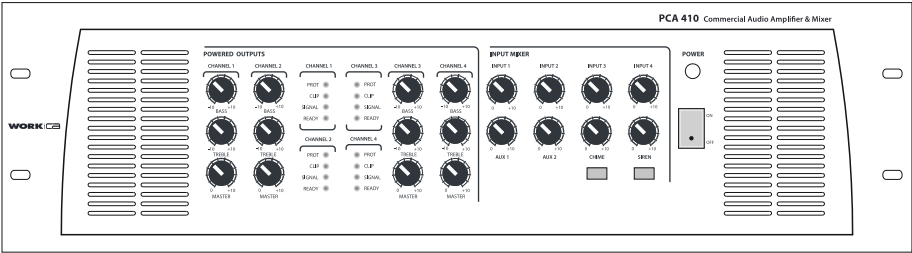


**PCA 410**



**User Manual**

## SAFETY RELATED SYMBOLS

**WARNING:**  
 TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE TO RAIN OR HUMIDITY. DO NOT REMOVE COVER. THIS PRODUCT IS NOT INTENDED FOR USE OTHER THAN STATED.



## GRAPHICAL SYMBOLS EXPLANATION



This symbol, wherever used, alerts you to the presence of un-isolated and dangerous voltages within the product enclosure. These are voltages that may be sufficient to constitute the risk of electric shock.



This symbol, wherever used, alerts you to important operating and maintenance instructions. Please read.



Protective Ground Terminal



AC mains (Alternating Current)



Hazardous Live Terminal

**ON:** Denotes the product is turned on.

**OFF:** Denotes the product is turned off.

**WARNING**

Describes precautions that should be observed to prevent the possibility of death or injury to the user.

**CAUTION**

Describes precautions that should be observed to prevent damage to the product.

**WARNING****Power Supply**

Ensure that the mains source voltage (AC outlet) matches the voltage rating of the product. Failure to do so could result in damage to the product and possibly the user.

Unplug the product before electrical storms occur and when unused for long periods of time to reduce the risk of electric shock or fire.

**External Connection**

Always use proper ready-made insulated mains cabling (power cord). Failure to do so could result in shock or fire. If in doubt, seek advice from a registered electrician.

**Do not Remove Any Cover**

Within the product are areas where high voltages may be present. To reduce the risk of electric shock do not remove any covers unless the AC mains power cord is removed.

**Covers should be removed by qualified service personnel only.**

No user serviceable parts inside.

**Fuse**

To prevent fire and damage to the product, use only the recommended fuse type as indicated in this manual. Do not short-circuit the fuse holder. Before replacing fuse, make sure that the product is OFF and disconnected from the AC outlet.

**Protective Ground**

Before turning the product ON, make sure that it is connected to Ground. This is to prevent the risk of electric shock.

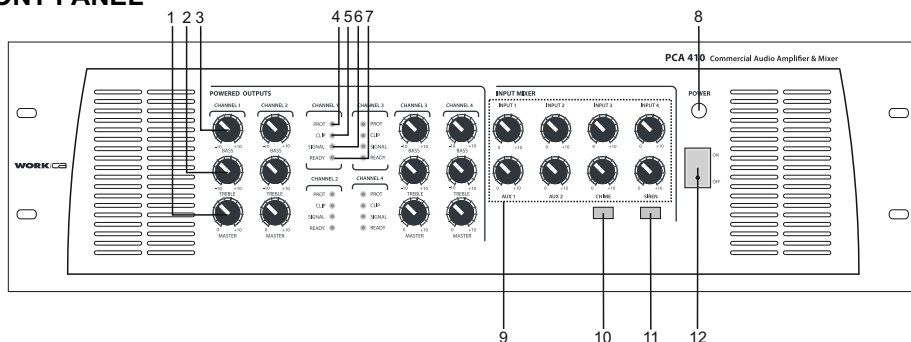
Never cut internal or external Ground wires. Likewise, never remove Ground wiring from the Protective Ground Terminal.

**Operating Conditions**

Always install in accordance with the manufacturer's instructions.

