

# ENGLE

## RACKHEAD

# 1060

Dual Tube/Solid-State Channel Bass Amp

Please read this manual and the enclosed safety pamphlet carefully before operating the amp!

**Technical specifications subject to change without notice.**

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## Preface

Thank you for purchasing this bass amp; we certainly appreciate your confidence in us. Here's wishing you lots of fun and musical success in the rehearsal room and on stage!

Your Engl-Team

## Welcome

The RACKHEAD 1060 is a dual-channel bass amp. Its two-space (2RU) rack-mount chassis houses two preamps and one stereo power amp.

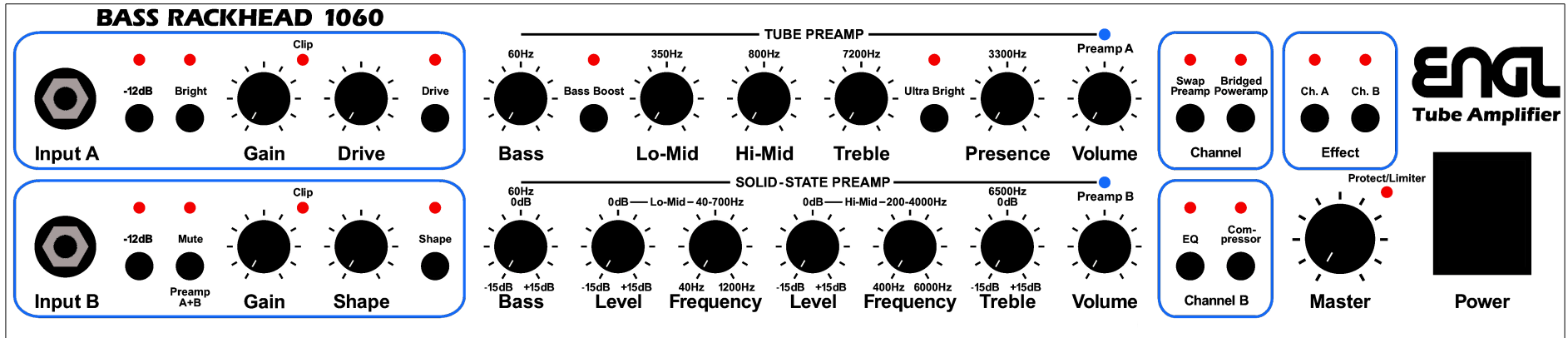
This design gives you quite a few options:

- **TWO SEPARATE AMPS IN ONE HOUSING** for two instruments and/or two bass players. We call this *dual mode*.
- **A/B OPERATION** using two **SEPARATE PREAMP STAGES** with a stereo power amp with the two channels bridged to achieve maximum output. This is called *bridge mode*.
- **BI-AMPED OPERATION** via an **ACTIVE CROSSOVER**

## Features

- One **TUBE CHANNEL** featuring **DRIVE** and **BASS BOOST**→ Channel A
- One **SOLID-STATE CHANNEL** with an **EQUALIZER** and **COMPRESSOR**→ Channel B
- **STEREO POWER AMP**
- Balanced ¼" (6.35 mm) **TUNER OUT**
- **SPEAKON®/ ¼" (6.35 mm) COMBO JACK** for speakers
- **GROUND-LIFT** switchable for **DIRECT OUT, PRE/POST, XLR** ♂
- Balanced ¼" (6.35 mm) **PREAMP (SLAVE) OUT / EXTERNAL POWERAMP IN**
- **REMOTE CONTROL**

# Front Panel



## Channel A (tube-driven)

<b>Input A</b>	1/4" (6.35 mm) input jack for Channel A
<b>-12dB</b> (switch)	Attenuates input gain for hot pickups & active basses
<b>Bright</b> (switch)	Adds high-frequency boost to the input signal
<b>Gain</b> (knob)	Adjusts input sensitivity.
<b>Clip</b> (red LED)	The <i>Clip</i> LED may flash now and then, but not light up constantly while playing.
<b>Drive</b> (knob)	Adjusts the mix of regular and boosted (Drive) signals
<b>Drive</b> (switch)	Activates an additional power amp

<b>Equalizer</b>	Four-band voicing section (Bass, Lo Mid, Hi Mid, Treble) with a Presence knob
<b>Bass Boost</b> (switch)	Boosts low frequencies
<b>Ultra Bright</b> (switch)	Boosts high frequencies
<b>Volume</b> (knob)	Adjusts Channel A's volume
<b>Preamp A</b> (blue LED)	Lights up to indicate Channel A is on

