

Fender[®]

**2150 POWER AMP
OWNER'S MANUAL**

P/N 038779

FENDER 2150 OWNER'S MANUAL

Your Fender 2150 Rack Mount Tube Emulation Power Amplifier is the culmination of an ambitious project undertaken by Fender R&D, Manufacturing and Marketing personnel in which the goal was to bring to the working musician a straight-ahead amplifier with inherent reliability, tonal flexibility and portability. The 2150 offers the dependability of total Solid State circuitry and more tonality than most tube amplifiers at half the cost. The amplifier is extremely versatile, including switchable tube emulation, presence control, and impedance selection.

Your power amplifier has switchable CIP (CURRENT IMPULSE POWER) that emulates the characteristics of output tubes without the microphonics, reliability and cost hassles. With the switch in, the 2150 uses a radically underdamped design that interacts with the speaker in much the same way as a tube amplifier does, producing sparkle and punch with an increase in apparent loudness and power that defies comparison to other similarly rated units. For a sound that screams even louder, turn up the presence control to increase the high frequency output.

With the CIP switch out, the amplifier's output level remains constant with any load impedance just like a normal PA amp or bass amp but with the added benefit of a presence control. This control adds "slap" to your bass or a killer high end to your keyboards or other instruments. With either mode, at 150 watts per channel, this amp is LOUD!

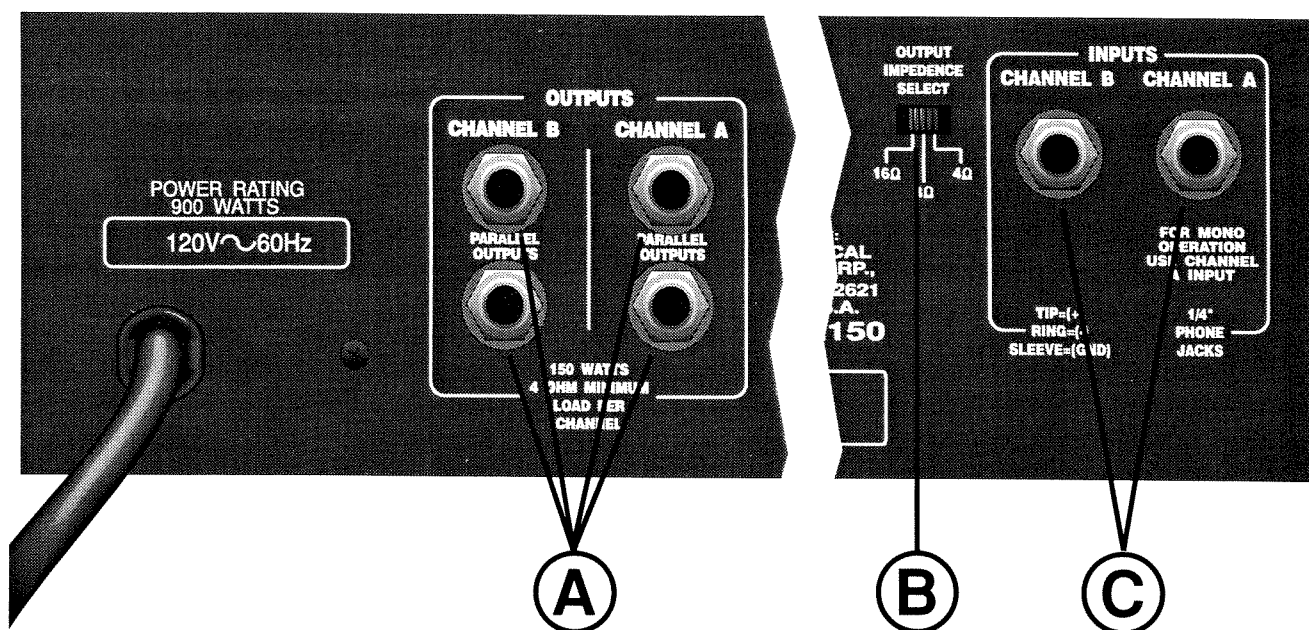
Setting the impedance selector switch to the rated impedance of your speakers allows you to switch CIP in and out without having to spend time resetting the volume controls.

The selection of a Fender amplifier will reward you with years of quality music in a wide range of controlled sounds. This manual is designed to familiarize you with the equipment and to acquaint you with its many fine features. Read it carefully so that you will benefit from all the features as soon as you start using the amplifier.

The built-in quality of a Fender amplifier is the result of over three and a half decades of dedication in the combined skills of research and development by our engineers and musicians.

That is why we say, proudly...**FENDER, *The Sound That Creates Legends.***

WARNING: TO REDUCE THE RISK OF FIRE OR SHOCK HAZARD, DO NOT EXPOSE AMPLIFIER TO RAIN OR MOISTURE.



