

# T 775

Surround Sound Receiver

# SERVICE MANUAL



# T 775

Surround Sound  
Receiver

# SAFETY INFORMATION

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THIS DEVICE COMPLIES WITH PART 15 OF THE FCC RULES.  
OPERATION IS SUBJECT TO THE FOLLOWING TWO CONDITIONS:  
(1) THIS DEVICE MAY NOT CAUSE HARMFUL INTERFERENCE.  
(2) THIS DEVICE MUST ACCEPT INTERFERENCE RECEIVED,  
INCLUDING INTERFERENCE THAT MAY CAUSE UNDESIRABLE OPERATION.

**NAD ELECTRONICS INTERNATIONAL**  
633 GRANITE COURT, PICKERING, ON CANADA L1W 3K1

**MODEL T775 AV SURROUND SOUND RECEIVER**

**POWER RATING** 120V ~ 60Hz 8.5A

DESIGNED & ENGINEERED IN CANADA, CUSTOM  
MANUFACTURED TO NAD SPECIFICATIONS IN CHINA

**NAD ELECTRONICS INTERNATIONAL**

**MODEL T 775 A/V SURROUND SOUND RECEIVER**

**POWER RATING** 230V ~ 50Hz 4.5A

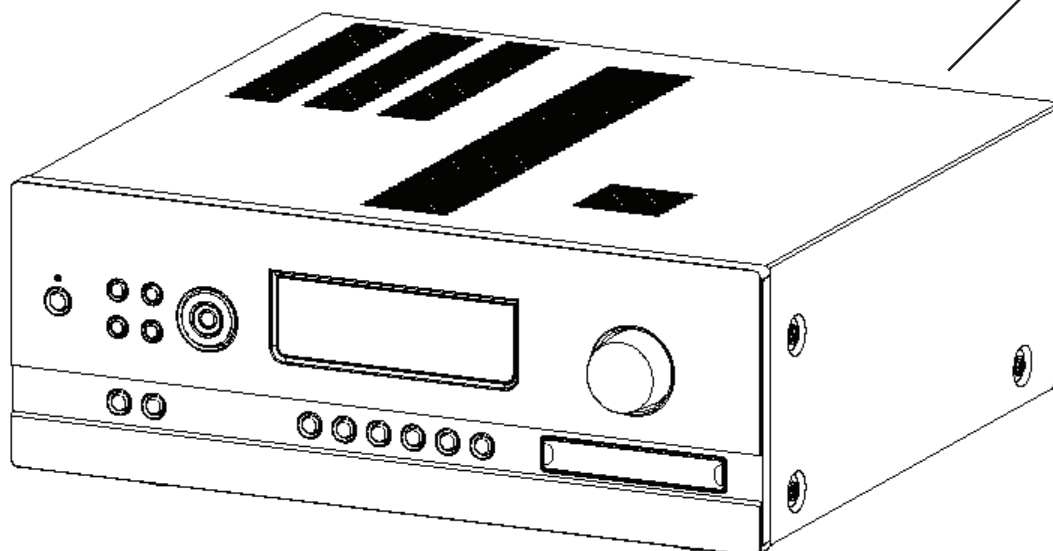
DESIGNED & ENGINEERED IN CANADA, CUSTOM  
MANUFACTURED TO NAD SPECIFICATIONS IN CHINA



**CAUTION**  
RISK OF ELECTRIC SHOCK  
DO NOT OPEN



**WARNING: SHOCK HAZARD - DO NOT OPEN**  
**AVIS: RISQUE DE CHOC ELECTRIQUE - NE PAS OUVRIR**







# SERVICE SAFETY PRECAUTIONS

## 1. Replacing the fuses

### CAUTION:

FOR CONTINUED PROTECTION AGAINST THE RISK OF FIRE REPLACE ONLY WITH SAME TYPE OF FUSE.

