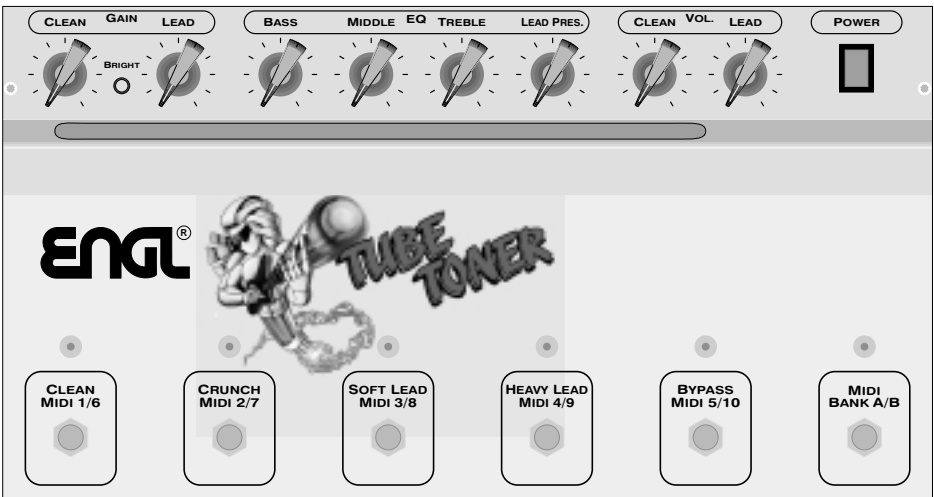


ENGL



TUBE TONER E430

Operator´s Manual

Please, first read this manual carefully!

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Attention! Please read the following!

- ***Leave tube replacement and repair service to qualified professional.***
- ***Be sure 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 unit through an ungrounded outlet!***
- ***Never bridge a defective fuse and be sure replacement fuses feature identical ratings!***
- ***Never open the chassis or attempt repairs to your own. Consult qualified service personnel!***
- ***Never expose the Tube Toner to extreme humidity or dampness!***
- ***Please read the instructions carefully before operating the unit!***
- ***Only operate the Tube Toner in a manner it is designed for and therefore note this operational instructions!***

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Internet: www.engl-amps.com
Text, graphics and layout by Horst Langer

**We reserve the right
to make unannounced
technical upgrades!**

*Congratulations on your choice, the **ENGL** TUBE TONER. The engine room of this crafty combination of four different components is the four-channel, all-tube preamp. It is responsible for the extraordinary tube tone that is definitely up to professional stands. Next up is a MIDI footswitch, which is connected to the channel switching circuit. It lets you access a total of 10 MIDI program numbers located in Banks A and B, which gets the job done for a wide range of applications. The TUBE TONER is all about great tone, but we considered portability and versatility essential attributes, so we added a filtered stereo line out to put speaker simulated recording and direct-to-desk signals at your disposal. And finally, we equipped the TUBE TONER with a miniature 2 x 1.5-watt stereo poweramp so you can get in hassle-free rehearsal time and maybe write the odd tune or two at weird hours without alienating the neighbors. This small-but-very-practical amp can drive stereo headphones, hi-fi systems or conventional guitar cabinets. In addition to these four main components, you have load of other handy features at your disposal, including a stereo FX loop and variable stereo line outs. The two main channels Clean and Lead are each equipped with dedicated gain and volume controls for precision level adjustments.*

*The bypass circuit routes your guitar signal directly to the output, which lets you set up a serial string of preamps or access combo preamps separately. This feature gives you an incredibly varied range of tonal options. If you´re thinking about using the TUBE TONER in a rig powered by a stereo tube power amp, the **ENGL** 840 might be just what you need, or if you want to go for a truly modern rig, the 930/60 (930/120) is equipped with a bunch of sound shaping features you won´t find anywhere else - some even claim that this power amp works with something akin to sonic sorcery.*

This Tube Toner is defined by the effort and materials that went into it: intelligent design features, superior craftsmanship, impeccable finishing and quality components. However keep in mind, that a few precautions will radically extend tube life (see handling and care guidness).

*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 TONER.*

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 TUBE TONER by heeding the guidelines and cautionary remarks in this manual. The boxes shaded in gray located between the diverse descriptions of the amp´s functions contain interesting tips covering the preceding function.*

Front (actually, top) panel control features:

The page 12 includes the front and rear panel diagrams.

