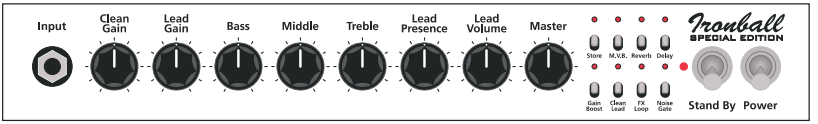
# E606SE
# Ironball SE
## Operator´s Manual




**Input**
Input (conventional 6,3mm / ¼" TS) unbalanced input. Plug your guitar in here using a shielded cord.

**Clean Gain**
Gain control for the Clean channel.

**Lead Gain**
Gain control for the Lead channel.

**Bass**
Bottom end voicing control of the preamp´s passive EQ.

**Middle**
Mid-range voicing control of the preamp´s passive EQ.

**Treble**
Upper range voicing control of the preamp´s passive EQ.

**Lead Presence**
This control defines the Treble response in the poweramp stage for the Lead channel.

**Lead Volume**
Volume control for the Lead channel (pre-FX Loop, influences the send level). Use this knob to dial in the desired balance of levels between the Lead and Clean channels.

**Master**
Master volume knob. Located post-FX Loop, it controls power amp output.

**Store**
This push button is to store a setting with programmable features to a MIDI memory slot (generally called a preset).

This is how it works:
1. Send a PC # message to the amp.
2. Select the desired channel and functions for the preset you want to create.
3. Press and hold the Store push button for about 2 seconds to save the preset to the formerly sent PC # until the Store button LED is confirming the process by flashing 3 times short.

The Store LED is also signalizing by flashing permanently slow when a change to a preset is recognized. The LED will stop signalizing changes to a preset while the Delay function is activated, to avoid confusion.

**M.V.B. - Master Volume Boost**
This feature increases the master volume level, giving you instant access to two different volume levels for different musical situations, for instance, one for rhythm parts and the other for lead lines.
Press this push switch to activate / deactivate the M.V.B. function. The red LED above this push button lights up to indicate that the function is activated. This feature can also be stored and switched via MIDI.

**Reverb**
Press this push button to activate / deactivate the Reverb function. The red LED above this push button lights up to indicate that the function is activated. This feature can also be stored and switched via MIDI.

**Reverb Tails**
Push and hold the Reverb push button for about 2 seconds until the Reverb LED starts to flash. Three short flashes for Reverb Tails active, one long flash for Reverb Tails inactive. This adjusted status can be saved to a MIDI preset.

**Delay**
Press this push button to activate / deactivate the Delay function. The red LED above this push button lights up to indicate that the function is activated. This feature can also be stored and switched via MIDI. The Delay LED is signalizing the Delay time, too.

**Delay Tails**
Push and hold the Delay push button for about 2 seconds until the Delay LED starts to flash. Three short flashes for Delay Tails active, one long flash for Delay Tails inactive. This adjusted status can be saved to a MIDI preset.

**Gain Boost**
Press this push button to activate / deactivate the Gain Boost function. The red LED above this push button lights up to indicate that the function activated. This feature can also be stored and switched via MIDI program change or controlled via the respective ENGL Z4 (TRS) footswitch connected.

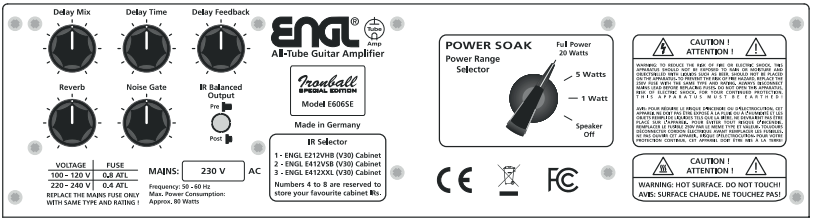
**Clean/Lead Channel**
Press this push button to toggle between the Clean and the Lead channel. The red LED above this push button lights up to indicate that the Lead channel is engaged. This feature can also be stored and switched via MIDI or controlled via the respective ENGL Z4 (TRS) footswitch connected.

