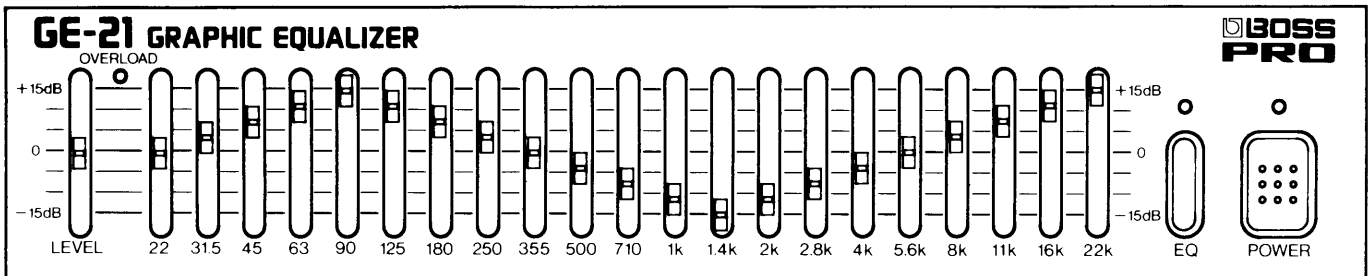




# GE-21 GRAPHIC EQUALIZER

Owner's Manual

*[Faint, illegible text, likely bleed-through from the reverse side of the page.]*



Thank you, and congratulations on your choice of the BOSS [GE-21] 21-Band Graphic Equalizer.

To make sure you enjoy the complete range of functions the GE-21 provides, and to ensure satisfaction for years to come, please take the time to completely read this Owner's Manual before starting out.

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## ■ Important Notes

When using an AC adaptor, be sure that it is one supplied by the manufacturer. Use of any other power adaptor could result in damage, malfunction, or electric shock.

### Power Supply

- When making any connections with other devices, always turn off the power to all equipment first; this will help prevent damage or malfunction.
- Do not use this unit on the same power circuit with any device that will generate line noise, such as a motor or variable lighting system.
- The power supply required for this unit is shown on its nameplate. Ensure that the line voltage of your installation meets this requirement.
- Avoid damaging the power cord; do not step on it, place heavy objects on it etc.
- When disconnecting the AC adaptor from the outlet, grasp the plug itself; never pull on the cord.
- If the unit is to remain unused for a long period of time, unplug the power cord.

### Placement

- Do not subject the unit to temperature extremes (eg. direct sunlight in an enclosed vehicle). Avoid using or storing the unit in dusty or humid areas or areas that are subject to high vibration levels.
- Using the unit near power amplifiers (or other equipment containing large transformers) may induce hum.

## ■ Features

- The unit provides 21 bands of graphic equalization, in half-octave steps. Since it covers a range of 22 Hz through 22kHz, broad ranging, yet precisely focussed equalization is assured.
- Equalization can be switched In/Out as desired. Moreover, a foot switch can also be used for this purpose.
- Amplitudinal differences (between equalization "In" and "Out") are compensated for by the "Total Level Control" function.
- An Overload indicator facilitates the making of settings which are the most appropriate, and offer the least amount of distortion.
- By employing the optional RAD-50 Rack Mount Adaptor, two units can be combined together as a set which fits into a 1U space on a standard 19-inch rack.

- This unit may interfere with radio and television reception. Do not use this unit in the vicinity of such receivers.

### Maintenance

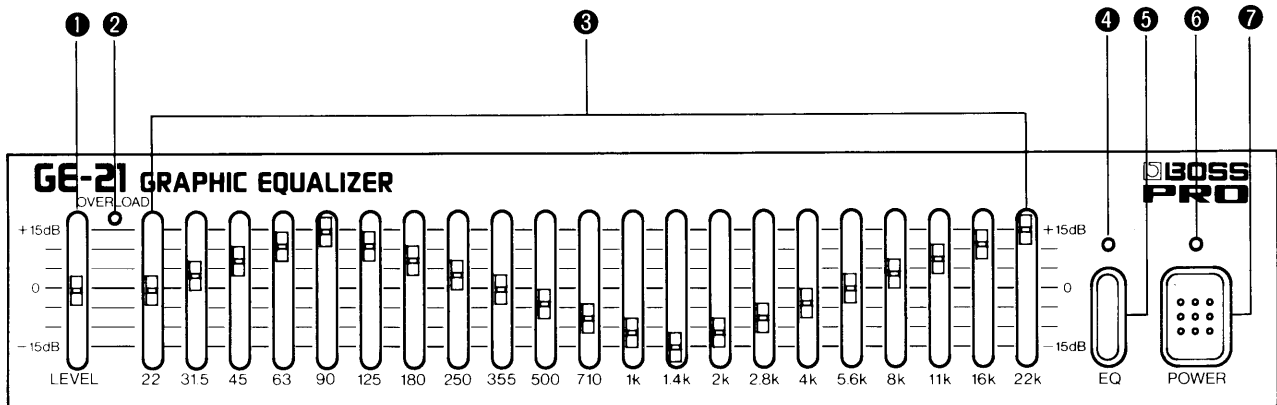
- For everyday cleaning wipe the unit with a soft, dry cloth (or one that has been slightly dampened with water). To remove stubborn dirt, use a mild neutral detergent. Afterwards, be sure to wipe the unit thoroughly with a soft, dry cloth.
- Never use benzene, thinners, alcohol or solvents of any kind, to avoid the risk of discoloration and/or deformation.

