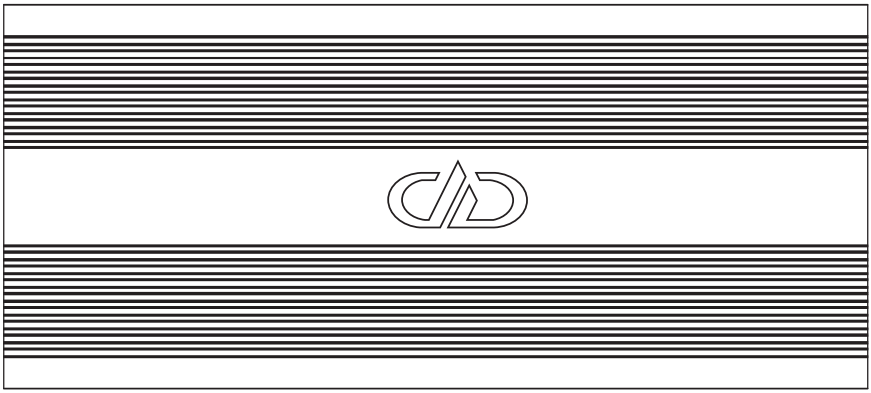
CLASS D AMPLIFIERS

D4.100a, D4.200, D5.350, D600, D1100

OWNER'S MANUAL

INTRODUCTION



Thank you for purchasing a DD AUDIO® amplifier. All of our products are proudly developed at our headquarters in Oklahoma City, USA where day in and day out we dedicate ourselves to the mission of providing our customers with products that meet or exceed our stringent standards of reliability and performance. All of our products are painstakingly designed to provide years of listening pleasure. To help ensure your satisfaction and the longevity of your equipment, it is highly recommended that you read this Owner's Manual and familiarize yourself with the many features of your amplifier. To achieve optimum performance we suggest you have your amplifier installed by an Authorized DD AUDIO Dealer.

The D Series contains full range multi-channel, sub range monoblock and hybrid amplifiers (multi-channel + monoblock) amplifiers engineered for multiple applications. Designed with the goal of being the best amps on the market for the everyday enthusiast, the D Series will be the soul of your audio system delivering clean, powerful audio from a true stock electrical system. These amps feature compact chassis, strong power, logical controls and efficient design. No shortcuts were taken when deciding on the internal components and feature sets. Our engineers paid extremely close attention to every stage of the D Series circuit design; and utilized high speed controller chipsets, efficient power devices, precise thermal management and the latest in IC technology. We hope you enjoy using this DD AUDIO product, and if you have any questions regarding setup or installation after reading this manual, please contact the DD AUDIO technical support team.

WARNING

DD AUDIO amps are built to play at high volumes beyond what your ears can safely handle for extended periods of time. Prolonged exposure to excessively high volume can cause permanent damage to your hearing. In addition, operation of a motor vehicle while listening to audio equipment at high volume levels may impair your ability to hear external sounds such as: horns, warning signals, or emergency vehicles; thus, constituting to a potential traffic hazard. You may also find your state has laws governing the volume of an audio system in a car. Please be aware of all local and state laws in your area. So, be smart, and behave yourself… As much as possible.

D SERIES DESIGN FEATURES:

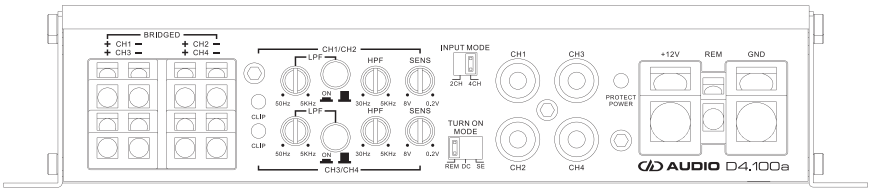
- **MOSFET POWER SUPPLY AMPLIFIER**
- **FULLY DISCRETE OUTPUT SECTIONS**
- **4 GAUGE SET SCREW POWER TERMINALS**
- **12 GAUGE SET SCREW SPEAKER TERMINALS**
- **4 LAYER CONFORMAL COATED PCB**
- **VARIABLE 12DB/OCT AND 24DB/OCT. CROSSOVERS**
- **REMOTE SUBWOOFER CONTROL (D5.350, D600, D1100)**
- **INPUT MODE (D4.100a, D4.200, D5.350)**
- **REM 12V, SIGNAL SENSE, AND DC OFFSET TURN ON MODES**
- **5-WAY PROTECTION: SPEAKER SHORT, THERMAL, OVERLOAD, HI/LOW VOLTAGE, DC OFFSET**

