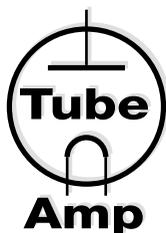


ENGL



Powerball

Full Tube
Guitar Amplifier

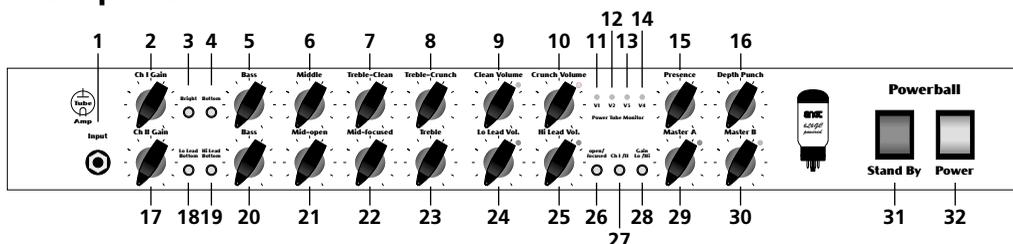
Operator's Manual

Please, first read this manual carefully!

A four-channel, all-tube powered head, the **ENGL Powerball** offers sound-shaping options unrivalled by any other amp. Designed to satisfy the exacting demands of discerning players, it delivers all the tonal hues and colors you need to paint the most vivid musical pictures imaginable. Housed inside this newly designed enclosure is a powerhouse 100-watt amp boasting 6L6GC tubes. It delivers the sonic goods you need to dial in everything from contemporary ultra-high gain lead tone to crystal-clear clean and punchy crunch sounds. An astonishing amount of gain reserves, remarkable tonal versatility, and bone-rattling bottom end have crowned the **Powerball** king of the heap among modern-day guitar amps. Courtesy of its ability to crank out tight, focused low end, glossy top end and jaw-dropping sound pressure levels, this amp provides the contemporary guitarist with richly detailed tone and the kind of cut-thru-the-din assertiveness that sets standards for amps of this class. And in keeping with the ENGL tradition of engineering excellence, it sports a host of hip features: a second master volume, electronic power amp monitoring, an adjustable FX loop, and a Depth Punch knob that shapes the power amp's response by beefing up the low end. But that's not the last word on this ENGL head's innovative features: You also get two different sound voicings, *Open* and *Focused*. We created these voicings to extend the range of lead sounds you have at your disposal by tweaking mid-range response to suit different playing styles and applications.

There are few more handy features to rave about: The amp ships with a Z-5 Custom Footswitch Port. Designed to take the ENGL Z-5 footswitch that lets you control all key sound-shaping functions remotely. ENGL added another new audiophile wrinkle - an adjustable noise gate for the Lead channel. Old world craftsmanship and highest quality components are part of what makes ENGL amps so special, and the Powerball is no exception. On that note, please read and heed the guidelines on handling all-tube amps. You'll find them on the last page of this manual. The ENGL team is convinced that this amp will delight and inspire you. The **Powerball** will rock your world!

Frontpanel



1 Input

1/4" unbalanced input. Plug your guitar cord in here.

2 Ch I Gain

This knob determines input sensitivity of Main Channel I (Clean & Crunch), in other words, the input level of the preamp in Ch I. In Crunch mode it determines the amount of preamp saturation.

A tip from the designer:

The amount of distortion depends on the type of pickups your guitar is equipped with. Single coil pickups may overdrive the preamp when the knob is set to about the two o'clock position in Clean operating mode, pickups with very high output levels (humbuckers or active pickups) will evoke distortion at even lower settings. If you want squeaky clean tone, simply back off the Gain knob accordingly.

CAUTION: Extremely high gain and volume levels in Crunch mode can produce strong feedback.

Avoid feedback squeals, they lead to hearing loss and damaged speakers! Reduce the Gain, Treble and Presence levels at higher volumes in order to avoid uncontrolled feedback!