**FX Loop**
Press this push button to activate / deactivate the FX Loop function. The red LED above this push button lights up to indicate that the function is activated. This feature can also be stored and switched via MIDI.

**Noise Gate**
Press this push button to activate / deactivate the Noise Gate function and suppress excess noise in the Lead Channel with or without the Gain Boost function engaged. Control the Noise Gate threshold using the Noise Gate knob on the back of the amp. The red LED above this push button lights up to indicate that the function is activated. This feature can also be stored and switched via MIDI program change.

**Stand By**
Use this switch to silence the amp when you take a longer break. The amp´s tubes stay nice and toasty, and the amp is ready to roll immediately when you ramp it back up to full power. The Stand By switch is also well-suited for muting the amp for brief breaks, for instance when you are switching guitars.

**Power**
Mains power on/off.
**Please note:** ensure that the Stand By switch is set to Stand By before you switch the amp on. Let the tubes heat up for about 30 seconds before you activate the power amp. This procedure spares the tubes.




## Delay Mix
This control adjusts the mix of dry signal to wet Delay signal and increases it´s intensity if you rotate it clockwise.

## Delay Time
This control is to adjust the Delay time. The Delay LED shows you the delay time. The Delay time can also be tapped with CC #54.

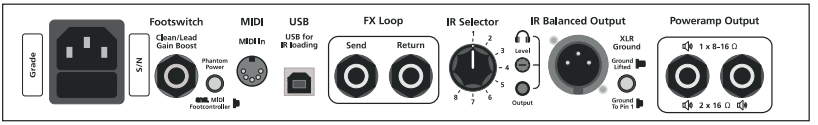
## Delay Feedback
This control sets the Delay feedback level and increases the number of repeats if you rotate it clockwise.

## Reverb
This control adjusts mix of dry signal to wet Reverb signal and increases it´s intensity if you rotate it clockwise.

## Noise Gate
Use this knob to set a threshold value (noise level) at which the Noise Gate activates to suppress the signal. The further you twist the knob to the right, the higher the signal level at which the Noise Gate kicks in. If you set the knob to the 5 o'clock position, the Noise Gate reacts to extremely high noise levels, meaning that there is not much of a margin between the guitar signal and background noise.

## IR Balanced Output – Pre/Post
This button selects the signal source for the IR Balanced Output signal routed to the XLR port.
When the button is not pushed, the line signal is tapped from the preamp.
When the button is pushed, the line signal is tapped from the power amp. The Power Soak must set to Speaker Off or a speaker load must be connected to the Poweramp Output for this option!

**Power Range Selector**
Use this switch to activate the Power Soak and select the desired power level.
Full Power (approx. 20 Watts)
Mid Power (approx. 5 Watts)
Low Power (approx. 1 Watt)
Speaker Off (zero Watts)
When activated, the Power Soak´s resistors convert some or all of the power amp´s output into heat. So, make sure air can circulate freely around the back of the amp!




**Main Supply 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 amp up, ensure the voltage value (e.g. printed on the Type Label or 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.

**Mains Fuse Box**
The rear chamber contains the mains fuse and the front chamber a spare fuse.
**NOTE:** Ensure replacement fuses bear identical ratings (refer to the technical data)!
**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.

**Footswitch:**
Clean/Lead and Gain Boost (conventional 6.3mm / ¼" TRS). Use this jack to connect a conventional footswitch with two switching functions, i.e. the ENGL Z4 (2 x off/on – Single Pole Single Throw or SPST for short).
**Tip:** switching between the Clean and the Lead channel.
**Ring:** switching Gain Boost on and off.

**Phantom Power - ENGL Midi Footcontroller**
This selector activates a MIDI In port phantom power supply for powering an ENGL MIDI footcontroller when connected to the amp. When the switch is pushed in, power is routed to the MIDI In port´s pin 1 and pin 2. If you want to use a 3rd party MIDI footcontroller, be sure that the switch is unpressed to avoid damaging the amp or the footcontroller.

This feature is compatible with the ENGL Z9 (which we recommend to use with this amp) and the ENGL Z12 only.

**MIDI In**

This 5-pin DIN port accepts data sent by a MIDI sender (ENGL Z9, ENGL Z12) or from or routed through another MIDI device.

**CAUTION:** Before you connect any 3rd party MIDI footcontroller or effects device, always make sure that the Phantom Power switch is not engaded to avoid damaging the connected device or the amp.

**MIDI Channel Auto Recognition**

To assign the MIDI channel by which the amp´s MIDI system will receive program change or specific MIDI controller commands assigned to certain amp functions you need to enter the MIDI Channel Auto Recognition.

This is how it works:

1. The Clean channel must be engaged.
2. Press and hold the Noise Gate push button for about 2 seconds until the Noise Gate LED starts flashing fast.
3. Now send a PC (program change) or CC (control change) command on the desired MIDI channel (e.g. PC #1 on MIDI channel 1) to the amp.
4. When receiving data, it gets confirmed by the store LED flashing 3 times short.
5. Now the amp is only listening to the MIDI channel (e.g. channel 1) that was formerly sent to the amp.

MIDI channel OMNI mode (receiving data on all 16 channels).

This is how it works:

1. The Clean channel must be engaged.
2. Press and hold the Noise Gate push button for about 2 seconds until the Noise Gate LED starts flashing fast.
3. Press and hold the store button for 2 seconds while the Noise Gate LED is flashing fast.
4. It gets confirmed by the store button LED flashing once long.
5. Now the amp is receiving data from all channels.

**MIDI Controller Numbers**

The E606SE accepts CC # messages to control most of the built-in functions, so that MIDI controllers #7 for example can be used to mute the output signal. This controller sends an Amp Mute command when assigned a value of 64 to 127. A value of 0 to 63 deactivates the Amp Mute command, thereby unmuting the amp and reactivating at its current Master volume setting. Most controllers switch functions on (64 to 127) and off (value 0 to 63), while other controllers are using specific values from 0 to 127. One of these is CC #35, which controls the Reverb mix.

Another application is to tap the Delay time via CC #54.
To tap the delay time, the time between two sent values with CC #54 is measured. As an example, the assignment via an external MIDI foot controller can look like this:
MIDI footcontroller "A" sends via pushing button "X" (Momentary) when pressed CC #54, value 127, when pressed again it sends again CC # 54, value 127. The time between the operations indicates the delay time.

The following table lists amp functions and their assigned MIDI controller numbers.

| Functions E606SE | MIDI CC# | HEX value: | On/Off / Value |
|---|---|---|---|
| Amp Mute | #7 | 0x07 | On/Off |
| M.V.B. | #14 | 0x0E | On/Off |
| Gain Boost | #22 | 0x16 | On/Off |
| Noise Gate | #24 | 0x18 | On/Off |
| Reverb Active | #28 | 0x1C | On/Off |
| FX Loop | #30 | 0x1E | On/Off |
| Reverb | #35 | 0x21 | value |
| IR Bypass | #41 | 0x29 | On/Off |
| Reverb Tails | #46 | 0x2E | On/Off |
| Delay Tails | #47 | 0X2F | On/Off |
| Delay Active | #52 | 0x34 | On/Off |
| Delay Mix | #53 | 0x35 | Value |
| Delay Tap | #54 | 0x36 | Value/Momentary |
| Delay Feedback | #55 | 0x37 | Value |

**USB**
Connect the amp to a computer to drag and drop your impulse response files.
Impulse responses will be stored in alphabetical sequence to the slots 4 to 8.

This is how it works:
1. Connect your the amp via a USB-B cable with your computer.
2. Power the amp up and wait until the internal memory "ENGL" is recognized and ready.
3. Now you can drag and drop the desired IR to the amps internal memory.
4. When done, [Safely Remove Hardware] and disconnect the amp from the computer.
5. "Reboot" the amp (turn the amp off, wait about 10 seconds and turn it on again).
6. Now the loaded IR is ready to use.

**Supported IR Files:**
Files in **mono** up to a maximum size of **128kB / 96kHz (1 second @ 48kHz; 500ms @ 96kHz)**.
The saved files are automatically assigned to the IR selector switch (4 to 8) in alphanumeric order.
If the files are outside of these specifications, they cannot be read and processed.

**FX Loop**
In the signal path, the FX Loop is located post preamp and before the power amp Master controls.

**FX Loop Send**
Connect the FX Loop Send (output) to a signal processor´s input or an effect pedal´s input/return jack using the shortest possible shielded cord (conventional 6,3mm / ¼" TS).

**FX Loop Return**
Connect the FX Loop Return (input) to a signal processor´s output or an effect pedal´s output/send jack using the shortest possible shielded cord (conventional 6,3mm / ¼" TS).

**IR Selector**
This rotary switch allows you to select between eight different IRs. The first three are built-in ENGL IRs:

1 - ENGL E212VHB (V30) Cabinet
2 - ENGL E412VSB (V30) Cabinet
3 - ENGL E412XXL (V30) Cabinet

The selected IR can also be stored to the a respective MIDI Preset. When selecting an unused or let´s say free slot, the IR section is bypassed automatically.

**Select and store an IR to a respecitve channel**
Any IR can be simply assigned to the Clean channel and the Lead channel. This works without having a MIDI footswitch and with or without having a TRS footswitch (Z4) connected.

1. Select a channel (Clean or Lead).
2. Select the IR you want to save to the channel.

Now the setting is saved temporarily (for this session) and will discarded by switching the amp off. You can assign one specific IR to the Clean and another one to the Lead channel. When you change the selection while the respective Channel is active, the new setting will be saved temporarily. To save the setting permanently you need to go on with step 3.

3. Press and hold the Store push button for about 2 seconds until the Store LED begins to flash 3 times short to indicate that the selected IR is saved to the channel.
   Please note, that MIDI PC #1 will be overwritten by this process.

Via MIDI you can select and save a specific IR to every preset. You just have to select the IR you want to save to the preset and follow the standard Store procedure. Press and hold the Store push button for about 2 seconds until the Store LED begins to flash 3 times short to indicate that the selected IR is saved to the channel.

**IR Bypass**
Push and hold the FX Loop push button for about 2 seconds until the FX Loop LED starts to flash. Three short flashes for IR Bypass active, one long flash for IR Bypass inactive. The IR Bypass will be deactivated by selecting another IR as well. The adjusted status will not be saved to a MIDI preset but it is globally saved until you change it by holding and pressing the FX Loop push button for about 2 seconds again or moving the IR Selector Switch. Powering the amp off and on will discard the status to IR Bypass inactive as well.
This feature is very useful, when using the E606SE Ironball Special Edition for a recording session and you want to use an external IR Loader for example.

**IR Balanced Output**

Headphone Output
Connect a headphone (3,5mm / 1/8" TRS) for easy monitoring or practice. When selecting the Power Soak "Speaker Off" position you can practice without disturbing your neighbours.
**CAUTION! When powering the amp up, upcoming noise can appear and damage hearing. Make shure to remove the headphones while powering the device up.**

Headphone Level
Adjusts the level of the Headphone output.

XLR – Ground
When this push button is not pressed, the ground is lifted. Push this switch when you recognize upcoming ground loop noise.

**Poweramp Output**
1. One 8 - 16 Ohm cabinet connected to the left jack.
2. Two 16 Ohm cabinets connected to the both output jacks.

**Important Note:** We cannot stress enough the importance of proper impedance matching when connecting one or more cabinets to your amp. Impedance mismatching can damage the poweramp! Always check the connected cabinet´s impedance to confirm it matches the amp´s output impedance!

## TECHNICAL DATA:

| | |
|---|---|
| **Output power** | approx. 20 Watts max |
| | |
| **Input sensitivity** | |
| Input | from -20 dB to approx. 0 dB max. |
| FX Return | from -20 dB to approx. 0 dB max. |
| | |
| Output level | |
| FX SEND | from -20 dB to approx. 0 dB max. |
| XLR, Headphone | approx. 0 dB at nominal power output |
| | |
| **Power consumption** | approx. 80 Watts (95 VA) max. |
| | |
| **Fuses** | |
| 220 / 230 / 240 supply voltage | 0,4 AT L (T: slow-blow) |
| 100 / 115 / 120 supply voltage | 0,8 AT L (T: slow-blow) |
| | |
| **Power Tube Fuses** | 2 x 0,08 AM (M: medium-blow) |

Important: Replace these with fuses of the same type and rating only!

| | |
|---|---|
| **Tubes** | |
| V1: | ENGL ECC83 First Quality (FQ) |
| V2 / V3 / V4 | ENGL ECC83 Selected (S) |
| V5 / V6 | ENGL EL84 Hand-matched Duet |
| | |
| **Dimension** | 34cm x 14cm x 22cm |
| | |
| **Weight** | approx. 7kg |

## A FEW COMMENTS ON TUBE AMPLIFIERS

Be sure to read this section before powering the amp up!

This amp´s input is extremely sensitive due to its high gain factor. In combination with inherent microphonics of tubes, at certain settings this can elicit powerful feedback from the speakers – even without a guitar being connected!

This occurs primarily when Crunch and Lead channels (that is, all channels whose preamp is easily overdriven) are activated and the following settings are dialed in:

- Gain and / or Lead Gain knob past the 12 o´clock position
- Treble knob past the 12 o´clock position
- Crunch / Lead Volume knob past the 12 o´clock position
- Presence knob past the 12 o´clock position

Avoid setting the afore mentioned knobs to extreme positions (that is, combinations in which several of these knobs are set past the 12 o´clock position). This type of configuration can cause considerable feedback that could severely damage your hearing and destroy speakers.

If you set the Volume or Master knobs to higher volume levels, always make sure to back off amplification levels to prevent feedback by turning the Lead channel Gain knobs down. The same applies to these channel´s Treble and Presence knob settings.

Before you power the amp up, take a moment to check out the control panel and make sure that these knobs are not set to any configuration similar to the one described above!

## A FEW WORDS ON BACKGROUND NOISE IN TUBE AMPLIFIERS

You may hear slight background noise right after you power a tube amp up or even while you are operating. It manifests as intermittent hissing or sizzling, crackling, or popping noises. Caused by tubes, this type of noise may even occur with brand new tubes.

The noise is particularly noticeable in high-gain Lead channels. This is because the Lead channels provide a very high gain factor, amplifying noise along with the usable guitar signal.

It is not necessary to swap tubes if you encounter this kind of noise every now and then, though you may consider replacing tubes if it becomes a constant companion.

## TROUBLESHOOTING

**The output volume fluctuates or drops:**

- Take all effect devices (infront of the preamp and FX Loop) out of the signal chain.
- Check all used cables.
- Check the used guitar or use another guitar.
- Use a patch or guitar cable to patch he FX Send with the FX Return jack.
- Try using an external and functional power amp with the preamp of the amp (FX Send connected to an external power amp) to exclude a problem with the amp´s internal preamp.
- Try using an external and functional preamp with the poweramp of the amp (FX Return connected to an external preamp) to exclude a problem with the amp´s poweramp.

**The amp is not providing a proper output signal / no or low sound is emanating from the speaker:**

- Is at least one speaker connected to the speaker outputs?
- Is the power amp activated ( Stand By switch to ON)?
- Are all cords (guitar, effects and speaker) connected properly and are they functional?
- Take all effect devices (before the preamp, FX Loop) out of the signal chain.
- Is the Noise Gate activated? (Relevant only, if the amplifier is equipped with a Noise Gate).
- Are the Master knob and the Gain and Volume knobs set to a value higher than 0? If any of these knobs is set to zero, no signal is routed to the amp´s output.

**The speaker is emitting humming noises:**

- The amp and mains ground are not connected properly or are altogehter disconnected. Please have this checked by a technician.
- Chords connected to the input or FX Loop may not be shielded properly. Replace them to check if this is indeed the case.
- The amp or speaker cords may be picking up interferrence from powerful magnetic fields (i.e., of nearby power transformers or electrical motors). Reposition the amp and connector cables.
- The  amp or speaker cords may be picking up radio signals. For example, from activated mobile phones or powerful local transmitting stations nearby. Switch off mobile phones while troubleshooting noise problems.

**Please contact us via e-mail: service@engl-amps.com before shipping a product to us.**
The more precise the error description is, the better our service team can help you. It is best to send us a photo of the control settings and a video recording. A detailed description of the error also helps us to isolate and locate the problem faster.

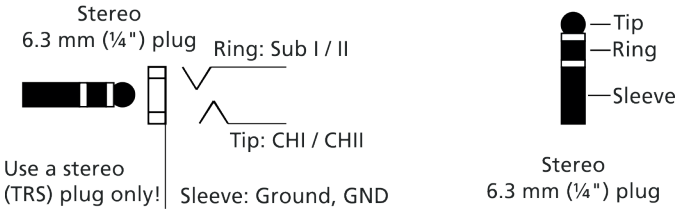
- Which channels are affected?
- Which functions are activated?
- In which knob positions does the problem occur?
- Are you using effects devices before the input or in the FX-Loop?
- Does the problem occur in standby mode (noise issues)?
- What equipment is used in detail?

**Packaging**
Please make sure to use suitable packaging to ensure undamaged transport (use original PKG). To unfold the full protective function of the packaging, the outer packaging, the device and the inner packaging must form a single unit. This is the only way to ensure that the device survives the transport route undamaged.

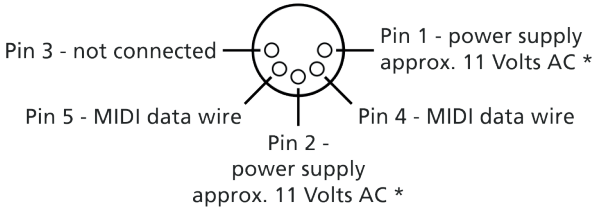
Please check used packaging for tears, signs of compression, pressure marks, perforations or other damage before use. Please do not use damaged packaging. Note that a flight case is not a suitable shipping packaging and is therefore not accepted. Please never pack devices together (e.g. Z4 Footswitch + E633 Head), but send them separately. As it is our responsibility to use suitable shipping packaging for return shipping, we reserve the right to use a new original packaging if necessary and must also invoice it.

**Original Packaging**
Our original packaging consists of particularly thick cardboard material and is equipped with special, custom-made molded foam parts for each model. **This packaging can be used several times - do not throw it away!**

## TRS Footswitch




## MIDI IN




*: AC voltage is routed to Pin 1 and Pin 2 only when the Phantom Power switch is engaged.

**Using the ENGL Z9 or Z12 to control the amp.**

This is how it works:

1. Connect your ENGL Z9 or Z12 to the amp by a **5-pin MIDI** cable.
   **>> To use the phantom power option you need to use a 5-pin MIDI cable.**
2. Activate the phantom power switch (backside of the amp).
   **>> Deactivate this function if you are using a MIDI footswitch from another manufacturer.**
3. Send a PC # message by pressing a switch on the Z9 or Z12.
4. Activate all desired functions on the map you want to add to your preset.
5. Press and hold the Store push button for about 2 seconds to save the preset to the formerly sent PC # until the Store button LED is confirming the process by flashing 3 times short.
6. The preset is saved to the assigned footswitch.

**Whilst the information contained herein is correct at the time of publication, due to our policy of constant improvement and development, ENGL AMPLIFICATION reserves the right to alter specifications without prior notice.**

E606SE-OM-2-05/21

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