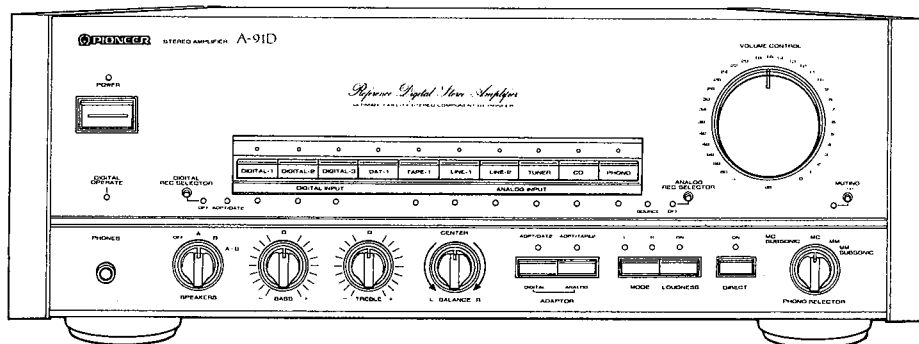


Operating Instructions

STEREO AMPLIFIER

A-91D



Thank you for buying this Pioneer product.

Please read through these operating instructions so you will know how to operate your model properly. After you have finished reading the instructions, put them away in a safe place for future reference.

In some countries or regions, the shape of the power plug and power outlet may sometimes differ from that shown in the explanatory drawings. However, the method of connecting and operating the unit is the same.

WARNING: TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

IMPORTANT NOTICE

[For U.S. and Canadian models]

The serial number for this equipment is located on the rear panel. Please write this serial number on your enclosed warranty card and keep it in a secure area. This is for your security.

[For Canadian model]

CAUTION: TO PREVENT ELECTRIC SHOCK DO NOT USE THIS (POLARIZED) PLUG WITH AN EXTENSION CORD, RECEPTACLE OR OTHER OUTLET UNLESS THE BLADES CAN BE FULLY INSERTED TO PREVENT BLADE EXPOSURE.

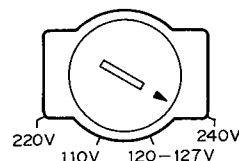
ATTENTION: POUR PREVENIR LES CHOCS ELECTRIQUES EN PAS UTILISER CETTE FICHE POLARISEE AVEC UN PROLONGATEUR UNE PRISE DE COURANT OU UNE AUTRE SORTIE DE COURANT, SAUF SI LES LAMES PEUVENT ETRE INSEREES A FOND SANS EN LAISSER AUCUNE PARTIE A DECOUVERT.

LINE VOLTAGE SELECTOR SWITCH

Only multi-voltage models are provided with this switch. U.S., Canadian, European, U.K., and Australian models are not provided with this switch. Mains voltages in Saudi Arabia are 127V and 220V only. Never use this model with 110V setting in Saudi Arabia.

The line voltage selector switch is on the rear panel. Before your model is shipped from the factory, this switch is set to the power requirements of the destination. Check that it is set properly before plugging the power cord into the AC wall socket. If the voltage is not properly set or if you move to an area where the voltage requirements differ, adjust the selector switch as follows.

1. Use a medium-size screwdriver.
2. Insert the tip of the screwdriver into the groove on the voltage selector, and adjust so that the tip of the arrow points to the voltage level of your area.



SAFETY INSTRUCTIONS

READ INSTRUCTIONS — All the safety and operating instructions should be read before the appliance is operated.

RETAIN INSTRUCTIONS — The operating instructions should be retained for future reference.

HEED WARNING — All warnings on the appliance and in the operating instructions should be adhered to.

FOLLOW INSTRUCTIONS — All operating and use instructions should be followed.

WATER AND MOISTURE — The appliance should not be used near water — for example, near a bathtub, washbowl, kitchen sink, laundry tub, in a wet basement, or near a swimming pool, etc.

LOCATION — The appliance should be installed in a stable location.

WALL OR CEILING MOUNTING — The appliance should not be mounted to a wall or ceiling.

VENTILATION — The appliance should be situated so that its location or position does not interfere with its proper ventilation. For example, the appliance should not be situated on a bed, sofa, rug, or similar surface that may block the ventilation openings; or, placed in a built-in installation, such as a bookcase or cabinet that may impede the flow of air through the ventilation openings.

HEAT — The appliance should be situated away from heat sources such as radiators, heat registers, stoves, or other appliances (including amplifiers) that produce heat.

POWER SOURCES — The appliance should be connected to a power supply only of the type described in the operating instructions or as marked on the appliance.

POWER-CORD PROTECTION — Power-supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords at plugs, convenience receptacles, and the point where they exit from the appliance.

POLARIZATION — If your purchased product is provided with a polarized power plug, please read the following instructions. This product is equipped with a polarized alternating current line plug (a plug having one blade wider than the other). This plug will fit into the power outlet only one way. This is a safety feature. If you are unable to insert the plug fully into the outlet, try reversing the plug. If the plug should still fail to fit, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the polarized plug.

CLEANING — The appliance should be cleaned only with a polishing cloth or a soft dry cloth. Never clean with furniture wax, benzene, insecticides or other volatile liquids since they may corrode the cabinet.

POWER LINES — An outdoor antenna should be located away from power lines.

NONUSE PERIODS — The power cord of the appliance should be unplugged from the outlet when left unused for a long period of time.

OBJECT AND LIQUID ENTRY — Care should be taken so that objects do not fall and liquids are not spilled into the enclosure through openings.

DAMAGE REQUIRING SERVICE — The appliance should be serviced by a Pioneer authorized service center or qualified service personnel when:

- The power-supply cord or the plug has been damaged; or
- Objects have fallen, or liquid has been spilled into the appliance; or
- The appliance has been exposed to rain; or
- The appliance does not appear to operate normally or exhibits a marked change in performance; or
- The appliance has been dropped; or the enclosure damaged.

SERVICING — The user should not attempt to service the appliance beyond that described in the operating instructions. For all other servicing, contact the nearest Pioneer authorized service center.