## Channel B (solid-state)

<b>Input B</b>	¼" (6.35 mm) input jack for Channel B
<b>-12dB</b> (switch)	Attenuates input gain for hot pickups & active basses
<b>Gain</b> (knob)	Adds high frequencies to the input signal
<b>Shape</b> (switch)	Activates the midrange filter
<b>Clip</b> (red LED)	The <i>Clip</i> LED may flash now and then, but not light up constantly while playing
<b>Shape</b> (knob)	Adjusts the midrange filter's frequency and intensity

<b>Equalizer</b> (four knobs)	Two parametric equalizers for adjusting the upper and lower mids
<b>Bass</b> (knob)	Boosts/cuts low frequencies
<b>Treble</b> (knob)	Boosts/cuts high frequencies
<b>Volume</b> (knob)	Adjusts Channel B's volume
<b>Preamp A</b> (blue LED)	Lights up to indicate Channel B is on

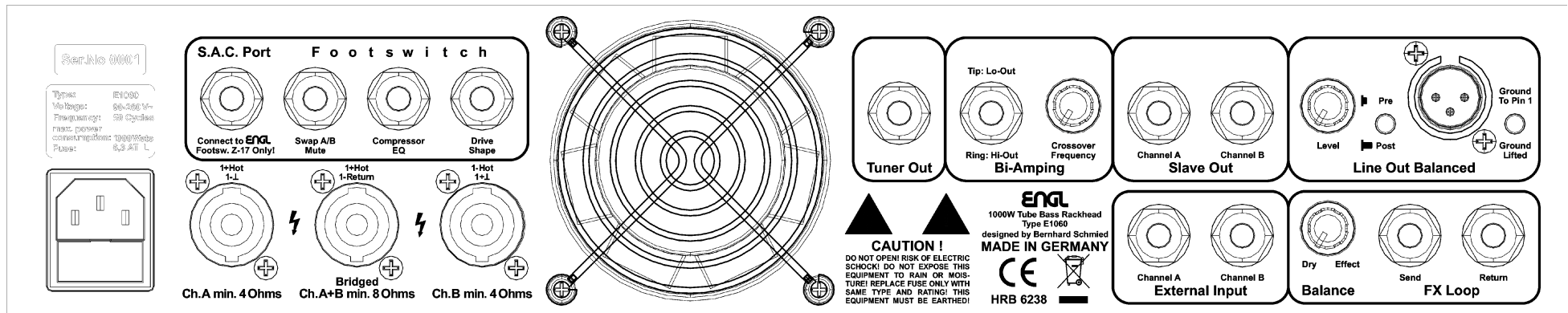
<b>Equalizer</b> (switch)	Activates the equalizer
<b>Compressor</b> (switch)	Activates the compressor (not adjustable)



## For Both Channels Shared Switches

<b>Mute Preamp A+B</b> (switch)	Mutes <b>both</b> channels; Tuner Out remains on
<b>Effect A</b> (switch)	Each switch activates and assigns the FX loop directly to the given channel. They are mutually exclusive: enabling one disables the other. The Balance knob on the rear panel adjusts the mix of wet (effects) and dry signals.
<b>Effect B</b> (switch)	
<b>Swap Preamp</b> (switch)	Flips the two inputs, assigning jack A to channel B and jack B to channel A
<b>Bridged Poweramp</b> (switch)	Bridges the stereo power amp (default setting); LED lights up to indicate bridged mode  The power amp is now a mono block delivers 1000W at 8 ohms for both channels!
<b>Master</b> (knob)	Adjusts the volume of the power amp
<b>Protect/Limiter</b> (red LED)	<b>Protect/Limiter</b> -LED lights for about 2 seconds after switching on the amplifier and goes out afterwards. It may flash now and and then. <b>Constant lightning</b> shows that the limiter of the power amplifier is working to limit the output power. This <b>has to be avoided</b> otherwise the power amplifier can be damaged.

# Rear Panel



## Hands-Free Remote Control

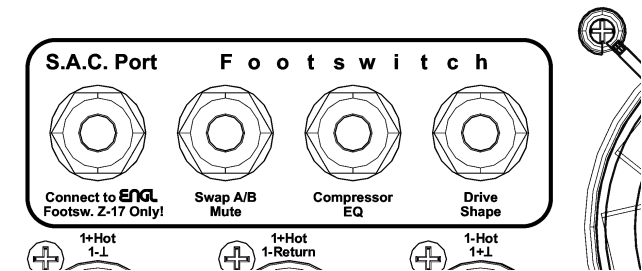
The amp may be controlled remotely using a **ENGL** Z-17 pedal or one, two or three footswitchs such as the **ENGL** Z-4.

### S.A.C.Port (**ENGL** Z-17 Footswitch)

The switches on the Z-17 pedal operate specific functions. These assignments depend on which amp input is in use (Input A or B) **and** whether or not SWAP is depressed.