<u>Reference Designator</u>		<u>Database Part Number</u>	<u>Description</u>
F8001*AH		20-001-0078-90	FUSE TIME-LAG 10A/250VAC 5X20mm UL/CSA 5T
F8001*C,CT		20-001-0072-90	FUSE TIME-LAG 6.3A 250VAC 5X20mm TSD UL/CSA/VDE/CCC WALTER
F8002*AH		20-001-0076-90	FUSE 1.6A 250V TIME LAG LBC 5x20mm TSD UL/CSA/VDE/SEMKO
F8002*C,CT		20-001-0069-90	FUSE TIME-LAG 800mA 250V 5x20mm TSD UL/CSA/VDE/CCC WALTER 5X20mm VDE/UL/CSA 5T

### NOTE:

<\*AH > : USA, CANADIAN MODEL ONLY.

<\*C, \*CT > : EUROPEAN MODEL ONLY.

## 2. Safety check out

(Only U.S.A. model)

Before returning the product to the customer, make leakage current or resistance measurements to determine that exposed parts are acceptably insulated from supply circuit.

Parts marked with the symbol  are critical with regard to the risk of fire and electric shock.

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# SPECIFICATIONS

## POWER AMPLIFIER SECTION

Rated distortion	(Rated power level into 8 ohms, THD 20 Hz-20 kHz FL/C/FR)	$\leq 0.1 \%$
	(Rated power level into 8 ohms, THD 20 Hz-20 kHz SL/SR/BS)	$\leq 0.1 \%$
Input Sensitivity	(ref. 8 ohms, 1 kHz)	$1 \pm 0.1 \text{ V}$
S/N Ratio	(A-wtd, 1kHz, 1 W, 8 ohm, SL/SR/BL)	$\geq -80 \text{ dB}$
Frequency Response	(20 Hz - 20 kHz)	$0 \pm 1.0 \text{ dB}$
Channel Balance	(1 dB to -40 dB, 1 kHz)	$\leq 2 \text{ dB}$
	(-41 dB to -50 dB, 1 kHz)	$\leq 3 \text{ dB}$
Audio muting at 1 kHz		$\geq 55 \text{ dB}$
Subwoofer out, 500 mV in	(THD at 2 V O/P, 100 Hz)	$\leq 0.5 \%$
Crosstalk	(500 mV input, 10 W, 1 kHz)	$\geq -54 \text{ dB}$
<b>Controls</b>		
Bass	(at 500 mV in, 1 W out, 100 Hz)	$\pm 10 \text{ dB} \pm 2 \text{ dB}$
Treble	(at 500 mV in, 1 W out, 10 kHz)	$\pm 10 \text{ dB} \pm 2 \text{ dB}$

## DOLBY DIGITAL SECTION

Channel Difference	(FL ref. Track 30)	$\pm 1.2 \text{ dB}$
Frequency Response at Dolby config.2	SL Track 46 200 - 20 kHz	$\pm 0.8 \text{ dB}$
	SR Track 47 200 - 20 kHz	$\pm 0.8 \text{ dB}$
	C Track 44 200 - 20 kHz	$\pm 0.8 \text{ dB}$
Harmonic Distortion (1 W, Audio LPF, Dolby Config 1)	FL Track 65 997 Hz	$\leq 0.08 \%$
	FR Track 67 997 Hz	$\leq 0.08 \%$
	SL Track 68 997 Hz	$\leq 0.08 \%$
	SR Track 69 997 Hz	$\leq 0.08 \%$
	C Track 66 997 Hz	$\leq 0.08 \%$
S/N Ratio (31 for O/P 1 W, Track 35)	CCIR / ARM	$\geq 65 \text{ dB}$
	Audio LPF	$\geq 64 \text{ dB}$
	A-wtd	$\geq 68 \text{ dB}$
Channel Separation (1 W, 20 kHz LPF)	Track 65 997 Hz	$\geq 55 \text{ dB}$

