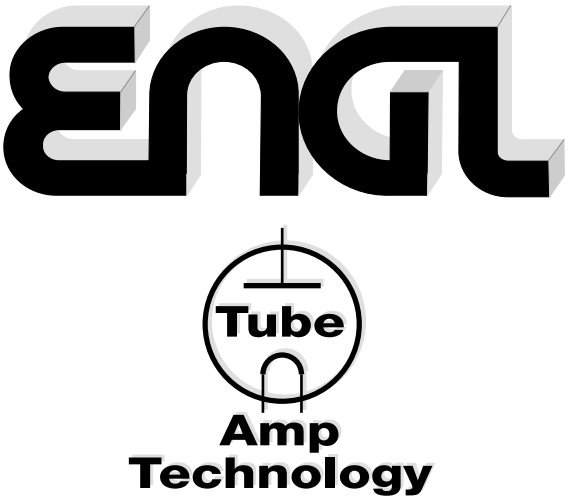
TUBE POWERAMP 810

Operator´s Manual

Please, first read this manual carefully!


Tube
Amp
Technology

In addition to delivering **top-notch tone** with that **typical EL84-driven flavor**, the compact, **all-tube ENGL 810 Power Amp** offers a number of **practical features** in a potent 2 x 20-watt package:

-> An **Input Gain switch** to adjust the amp's input sensitivity and **match gain levels** to **various preamps** and **FX processors**. At the higher setting, the input is **sensitive enough** for signals sent from the **pickups on guitars**.

-> Each Left and Right stereo channel features **A and B volume controls** that let you dial in **different volume settings**. Volume A/B may be selected via a footswitch or an external MIDI Switcher (e.g. ENGL Z11-S.A.C.).
You're sure to find that **Volume A/B** comes in very handy, especially when playing **alternating rhythm and lead parts**.

-> The **Sound Set circuit**, yet another **trademark ENGL innovation**.
It offers **two independent EQ systems** with **Presence A and Depth A** controls for **Sound Set A** and **Presence B and Depth B** controls for **Sound Set B**.
You can dial in **two different power amp setups** and **match them up** with a **clean and a lead configuration** on the connected preamp to **achieve excellent tonal results**. Sound Set A/B is selected via a footswitch or an external MIDI Switcher (e.g. the ENGL Z11-S.A.C.).

-> The power amp is equipped with **impedance-matched 8 and 16-ohm speaker outputs** each channel.

-> **Dedicated Standby switches** for the power amp's left and right channels enable single-sided operation.

-> **Two safety systems:** Four power tube fuses protect the amp from damage brought on by power tube defects/failure and ensure the amp does not shut down. It continues to function on both channels, though the defective channel operates at a perceptibly reduced output level. LEDs indicate which channel's tube fuse has triggered. In addition, a thermal overload protector powers the amp down if the it overheats because of a problem with the fan.

This power amp's hallmarks include intelligent design features, superior craftsmanship, impeccable finishing and highest quality components. Bear in mind, though, that a few precautions will dramatically extend tube life (see handling and care guide). The ENGL team would like **to thank you for your confidence in our product**. We certainly enjoyed engineering this fine work of audio art for you, and hope the **ENGL TUBE POWER AMP 810** brings you just as **much joy and satisfaction.**

PLEASE NOTE: Read the Operator's Manual carefully and thoroughly! You'll find guidelines on care and maintenance of tube amps on page 9 and 10.
Avoid operating errors and potential damage to the Power Amp by heeding the guidelines and cautionary remarks in this manual. Under the heading Tips from the designer, you'll come across practical tips on the aforementioned features throughout the manual.
All critical information concerning the operation of this Power Amp is preceded by "**NOTE**", "**CAUTION**", "**Read and heed**" or some other eye-catching comment. We're calling your attention to these remarks for reasons of safety or other compelling motives, so please give them due consideration.

CAUTION! Please read and heed the following:
You'll find an ancillary pamphlet accompanying this owner's manual entitled Instructions for the Prevention of Fire, Electrical Shock and Injury. Be sure to read it before you plug in and power up the Power Amp!

