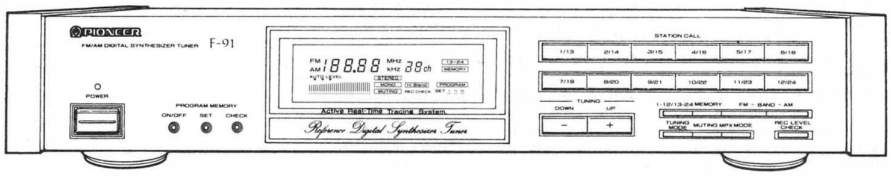
Operating Instructions

FM/AM DIGITAL SYNTHESIZER TUNER

F-91



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 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.

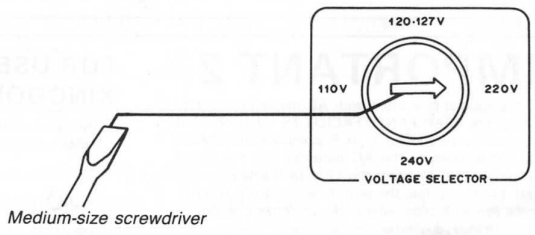
ATTENTION: POUR PREVENIR LES CHOCS ELECTRIQUES EN PAS UTILISER CETTE FICHE POLARISEE AVEC UN PROLONGATEUR UNE PRISE DE COURANT OU UNE AUTRE SORTIE DE COURANT, SAUF SI LES LAMES PEUVENT ETRE INSEREES A FOND SANS EN LAISSER AUCUNE PARTIE A DECOUVERT.

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.

You will find the line voltage selector switch on the rear panel. Before your model is shipped from the factory, the switch is set to the power requirements of the destination; nevertheless, you should check that it is set properly before plugging the power cord into the AC outlet. 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. Before adjusting, disconnect the power cord.

1. Provide yourself with a medium-size screwdriver.
2. Using the screwdriver turn until the arrow points to the voltage level of your area.



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The future of sound and vision.

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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, benzine, 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.

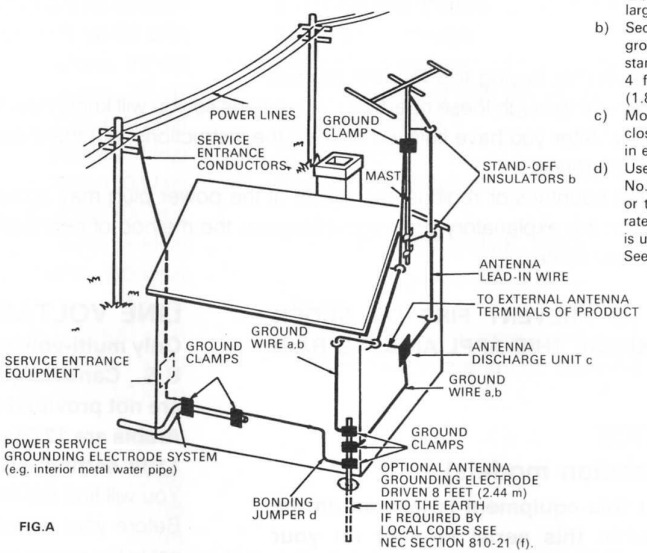


FIG.A

a) Use No. 10 AWG (5.3 mm^2) copper, No. 8 AWG (8.4 mm^2) aluminum, No. 17 AWG (1.0 mm^2) 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 mm^2) copper, or the equivalent, when a separate antenna-grounding electrode is used.
See NEC Section 810-21 (j).

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
RISK OF ELECTRIC SHOCK
DO NOT OPEN

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.

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FEATURES

- **IF Circuit with Active Real-time Tracing System**

With the newly developed IF circuit, interference signals are removed without impairing sound quality.

- **D.D.D. (Digital Direct Decoder) Type III, for a high (95 dB, DIN: 77 dB) SN ratio**

- **Random 24-stations Presetting**

A total of 24 FM and AM stations can be preset into the memory circuit.

- **Convenient Memory Function for Programmed Recording**

Three different stations can be received in sequence as the tuner is turned off and on again.

- **Even the slightest deterioration of sound quality is avoided by the thorough use of anti-vibration parts**
  - Parts resin-mounted within oscillator block
  - Honeycomb chassis
  - Large insulator

CHECKING OUT THE ACCESSORIES

AM loop antenna



FM T-type antenna

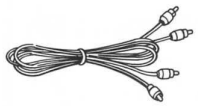
- *for U.K. model*



- *for other destination models*



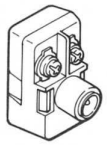
Connecting cord with pin plug



Control cord *



Antenna adaptor *
300Ω—75Ω

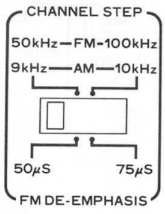


* Not attached on U.K. model

CHANNEL STEP/FM DE-EMPHASIS SWITCH

Only multi-voltage models are provided with this switch.

