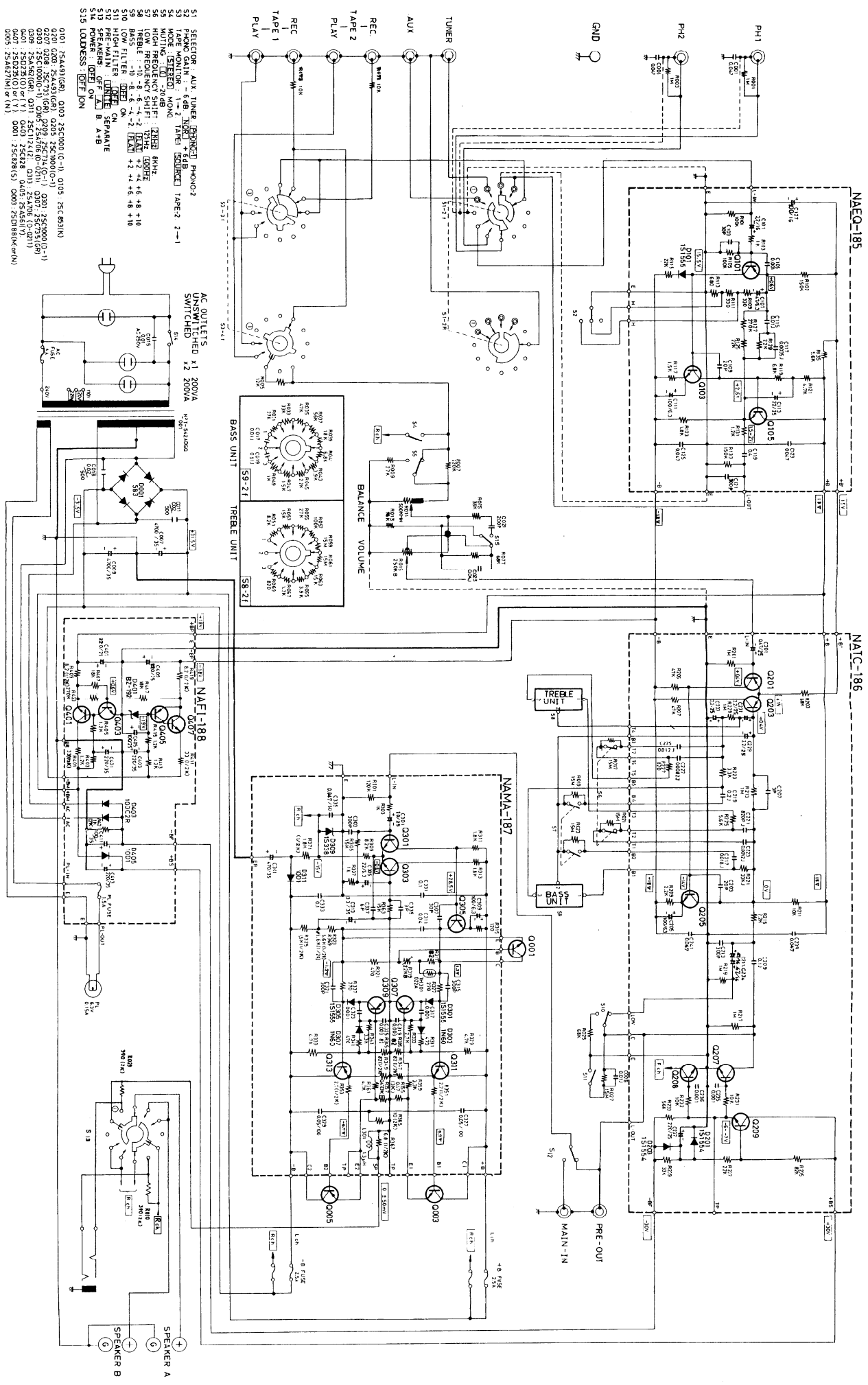
(Abnormal operation indicates operation with a load below 4 ohms, or operation under conditions of high power and insufficient air circulation.)