3 Bright

Alters the EQ by boosting the upper treble range; effectiveness decreases at higher Gain settings; the Bright feature affects Clean and Crunch.

A tip from the designer:

For a crisp glassy tone, set the Bright switch to the On position.

This setting boosts the treble response of muddy pickups.

4 Bottom

Alters the EQ by boosting the low end range; the Bottom feature affects Main Channel I Clean & Crunch.

A tip from the designer:

If you want to ladle an extra helping of bottom-end oomph on crunch sounds, I recommend that you activate the *Lo End Punch* button. At very high Gain knob settings (> 3 o'clock) and with high output pickups, your best bet is to deactivate this button for a more focused, crisper tone.

5 Bass

Bottom end voicing control of the preamps' passive EQ for Main Channel I, Clean und Crunch.

6 Middle

Mid-range voicing control of the preamps' passive EQ for Main Channel I, Clean und Crunch.

7 Treble-Clean

Upper range voicing control of the preamps' passive EQ for Main Channel I, Clean mode.

8 Treble-Crunch

Upper range voicing control of the preamps' passive EQ for Main Channel I, Crunch mode.

TIP's from the Designer:

To help you get acquainted with the amp's fundamental sounds, I recommend that you set all tone controls to the center or 12 o'clock position. For higher Gain Crunch sounds, your best bet is to turn the respective Treble knob well down to prevent the pickups and speakers from interacting at hi levels and generating feedback (the recommended setting is somewhere in the 9 to 1 o'clock range). The Clean and Crunch channels are equipped with dedicated Treble knobs. This means that you can tweak the top end of each of the two channels separately to suit your taste and the given sonic scenario. You will find that grittier tones generally sound better with a touch less treble because preamp saturation makes higher frequencies figure more prominently in the signal.

9 Clean Volume

Volume control for the Clean channel (pre-FX loop, influences the Send level). The green LED beside this control indicates Clean operating mode.

10 Crunch Volume

Volume control for the Crunch channel (pre-FX loop, influences the Send level). The yellow LED beside this control indicates Crunch operating mode.

11 POWER TUBE MONITOR V1

This LED lights up when the current sent through the V1 power amp tube was too high and the power tube monitor system has switched that tube off.

12 POWER TUBE MONITOR V2

This LED lights up when the current sent through the V2 power amp tube was too high and the power tube monitor system has switched that tube off.

13 POWER TUBE MONITOR V3

This LED lights up when the current sent through the V3 power amp tube was too high and the power tube monitor system has switched that tube off.

14 POWER TUBE MONITOR V4

This LED lights up when the current sent through the V4 power amp tube was too high and the power tube monitor system has switched that tube off.

A few words on the POWER TUBE MONITOR system:

The electronic power amp monitoring system constantly gauges the current sent to the two power amp tubes. If it rises to too high a level, the system shuts down the given tube.

This can occur when the amp is operated incorrectly (for example, if the impedance is wrong due to an incorrect speaker load), at extreme power spikes, or when a tube is defective.

Reset this electronic monitoring system by switching the standby switch off and on again. When you press the standby switch to turn the amp on again, the system again measures the current sent to the tube. If it is still too high, the power amp must be checked by a service technician, and the tube may have to be replaced if it is defective.

15 Presence

This control shapes the hi frequency response in the power amp stage and affects all channels.

16. Depth Punch

This control shapes the lo frequency response in the power amp stage and affects all channels.

17 Ch II Gain

This knob determines input sensitivity of Main Channel II (Lo & Hi Lead) and it determines the amount of preamp saturation in both Lead channels.

CAUTION: Extremely high gain and volume levels in Lead mode can produce strong feedback. Avoid feedback squeals, they lead to hearing loss and damaged speakers! Reduce the Gain, Treble and Presence levels at higher volumes in order to avoid uncontrolled feedback!