TECHNICAL SPECIFICATIONS

	D4.100a	D4.200	D5.350	D600	D1100
Operating Voltage	9-16V	9-16V	9-16V	9-16V	9-16V
Test Voltage	14.4V	14.4V	14.4V	14.4V	14.4V
Channels	4ch	4ch	5	1ch	1ch
Cont Wattage @ 4 Ohm	100x4 / 320x2	200x4 / 700x2	(CH1~4) 85x4 / 280x2 (CH5) 130x1	200x1	380x1
Cont Wattage @ 2 Ohm	160x4	370x4 / 1040x2	(CH1~4) 140x4 (CH5) 230x1	400x1	700x1
Cont Wattage @ 1 Ohm	N/A	550x4	(CH5) 350x1	600x1	1100x1
Max Current Draw	64A	220A	90A	60A	110A
Input Voltage Sensitivity	8V ~ 0.2V	8V ~ 0.2V	8V ~ 0.2V	8V ~ 0.2V	8V ~ 0.2V
S/N Ratio	>85dB	>85dB	>85dB	>80dB	>80dB
Damping Factor	>100	>100	>100	>100	>100
Frequency Response	30Hz-30kHz	20Hz-25kHz	30Hz~25KHz	20Hz~500Hz	20Hz~500Hz
THD	<0.2%	<0.2%	<0.2%	<0.2%	<0.2%
High Pass Filter	30Hz-5KHz	30Hz-5KHz	(CH1~4) 30Hz-5kHz		
Low Pass Filter	50Hz-5KHz	50Hz-5KHz	(CH1~4) 50Hz-5kHz (CH5) 50Hz-500Hz	50Hz-500Hz	50Hz-500Hz
Subsonic Filter			(CH5) 25Hz-100Hz	25Hz-100Hz	25Hz-100Hz
Pass Through Output	No	Yes	No	Yes	Yes
Remote Sub Control	No	No	Yes	Yes	Yes
Power Wire Gauge	4	2	4	4	4
Speaker Wire Gauge	12	12	12	12	12
Dimensions: in	7 x 4 x 1.7	10.5 x 7 x 2	9.8x4x1.7	6.3 x 4 x 1.7	8.7 x 4 x 1.7
Dimensions: mm	180 x 104 x 43	268 x 177 x 54	250x104x43	160 x 104 x 43	220 x 104 x 43

CONTROL AND CONNECTIONS FOR D SERIES AMPLIFIERS

D4.100a CONTROL PANEL



SPEAKER OUTPUT:
Connect to the speakers + and - terminals. Minimum suggested speaker cable size is 16 gauge. CH1-CH4 are 2 Ohm stereo stable and bridgeable to 2ch @ 4 Ohm. To bridge the outputs use CH1+ with CH2- and CH3+ with CH4-.

CLIP LED:
Indicates when the amplifier's outputs are being overdriven. The CLIP LED should only briefly flash on peak signal levels in the source material. If the CLIP LED is constantly illuminated reduce the SENS to a lower level. Constant clipping can cause the amplifier to overheat and can also damage the amplifier and/or the connected speakers.

LPF:
Attenuates unwanted high frequencies by controlling the low pass frequency cutoff point for the speaker outputs.

LPF ON/OFF Button:
Activates or deactivates the LPF crossover.

HPF:
Attenuates unwanted low frequencies by controlling the high pass frequency cutoff point for the speaker outputs.