### Additional Precautions

- Protect the unit from strong impact.
- Do not allow objects or liquids of any kind to penetrate the unit. In the event of such an occurrence, discontinue use immediately. Contact qualified service personnel as soon as possible.
- Never strike or apply strong pressure to the display.
- Before using the unit in a foreign country, consult with qualified service personnel.
- Should a malfunction occur (or if you suspect there is a problem) discontinue use immediately. Contact qualified service personnel as soon as possible.

# PANEL DESCRIPTIONS

## <Front Panel>



### ① Level Control Slider

Provides compensation for the difference in amplitude between times the equalizer is switched “In” and when switched “Out”. While equalization is employed, the amplitude can be varied by  $\pm 15\text{dB}$ .

### ② Overload Indicator

Lights (red) whenever the input or output signals are too great.

**\* This indicator lights 6dB prior to the clipping point (the level at which distortion starts to occur).**

Should this indicator light too frequently, carry out the steps below. This will ensure that the overload indicator lights only on input peaks.

- Lower the output level of the device you have connected to the Input jack.
- Move the Level switch ① on the unit’s rear panel to the “+4dBm” position.
- Using the Level Control Slider ①, lower the output level.

### ③ Equalizer Control Sliders

These sliders represent a division of the audio frequencies (from 22Hz through 22kHz) in 21 half-octave “bands”. Each slider allows boosting or cutting of the level, centering on a particular frequency.

### ④ Equalizer Indicator

Lights when the equalizer is “In”. This indicator allows you to confirm the status (In/Out) of the equalizer.

### ⑤ Equalizer Switch

This switch is used to switch the equalizer “In” and “Out”. When the switch is In (—), the input signal has equalization applied to it when it is output. When the switch is Out (—), the signal is output directly (bypassed), without any equalization.

Also useful for comparing the sound quality when equalization is applied and when it is bypassed, and when compensating for the difference in volume.

### ⑥ Power Indicator

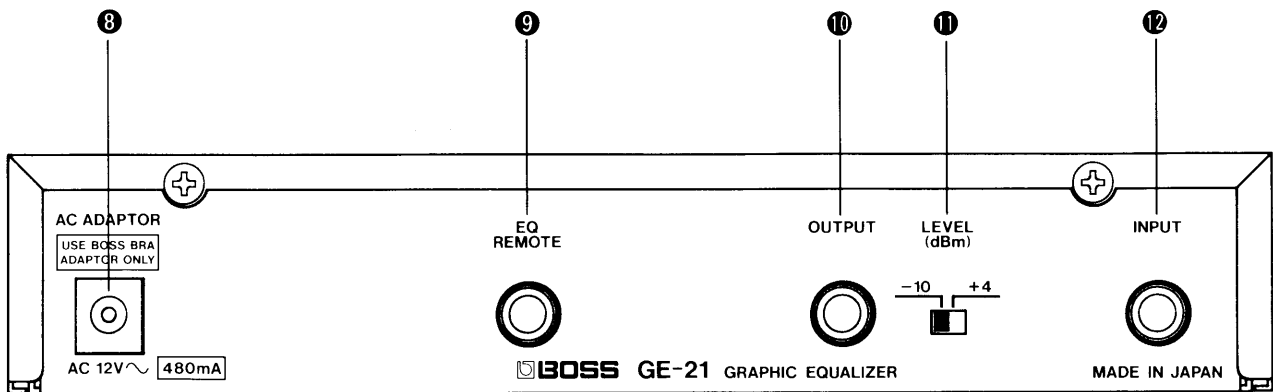
Lights when the Power Switch is turned on, indicating that the unit is ready for operation.