18 Lo Lead Bottom

Alters the EQ by boosting the low end range; this Bottom feature affects the Lo Lead mode.

19 Hi Lead Bottom

Alters the EQ by boosting the low end range; this Bottom feature affects the Hi Lead mode.

A tip from the designer:

If you really want to beef up the low end of your lead tone to dial in the type of sound often employed in contemporary styles, press the Bottom button. Note that you can activate this feature separately for each of the two Lead channels.

20 Bass

Bottom end voicing control of the preamps' passive EQ for Main Channel II, Lo and Hi Lead.

21 Middle open

Mid-range voicing control of the preamps' passive EQ for Main Channel II, Lo and Hi Lead. This control determines the response of a specific mid frequency range when sound style "open" is selected.

22 Middle focused

Mid-range voicing control of the preamps' passive EQ for Main Channel II, Lo and Hi Lead. This control determines the response of a specific mid frequency range when sound style "focused" is selected.

TIP from the Designer:

Try the *open* and *focused* voicings out for different applications. As the names suggest, *open* gives you a more expansive sound that is excellent for grinding out heavy-duty riffs, while *focused* brings up the low mids, making it a great choice for leads.

23 Treble

Upper range voicing control of the preamps' passive EQ for Main Channel II, Lo and Hi Lead.

TIP from the Designer:

To help you get acquainted with the amp's fundamental sounds, I recommend that you set all tone controls to the center or 12 o'clock position. For high Gain Lead sounds, your best bet is to turn the Treble and the Presence knobs well down to prevent the pickups and speakers from interacting at hi levels and generating feedback (the recommended setting is somewhere in the 9 to 2 o'clock range). Since the two knobs sweep through different frequency ranges and influence the signal at different places in the amp's internal signal chain, you can dial in different combinations of treble and presence settings to come up with many interesting sonic variations.

24 Lo Lead Volume

Volume control for the Lo Lead channel (pre-FX loop, influences the Send level). The red LED beside this control indicates Lo Lead operating mode.

25 Hi Lead Volume

Volume control for the Hi Lead channel (pre-FX loop, influences the Send level). The red LED beside this control indicates Hi Lead operating mode.

26 open/focused

This button lets you select from two different voicings. Choose *open* for a looser, *focused* for a tighter mid-range voicing. Twist the appropriate knob (*open* knob 21, *focused* knob 22) of Ch II to tweak the selected mids voicing to taste. This sound shaping feature affects all four channels (Clean, Crunch, Lo Lead and Hi Lead). You can also activate this function via a respective footswitch connected to jack 35 or 37. When a footswitch is plugged in, the front panel sound style button is disabled.

27 Ch I/II

Main Channel selector pushbutton; selects Main Channel I or II and, depending on the Gain selector pushbutton setting 28 it activates the Clean, Crunch, Lo or Hi Lead channels. Off position: Main Channel I (Clean or Crunch), On position (pushed in): Main Channel II (Lo or Hi Lead). This feature can also be switched via the Custom Footswitch Port 37 or the footswitch jack 36: the channel selector pushbutton is deactivated once a footswitch is connected.

28 Gain Lo/Hi (Gain Boost)

When you press this button, the input sensitivity of both Main channels is increased. The Hi-Gain function switches from Clean to Crunch in Main Channel I, and from Lo Lead to Hi Lead in Main Channel II. This function can also be activated via a suitable footswitch connected to Jack 36 or 37; the Gain Lo/Hi button is automatically disabled when you connect a footswitch.

29 Master A

Master volume A for power amp output (located post FX loop). The red LED next to the knob lights up when this knob determines the master volume level. Master A/B switching can be accessed via a footswitch connected to jack 35 (e.g. ENGL Z-4) or 37 (ENGL Custom Footswitch Z-5).

30 Master B

Master volume B for power amp output (located post FX loop). The green LED next to the knob lights up when this knob determines the master volume level. Master A/B switching can be accessed via a footswitch connected to jack 35 (e.g. ENGL Z-4) or 37 (ENGL Custom Footswitch Z-5).