SENS:
Matches the amplifier's input sensitivity to the output voltage of the source signal.

INPUT MODE:
Place the jumper in the 2ch position when only 2 channels of RCA preamp signal are available. This will send audio to all four output channels. Place the jumper in the 4ch position when 4 channels of RCA preamp signal are available.

TURN ON MODE:
Place the jumper in the turn on mode position for your application.

REM - Turns the amplifier on/off with a +12V switched wire connected to the power terminal labeled REM.

DC - Turns the amplifier on /off when it senses a high level source signal. No REM wire is needed (see INPUT section).

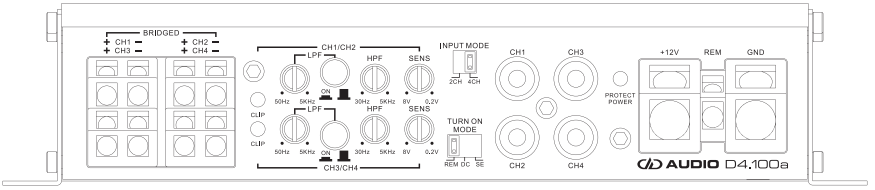
SE - Turns the amplifier on /off when it senses a low level source signal. No REM wire is needed.

INPUT (CH1~CH4):
Used for connecting signal cables from the source unit to the amplifier. These inputs are capable of receiving both high and low level signals. A high level signal (10V AC maximum) can be run from the source unit's speaker outputs to the RCA inputs using a pair of speaker cable to RCA adapters (DD part # RCA ADAPTER PR, not included).

CONTROL AND CONNECTIONS FOR D SERIES AMPLIFIERS

Continued

D4.100a CONTROL PANEL



POWER / PROTECT LED:
When illuminated green indicates the amplifier is grounded, receiving +12V and REM power, and the outputs are active. When illuminated red indicates a general malfunction due to speaker short, faulty connection or thermal protection.

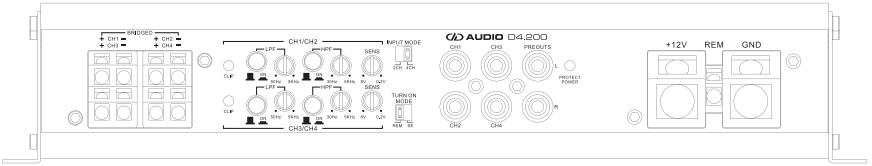
+12V:
Connect to a fused +12V cable from the battery. Minimum power cable size is 4 gauge.

REM:
Connect to a switched +12V cable (set TURN ON MODE to REM).

GND:
Connect to a ground wire going directly to the chassis of your vehicle. Minimum cable size is 4 gauge.

CONTROL AND CONNECTIONS FOR D SERIES AMPLIFIERS

D4.200 CONTROL PANEL



SPEAKER OUTPUT:
Connect to the speakers + and - terminals. Minimum suggested speaker cable size is 12 gauge. CH1-CH4 are 1 Ohm stereo stable and bridgeable to 2ch @ 4 Ohm or 2 Ohm. To bridge the outputs use CH1+ with CH2- and CH3+ with CH4-.

CLIP LED:
Indicates when the amplifier's outputs are being overdriven. The CLIP LED should only briefly flash on peak signal levels in the source material. If the CLIP LED is constantly illuminated reduce the SENS to a lower level. Constant clipping can cause the amplifier to overheat and can also damage the amplifier and/or the connected speakers.

LPF ON/OFF Button:
Activates or deactivates the LPF crossover

LPF:
Attenuates unwanted high frequencies by controlling the low pass frequency cutoff point for the speaker outputs.

HPF ON/OFF Button:
Activates or deactivates the LPF crossover.

HPF:
Attenuates unwanted low frequencies by controlling the high pass frequency cutoff point for the speaker outputs.

SENS:
Matches the amplifier's input sensitivity to the output voltage of the source signal.

INPUT MODE:
Place the jumper in the turn on mode position for your application.

