



TUBE RACKHEAD

860

Operator's Manual

Please, first read this manual carefully!

Your **ENGL**-Tube Rackhead 860 is characterized by maximum flexibility and quality tube tone. The three-channel tube preamp (Clean/Crunch/Lead) featuring individual volume controls for each channel and an integrated spring reverb combined with a 2x50W tube power amp gives you the total stereo guitar amp head, a setup that delivers quality amplification for any application. A 19" rack setup incorporating other 19" equipment is a viable option via the stereo effects loop. The power amp can also be accessed separately via the two Return inputs and the Gain switch. The three-band voicing section, the Bright switch and the Crunch/Gain switch allow you to spice up the amp's great basic tone to your taste. The spring reverb delivers the finishing touch.

The A and B presence controls in the power amp enable additional manipulations of the preamps' three channels: two auto-switch variations can be preset in conjunction with the Mode switch.

The integrated ECS (Emergency Circuit System) protects the amp from damage due to power tube defects/failure and ensures the amp continues to function on both channels, albeit with reduced power on the affected channel.

Intelligent design features, superior craftsmanship and finishing and quality components are what this device is all about.

However keep in mind, that a few precautions will radically extend tube life (see handling and care guidelines).

The entire **ENGL**-Team would like to thank you for your faith in our product; we hope you derive a great deal of joy and satisfaction from your **ENGL**-TUBE RACKHEAD 860.

PLEASE NOTE: Read the Operator's Manual carefully and thoroughly, especially the Handling and Care section as well as the guidelines in bold-face type. Avoid operating errors and potential damage to the amp by heeding the guidelines and cautionary remarks in this manual. The footnotes also cover a few convenient pointers and interesting tips on several functions. These are listed on side three of the manual.

E C S (Emergency Circuit System)

This circuit ensures the amplifier does not shut down completely when a single power tube fails. You can continue to play, but the affected channel's output power is reduced by 2/3rds (depending on the type of defect). Gas developing in the power tubes can cause a momentary short circuit. The fuse activates, but the amp is not shut down! Often the tube absorbs the developed gas, and is operable after a short circuit. Usually the problem can be rectified by replacing the fuse, but if the new fuse activates as well, the defective power tube needs to be replaced.

TIP 1

GAIN settings depend on what type of pickups are installed in your guitar. The recommended setting for humbuckers or active pickups lies between the 8 and 12 o'clock positions, and 1 to 3 o'clock for single coils. More over increased gain will produce a touch of overdrive in the preamp that in combination with high volumes (power amp distortion) produces an expressive tone !

(In that case you may find you need to roll off the bass a little to avoid speaker rumble.)

But also combinations with low gain and high level p.a. settings (only p.a. distortion) or high gain ("light Crunch") and medium volumes are very attractive.

If your pickups are of the ultra-high output variety (> 1V or 0dB) you may have to back off the guitar's volume to achieve a truly clean tone.

TIP 2

For crisp glassy tones, set the BRIGHT switch to the HI position. This setting boosts the treble response of muddy pickups.

TIP 3

To get an idea of this amp's capabilities, we suggest you set all tone control pots to the 12 o'clock position and then adjust the sound according to your taste, the connected speakers and the room's ambience.

TIP 4

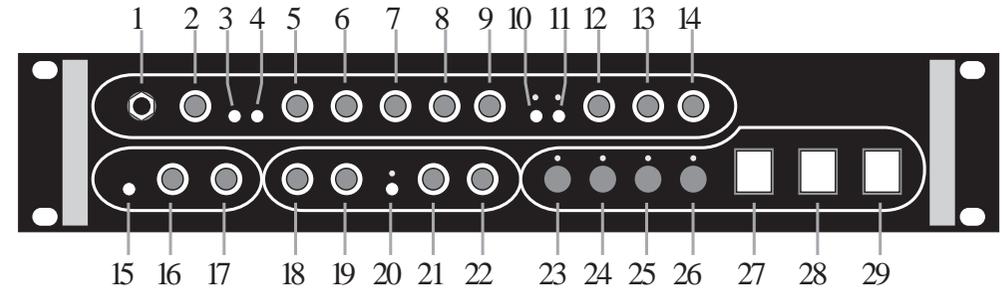
This amp is designed for one speaker cabinet per channel. If you decide to connect additional speakers, ensure you keep the overall impedance in mind! For instance, if you want to connect two 8Z systems per side, you must first connect them in series and then to the amp's 16Z outputs. The **ENGL** Speaker Cabinet Extension offers a number of options, right up to four cabinets per channel. If you are using a stereo speaker for both channels, ensure it actually operates in the stereo mode, otherwise you may damage the power amp. A convincing stereo image is achieved via a quality stereo effects processor and a separate speaker for each channel.

As a rule, large multi-speaker cabinets (4x12", 2x12") generate more bottom end. Simply dial in more mids and treble at your amp. Open-backed systems or small cabinets with bass reflex channels (1x12") emphasize mids and high end frequencies, depending on the type of speaker. Simply reduce PRESENCE and TREBLE levels and add BASS for a balanced sound.