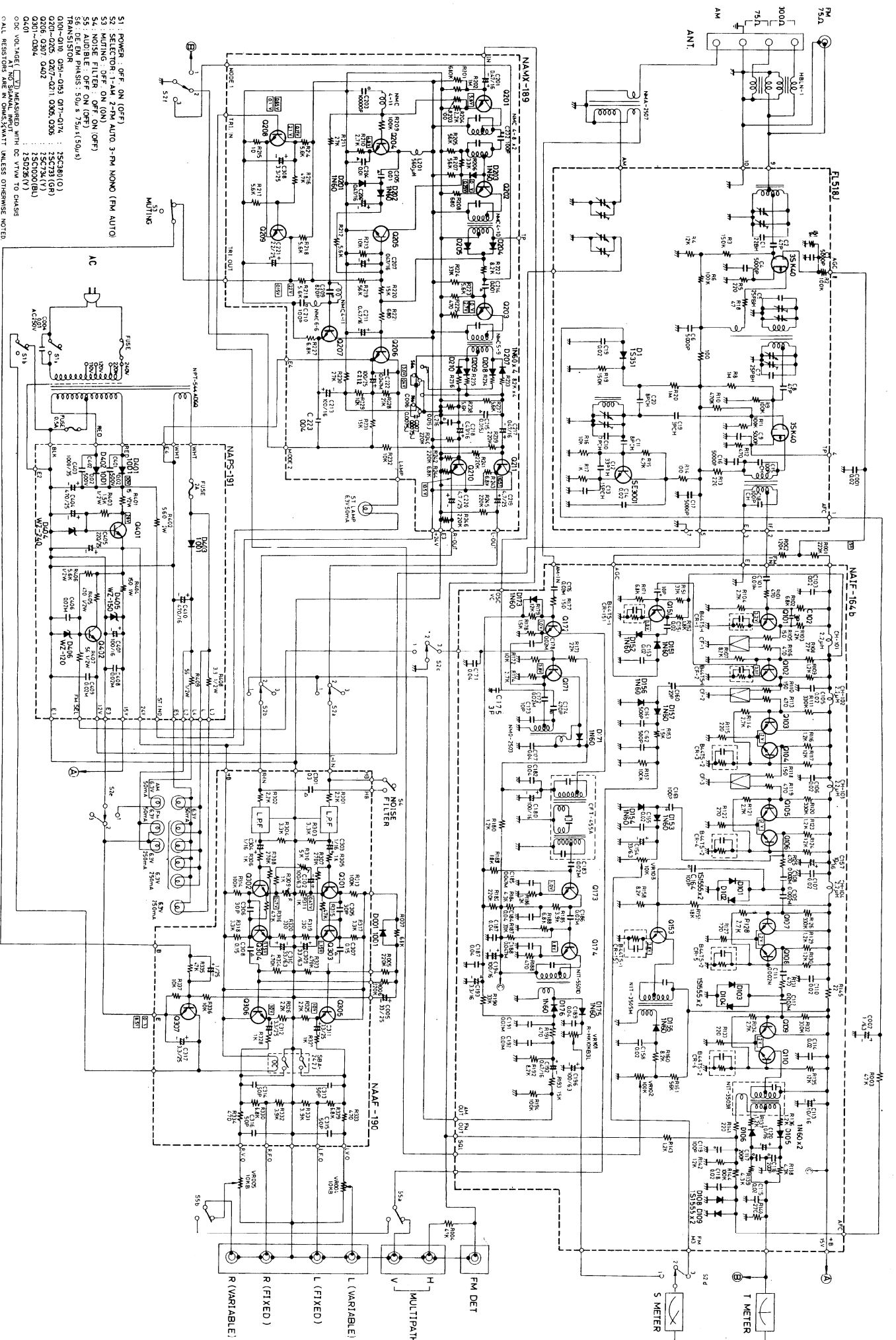
## 4. PARTS LIST

CIRCUIT NO.	DESCRIPTION	SPECIFICATION	QTY	STOCK NO.	
U 1	Equalizer Amp assembly	NAEQ-185	1	12969585	
U 2	Tone Amp assembly	NATC-186	1	12969586	
U 3	Main Amp assembly	NAMA-187	1	12969587	
U 4	Power Supply assembly	NAFI-188	1	12969588	
Q001, Q002	Transistor	2SC828(S)	2	2210033	
Q003, Q004	"	2SD188M(orN)	2	2200052or2200053	
Q005, Q006	"	2SA627M(orN)	2	2200062or2200063	
D001	Silicon Diode	5B3	1	223810	
	Pilot Lamp	6.3V 0.15A	1	210003	
T001	Transformer-Power	NPT-542ADGQ	1	230048	
C007, C009	Electrolytic	CE62W35V4700 $\mu$ F	2	3504030A	
R011, R012 R015, R016	Variable Resistor	N24RDG500KMN250KB2T	1	5104006	(Double gang)
S 1	Switch-Rotary	NRS-284-20Y	1	250114	(Selector)
S 3	"	NRS-465-20Y	1	250115	(Tape monitor)
S8, S9	"	NRS-2211-20Yb	2	250117	(Tone)
S13	"	NRS-124-20Y	1	250118-1	(Speakers)
S2	Switch-Slide	NSS-2323	1	250121	(Equalizer sensitivity)
S12	"	NSS-4224	1	250122	(Pre-main)
S4, S5, S10 S11, S15	Switch-Lever	NLS-122-29-SL	5	250119-1	(Loudness, Muting) (Mode, Filters)