## DOLBY PRO LOGIC II SECTION

### Frequency Response

I/P mode : L, R	: 1 V in, 1 W, Ch L/R	40 Hz	$0 \pm 2.0 \text{ dB}$
		20 Hz	$0 \pm 2.0 \text{ dB}$
I/P mode : L=R	: 1 V in, 1 W, Ch /L/R	40 Hz	$0 \pm 2.0 \text{ dB}$
	Ch C	20 kHz	$0 \pm 2.0 \text{ dB}$
I/P mode : L=-R	: 1 V in, 1 W, Ch SL/SR	40 Hz	$0 \pm 2.0 \text{ dB}$
		20 kHz	$0 \pm 2.0 \text{ dB}$
S/N Ratio (200 mV in, 1 W, A-WTD w/ 1 k termination)			
I/P mode : L, R	: 1 kHz, Ch L/R		$\geq 60 \text{ dB}$
I/P mode : L=R	: 1 kHz, Ch C		$\geq 60 \text{ dB}$
I/P mode : L=-R	: 1 kHz, Ch SL/SR		$\geq 60 \text{ dB}$
THD (2.2 V in, 1 W, w/ 80 kHz LPF, 1 kHz)			$\leq 0.2 \%$

## **DTS SECTION**

Output Level (Vol 0 dB)	: FL/FR/C/SL/SR Track 6	1 kHz	<b>0.5 -0.2/+0.8 W</b>
Channel Difference (FL ref)	: FL/FR/C/SL/SR Track 6	1 kHz	<b>0 ± 1.0 dB</b>
Harmonic Distortion (Audio Filter)	: FL/FR/C/SL/SR Track 10-14	1 kHz	<b>≤ 0.08 %</b>
Frequency Response (20 Hz to 20 kHz)	Track 26-30		<b>+2/-1.5 dB</b>
Subwoofer Output Level	1 kHz ref at pre-out (FL) Play Track 10, charge to 15		<b>12.5 ± 1.5 dB</b>

## **AM TUNER SECTION**

Input level is expressed as the reading in open circuit  
of 75-ohm source impedance signal generator

Usable sensitivity (999/1000 kHz)		<b>≤ 60 dB<sub>μV</sub></b>
S/N Ratio	(5 mV in)	<b>≥ 38 dB</b>
THD	(5 mV in)	<b>≤ 3 %</b>
IF Rejection	(450 kHz)	<b>≤ 36 dB</b>
Image Rejection	(F+2xIF)	<b>≥ 28 dB</b>
Selectivity		<b>≥ 17 dB</b>
Output		<b>170 -20/+30 mV</b>
Loop sensitivity	(20 dB S/N)	
	999/1000 kHz	<b>≤ 66 dB</b>
	603/600 kHz	<b>≤ 66 dB</b>
	1404/1400 kHz	<b>≤ 66 dB</b>
Frequency Response	(100 - 2.3 kHz, 5 mV)	<b>± 6 dB</b>

## **FM TUNER SECTION**

**\*C**

**\*AH**

Input level is expressed as the reading in open circuit  
of 75-ohm source impedance signal generator

