



ED[®] 300

OPERATING GUIDE

WARNING
TO PREVENT ELECTRICAL SHOCK OR
FIRE HAZARD, DO NOT EXPOSE THIS
APPLIANCE TO RAIN OR MOISTURE.
BEFORE USING THIS APPLIANCE, READ
BACK COVER FOR FURTHER WARNINGS.



General Description

The ED[®] 300 is a self-contained amplification system specifically designed for use with electronic drums. Its design incorporates many features not found on nonspecialized musical instrument amplifiers. Independent channel equalization, complete effects patching capability, and isolated monitor mixing capability allow the drummer to realize maximum potential from today's sophisticated electronic drum systems.

The ED 300 will deliver 130 watts RMS into its integral speaker system. To accurately reproduce the full spectrum of sound from electronic drum systems, Peavey engineers have selected the Peavey 15" Scorpion[®] Plus speaker, and the Peavey Model 22A[™] compression driver coupled with a CH[™]-3 high frequency horn. To protect the speakers, and to prevent clipping distortion, the ED 300 is equipped with Peavey patented DDT[™] compression circuitry.

The ED 300 is built to withstand the rigors of use in a night-after-night touring environment. The cabinet is constructed of 3/4" wood and is covered with the heaviest available 34-ounce Tolex[®]. Ruggedness is enhanced by the use of heavily plated steel corners and guides and a steel-reinforced carrying handle. Internally, the ED 300 features a chassis constructed of high strength tempered aluminum alloy and utilizes the finest electronic components available.

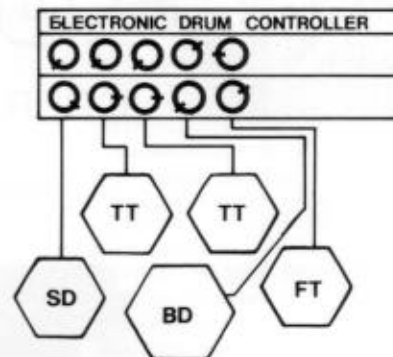
Although the ED 300 incorporates many sophisticated features, its operation is relatively simple. In order to quickly familiarize yourself with the ED 300, and to avoid potentially hazardous or damaging situations, please read this operating guide carefully and completely, and keep it handy for future reference.

Basic Setup and Connections

The ED 300 features two channels which differ in input equalization. The normal channel is essentially "flat" (no input equalization) and is designed primarily for amplification of bass drum signals. The bright channel is equalized to enhance high frequency signals and is designed primarily to accept signals from the snare drum and tom-toms.

Most electronic drum system mixers provide two outputs for adjusting the mix of individual drum signals. To interconnect the drum mixer to the ED-300, use two high-quality SHIELDED connecting cables. Connect one end of each cable to each of the mixer's outputs. Connect the other end of each cable to a channel input of the ED 300. Then adjust the drum system mixer to route individual drum signals to the appropriate channel of the ED 300.

Since individual drum system manufacturers differ in mixer configuration, a complete discussion of mixer adjustments is beyond the scope of this manual. Consult the owner's manual of your drum system for specific instructions regarding channel assignments. A basic mix for use with the ED 300 might look like this:



E G
A B C D F H
A B C D F H
E G
I J K
L M



FRONT PANEL FEATURES:

CHANNEL INPUTS (A)

As discussed in the "Basic Set-up" section, the Channel Inputs receive signals from the drum system mixer outputs. These inputs are high impedance and will accept signals over a wide dynamic range.

CHANNEL GAIN CONTROLS (B)

The Channel Gain Controls allow individual volume adjustments of each incoming signal. Adjusting the individual Gain Controls will affect both the overall loudness and the balance between channels. Some experimentation will be necessary to determine the "best" overall balance between channels.

Regardless of the type of electronic drum system used, setting of the Channel Gain Controls above "5" is not recommended. Setting the Channel Gain Controls above "5" may result in unwanted distortion and/or premature engaging of the DDT compression circuit.