Contents:

1. ENGL Power Amp 810, 19" stereo rack power amp;
2. mains cord;
3. this manual;
4. a pamphlet entitled Instructions for the Prevention of Fire, Electrical Shock and Injury.

Front Panel Features

On page 15 of the manual, you'll find diagrams of the front and rear panels.

1 GAIN P.A.
This button's setting determines the input sensitivity for both the left and right channels of the power amp;
"on position" (button engaged): Input Gain High.
A tip from the designer:
The 810 Power Amp offers quite a lot of gain, so you can plug a guitar straight into it. If you set the Volume controls to 12 o'clock or higher and select High Gain mode by pressing the Gain P.A. button (1), you will be able to push the power amp into the overdrive zone, with plenty of saturation for certain styles such as snarling rock riffs.
Use the Presence and Depth tone controls in combination with the Volume A and B knobs to dial in four different sounds on the power amp and then access them via footswitch. For example, you could configure a clean sound for single-coil pickups by setting the Volume knobs (2 & 5) to around 12 o'clock, Presence A (7) in the 1-to-4 o'clock range, and Depth A (8) to somewhere between 11 and 3 o'clock. You can coax vintage sounds with that typical EL84 flavor and moderate overdrive out of the amp by setting Volume B (3 & 6) to somewhere between 1 and 3 o'clock in combination with Presence B (10) and Depth B (11) set anywhere from 8 to 12 o'clock. If you add the guitar's volume knob to the sonic equation, you get a vast spectrum of fine tonal distinctions. If you want to hit the input section a little harder to strike a more aggressive note, set the L & R channels' Volume controls between 3 and 5 o'clock. In combination with humbuckers, this should give you enough juice for a lower gain lead sound. Be sure to dial back the activated Depth knob to a position lower than 10 o'clock so the bottom end doesn't get muddy. If you're aiming for a pristine clean sound with humbucking pickups, you will have to back off the Volume knobs to a relatively low setting or select Low Gain mode on the Gain P.A. This is done by ensuring the button is not pressed in.

2 VOLUME LEFT A
Volume control A for the left power amp channel.

3 VOLUME LEFT B
Volume control B for the left power amp channel.

4 VOLUME A/B
switches between Volume A controls and Volume B controls,
"off position" (button not engaged): Volume A controls activated, red LED off;
"on position" (button engaged): Volume B controls activated, red LED lights up;
This feature can also be remote-controlled via a footswitch or a MIDI Switcher connected to jack 20; the Volume A/B pushbutton is deactivated once a footswitch is connected.
A tip from the designer:
Volume A/B switching serves to activate two different volumes:
In combination with a preamp, you can dial in one level for rhythm work, and the other for leads, or even two different levels for soloing.

5 VOLUME RIGHT A
Volume control A for the right power amp channel.

6 VOLUME RIGHT B
Volume control B for the right power amp channel.

7 PRESENCE A
Power amp treble control A; affects both left and right channels.

8 DEPTH A
Power amp bass control A; affects both left and right channels.

9 SOUND SET A/B
Switches between Sound Set A (Presence A control and Depth A control) and Sound Set B (Presence B control and Depth B control);
"off position" (button not engaged): Sound Set A active, red LED off;
"on position" (button engaged): Sound Set B active, red LED lights up;
This feature can also be remote-controlled via a footswitch or a MIDI Switcher connected to jack 20; the Sound Set A/B pushbutton is deactivated once a footswitch is connected.
A tip from the designer:
Benefits and practical application of Sound Set A/B switching:
This unique feature lets you combine various preamp configurations with the two power amp EQ setups Sound Set A and Sound Set B, easily and conveniently. You can tweak the power amp to shape the tone in different ways using the two Sound Set EQs, thereby considerably extending your sonic spectrum.
The two power amp EQs let you sculpt different basic sounds, say clean and lead, with great precision, so you can dial in exactly the sound you wish to hear. Let's look at a typical example using a multi-channel preamp (that is, a dual clean/lead-channel device):

Sound Set A:
Presence A knob setting between 1 and 4 o'clock;
Depth A knob setting around 12 o'clock;
Sound Set B:
Presence B knob setting between 9 and 1 o'clock;
Depth B knob setting somewhere in the 12-to-3 o'clock range;
Activate the preamp's clean channel and Sound Set A: Lots of high end and a moderate amount of low end yield crisp clean tone. Activate Sound Set B for the preamp's lead channel (that is, overdriven preamp). Reduced treble and plenty of low-end punch yield warm, assertive lead tone.