S14	Switch-Power	NPS-111LA2	1	250157	(Power)
S6, S7	Switch-Lever	NLS-142-29-SL	2	250120-1	(Frequency shift)
	Socket-Pilot Lamp	VE-0202	1	250124	
	Socket-Transistor	SA-3905	4	250144	
	Jack-Stereo Head Phone	3P64M	1	250126	
	Fuse	2A-T	2	252002	(AC line)
	"	2.5A-T(A)	4	252008	(B $\pm$ )
	"	1.5A-T	1	252007	(Lamp)
	Bottom cover		1	270295	
	Rubber Cushion		4	280379	
	Slim Cloth Piece		1	270560	
	Front Panel		1	280707	
	End Cap		2	280367	
	Facet		1	280375	
	Knob Sheet		1	280377	
	Soft Block		2	270559	
	Rating Plate		1	282974	
	Knob-Volume		1	283063	
	Knob-Balance		1	283064-1	
	Knob-Selector		1	283062	
	Knob-Tone(Speakers, Tape monitor)		4	283061	
	Knob-Push Switch		1	283071	
	Knob Guide		1	280374	
	Joiner		4	280376	
	Amp Box assembly		1	280708	
	Master Carton Box		1	290332	
	Side Pad		2	290203	
	Fuse	4A-T	2	252014	(AC line)
NAEQ-185					
Q101, Q102	Transistor	2SA493(GR)	2	2210235	
Q103, Q104		2SC1000(0-1)	2	2210280	
Q105, Q106		2SC853(K)	2	2210290	