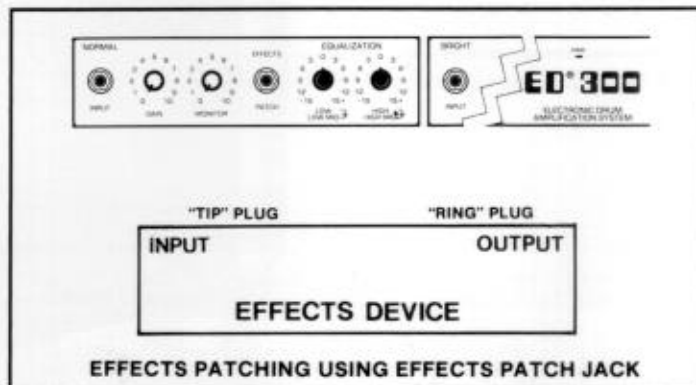
MONITOR CONTROLS (C)

Each channel is provided with a Monitor Control and monitor preamp. These controls are completely independent of the ED 300's internal signal flow; signal from these controls is routed directly to the Monitor Outputs on the rear panel.

EFFECTS PATCH JACKS (D)

Each channel is provided with a stereo-type Effects Patch Jack. These jacks are used with external devices to provide independent effects loop capability for each channel.

To patch an effects device into a channel, a stereo "Y" cord should be used. First, turn the Channel Gain Control (B) to its "Zero" setting. Insert the stereo plug into the Effects Patch Jack. Insert the "Tip" plug into the effect's input jack. Insert the "Ring" plug into the effect's output jack. Then slowly increase the Gain Control setting until a satisfactory level has been achieved. Note that all signals in a channel (except monitor signals) will be sent through any effect patched into that channel. Also note that the Effects Patch Jacks occur in the signal path before the equalization stage (pre-EQ). Therefore, any effects signal will be altered by changes in the equalization controls.



CHANNEL EQUALIZATION CONTROLS (E,F,G,H)

Each channel of the ED 300 is equipped with an independent 4-band equalizer. The Equalization Controls are "stacked" on the front panel. The inner knob on the left "stack" is the low frequency control, while the outer knob controls low mid frequencies. In the right "stack", the outer knob regulates high mid frequencies, while the inner knob is the high frequency control.

The ED 300 features active equalization, which means that frequencies within any band may be either cut or boosted. Setting any Equalization Control to "Zero" delivers "flat" (unaltered) frequency response for that band. Rotating an Equalization Control clockwise will boost frequencies within that band, while rotating counterclockwise will cut that band's frequencies.

Extreme care should be taken when boosting low frequencies. Low frequencies consume a disproportionate amount of an amplifier's power, and overboosting low frequencies may lead to loss of headroom (amplification capability) and to possible speaker damage. Extreme boost of any Equalization Control should be avoided to ensure quiet operation.

MASTER GAIN CONTROL (I)

The Master Gain Control regulates the total amplification and headroom of the ED 300. In normal operation, the Master Gain Control should be set at or near the "10" position to allow maximum headroom and dynamic range and to prevent distortion.

GROUND SWITCH (L)

The Ground Switch is a three-position rocker switch which should normally be operated in its center or "zero" position. Occasionally, a situation may arise in which noticeable hum or noise comes from the loudspeakers. If this should occur, switching the Ground Switch to either positive (+) or negative (-) should eliminate or minimize the noise. If hum or noise problems persist, consult your Authorized Peavey Dealer Dealer or a qualified service technician. NOTE: THE GROUND SWITCH IS NOT FUNCTIONAL ON 220/240 VOLT EXPORT MODELS.

ON/OFF SWITCH AND POWER LED (M,K)

The On/Off Switch is a two-position rocker switch which provides AC power to the ED 300. When the switch is in the "On" position, the Power LED will illuminate showing that power is being supplied to the unit.

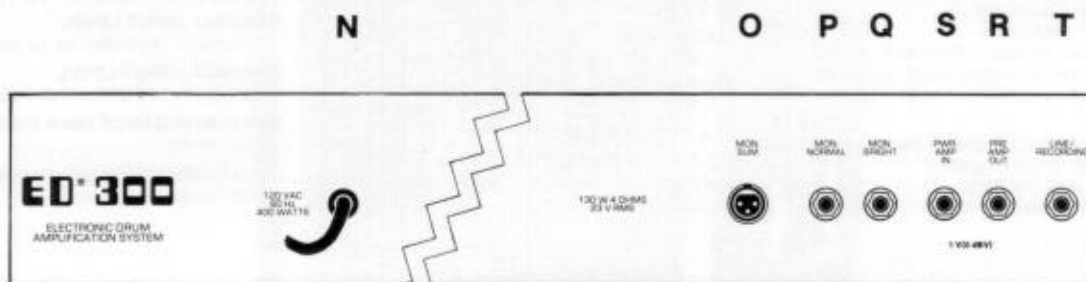
DDT COMPRESSION AND COMPRESSION LED (J)

The ED 300 utilizes Peavey patented DDT (Distortion Detection Technique)* Compression Circuit to virtually eliminate the possibility of clipping distortion in the power amplifier and speakers. The DDT circuit performs its function automatically and is not adjustable.

The DDT circuit will not engage until the ED 300 is utilizing all available output power. When this occurs, the Compression LED will light. In normal playing, the ED-300 should be set so that the Compression LED lights only on very loud passages.

If the Compression LED remains constantly lit, this indicates that the Channel Gain and/or Master Gain Controls are set too high, or that too much boost equalization is being used. In this situation, control settings should be reduced until the Compression LED fires only intermittently.

The Compression LED will sometimes illuminate when the ED 300 is turned on. This is normal and does not indicate a malfunction of the amplifier.



REAR PANEL FEATURES:

LINE CORD (N)

For your safety, the ED 300 is equipped with a three-wire Line (mains) Cord and a three-pin AC plug. It is not advisable to remove the ground pin under any circumstances. If it is necessary to use the ED 300 without proper grounding facilities (as when only two-wire AC service is available), a suitable grounding adaptor should be used. When the ED 300 is used with properly grounded AC receptacles, shock hazard is greatly reduced, as are hum and noise.

MONITOR NORMAL AND MONITOR BRIGHT JACKS (P, Q)

The Monitor Jacks may be used to send independent signals from each channel to outboard equipment such as monitor amplifiers, sound reinforcement systems or recording consoles. Signals at each jack are directly controlled by the respective Monitor Controls (C) on the front panel. All signals appearing at the Monitor Jacks are unaffected by any other gain or equalization controls.

MONITOR SUM JACK (O)

This unbalanced Lo-Z output provides access to a summed monitor signal. Signal at this jack is unaffected by Channel Gain, Master Gain or Equalization Controls, but will be affected by either or both Monitor Controls (C) on the front panel.

PREAMP OUT JACK/POWER AMP IN JACK (R, S)

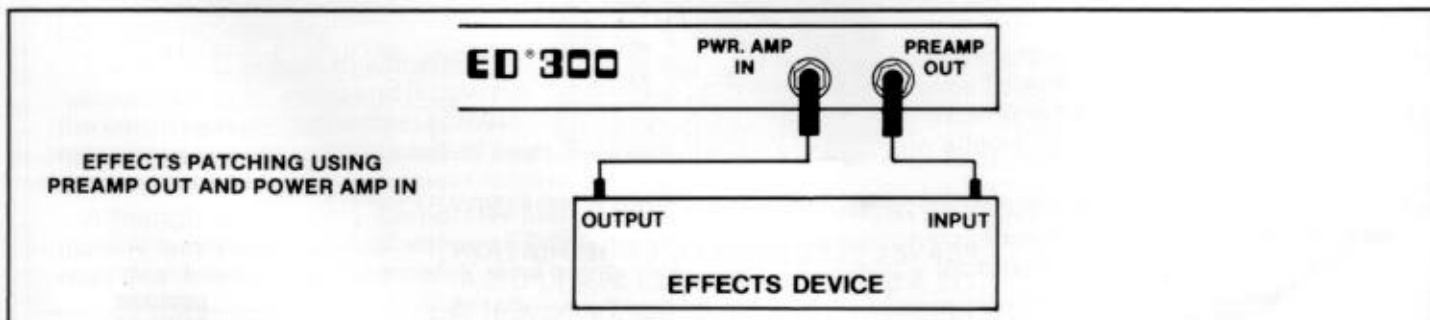
The Preamp Out Jack and Power Amp In Jack provide another form of effects patching within the ED 300. Effects may be patched between the preamp and power amp according to the following diagram. Be sure to use high-quality shielded cables when connecting any effects device with the ED 300.

Connecting an effects device at the Preamp Out Jack/Power Amp In Jack differs in two ways from effects patching discussed earlier. First, any effect patched at this point will affect ALL signals in both channels within the amplifier (except monitor signals). Secondly, this effects patch point occurs after the ED 300's equalization stage (post-EQ). In experimenting with effects patching, you may note differences in the operation of an effects device depending on its location in the signal path.

LINE/RECORDING JACK (T)

The Line/Recording Jack provides a means of sending a low impedance signal to the mixer, recording console or additional amplifier. Signals appearing at this jack are post-EQ and contain information received from both input channels.

*U.S. Patent 4,318,053



ED-300 SPECIFICATIONS

SUMMARY OF FUNCTIONS:

Two channels: Pre EQ Patch and four-band equalizer (each channel); preamp out; monitor (each channel); master level; 130 watt power amp with DDT™ compression; one 15" Scorpion® Plus speaker and one CH-3 horn and 22A compression driver.

MIXER SECTION:

The following preamp specs are measured with all EQ flat at 0 dB, master level set at 10. Nominal signal levels are with channel level controls set at 5; Minimum levels are with channel level controls set at 10.

INSTRUMENT INPUTS:

Impedance: High Z, 100K ohms
Nominal Input Level: -20 dBV, 100KV RMS 100
Minimum Input Level: -40 dBV, 10mV RMS
Maximum Input Level: +10 dBV, 3V RMS

PRE EQ PATCH OUTPUT (STEREO JACK TIP):

Function: Low Level Effects Send
Load Impedance: 10K ohms or greater
Nominal Output: -9 dBV, 0.35V RMS

PRE EQ PATCH INPUT (STEREO JACK RING):

Function: Low Level Effects Return
Impedance: High Z, 100K ohms
Designed Input Level: -9 dBV, 0.35V RMS
(Switching stereo jack providing patch output to patch input connection when not used)

PREAMP OUTPUT:

Function: High Level Post EQ Signal Send
Load Impedance: 1K ohms or greater
Nominal Output: 0 dBV, 1V RMS
Maximum Output: +18 dBV, 8V RMS

POWER AMP INPUT:

Function: High Level Post EQ Signal Return
Impedance: High Z, 22K ohms
Input Level: 0 dBV, 1V RMS
(Switching jack provides preamp output to power amp input connection when not used)

LINE RECORDING OUTPUT:

Function: Additional preamp output
Load Impedance: 1K ohms or greater
Nominal Output: -0 dBV, 1V RMS
Maximum Output: +18 dBV, 8V RMS

THE FOLLOWING SPECS MEASURED AT NOMINAL SETTINGS: ALL CHANNEL INPUTS TERMINATED WITH 47K OHMS:

FREQUENCY RESPONSE (Channel In/Preamp Out with 1V RMS output): Equalized for ED-300 speakers

PREAMP HUM & NOISE:
-75 dBV (Both channels operational)

SYSTEM DISTORTION (Channel In/Preamp Out, 40 Hz - 20 kHz at 1V RMS):
Less than .05% THD, typically below .01%

EQUALIZATION:
+/-15 dB at 60 Hz and 10 kHz, Shelving
+/-15 dB at 400 Hz, Peak/Notch
+/-15 dB at 1800 Hz, Peak/Notch

POWER AMPLIFIER SECTION:

RATED POWER AND LOAD:
130W RMS into 4 ohms with DDT™ Compression and LED indicator

POWER AT CLIPPING (typically at 5% THD, 1 kHz, 120 VAC line):

85W RMS into 8 ohms
140W RMS into 4 ohms
2 ohms NOT recommended

FREQUENCY RESPONSE:

+0, -1 dB, 20 Hz to 20 kHz at 100W RMS into 4 ohms

TOTAL HARMONIC DISTORTION:

Less than 0.2%, 100 mW to 100W RMS, 20 Hz to 10 kHz, 4 ohms, typically below 0.1%

DDT™ DYNAMIC RANGE:

Greater than 20 dB

DDT™ MAXIMUM THD:

Less than 0.5% THD for 6 dB overload
Less than 1% THD for 20 dB overload

HUM & NOISE:

Greater than 95 dB below rated power

POWER CONSUMPTION (DOMESTIC)

400W, 50/60 Hz, 120 VAC

MONITOR CHANNELS SECTION:

MINIMUM INPUT LEVEL:

26.6 mV RMS, -31.5 dBV for 1V out

NOMINAL INPUT LEVEL

.31V RMS, -10.3 dBV for 1V out

MAXIMUM INPUT LEVEL

3.2V RMS, +10 dBV without clipping

INPUT IMPEDANCE (each channel):

100K ohms

INPUT IMPEDANCE (effects patch, either channel):

100K ohms

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WARNING

EXPOSURE TO EXTREMELY HIGH NOISE LEVELS MAY CAUSE A PERMANENT HEARING LOSS. INDIVIDUALS VARY CONSIDERABLY IN SUSCEPTIBILITY TO NOISE INDUCED HEARING LOSS, BUT NEARLY EVERYONE WILL LOSE SOME HEARING IF EXPOSED TO SUFFICIENTLY INTENSE NOISE FOR A SUFFICIENT TIME.

THE U.S. GOVERNMENT'S OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) HAS SPECIFIED THE FOLLOWING PERMISSIBLE NOISE LEVEL EXPOSURES:

DURATION PER DAY IN HOURS	PERMISSIBLE NOISE LEVEL EXPOSURE SOUND LEVEL dBA, SLOW RESPONSE
8	90
6	92
4	95
3	97
2	100
1½	102
1	105
¾	110
½ or less	115

ACCORDING TO OSHA, ANY EXPOSURE IN EXCESS OF THE ABOVE PERMISSIBLE LIMITS COULD RESULT IN SOME HEARING LOSS. EAR PLUGS OR PROTECTORS IN THE EAR CANALS OR OVER THE EARS MUST BE WORN WHEN OPERATING THIS AMPLIFICATION SYSTEM IN ORDER TO PREVENT A PERMANENT HEARING LOSS IF EXPOSURE IS IN EXCESS OF THE LIMITS AS SET FORTH ABOVE. TO INSURE AGAINST POTENTIALLY DANGEROUS EXPOSURE TO HIGH SOUND PRESSURE LEVELS, IT IS RECOMMENDED THAT ALL PERSONS EXPOSED TO EQUIPMENT CAPABLE OF PRODUCING HIGH SOUND PRESSURE LEVELS SUCH AS THIS AMPLIFICATION SYSTEM BE PROTECTED BY HEARING PROTECTORS WHILE THIS UNIT IS IN OPERATION.

CAUTION

THIS AMPLIFIER HAS BEEN DESIGNED AND CONSTRUCTED TO PROVIDE ADEQUATE POWER RESERVE FOR PLAYING MODERN MUSIC WHICH MAY REQUIRE OCCASIONAL PEAK POWER. TO HANDLE OCCASIONAL PEAK POWER, ADEQUATE POWER "HEADROOM" HAS BEEN DESIGNED INTO THIS SYSTEM. EXTENDED OPERATION AT ABSOLUTE MAXIMUM POWER LEVELS IS NOT RECOMMENDED SINCE THIS COULD DAMAGE THE ASSOCIATED LOUDSPEAKER SYSTEM. PLEASE BE AWARE THAT MAXIMUM POWER CAN BE OBTAINED WITH VERY LOW SETTINGS OF THE GAIN CONTROLS IF THE INPUT SIGNAL IS VERY STRONG.

1. Read all safety and operating instructions before using this product.
2. All safety and operating instructions should be retained for future reference.
3. Obey all cautions in the operating instructions and on the back of the unit.
4. All operating instructions should be followed.
5. This product should not be used near water, i.e. a bathtub, sink, swimming pool, well basement, etc.
6. This product should be located so that its position does not interfere with its proper ventilation. It should not be placed flat against a wall or placed in a built-in enclosure that will impede the flow of cooling air.
7. This product should not be placed near a source of heat such as a stove, heater, radiator or another heat producing appliance.
8. Connect only to a power supply of the type marked on the unit adjacent to the power supply cord.
9. Never break off the ground pin on the power supply cord. For more information on grounding write for our free booklet "Shock Hazard and Grounding."
10. Power supply cords should always be handled carefully. Never walk or place equipment on power supply cords. Periodically check cords for cuts or signs of stress, especially at the plug and the point where the cord exits the unit.
11. The power supply cord should be unplugged when the unit is to be unused for long periods of time.
12. Metal parts can be cleaned with a damp rag. The vinyl covering used on some units can be cleaned with a damp rag, or an ammonia based household cleaner if necessary.
13. Care should be taken so that objects do not fall and liquids are not spilled into the unit through the ventilation holes or any other openings.
14. This unit should be checked by a qualified service technician if:
 - A. The power supply cord or plug has been damaged.
 - B. Anything has fallen or been spilled into the unit.
 - C. The unit does not operate correctly.
 - D. The unit has been dropped or the enclosure damaged.
15. The user should not attempt to service this equipment. All service work should be done by a qualified service technician.



Due to our efforts for constant improvement, features and specifications listed herein are subject to change without notice.

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