1 CLEAN GAIN

Input sensitivity control for the Clean Channel and for the Crunch Channel.

Gain settings depend on what type of pickups are installed in your guitar. The recommended setting for humbuckers or active pickups lies between the 10 and 1 o'clock positions and 12 to 3 o'clock for single coils for a pure clean response.

2 BRIGHT

Alters the EQ by boosting the upper treble range (above 2 kHz) in the Clean Channel and the Crunch Channel. Effectiveness decreases at higher Clean Gain (1) settings.

For a crisp glassy tone, set the Bright switch to the On position. This setting boosts the treble response of muddy pickups.

3 LEAD GAIN

Gain control for both Lead channels, controls the amount of distortion in the Lead mode.

CAUTION: Extremely high gain and volume levels in the Lead mode can produce strong feedback. Avoid feedback squeals, they lead to hearing loss and damaged speakers!

4 BASS

Bottom end voicing control of the preamp. To get an idea of the Tube Toner's sound capabilities, we suggest you set the tone control pots Bass (4), Middle (5) and Treble (6) to the 12 o'clock position.

5 MIDDLE

Mid-range voicing control of the preamp.

6 TREBLE

Upper-range voicing control of the preamp.

7 LEAD PRESENCE

Special treble control only for the Soft Lead and the Heavy Lead mode.

This control is important when operating the Tube toner in combination with a poweramp that does not feature a Presence control: Set the Treble pot between the 7 and 12 o'clocks position it suppresses the gritty upper frequencies.

8 CLEAN VOLUME

Volume control for the Clean Channel and the Crunch Channel.

9 LEAD VOLUME

Volume control for the Soft Lead Channel and the Heavy Lead Channel.

10 POWER

AC power on/off.

11 CLEAN, MIDI 1/6

When you press this button, the Tube Toner Clean channel is activated and a program change message is routed via the MIDI OUT jack (19) to select MIDI Program Number 1 in Bank A or Number 6 in Bank B. The Clean channel is the default setting when you power the amp up. The red LED located above the button illuminates to indicate that the Clean channel is active.

If you have a MIDI multi-effects processor handy, you can also use the Tube Toner as a MIDI control unit: When you switch channels, a discrete MIDI program location number is routed to the MIDI output jack. You can activate five program locations in each bank, which in turn lets you activate each channel with a combination of two different effects (e.g. Clean/Bank A with reverb and Clean/Bank B with chorus and so forth)

12 CRUNCH, MIDI 2/7

When you press this button, the Crunch channel is activated and a program change message is routed via the MIDI OUT jack (19) to select MIDI Program Number 2 in Bank A or Number 7 in Bank B. The red LED located above the button illuminates to indicate that the Crunch channel is active.

13 SOFT LEAD, MIDI 3/8

When you press this button, the Soft Lead channel is activated and a program change message is routed via the MIDI OUT jack (19) to select MIDI Program Number 3 in Bank A or Number 8 in Bank B. The red LED located above the button illuminates to indicate that the Soft Lead channel is active.

14 HEAVY LEAD, MIDI 4/9

When you press this button, the Heavy Lead channel is activated and a program change message is routed via the MIDI OUT jack (19) to select MIDI Program Number 4 in Bank A or Number 9 in Bank B. The red LED located above the button illuminates to indicate that the Heavy Lead channel is active.

15 BYPASS, MIDI 5/10

This circuit is pretty much self-explanatory: the input signal simply bypasses the preamp. When you activate Bypass, the input signal is routed directly to the "Instrument Output" (30) jack as well as the "Mono Output" (29) jack. The LED located above the button illuminates when the bypass circuit is active. The following program change messages are sent via the MIDI OUT (19) jack when this button pressed: MIDI Program Location Number 5 in Bank A or Number 10 in Bank B.

Note: When Bypass is active, all control features (1) through (9) as well as the Bright button (2) are disabled!

Front (actually, top) panel control features:

The page 12 includes the front and rear panel diagrams.

- 15** If you own a multi-effects device that features an integrated preamp, you can use two of the unit's preamp settings separately via the Bypass circuitry. If you are using a multi-amp setup or have patched the Tube Toner signal directly to a combo, you can send your guitar's signal directly to the preamp of the combo via the bypass circuit without coloring the tone of your original instrument signal.