OUTDOOR ANTENNA GROUNDING — If an outside antenna is connected to the antenna terminal, be sure the antenna system is grounded so as to provide some protection against voltage surges and built up static charges.

In the U.S.A. section 810 of the National Electrical Code, ANSI/NFPA No. 70-1984, provides information with respect to proper grounding of the mast and supporting structure, grounding of the lead-in wire to an antenna discharge unit, size of grounding conductors, location of antenna-discharge unit, connection to grounding electrodes, and requirements for the grounding electrode. See Fig. A.

- a) Use No. 10 AWG (5.3 mm²) copper, No. 8 AWG (8.4 mm²) aluminum, No. 17 AWG (1.0 mm²) copperclad steel, bronze wire, or larger as ground wire.
- b) Secure antenna lead-in and ground wires to house with stand-off insulators spaced from 4 feet (1.22 meters) to 6 feet (1.83 meters) apart.
- c) Mount antenna discharge unit as closely as possible to where lead-in enters house.
- d) Use jumper wire not smaller than No.6 AWG (13.3 mm²) copper, or the equivalent, when a separate antenna-grounding electrode is used. See NEC Section 810-21 (j).

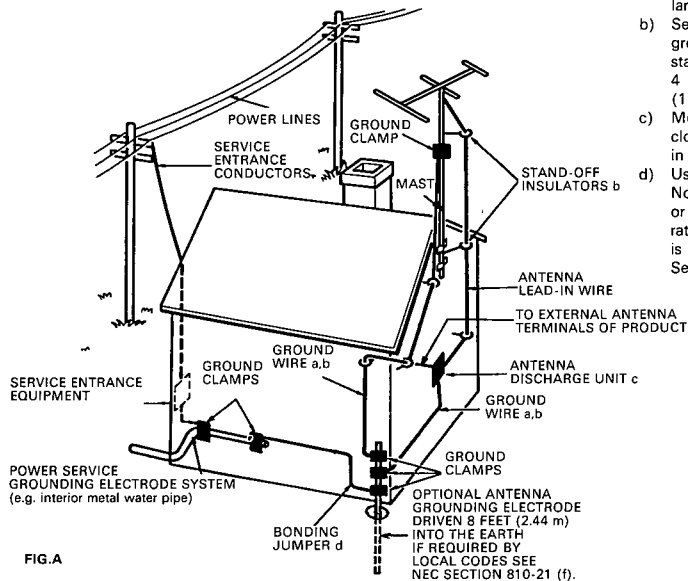


FIG. A

IMPORTANT 1



The lightning flash with arrowhead, within an equilateral triangle, is intended to alert the user of the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



CAUTION:
TO PREVENT THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.



The exclamation point within an equilateral triangle is intended to alert the user of the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

IMPORTANT 2

If the apparatus is fitted with AC mains power outlet(s), see REAR PANEL FACILITIES for convenient connection of additional Hi-Fi component(s). Make all connections to the AC outlet(s) and the signal terminals first. Connect the plug to the wall socket last, make sure that the power switch is off. Disconnect the wall plug when the equipment is not in (regular) use, e.g. when on vacation.

FOR USE IN THE UNITED KINGDOM

The wires in this mains lead are coloured in accordance with the following code:

Blue: Neutral
Brown: Live

As the colours of the wires in the mains lead of this apparatus may not correspond with the coloured marking identifying the terminals in your plug proceed as follows:

The wire which is coloured blue must be connected to the terminal which is marked with the letter N or coloured black.

The wire which is coloured brown must be connected to the terminal which is marked with the letter L or coloured red.

Equipment sold in the U.K. is not supplied with a power plug.

INFORMATION TO USER [FOR U.S. MODEL]

This equipment generates and uses radio frequency energy and if not installed and used properly, that is, in strict accordance with the manufacturer's instructions, may cause interference to radio and television reception. It has been type tested and found to comply with the limits for a Class B computing device in accordance with the specifications in Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference in a residential installation. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- reorient the receiving antenna
- relocate this equipment with respect to the receiver
- move this equipment away from the receiver
- plug this equipment into a different outlet so that equipment and receiver are on different branch circuits.

If necessary, the user should consult the dealer or an experienced radio/television technician for additional suggestions. The user may find the following booklet prepared by the Federal Communications Commission helpful:

"How to Identify and Resolve Radio-TV Interference Problems".

This booklet is available from the US Government Printing Office, Washington, D.C., 20402, Stock No. 004-000-00345-4.

The above instructions apply only to units which will be operated in the United States.

FEATURES

- High driving capacity, suitable for low-impedance speakers.
- The line direct circuit allows for high-fidelity reproduction of sources, with flat frequency characteristics and little tone variation.
- The REC SELECTOR switch makes tape editing easy.
- Use of the Non-switching Circuit Type III reduces distortion for a high-quality playback sound.
- Built-in phono equalizer circuit, permitting use of an MC cartridge.
- High-quality parts for an outstanding sound reproduction honeycomb chassis, honeycomb heat sink, large insulator, large speaker terminals, CD and PHONO gold-plated input terminals, etc.

CONTENTS

Connecting Cords	3	Troubleshooting	11
Panel Facilities	6	Specifications	12
Operations	9		

CONNECTING CORDS

CONNECTION TO THE DIGITAL IN/OUT TERMINALS

Optical Fiber Cable:

Use an optical fiber cable for connection to the OPTICAL terminals. Only those components can be connected here, that are equipped with the same type of optical transmission and reception modules. (ex. "JLL-A10T")

Digital Outputs:

These outputs conform to the IEC format and are suitable for connection of equipment which can receive this format.

Digital Inputs:

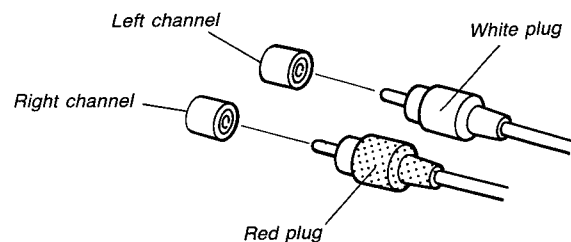
These inputs also conform to the IEC format and can be used for connection of equipment that continuously sends signals with this format.

