COPEMAN HART
CHURCH ORGAN BUILDERS

User Manual

For new and rebuilt organs from 2024

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Contents

1 SAFETY

1.1 Safety Instructions

- To reduce the risk of fire or electric shock, do not expose the Instrument to liquids, rain or moisture.
- Position the Instrument on a stable, horizontal surface.
- When power cord plug has an earth-pin: Connect the Instrument to an earthed mains (wall) socket-outlet.
- Turn off the Instrument when it is not in use.
- Do not place the Instrument in a damp area.
- Follow the instructions and precautionary measures in this user manual.
- Keep this user manual with the Instrument.
- The Instrument may only be opened by a technician authorized by Global Organ Group B.V. The Instrument contains static-sensitive components. The warranty is void if the Instrument is opened by a non-authorized person.

NOTICE

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this apparatus near water.
6. Clean only with a dry cloth.
7. Do not block any of the ventilation openings.

Install in accordance with the manufacturer's instructions.

8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9. When power cord plug has an earth-pin: Do not defeat the safety purpose of the polarized or grounding-type plug.

A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.

10. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
11. Only use attachments/accessories specified by the manufacturer.
12. Unplug this apparatus during lightning storms or when unused for long periods of time.
13. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

1.2 Symbols on the organ

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

The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to 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.

Warning for static-sensitive components. To prevent damage to electronic parts from static electricity, be sure to discharge any static electricity from your own body before handling / touching the organ.

1.3 Symbols in this manual

Caution, Warning or Important Information

Do not, or forbidden to do

Note

1.4 Transport and storage

Pay attention to the following during transport and storage:

- **Remove the music desk and the pedal board from the organ before transport.**
- **Store in an area with 40% to 60% relative humidity**. Do not store in damp areas or on wet floors, expose to steam or smoke, salt, humid, rain, moisture, dusty or sandy locations.

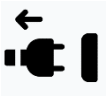
- **Minimum temperature within the storage area: 0°C**
- **Do not expose the organ to direct sunlight (UV),** do not place it near devices that radiate heat, or otherwise subject to temperature extremes. Also, do not allow lighting devices that normally are used while their light source is very close to the organ (such as a piano light), or powerful spotlights to shine upon the same area of the organ for extended periods of time. Excessive heat can deform or discolour the organ.

- **Do not allow rubber, vinyl or similar materials to remain on this organ for long periods of time**. Such objects can discolour or otherwise harmfully affect the finish.

- **Do not paste stickers, decals, or the like to this organ**. Peeling such items off the organ may damage and or discolour the exterior finish.
- **Do not bend the power cord or place heavy objects on** it.

- **Do not allow foreign objects or liquids to enter the organ**
- **Never place containers with liquid on the organ**; Do not put anything that contains water on this organ. Also, avoid the use of insecticides, perfumes, alcohol, nail polish, spray cans, etc., near the organ. Swiftly wipe away any liquid that spills on the organ using a dry, soft cloth. Never use benzene, thinners, alcohol or solvents of any kind, to avoid the possibility of discoloration and/or deformation.

- **Unplug the power cord from the outlet before cleaning**. Before cleaning the organ, turn it off and unplug the power cord from the outlet. To clean the organ, use a dry, soft cloth; or one that is slightly dampened. Try to wipe the entire surface using an equal amount of strength, moving the cloth along with the grain of the wood. Rubbing too hard in the same area can damage the finish.



- **Do not remove the back from the organ. Do not disassemble or modify by yourself**

- **Avoid climbing on top of the organ, or placing heavy objects on it, nor on top of the keyboard nor pedal board. This can lead to dangerous situations** - such as tilting / tipping over - shearing / falling off of heavy objects. This can also lead to malfunctions - such as keys ceasing to produce sound.

- **Do not bend, drop, expose to strong shock or vibration.**
- **Never strike or apply excessive pressure to the display.**
- **Take care when moving this organ**. As this product is very heavy, you must make sure that a sufficient number of people are on hand to help, so you can lift and move it safely, without causing strain. Make sure to have a firm grip, to protect yourself from injury and the organ from damage. If you need to move the organ, consult with your retailer, or Global Organ Group B.V.

1.5 Safety Information

Indoor use only.

Connect the power cord to an outlet of the correct voltage. The organ should be connected to a power supply only of the type described as marked under the keyboard deck of organ.

When power cord plug has an earth-pin: Make sure that this is connected to an earthed mains (wall) socket-outlet.

Do not connect or disconnect the power cord with wet hands. Never handle the power cord or its plugs with wet hands when plugging into, or unplugging from, an outlet.

Turn off the organ if an abnormality or malfunction occurs. Immediately turn the organ off, remove the power cord from the outlet, and request servicing by your retailer, or Global Organ Group B.V., when:

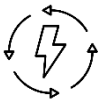
- The power-supply cord or the plug has been damaged; or
- If smoke or unusual odour occurs; or
- Objects have fallen into, or liquid has been spilled onto the organ; or
- The organ has been exposed to rain (or otherwise has become wet); or
- The organ does not appear to operate normally or exhibits a marked change in performance.

Overseas and other countries. Before using the organ in a country other than its original place of sale, consult with your retailer, or Global Organ Group B.V.

Presence of children. For their safety, adults should make sure that children under the age of 16 use the organ properly and that the organ is in a stable position. An adult should always be present to supervise and guide any use by a child. Due to the weight of the organ, it is recommended that it be securely fixed to the wall or floor by a professional to prevent tipping over. This applies even though all safety precautions have been taken to avoid accidents.

Do not connect this organ to same electrical outlet that is being used by an electrical appliance that is controlled by an inverter or a motor (such as a refrigerator, washing machine, microwave oven, or air conditioner). Depending on the way in which the electrical appliance is used, power supply noise may cause this organ to malfunction or may produce audible noise. If it is not practical to use a separate electrical outlet, connect a power supply noise filter between this organ and the electrical outlet.

Do not share an outlet with an unreasonable number of other devices. Do not force the organ's power-supply cord to share an outlet with an unreasonable number of other devices. Be especially careful when using extension cords—the total power used by all devices you have connected to the outlet must never exceed the power rating (watts/amperes) for the extension cord. Excessive loads can cause the insulation on the cord to heat up and eventually melt through - therefore always completely unwind an extension cord.