The unit has been factory preset to the channel allocation and de-emphasis value for the area in which it is to be sold. If these values are set incorrectly, the frequency display may stop at the wrong frequency, or sound may be distorted, resulting in an inability to reproduce reception signals at their proper sound quality. For this reason, be sure to confirm that the values are set correctly before first using the unit.



[100 kHz/10 kHz/75 μs] position:
Set to this position for areas with FM reception step of 100 kHz, AM 10 kHz, and de-emphasis 75 μs.

[50 kHz/9 kHz/50 μs] position:
Set to this position for areas with FM reception step of 50 kHz, AM 9 kHz, and de-emphasis of 50 μs.

NOTE:
When unsure about the channel allocation and de-emphasis values for your area, consult your dealer for correct information.

The channel step will not change if this switch is operated with the power ON.
After operating this switch, if you turn the POWER switch OFF and then ON again the channel step will switch over. If you operate this switch, the stations that were memorized before the switch was operated will be erased.

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CONNECTIONS

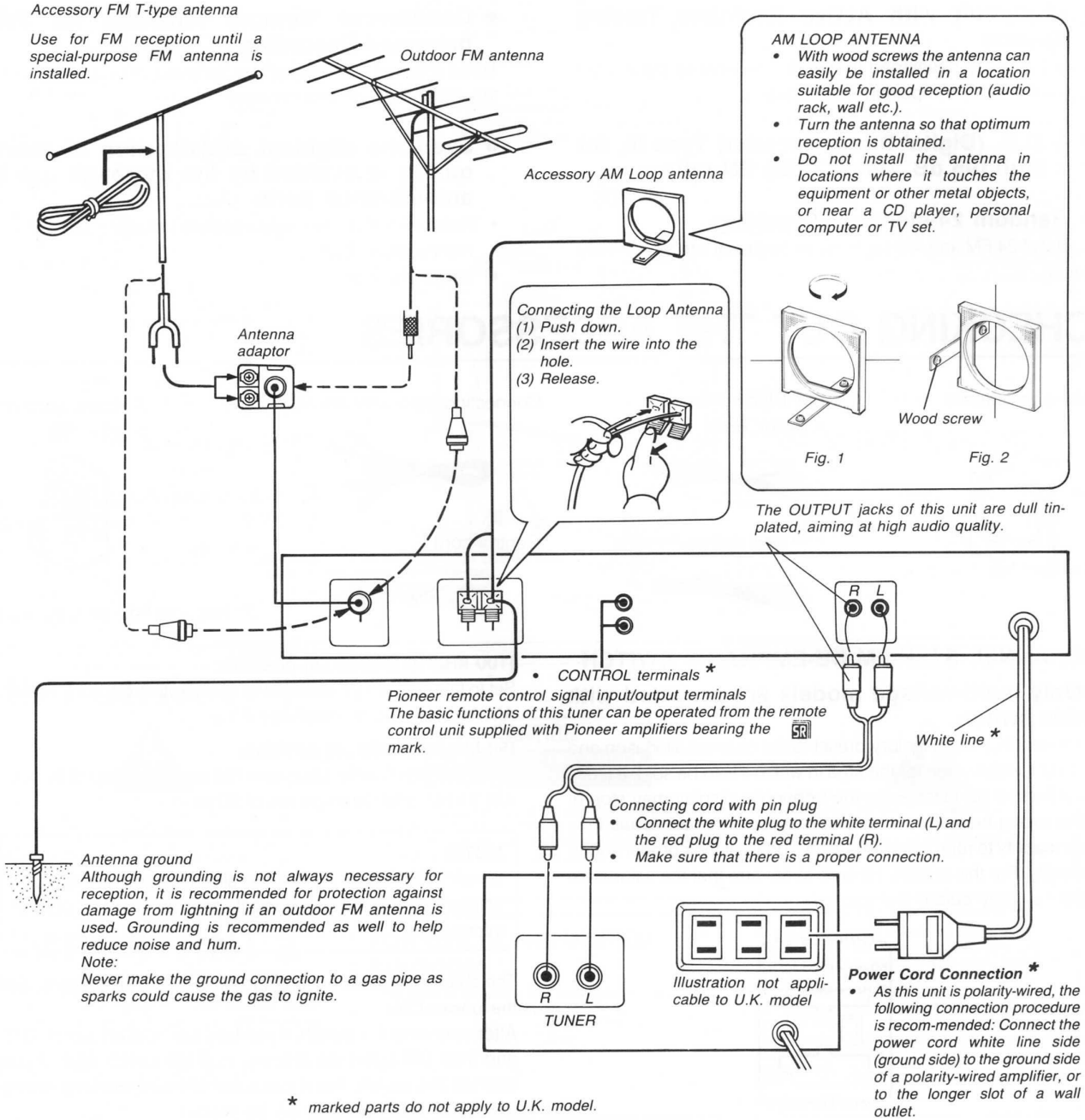
INDOOR VS. OUTDOOR ANTENNAS

If FM reception is poor when using the accessory T-type antenna, it means that you are not living in a good reception area. In this case, setting up a good outdoor FM antenna will solve this problem.