TIP from the Designer:

This option of using a footswitch to select the two master A and B knobs gives you another interesting switching alternative: You can dial in two different volume levels and activate them in combination with the amp's different operating modes (i.e. each of the four channels). That gives you many basic sonic variations, each of which supports different playing techniques: In effect, you get footswitchable clean (or slightly dirty) rhythm or crunch and Lead tones in Main Channel I, and overdriven preamp tones in Lead mode for power chords or distorted lead guitar in Main Channel II. And by working your guitar's volume knob, you can expand this palette of tones accordingly.

31 Stand By

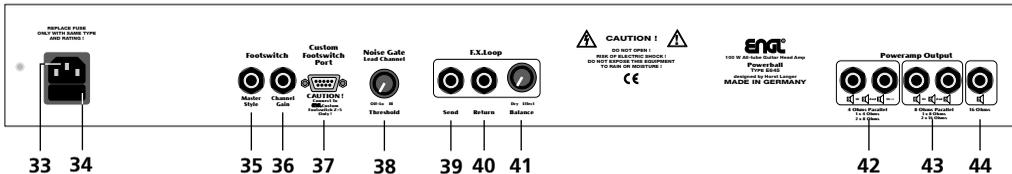
Power amp standby switch: Use this switch to silence (0 position) the amp when you take a lengthier break. The amp's tubes stay warm, which means that it is ready to roll immediately when you switch it back to full power.

To reset the power tube monitoring circuitry, press the standby switch briefly (see Power Tube Monitor).

32 Power

AC power on/off.

Rear Panel



33 AC SOCKET:

Connect an AC cord here

CAUTION: Ensure you use an intact AC cord with an insulated plug only!
Before you power the amp up, ensure the voltage value printed beside the AC socket corresponds to the available current.

34 AC Fuse Box

Contains mains fuse (rear chamber) and spare fuse (front chamber).

NOTE: Ensure replacement fuses bear identical ratings (refer to the table)!

35 Footswitch Master A - B; Style open - focused

1/4" Stereo jack designed to take a dual footswitch (e.g. ENGL Z-4) for the following functions:

1. Switching between the two Master volume controls A and B (mono terminal);
2. Switching between the Sound-Style "open" and "focused" (stereo terminal).

36 Footswitch Channel Ch I - Ch II; Gain Lo - Hi

1/4" Stereo jack designed to take a dual footswitch (e.g. ENGL Z-4) for the following functions:

1. Channel switching between Main Channel I and Main Channel II (mono terminal);
2. Gain Lo - Hi switching (Clean -> Crunch or Lo Lead -> Hi Gain Lead) (stereo terminal).

37 Custom Footswitch Port

Connect the ENGL Custom Footswitch Z-5 (optional) to this port (Sub-D, 9-pin). This special footswitch lets you activate the four channels (Clean, Crunch, Lo Lead, Hi Lead) directly via dedicated buttons. Master A/B and Sound Style are activated via two additional buttons. When the Z-5 footswitch is connected, the Channel I/II, Gain Lo/Hi and the Sound Style open/focused buttons on the front panel as well as footswitch Jacks 35 and 36 are disabled.

38 Noise Gate Threshold

This knob activates an onboard Noise Gate serving to suppress excess noise in the lead channel when you twist it to the right past roughly the 9 o'clock position.

Set the desired threshold within the range of 9 o'clock to 5 o'clock. The Noise Gate kicks in when the noise level reaches the threshold that you have dialed in. The further you rotate the knob to the right, the higher the threshold - that is, the level at which the Noise Gate activates.

39 F.X. Loop Send

Signal output for the Effects loop. Connect this output to a signal processor's input/return jack via a shielded cable with 1/4" plugs.