10 PRESENCE B
Power amp treble control B; affects both left and right channels.

11 DEPTH B
Power amp bass control B; affects both left and right channels.

12 LEFT Ch. V4 & V5
This LED lights up as soon as the amp's left channel is activated via the Standby switch (14). This tells you the left channel is ready to go. A flashing LED indicates that a power tube fuse has triggered because of an overload or a defect in either the V4 or V5 power tubes. See the tube map on page 13 for the positions of the two tubes and their fuses in the chassis.

13 RIGHT Ch. V6 & V7
This LED lights up as soon as the amp's right channel is activated via the Standby button (15). This tells you the right channel is ready to go. A flashing LED indicates that a power tube fuse has tripped because of an overload or a defect in either the V6 or V7 power tubes. See the tube map on page 13 for the positions of the two tubes and their fuses in the chassis.

14 STAND BY LEFT
Left channel standby switch. Use this switch to silence ("0" indicated) the left channel when you take a longer break. The power amp's tubes stay nice and toasty, and the channel is ready to roll immediately when you ramp it back up to full power. If you wish to use the right channel only, you must deactivate the left channel with the Standby switch (14).

15 STAND BY RIGHT
Right channel standby switch. Use this switch to silence ("0" indicated) the right channel when you take a longer break. The power amp's tubes stay nice and toasty, and the channel is ready to roll immediately when you ramp it back up to full power. If you wish to use the left channel only, you must deactivate the right channel with the Standby switch (15).

A tip from the designer:
I suggest you get into the habit of using standby during short breaks. In this mode, current is not piped through the power tubes, so they don't get as hot (due to the lack of anode dissipation) and are spared considerable wear. The power amp is ready to run when you flip the Standby switch because the tubes are already warm and don't require time to heat up. For breaks of 20 minutes and longer, I recommend that you switch the amp off in order to conserve energy.

16 POWER
Mains power on/off.
Please note: ensure that the Stand By switches (14, 15) are both set to Stand By (0 position) before you switch the power amp on. Let the tubes heat up for about 30 seconds before you activate the power amp channels. This procedure spares the tubes.
CAUTION: After an extended period of operation and higher ambient temperatures the amps's chassis can become very hot, therefore avoid touching the topside and the rear panel surface!

Rear Panel Features

On page 15 of the manual, you'll find diagrams of the front and rear panels.

17 Mains Connector (AC Power Inlet, IEC - C14 connector)
Plug the mains cord in here.
CAUTION: Make sure you use an intact mains line cord with a grounded plug! Before you power the power amp up, ensure the voltage value printed alongside the mains port is the same as the current of the local power supply or wall outlet. Please also heed the guidelines set forth in the separately included pamphlet, Instructions for the Prevention of Fire, Electrical Shock and Injury.

18 Mains Fuse Box:
The rear chamber contains the mains fuse and the front chamber a spare fuse.
CAUTION: ALWAYS make sure replacement fuses are of the same type and have the same ratings as the original fuse! To this end, please refer to the fuse ratings shown on the type panel.

19 GROUND LIFT SWITCH
This switch severs the circuit connecting the amp's internal ground to the wall receptacle's ground terminal. You can set the switch to Ground Floated when you have connected a preamp or a signal processor and want to prevent the two devices' grounds from forming a ground loop that manifests in annoying humming.
Please note: A ground loop is an extraordinary condition. Under ordinary circumstances, ensure the rocker switch is set to Ground to earth the amp to the mains ground, thereby preventing ungrounded line noise!