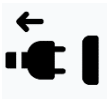


Energy consumption: By using efficient, energy-saving technology (internal LEDs, switching power supplies and amplifiers), a high efficiency is achieved. The organ is equipped with an AC mains power switch that switches off the organ completely, so that no (standby) power is consumed in the off position.

To prevent malfunction and equipment failure, always make sure to turn off the power on all your equipment before you make any connections.

Although the LCD and LEDs are switched off when the organ is turned off, this does not mean that the organ has been completely disconnected from the source of power. If you need to turn off the power completely, first turn off the organ's switch, then unplug the power cord from the power outlet. For this reason, the outlet into which you choose to connect the power cord's plug should be one that is within easy reach and readily accessible.

If there is a possibility of lightning strike, disconnect the power cord from the outlet. Whenever you suspect the possibility of lightning in your area, pull the plug on the power cord out of the outlet.



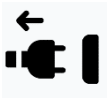
Periodically clean the power cord's plug. At regular intervals, you should unplug the power plug and clean it by using a dry cloth to wipe all dust and other accumulations away from its prongs. Also, disconnect the power plug from the power outlet whenever the organ is to remain unused for an extended period. Any accumulation of dust between the power plug and the power outlet can result in poor insulation and lead to fire.

The settings you were editing will be lost when the organ is turned off. If you want to keep your settings, you must save your settings before turning the organ off.

Place in a well-ventilated location. The organ should be located so that its location or position does not interfere with its proper ventilation.

Manage cables for safety. Try to prevent cords and cables from becoming entangled. Also, all cords and cables should be placed so they are out of the reach of children.

Grasp the plug when connecting or disconnecting the power cord. Always grasp only the plug on the power-supply cord when plugging into, or unplugging from, an outlet.



Precautions concerning use of bench. When using the bench, please observe the following points:

- Do not allow two or more people to sit on the bench.
- Do not adjust the height while sitting on the bench (height adjustable benches only)

Disconnecting power from AC mains. To completely disconnect this apparatus from the AC mains, disconnect the power supply cord plug from the AC outlet. The power supply cord and/or main power switch must be accessible. The mains plug of the power supply cord must remain readily accessible, or the power switch must be accessible so the organ can be isolated from the main supply if required.

Do not use internal connections. Do not use internal connections for optional external speakers by yourself. Refer all servicing to your retailer, or Global Organ Group B.V.

1.6 Placement

Using the organ near power amplifiers (or other equipment containing large power transformers) may induce hum or static noise. To alleviate the problem, change the orientation of this organ; or move it farther away from the source of interference.

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

Noise may be produced if wireless communications devices, such as cell phones, are operated in the vicinity of this organ. Such noise could occur when receiving or initiating a call, or while conversing. Should you experience such problems, you should relocate these wireless devices, so they are at a greater distance from this organ or switch them off.

Do not expose the organ to direct sunlight, place it near devices that radiate heat, or otherwise subject it to temperature extremes. Also, do not allow lighting devices that normally are used while their light source is very close to the organ (such as a piano light), or powerful spotlights to shine upon the same area of the organ for extended periods of time. Excessive heat can deform or discolour the organ.

Do not allow rubber, vinyl, or similar materials to remain on this organ for long periods of time. Such objects can discolour or otherwise harmfully affect the finish.

Do not allow objects to remain on top of the keyboard or pedal board. This can be the cause of malfunction, such as keys ceasing to produce sound.

Do not paste stickers, decals, or the like to this organ. Peeling these kinds of items off the organ may damage the exterior finish.

Do not put anything that contains water on this organ. Also, avoid the use of insecticides, perfumes, alcohol, nail polish, spray cans, etc., near the organ. Swiftly wipe away any liquid that spills on the organ using a dry, soft cloth.

Due to the weight of the organ, it is recommended to attach the organ securely to the wall or floor by a professional, to avoid tipping. This, although all safety measures have been taken to avoid any accident.

1.7 Repairs and data

Please be aware that all data contained in the organ's memory may be lost when the organ is sent for repairs. Important data should always be stored on removable memory and written down on paper (when possible).

During repairs, due care is taken to avoid the loss of data. However, in certain cases (such as when circuitry related to memory itself is out of order), we regret that it may not be possible to restore the data, and Global Organ Group B.V. assumes no liability concerning such loss of data. Refer all servicing to your local dealer, or Global Organ Group B.V.

1.8 Additional precautions

Please be aware that the contents of memory can be irretrievably lost because of a malfunction, or the improper operation of the organ. To protect yourself against the risk of losing important data, we recommend that you periodically write down important setting data (when possible) and use the backup function of the organ to place a copy on removable memory.

Unfortunately, it may be impossible to restore the contents of data that was stored in the organ's memory once it has been lost. Global Organ Group B.V. assumes no liability concerning such loss of data.

Use a reasonable amount of care when using the organ's buttons, sliders, or other controls; and when using its jacks and connectors. Rough handling can lead to malfunctions.

Never strike or apply strong pressure to the display as this can crack or damage it.

A small amount of heat will radiate from the organ during normal operation.

To prevent possible hearing damage, do not listen at high volume levels for long periods. This organ, either alone or in combination with an amplifier and headphones or speakers, may be capable of producing sound levels that could cause permanent hearing loss. Do not operate for a long period of time at a high-volume level, or at a level that is uncomfortable. If you experience any hearing loss or ringing in the ears, you should immediately stop using the organ and consult an audiologist.

To avoid disturbing others nearby, try to keep the organ's volume at reasonable levels.

When you need to transport the organ, pack it in shock-absorbent material. Transporting the organ without doing so can cause it to become scratched or damaged and could lead to malfunction.

Do not apply undue force to the music stand while it is in use.

Some connection cables contain resistors. Do not use cables that incorporate resistors for connecting to this organ. The use of such cables can cause the sound level to be extremely low, or impossible to hear. For information on cable specifications, contact the manufacturer of the cable.