### ⑦ Power Switch

Turns power on or off. When “On” (—), the Power Indicator ⑥ lights indicating that the unit is ready for operation.

- \* Make sure you turn the volume on your amplifier to “0” before turning the power switch on.**
- \* No signal will be output from the unit for a few seconds after power is turned on since a muting circuit is in effect at that time.**

## <Rear Panel>



### ⑧ AC Adaptor Jack

This jack accepts connection of the supplied AC Adaptor (BOSS BRA-120, 220, 240), specialized for use with this unit.

### ⑨ Equalizer Remote Jack

This jack accepts connection of an optionally available foot switch (FS-5L). When connected, you have pedal control over switching the equalizer In and Out. You can confirm the In/Out status by Equalizer Indicator ④.

**\* If a foot pedal is to be used, the Equalizer switch ⑤ on the front panel should first be set to "In" (—).**

### ⑩ Output Jack

Output is provided from this jack.

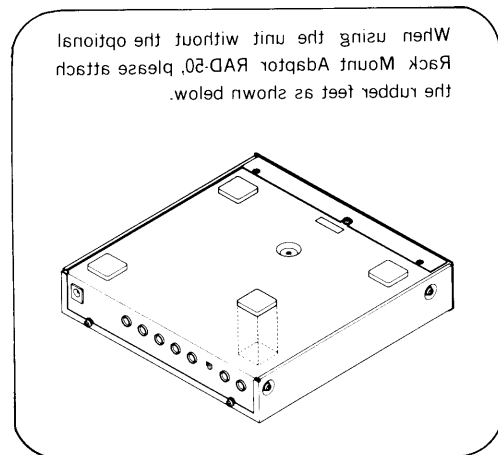
### ⑪ Level Switch

This switch is used to select the rated input/output level. It should be set to either  $-10\text{dBm}$  or to  $+4\text{dBm}$ , depending on the level of the device you have connected. Ordinarily, with a guitar or other electronic musical instrument, you should set it to the " $-10\text{dBm}$ " position.

**\* No change in the volume occurs as a result of switching the position of the Level Switch.**

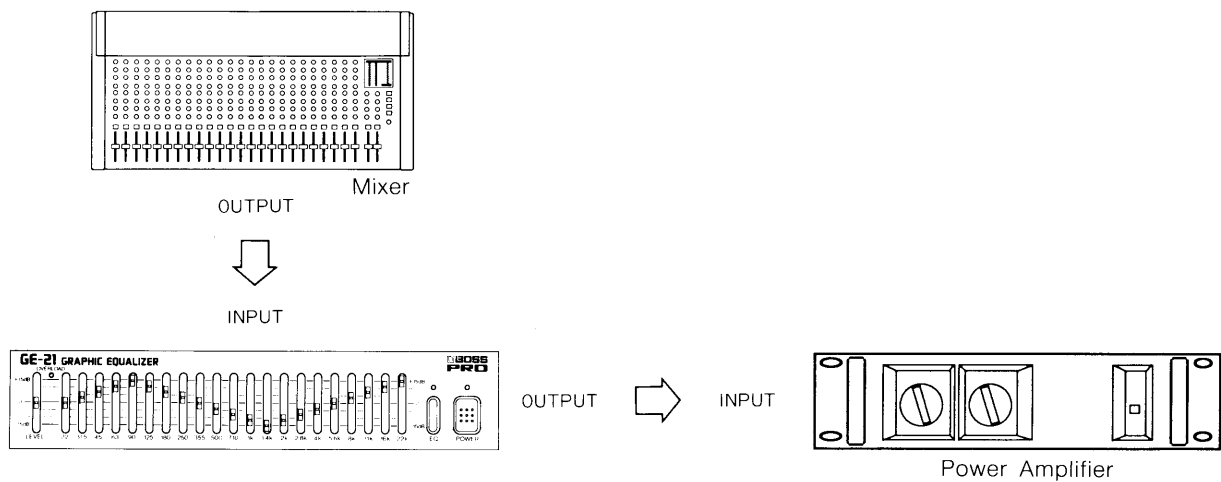
### ⑫ Input Jack

Input to the unit is made through this jack.