20 FOOTSWITCH: VOLUME A/B, SOUND SET A/B
Use this 1/4" stereo jack to connect a conventional footswitch with two switching functions (for example, the ENGL Z-4, see page 15 for additional information) to

1. Switch between Volume A and Volume B (Mono contact).
2. Switch between Sound Set A and Sound Set B (Stereo contact).

A tip from the designer:
The switching functions Volume A/B and Sound Set A/B can also be executed via a looper/switcher or other MIDI devices that feature two freely-programmable (switching-) inputs. Depending on the type of MIDI device, you may have to split the Footswitch stereo jack into two mono jacks. Each switching function requires the mono or stereo contact (see page 15 for assignments) and the ground!
NOTE! If the switching and signal grounds are identical in the MIDI device, then you may encounter a ground loop, especially if the amp and device (e.g. FX processor) exchange signals!

21 INPUT RIGHT
This is the right power amp channel's signal input as well as the master input for the right and left channels.
A tip from the designer:
Input Right also serves as a master input when you want to feed a mono signal to both the right and left channels. The signal routed into Input Right (21) is automatically patched to the left channel when there is no plug inserted in the Input Left (22) jack. This lets you do things like plug a guitar straight into the power amp and use both channels without having to fuss with Y cables and the like.

22 INPUT LEFT
This is the left power amp channel's signal input

23 Ventilation Duct / Fan
An ultra-quiet fan keeps your power amp cool inside the enclosure by channeling hot air out.
ATTENTION: Install the Poweramp in a 19" rack in such a manner as to ensure air circulation is not impeded. Do not block or cover the Ventilation Duct, the side and the top venting slots.

24 SPEAKER OUTPUT: 16 OHM RIGHT
16-ohm right channel speaker output jack for connecting one 16-ohm cabinet.

25 SPEAKER OUTPUT: 8 OHM RIGHT
8-ohm right channel speaker output jack for connecting one 8-ohm cabinet.

26 SPEAKER OUTPUT: 16 OHM LEFT
16-ohm left channel speaker output jack for connecting one 16-ohm cabinet.

27 SPEAKER OUTPUT: 8 OHM LEFT
8-ohm left channel speaker output jack for connecting one 8-ohm cabinet.

A tip from the designer:
You can connect the following combinations of speakers or cabinets:
-> An 8-ohm cabinet to the 8-ohm jack of each channel;
-> A 16-ohm cabinet to the 16-ohm jack of each channel;
-> Two 16-ohm cabinets connected in parallel to the 8-ohm jack of each channel;
In theory, you could also connect two 8-ohm speakers or cabinets to each channel. These two speaker systems would have to be wired externally in a serial circuit, which would then need to be connected to one stereo channel's 16-ohm jack.
If you opt to use one stereo cabinet for both channels, make sure it is wired and connected to work in stereo, otherwise the amplifier could be damaged!

IMPORTANT NOTE: If you choose to use just one power amp channel, ensure you switch the other channel's STANDBY switch off. Never operate an active stereo channel without a connected speaker, you may destroy the power amp!
Ensure your cabinet's specifications match the respective output's specs!

Handling and Care:

Keep the Power Amp 810 safe from hard knocks and shocks. Tubes are fragile and tend to suffer when exposed to mechanical stress!
Let the power amp cool down before you transport it. Ten 10 minutes or so will do to spare the tubes.

Tubes take some 20 seconds to warm up after you switch the power on, and about two to three minutes before they are able to pump out full power. Make a habit of giving your Power Amp 810 plenty of time to get toasty and of flipping the Standby switches for short breaks.

In order to spare the power tubes and prolong their lifetime, we recommend to set the Stand By switch to Stand By (0 position) before you switch the Power Amp 810 on. After a period of 30 seconds you may activate the power amp channels by flipping the Stand By switches.

Avoid storing the power amp in damp or dusty rooms to spare jacks, switches and potentiometers.

Never use caustic or scouring detergents to clean the power amp's housing, front or rear panels. Use a soft, damp cloth or sponge with diluted soapsuds or a standard brand of mild dishwashing liquid instead. Never use solvents they can dissolve the Poweramp's front and rear panel labels. Keep liquids well away from the power amp, particularly the interior of the housing.