Due to the structural design of this organ, small pets or other animals could end up getting trapped inside it. If such a situation is encountered, you must immediately turn off the organ and disconnect the power cord from the outlet. You should then consult with the retailer from whom the organ was purchased, or contact Global Organ Group B.V.

The explanations in this manual include illustrations that depict what should typically be shown by the display.

Note, however, that your organ may incorporate a newer, enhanced version of the system so what you see in the display may not always match what appears in the manual. Please contact your local dealer for clarification if any menu item or function is unclear.

2 OPERATING THE ORGAN

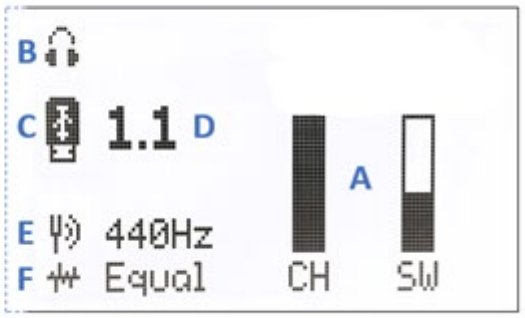
2.1 Switching On

Switch on the organ by turning the start key (F) a quarter turn to the right.

After a few seconds the organ is ready to play and the main screen is displayed:

MAIN SCREEN LAYOUT

A Pedal Position
B Headphones connected
C USB drive connected
D Capture Memory Location
E Tuning
F Temperament



Divisional Abbreviations
CH = Choir
SW = Swell

3 CONNECTIONS

3.1 Connect and switch on the external device(s)

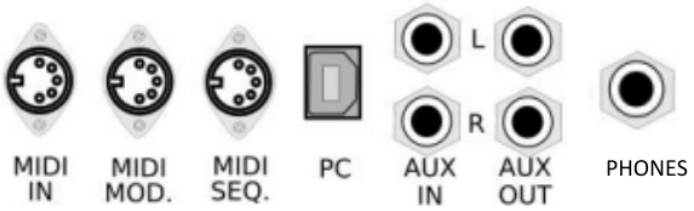
You can connect external devices (for example, a MIDI device) to the organ.

> Follow the instructions provided in the documentation for the external device(s).

1. Switch off the organ and the external device(s).
2. Connect the external device to the organ.
3. Switch on the external device.
4. Switch on the organ.

3.2 External connections

The external connections are situated on the bottom side of the keyboards, on the left side.



MIDI IN: An input for receiving MIDI codes from other devices.

MIDI MOD: A programmable MIDI output for connecting a sound module or expander, for example.

MIDI SEQ: A non-programmable MIDI output for connecting a Johannus Sequencer+ or PC, for example.

PC: PC USB connection for data transfer (with the optional Intonat voicing software). Use a short USB2 cable for connection, without an extension cable.

AUX IN: A stereo audio input for playing the sound of an external device through the amplifiers of the organ. For example, an expander connected to the organ through the MIDI MOD can be played through the organ's loudspeakers.

AUX OUT: A stereo audio output for connecting an external device (amplifier or recording device, for example).

PHONES: This connection for (stereo) headphones is suited for a headphone with an impedance of 30 Ω or more (see headphone specifications).

When the headphone is used, the loudspeakers of the organ are switched off automatically. The headphones symbol will be visible on the display.

3.3 External loudspeaker output

The external loudspeaker outputs (8 Ω) are situated inside the organ. Connect the loudspeaker cables to the connectors of the loudspeaker output during installation of the organ. This work should only be undertaken by a trained person.

3.4 USB (type A) connection for USB-memory

The USB type A, for USB-memory. This USB-connection is suitable to connect USB-memory to save settings, memory locations or for service purposes, see §3.5, §5.2 and §5.18. This connection is automatically disabled when the USB port (type B) for PC-connection is used see §3.3.

4 OPERATION

4.1 General volume

The general volume of the organ can be adjusted with use of the Menu, see Section 5.1

4.2 Expression pedals

Your Copeman Hart organ will either have one or two expression pedals. If it has one, then this is the swell expression pedal, if there are two then the second is for the choir division.

The expression pedals are programmed to mimic the behaviour of shutters on enclosed divisions in pipe organs; as the box is closed the volume of the pipes decreases, and more of the higher frequencies are filtered out creating more muted tones. Opening the box will both increase the volume and the brightness of the sound.

4.3 Reverb

The organ is equipped with 12 unique convolution reverbs captured in stunning detail from existing buildings. The convolution reverb takes the characteristic decay signature of sounds in the original building and applies it to the organ sound, giving a realistic sense of how the organ would sound in that space.

By selecting a reverb that blends well with the venue, these can be used to enhance the sound of the organ:

Convolution reverbs	**Length**
Trinity Episcopal Church, Greeley (CO, USA)	1.6 sec
Zuidervemaning, Westzaan (Netherlands)	2.7 sec
First United Methodist Church, Galveston (TX, USA)	2.8 sec
Concert Hall, Worcester (MA, USA)	3.0 sec
First Congregational Church, Los Angeles (CA, USA)	3.2 sec
Redeemer Presbyterian Church, Austin (TX, USA)	3.4 sec
First Baptist Church, Longview (TX, USA)	3.6 sec
Frognerkirke, Oslo (Norway)	4.2 sec
Church of the Holy Name, Manchester (United Kingdom)	4.8 sec
Oude Kerk, Amsterdam (Netherlands)	5.2 sec
Notre Dame d'Auteuil, Paris (France)	6.8 sec
Hofkirche, Dresden (Germany)	7.4 sec

With use of the Menu the reverb settings can be adjusted, see section 5.2.

4.4 Stops and Couplers

Organ stops can be activated by pressing either the bottom or top of the illuminated tabs (which light to show the stop is active), or by pulling out the drawstop (hand registration) or can be controlled via the capture memory of the organ.

Your Copeman Hart organ has usual couplers for an English pipe organ, for instance to couple the Swell to Great, or Great to Pedal. These can be activated via the tab or drawstop, or a thumb piston on the keyboard rails or, on some models, a foot piston.