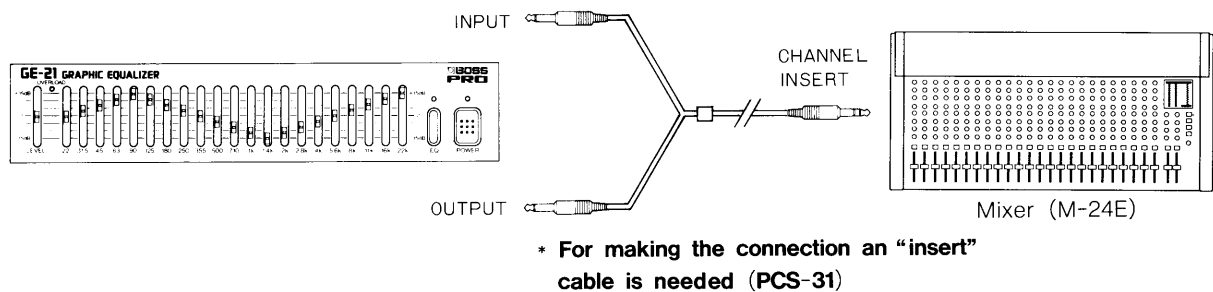


# MAKING CONNECTIONS

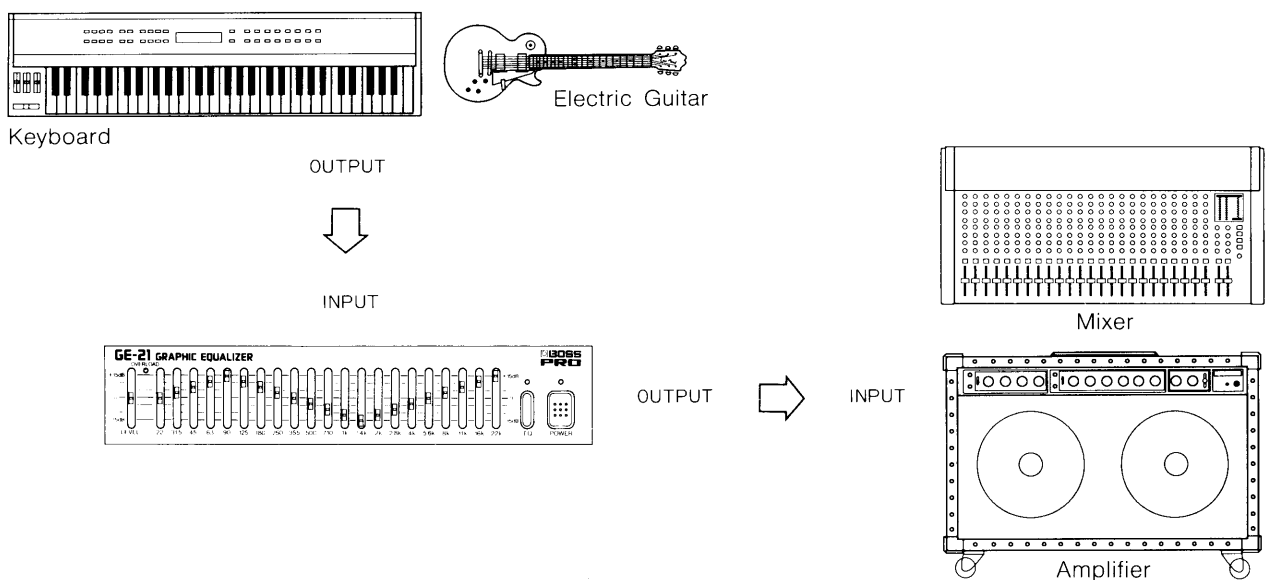
**Connection Example 1: For obtaining compensation for the overall tone and sound field.**



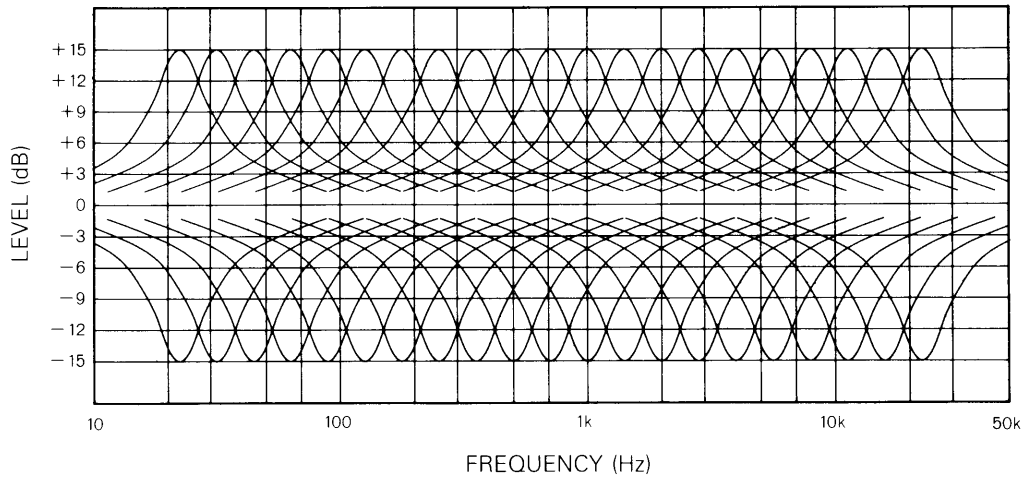
**Connection Example 2: To connect to a Channel Insert on a mixer.**