NOTE:
Consult your dealer as to the selection and actual installation of the FM antenna.

AM LOOP ANTENNA

NOTE:
Any contact of the loop antenna with metal objects will result in impaired sensitivity and a deterioration in reception.



* marked parts do not apply to U.K. model.

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OUTDOOR AM ANTENNAS

The accessory AM loop antenna is quite sufficient if you live in a strong-signal area. However, an outdoor AM antenna should be erected if surrounding objects are interfering with reception, or if the stations are distant and their signals are weak.

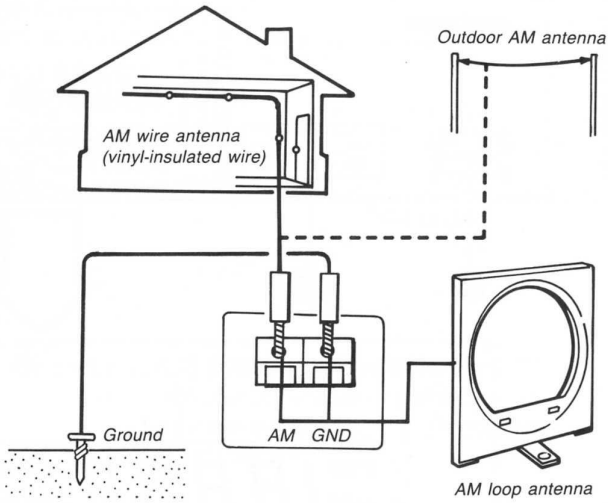
NOTE:
Do not detach the AM loop antenna when using an outdoor AM antenna.

GROUNDING

Grounding is recommended if reception of FM programs is impaired by noise. To ground, connect a thick polyvinyl wire to the GND terminal and attach the other end to a metal water pipe or grounding bar, or wind it around a copper plate and bury it.

NOTE:
Never connect a wire to a gas pipe for grounding as there is the danger of a explosion in case of lightning.

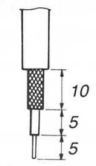
Connecting the outdoor AM antenna



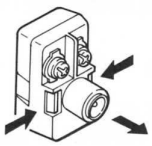
ATTACH THE ANTENNA ADAPTOR (Antenna adaptor is not supplied in U.K. model.)

For 75Ω coaxial cable

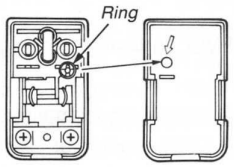
1. Strip off the end of the cable as shown below.
2. Remove the cover.



Unit: mm

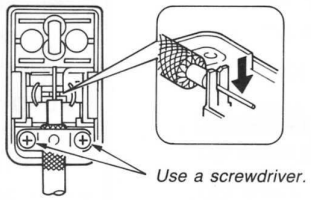

Press both sides at the same time.

3. Remove the ring. (To convert it into a 75Ω adapter.)

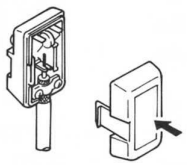


Place the removed ring on the ring holder on the cover.

4. Connect the cable as shown below.

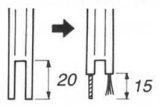

Use a screwdriver.