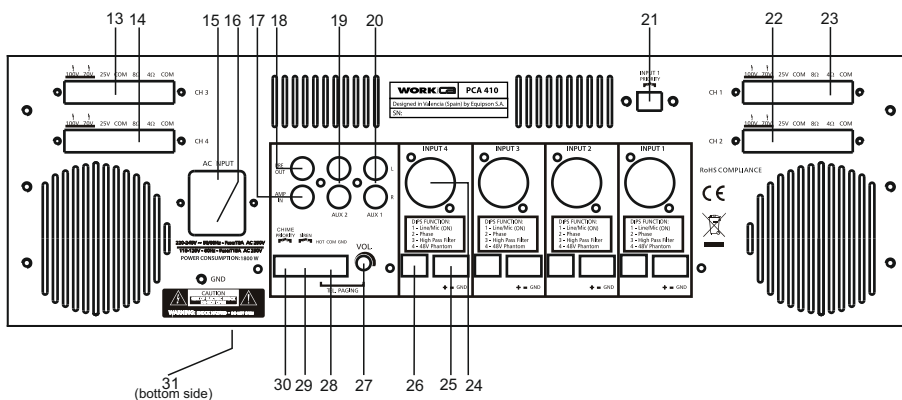
To avoid the risk of electric shock and damage, do not subject the product to any liquid/rain or moisture. Do not use this product when in close proximity to water. Do not install this product near any direct heat source. Do not block areas of ventilation.

## FRONT PANEL



1. Master Output Volume Control	7. Ready LED
2. Treble Tone Control	8. Power ON LED
3. Bass Tone Control	9. Input Volume Controls (1-4, AUX 1-2, CHIME, SIREN)
4. Protection LED	10. CHIME (Switch ON/OFF)
5. Clip LED	11. SIREN (Switch ON/OFF)
6. Signal LED	12. Power Switch ON/OFF

\* NOTE: Items 1 to 7 are shown for OUTPUT channel 1. Outputs 2 - 4 are identical.



13. OUTPUT 3 (high/low impedance speaker outputs)	22. OUTPUT 2 (high/low impedance speaker outputs)
14. OUTPUT 4 (high/low impedance speaker outputs)	23. OUTPUT 1 (high/low impedance speaker outputs)
15. Mains input socket	24. Input 4 (COMBI(XLR3P-Jack)/balanced)
16. AC fuse holder	25. Input 4 (Terminal block)
17. Power amp Input (RCA phono)	26. Input 4 (Dip-switch for functions)
18. Pre output (RCA phono)	27. TEL/EMER input level control
19. AUX 2 input (RCA phono)	28. TEL/EMER input terminals
20. AUX 1 input (RCA phono)	29. SIREN terminals
21. Input 1 Priority Terminals	30. CHIME priority terminals
	31. Input Voltage Selector

\* NOTE: Items 24 to 26 are shown for INPUT 4. INPUTS 1 - 3 are identical.

## CONNECTIONS

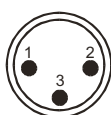
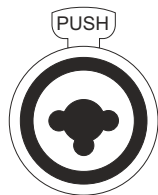
### Mains Connection (15)

The supply transformer has been designed for use on either 115V AC or 230 V AC, selected by a slide switch on the bottom of the device. The amplifier is factory set at 230 V AC mains voltage.

### Input Connection

Inputs 1-4 feature both balanced standard COMBI socket (1/4" stereo jack, and XLR 3P) and terminal blocks on the rear panel.

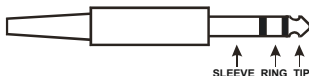
Wiring is as follows:



#### XLR 3P

Pin1 : Screen  
Pin2 : Signal (live)  
Pin3 : Signal (return)

(Front view)



#### 1/4" STEREO JACK

Tip : Signal (live)  
Ring : Signal (Return)  
Sleeve : Screen



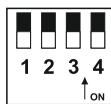
#### TERMINAL BLOCK

Pin+ : Signal (live)  
Pin- : Signal (return)  
GND : Screen

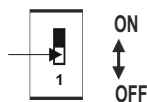
Turn the front panel potentiometers (9) clockwise to increase the volume or anticlockwise to reduce the volume.

### Selected Functions by Dip-Switch block

Each input incorporates several functions configurable through a dip-switch block:



**NOTE:** To ensure a correct understanding, the white coloured square is considered the switch in all pictures in this user manual



Switch 1: AUDIO SOURCE SELECTION: Setting the switch to the ON position, the input will accept microphone level audio. Setting it to the OFF position, the input will accept LINE level.

Switch 2: PHASE INVERSION: Setting the switch to the ON position, the signal will be inverted 180°. Setting it to the OFF position, the signal will be unaffected.