**Function 1 (Mute)** and **function 2 (Swap)** are always assigned to the same switch because they are used for both channels.

The assignments of **functions 3 to 6** vary according to the currently active channel (as indicated by the blue LED on the amp).



**One Bass into Channel A (SWAP not depressed → Channel A on)**

**One Bass into Channel B (SWAP depressed → Channel A on)**

Switch	Function	Assigned Channel	Remarks
Function 1	Muting	Both channels	LED indicates function
Function 2	Swap		
Function 3	Drive	Channel A only	
Function 4	Bass Boost		
Function 5	Ultra Bright		
Function 6	Effect Ch A		

**One Bass into Channel A (SWAP depressed → Channel B on)**

**One Bass into Channel B (SWAP not depressed → Channel B on)**

Switch	Function	Assigned Channel	Remarks
Function 1	Muting	Both channels	LED indicates function
Function 2	Swap		
Function 3	Shape	Channel B only	
Function 4	Effect Ch B		
Function 5	Equalizer		
Function 6	Compressor		

## **Two bass guitars → Channel A and B on**

Switch	Function	Assigned Channel	Remarks
Function 1	Muting	Both channels	LED indicates function
Function 2	Swap		
Function 3	Drive	Channel A only	
Function 4	Bass Boost		
Function 5	Equalizer	Channel B only	
Function 6	Compressor		

## **Footswitch (ENGL® Z-4 Pedals)**

The RACKHEAD 1060 may be remote-controlled using up to three ENGL® Z-4 pedals.

The three stereo jacks are wired as follows::

TIP: Swap

RING: Mute

TIP: Compressor

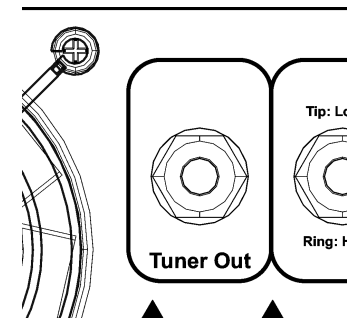
RING: Equalizer

TIP: Drive

RING: Shape

## Tuner Out

This stereo jack patches out a balanced composite of the two input signals. This circuit is always enabled regardless of the *Mute* setting. Tapping its signal using a cord equipped with mono ¼" (6.35 mm) jack plugs will not harm the amp.

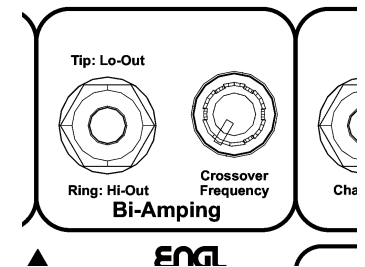


## Bi-Amping

Use a Y adapter with one stereo and two mono jack plugs to bi-amp the RACKHEAD 1060.

Bi-Amping Out:

TIP: Low-Out  
RING: High-Out



Twist the *Crossover Frequency* knob to dial in your preferred corner frequency.

### Using the internal stereo power amp (Hi and Lo Out):

1. Press the *Bridged Poweramp* switch
2. Insert the Y cord's stereo plug into Bi-Amping Out
3. Insert one each mono plug into Ext. Input A and B