5. Put the cover back on.



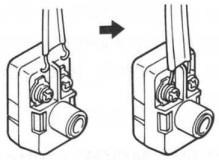
For 300Ω parallel feeder

1. Strip off the insulation of the feeder wire as shown below.



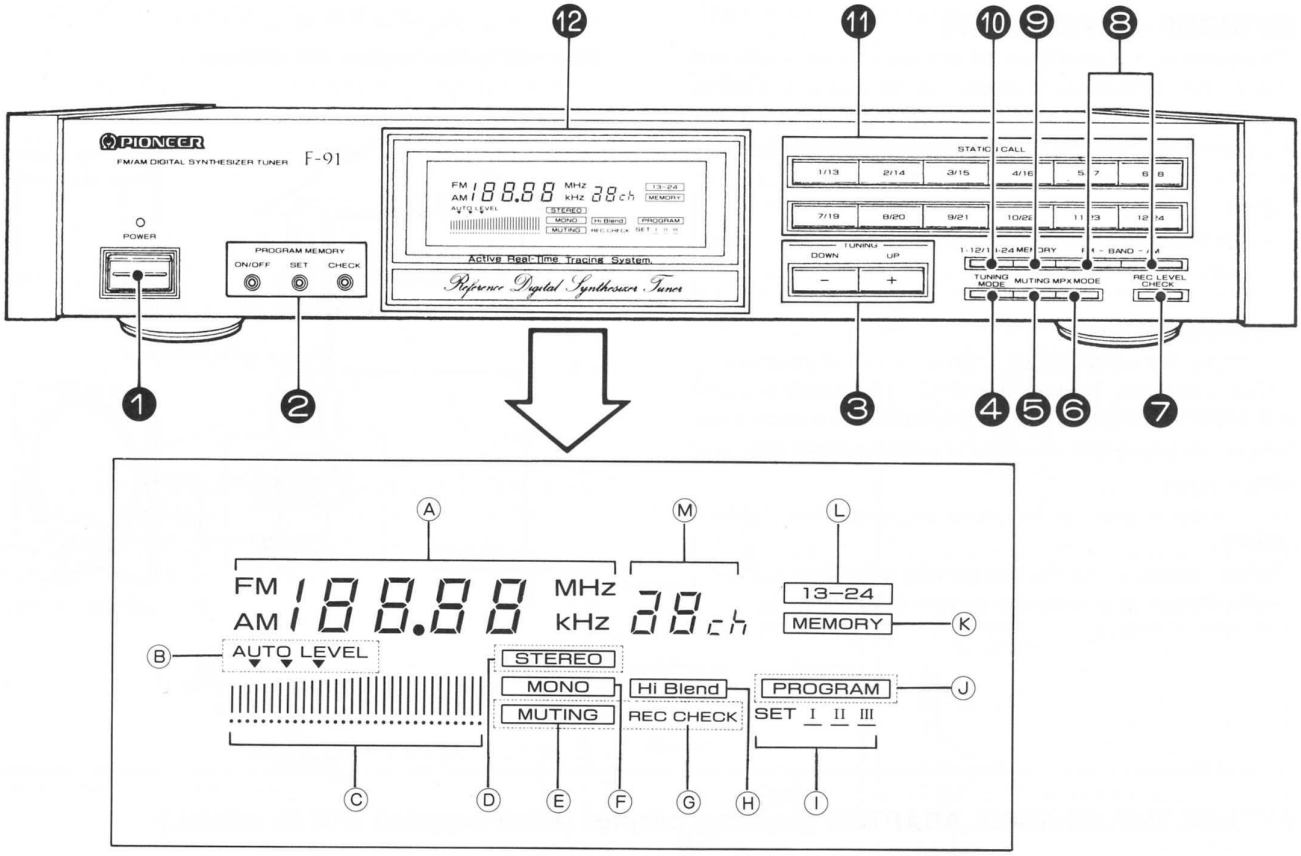
Unit: mm

2. Connect the wire to the 300Ω terminal.


Loosen the screws, twine the wire around and tighten the screws.

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FRONT PANEL FACILITIES



❶ POWER switch/Indicator

- Press to turn power on . . . . . on
- Press again to turn power off . . . . . off

❷ PROGRAM MEMORY buttons

Convenient for programmed recording.

ON/OFF:

Set to ON, and the three memorized stations will be recalled in sequence as power is turned off and on again.

SET:

Press to set the program memory contents.

CHECK:

Press to confirm the program memory contents.

❸ TUNING UP/DOWN switches

Use these switches to tune in broadcasting stations. Press UP (+) to receive a station whose frequency is higher than the displayed frequency, and DOWN (−) to tune in to a lower frequency station.

❹ TUNING MODE switch

To select the tuning mode. It changes each time the switch is pressed:

MANUAL:

Frequency changes by one step each time one of the TUNING UP/DOWN switches is pressed. When the switch is held depressed the frequency will change continuously.

— AUTO LEVEL indicator off

AUTO 1:

Press one of the TUNING UP/DOWN switches once. The unit will automatically scan the frequency band and stop when if finds a station (a too weak signal station will be ignored). In this case use MANUAL tuning mode.

— [▼] AUTO LEVEL indicator lights up

AUTO 2:

Tuning will stop at stations with more than medium signal strength.

— [▼] AUTO LEVEL indicator lights up

AUTO 3:

Tuning will only stop at strong signal stations.

— [▼] AUTO LEVEL indicator lights up

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❺ MUTING switch

The muting circuit is designed to remove the typical FM interstation noise generated when moving away from in-tune frequencies, but it can also prevent reception of distant or weak signal stations. In this case, press the MUTING switch off and tune into the desired station. Normally, leave this switch on (MUTING indicators lit).
This switch does not affect AM reception.

NOTE:
The setting of this switch is memorized together with the station in the station memory.