TURN ON MODE:

REM - Turns the amplifier on/off with a +12V switched wire connected to the power terminal labeled REM.

SE - Turns the amplifier on /off when it senses a low level source signal. No REM wire is needed.

INPUT (CH1~CH4):
Used for connecting low level RCA preamp signal cables from the source unit to the amplifier.

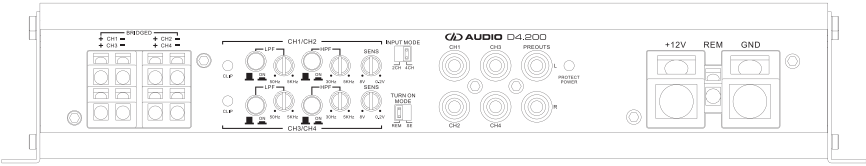
PREOUTS:
Passes a full range stereo signal out to external devices eliminating the need to run additional RCA signal cables from the source unit.

POWER / PROTECT LED):
When illuminated green indicates the amplifier is grounded, receiving +12V and REM power, and the outputs are active. When illuminated red indicates a general malfunction due to speaker short, faulty connection or thermal protection.

CONTROL AND CONNECTIONS FOR D SERIES AMPLIFIERS

Continued

D4.200 CONTROL PANEL



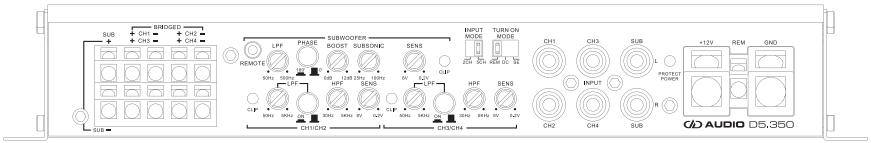
+12V:
Connect to a fused +12V cable from the battery. Minimum power cable size is 4 gauge.

REM:
Connect to a switched +12V cable (Set TURN ON MODE to REM).

GND:
Connect to a ground wire going directly to the chassis of your vehicle. Minimum cable size is 4 gauge.

CONTROL AND CONNECTIONS FOR D SERIES AMPLIFIERS

D5.350 CONTROL PANEL



SPEAKER OUTPUT:
Connect to the speakers + and - terminals. Minimum suggested speaker cable size for the SUB channel is 12 gauge and for CH1-CH4 is 16 gauge. A 1 Ohm minimum load can be connected to the SUB channel. CH1-CH4 are 2 Ohm stereo stable and bridgeable to 2ch @ 4 Ohm. To bridge the outputs use CH1+ with CH2- and CH3+ with CH4-.

REMOTE:
Use this port to connect the included SUB channel remote control knob.

CLIP LED:
Indicates when the amplifier's outputs are being overdriven. The CLIP LED should only briefly flash on peak signal levels in the source material. If the CLIP LED is constantly illuminated reduce the SENS to a lower level. Constant clipping can cause the amplifier to overheat and can also damage the amplifier and/or the connected speakers.

LPF:
Attenuates unwanted high frequencies by controlling the low pass frequency cutoff point for the speaker outputs.

LPF ON/OFF Button:
Activates or deactivates the LPF crossover.

HPF ON/OFF Button:
Attenuates unwanted low frequencies by controlling the high pass frequency cutoff point for the speaker outputs.

PHASE Button:
Switches the phase from 0 to 180 to help synchronize your subwoofer to the other speakers in the vehicle. When tuning the system, switch between the two settings to determine which setting results in the best bass response.

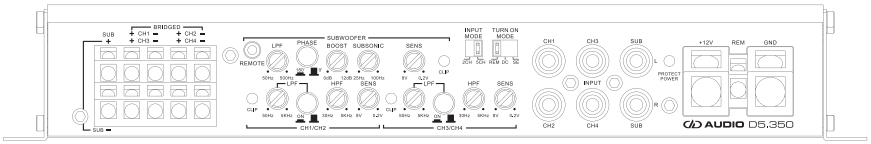
BOOST:
Use to increase the output in frequencies centered around 40Hz. Most commonly used when the source material doesn't contain high peak levels of bass in the source material. Setting the boost level to high can cause severe clipping and damage to the subwoofer and/or amplifier. Use in conjunction with the HPF and Subsonic filters to maximize the output of the subwoofer portion of the system.