#### 4. Adjust the volume with the Master knob

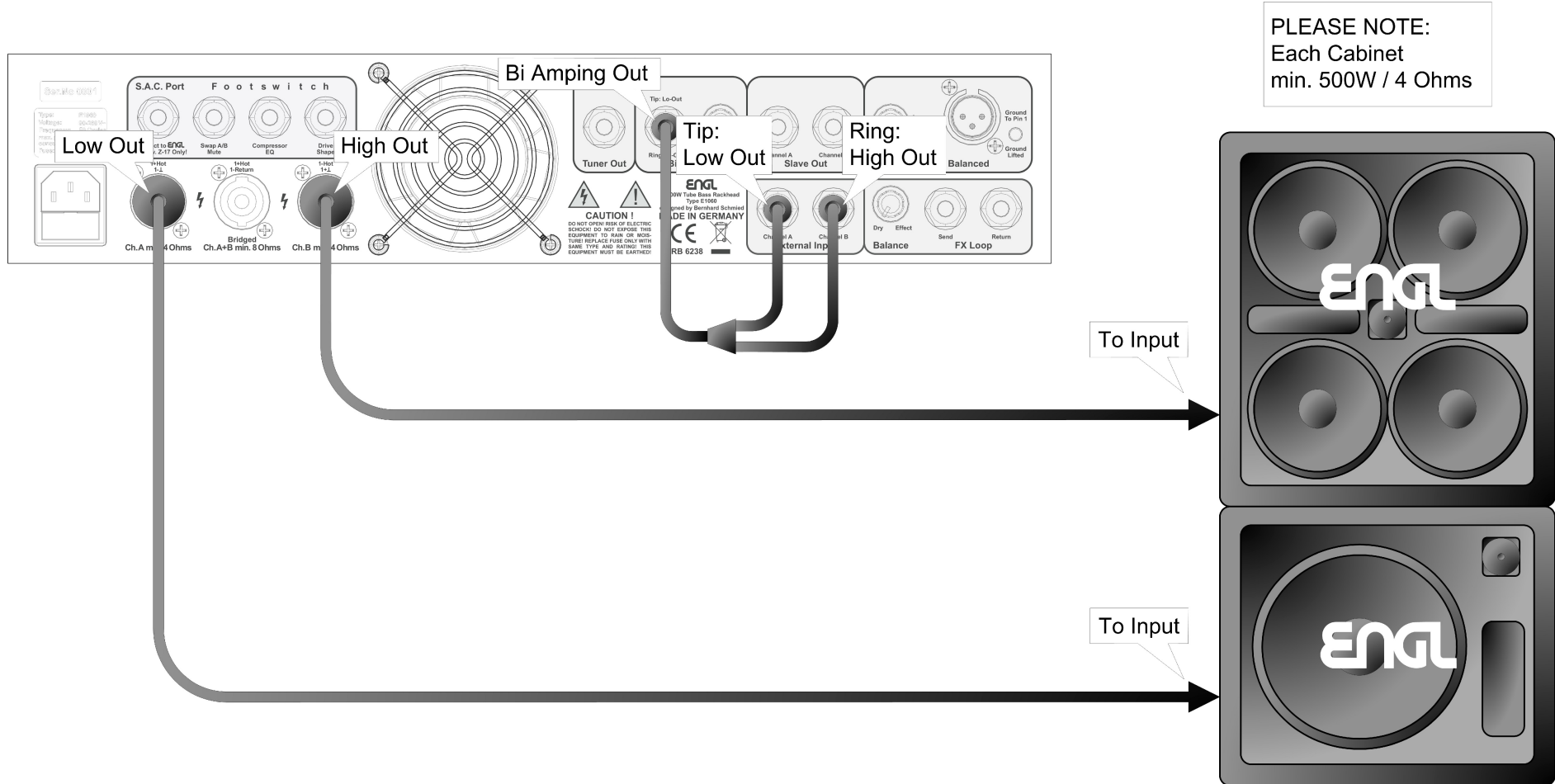


Figure 1: Bi Amping using the internal stereo power amp

## Driving an outboard power amp with Low Out and using the onboard stereo power amp for the fullrange signal:

1. Press the *Bridged Poweramp* switch.
2. Insert a mono plug into *Bi-Amping Out*.
3. Connect the mono 1/4" (6.35 mm) cord to the external power amp's input.