❻ MPX (multiplex) MODE switch

Mode changes as follows each time this switch is pressed:

STEREO:

For listening to FM stereo broadcasts (the indicator lights up, when a stereo broadcast is received. The indicator also lights, when a stereo broadcast is received in Hi-Blend Mode.).
— [STEREO] indicator lights up



MONO:

To receive stereo broadcasts in monaural.
— [MONO] indicator lights up



Hi-Blend:

Select this position when the stereo signal is noisy. High frequencies will be blended, improving sound quality.
— [Hi-Blend] indicator lights up



NOTE:
The setting of this switch is memorized together with the station in the station memory.

❼ REC LEVEL CHECK switch

To set the tape deck recording level when recording FM broadcasts. Press this switch on (the REC CHECK indicator will start flashing), and an FM recording standard level signal (frequency: approx. 330 Hz; level: equivalent to 50% modulation FM) will be continuously delivered from the OUTPUT jacks. Adjust the tape deck level meter reading to approx. −2 dB to obtain an appropriate recording level. Always press this switch off after setting the recording level (the REC CHECK indicator will go off).

❽ BAND selector switches

FM:
Press to receive FM broadcasts.

AM:
Press to receive AM broadcasts.

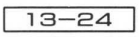
❾ MEMORY switch

Press to memorize preset stations.
The [MEMORY] indicator will remain lit for about 5 seconds. Press the desired STATION CALL switch to memorize it during this period.



❿ [1-12/13-24] Station call selector switch

Use this selector to choose between channels 1-12 and 13-24 when memorizing station frequencies or recalling already stored stations. The [13-24] indicator lights up when channels 13-24 are selected.



⓫ STATION CALL switches

Use these switches to preset stations and to receive already preset stations.

⓬ Operation Display

Ⓐ Shows reception band and frequency.
Ⓑ When the TUNING MODE switch is set to AUTO 1-3, the mark ▼ above the signal indicator indicates the level set for automatic tuning.
Ⓒ Signal indicator
Ⓓ Lights up when a stereo broadcast is received.
Ⓔ Stays lit while muting is occurring.
Ⓕ Stays lit while the MPX MODE switch is set to MONO.
Ⓖ Flashes when the REC LEVEL CHECK switch is set to on.
Ⓗ Stays lit while the MPX MODE switch is set to Hi-Blend.
Ⓘ Shows the condition of the program memory mode.
Ⓙ Stays lit while the PROGRAM MEMORY ON/OFF switch is on.
Ⓚ Lights for about 5 seconds when the MEMORY switch is pressed.
Ⓛ Lights up when the station call selector switch is set to 13-24.
Ⓜ When a STATION CALL switch is pressed, it will show the corresponding channel number.

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LISTENING TO BROADCASTS

Listening to FM or AM Broadcasts

1. **Turn the POWER switch ❶ ON.**
2. **Select the manual or automatic tuning mode with the TUNING MODE switch ❹.**
3. **Depress the desired BAND selector switch ❽.**
   - For FM broadcasts, the "FM" and "MHz" indicators will light.



   - For AM broadcasts, the "AM" and "kHz" indicators will light.



4. **Press the "+" or "–" TUNING UP/DOWN switch ❸.**

   For automatic tuning

   The unit will automatically locate a station and stop. To change stations, press the switch again.

   For manual tuning

   Press and release immediately.
   Frequency will change 1 step each time the siwtch is pressed. Match it to the frequency of the desired station.
   Keep the switch pressed to obtain a continuous frequency change.

5. **To receive another station in the same band, repeat step 4. To receive a station in another band, repeat steps 3 and 4.**

Note on Automatic Tuning

- Because of the high sensitivity of this unit, it may automatically stop even with very weak overseas stations. The same can happen with city noise.

The Signal Indicator

When not even one segment of the signal indicator is lit, reception is not possible even if the tuning frequency is correct. This is because the antenna terminal input is too weak. Check whether the antenna cable is firmly connected. If it is, consult your nearest dealer and install an outdoor antenna.

Presetting FM and AM Stations

Up to a total of 24 FM and AM stations can be preset for onetouch tuning.

1. **Press the POWER switch ❶ on.**
2. **Select the desired TUNING MODE (❹).**
3. **Use the BAND selector switch ❽ to select either the FM or AM reception band.**
   - For FM broadcasts, the "FM" and "MHz" indicators will light.



   - For AM broadcasts, the "AM" and "kHz" indicators will light.



4. **Tune in the desired station with the TUNING switches ❸.**

- The present mode selected with the MPX MODE switch ❻ (STEREO, Hi-Blend or MONO) and MUTING switch ❺ (on or off) will be memorized together with the station.

5. **Select channels 1-12 or 13-24 with the station call selector switch ❿.**
6. **Press MEMORY switch ❾.**

- The [MEMORY] indicator will light up for about 5 seconds.
- Memory storage is not possible once the light goes off. In this case, press the MEMORY switch again.
- If the switch is pressed again with the display lit, the memory function will be canceled.