Great to Pedal Combs Coupled
This is a feature on many English organs. When this function is activated, selecting a divisional memory location on the pedal organ will trigger the corresponding memory location on the great manual and vice versa. For example, if the player selects divisional memory bank 4 on the Great division, then memory bank 4 on the Pedal division will also be activated. This is useful when accompanying hymns as the relative volume of the Great and Pedal divisions will be in lockstep. This function is not cancelled when General Cancel is used.

Gen on Swell Toe Pistons
Your organ may have a stop or piston which is marked "Gen on Swell Toe Pistons" or a similar form of words. When engaged this means the swell toe pistons control the general pistons. So pressing the 3rd toe piston will activate the stops memorised in slot of the general bank you are using.

MB: Manual Bass (bass coupler)

The exact location of the MB piston is specific to each Copeman Hart organ.
It is most likely found on one of the piston rails (often under the Great), but it could also be located on a piston near the screen of your instrument.
Couples the Pedal monophonically to the Great. Only the lowest key that is played on the Great is coupled from the Pedal to the Great.
If only the lowest key of a chord is released, the pedal key activated by the Manual Bass function is dropped until a new lowest key is played.
Activate the Manual Bass with the MB piston.

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It is advised not to use the Manual Bass while playing the pedals to avoid duplicating bass notes.

4.5 Accessories

General Cancel (0)

All organs have a general cancel button on the lowest keyboard rail on the right-hand side, this has 0 on it. This switches off all stops at once (except for Gt to Ped Combs and Gen on Swell Toe Pistons)

TRANS: **Transposer**

The Transposer function shifts the pitch by half-tone steps (from -8 to +8).
The set pitch can be read on the display (Transpose:..).

- Press the TRANS. piston.
- Use the ⊕ and ⊖ pistons to set the pitch.

4.6 Memory Lock

Your organ will have a key lock which is labelled 'memory lock' or mem lock. When the key is inserted and the lock turned to the right you can program memories and change items in the menu. If the key is not inserted or the lock is turned to the left (so the key is vertical), then it is not possible to alter or program memory slots or change items in the menu such as the general volume or reverb settings.

Please note that the memory lock and power functions are different keys. Do not force the wrong key into either keyhole as this may damage the key and/or lock.

4.7 Capture memory

Through use of the capture memory, a registration can be recalled with just one piston. The internal capture memory consists of 250 levels, represented on the display as M1 through to M250. The number can be increased with a short press on the ⊕ piston and decreased with the ⊖ piston. When the ⊕ or ⊖ piston is held down, the value changes more quickly. If the memory location is at 1 and the ⊖ button is pressed the 250 level will be selected. This is useful for quickly selecting the higher levels, for instance bank 248 can be selected with just 2 presses on the ⊖ button when memory bank 1 is the starting position.

Each level has eight general memory locations (general pistons 1-8) and eight separate memory locations per division (divisional pistons 1-8).

The screen will show the current memory location with the number of the bank first and the selected 'slot' after the decimal point. For example, if the screen reads '2.6' this indicates the organ is currently at memory bank 2 and general piston 6 has been pressed.

4.7.1 Programming a general capture memory location

1. Select the desired registration, with all couplers and stops ⊕

2. Use the and ⊖ pistons to select a level (M 1-250) on the display, (U 1-999 with USB-memory connected, with symbol visible on the display)
3. Press and hold the SET piston
4. Press the desired memory location.
5. Release the SET piston.

Recalling a capture memory location

1. Use the ⊕ and ⊖ pistons to select the desired level (M 1-250, or U 1-999) on the display.
2. Select the desired memory location. The stops are activated.

4.7.2 Programming a divisional capture memory location

1. Select the desired registration for a division (stops and tremulants). Note that couplers are not included in divisional memories.
2. Use the ⊕ and ⊖ pistons to select a level (M 1-250) on the display, (U 1-999 with USB-memory connected, with symbol visible on the display)
3. Press and hold the SET piston
4. Press the desired divisional memory location.
5. Release the SET piston.

Recalling a divisional memory location

1. Use the ⊕ and ⊖ pistons to select the desired level (M 1-250, or U 1-999) on the display.
2. Press the desired divisional memory location. The stops on the division are activated.

5 Menu

The menu allows for advanced features of the organ to be controlled. Many of these features require the memory key lock to be inserted and turned to the right.

Press the **MENU** button to activate the Menu on the display.
Navigating the menu is done with the ⊕ and ⊖ buttons.
Confirmation of a choice is done with the **ENTER** button.
To cancel or move back in the memory, press the **MENU** button.

The Menu consists of the following functions:

Function	More information
General Volume	5.1
Reverb Settings	5.2
Temperaments	5.3
Audio Settings	5.4
Backup & Restore	5.5
Chorus	5.6
Expression Pedals	5.7
Keyboard Transfer	5.8
Key Volumes	5.9
Reset Procedures	5.10
Solo Reeds	5.11
Startup Settings	5.12
Tremulants	5.13
Tuning	5.14
USB	5.15
Version	5.16

5.1 General Volume

The volume can be changed from 0 - 100%. The memory lock key is needed for this:

1. Use the ⊕ and ⊖ buttons to select the ***General Volume*** function.
2. Press the **ENTER** button. The current general volume appears behind ***Volume*****:** The default value is 85%.
3. Use the ⊕ and ⊖ buttons to change to the desired volume level.
4. Enter to confirm or **MENU** to exit and discard changes.
5. Press the **MENU** button to exit the Menu.

5.2 Reverb Settings

With the function ***Reverb Volume,*** you can set the volume from 0-100%.

1. Press the **MENU** button.
2. Use ⊕ **and** ⊖ to select the *Reverb Volume* and/or *Reverb Type* function on the display.
3. Press **ENTER**. With *Reverb Type* a selection can be made from 12 convolution reverbs. With *Reverb Volume* the amount of reverb can be adjusted.
4. Use ⊕ and ⊖ to select the between *Reverb Type* and *Reverb Volume.*

5. Press **ENTER** to confirm.
6. Use ⊕ and ⊖ to select the Reverb type, or amount of reverb volume.
7. Press **ENTER** to confirm.
8. Press **MENU** to exit the Menu.