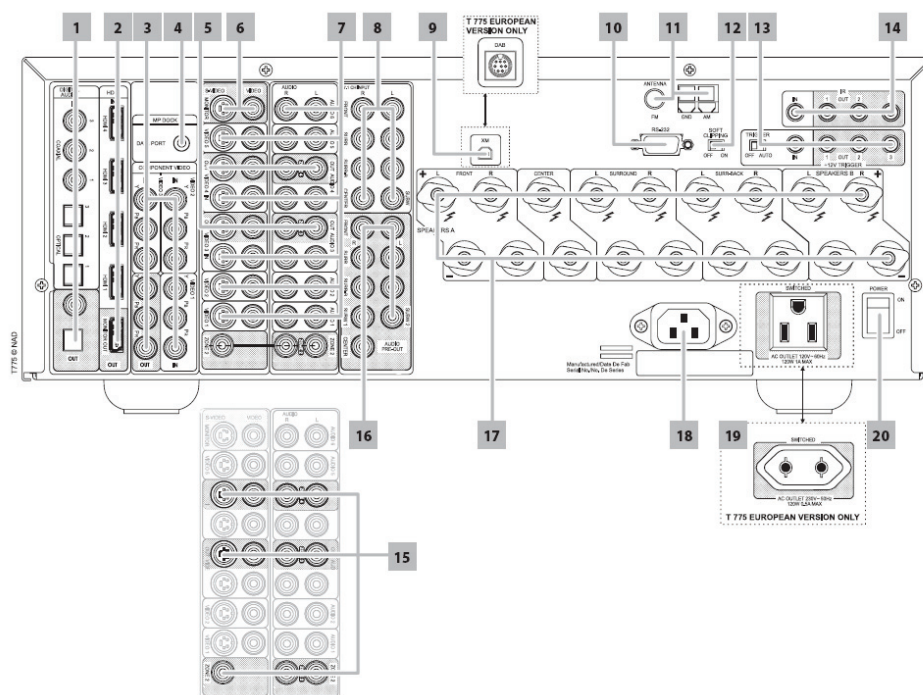
Usable sensitivity (98 MHz)		<b>≤ 15 dB<sub>μ</sub></b>	<b>≤ 15 dB<sub>μv</sub></b>
S/N Ratio	(60 dB, IHF wtd)	Mono <b>≥ 60 dB</b>	<b>≥ 60 dB</b>
		Stereo <b>≥ 63 dB</b>	<b>≥ 63 dB</b>
Frequency Response	(20 Hz - 15 kHz, 60 dB <sub>μ</sub> )	<b>0 ± 1.5 dB</b>	<b>0 ± 1.5 dB</b>
Channel Separation	(60 dB <sub>μ</sub> ) 100 Hz	<b>≥ 30 dB</b>	<b>≥ 30 dB</b>
		1 k <b>≥ 32 dB</b>	<b>≥ 32 dB</b>
		10 kHz <b>≥ 30 dB</b>	<b>≥ 30 dB</b>
Alternate Channel Selectivity (40 dB <sub>μ</sub> , ± 400 kHz)		<b>≥ 60 dB</b>	<b>≥ 45 dB</b>
Capture Ratio	(40 dB <sub>μ</sub> )	<b>≤ 3 dB</b>	<b>≤ 3 dB</b>
AM Suppression (60 dB <sub>μ</sub> , 100% Mod. FM, 30% Mod. AM)		<b>≥ 48 dB</b>	<b>≥ 48 dB</b>
Image Rejection	(119.4 MHz)	–	<b>≥ 65 dB</b>
I.F. Rejection	(10.7 MHz)	<b>≥ 78 dB</b>	–
Pilot Suppression (98 MHz)		<b>≥ 50 dB</b>	<b>≥ 50 dB</b>
THD (60 dB <sub>μ</sub> , L=R 75 kHz for AH, 40 kHz Dev for C)	Mono	<b>≤ 0.5 %</b>	<b>≤ 0.5 %</b>
	Stereo	<b>≤ 0.5 %</b>	<b>≤ 0.5 %</b>
Auto-Search Sensitivity	On	<b>≥ 24 dB<sub>μ</sub></b>	<b>≥ 24 dB<sub>μ</sub></b>
	Off	<b>≤ 15 dB<sub>μ</sub></b>	<b>≤ 15 dB<sub>μ</sub></b>
RDS decode Sensitivity		<b>≤ 26 dB<sub>μ</sub></b>	–

## **PHYSICAL SPECIFICATIONS**

Dimensions (Width x Height x Depth)	<b>435 x 170 x 423 mm</b>
Net Weight	<b>20.8 Kg (45.76 lbs)</b>
Shipping Weight	<b>25.7 Kg (56.54 lbs)</b>