Short Pin Plugs

- Pull the short pin plugs out of the input terminals.
- The plugs must be inserted in those input terminals where nothing is connected.
- Do not insert short pin plugs into the OUT/REC terminals.

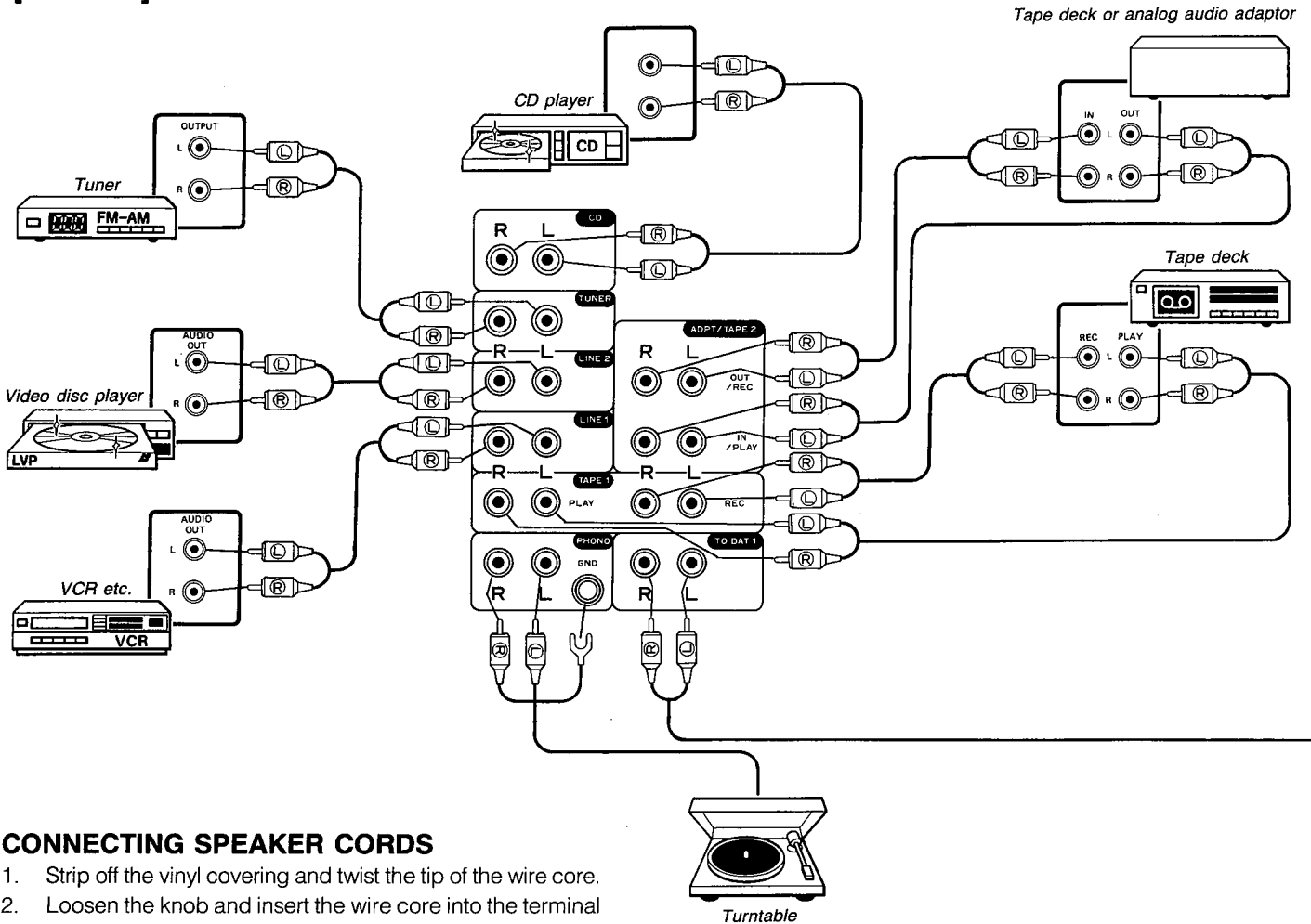
CONNECTING INPUT/OUTPUT CORDS

Connect the white plug to the L (left) side, and the red plug to the R (right) side. Be sure to push the plugs in firmly.



CONNECTING CORDS

[ANALOG]

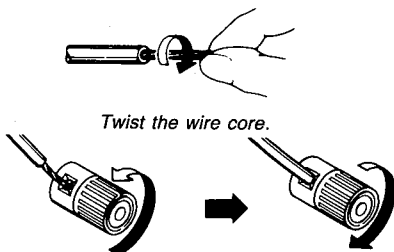


CONNECTING SPEAKER CORDS

1. Strip off the vinyl covering and twist the tip of the wire core.
2. Loosen the knob and insert the wire core into the terminal hole.
3. Tighten the knob to fix the wire core in place.

NOTE:

Do not allow the wire core to protrude or touch other terminals or wires. If the cores of differing wires touch, damage may be caused to your components. Twist the wire core.



Speaker Impedance

When speaker systems are connected to only one of the SPEAKERS A or B terminals, such speakers should have rated impedance in the range of 4-16Ω.

When speakers are connected to both the A and B terminals, they should have a rated impedance in the range of 8-32Ω.