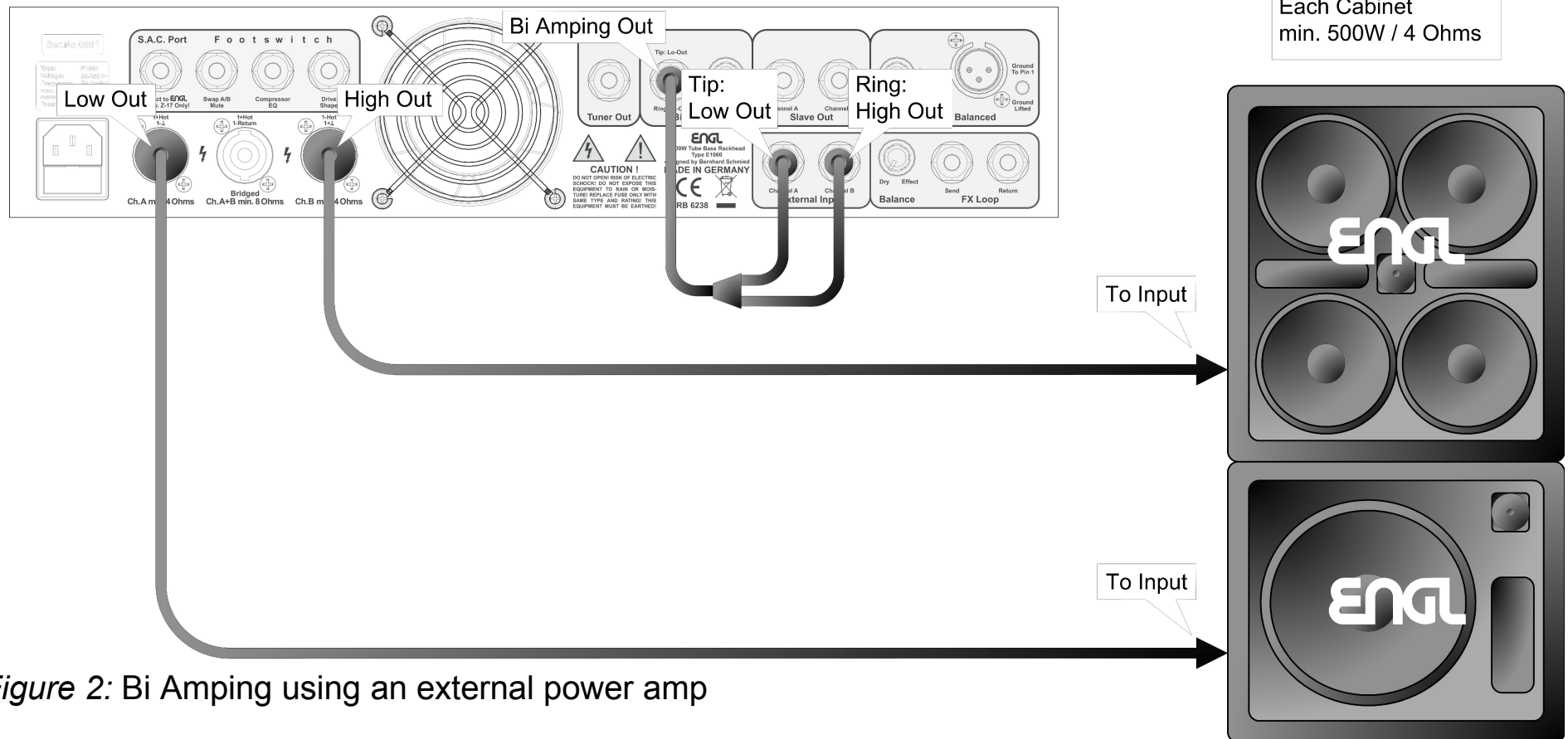
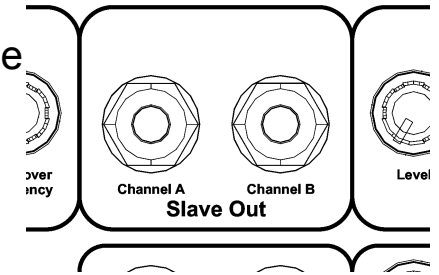


Figure 2: Bi Amping using an external power amp

## Slave Out (Channel A and Channel B)

These two balanced stereo jacks patch out the two channels' signals. Turn the Volume (A or B) knob to adjust the volume.

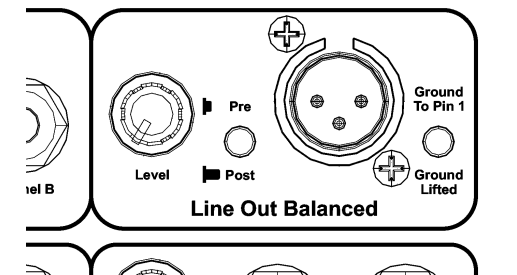


## Line Out Balanced

This balanced output provides a composite of the two channels' signals.

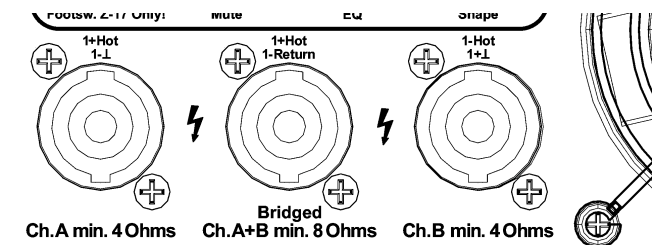
Turn the *Level* knob to adjust the volume.

The signal may be tapped before (pre = raw input signal) or after (post = processed signal) the tone controls and FX loop.



## Speaker Output

To drive two cabinets, connect one each to SPEAKON® ports A and B and press the *Bridged Poweramp* switch. Each speaker cabinet's impedance may be no less than 4 ohms.





Don't use the center SPEAKON® port.