SUBSONIC:
Attenuates unwanted low frequencies by controlling the high frequency pass cutoff point for the speaker outputs. This helps to eliminate extremely low frequencies that are inaudible in the system and can waste amplifier power and cause damage to your subwoofers.

CONTROL AND CONNECTIONS FOR D SERIES AMPLIFIERS

Continued

D5.350 CONTROL PANEL



HPF:
Attenuates unwanted low frequencies by controlling the high pass frequency cutoff point for the speaker outputs.

SENS:
Matches the amplifier's input sensitivity to the output voltage of the source signal.

INPUT MODE:
Place the jumper in the 2ch position when only 2 channels RCA preamp signal are available. This will send audio to all four output channels. Place the jumper in the 5ch position when 5/6 channels of RCA preamp signal are available.

TURN ON MODE:
Place the jumper in the turn on mode position for your application.

REM - Turns the amplifier on/off with a +12V switched wire connected to the power terminal labeled REM.

DC - Turns the amplifier on /off when it senses a high level source signal. No REM wire is needed (see **INPUT** section).

SE - Turns the amplifier on /off when it senses a low level source signal. No REM wire is needed.

INPUT (CH1~CH4, SUB):
Used for connecting signal cables from the source unit to the amplifier. These inputs are capable of receiving both high and low level signals. A high level signal (10V AC maximum) can be run from the source unit's speaker outputs to the RCA inputs using a pair of speaker cable to RCA adapters (DD part # RCA ADAPTER PR, not included).

POWER / PROTECT LED:
When illuminated green indicates the amplifier is grounded, receiving +12V and REM power, and the outputs are active. When illuminated red indicates a general malfunction due to speaker short, faulty connection or thermal protection.

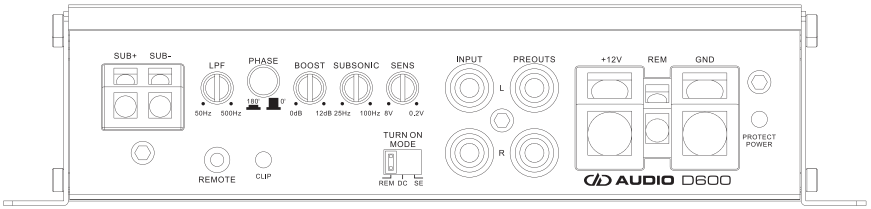
+12V::
Connect to a fused +12V cable from the battery. Minimum power cable size is 4 gauge.

REM:
Connect to a switched +12V cable (Set TURN ON MODE to REM).

GND::
Connect to a ground wire going directly to the chassis of your vehicle. Minimum cable size is 4 gauge.

CONTROL AND CONNECTIONS FOR D SERIES AMPLIFIERS

D600/D1100 CONTROL PANEL



SPEAKER OUTPUT:
Connect to the speaker's + and - terminals. Minimum suggested speaker cable size is 12 gauge. 1 Ohm is the minimum connected impedance.

CLIP LED:
Indicates when the amplifier's output is being overdriven. The CLIP LED should only briefly flash on peak signal levels in the source material. If the CLIP LED is constantly illuminated reduce the SENS to a lower level. Constant clipping can cause the amplifier to overheat and can also damage the amplifier and/or the connected speakers.

REMOTE:
Use this port to connect the included remote level control knob.

LPF:
Attenuates unwanted high frequencies by controlling the low frequency pass cutoff point for the speaker outputs.

BOOST:
Use to increase the output in frequencies centered around 40Hz. Most commonly used when the source material doesn't contain high peak levels of bass in the source material. Setting the boost level to high can cause severe clipping and damage to the subwoofer and/or amplifier. Use in conjunction with the HPF and Subsonic filters to maximize the output of the subwoofer portion of the system.