40 F.X. Loop Return

Signal input for the Effects loop. Connect this input to a signal processor's output/send jack via a shielded cable with 1/4" plugs.

41 Balance

FX mix control for the Effects loop: Rotate the knob to the "DRY" position for the pure amp signal, i.e. no effect on the signal. Turn clockwise to blend in an effect connected to the loop to the dry signal (parallel/passive). At the "EFFECT" position, only the wet signal, i.e. the signal sent from the FX device is fed to the power amp (serial/passive).

NOTE: If no effects processor is connected to this loop, leave this control in the "DRY" position!

42 Poweramp Output 4 Ohms parallel

4 ohms speaker output jacks, internal parallel signal path for the connection of one 4 ohms cabinet or two 8 ohms speaker cabinets.

43 Poweramp Output 8 Ohms parallel

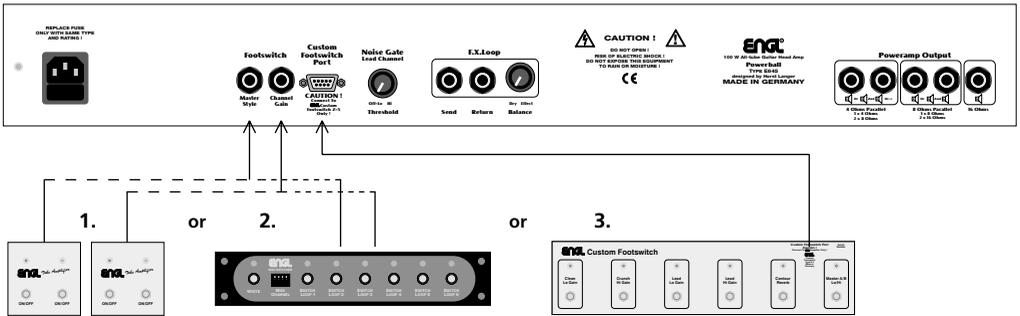
8 ohms speaker output jacks, internal parallel signal path for the connection of one 8 ohms cabinet or two 16 ohms speaker cabinets.

44 Poweramp Output 16 Ohms

16 ohms speaker output jack, for the connection of one 16 ohms speaker cabinet.

NOTE: Never operate the amplifier without a sufficient load, otherwise you may damage or destroy the power amp! Ensure your cabinet's specifications match the respective output's specs.

Possible speaker cabinet options: 1 x 4 or 2 x 8 ohms or 1 x 8 ohms or 2 x 16 or 1 x 16 ohms.



The different options for controlling the Powerball amp remotely:

1. Two-way footswitch (e.g. ENGL Z-4): Connect it to the amp via a stereo 1/4" cord. You will need one two-way footswitch for switching channels via Jack 36 and another footswitch for switching Master A/B and Style via Jack 35. Functions: Ch I/II, Gain Lo/Hi, Master A/B and Style open/focused. With this solution, you can't activate the channels Crunch and Hi Lead directly, i.e. this requires an intermediate switching operation.

2. MIDI-Switcher (e.g. ENGL Z-11): Connect the unit to the amp via two stereo 1/4" cords. The buttons on the Switcher controls Ch I/II, Gain Lo/Hi, Master A/B and Style. If you program the diverse switching configurations to different MIDI program locations (e.g. Hi Lead & Master A & Style "open" to MIDI program number 1), you can activate the desired configuration directly via a MIDI board (e.g. ENGL Z-12).

This type of control option is extremely versatile, we recommend it highly if you intend to use the amp in conjunction with a MIDI system (e.g. MIDI effects devices).

3. ENGL Custom Footswitch Z-5: Connect it to the "Custom Footswitch Port" port via a 9-pin computer cable. Functions: Direct access to Clean (Ch I & Lo Gain), Crunch (Ch I & Hi Gain), Lo Lead (Ch II & Lo Gain), Hi Lead (Ch II & Hi Gain) as well as Master A/B and Style. This is a very convenient yet compact solution.