4

<ARB1076>

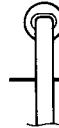
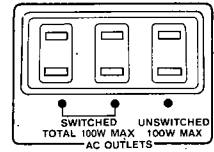
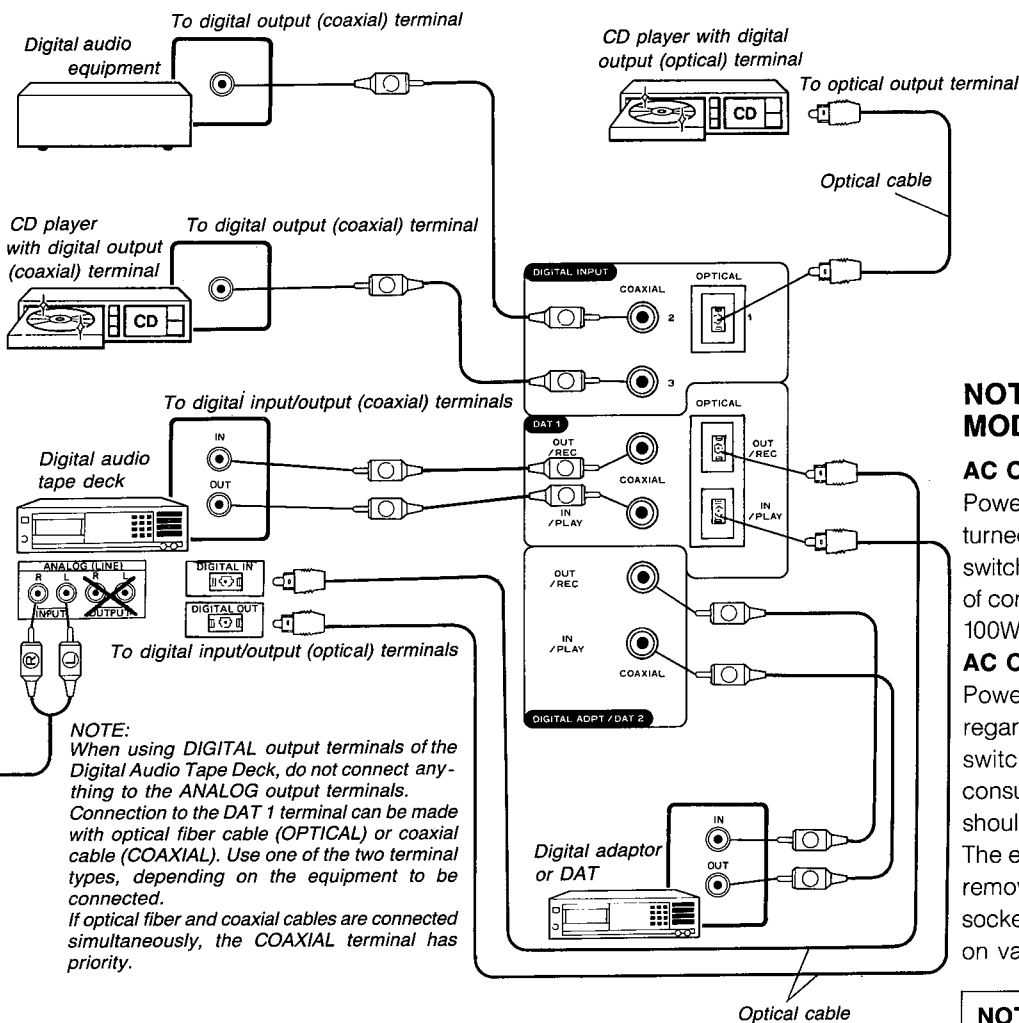
SPEAKER IMPEDANCE selector switch

(For U.K. model only)

Set in accordance with the impedance of the speaker system in use. Before operating this switch, turn the POWER switch OFF.

	Speaker impedance	Switch position
When using a single speaker system (A or B)	4 to 6 ohms	Upper position
	6 to 16 ohms	Lower position
When using two speaker systems (A and B)	8 to 12 ohms	Upper position
	12 to 32 ohms	Lower position

[DIGITAL]



NOT EQUIPPED WITH THE U.K. MODEL

AC OUTLETS (SWITCHED)

Power supplied through these outlets is turned on and off by the amplifier's POWER switch. Total electrical power consumption of connected equipment should not exceed 100W.

AC OUTLET (UNSWITCHED)

Power flows continually to this outlet, regardless of whether the amplifier is switched on or off. Electrical power consumption of the connected equipment should not exceed 100W.

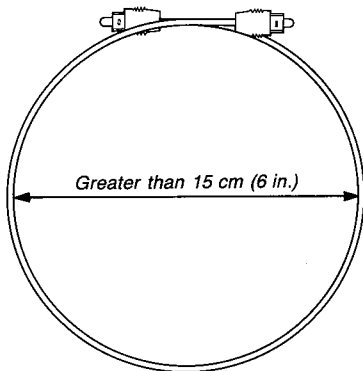
The equipment should be disconnected by removing the mains plug from the wall socket when not in regular use, e.g. when on vacation.

NOTE:

Do not connect appliances with high power consumption, such as heaters, irons, or television sets, to AC OUTLETS in order to avoid overheating or fire risk. These can cause the amplifier to malfunction.