5.3 Temperaments

The Temperaments function sets the temperament. The active temperament will be on the main display, behind the symbol ⧺.

Selecting a temperament

1. Press **MENU**
2. Use ⊕ and ⊖ to select the `Temperaments` function on the display.
3. Press **ENTER**. A list of available temperaments appears on the display. The pointer indicates the current temperament.
4. Use ⊕ and ⊖ to select the desired temperament.

You can choose from twelve temperaments:

- Equal (normal temperament)
- Young II
- Vallotti
- Kirnberger III
- Kirnberger II
- Neidhardt III
- Werckmeister III
- 1/6 Meantone (1/6 comma meantone)
- 1/5 Meantone (1/5 comma meantone)
- 1/4 Meantone (1/4 comma meantone)
- Pythagorean

Besides these, it is possible to configure a custom temperament:

- Custom (free programmable temperament)
- Custom Programming (free programmable temperament)

5. Press **ENTER** to confirm the new setting and return.
6. Press **MENU** twice to exit the Menu.

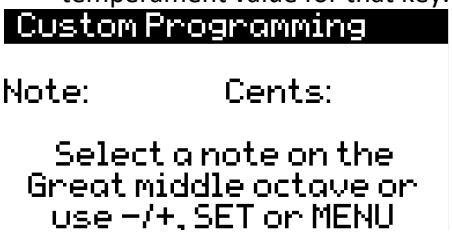
Programming a custom temperament

With this function it is possible to create a personal temperament. Every key can be detuned with increments of 1 cent. The minimum value is -32 cents; the maximum value is +32 cents.

Programming can be done using the Great middle octave and will automatically be calculated for all keys of the organ.

1. Press **MENU**.
2. Use ⊕ and ⊖ to select the `Temperaments` function on the display.
3. Press **ENTER**. A list of available temperaments appears on the display. The pointer indicates the actual temperament.
4. Use ⊕ and ⊖ to select the `Custom Programming` function.
5. Press **ENTER**.

6. Press and hold a key of the Great middle octave. The detune setting of the pressed key appears on the display. The tuning starts from the equal temperament value for that key.



7. Use ⊕ and ⊖ to select the desired pitch of the pressed key.
8. If necessary, repeat steps 6 and 7 for another key of the middle octave.
9. Press **MENU** twice to exit the Menu.

> Using the reset procedure `Cust. Temperament def.` the Custom Temperament can be reset to equal temperament.

5.4 Audio Settings

Audio settings of headphones and aux-out can be changed:

1. Press **MENU**.
2. Use ⊕ and ⊖ to select the `Audio Settings` function on the display.
3. Press **ENTER**. The display shows Headphone/Aux Out.
4. Press **ENTER** to change the volume. The default HP/Aux Out level is 85%
6. Press **MENU** to exit the Menu.

Note: When a headphones plug is inserted, the headphones symbol appears on the main menu. The loudspeakers will be silent when this symbol appears.

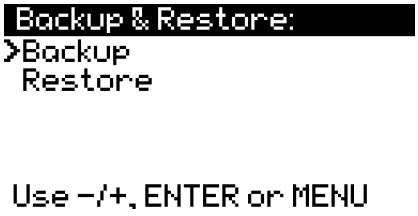
5.5 Backup & Restore

For Backup, or Restore of all settings, an USB-memory is necessary, with the **FAT32 file system**, 32GB or smaller size:

- Insert the correct USB-memory for Backup / Restore into the (type A) USB-connector. Make sure the (type B) USB for PC is not connected/used!
- When the display shows the USB-memory symbol , the USB-memory is recognized.

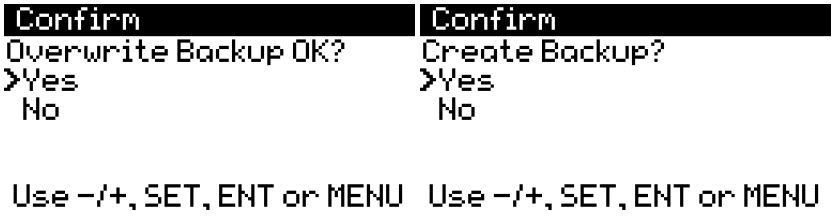
When the USB-memory symbol is visible:

1. Press **MENU**
2. Use ⊕ and ⊖ to select the `Backup & Restore` function on the display.
3. Press **ENTER**. The display shows both Backup and Restore choices.

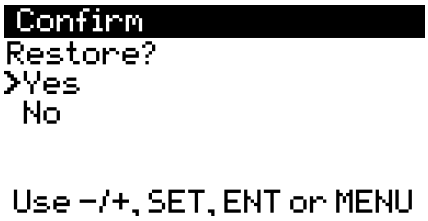


4. Use ⊕ and ⊖ to select `Backup or Restore`.
5. Press **ENTER** to confirm. Display possibilities are:

- Backup will continue after confirmation on the display:



- Restore will continue after confirmation on the display:



- 'Media Unavailable' message provided when no USB-memory is recognized.

6. Press **MENU** to exit the Menu.

> **WARNING:** Keep the USB-memory inserted when Backup or Restore is in progress. And do not use the organ – This is to avoid loss of data.

5.6 Chorus

Chorus is a function for lightly detuning the organ stops to give it a broader and livelier sound.

The chorus function can be activated/deactivated:

1. Press **MENU**.
2. Use ⊕ and ⊖ to select the ***Chorus*** function on the display.
3. Press the **ENTER**. The display shows the choices.
4. Use ⊕ and ⊖ to select the choice (on/off).
5. Press **ENTER** to activate the selected choice.
6. Press **MENU** to exit the Menu.

5.7 Expression Pedals

The sequence and assignment of the Expression Pedals can be changed in the Menu:

1. Press **MENU**

2. Use ⊕ and ⊖ to select the ***Expression Pedals*** function on the display.
3. Press **ENTER**. The display shows the current Pedal assignment.
   For example:
   CH *Pedal 1*
   SW *Pedal 2*

4. Use ⊕ and ⊖ to select the Pedal that needs to be changed.
5. Confirm the desired choice with **ENTER** or press **MENU** to exit without adjustment. If needed, another Pedal can be selected and changed.
4. Press **MENU** to exit the Menu.