16 MIDI BANK A/B

This button activates MIDI bank switching mode. When you press this button, the LED located above the button flashes to indicate that "Bank Switching Mode" is active. Now when you press one of the buttons (10) through (15), the unit switches to the other MIDI bank and the appropriate MIDI program location number is sent via the MIDI OUT jack (19). To avoid confusion, keep in mind that the LED illuminates continually when you switch to Bank B and is extinguished when you switch to

- 16** Bank A. Bank A (LED off) active is the default setting when you power the Tube Toner up. **Note:** A MIDI program location number is not routed out/sent via the MIDI OUT jack when you press the MIDI BANK A/B button (16).

MIDI bank change example:

Say you want to switch from Crunch/MIDI Program #2 (Bank A active - LED off) to Bypass/MIDI Program #10. Program #10 is in Bank B, so you have to switch banks. You must first press the "MIDI BANK A/B" button (16), which activates MIDI Bank Switching Mode. The LED located above the button (16) will flash. Now press the "BYPASS MIDI 5/10" button (15), which switches to MIDI Bank B. MIDI Program Location 10 is routed out via the MIDI OUT jack (19). The LED above the button (16) illuminates continually, which tells you that MIDI Bank B is active. Now if you select another preamp channel, the amp sends the appropriate MIDI program location number (#6 through #10).

Rear panel control features:

Fold out the center page to check out the front and rear panel diagrams.

17 AC Socket

Connect 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.

18 AC Fuse Box

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

NOTE: Ensure replacement fuses bear identical ratings (refer to the table page 10)!

19 MIDI OUTPUT

5-pin, standard MIDI diode port for connecting the MIDI cable. Patch it to the MIDI IN jack of a MIDI-capable device. The appropriate MIDI program location number is sent via this interface whenever you press one of the buttons (10) through (15).

20 STEREO HEADPHONES OUTPUT

1/4" stereo output designed for stereo headphones. You can also connect hi-fi speakers or guitar cabinets. When you connect a conventional guitar cabinet set the selector switch (21 to „Routed to Guitar Cabinet." **CAUTION! Ensure You Heed The Following: Always use a 1/4 STEREO plug. If you use a mono plug, it may short-circuit and destroy the poweramp!**

21 Routed To Headphones (a) Or HiFi Cab. Guitar Cab. (b)

Selector switch for the HEADPHONES OUTPUT jack (20). Set the switch to the left position (a) when you connect stereo headphones or hi-fi speakers and to the right position (b) when you connect a guitar cabinet to ensure proper frequency compensation for the respective systems.

22 FREQUENCY COMPENSATED LINE OUTPUT: RIGHT

Line Out for the preamp's right frequency compensated signal (1/4" unbalanced jack; related to ground).

This signal can be patched directly to a mixing console or a recording device. Ensure you use a shielded cable for this signal circuit.

The LINE outputs (22) and (23) provide signals that emulate the response of a 412 guitar cabinet. The signal level is nominally identical to the level at the LINE outputs (24) and (25). However in practice, the level deviates slightly due to frequency compensation. When the preamp is active, the output level of the LINE outputs depends on the following factors: the input level (Gain), the Volume control settings for the respective channels, and in some measure, the voicing section control settings. This is why we recommend that you dial in the desired sound via the control features, set a desired FX level (if you have connected a processor) and then use the LINE LEVEL pot (26) to dial in a suitable level.

Rear panel control features:

The page 12 includes the front and rear panel diagrams.

23 FREQUENCY COMPENSATED LINE OUTPUT: LEFT

Line Out for the preamp's left frequency compensated signal (1/4" unbalanced jack; related to ground).

This signal can be patched directly to a mixing console or a recording device. Ensure you use a shielded cable for this signal circuit.

24 LINE OUTPUT: RIGHT

Line Out for the preamp's right channel (1/4" unbalanced jack; related to ground).

This signal can be routed to a poweramp or a FX device via a shielded cable.

25 LINE OUTPUT: LEFT

Line Out for the preamp's left channel (1/4" unbalanced jack; related to ground).

This signal can be routed to a poweramp or a FX device via a shielded cable.

26 LINE LEVEL

This control feature determines the level of the LINE outputs (22), (23), (24) and (25). The output signal can be amplified to 15 dB if required.