# PARTS LIST

CIRCUIT NO.	DESCRIPTION	SPECIFICATION	QTY	STOCK NO.
D101, D102	Silicon Diode	1S1555	2	223105
C127	Capacitor-Electrolytic	CE04W 25V220 $\mu$ F	1	352752211A
C107, C108	"	CE04W6.3V47 $\mu$ F	2	352724701A
C111, C112	"	CE04W 6.3V100 $\mu$ F	2	352721011A
C113, C114	"	CE04W 25V22 $\mu$ F	2	352752201A
C101, C102	Capacitor-Aluminum Electrolytic	AL0413 16V2.2 $\mu$ F	2	3500002A
NATC-186				
Q201 ~ Q204	Transistor	2SA493(GR)	4	2210235
Q205, Q206	"	2SC10000(0-1)	2	2210280
Q207, Q208	"	2SC733(GR)	2	2210085
Q 209	"	2SC734(0-1)	1	2210060
D201, D203	Silicon Diode	1S1554	2	223106
C205, C206	Capacitor-Electrolytic	CE04W6.3V100 $\mu$ F	2	352721011A
C211, C212	"	" 16V47 $\mu$ F	4	352744701A
C234, C235	"	" 25V0.47 $\mu$ F	2	352754791A
C201, C202	"	" 25V220 $\mu$ F	1	352752211A
C237	"	" 25V220 $\mu$ F	1	352752211A
C231, C232	Capacitor-Super	SP25V2.2 $\mu$ F	4	3504014A
C229, C230	"	SNP25V2.2 $\mu$ F	2	3504015A
C233, C234	" Bipolar	SNP25V2.2 $\mu$ F	2	3504015A
NAMA-187				
Q301 ~ Q304	Transistor	2SC1000(0-1)	4	2210280
Q305, Q306	"	2SA706(0-0211)or(52)	4	2200033or2200032
Q313, Q314	"	2SC735(GR)	2	2210245
Q307, Q308	"	2SA562(GR)	2	2210255
Q309, Q310	"	2SC1124(2)	2	2200016