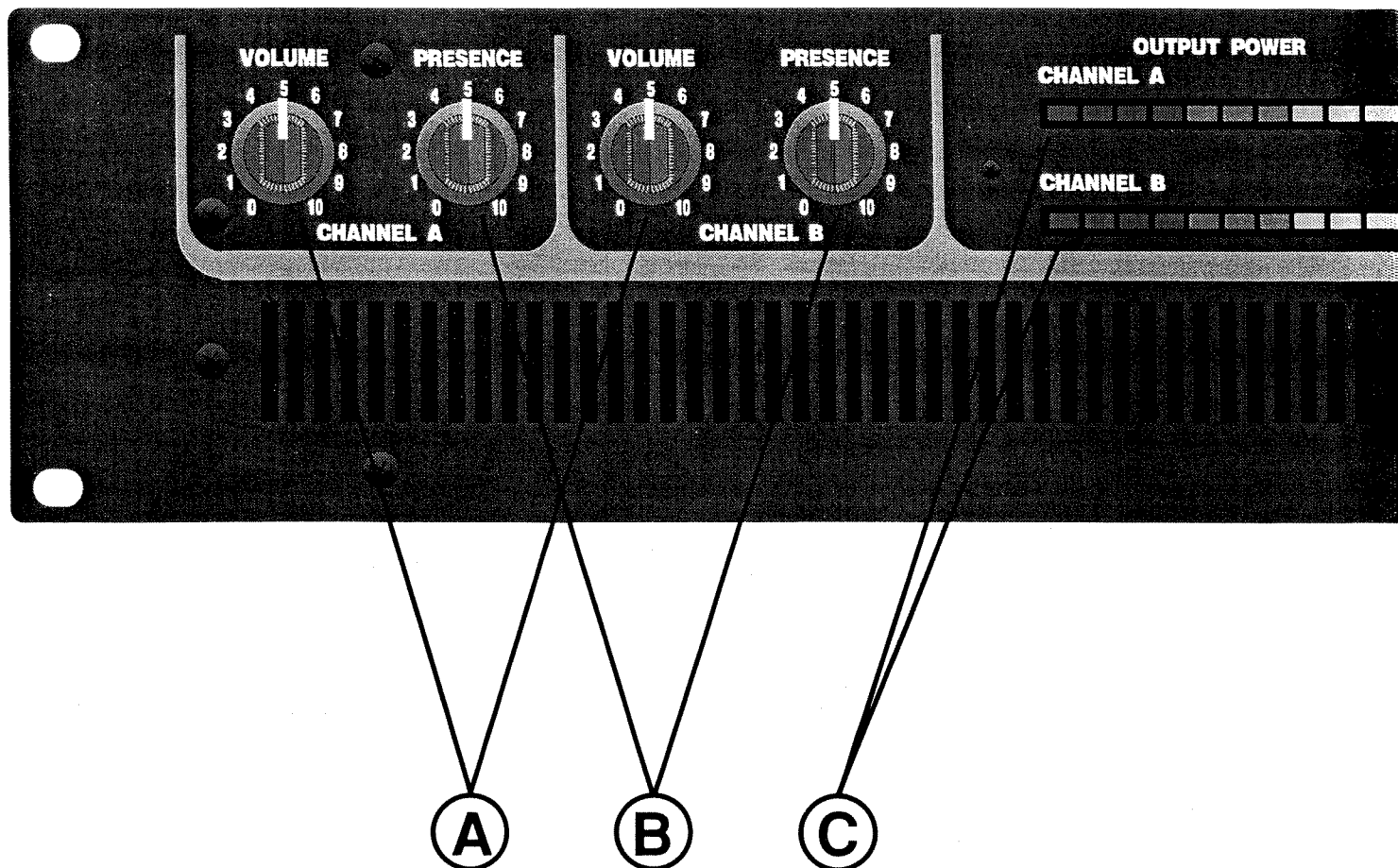
REAR PANEL FUNCTIONS

A. SPEAKER OUTPUT JACKS: Two parallel outputs are provided for each channel. The minimum total impedance that should be connected to any single channel is 4 Ohms.

B. OUTPUT IMPEDENCE SELECTOR: This switch should be set to the impedance of the speakers. For example, if you have connected an 8 Ohm speaker to each channel, the switch should be put in the 8 Ohm position. The switch enables the user to change in and out of tube emulation mode without a significant change in output level. Because the amplifier reacts with the speaker in tube mode, though, some change in level, especially a boost of highs and lows, should be expected.