> It is possible to assign a pedal to more than one function.
> Invalid options cannot be selected.

5.8 Key Volumes

a. Adjust

The Key Volumes 'Adjust' sub function makes it possible to adjust the key volumes of each stop per Organ Style while playing. The memory lock key is needed for this function.

1. The first time it is recommended to press the CAN piston (0), to switch off all stops and couplers.
2. Press **MENU**
3. Use ⊕ and ⊖ to select the `Key Volumes` function on the display.
4. Press **ENTER**. The sub functions of the Key Volumes menu appear on the display (Adjust, Reset One stop, Reset all Stops).
5. Use ⊕ and ⊖ to select the sub function `Adjust` and press Enter. The display prompts for a stop.
6. Activate a single stop. When selected, it gets a blinking status for the key volume adjustment. A question to press a single key appears on the display.
7. Press and hold a key of the corresponding division, or orchestral voice. All information of the pressed key is shown on the display:
   behind `Stop:` the active stop,
   behind `Keyb:` the corresponding keyboard,
   behind `Key:` the actual key whose key volume can be changed:
   behind `Vol:` the actual 'key volume' of that key.
8. Press pistons ⊕ or ⊖ (one or more times) to change the 'key volume' of the displayed key. While holding that key, you will hear the change in key volume and the display will show the new key volume level, which can be set from +24 dB to -24 dB (or off).

   During the key volume adjustment, it is possible to play the organ and activate more stops, to compare and contrast sounds. The last activated stop/ /key will always be shown on the display to change the key volume – indicated by a flashing status of the register.

9. Go to step 7 or 8 for the next stop, key volume change, or press SET to save the (the interim) change(s) or press **MENU** to exit the menu.

10. If any changes have not been saved, the display will show `Discard changes?` Use ⊕ and ⊖ to select `Yes` for discarding and press ENTER, or use ⊕ and ⊖ pistons to select `No` if the changes still have to be saved and press **ENTER**.
11. Press **MENU** twice to exit the Menu.


Only the 'key volume' of the stop/ with the blinking status can be changed. The display shows the key information and actual key volume.


For resetting to default settings, refer to 5.9 Reset Procedures


Key volumes can also be adjusted using the optional Intonat program. The individual pitch tuning of each key can only be changed using Intonat.

b. Reset one stop

The 'Reset one stop' sub function resets the key volumes for one stop for one selected organ style to the factory setting. The memory lock key is required for this.

1. Press the **0** (Gen Cancel) to switch off all stops and couplers (recommended).
2. Press **MENU**
3. Use ⊕ and ⊖ to select the `Key Volumes` function on the display.
4. Press ENTER. The sub functions of the Key Volumes menu appear on the display.
5. Use ⊕ and ⊖ to select the `Reset one stop` sub function on the display.
6. Press **ENTER**. A prompt to select a stop to reset appears on the display.
7. Activate one stop – this will get a blinking status indication. A question to confirm appears on the display.
8. Use ⊕ and ⊖ to select `No` or `Yes`.
9. Press **SET** to confirm and to return to the Key Volumes menu.
10. Press **MENU** twice to exit the Menu.

c. Reset ALL stops

The 'Reset ALL stops' sub function resets the key volumes of all stops in for one selected organ style to the factory setting. The memory lock key is required for this.

1. Press **MENU**
2. Use ⊕ and ⊖ to select the `Key Volumes` function on the display.
3. Press **ENTER**. The sub functions of the Key Volumes menu appear on the display.
4. Use ⊕ and ⊖ to select the `Reset ALL stops` sub function on the display.
5. Press **ENTER**. A question to confirm appears on the display.
6. Use ⊕ and ⊖ to select `No` or `Yes`.
7. Press **SET** to confirm and to return to the Key Volumes menu. Press **MENU** twice to exit the Menu.

5.9 Reset Procedures

The Reset Procedures function is used to **delete the capture memory, or to reset a number of settings**. The memory lock key must be used for this.

1. Press **MENU**
2. Use ⊕ and ⊖ to select the `Reset Procedures` function on the display.
3. Press **ENTER**. The display shows the menu for the Reset Procedures.
4. Use ⊕ and ⊖ to select the desired procedure:
   - **Cust. Temperament def.:** Resets the Temperament to factory settings
   - **Expression Pedal def.:** Resets the Expression Pedals to factory settings
   - **Memory default**: Clear the ***entire*** capture memory (reset to factory).
   - **MIDI default**: Resets the factory settings of the MIDI stops (optional).
   - **Preset default**: Resets the factory settings of the fixed combinations.
   - **Reverb default**: Resets the reverb settings to default settings.

The selected settings will be deleted and set to factory default. If you are not sure, press the menu-piston and make a backup, see §5.2 Backup & Restore.

5. Press **ENTER**. The display requests confirmation.
6. Use ⊕ and ⊖ to select No or Yes.
7. Press **ENTER** for confirmation
8. Press **MENU** to exit the Menu.

When the USB-memory is connected, a message will appear to disconnect the USB-memory.

To reset key volumes, see section 5.9

5.10 Startup Settings

With this function default choices can be selected at power-on, these are: Chorus on, Expression Pedal Behaviour and Keyboard Transfer.

1. Press **MENU**
2. Use ⊕ and ⊖ to select the `Startup Settings` function on the display.
3. Press **ENTER**. Now startup choices can be selected for:
   - `Chorus` (on/ off),
   - `Swell` (Realistic/ Linear) behaviour of the swell pedal and
   - `Keyboard Transfer` (swop order of Great and Choir).
4. Use ⊕ and ⊖ to select between choices.
5. Press **ENTER** to confirm. The cursor sign “>” moves to the right.
6. Use ⊕ and ⊖ to select the choice
7. Press **ENTER** to confirm.
6. Press **MENU** to exit the Menu.

5.11 Tremulants

Parameters for the tremulants on the organ can be altered to taste. The two parameters are the 'depth' which controls how much the pitch of the note fluctuates around the core note value. A higher depth means more fluctuation, so the note has more vibration. The speed is the rate at which the fluctuations occur measured in Hz (1 Hz is equal to once every second).