Make sure air can circulate at the rear panel (Ventilation Duct / Fan) and at the venting slots on the top and on the right side of the power amp to allow for adequate cooling, which increases component life.

Never operate an active stereo channel without an adequate load (a speaker, cabinet or suitable terminating resistor).

High ambient temperatures place an additional strain on diverse components; so if at all possible, avoid operating the Power Amp 810 at temperatures far higher than 30°C for longer periods. Running the amp at mains voltages exceeding the nominal mains input voltage over longer periods can also shorten component life.

Replace tubes with selected tubes that satisfy ENGL selection criteria to forestall microphonic properties, undesirable noise and unbalanced power amp signals. Because power tubes' idle current (bias) must checked and possibly adjusted when replacing tubes, this is a job best left to experienced and authorized specialists.

Troubleshooting

The Power Amp 810 will not switch on.

-> Does the necessary voltage level exist at the receptacle?
-> Is the power cord o.k.? Test it through exchanging it.
-> The mains fuse may have blown. Check the fuse and replace it with a fuse of the same type and rating. If necessary; you'll find a spare fuse in the mains fuse box's (18) front chamber
-> The temperature within the power amp may have spiked, perhaps because ventilation ducts are obstructed, the fan malfunctioned, or ambient temperatures are extremely high, all of which can trigger the internal thermal cutoff. Set both Standby switches to "0" and allow the power amp to cool down. See the chapter "Over-temperature protection" on page 11.

The Power Amp 810 is not providing an output signal / no sound is emanating from the speaker.

-> Is at least one speaker connected to the speaker outputs Right and/or Left 8 or 16 ohms (24, 25, 26, 27)?
-> Is the respective power amp channel activated (Standby switch to ON)?
-> Are all cords (guitar, effect, and speaker) connected properly and are they functional ? (-> Is there a break or short circuit in a cord?)
-> Unplug connected preamps and effectors and see if the Power Amp 810 works fine without these peripheral devices. Plug in your guitar to the respective Input jack (21 or 22) and set the Gain P.A. (1) option to Input Gain High.
-> Are the active Volume knobs of the given power amp channel set to a value greater than 0? If any of these knobs is set to 0, no signal is routed to the power amp's outputs.
-> The temperature within the power amp may have spiked, perhaps because ventilation ducts are obstructed, the fan malfunctioned, or ambient temperatures are extremely high, all of which can trigger the internal thermal cutoff. Set both Standby switches to "0" and allow the power amp to cool down. See the chapter "Over-temperature protection" on page 11.

-> A tube, internal fuse or other component may be defective. Be sure to take the Power Amp 810 to an authorized service center.

One channel is providing far less power than it should.

-> A defective power tube triggered one of the fuses (the power tube fuse has blown). Once the corresponding power amp channel is activated via the Standby switch, the two LEDs LEFT Ch. V4 & V5 (12) and RIGHT Ch. V6 & V7 (13) indicate this status by flashing.
Have a professional technician check and replace the internal power tube fuse(s). The same goes for the tube(s) protected by the fuse(s). They must also be tested and replaced, if necessary, to prevent fuses from triggering again.

The speaker is emitting humming noises:

-> Is the Ground Lift switch (19) set to Ground? If you are operating the power amp with other grounded gear (preamp, effect devices) connected, this switch must be set to the Ground Floated position in order to prevent ground loop hum. You may even hear humming even without a guitar connected to your rig. Set the Ground Lift switch to the Ground position if the other connected devices are not grounded (this is usually the case with external power supply units and mains plugs lacking a ground terminal).

-> The two patch cords connecting the two L & R preamp outputs to the L & R power amp inputs are another potential noise source. The duplicate ground circuits can cause hum, depending on the type of cords and their routing. You can possibly solve this problem by severing one of the two patch cords' ground circuits, either by detaching the ground wire from one of the two patch cords or by masking the ground terminal on one jack plug using insulating tape.

-> The amp and mains grounds are not connected properly or are altogether disconnected. Have an experienced specialist check this.

-> Cords connected to the input may not be shielded properly. Replace them to check if this is indeed the case.