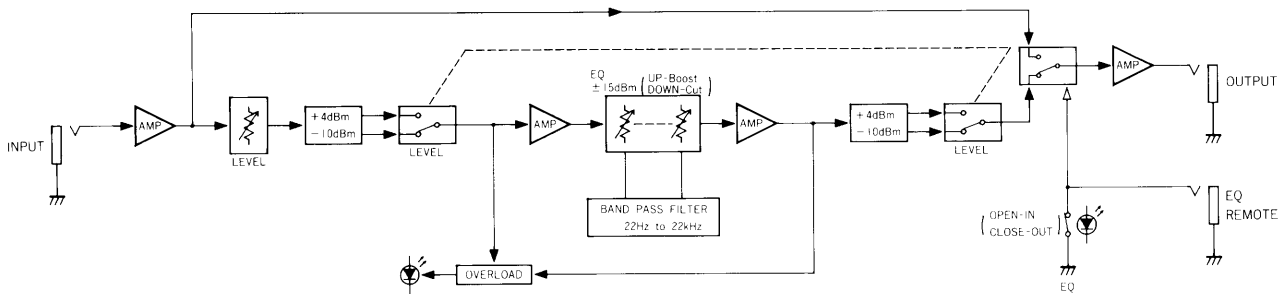
**Connection Example 3: For connecting a keyboard, electric guitar, or other instrument.**



## FREQUENCY RESPONSE



## BLOCK DIAGRAM



## SPECIFICATIONS

**Rated Input Level:** -10dBm/+4dBm

**Input Impedance:** 1MΩ

**Rated Output Level:** -10dBm/+4dBm

**Output Impedance:** 600Ω

**Output Load Impedance:** over 10kΩ

**Frequency Response:** (IN)10Hz to 30kHz ( $\pm 1$ dB)

**Residual Noise:** Less than -100dBm(IHF-A)  
(flat, LEVEL SWITCH:-10dBm)

**Total Harmonic Distortion:**  
Less than 0.01% (flat, LEVEL SWITCH:-10dBm)

**Equalizer Controls:** 21 bands(1/2 octave)

**Center Frequency:**

22, 31.5, 45, 63, 90, 125, 180, 250, 355,  
500, 710, 1k, 1.4k, 2k, 2.8k, 4k, 5.6k, 8k,  
11k, 16k, 22k(Hz)

**Variable Range:**  $\pm 15$ dB

**Total Level:**  $\pm 15$ dB

**Controls:** Equalizer (21 bands), Level

**Switches:** Power, EQ In/Out, Level

**Indicators:** Power, EQ IN/Out, Overload

**Jacks:** Input, Output, EQ Remote, AC Adaptor In

**Power:** 12V AC (BOSS BRA-120, 220, 240)

**Current Draw:** 480mA

**Dimensions:** 218(W)  $\times$  44(H)  $\times$  227(D) mm  
8-5/8" (W)  $\times$  1-3/4" (H)  $\times$  8-15/16" (D)

**Weight:** 1.4kg/3lb 2oz

**Accessories:** AC Adaptor BOSS BRA-120, 220, 240  
Foot Rubber  $\times$  4

**Options:** Rack Mount Adaptor RAD-50

\* Not attachable to Rack Mount Adaptor RAD-10.

Foot Switch FS-5L

\* In the interest of product improvement, the specifications of this unit are subject to change without prior notice.

# Information

●When you need repair service, call your local Roland Service Station or the authorized Roland distributor in your country as shown below.