7. **While the indicator is lit up, press the desired STATION CALL switch ⓫.**

- The selected preset channel will be displayed, and the [MEMORY] indicator will go off. This completes the preset procedure.
- Write down the preset stations in the STATION CALL switches "Memo" (page 10) and use it as a reminder.

Notes on Preset

- If a station is memorized with the STATION CALL switch ⓫ activated, the previous contents are erased and the new data is stored in memory.
- Preset stations are not erased for about a month, even when turning the POWER switch off.
- When the unit is not going to be used for a long time, pull out the power cord. Preset stations will remain in memory for about a month, the power supplied by the backup capacitor.
- If preset stations get erased, repeat the preset procedure from the beginning.

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Receiving Preset Stations

- The procedure above permits an easy and precise radio reception.
- Broadcast stations must be preset first following the instructions under "Presetting FM and AM Stations".

1. **Press the POWER switch ❶ on.**
2. **Select channels 1-12 or 13-24 with the station call selector switch ❿.**
3. **Press the STATION CALL switch ⓫ corresponding to the desired station.**

Last Station Memory

- When turning the POWER switch on, the last station received before turning power off is tuned in.
- When the BAND selector switch is pressed with the power on, the station received with the last band change will be tuned in.
- While the PROGRAM MEMORY ON/OFF switch is on, stations stored in the program memory are received.

USING THE PROGRAM MODE MEMORY

The three stations stored in the program mode memory are recalled in sequence as power is turned repeatedly off and on again. Any desired frequency can be memorized.

Example:

This function can be used for absent recording of three different stations with an audio timer.

A Station . . . . 9:00 a.m — 10:00 a.m (PROGRAM I)
B Station . . . . 10:30 a.m — 11:30 a.m (PROGRAM II)
C Station . . . . 1:00 p.m — 3:00 p.m (PROGRAM III)

1. Storing stations in the program mode memory.

Procedure	Display	Tuner Operation
(1) Press the ON/OFF button to turn the PROGRAM indicator on. ON/OFF ○ ↑ SET ○ CHECK ○	PROGRAM	The program mode is enterd.
(2) Press the SET button. ON/OFF ○ SET ○ ↑ CHECK ○	PROGRAM SET _ ↑ Cursor	Memory standby.
(3) Press the STATION CALL switch corresponding to the station you want to store in PROGRAM I (for example, channel 6). 6/18	PROGRAM SET I _	Storage in PROGRAM I completed.
(4) Press the STATION CALL switch corresponding to the station you want to store in PROGRAM II (for example, channel 8). 8/20	PROGRAM SET I II _	Storage in PROGRAM II completed.
(5) Press the STATION CALL switch corresponding to the station you want to store in PROGRAM III (for example, channel 24). * 13-24 → 12/24 * Press the station call selector first.	PROGRAM I II III	When storage in PROGRAM III is completed, '_' moves to 'I', indicating that the station in PROGRAM I will be recalled when turning power off and on again.

- If you press the SET switch again, the contents of program memories I, II and III will be erased.

2. Activating the program memory

Procedure	Display	Tuner Operation
(1) Press the ON/OFF button to turn the PROGRAM indicator on. ON/OFF ○ ↑ SET ○ CHECK ○	PROGRAM I II III	Starts program memory operation.
• When power is turned ON by an audio timer, etc...	PROGRAM I II III	The station stored in PROGRAM 'I' (channel 6) is received and '_' moves to 'II', indicating that II will be recalled when power is turned off and on again.

After this, stations will be recalled in the following sequence each time power is turned off and then on: II (CH8) → III (CH24) → I → II → III, etc.

- When power is turned on with the 'PROGRAM' indication off (program mode memory not operating), the last station received before turning power off will be received.

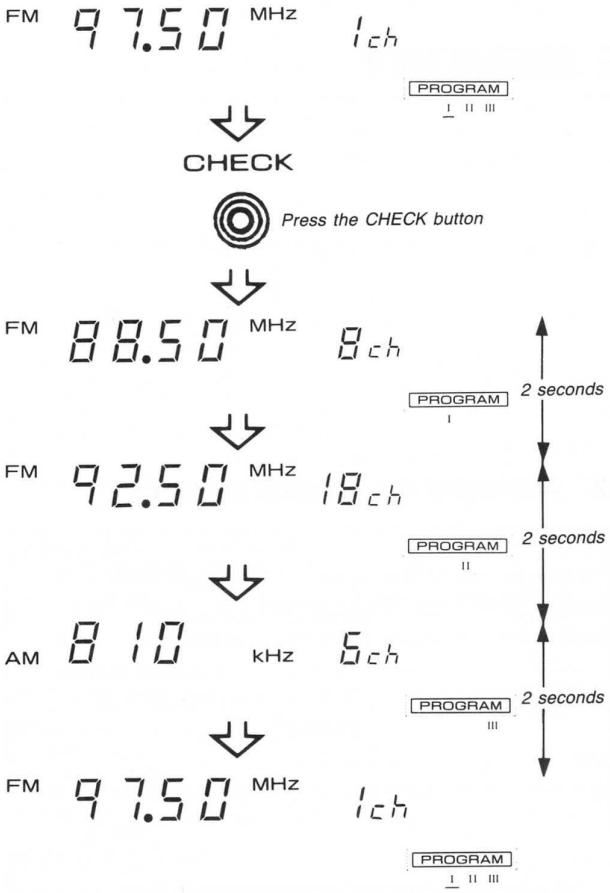
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3. Checking memory contents