27 FX LOOP RETURN: RIGHT

Signal input right stereo channel for the FX Loop. Connect this input to a signal processor's right output/send jack via a shielded cable with 1/4" plugs.

28 FX LOOP RETURN: LEFT

Signal input left stereo channel for the FX Loop. Connect this input to a signal processor's left output/send jack via a shielded cable with 1/4" plugs.

29 MONO OUTPUT; FX LOOP SEND

Output for patching the preamp signal to a poweramp input or the input of a another preamp or signal processor/FX device. Ensure you use a shielded cable for this signal circuit.

When the preamp is active, the MONO output (29) and the INSTRUMENT output (30) provide a signal that is very similar to that of a guitar's pickups, and at much the same level. You can use the two volume knobs to dial in the desired level very precisely. Although this might seem pretty mundane, this feature is essential when you're using the bypass circuit. Usually, you want to establish the same conditions for the sound shaping device following the Tube Toner in your setup (e.g. to ensure the signal you are sending to an effects device or the next preamp in serial setup has the same level).

30 INSTRUMENT OUTPUT; TO GUITAR AMP

This is a frequency-compensated preamp signal output. You can patch a cable directly from this output to the input of a combo or head. Ensure you use a shielded cable equipped with 1/4" plugs.

The difference between the two MONO outputs (29) and the INSTRUMENT out (30) is that the Instrument output signal is filtered when the preamp is active. A common problem when you are routing a preamped signal to a combo connected in series is that the combo's voicing section causes high-end distortion. This filtered circuit is designed to prevent this nuisance from rearing its ugly head, which is why the INSTRUMENT output is the one you want to use when you are routing the signal to the instrument input of a combo or head. The MONO output (29) can be used to patch the signal directly to a mono poweramp (for instance to the effects return of a combo or head).

31 INPUT

Unbalanced 1/4" (main) input jack.

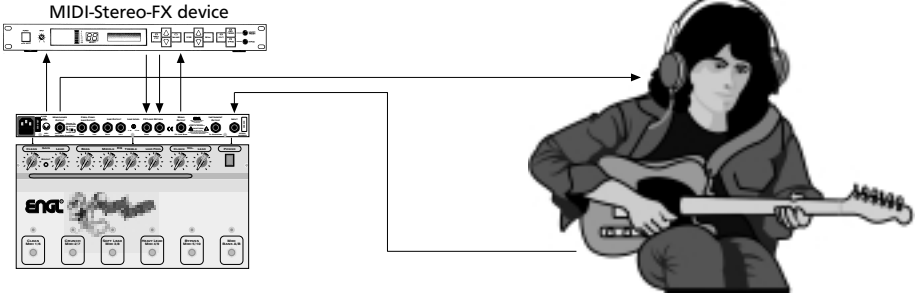
TIP Stereo FX loop:

You can connect a signal processor between the MONO OUTPUT (29) and the FX LOOP RETURN jacks (27) and (28) or directly between the LINE OUTPUTS (24) and (25) and a stereo poweramp's inputs. There is a substantial difference between these two applications: When you connect the Processor to the FX LOOP, the send signal is identical to the guitar signal when the Tube Toner is in Bypass mode and the preamp signal when the preamp is active. The send level only is influenced by the settings of the volume controls in this case. The level of the master output signal routed to the LINE outputs can be increased via the LINE LEVEL (26) pot.