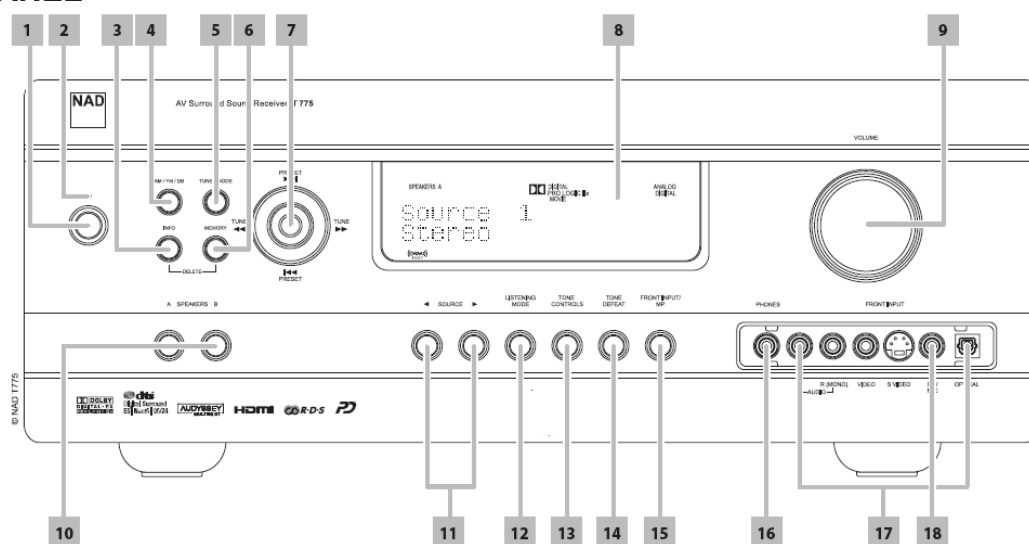
# REAR PANEL / FRONT PANEL VIEW

## REAR PANEL



- |                           |                         |                           |
|---------------------------|-------------------------|---------------------------|
| 1. DIGITAL AUDIO IN/OUT   | 7. AUDIO/VIDEO 1~6 IN   | 13. +12V TRIGGER OUT      |
| 2. HDMI                   | 8. 7.1 CH INPUT         | 14. IR IN/OUT             |
| 3. COMPONENT IN/OUT       | 9. XM MODULE INPUT(AH)  | 15. ZONE 2,3,4            |
| 4. MP DOCK                | 10. RS-232              | 16. AUDIO PREOUT          |
| 5. AUDIO/VIDEO 3/4 OUT    | 11. FM,AM ANTENNA INPUT | 17. SPEAKERS A, SPEAKER B |
| 6. MONITOR(S-VIDEO,VIDEO) | 12. SOFT CLIPPING       | 18. AC POWER INLET        |
|                           |                         | 19. SWITCHED AC OUTLET    |
|                           |                         | 20. POWER                 |

## FRONT PANEL



- |                 |                                     |                       |
|-----------------|-------------------------------------|-----------------------|
| 1. POWER BUTTON | 7. NAVIGATION AND ENTER BUTTON      | 12. LISTENING MODE    |
| 2. STANDBY LED  | 8. VACUUM, FLUORESCENT DISPLAY(VFD) | 13. TONE CONTROLS     |
| 3. INFO         | 9. VOLUME                           | 14. TONE DEFEAT       |
| 4. AM/FM/DB     | 10. SPEAKER A/B                     | 15. FRONT INPUT/MP    |
| 5. TUNER MODE   | 11. SOURCE                          | 16. PHONES            |
| 6. MEMORY       |                                     | 17. FRONT INPUT JACKS |
|                 |                                     | 18. MP/MIC INPUT      |

## DISASSEMBLY INSTRUCTIONS

1. Remove machine screws M4.0 x 8.0 (1 to 6) from the side panels.  
Remove tapping screw 3.0 x 8.0 (7 to 10) from the back panel.  
Refer to **Figure No. 1**.