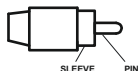
Switch 3: HIGH PASS FILTER: Setting the switch to the ON position, the input will be processed by a high pass filter with a 200Hz cutoff frequency. Setting it to the OFF position, the signal will be unaffected.

Switch 4: PHANTOM POWER: Setting the switch to the ON position, + 48V phantom power will be applied for condenser microphones. Setting it to the OFF position, this function will be disabled.

The **PCA 410** provides two auxiliary inputs (**AUX 1-2**) which may be used for connecting other signal sources such as a Radio Tuner, MP3 player, computer, CD or Cassette player (LINE level). Connect the audio source to the rear connectors (19, 20). Turn their respective potentiometers clockwise to increase the volume or anticlockwise to reduce the volume.

These input sockets are standard RCA phonos, two sockets are supplied and these are linked together internally in parallel, this allows stereo signal source to be used without the need to obtain a special lead, however you may wish to check with the manufacturer of the signal source to ensure that no damage will result if the left and right output channels are connected together in parallel.

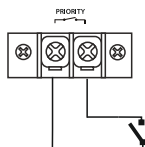
#### RCA Phono plug connections



Sleeve - Screen  
Pin - Signal

## PRIORITY

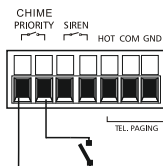
**INPUT 1** has the highest priority (apart from TEL/EMER), overriding the rest of inputs. To activate the priority state short-circuit the Priority terminals (**21**) on the rear panel.



## CHIME ON/OFF

To activate the CHIME, both the front panel switch (**10**) must be depressed, and a short-circuit made between the CHIME PRIORITY terminals on the rear panel (**30**). This will activate the chime function ('Ding Dong' pre-announcement chime). Whilst the CHIME state is enabled all inputs will be overridden.

The volume of the CHIME can be set from the CHIME potentiometer on the front panel.



CHIME



## SIREN ON/OFF

SIREN can be activated in one of two ways:

- Pressing the front panel switch (**11**)

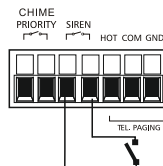
**In that case, the SIREN WILL BE ACTIVATED UNTIL THE SWITCH IS PRESSED AGAIN (OUT POSITION).**

- Making a short-circuit in the SIREN terminals (**29**) in the rear panel.

**In that case, the SIREN WILL BE ACTIVATED UNTIL THE SHORT-CIRCUIT IS REMOVED.**

Whilst the SIREN state is enabled all inputs will be overridden.

The volume of the SIREN can be set from the SIREN potentiometer on the front panel.



SIREN

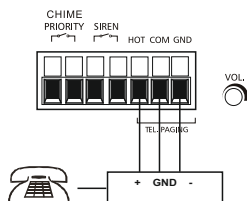


## Telephone/Emergency (28)

The Telephone/Emergency input is for emergency announcements/signals and is not affected by the Master volume control. The volume can be set by the tel. paging volume control (**27**).

The terminals allows connection of a telephone/paging system interface.

**NOTE: The Telephone/Emergency input has the highest priority, all other units will be overridden.**

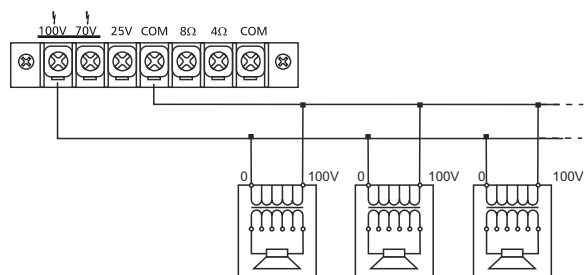


## Power In & Pre Out (17-18)

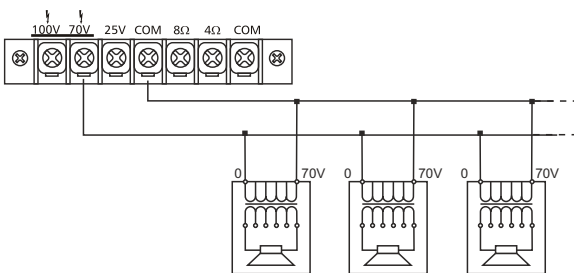
These sockets connect the mixer/preamplifier stage to the power amplifier stage. The connecting link must be plugged in for normal operation as a mixer/amplifier. If a compressor/limiter, equalizer, or other external signal processor is used in the sound system, connect the "PRE OUT" to the input of the external processor and the output of the processor to "POWER IN" In the signal chain, "PRE OUT" is after the tone controls and the master volume control.