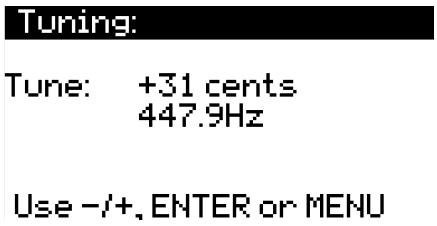
You will need the memory lock key to alter this.

1. Press **MENU**
2. Use ⊕ and ⊖ to select the `Tremulants` function on the display.
3. Press the **ENTER**, you will be prompted to select a tremulant.
4. Select the desired tremulant and the screen will display the current values for the tremulant.
5. Use the ⊕ button to move to a parameter.
6. Press **ENTER** to select that parameter and then ⊕ and ⊖ to adjust it. You can play the organ to hear the effects of the adjustment in real time.
7. Press **ENTER** to confirm.
6. Press **MENU** to exit the Menu.

5.12 Tuning

The Tune function shifts the pitch in steps of 1 cent, from -50 till +50 cents. The frequency adapts automatically from 427.5 Hz to 452.9 Hz. The active pitch setting in Hz can be read on the main display directly behind the tune symbol.

1. Press **MENU**
2. Use ⊕ and ⊖ to select the `Tune` function on the display.
3. Press **ENTER**. The actual Tune setting appears in cents and Hz on the display:



4. Use ⊕ and ⊖ to select the desired pitch.
5. Press **ENTER** to program the new setting and to return to the Menu or press Menu to exit without changes.
6. Press **MENU** to exit the Menu.

5.13 USB

The USB menu has functions to copy, delete and format the USB-memory. The USB-menu can be used for USB-memory with a memory capacity of 4GB to 32GB and FAT32 file system. You will need the memory lock to use this function.

Note: When USB-memory is inserted and recognized, the USB-memory symbol appears on the main display and the capture memory bank

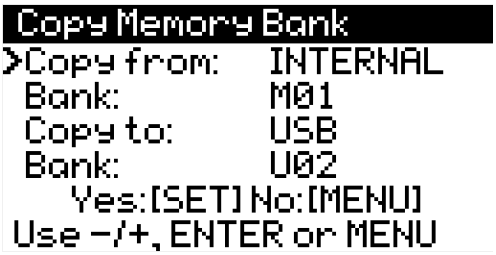
locations starting with an “U” will be loaded from USB Memory, instead of internal memory starting with an “M”.

Only USB memory with **FAT32 file system** can be recognized by the system. USB-memory with other formats cannot be recognized, whether any data is present or not.

To copy a specific Memory bank from USB Memory to internal memory, or vice versa:

1. Press **MENU**
2. Use ⊕ and ⊖ to select the `USB` function on the display.
3. Press **ENTER**
4. Use ⊕ and ⊖ to select the function `Copy Memory Bank` and press **ENTER**
5. Use ⊕ and ⊖ to select the options on the display, for the desired copy action.

   For example, the selected parameters below will Copy the settings of internal bank M01 to USB Memory Bank U02. The contents of the selected “Bank:” on the selected “Copy to:” destination will be overwritten.



6. Press **SET** to carry out the selected copy action.
   A confirmation will appear on the display for a final verification of the copy action in plain text, for example:
   `Copy INTERNAL M01 to USB M02 OK?`
7. Select the answer, Yes or No on the display with ⊕ and ⊖ pistons and press **ENTER** to confirm the copy command, or MENU to exit the menu.
8. Press **MENU** twice to exit the Menu.

To delete a Memory bank from USB Memory, or internal memory:

1. Press **MENU**
2. Use ⊕ and ⊖ to select the `USB` function on the display.
3. Press **ENTER**
4. Use ⊕ and ⊖ to select function `Delete Memory Bank`
5. Press **ENTER**. The Display shows the bank, or banks that can be deleted. When the display shows Bank ***, this means that the banks are empty, there is nothing to delete.
6. Use ⊕ and ⊖ to select the bank for deletion.
7. Press **SET** to delete the bank, or **MENU** to exit the menu
8. Press the **MENU** twice to exit the Menu.

To format USB Memory:

1. Press **MENU**
2. Use - and + to select the `USB` function on the display.
3. Press **ENTER**
4. Use ⊕ and ⊖ to select one of the functions `Copy Memory Bank`, `Delete Memory Bank`, `Format USB Memory`
4. Use ⊕ and ⊖ to select the `Format USB Memory` function on the display
5. Press **ENTER**. A warning appears.

The Format procedure will erase all information on the inserted USB-memory. Use only USB-memory with a capacity of 4GB to 32GB!

6. Press SET to format inserted USB-memory, or **MENU** to exit the menu.
7. Press **MENU** to exit the Menu.

5.14 Version

The Version of the firmware, hardware and sample set information can be checked:

1. Press **MENU**
2. Use ⊕ and ⊖ to select the `Version` function on the display.
3. Press ENTER. The display shows the version information.
4. Use ⊕ and ⊖ to step through the information pages.
   When the USB Memory is connected, active before activating the MENU, it is possible to save the version information as text file on the USB Memory by pressing the ENTER piston on the last information page.
5. Press **MENU** to exit the Menu.

6 MAINTENANCE, TROUBLESHOOTING AND WARRANTY

6.1 Maintenance

Overview

Component	Maintenance	Frequency
Cabinet	Cleaning. See 6.1.1	As required
Manuals	Cleaning and removing scratches. See 6.1.2	As required

6.1.1 Maintenance of the cabinet

Do not use furniture polish or teak oil to clean the cabinet of the organ. Direct sunlight may discolor the cabinet.

1. Clean the cabinet with a damp cloth.
2. Rub the cabinet dry with a lint-free cloth.

6.1.2 Maintenance of the manuals/keyboards

Do not use aggressive cleaning agents such as paint thinner or acetone to remove dirt.

1. Clean the manuals with a damp cloth.
2. Rub the manuals dry with a lint-free cloth.
3. Remove any scratches with car polish.

6.2 Warranty

The conditions are specified in the warranty certificate. The warranty is void if changes or repairs are made to the organ by persons or organizations that are not authorized by Global Organ Group b.v.

7 MIDI Implementations

7.1 MIDI Implementation Chart

Copeman Hart Organs — Date: September 2008

MIDI Implementation card — Version 1.00

Functions		Transmitted	Recognized	Remarks
Basic Channel	Default Changes	See MIDI Specs See MIDI Specs	See MIDI Specs Y[1]	See MIDI Specs
Mode	Default Messages Altered	Mode 3 N * * * * * * * *	Mode 3 N N	
Note Number	True Voice	36 - 96 * * * * * * * *		
Velocity	Note ON Note OFF	9nH v=1 - 127 9nH (v=64) 9nH (v=0)	9nH v=1 - 127 9nH v=1 - 127 9nH v=0, 8nH v=*	Velocity ON Velocity OFF *=irrelevant
After Touch	Keys Channels	N N		
Pitch Bend		N		
Control Change	7 11 100/101/6 100/101/6	Y Y Y Y		General Volume Expr. pedals Pitch Transposer
Program Change	: True#	See MIDI Specs * * * * * * * *	See MIDI Specs See MIDI Specs	See MIDI Specs See MIDI Specs
System Exclusive		See MIDI Specs	See MIDI Specs	See MIDI Specs
Common	: Song Pos : Song Sel : Tune	N N N	N N N	
System Real Time	: Clock : Commands	N N	N N	
Aux	: Reset All Contr. : Local ON/OFF : All Notes OFF : Active Sense : Reset	N N Y N N	N N Y N N	
Notes		[1] Depends on number of divisions		

Mode 1: OMNI ON, POLY
Mode 2: OMNI ON, MONO
Y=YES
Mode 3: OMNI OFF, POLY
Mode 4: OMNI OFF, MONO
N=NO

7.2 MIDI Specifications

This paragraph describes the specifications on the MIDI Implementation Chart in more detail.

Default basic channels (transmitted/recognized)

For 2 manual instruments:	1: Great 2: Swell 3: Pedal 12: Stops
For 3 manual instruments:	1: Choir 2: Great 3: Swell 4: Pedal 12: Stops

Control changes (transmitted)

Controller 7 (07h)	General volume, with volume values 40 (28h) - 127 (7Fh).
Controller 11 (0Bh)	Swell pedal, with volume values 55 (37h) - 127 (7Fh).
Controller 6 (06h)	Pitch, with pitch values (21h) - 95 (5Fh). Pitch value 64 (40h) = a = 440Hz. The following applies to the pitch: LSB 100 (64h) 1 (01h) and the MSB 101 (65h) 0(00h). Transposer, with transposer values 56 (38h) - 72 (48h). Transposer value 64 (40h) = a = 440Hz. The following applies to the transposer: LSB 100 (64h) 2 (02H) and the MSB 101 (65h) 0(00h).

Control changes (recognized)

Controller 7 (07h)	General volume, with volume values 0 (00h) - 127 (7Fh). Volume values less than 40 (28h) are treated as 40 (28h).
Controller 11 (0Bh)	Swell pedal, with volume values 0 (00h) - 127 (7Fh). Volume values less than 55 (37h) are treated as 55 (37h).

Program changes (transmitted/recognized)

Organ stops: Depends on the number of stops and the sequence of stops.
MIDI stops (programmable): 1-128.

System exclusive messages (transmitted/recognized)

Each ‘sys ex’ (system exclusive) message largely looks the same. The first 7 bytes and the last byte are always the same. Only the value of the 8th byte varies. This is the ‘sys ex message’ that Johannus generally uses: F0 00 4A 4F 48 41 53 XX F7 (hexadecimal). The ‘sys ex messages’ described below only indicates the value of the 8th byte (XX) and the output from which it is transmitted.

All stops off
The ‘all stops off’ sys ex code is 7F. This sys ex code is transmitted through the MIDI SEQ. output when the cancel piston (CAN) is pressed. When an ‘all stops off’ sys ex code is received, all stops on the organ are switched off.

Pushbutton values
When a piston is pressed, a sys ex code is transmitted with the value of the piston that is pressed (for example PP = 00 P = 01) through the MIDI MOD. output.
These sys ex codes are only important when the Johannus sound module CSM 128 is connected to your organ.

Other MIDI codes (transmitted)
Press the cancel piston (CAN) to transmit the sys ex code, ‘all stops off’ and all volume settings through the MIDI SEQ. output.

For the USA: This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC rules as documented for identified product above. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.

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 o- and then on, the user is encouraged to try to correct the interference by one or more of the following measures:
• Reorient or relocate the receiving antenna.
• Increase the separation between the equipment and receiver.
• Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
• Consult the dealer or an experienced radio/TV technician for help.

This equipment referenced in this declaration is identical to the Organ tested and found acceptable with the standards. The technical records maintained by the responsible party continue to reflect the equipment being produced under this Declaration of Conformity within the variation that can be expected due to quantity production and testing on a statistical basis.

This equipment requires shielded interface cables to meet FCC class B limit. Any unauthorized changes or modifications not expressly approved by the party responsible for compliance could void the user authority to operate the equipment.

For Canada: **NOTICE.** This Class B digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.
AVIS. *Cet appareil numérique de la classe B respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada*.

For C.A. US (Proposition 65): **WARNING.** This product contains chemicals known to cause cancer, birth defects and other reproductive harm, including lead.

For the U.K.:

IMPORTANT:

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

The wire which is coloured GREEN-AND-YELLOW must be connected to the terminal in the plug which is marked by the letter E or by the safety earth symbol ⏚ coloured GREEN or GREEN-AND-YELLOW.

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.

For additional safety, all externally accessible metal parts (such as headphones, Aux-in/out, MIDI, toe pistons, etc.) are floating from safety earth.

THIS APPARATUS MUST BE EARTHED

THE WIRES IN THIS MAINS LEAD ARE COLOURED IN ACCORDANCE WITH THE FOLLOWING CODE. GREEN-AND-YELLOW: EARTH, BLUE: NEUTRAL, BROWN: LIVE