-> The poweramp, signal or speaker cords or another unit in the setup may be picking up interference from powerful magnetic fields (for example, of nearby power transformers or electrical motors). Reposition the amp and connector cables.

-> The power amp, signal or speaker cords or another unit in the setup may be picking up radio signals, for example, from activated mobile telephones or powerful local transmitting stations nearby. Switch off mobile phones while troubleshooting noise problems.

Over-temperature protection:

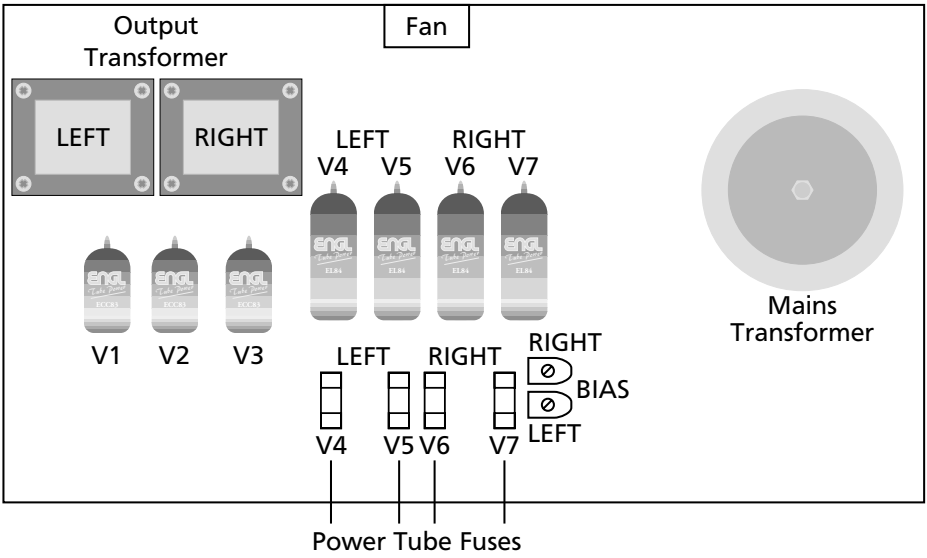
If the temperature within the power amp rises sharply, a thermal cutoff is triggered to shut down the power amp to protect the components.
Overheating can be caused by insufficient ventilation, when both channels are operated at peak loads for lengthy periods at very high ambient temperatures, or if the built-in fan malfunctions. The thermal cutoff will automatically switch the amp back on after it has cooled down to the point where the temperature in the housing drops below a certain threshold.

Technical Data

Output power:	approx. 20 watts max per channel.; adjusted accordingly to 8 and 16 ohms;
Input sensitivity	
P.A: Low Gain:	0 dB nominal, max. 10 dB
P.A. High Gain:	-20 dB nominal, max. -10 dB
Power consumption:	approx. 120 watts max.;
Fuses:	
Mains fuse:	
at 220/230/240 mains voltage	0.63 ATL (0.63 amps slo-blo);
at 100/115/120 mains voltage	1.25 ATL (1.25 amps slo-blo);
power tube fuses:	4 x 80 mAM (0.08 amps medium blow);
Important:	**Replace these with fuses of the same type and rating only!**
Tubes:	
V1:	ECC83/12AX7 F.Q., input tube;
V2, V3:	ECC83/12AX7 selected;
V4, V5:	EL84, matched set;
V6, V7:	EL84, matched set;
Consult Tube Map to view tube array on page13!	Replace tubes with selected sets only!
Dimensions:	19", 1 rack space, depth: 235 mm (9.25");
Weight:	approx. 5.6 kg, 12.35 lb;

CAUTION! Please read and heed the following:
You'll find an ancillary pamphlet accompanying this owner's manual entitled Instructions for the Prevention of Fire, Electrical Shock and Injury. Be sure to read it before you plug in and power up the amp!
Note: Technical specifications are subject to change without notice.