## Loudspeaker Connections

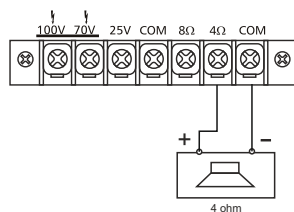
The **PCA 410** includes 4 discrete outputs and each output section provides two different types of loudspeaker outputs in each one: High impedance lines (25/70/100V) and low impedance (4, 8Ω). You can only use one of these outputs at any one time; any attempt to use two or more of these may result in damage to the amplifier.



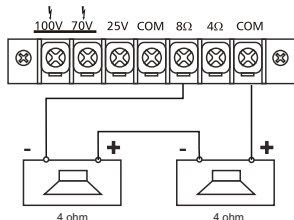
Connecting multiple speakers in parallel to the 100V output



Connecting multiple speakers in parallel to the 70V output

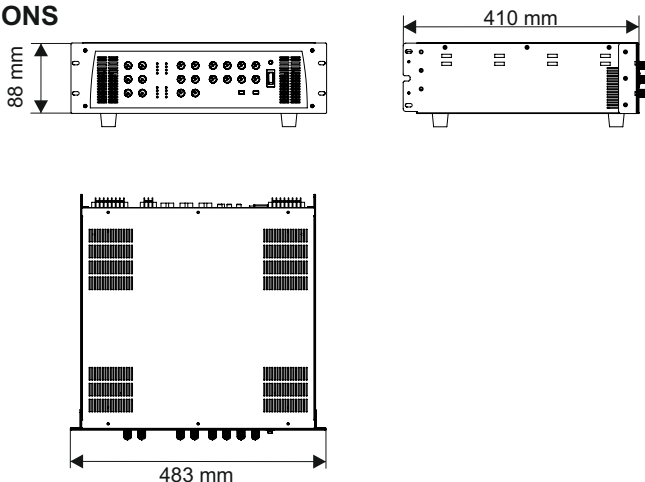


Connecting a single speaker to the 4 ohm output



Connecting two speakers in series to the 8 ohm output.

## DIMENSIONS



## TECHNICAL SPECIFICATIONS

Output Power (RMS)	4 x 250 W
Audio Inputs	4 MIC / LINE, 2 AUX level
<b>INPUTS</b>	
MIC (Impedance/Sensitivity)	600 $\Omega$ / 2.8mV
LINE (Impedance/Sensitivity)	3k $\Omega$ / 316 mV
AUX (Impedance/Sensitivity)	50k $\Omega$ / 316 mV
<b>OUTPUTS</b>	
Low Impedance	4 / 8 $\Omega$
High Impedance Line	25 / 70 / 100 V
Frequency Response	50 Hz - 17 kHz +/- 3dB
EQ Control (Bass)	+/- 10 dB / 22 Hz - 180 Hz /Centre Frequency 50 Hz
EQ Control (Treble)	+/- 10 dB / 3k Hz - 20 kHz /Centre Frequency 12 kHz
S/N ratio	> 90 dB (Line), > 80 dB (MIC)
Total harmonic distortion	Less than 1% at 1 kHz, rated power
Chime	Two tone chime ('Ding-dong' pre-announcement chime)
Priority	Tel./Emer. - MIC 1
Main Supply AC power	115 / 230 V - 50/60 Hz
Consumption	1800 W
Dimensions	483 x 132 x 410 mm ( W x H x D)
Weight	25.2 kg.



## **Important Warranty Information**

WORK pro CA products are exclusively distributed in Europe by

Yamaha Music Europe GmbH.  
Siemensstrasse 22-34  
D-25462 Rellingen, b. Hamburg, Germany

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This symbol on the product or on its packaging indicates that this product shall not be treated as household waste. Instead it shall be handed over to the applicable collection point for the recycling of electrical and electronic equipment. By ensuring this product is disposed of correctly, you will help prevent potential negative consequences for the environment and human health, which could otherwise be caused by inappropriate waste handling of this product. The recycling of materials will help to conserve natural resources. For more detailed information about recycling of this product, please contact your local city office, your household waste disposal service or the shop where you purchased the product.

Manufactured by **EQUIPSON, S.A.**