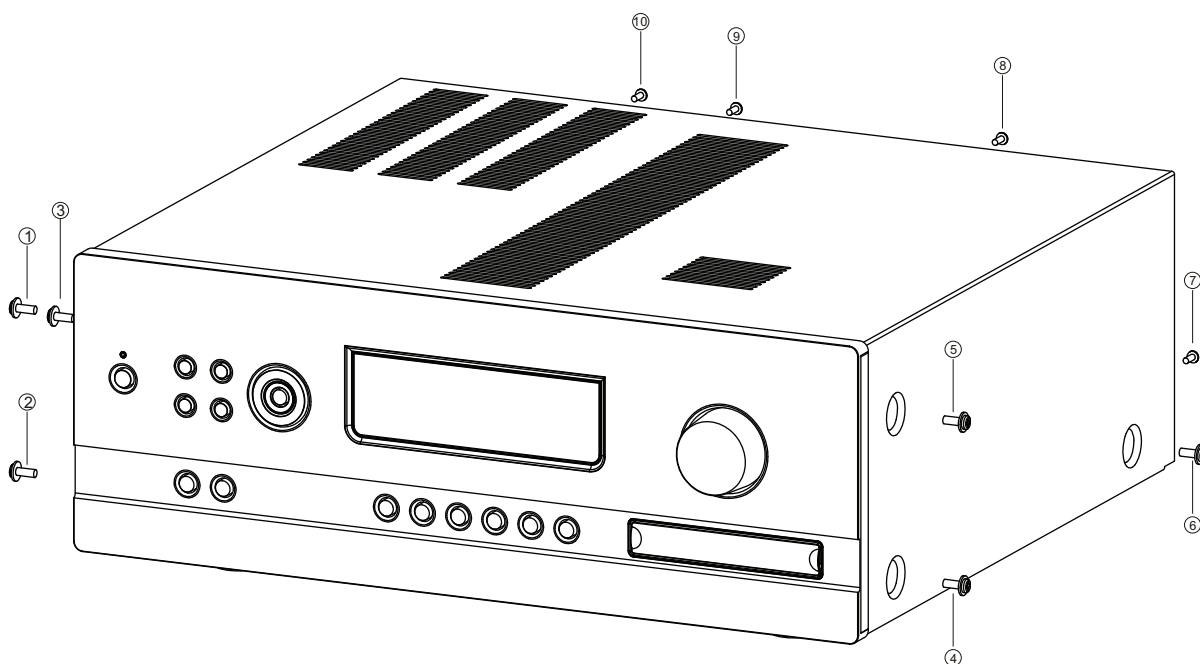


Figure No. 1

2. Pull both sides of the TOP COVER slightly outwards 11 and tilt approx. 35° and then remove in the direction as indicated by the arrow 12. Refer to **Figure No. 2**.

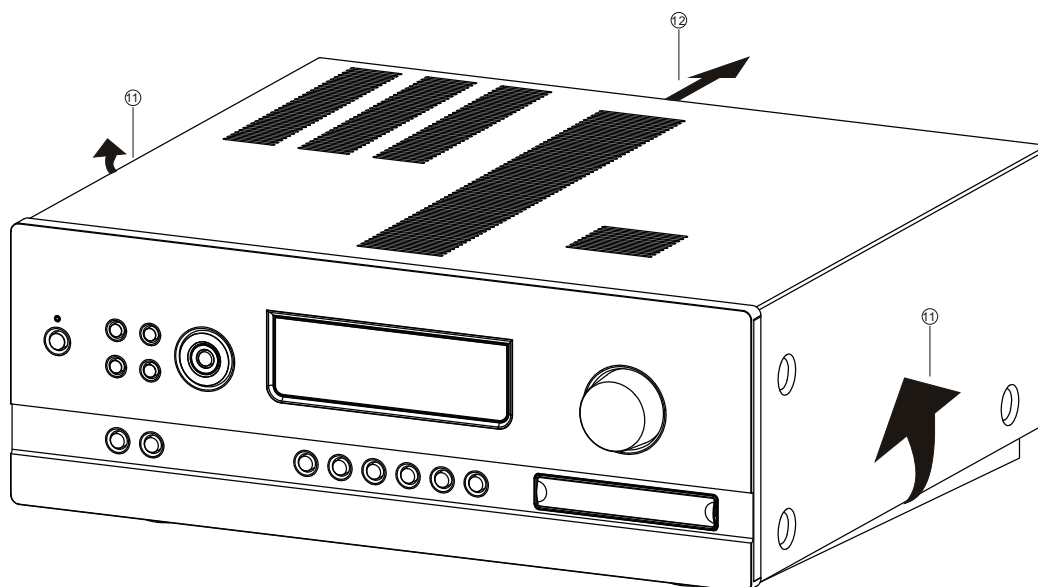


Figure No. 2

# WIRING DIAGRAM