## U. S. A.

Roland Corp US  
7200 Dominion Circle  
Los Angeles, CA. 90040 - 3647  
U. S. A.  
☎ (213)685 - 5141

## CANADA

Roland Canada Music Ltd.  
(Head Office)  
13880 Mayfield Place  
Richmond B. C., V6V 2E4  
CANADA  
☎ (604)270 - 6626

Roland Canada Music Ltd.  
9425 Transcanadienne  
Service Rd. N.,  
St Laurent, Quebec H4S 1V3  
CANADA  
☎ (514)335 - 2009

Roland Canada Music Ltd.  
346 Watline Avenue,  
Mississauga, Ontario L4Z 1X2  
CANADA  
☎ (416)890 - 6488

## AUSTRALIA

Roland Corporation  
(Australia)Pty. Ltd.  
(Head Office)  
38 Campbell Avenue  
Dee Why West. NSW 2099  
AUSTRALIA  
☎ (02)982 - 8266

Roland Corporation  
(Australia)Pty. Ltd.  
(Melbourne Office)  
50 Garden Street  
South Yarra, Victoria 3141  
AUSTRALIA  
☎ (03)241 - 1254

## NEW ZEALAND

Roland Corporation (NZ)Ltd.  
97 Mt. Eden Road, Mt. Eden,  
Auckland 3  
NEW ZEALAND  
☎ (09)398 - 715

## UNITED KINGDOM

Roland(UK)Ltd.  
Amalgamated Drive  
West Cross Centre, Brentford,  
Middlesex TW8 9EZ,  
UNITED KINGDOM  
☎ (81)568 - 4578

## WEST GERMANY

Roland Elektronische  
Musikinstrumente  
Handelsgesellschaft mbH.  
Oststrasse 96,  
2000 Norderstedt  
WEST GERMANY  
☎ 040/52 60 090

## BELGIUM/HOLLAND/ LUXEMBOURG

Roland Benelux N. V.  
Houtstraat 1  
B - 2431 Oevel - Westerlo  
BELGIUM  
☎ 014 - 58 45 35

## DENMARK

Roland Scandinavia A/S  
Langebrogade 6  
Box 1937  
DK - 1023 Copenhagen K.  
DENMARK  
☎ 31 - 95 31 11

## SWEDEN

Roland Scandinavia A/S  
DanvikCenter 28 A, 2 tr.  
S - 131 30 Nacka,  
SWEDEN  
☎ 08 - 702 00 20

## NORWAY

Roland Scandinavia  
Avd. Norge  
Lilleakerveien 2  
Postboks 95 Lilleaker  
N - 0216 Oslo 2  
NORWAY  
☎ 02 - 73 00 74

## FINLAND

Fazer Musik Inc.  
Länsituulentie  
POB 169  
SF - 02101 Espoo  
FINLAND  
☎ 0 - 43 50 11

## ITALY

Roland Italy S. P. A.  
Viale delle Industrie 8  
20020 ARESE MILANO  
ITALY  
☎ 02 - 93581311

## SPAIN

Roland Electronics  
de España S. A.  
Bolivia 239  
08020 Barcelona  
SPAIN  
☎ 93 - 308 - 1000

## SWITZERLAND

Musitronic AG  
Gerberstrasse 5, CH - 4410  
Liestal  
SWITZERLAND  
☎ 061/921 16 15

Roland CK (Switzerland) AG  
Hauptstrasse 21  
CH - 4456 Tenniken  
SWITZERLAND  
☎ 061/98 60 55  
Repair Service by Musitronic AG

## FRANCE

Musikengro  
102, Avenue Jean - Jaures  
69007 Lyon Cedex 07  
FRANCE  
☎ (7)858 - 54 60

Musikengro  
(Paris Office)  
Centre Region Parisienne  
41 rue Charles - Fourier,  
94400 Vitry s/Seine  
FRANCE  
☎ (1)4680 86 62

## AUSTRIA

E. Dematte &Co.  
Neu - Rum Siemens - Strasse 4  
A - 6021 Innsbruck Box 591  
AUSTRIA  
☎ 43(05222)63 451

## GREECE

V. Dimitriadis & Co. Ltd.  
2 Fidiou Str., GR 106 78  
Athens  
GREECE  
☎ 3620130

## PORTUGAL

Casa Caius Instrumentos  
Musicais Lda.  
Rua de Santa Catarina 131  
Porto  
PORTUGAL  
☎ 02 - 38 44 56

## HUNGARY

Intermusica Ltd.  
Warehouse Area 'DEPO'  
Budapest. P.O. Box 3,  
2045 Torokbalint  
Budapest  
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☎ 1868905

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Sao Paulo - SP  
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