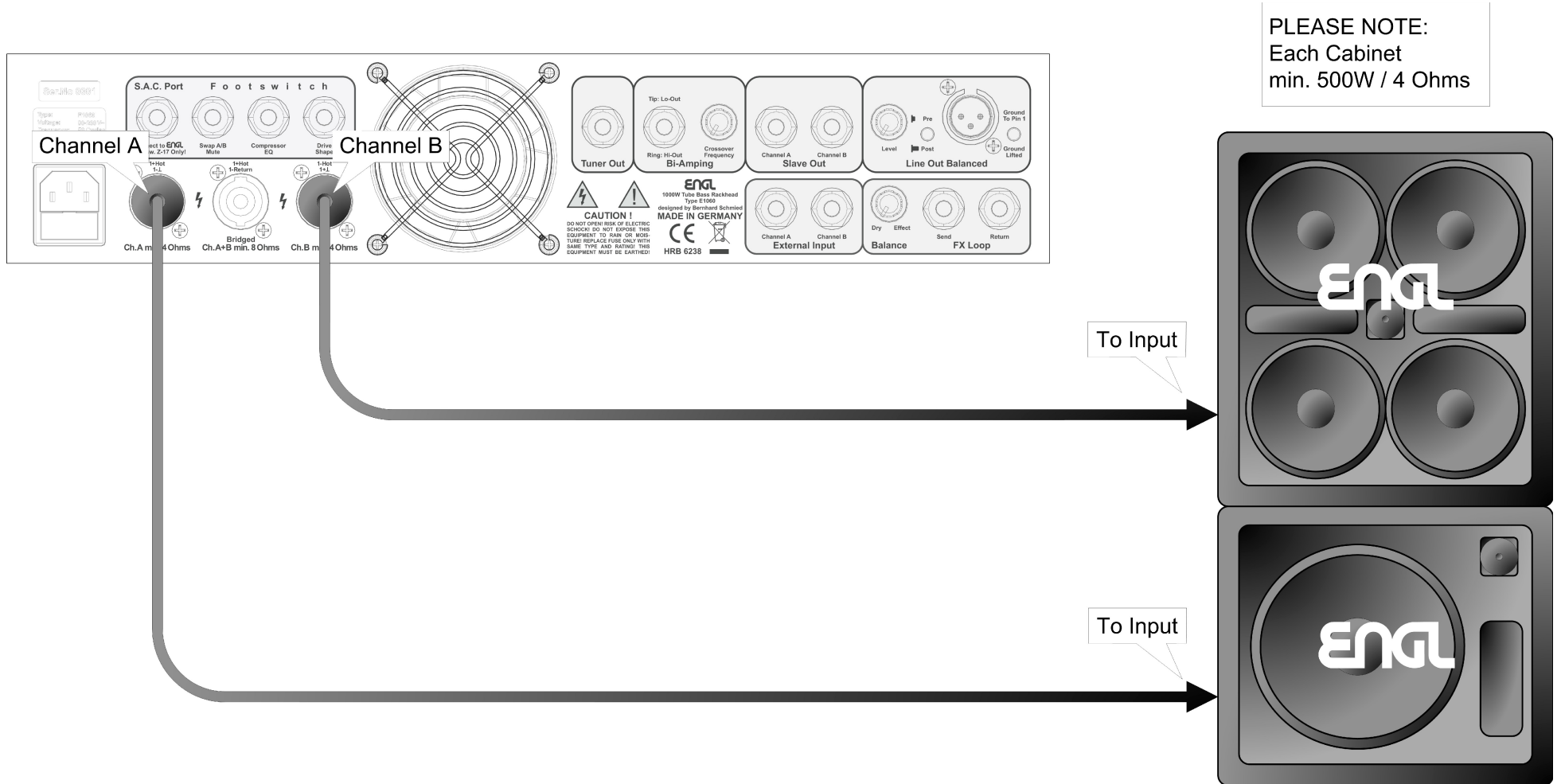


Figure 3: Mono-Block (bridged stereo power amp) with two speaker cabinets or two-channel mode

A cabinet connected to the center SPEAKON® port must be rated for 8 ohms impedance and able to handle at least 1000 watts!