Q311, Q312	"	1S1555	4	223105
D301, D302	Silicon Diode	10D1	2	223801
D305, D306	"	1S338orYZ-147	1	223914
D311, D312	Zener Diode	1N60(N)FM	4	2231031
D309	Germanium Diode	S-1.3B	2	231001
D303, D304	Coil-Compensation	SP25V10 $\mu$ F	2	3504021A
D307, D308	Capacitor-Super	CE04W6.3V22 $\mu$ F	2	352722201A
L301, L302	Capacitor-Electrolytic	" 6.3V100 $\mu$ F	2	352721011A
C301, C302	"	" 35V33 $\mu$ F	2	352763301A
C305, C306	"	" 35V470 $\mu$ F	1	352764711A
C309, C310	"	R-HK 2.2KB	2	5225005
C313, C314	Resistor-Semi Fixed	D-22A	2	4000003
C341	Thermistor		2	270187
R319, R320	Radiator		6	
TH301				
TH302				
NAFI-188				
Q401, Q407	Transistor	2SD235(O)or(Y)	2	2200014or2200013
Q403	"	2SC828(S)	1	2210033
Q405	"	2SA561(Y)	1	2210074
D403	Silicon Diode	10DC 2 R	1	223813
D405	"	10D1	1	223801
D401	Zener Diode	BZ-192	1	223913
C405	Capacitor-Electrolytic	CE04W 25V47 $\mu$ F	1	352754701A
C401	"	" 35V220 $\mu$ F	3	352762211A
C407, C409	"	" 35V100 $\mu$ F	1	352761011A
C411	"	" 25V220 $\mu$ F	2	352752211A
C403, C413	"	" 25V220 $\mu$ F	2	352752211A
	Radiator		2	270187
	Fuse Holder	S-N5051	2	250113





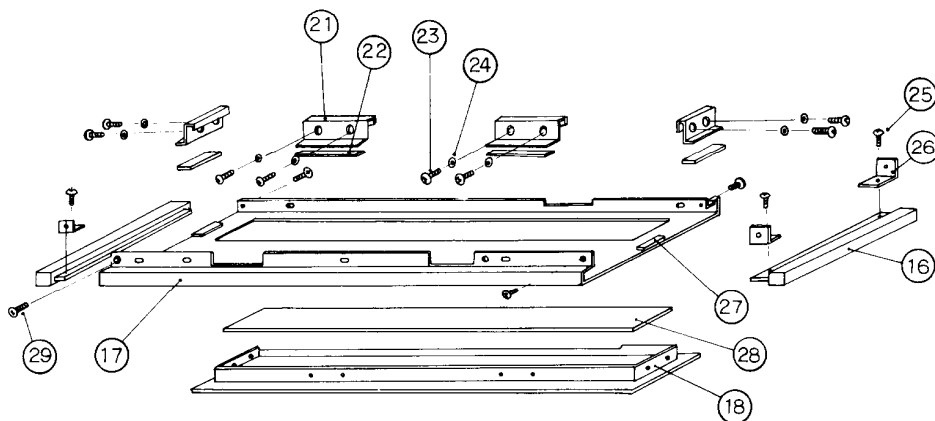
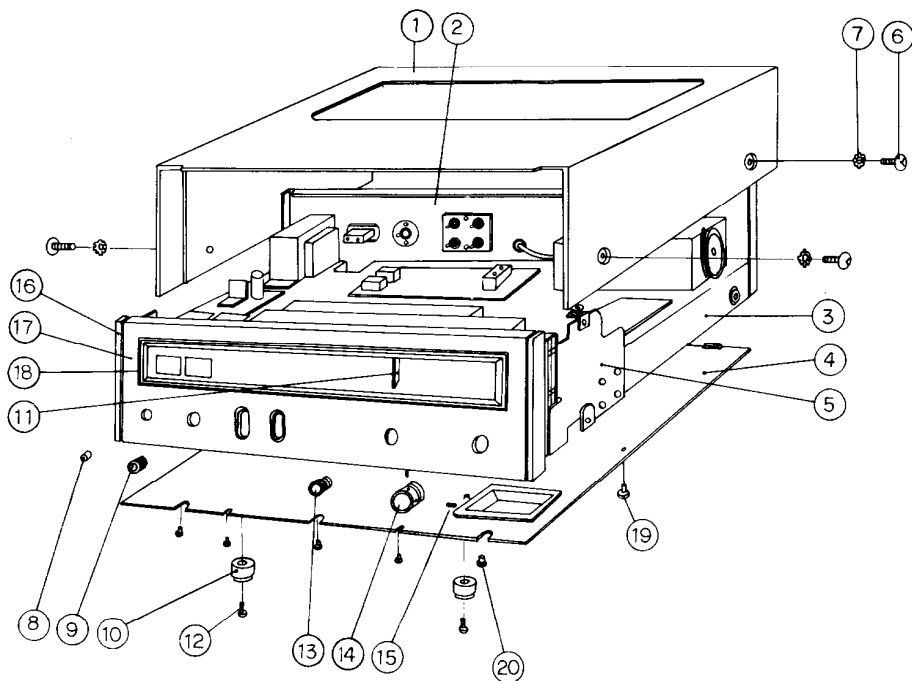