Press the CHECK button once, and the programs stored in the program memory will be received for 2 seconds each with sound will be output. After completing one cycle, the unit will return to the condition before the CHECK button was pressed. The PROGRAM indicator flashes during the checking.

Example:

Let's suppose 88.5 MHz has been memorized into 'I', 92.5 MHz into 'II' and 810 kHz into 'III'. FM 97.5 MHz is being received at present.



4. For memorizing just one or two programs

Enter the desired station(s), then press the SET button.

Example:

When memorizing just two stations.

Procedure	Display	Tuner Operation
(1) Press the ON/OFF button to turn the PROGRAM indicator on. ON/OFF ○ ↑ SET ○ CHECK ○	PROGRAM	The program mode is enterd.
(2) Press the SET button. ON/OFF ○ SET ○ ↑ CHECK ○	PROGRAM SET _	Memory standby.
(3) Press the STATION CALL switch corresponding to the station you want to store in program I (for example, channel 2). 2/14	PROGRAM SET I _	Storage in Program I completed.
(4) Press the STATION CALL switch corresponding to the station you want to store in program II (for example, channel 5). 5/17	PROGRAM SET I II _	Storage in Program II completed.
(5) Press the SET button. ON/OFF ○ SET ○ ↑ CHECK ○	PROGRAM I II	When storage of both stations is completed, the unit will enter the standby mode.

- After activating the program 'SET', programs I → II → I → II . . . . . will be alternately received each time power is turned off and on.
- If you press the CHECK button instead, stations I and II will be received for 2 seconds each, then the unit will return to the station it was receiving before.
- If you press the SET button twice in a row, the SET mode will be canceled. (The previously input program will be erased.)
- The SET mode is canceled when pressing any button except the STATION CALL switches, CHECK button and the station call selector.
- The SET and CHECK buttons only operate when program MEMORY is on.
- The CHECK button cannot be used in the SET mode.

STATION CALL Switches "Memo"

It is recommended that you make a note of the preset stations.

STATION CALL Switch No.	1	2	3	4	5	6	7	8	9	10	11	12
Name of broadcast station												
Frequency												

STATION CALL Switch No.	13	14	15	16	17	18	19	20	21	22	23	24
Name of broadcast station												
Frequency												

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TROUBLESHOOTING

Incorrect operations are often mistaken for trouble and 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	Trouble	Remedy
No power (POWER switch is on)	• Has the power cord been disconnected?	• Reconnect the power cord.
No sound.	• Have any of the output cords been disconnected or incorrectly connected?	• Connect them properly to the TUNER terminals on the amplifier.
	• Has the antenna been disconnected or is the connection loose?	• Connect the antenna properly.
	• Has the power cord been disconnected for or power switch to off more than a month? (The MEMORY function will cancel itself out after about a month.	• Preset MEMORY.
Noise	• Is the station properly tuned in to the correct frequency?	• Tune the station in correctly.
	• Has the antenna been disconnected or is the connection loose?	• Connect the antenna properly.
Sound distortion	On the FM band • The T-type FM antenna has not been extended, or it is not properly orientated.	• Extend both ends fully, and face it in the direction giving best reception.
	• Are the signals weak and reception poor?	• Replace the supplied T-type FM antenna for an outdoor antenna.
		• Set the MPX MODE switch to MONO. (The broadcast will be received in monaural).
	• Static from other appliances (particularly automobiles) or multipath reflection (radio waves beamed off mountains and tall buildings hence not received directly.)	• Try changing the antenna installation place. If you are using an outdoor antenna, move it away from the street and/or change the connector cable for a 75Ω coaxial cable.
	On the AM band • Poor positioning of AM loop antenna?	• Change antenna direction, and set it in the position giving best reception.
	• The supplied AM loop antenna is in contact with the unit.	• Move the loop antenna away from the unit.
	• Are the signals weak and reception poor?	• Install and connect an external AM antenna, and ground the unit.
	• Noise from other electrical appliances (fluorescent lights/motors)	• Stop using the noise-generating equipment, or move it away.
FM stereo broadcasts not received in stereo.	• Antenna input is insufficient because of weak broadcast signals.	• Use a multi-element FM antenna.
	• The unit is not correctly tuned to the frequency of the broadcast station.	• Tune the correct frequency in.
	• MPX MODE switch is set to MONO.	• Set the MPX MODE switch to STEREO or Hi-Blend