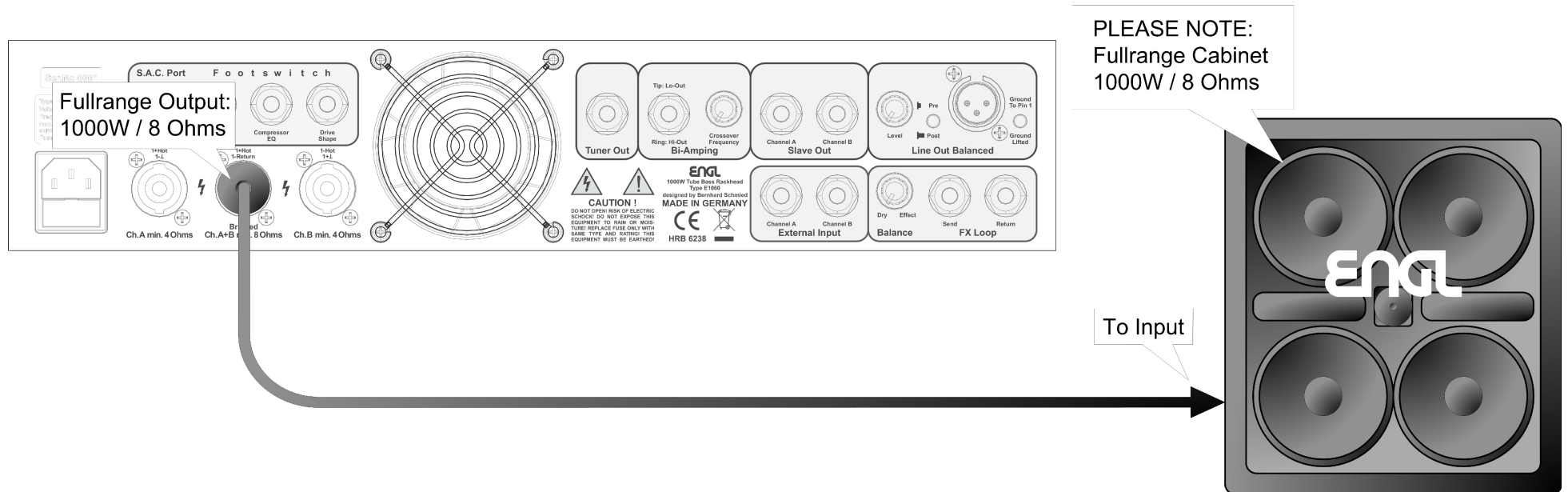


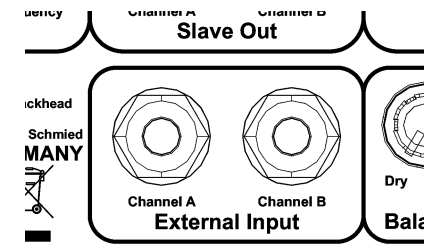
Figure 4: Mono-Block (bridged stereo power amp) with one speaker cabinet

**A 4-ohm cabinet connected to the center SPEAKON® port, when operated at high volume levels, may overload, shut down or even destroy the power amp. This is something you really want to avoid.**

## External Input

The External Input lets you patch a signal directly to the power amp.

This external signal has priority!

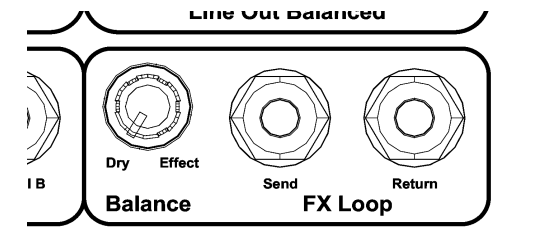


## FX Loop (effects)

Connect the *Send* jack to your effects processor's input and the *Return* jack to the processor's output.

Dial in the desired mix of dry and wet signals using the *Balance* knob.

Use the *Effect A* and *Effect B* switches to assign the FX loop to the desired channel.