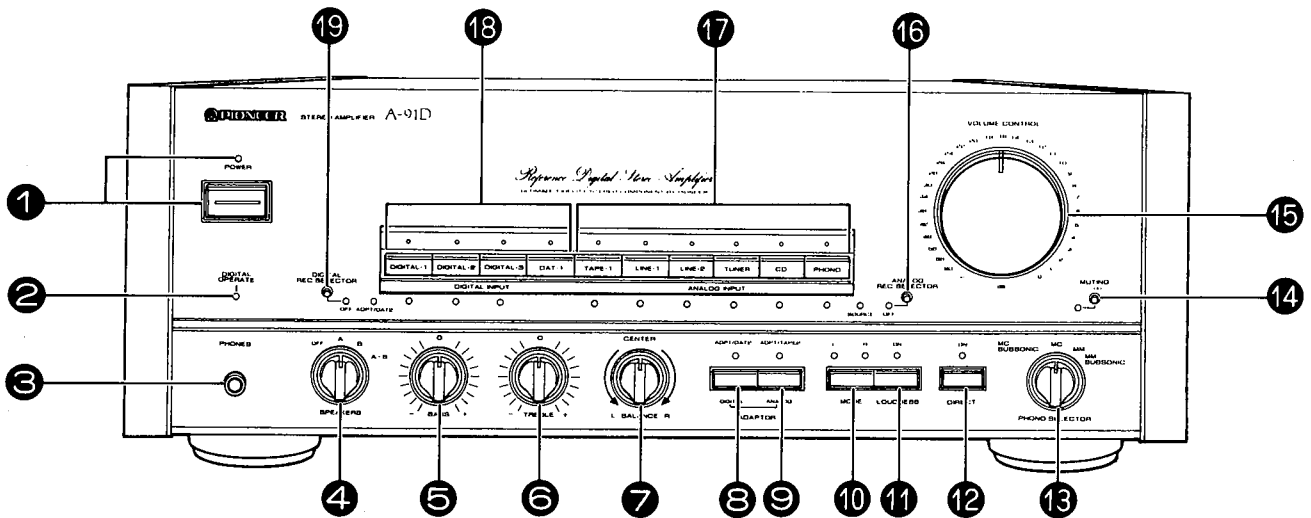
CAUTIONS FOR HANDLING OPTICAL CABLE

1. Do not fold optical cable when using as the cable is easily damaged. When circling it, keep the diameter of the loop greater than 15 cm (6 in.).
2. When connecting it, insert the plug firmly to the end to prevent a faulty connection.
3. Use an optical cable shorter than 3 meters (10ft.).
4. Prevent the plug of the optical cable from getting scratched or dusty. If dusty, clean with a soft cloth before connecting.
5. When the optical cable is not connected, use the dust-cap on the optical terminal of the unit to avoid dust.



PANEL FACILITIES

FRONT PANEL



1 POWER switch/indicator

Press to turn power to the unit on and off.

2 DIGITAL OPERATE indicator

Indicates that the D/A converter is being operated by lighting up with sampling frequency of digital-input signal at 32, 44.1, 48 kHz.

3 PHONES jack

When using headphones, insert the plug into this jack.

4 SPEAKERS selector switch

Use this switch to listen to the speaker systems connected to the SPEAKERS terminals.

OFF:

No sound is heard from the speaker system.

A:

For reproduction of sound with the speaker systems connected to the SPEAKERS A terminals.

B:

For reproduction of sound with the speaker systems connected to the SPEAKERS B terminals.

A + B:

For reproduction of sound with the speaker systems connected to SPEAKERS A and B terminals.

5 BASS tone control

Use to adjust the low-frequency tone. The center position is the flat (normal) position. When turned to the right, low-frequency tones are emphasized; when turned to the left, low-frequency tones are de-emphasized.

NOTE:

This function does not operate when the DIRECT switch is in the on position.

6 TREBLE tone control

Use to adjust the high-frequency tone. The center position is the flat (normal) position. When turned to the right, high-frequency tones are emphasized; when turned to the left, high-frequency tones are de-emphasized.

NOTE:

This function does not operate when the DIRECT switch is in the on position.

7 BALANCE control

Should normally be left in the center position. Adjust balance if the sound is louder from one of the speakers. If the right side is louder, turn toward the L position, and if the left side is louder, turn toward the R position.

NOTE:

This function does not operate when the DIRECT switch is in the on position.

8 DIGITAL ADPT/DAT2 monitor switch/indicator

ON:

The indicator lights: Press when listening to the playback sound of the Digital Audio Tape deck connected to the DIGITAL ADPT/DAT2 terminals, or when using a digital audio adaptor.

OFF:

The indicator goes off.

NOTE:
This switch operates only when a digital input (DIGITAL 1, DIGITAL 2, DIGITAL 3, DAT 1) is selected.

9 ANALOG ADPT/TAPE2 monitor switch/indicator

ON:

The indicator lights: Press when listening to the playback sound or monitoring during recording of the tape deck connected to the ADPT/TAPE2 terminals, or when using an analog audio adaptor.

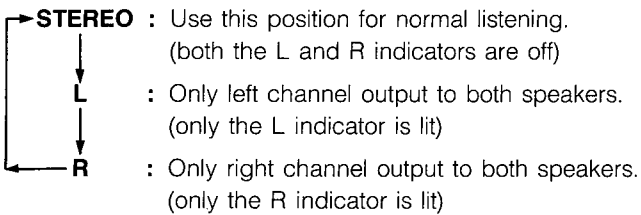
OFF:

The indicator goes off.

NOTE:
This switch does not operate when the DIRECT switch is in the on position.

10 MODE switch/indicators

The output changes as shown below each time the switch is pressed.



NOTE:
This switch does not operate when the DIRECT switch is in the on position.

11 LOUDNESS switch/indicator

Use when listening at low output levels.

ON:

The indicator lights: Boosts low and high frequencies to give added punch to playback even at low volume.

OFF:

The indicator goes off: Should normally be left in this position.

NOTE:
This switch does not operate when the DIRECT switch is in the on position.

12 DIRECT switch/indicator

Use this switch/indicator when you do not wish to pass the output from input terminal equipment through the various frequency adjusting circuits and adaptor terminals (ADPT/TAPE 2, BASS, TREBLE, BALANCE, LOUDNESS and MODE switch).

ON:

When the switch is in this position, the indicator lights and the signals input from the input terminals are reproduced without passing through the various frequency adjusting circuits. This results in flat, pure sound which is a more faithful reproduction of the input source.

OFF:

- When the switch is in this position, the indicator goes off and the signal passes through the various frequency adjusting circuits.
- When turned off, a few seconds is needed for the tone circuit to stabilize. The indicator flashes during this interval.

13 PHONO SELECTOR switch

Set in accordance with the type of cartridge used in your record turntable.

MM:

Set to this position when using a moving magnet cartridge, or a moving coil cartridge with a high output of 1 mV or more.

MC:

Set to this position when using a moving coil cartridge.

MM SUBSONIC/MC SUBSONIC:

Subsonic filter for moving coil or moving magnet cartridges, to cut ultralow frequency noise less than 17 Hz, generated when playing a warped record. When using a high-output moving coil cartridge, set this switch to MM or MM SUBSONIC.