C. INPUTS: One input is provided for each channel. The inputs to the amplifier can be unbalanced or balanced 1/4 inch plugs. For balanced lines, the tip is the "+" signal, the ring is the "-" signal and the sleeve is ground. Connecting a single mono source to channel one will cause the input to be sent to both amplifier channels, each with its own volume and presence controls. Connecting a single source to just channel two will send the signal only to channel two. Connecting two sources (or the stereo outputs of one source) to both channels will enable two channel operation, with each having its own respective volume and presence controls.

CAUTION: This amplifier is equipped with a grounding type supply cord to reduce the possibility of leakage current. Be sure to connect to a grounded receptacle. Operation from an ungrounded (two pronged) AC receptacle requires a three to two contact grounding type adaptor. Be sure to connect the adaptor's grounding lead to a good earth ground. **DO NOT ALTER THE AC PLUG.**

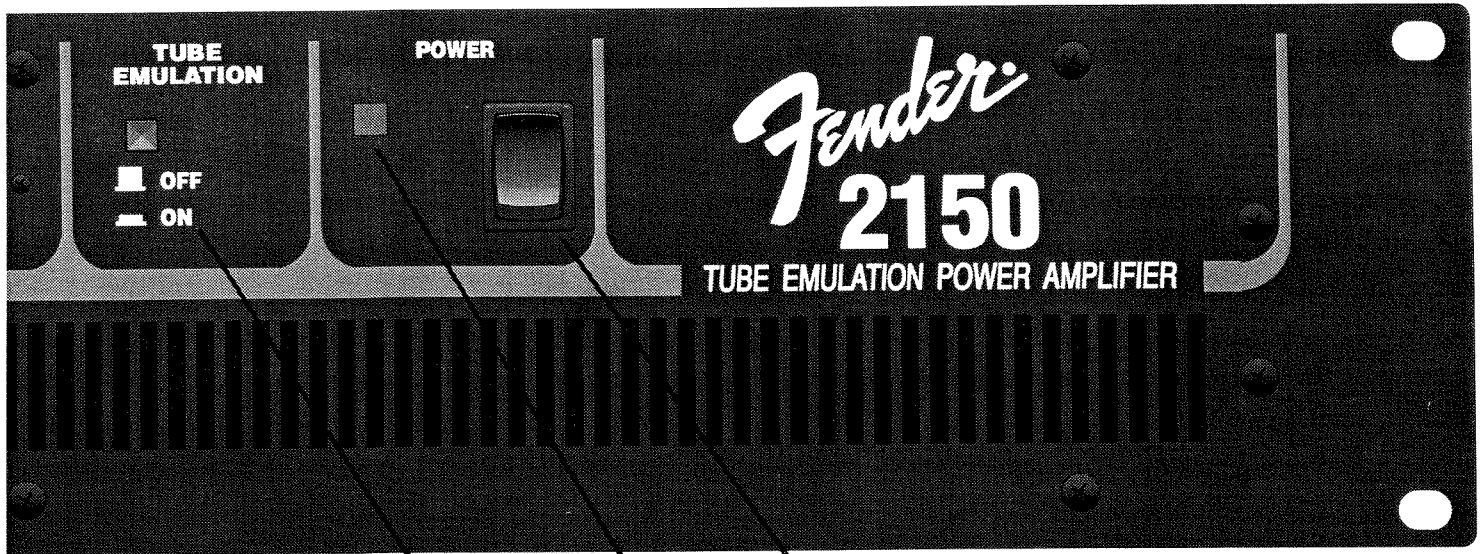


2150 FRONT PANEL FUNCTIONS

A. VOLUME: Adjusts the overall loudness of each individual channel regardless of the mode the amplifier is operated in (mono, stereo, single channel). See function 9 for a description of mode selection.

B. PRESENCE: Adjusts the amount of boost in the upper high frequency range of each individual channel. With the control at minimum (fully counterclockwise), the frequency response of the amplifier is flat.

C. OUTPUT POWER METERS: These meters indicate the power being output to the speakers, one for each channel. Each LED represents about 3dB of sound level with the first green led representing a loudness level 21dB below full power. If all green and yellow LED's plus the first red LED is lit, then the peaks of the output signal are soft-clipping (this is rarely audible). If all LED's are lit, then the amplifier is hard clipping the output signal. This is often desired as distortion when used as a guitar amplifier but not when used as a bass or PA amplifier (see note D for emulation selection).



D

E

F

D. TUBE EMULATION SWITCH: With the switch out, the amplifier functions as a normal bass guitar or PA amp with a flat frequency response regardless of load impedance. With the switch in, the amplifier utilizes CURRENT IMPULSE POWER (CIP) technology to achieve a radically underdamped response that interacts with the speaker in much the same way a tube amplifier does, producing sparkle and punch with an increase in apparent loudness and power. NOTE: Since operating the switch can cause a small thump to occur at the speakers, it is not recommended that the switch position be changed while playing.