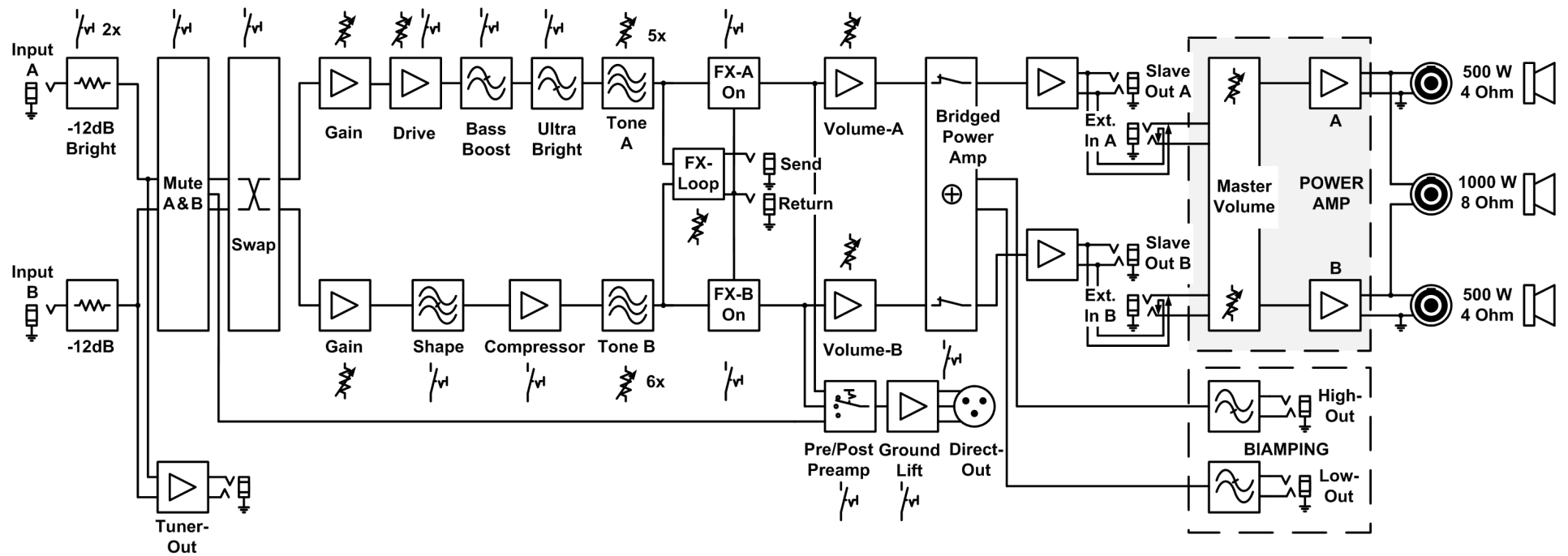


Figure 5: Block diagram

# APPENDIX

## Technical Specifications

Model: RACKHEAD 1060 (with automatic voltage range adjustment)

Series: Power Amplifier

Dual-channel amp with two preamps and two power amps. The two power amps can be bridged and operated in mono.

### ***Channel A (tube driven)***

- Input sensitivity..... 12 mV (-36dBu)
- Input pad..... 12 dB (switchable)
- Bright..... Boosts input signals' top end
- Gain..... Adjusts preamp's input sensitivity
- Drive..... Adjusts mix of regular and boosted signals
- 4-band voicing section:
  - Bass.....  $\pm 15$  dB at 80 Hz
  - Lo-Mid.....  $\pm 15$  dB at 400 Hz
  - Hi-Mid.....  $\pm 15$  dB at 800 Hz
  - Treble.....  $\pm 15$  dB at 6.5 kHz
  - Präsenz.....  $\pm 15$  dB at 3.3 kHz
- Volume Preamp A..... Adjusts Channel A's volume
- LED (blue)..... Indicates Channel A is on

Switches:

- Ultra Bright..... +10 dB at around 10kHz
- Bass Boost..... +10 dB at around 120 Hz
- Treble Boost..... +12 dB at around 6.5kHz

**Channel B (solid-state)**

- Input sensitivity..... 12 mV (-36dBu)
- Input pad..... 12 dB (switchable)
- Gain..... Verstärkung Channel B
- Shape..... -3 bis -12 dB at 550 Hz (switchable)
- 2-band tone controls and parametric equalizer:
  - Bass.....  $\pm 15$  dB at 60 Hz
  - Lo-Mid.....  $\pm 15$  dB at 200 - 2500 Hz (switchable)
  - Hi-Mid.....  $\pm 15$  dB at 2.5 - 6.8 kHz (switchable)
  - Treble.....  $\pm 15$  dB at 6.5 kHz
- Volume Preamp B..... Adjusts Channel B's volume
- LED (blue)..... Indicates Channel B is on
- Master..... Adjusts power amp's output level
- Slave Out A: ..... +4 dBu, balanced
- Slave Out B: ..... +4 dBu, balanced

Direct-Out (XLR ♂):..... Pre/Post EQ switchable, Ground Lift

Effekt Send/Return: ..... Assignable to Channels A or B via front panel switches

External Input:..... Balanced power amp input, volume Master knob,  
+4 dBu at max.

Bi-Amping High/Low: ..... +4 dBu, (Ring: High-Out, Tip: Low-Out)

Crossover frequency: ..... 100 - 1000Hz, variable

### ***Power Amplifier***

Bandwidth..... 10 Hz - 25kHz

Power (continous)..... 8 Ohms = 225 W  
(both channels, 1 kHz 1% THD)... 4 Ohms= 455 W

Power (EIA, IHF A-202)..... 8 Ohms = 253 W  
(both channels, 1 kHz 1% THD)... 4 Ohms = 498 W

Power (EIA, IHF A-202)..... 8 Ohms = 994 W  
(bridged, 1 kHz 1% THD)

SPEAKON®/¼" (6.35 mm) combo jacks:

CH. A..... min. impedance: 4 Ohm

CH. A+B..... min. impedance: 8 Ohm

CH. B..... min. impedance: 4 Ohm

## ***Fuses***

Mains..... T 10 AH

Power Amplifier (internal)..... T 10 AL

## ***Logic-Control System***

Processor.....Atmega8515

## ***Logic-Control System***

Serial Amp Control (S.A.C.)... **ENGL**<sup>®</sup> specific, asynchronous data protocol

## ***Power Requirements***

110 - 230 V, 50 - 60 Hz, 1.2 kVA

## ***Size and Weight***

19" (W) x 3.8" (H, with feet) x 15.5" (D); 19.1 lbs

**ENGL**<sup>®</sup> Gerätebau GmbH

Internet: [www.engl-amps.com](http://www.engl-amps.com)

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**Notes:**