14 MUTING switch/indicator

Use to temporarily cut sound volume.

ON:

The indicator lights: The sound volume will be cut off.

OFF:

The indicator goes off: The sound will return to its previous volume.

15 VOLUME CONTROL

Use to adjust volume level.

NOTE:
This unit is equipped with a circuit that attenuates the effect of the tone controls and loudness as the volume is turned up.

PANEL FACILITIES

16 ANALOG REC SELECTOR switch

Press to select recording signal. When set at other than SOURCE or OFF positions, signals of other equipment can be recorded during playback on the equipment selected by INPUT selector switches. The signals, output are to the TAPE 1 and TO DAT 1 terminals.

SOURCE:

To record the equipment selected by ANALOG and DIGITAL INPUT selector switches.

PHONO:

To record from PHONO terminals.

- When PHONO is selected, a few seconds is needed for the equalizer circuit to stabilize. The indicator flashes during this interval.

CD:

To record from CD terminals.

TUNER:

To record from TUNER terminals.

LINE 2:

To record from LINE 2 terminals.

LINE 1:

To record from LINE 1 terminals.

TAPE 1:

To record from TAPE 1 terminals.

OFF:

In this position, nothing from the REC terminals of TAPE 1 and TO DAT 1, will be emitted. Select it when not recording; the tape deck will be disconnected, improving sound quality.

17 ANALOG INPUT selector switch/indicators

Use to select playback source

PHONO:

Set to this position when listening to record playback on a turntable.

- When PHONO is selected, a few seconds is needed for the equalizer circuit to stabilize. The indicator flashes during this interval.

CD:

Set to this position when listening to a compact disc playback with a CD player.

TUNER:

Set to this position when listening to AM or FM broadcasts with a tuner.

LINE 2:

Set to this position when listening to the programs from a component connected to the LINE 2 terminals.

LINE 1:

Set to this position when listening to the programs from a component connected to the LINE 1 terminals.

TAPE 1:

For playback with a tape deck connected to the TAPE 1 terminals.

18 DIGITAL INPUT selector switch/indicators (DIGITAL INPUT)

DAT 1:

For listening to a Digital Audio Tape deck.

DIGITAL 3:

For play-back from the CD player or any other digital output component connected to the DIGITAL INPUT 3 terminal.

DIGITAL 2:

For play-back from the digital component connected to the DIGITAL INPUT 2 terminals.

DIGITAL 1:

For play-back from the digital component connected to the DIGITAL INPUT 1 terminals.

19 DIGITAL REC SELECTOR switch

The signal selected with this switch is emitted through the DAT 1 REC terminals.

Digital recording of CDs is not possible with this unit. Connect the analog input terminals of the Digital Audio Tape deck to the TO DAT 1 terminals of this unit. Set the ANALOG REC SELECTOR to SOURCE, and select the terminals to which the CD player is connected (DIGITAL 1, 2 or 3) with the DIGITAL INPUT selector switch.

DIGITAL 1:

To record the sound from a Digital Audio Tape deck or any other digital signal output component connected to the DIGITAL INPUT 1 terminals.

DIGITAL 2:

To record the sound from the digital audio component connected to the DIGITAL INPUT 2 terminals.

DIGITAL 3:

To record the sound from the digital audio component connected to the DIGITAL INPUT 3 terminals.

ADPT/DAT 2:

The digital signal input through the DIGITAL ADPT/DAT 2 IN/PLAY terminal is send to the DAT 1 OUT/REC terminal.

OFF:

In this position, no signal is emitted through the to DAT 1 OUT/REC terminals.

OPERATIONS

BEFORE BEGINNING OPERATIONS

Set the controls and switches as follows: See page 6-7.

1. Set the VOLUME CONTROL to minimum (∞).
2. Set the POWER switch to on.
3. Set the SPEAKERS switch to A, B or A + B.
4. Set the BALANCE control to the center position.
5. Set the ANALOG ADPT/TAPE 2 switch to off.
6. Set the DIGITAL ADPT/DAT 2 switch to off.

PLAYBACK PROCEDURES

For playback, with the input signal bypassing all adjustment circuits (mode switching, tape monitor [ADPT/TAPE 2], tone, balance, loudness), press the DIRECT switch ON.

1. Set the corresponding input selector or tape monitor switch according to the playback component.

Analog components

- For listening to records: [PHONO]
Set the PHONO SELECTOR switch to MM or MC, according to the cartridge in use.
- For listening to FM/AM broadcasts: [TUNER]
- For listening to compact discs: [CD]
- For listening to the sound from a component connected to the LINE terminals: [LINE 1] [LINE 2]
- For listening to tapes: [TAPE 1]
- For listening to sound from the component connected to the ADPT/TAPE 2 terminals: Set the DIRECT switch to off and the [ADPT/TAPE 2] switch to on.

Digital signal playback components

- For listening to the sound from the component connected to the DAT 1 terminals: [DAT 1]
 - For listening to the sound from a component connected to the DIGITAL INPUT terminals:
 - Terminal 1: [DIGITAL 1]
 - Terminal 2: [DIGITAL 2]
 - Terminal 3: [DIGITAL 3]
 - For listening to sound from the component connected to the DIGITAL ADPT/DAT 2 terminals: Select a digital input (DIGITAL 1-3, DAT 1) and set the [DIGITAL ADPT/DAT2] switch to on.
2. Operate the selected component to start playback.
 3. Adjust the VOLUME control.

RECORDING

ANALOG SIGNAL RECORDING

1. Set the tape deck to REC standby state.
Recording with the tape deck connected to the TAPE 1 or TO DAT 1 terminals:
Select the program source with the ANALOG REC SELECTOR switch.

- When the switch is set to SOURCE, the equipment corresponding to the activated DIGITAL INPUT selector or ANALOG INPUT selector switch will serve as program source.
 - Recording is not possible when the switch is set to OFF.
- Recording with a tape deck connected to the ADPT/TAPE 2 terminals:

The program source for the tape deck connected to ADPT/TAPE 2 is always selected with the DIGITAL INPUT selector or ANALOG INPUT selector switches. For recording, the DIRECT switch must be set to off.