TIP 5

The Clean/Lead, Clean/Crunch, Reverb On/Off and Presence A/B switching functions can be executed via a Looper or other MIDI devices that feature 4 freely-programmable switching inputs. Depending on the type of MIDI device, you may have to split the FOOTSWITCH stereo jacks into four mono jacks. Each switching function requires the mono or stereo contact (see No. 37 and 38 in the Rear Panel description for assignments) and the ground! If the ground and the circuit are identical in the MIDI device then you may encounter ground hum.

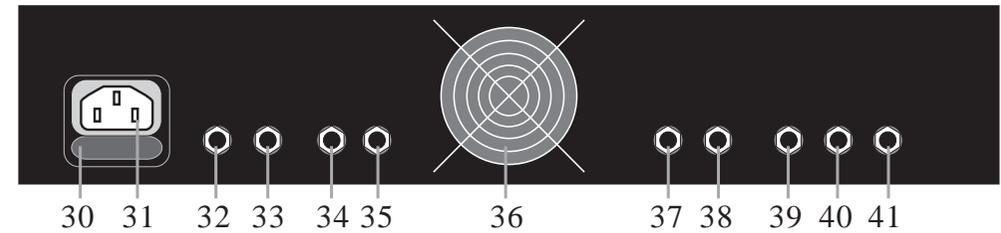
Front Panel



Preamplifier Section

- | | | | |
|---|---|----|---|
| 1 | Input
unbalanced 1/4" input jack | 6 | Bass
bottom end voicing control |
| 2 | Gain
adjusts input sensitivity for diverse pickups;
functions as a pre-gain for all channels | 7 | Middle
mid-range voicing control |
| | | 8 | Treble
upper range voicing control |
| | | | TIP 3 |
| 3 | Bright (Lo/Hi)
boosts upper treble range; no longer functional
at GAIN settings above 7-8 | 9 | Reverb
reverb control; reverb can be switched
on/off via a footswitch |
| | | | |
| | | | TIP 2 |
| 4 | Crunch-Gain (Lo/Hi)
sensitivity switch for the Crunch channel | 10 | Clean/Crunch
channel selector from Clean to Crunch,
yellow LED indicates Crunch mode is active |
| 5 | Lead
controls the amount of distortion in the LEAD
mode; the GAIN and LEAD controls are used to
define the relationship between the Clean and
Lead signals.
CAUTION: Extremely high gain and volume
levels in the Crunch and Lead mode can produce
strong feedback. Avoid feedback squeals, they
lead to hearing loss and damaged speakers! | 11 | Clean/Lead
channel selector from Clean to Lead, has
priority over the CLEAN/CRUNCH
switch,
Lead mode indicated by red LED |
| | | 12 | Clean
volume control for the Clean channel |
| | | 13 | Crunch
volume control for the Crunch channel
Lead |
| | | 14 | volume control for the Lead channel |

Rear Panel



Power Amp Section

- 15 Gain(Lo/Hi)**
power amps' input sensitivity
IMPORTANT!: This GAIN switch must be in the "Hi" position when used in conjunction with the integrated preamp! (pushed in)
- 16 Volume Left**
volume control for the left power amp
- 17 Volume Right**
volume control for the right power amp
- 18 Presence A Left**
treble control A in the power amp, left channel
- 19 Presence B Left**
treble control B in the power amp, left channel
- 20 Mode**
two variations of the PRESENCE A/B control assignment to preamp channel switching are available:
1.Position Off:
PRESENCE A active in the Clean channel
PRESENCE B active in the Crunch and Lead channels
2.Position On (pushed in):
PRESENCE A active in the Clean and Crunch channels
PRESENCE B active in the Lead channel
red LED indicates PRESENCE B active
PRESENCE
A/B switching can be executed via footswitch; the MODE switch is then inactive
- 21 Presence A Right**
treble control A in the power amp, right channel
- 22 Presence B Right**
treble control B in the power amp, right channel
- 23 Power Tube Fuse**
power tube fuse (ECS) for tube pair V6 und V7;
LED indicates defective fuse
- 24 Power Tube Fuse**
power tube fuse (ECS) for tube pair V8 und V9;
LED indicates defective fuse
- 25 Power Tube Fuse**
power tube fuse (ECS) for tube pair V10 und V11; LED indicates defective fuse
- 26 Power Tube Fuse**
power tube fuse (ECS) for tube pair V12 and V13; LED indicates defective fuse
- 27 Standby Left**
left channel standby
- 28 Standby Right**
right channel standby
- 29 Power**
AC power on/off