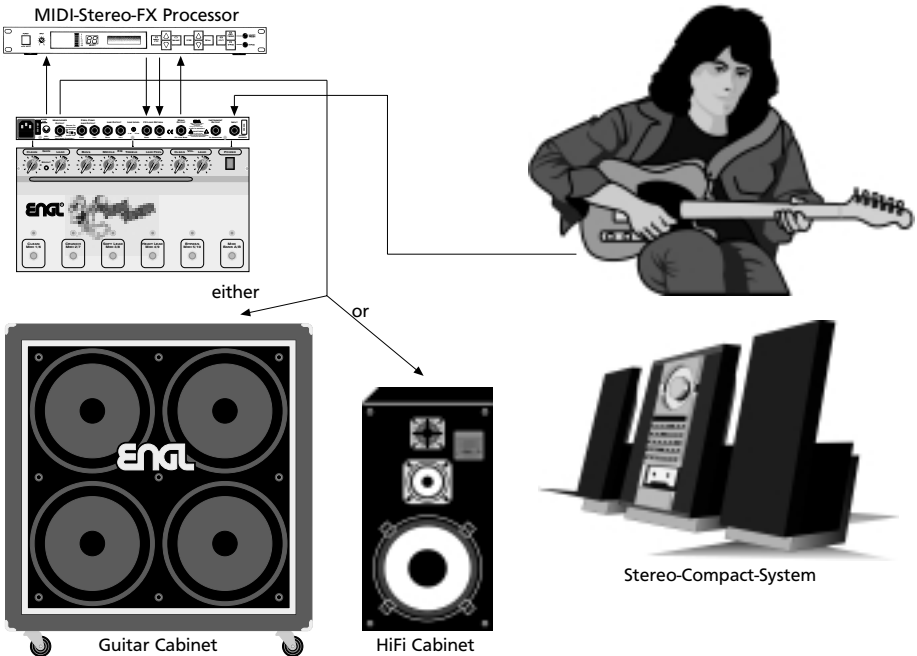
However, when you connect the Processor between the LINE outputs and the poweramp, the input (Send) signal to the FX device can be increased via the LINE LEVEL (26) pot and you have two Send signals (left, right) available. This option is recommended for low impedance (0 dB) FX devices that are not equipped with a variable input.

If you chose to use this option, you should ensure that the output signal of the effects device has a level sufficient (preferably variable) to drive the power amp. For another conceivable option, you could patch an effects device or stomp box/pedal between the INSTRUMENT (30) output and the input of a combo.

Sample Applications:

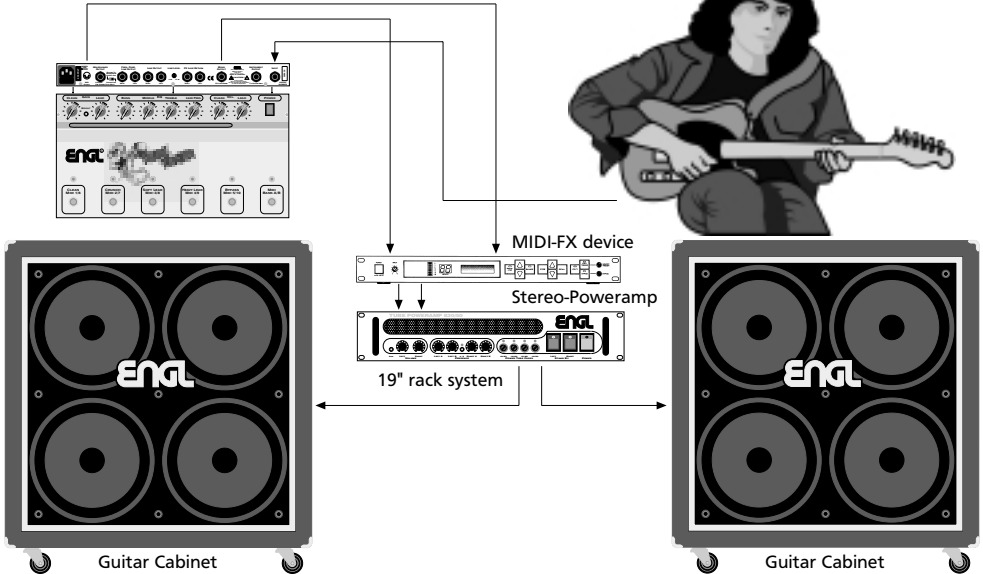


1. **Rehearsing/writing with headphones:** Connect your guitar to the INPUT (31) and a stereo headphones set to the HEADPHONES OUTPUT (20); ensure you set the "ROUTED TO" switch (21) to "HEADPHONES OR HIFI CAB." (to the left). If you have an effects device available and want to connect it, patch it in via FX LOOP SEND (29) and the two FX RETURNS RIGHT (27) and LEFT (28). If you want to get really sophisticated, connect MIDI OUT (19) to the MIDI IN of your MIDI effects device.