2. Play back the program source and set the tape deck to recording.
 - For proper operation of the connected equipment refer to the corresponding operating instructions.

NOTES:

- When the TAPE 1, input is selected and the ANALOG REC SELECTOR switch is set to SOURCE or TAPE 1, no signals are output through the TAPE 1 REC terminals.
- When the DAT 1 input is selected and ANALOG REC SELECTOR to SOURCE, no signal is output through the TO DAT 1 terminals.

DIGITAL SIGNAL RECORDING

1. Set the Digital Audio Tape Deck to REC standby state.
Recording with the Digital Audio Tape deck connected to the DAT 1 terminals:
Select the program source with the DIGITAL REC SELECTOR switch.
Recording is not possible when the switch is set to OFF.
Recording with a Digital Audio Tape deck connected to the DIGITAL ADPT/DAT 2 terminals:
The program source for the Digital Audio Tape deck connected to DIGITAL ADPT/DAT 2 is always selected with the DIGITAL INPUT selector switches.
2. Play back the program source and set the Digital Audio Tape deck to recording.
 - For proper operation of the connected equipment refer to the corresponding operating instructions.

NOTE:

When the DAT 1 input is selected and the DIGITAL REC SELECTOR switch is set to DIGITAL ADPT/DAT 2, no signal is output through the DAT 1 REC terminals.

NOTE:

Digital signals from compact discs (CD) Digital Audio Tape (DAT) etc. with recording protection code cannot be recorded with a Digital Audio Tape deck (DAT).

OPERATIONS

MONITORING WHILE RECORDING

At the time of monitoring, set the INPUT selector or ADAPTOR switches of this equipment in the following way, to match the tape deck on which recording is being done.

- When recording on the tape deck from TAPE 1 terminals:
Set to TAPE 1.
- When recording on the tape deck from ADPT/TAPE 2 terminals:
Switch on ANALOG ADPT/TAPE 2.

NOTE:

With an analog 3-head tape deck, the sounds recorded on the tape can be confirmed with other equipment, and the signals being recorded (input signals) can be heard.

COPYING TAPES:

When two decks are used, you can record the sounds from one deck onto the other.

Application examples:

- To make a tape copy with contents identical to the original tape.

- To edit a recording of an FM broadcast in order to cut out unwanted commercials, recording only desired material onto another tape.

Recording When Using a Digital/Analog Adaptor

- For digital signal recording with a digital audio adaptor connected to the DIGITAL ADPT/DAT 2 terminals, set the DIGITAL REC SELECTOR switch to ADPT/DAT 2 and connect the recording equipment to the DAT 1 terminals.
For recording with an analog tape deck, the deck must be connected to the TAPE 1 or TO DAT 1 terminals.
- For recording with an analog audio adaptor (Graphic equalizer etc.) connected to the analog ADPT/TAPE 2 terminals, set the DIRECT switch to OFF and the ANALOG REC SELECTOR switch to SOURCE. The signals will be output through the TAPE 1 or TO DAT 1 terminals.

WHEN USING TWO TAPE DECKS

1. Load tapes for playback (pre-recorded tape) and recording into the respective tape decks.
2. Set switches as shown below according to the connected components.

Copy direction	INPUT selector	DIRECT switch	ANALOG REC SEL	DIGITAL REC SEL	ANALOG ADPT/TAPE 2	DIGITAL ADPT/DAT 2	Signal being recorded
TAPE 1 → ANALOG ADPT/TAPE 2	TAPE 1	OFF					ANALOG
ANALOG ADPT/TAPE 2 → TAPE 1	Other than TAPE 1	OFF	SOURCE		ON		
DAT 1 → DIGITAL ADPT/DAT 2	DAT 1						DIGITAL
DIGITAL ADPT/DAT 2 → DAT 1	Other than DAT 1			ADPT/DAT 2			
TAPE 1 → TO DAT 1	Other than DAT 1		TAPE 1				ANALOG
	TAPE 1		SOURCE				
ANALOG ADPT/TAPE 2 → TO DAT 1	Other than DAT 1	OFF	SOURCE		ON		
DAT 1 → TAPE 1	DAT 1		SOURCE			OFF	
DAT 1 → TAPE 2	DAT 1	OFF				OFF	
DIGITAL ADPT/DAT 2 → TAPE 1	DAT 1 DIGITAL 1 DIGITAL 2 or DIGITAL 3		SOURCE			ON	
DIGITAL ADPT/DAT 2 → TAPE 2		OFF				ON	
DIGITAL ADPT/DAT 2 → TO DAT 1	DIGITAL 1 DIGITAL 2 or DIGITAL 3		SOURCE			ON	

NOTE:

Press the correct input selector for the Digital Audio Tape deck. If this is omitted, recording will not be possible in some cases.

3. Operate the tape decks to begin copying.
Set the tape deck with the original (playback) tape to the playback mode, and set the tape deck with the tape to be recorded to the recording mode.

TROUBLESHOOTING

Incorrect operations are often mistaken for trouble or malfunctions. If you think that there is something wrong with this component, check the points below. Sometimes the trouble may lie in another component. Investigate the other components and electrical appliances being used. If the trouble cannot be rectified even after exercising the checks listed below, ask your nearest PIONEER authorized service center or your dealer to carry out repair work.

Symptom	Probable Cause	Remedy
No power supplied to unit	<ul style="list-style-type: none"> • Power plug is disconnected from outlet. • The component's power plug has been plugged into another component's power outlet (e.g. timer, etc.), but the power switch to that unit is off. 	<ul style="list-style-type: none"> • Insert plug firmly in to outlet. • Turn on power to other component.
No sound	<ul style="list-style-type: none"> • Connecting cords are disconnected from terminals, or connected incorrectly. • Terminals, or connecting cords' pin plugs are dirty. • The INPUT selector or ADPT/TAPE 2 switch selected do not match the component being played back. • Operation of other components is correct. • The SPEAKERS selector switch is set to "OFF". • MUTING switch on. 	<ul style="list-style-type: none"> • Connect firmly. • Clean terminals and plugs. • Set switches correctly (PHONO, TUNER, CD, LINE, DAT/TAPE 1, ADPT/TAPE 2). Set the ADPT/TAPE 2 to off. • Consult the operating instructions for the other components. • Set the switch to "A", "B" or "A + B". • Press MUTING switch off.
No sound from one speaker	<ul style="list-style-type: none"> • Connecting cords or speaker cords are disconnected on that side. • BALANCE control has been adjusted to one side. 	<ul style="list-style-type: none"> • Connect firmly. • Adjust BALANCE control to center position.
Can't record tapes	<ul style="list-style-type: none"> • The position of the REC SELECTOR switch is incorrect. • Connections are incorrect. • Operation of tape deck are incorrect. 	<ul style="list-style-type: none"> • Set switch correctly (See section "RECORDING TAPES"). • Re-connect properly. • Consult the operating instructions for the tape deck.
Can't perform digital recording	<ul style="list-style-type: none"> • Not possible due to INPUT selector position. 	<ul style="list-style-type: none"> • Refer to page 8.
Can't perform tape copying	<ul style="list-style-type: none"> • The position of the REC SELECTOR switch is incorrect. • Operation of tape decks are incorrect. • Not possible according to switch combinations. 	<ul style="list-style-type: none"> • Set switch correctly (See section "COPYING TAPES"). • Consult the operating instructions for the tape decks. • Refer to page 10 and check switch positions.
No sound when DIRECT switch is off	<ul style="list-style-type: none"> • ADPT/TAPE 2 switch is on. 	<ul style="list-style-type: none"> • Set the switch to off.

SPECIFICATIONS

Amplifier Section

[U.S. and Canadian models]

Continuous average power output is 120 watts* per channel, min., at 8 ohms from 20 Hertz to 20,000 Hertz with no more than 0.003% total harmonic distortion.

Continuous power output (both channels driven, measured by Audio Spectrum Analyzer)

20 Hz to 20 kHz, T.H.D. 0.005%, 4Ω ... 170W + 170W

20 Hz to 20 kHz, T.H.D. 0.003%, 6Ω ... 140W + 140W

20 Hz to 20 kHz, T.H.D. 0.003%, 8Ω ... 120W + 120W

[U.K. and other destination models]

Continuous power output (both channel drivew, measured by Audio Spectrum Analyzer)

20 Hz to 20 kHz, T.H.D. 0.005%, 4Ω 150W + 150W

20 Hz to 20 kHz, T.H.D. 0.003%, 8Ω 120W + 120W

DIN continuous power output (both channels driven)

1 kHz, T.H.D. 1%, 8Ω 150W + 150W

1 kHz, T.H.D. 1%, 4Ω 170W + 170W

Power bandwidth

0.05%, 8Ω 5 Hz — 60 kHz

Damping factor

(20 Hz to 20 kHz), 8Ω 60

Total harmonic distortion

(measured by Audio Spectrum Analyzer)

20 Hz to 20 kHz, 120W, 8Ω 0.003%

Input sensitivity/impedance

PHONO (MM) 2.5 mV/50 kΩ

PHONO (MC) 0.25 mV/40Ω

CD, TUNER, LINE, TAPE 150 mV/50 kΩ

PHONO overload level

1 kHz, T.H.D. 0.01% (MM/MC) 200 mV/20 mV

Output level/impedance

TAPE REC, ADAPTOR OUTPUT 150 mV/0.8 kΩ

Frequency response

PHONO (MM), 20 Hz to 20 kHz ±0.2 dB

PHONO (MC), 20 Hz to 20 kHz ±0.3 dB

CD, TUNER, LINE TAPE 1 Hz to 150 kHz +0
-3

Tone control (volume control set at -30 dB position)

BASS ±8 dB (100 Hz)

TREBLE ±8 dB (10 kHz)

Loudness contour (volume control set at -30 dB position)

+5 dB (100 Hz)/+3 dB (10 kHz)

Filter (SUBSONIC) 17 Hz (12 dB/oct.)

Signal-to-Noise ratio (IHF short circuit, A network)

PHONO (MM, 5 mV input/MC, 0.5 mV input) 95 dB/83 dB

CD, TUNER, LINE, TAPE 109 dB

Signal-to-Noise ratio (DIN, continuous power/50 mW)

PHONO (MM) 74 dB/65 dB

CD, TUNER, LINE, TAPE 92 dB/66 dB

DA Converter Section

Data format Digital audio interface format

Digital coaxial Input/Output

Rated input voltage/impedance 0.5 Vp-p/75Ω

Rated output voltage/impedance 0.5 Vp-p/75Ω

Digital Optical Input/Output

Rated Input Level -26 ~ -18 dB m (A_{1m}^{REF})

Rated Output Level -22 dB m (A_{1m}^{REF})

Audio Signal

Distortion rate (1 kHz, 2 V) 0.003%

S/N (1 kHz, 2 V) 98 dB

Frequency characteristics (10-20 kHz) ±0.5 dB

Power Supply/Miscellaneous

Power requirements

U.S. and Canadian models AC120V, 60 Hz

U.K. model a.c. 240V, 50/60 Hz

Other destination models AC 110V/120 — 127V

220V/240V (switchable), 50/60 Hz

Power consumption

U.S. and Canadian models 670W,

820 VA

U.K. model 1000W

Other destination models 1000W

Dimensions 457(W) × 475(D) × 173(H) mm

18(W) × 18-11/16(D) × 6-13/16(H) in

Weight 29.2 kg (64 lb 6 oz)

Accessories

Operating instructions 1

- Specifications and design subject to possible modification without notice due to improvements.

- * Measured pursuant to the Federal Trade Commission's Trade Regulation rule on Power Claims for Amplifiers.

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