Technical Data:

Rated power: approx. 100 watts at 4, 8 or 16 ohms;

Tubes:
 V5 (Input -Tube): ECC 83 / 12AX7, FQ selected;
 V6, V7: ECC 83 / 12AX7 selected;
 V8: ECC 83 / 12AX7, standard;
 V1 - V4: 6L6GC matched sets.

Fuses:
 external: 2 AT (slow) for the 230 Volt model;
 4 AT (slow) in the 100 and 120 Volt models.
 internal: 2,5 AT (slow) for the 230 Volt model;
 5 AT (slow) in the 100 and 120 Volt models.

Important: Replace fuses only against same type and rating!

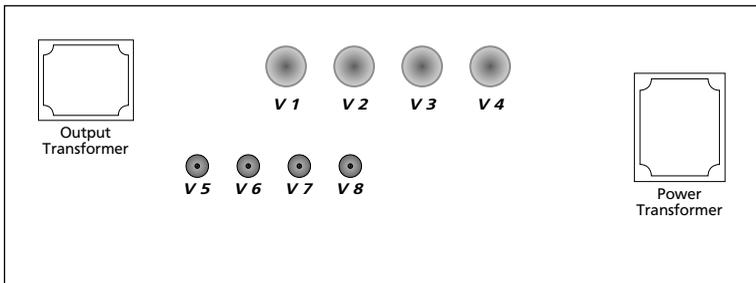
Power

Consumption: 295 watts max.

Dimensions: approx. 71 x 27 x 27 cm (l x h x d)

Weight: approx. 21 kg

Tube array:



Sound setting samples:

Sound sample 1: Crystal Clear

Sound sample 2: Power Crunch

Sound sample 3: Ultra Scoop Metal

Sound sample 4: Infinite Pressure

Sound sample 5: Liquid Lead

Explanations:



control settings does not care,
LED's are not lit.



control setting for the described
sound sample; LED is lit.



button setting does not care.



button in Off position.



button in On position (pressed).

Sound setting samples created by: Bernd Aufermann

Handling and Care

- Protect the amp from mechanical knocks (tubes!).
- Let the amp cool down before you transport it (approx. 10 minutes).
- Tubes need about 20 seconds to warm up after you switch the power on, and further few minutes before they reach their full power capability.
- Avoid storing the amp in damp or dusty rooms, they are hard on jacks, switches and potentiometers.
- Make sure air can circulate at the front and top of the amp to allow for adequate cooling (increases component life).
- Never operate the amp without an adequate load.
- Replace tubes with select **ENGL** replacement tubes (special selection criteria) to avoid microphonic properties, undesirable noise and unbalanced performance.

Attention! Please read the following!

- This guitar amplifier can produce high volume levels. Exposure to high volume levels may cause hearing damage!
- Leave tube replacement and power amp biasing to qualified professionals. Be sure the unit is switched off and unplugged!
- Caution! Tubes can get very hot and burn skin when touched.
- Always use high quality cables.
- Never plug the amp into an ungrounded outlet!
- Never bridge a defective fuse and be sure replacement fuses feature identical ratings!
- Pull the AC mains plug before replacing fuses!
- Never open the chassis or attempt repairs on your own. Consult qualified service personnel!
- Never expose the amplifier to extreme humidity or dampness!
- Please read the instructions carefully before operating the unit!
- Be sure to operate and handle this amp as it was designed for. To this end, please heed the instructions in the operator's manual.
- You'll find an additional pamphlet accompanying this owner's manual entitled "Instruction for the prevention of fire, electric shock or injury of persons". Be sure to read it before you plug the preamp in and switch it on!

ENGL Gerätebau GmbH, Germany;

internet: <http://www.engl-amps.com>

Text, design, graphics, photography and layout by

Horst Langer, ENGL Amp Designer

We reserve the right to make unannounced technical upgrades!