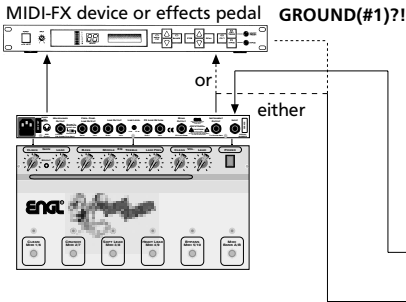


2. **Rehearsing/writing with speakers or jamming along with tracks via your stereo system:** Guitar to INPUT (31). Cabinet or hi-fi speaker (or two speakers if you're in a stereo kind of mood) to HEADPHONES OUTPUT (20): When you connect a conventional guitar speaker cabinet, ensure that you set the ROUTED TO switch (21) to "GUITAR CAB." (to the right). When you connect a hi-fi speaker, set the ROUTED TO switch (21) to "HEADPHONES OR HIFI CAB." (to the left). **CAUTION, WARNING, INCREDIBLY IMPORTANT SAFETY STUFF:** Whatever you do, make absolutely certain you use a STEREO 1/4" plug to connect the speaker to the Tube Toner. If you use a mono plug, you may short circuit your prized new possession and possibly destroy it! If you have an effects device available and want to connect it, patch it in via FX LOOP SEND (29) and the two FX RETURNS RIGHT (27) and LEFT (28). In case it is a MIDI FX processor, connect MIDI OUT (19) to the MIDI IN of your MIDI effects device.

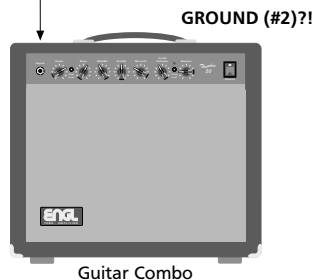
Sample-Applications:



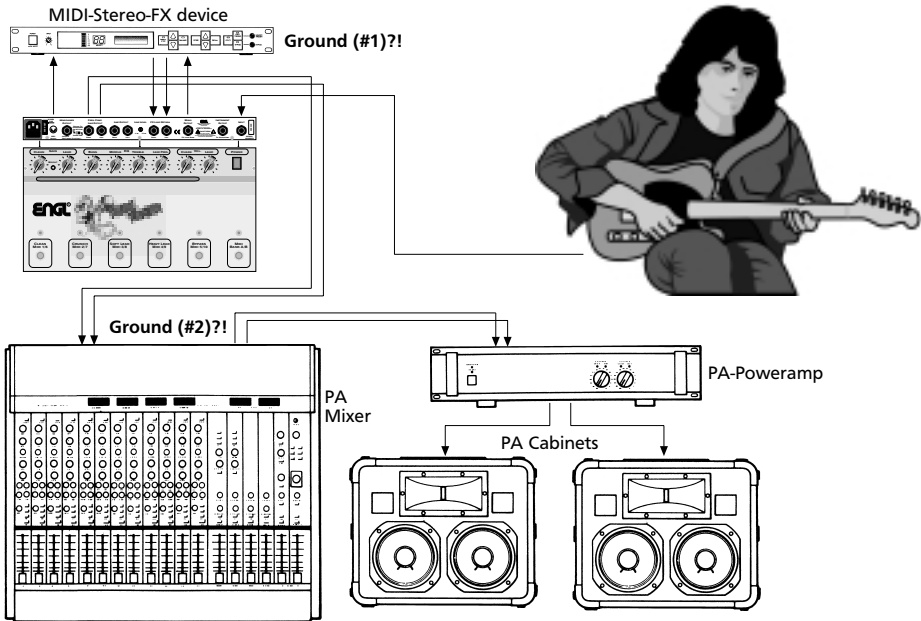
3. Another of the ENGL Tube Toner's many faces: MIDI control unit for a 19" stereo rack system. Guitar to INPUT (31). From MONO OUTPUT (29) to FX device input; from the two FX device outputs to the stereo power amp's inputs. As an alternative, you can also patch in a MIDI FX device via the Tube Toner's stereo effects loop (29, 28, 27): MIDI OUT (19) to the FX device's MIDI IN.