E. POWER ON LED: Indicates that unit is switched on and receiving power from the outlet.

F. POWER SWITCH: Turns AC power ON and OFF. When the switch is UP the amplifier's off and completely shut down.

BASIC WIRING AND CONNECTIONS

Power and audio signal cables are the most common sources of sound system failure. Well made and carefully maintained cabling is essential to the reliability of the whole system. If long speaker cables are required, make sure the wire is of sufficient size to transfer all the available amplifier power to the speakers rather than absorbing power itself. As a rule of thumb, the larger the wire, the better (larger wire has smaller "gauge number").

Large diameter (small gauge number) wire is expensive and long cables made from it are heavy. Rather than running long speaker cables, it's better to locate power amplifiers near speakers and run a line-level signal cable over the long distance to the amplifier. This approach eliminates most of the signal loss due to speaker cable resistance so the speakers will be fed all the amplifiers's power without the need for heavy cables. It can actually save money in many instances.

Always use stranded wire for two reasons:

- (1) It is more flexible and less prone to metal-fatigue breakage.
- (2) If an end is nicked while insulation is being stripped for connection, only one or two strands will break, not the entire wire.

CAUTION:

Never use coiled cords for speaker hookup, even in an emergency. Coiled guitar-type cords usually have higher internal resistance than the speakers themselves. This is due to the light-gauge wire used to keep the coil cords flexible. These cords will prevent most of the power from reaching the speakers. In high power operation, a coil cord can melt, cause a fire hazard, and possibly damage the amplifier. As a general rule, guitar-type connecting cords, both straight and coiled, make poor speaker cables.

The 2150 power amplifier can produce enough power output to damage electronic equipment connected to its output. Besides being capable of destroying speakers, under certain circumstances shock and/or fire hazards are possible. High power amplifiers should always be properly applied and used with care in clean and dry environments.

Assuming you're NOT turning all the equipment on at once with a switched power receptacle "strip", be sure to turn on the power amplifier last. This will prevent turn-on "thumps" from the other pieces of gear from possibly damaging speakers. The reverse logic should be used—turn OFF the amplifier FIRST—when shutting the system down.

The 2150 is timed to turn on the speaker outputs after the amplifier's power supply is fully charged up, thus preventing any turn-on noise. Timing of the amplifiers's turn-on circuit is usually sufficient to accommodate all of the turn-on anomalies from other pieces of gear in a system, making it acceptable to use a single switched power string in a permanent or semi-permanent system.

In multiple amplifier installations, we recommend sequential turn-on (either manually or via timed relays) to avoid a sudden, major drain on the AC line.

You should keep in mind that severe reduction of power line voltage affects the amount of power you can get FROM the amplifier. If you need to run long AC extension cords, make sure their conductors are as large as practical (small gauge number). Just as smaller diameter wire causes speaker line loss, smaller power lines cause loss.

SPECIFICATIONS

OUTPUT POWER:

Stereo Continuous sine wave output power, both channels driven ± 1 dB, 20 Hz to 20 kHz with 120 VAC line voltage.
8 Ohms 100 watts
4 Ohms 150 watts

Single channel Driven at 1kHz, 0.1% THD
8 Ohms 120 watts
4 Ohms 190 watts

POWER BANDWIDTH: 20 Hz to 22kHz (3 dB points from rated power)

RISE TIME: Less than 12 μ S

SLEW RATE: Greater than 8.5V/ μ S

TOTAL HARMONIC DISTORTION (THD): Rated power, 20 Hz to 20kHz
8 Ohms Less than 0.034%
4 Ohms Less than 0.08%

HUM AND NOISE: Below rated output, 8 ohms
20 Hz-20 kHz 80 dB
IHF A rated 90 dB

DAMPING FACTOR: Greater than 16, referenced to 8 Ohms

INPUT IMPEDENCE: 30K Ohms, differential

CHANNEL SEPARATION: Below rated power, single channel operating: Greater than 65 dB at 1 kHz

SENSITIVITY: Reference 1kHz -1.13dBv (1.14V)

COOLING: Two speed fan

GAIN CONTROLS: Continuously variable attenuators, volume and presence for each channel

POWER REQUIREMENTS: 120 VAC, 60 Hz, 8 amps

WEIGHT: 23.6 lbs.

DIMENSIONS:
width: 19 inches
height: 3.5 inches
depth: 12.75 inches (12 inches behind front panel)

SOUND: "KICKS*!"

TROUBLESHOOTER'S CHECKLIST:

If the amp is set up but does not function, check the following items:

- Is the amp power cord properly plugged into an electrical outlet?
- Is there power at the outlet?
- Are the speakers properly connected to the amplifier?
- Are the volume controls turned above four?
- Are the volume controls on the other pieces of equipment (including the instrument) turned up?

If, after checking all of the above, the system is still not performing correctly, consult your Fender Service Dealer.