Tube Map Power Amp 810:



the tubes and their function:
V1 - ECC83 (12AX7): input stage, left & right channel; grade: FQ selected;
V2 - ECC83 (12AX7): phase splitter left channel; grade: selected;
V3 - ECC83 (12AX7): phase splitter right channel; grade: selected;
V4, V5 - EL84: power tubes, left channel, matches set;
V6, V7 - EL84: power tubes, right channel, matches sets;

Tube replacement report:

1. Replaced on: _ _ _ _ _ _ _ 20 _ _ _ Replaced by: _ _ _ _ _ _ _ _ _ _ _ _ _ _

Replaced tubes: _

Reason: _

2. Replaced on: _ _ _ _ _ _ _ 20 _ _ _ Replaced by: _ _ _ _ _ _ _ _ _ _ _ _ _ _

Replaced tubes: _

Reason: _

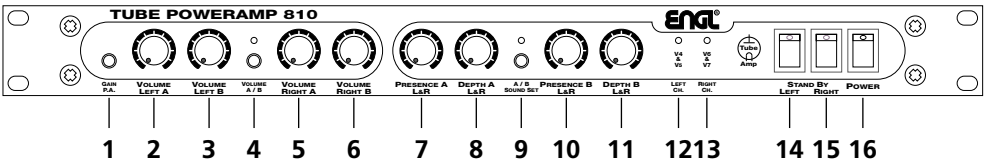
3. Replaced on: _ _ _ _ _ _ _ 20 _ _ _ Replaced by: _ _ _ _ _ _ _ _ _ _ _ _ _ _

Replaced tubes: _

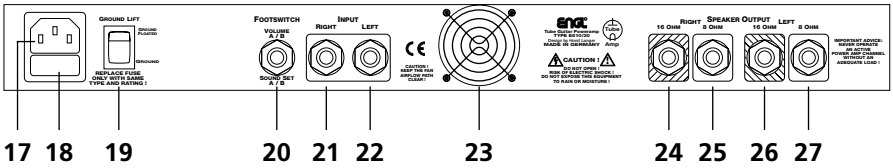
Reason: _

Space for User Notes

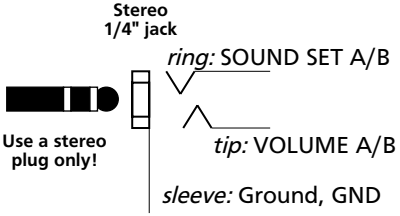
Front panel layout



Rear panel layout



Footswitch (20)



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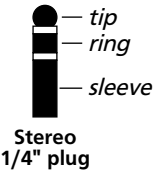
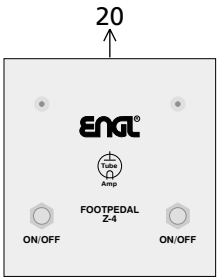
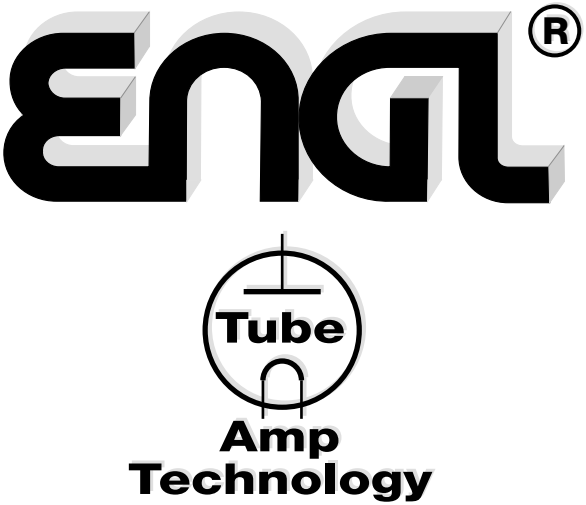


Options for controlling the Power Amp 810 remotely:

Two-way footswitch (e.g. ENGL Z-4): Connect two-way footswitches to the amp by plugging a stereo ¼ " cord into jack no. 20.
Functions:
1. *Volume A/B* (4)
2. *Sound Set A/B* (9)
see page 5 and page 8 for more details.
As an alternative to a two-way footswitch, you can connect a MIDI switcher (the ENGL Z11-S.A.C. or the ENGL MIDI Footcontroller Z-15 will do nicely) to this jack (20) to control the two switching functions.





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