4. Yet another option: Tube Toner as a multi-channel tube expander for a guitar combo. Guitar to INPUT (31). Either INSTRUMENT OUTPUT (30) directly to the combo's input, or to the input of an effects device (stomp box/pedal) and from the output of the effects device (stomp box/pedal) to the combo's input. If the combo is equipped with an FX loop - rather than route the signal from the INSTRUMENT OUTPUT - you can also send the signal from the MONO OUTPUT (29) or one of the two LINE OUTPUTS (24) or (25) to the combo's FX return. However, keep in mind that with this option you can no longer access the combo's preamp via the Tube Toner's bypass circuit. **Note:** If the stomp box/pedal is powered by a wall wart (in other words, by AC), then the combination of the combo and effect can generate a ground loop, which is easily identified by a loud, extremely annoying humming noise.

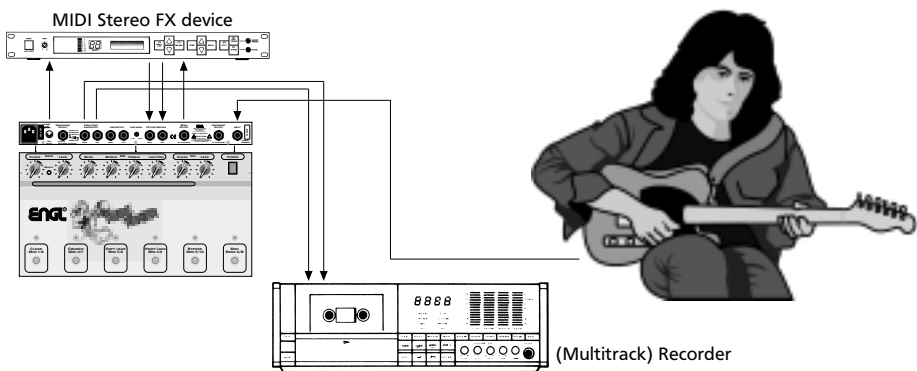


Sample Applications:



5. **The ENGL Tube Toner as a direct-to-desk (PA) tube preamp:** Guitar to INPUT (31). If desired and/or available, connect the effects device (stomp box/pedal) to FX LOOP SEND (29) and both FX RETURNS RIGHT (27) and LEFT (28). MIDI OUT (19) to the MIDI FX device's MIDI IN. From both FREQU.COMP. LINE OUTPUTS (23) and (22) on to two of the mixing console's inputs.

Note: If the stomp box/pedal is powered by a wall wart (in other words, by AC), then the combination of the PA system and effect can generate a ground loop, which is easily identified by a loud, extremely annoying humming noise.



6. **The list goes on: The ENGL Tube Toner as a recording preamp.** Guitar to INPUT (31). If desired and/or available, effects device (stomp box/pedal) to FX LOOP SEND (29) and both FX RETURNS RIGHT (27) and LEFT (28). MIDI OUT (19) to the MIDI FX device's MIDI IN. From both FREQU.COMP. LINE OUTPUTS (23) and (22) on to two of the recording desk's/recording device's inputs.

Technical Data

Input level (0 dB => 1Veff)	INPUT: -20 dB max. -3 dB
Output level (0 dB => 1Veff)	INSTRUMENT: -10 dB max. 0 dB LINE OUT: -10 dB max. 15 dB
Headphones poweramp:	2 x 1,5 Watts at 4 Ohms, solid state impedance 4 - 200 ohms
Tubes:	V1 => ECC83/12AX7 First Quality V2 => ECC83/12AX7 selected
Power Consumption:	approx. 23 Watts max.
MIDI-control circuit: Tru MIDI Data:	Flash-controller, 89C2051 MIDI Program-Change 00-09, CH 01

Fuses

AC Mains:	230 Volts	100 and 120 Volts
external:	200 mAM	400 mAM (medium)
internal:	250 mAT	500 mAT

Caution: Replace fuses only with others of the same rating!

Dimensions: 410 mm x 225 mm x 75 mm

Weight: approx. 4 kg

Handling and Care

- *Protect the preamp from mechanical knocks (tubes!).*
- *Let the preamp cool down before you transport it (approx. 10 minutes).*
- *Tubes need about 20 seconds to warm up after you switch the power on.*
- *Avoid storing the preamp in damp or dusty rooms, they are hard on jacks, switches and potentiometers.*
- *Ensure air can circulate at the front grill (never cover it) of the Tube Toner to allow for adequate cooling (increases component life).*
- *Replace tubes with select **ENGL** replacement tubes (special selection criteria) to avoid microfonic properties, undesirable noise and feedback.*

Block Diagram:

