MESA/BOOGIE

D-180 Amplifier
Operating Manual

CHANNEL ONE

The D-180 includes a two channel preamplifier with two separate input jacks and their respective gain controls, Volume 1 and Volume 2. But unlike conventional two channel pre-amps, these input channels are stacked in series so the output of Channel 1 is fed into the input of Channel 2. This enables the two channels to offer strikingly different gain and tone possibilities: Channel One is for guitar and includes incredible preamp overdrive capability; Channel Two is for bass. Adjusting Volume 1, Volume 2, and the Master offers endless combinations of sustain, overdrive, distortion and tonality--independent of playing loudness. All the great guitar tones are there--from the classic Boogie warmth and smoothness to the ultimate chunky metal crunch. So even though the D-180 has coliseum size power, it can obtain infinite sustain and a full crank sound at any volume, down to a whisper, and is easy to adjust.

MASTER CONTROL

The huge sound and versatility of the D-180 is due in part to the unique way its Master control works, and that function is the topic of one of the patents pending on D-180 technology. Ordinarily the Master is merely a volume control used to reduce gain and provide proper coupling between the preamp and power amp sections. But as part of the D-180's Total System Integration, matching between the preamp and the power stage has been optimized and is not adjustable. The D-180 Master control works instead as a variable current limiter, thereby reducing the amplifier's power and loudness but not its gain. This enables the D-180 to produce unbelievable chunky crank tones -- at any volume. At a Master setting of 10 a "constant current source" maintains precise regulation of driver current in order to produce a clean, undistorted, dynamic sound that seems to be far in excess of rated power. Turning down the Master increasingly limits the current available to the driver section and creates a totally musical, symmetrical clip while reducing loudness. For power hungry guitar players lusting after a rack mount system that can sound like Joe Pass, Carlos Santana, Brad Gillis (Ozzy Osbourne) or a minor holocaust, anywhere, any time; the D-180 is it! Bass players: Remember that when the Master is set at 10, the "constant current source" takes over and maintains precise, optimum circuit calibration for you, and ultimate clean performance is assured.

CHANNEL TWO, TONE CONTROLS

Channel 2 has been especially designed for bass players. To prevent stray noise, Volume 1 should be turned to zero when Channel 2 is used and the Master must be set at 10 for full, undistorted output. Loudness is adjusted by the Volume 2 control. For introductory tone control settings, we suggest using the Bass control at 5 or 6 and the Treble and Middle controls at 6 or 7. Pull switches integrated into the controls offer useful additional tone voicings. The Pull Bright on Volume 2 operates in a frequency range above that of the Treble control and is good for accentuating string attack and upper harmonics. The Pull Shift built into the Treble pot lowers the frequency affected by the control and gives the amp a little extra mid-range boost in gain. The Bass Shift pull-out increases amplifier sensitivity in the lowest frequency range and the Middle serves to emphasize tonal body and warmth. All of the controls interact with one another to various degrees and thorough experimentation is the best way of discovering the wide range of musically useful sounds the D-180 can produce.

EFFECTS LOOP

Two pairs of Send and Return jacks are provided, one pair on the front and one pair on the back of the D-180. So whether you use effects devices on the floor or built into a rack, patching with your D-180 is convenient and precise. The sophisticated Effects Loop circuitry of the D-180 works extremely well. A low impedance "send" amplifier assures high intercompatibility plus low noise. A unique Blend control located on the upper rear amplifier chassis (where it won't get-broken or damaged) enables you to mix "dry" and effected signals. With the Blend knob set at 10, all signal will pass through the accessory effects; set at 5, about half of the D-180 signal will pass through the effects and half will go direct. Set at 0, the effect patch points are fully bypassed. Zero is the recommended setting when no effects devices are patched into the loop. The Effects Send level has been padded at the rear panel jack to accommodate low-headroom effects devices. The front panel Send jack is unpadded.

The Effects Return jack offers access directly into the D-180's power stage, and about .775 volts (or 0 dBv) is required to drive it to full power when the Master is set at ten. This exactly matches the input sensitivity of the M-180 basic power amplifier (no preamp or control sections) so, by driving the M-180(s) from the Effects Send of the D-180, automatic level balancing will be maintained between all amplifiers. But if distortion from the D-180 is being used, or if heavy effects processing is in the loop, the 600 ohm balanced out or the Slave Output would be preferable. These features are described below.

REAR PANEL FEATURES

SPEAKER JACKS

Two 4 ohm and two 8 ohm jacks are provided. Unlike transistor amplifiers, the D-180 will produce its full power at 4 and 8 ohms. Furthermore, speaker impedance mismatching is not harmful to the D-180 and perceived loss of power is minimal. When using more than one speaker cabinet, remember that total load impedance goes down as more cabinets are hooked up. For example, if you use one 8 ohm speaker cabinet, use one of the 8 ohm jacks. But if you use two 8 ohm cabinets, they will be operating in parallel and the total load impedance will be 4 ohms. Therefore, plug each cabinet into a 4 ohm jack. If you want to use two 2x15 cabinets where each individual speaker is rated at 8 ohm , the best results will be achieved by wiring the speakers inside each box in series. Then each cabinet will become 16 ohms and they should be plugged into an 8 ohm jack.

SLAVE LEVEL, SLAVE OUTPUT & 600 OHM BALANCED OUTPUT

Signal is taken right from the speaker terminal - so that it captures the full sound of the D-180 - then it is linked through the Slave Level Control to both the Slave Out jack and the 600 ohm Balanced transformer and XLR connector. This enables precise level matching for best sound and lowest noise where any variety of receiving electronics might be used - from additional power amplifiers to mixing boards. Full compatibility is assured because all combinations are possible. For example, the M-190 matching full-featured power amp has a balanced input capability and for installations where one or more of these are located a great distance away from the D-180, the balanced interconnect system would be advantageous. Same with long cable runs to the PA and monitor boards: the D-180's balanced output will provide an ideal low noise signal and totally eliminate microphone leakage. Use of a line level input at the board is recommended. For devices that lack balanced input systems, the 1/4" Slave Output jack is provided. Remember that in using either the 600 ohm Balanced Out or the 1/4" Slave Out, you should first adjust the D-180 front panel for desired performance, then increase the Slave Level control as you play to get an appropriate mix into the following equipment.

GROUND SWITCH

A three position ground switch is provided to help in reducing buzzes which originate in the AC power. It is advisable to leave this toggle switch in the center OFF position unless selecting position A or B reduces buzz. With the Ground Switch in its center position, any residual shock between the D-180 and other equipment (microphones, guitar amps, etc.) cannot possibly be originating in the D-180.

FAN SWITCH

Normally the fan should operate in its LOW speed because cooling is adequate and dust build-up is minimized. If fan noise is objectionable - in a recording studio for example - turning the fan OFF will not cause overheating unless the D-180 enclosure is in a confined space. Use the fan’s HIGH speed setting when the D-180 is in an equipment rack with other units and free air circulation is reduced.