# model T-4055

## SPECIFICATIONS

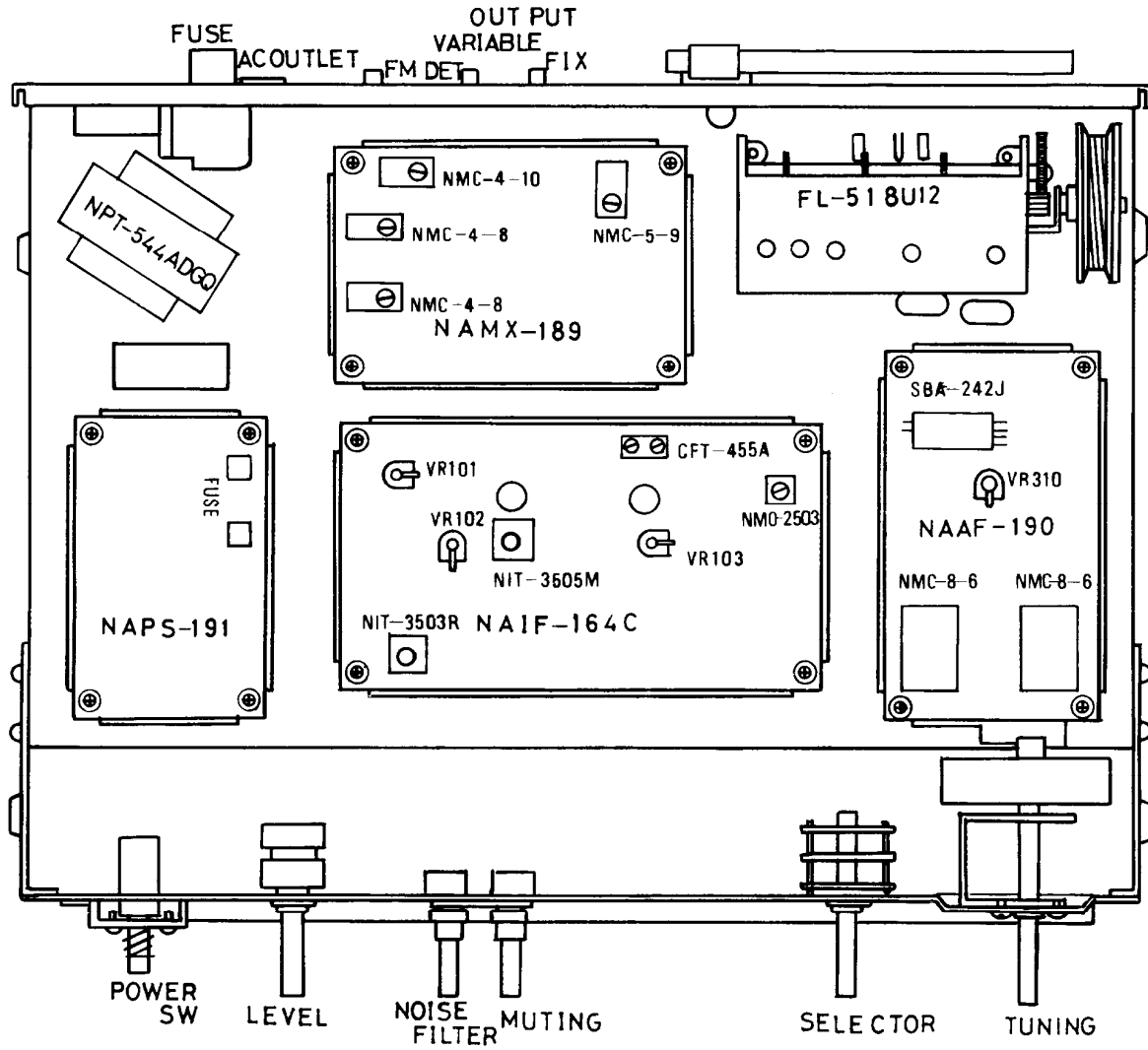
Tuning Range	FM:88-108MHz AM:530-1605kHz	LEVEL
Sensitivity	FM:1.7 $\mu$ V(IHF) AM:20 $\mu$ V,150 $\mu$ V/m	MUTING
Intermediate Frequency	FM:10.7MHz AM:455kHz	NOISE FILTER
Capture Ratio	FM:1.2dB	AUDIBLE SWITCH(MULTIPATH)
Image Rejection Ratio	FM:90dB(108MHz) AM:50dB(1MHz)	Antenna
IF Rejection Ratio	FM:95dB(98MHz) AM:33dB(1MHz)	FM:300 & 75ohm AM:Ferrite Core antenna
AM Suppression 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 $\Omega$ (Fixed), 1,5k $\Omega$ (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

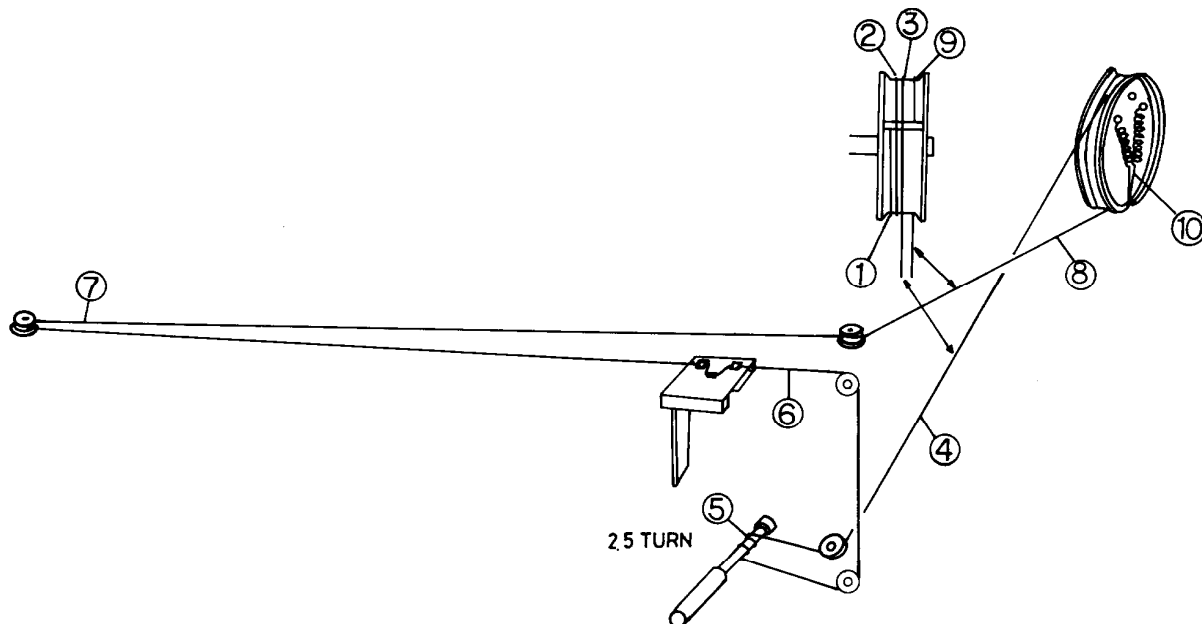


KEY NO.	DESCRIPTION	KEY NO.	DESCRIPTION
1	Amp Box assembly	16	End Cap
2	Rear Panel	17	Front Panel
3	Chassis	18	Dial Flame
4	Bottom Cover	19	Toothed Lock Screw(8W3P+6F)
5	Side Bracket	20	Binder Screw(3B+6F-N)
6	Truss Screw(3T+10F-N)	21	Flame Holder
7	Toothed Lock Washer(M5×AB)	22	Neoprene Sheet
8	Knob-Push 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 $\Omega$ )

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 oscilloscope 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	$\pm 0.3$ MHz Sweep Centered at 10.7MHz	Oscilloscope 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	"	"	Oscilloscope 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					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 NMC5-9	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  $50\mu s$ .

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

For USA shipment, this tuner has been set a de-emphasis rating of  $75\mu s$  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	CE02D16V1uF	1	351340101A	
C005	"	CE02D25V33uF	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-S1	2	250119-1	(Muting Noise Filter)
S 5, S 6	Switch-Slide	NSS-2225	2	250142	(Audible De-emphasis)
S 1	Switch-Power	NPS-1221.N2	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	Transistor	2SC380(0)	16	2210122	
D101 ~ D104 D108 ~ D109	Silicon Diode	1S1555	6	223105	
D105 ~ D106 D151 ~ D157 D171, D173, D175, D176	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	
	CF1 ~ CF3	"	CF-10M-12	3	3010002
	C180, C194	Capacitor-Electrolytic	CE04W16V100 $\mu$ F	2	358341011
	C113	"	" 16V10 $\mu$ F	3	358341001
	C120, C157	"	" 16V0.47 $\mu$ F	1	358344791
	C192	"	" 6.3V100 $\mu$ F	1	358321011
	C196	"	" 6.3V33 $\mu$ F	1	358323301
	C154	"	" 16V3.3 $\mu$ F	1	352740331A
	C193	"	"	1	352740331A
	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	
	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	
L201	Coil-Choke	NCCH-1503	1	233025	
C222	Capacitor-Electrolytic	CE04W25V100 $\mu$ F	1	358351011	
C308	"	" 3.3 $\mu$ F	1	358350331	
C213	"	CE04W16V100 $\mu$ F	1	358341011	
C201, C206, C207 C211, C217, C218	"	" 0.47 $\mu$ F	6	35834791	
C219, C220	"	" 4.7 $\mu$ F	2	358340471	
C221	"	" 2.2 $\mu$ F	1	358340221	
NAAF-190					
Q301 ~ Q304	Transistor	2SC1000(BL)	4	2210282	
Q305, Q306	"	2SC733(GR)	2	2210082	
Q307	"	2SC734(Y)	1	2210064	
	Low pass Filter	NMC-8-6	2	233030	
C303, C304	Capacitor-Electrolytic	CE04W16V1 $\mu$ F	2	358340101	
C302	"	" 6.3V100 $\mu$ F	1	358321011	
C309, C310	"	" 33 $\mu$ F	2	358320631	
C311, C312	"	" 25V3.3 $\mu$ F	3	358350331	
C317	"	" 1 $\mu$ F	1	358350101	
C318	"	"	1	358350101	
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 $\mu$ F	1	358361021	
C404	"	CE04W25V470 $\mu$ F	1	358354711	
C405	"	" 220 $\mu$ F	1	358352211	
C410	"	" 16V470 $\mu$ F	1	358344711	
C407	"	" 100 $\mu$ F	1	358341011	
	Radiator		1	270187	
	Fuse Holder	S-N5051	2	250113	

# 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.

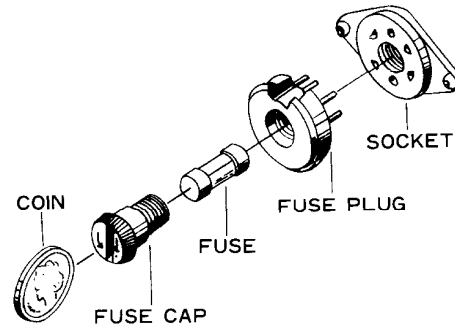


Fig 1

# 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.