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SPECIFICATIONS

FM Tuner Section

Frequency range . . . . . 87.5 MHz to 108 MHz
Usable Sensitivity . . . . . Mono; 9.8 dBf, IHF (0.85 μV/75Ω)
50 dB Quieting Sensitivity
U.S. and Canadian models . . . . . .
Mono; 12.8 dBf, IHF (1.2 μV/75Ω)
Stereo; 34.8 dBf, IHF (15 μV/75Ω)
U.K. and other destination's models . . . . . .
Mono; 15.3 dBf, IHF (1.6 μV/75Ω)
Stereo; 35.9 dBf, IHF (17 μV/75Ω)
Sensitivity (DIN) . . . . . Mono; 0.75 μV/75Ω
Stereo; 20 μV/75Ω
Signal-to-Noise Ratio
U.S. and Canadian models . . . Mono; 95 dB (at 80 dBf)
Stereo; 88 dB (at 80 dBf)
U.K. and other destination's models . . . . . .
Mono; 95 dB (at 80 dBf)
Stereo; 87 dB (at 80 dBf)
Signal-to-Noise Ratio (DIN) . . . . . Mono; 77 dB
Stereo; 73 dB
Distortion (at 80 dBf) . . . . . Mono; 0.015% (100 Hz)
0.009% (1 kHz)
0.02% (10 kHz)
Stereo; 0.02% (100 Hz)
0.02% (1 kHz)
0.07% (10 kHz)
Capture Ratio . . . . . 0.8 dB
Alternate Channel Selectivity . . . . . 85 dB (400 kHz)
Stereo Separation . . . . . 65 dB (1 kHz)
55 dB (20 Hz to 10 kHz)
Frequency Response . . . . . $^{+0.2}_{-0.8}$ dB (20 Hz to 15 kHz)
Image Response Ratio . . . . . 70 dB
IF Response Ratio . . . . . 100 dB
AM Suppression Ratio . . . . . 70 dB
Spurious Response Ratio . . . . . 80 dB
Subcarrier Product Ratio . . . . . 60 dB
Muting Threshold . . . . . 25.2 dBf (5 μV/75Ω)
Antenna Input . . . . . 75 unbalanced

AM Tuner Section

Frequency range . . . . . 531 kHz to 1602 kHz (Step 9 kHz)
530 kHz to 1700 kHz (Step 10 kHz)
Sensitivity (IHF, Loop antenna) . . . . . 150 μV/m
Selectivity . . . . . 40 dB
Signal-to-Noise Ratio . . . . . 50 dB
Image Response Ratio . . . . . 40 dB
IF Response Ratio . . . . . 60 dB
Antenna . . . . . Loop Antenna

Audio Section

Output (Level/Impedance)
FM (100% MOD) FIXED . . . . . 650 mV/0.9 kΩ
AM (30% MOD) FIXED . . . . . 150 mV/0.9 kΩ

Miscellaneous

Power Requirements
U.S. and Canadian models . . . . . AC120V, 60 Hz
U.K. model . . . . . a.c.240V- ,50/60 Hz
Other destination's models . . . . . .
AC110V/120-127V/220V/240V (switchable), 50/60 Hz
Power Consumption 25W
Dimensions . . . . . 457 (W) × 85 (H) × 316 (D) mm
18 (W) × 3-3/8 (H) × 12 - 7/16 (D) in
Weight (without package) . . . . . 5.2 kg (11 lb 8 oz)

Furnished Parts

FM T-type Antenna 1
AM Loop Antenna 1
Connecting Cord with Pin Plugs 1
Antenna adaptor * 1
Control cord * 1
Operating Instructions 1

* Not attached on U.K. model.

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

PIONEER ELECTRONIC CORPORATION 4-1, Meguro 1-Chome, Meguro-ku, Tokyo 153, Japan
PIONEER ELECTRONICS [USA] INC. 2265 East 220th Street Long Beach, California 90810 U.S.A.
P.O. BOX 1720 Long Beach, California 90801-1720 U.S.A.
PIONEER ELECTRONICS OF CANADA, INC. 505 Cochrane Drive, Markham, Ontario L3R 8E3 Canada
PIONEER ELECTRONIC [EUROPE] N.V. Keetberglaan 1, 2740 Beveren, Belgium TEL: 03/775·28·08
PIONEER ELECTRONICS AUSTRALIA PTY. LTD. 178-184 Boundary Road, Braeside, Victoria 3195, Australia TEL: [03] 580-9911

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