- 30 AC Socket**
connect AC cord here **ATTENTION:** Ensure you use an intact AC cord with an insulated plug only! Before you power the amp up, ensure the voltage value printed above the AC socket corresponds to the available current.
- 31 AC Fuse Box**
contains mains fuse (rear chamber) and spare fuse (front chamber)
NOTE: Ensure replacement fuses bear identical ratings (refer to the table!)
- 32 Speaker Output 16 Ohm, Right**
16Z right channel speaker output jack; connect 16Z speaker cabinet here
- 33 Speaker Output 8 Ohm, Right**
8Z right channel speaker output jack; connect 8Z speaker cabinet here
- 34 Speaker Output 16 Ohm, Left**
16Z left channel speaker output jack; connect 16Z speaker cabinet here
- 35 Speaker Output 8 Ohm, Left**
8Z left channel speaker output jack; connect 8Z speaker cabinet here
IMPORTANT: 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!
- 36 Fan Shaft**
ultra-quiet fan ensures your amp remains cool; hot air escapes via this shaft
ATTENTION: Install the amp in a 19" rack in such a manner as to ensure air circulation is not impeded. Do not block or cover the fan shaft and side coolant vents.
- 37 Footswitch Reverb/Presence A/B**
stereo 1/4" jack for connecting PRESENCE A/B dual footswitch with the following functions:
1.Select PRESENCE A/B (mono contact)
2.Reverb on/off (stereo contact)
- 38 Footswitch Clean/Crunch and Clean/Lead**
stereo 1/4" jack for connecting a dual footswitch for the following functions:
1.Channel switching Clean/Lead (mono contact)
2.Channel switching Clean/Crunch (stereo contact)
- 39 Effects-Loop send/Preamp out**
Effects loop; signal to effects device or preamp output signal to another power amp with a high Z/ high gain input (use short cable!)
- 40 Effects-Loop Return Right**
Effects loop; signal from effects device to right channel; also right power amp input
- 41 Effects-Loop Return Left**
Effects loop; signal from effects device to left channel; also left power amp input

Technical Data

Rated power	2x50 Watt
Outlet each channel	1x8 Z, 1x16 Z
Input level	Input min. -50 dB, max. 0 dB
Effects loop	Send : -20 dB (bis -10 dB) Return : max. 0 dB (GAIN Hi)
Tubes	Preamp V1-> ECC83/7025 F.Q. V2-> ECC83/12AX7 selected Poweramp V3-> ECC83/12AX7 selected V4,V5-> ECC83/12AX7 standard V6,V7,V8,V9-> EL84, matched set V10,V11,V12,V13-> EL84, matched set

Fuses	AC Mains	230V	100V und 120V
	external	2,5 AM	5 AM medium
	internal	3,15 AT	6,3 AT slow

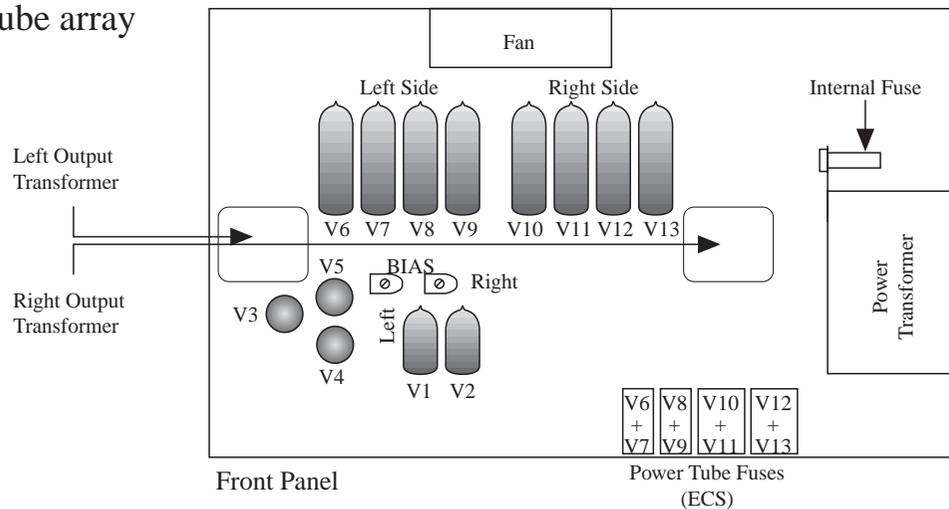
Poweramp (ECS): 4x160mAM

Caution: Replace fuses only with others of the same rating

Dimensions 19", 2 rack spaces; depth: 300mm (not including handles)

Weight app.12 kg

Tube array



Handling and Care

- Protect the amp from mechanical knocks (tubes!)
- Let the amp cool down before you transport it (app.10 minutes).
- Tubes need about 20 seconds to warm up after you switch the power on
- Avoid storing the amp in damp or dusty rooms, they are hard on jacks, switches and potentiometers.
- Ensure air can circulate at the rear and both sides 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 Amp is in a position, to produce high volume levels. Exposure to high volume levels may cause hearing damage!
- Leave tube replacement and power amp biasing to a qualified professional. Ensure the unit is switched off and unplugged!
- Caution -tubes can get very hot and cause skin burns.
- Always use high-quality cables.
- Never operate the amp through an ungrounded outlet!
- Never bridge a defective fuse and ensure 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!

We reserve the right to make unannounced technical upgrades!