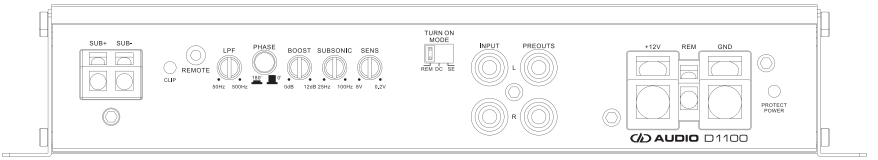
PHASE:
Adjusts the phase from 0 to 180 to help synchronize your subwoofer to the other speakers in the vehicle. When tuning the system, adjust between the two settings to determine which setting results in the best bass response.

SUBSONIC:
Attenuates unwanted low frequencies by controlling the high pass frequency cutoff point for the speaker outputs. This helps to eliminate extremely low frequencies that are inaudible in the system.

CONTROL AND CONNECTIONS FOR D SERIES AMPLIFIERS

Continued

D600/D1100 CONTROL PANEL



TURN ON MODE:
Place the jumper in the turn on mode position for your application.

REM - Turns the amplifier on/off with a +12V switched wire connected to the power terminal labeled REM.

DC - Turns the amplifier on /off when it senses a high level source signal. No REM wire is needed (see **INPUT** section).

SE - Turns the amplifier on /off when it senses a low level source signal. No REM wire is needed.

PREOUTS:
Passes a full range stereo signal out to external devices eliminating the need to run additional RCA signal cables from the source unit.

INPUT:
Used for connecting signal cables from the source unit to the amplifier. These inputs are capable of receiving both high and low level signals. A high level signal (10V AC maximum) can be run from the source unit's speaker outputs to the RCA inputs using a pair of speaker cable to RCA adapters (DD part # RCA ADAPTER PR, not included).

+12V:
Connect to a fused +12V cable from the battery. Minimum power cable size is 4 gauge.

REM:
Connect to a switched +12V cable (Set TURN ON MODE to REM).

GND:
Connect to a ground wire going directly to the chassis of your vehicle. Minimum cable size is 4 gauge.

POWER / PROTECT LED:
When illuminated green indicates the amplifier is grounded, and receiving +12V and REM power, and the outputs are active. When illuminated red indicates a general malfunction due to speaker short, faulty connection or thermal protection.

CONTROL AND CONNECTIONS FOR D SERIES AMPLIFIERS

REMOTE CONTROL (D5.350, D600, D1100)

Connect the remote level control to the REMOTE port on the amplifier with the supplied 6-pin to 3.5mm patch cable.

Controls the amplifier's output level. MAX level will be determined by the gain setting on the amplifier.

Depending on your application the knob can be mounted with the included bracket, with adhesive tape, or flush mounted through a hole drilled in a vehicle panel.

To flush mount the knob, remove it from the bracket and then remove it from the plastic housing by removing the keeper panel on the rear of the housing. Drill a 9/32" hole for the potentiometer shaft, and secure knob with the included nut.

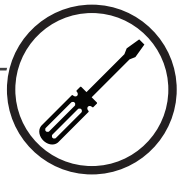
MOUNTING YOUR AMPLIFIER

- Mount your amplifier in a dry, well-ventilated environment.
- Before mounting the amplifier be sure the mounting location and screw placement will not present a hazard to any cables, wiring, fuel lines, fuel tanks, hydraulic lines or other vehicle systems or components.
- Securely mount the amplifier using appropriate hardware so that it does not come loose in the event of a collision or a sudden jolt to the vehicle.
- Do not mount the amplifier to any area that may have excessive vibration (like the subwoofer box).
- Take into consideration your vehicle's safety equipment (air bags, seat belt systems, ABS brake systems, etc.) and avoid interfering with such equipment.

POWERING YOUR AMPLIFIER

Make sure your vehicle's charging system is adequate for the amplifier you're installing. Amplifiers don't make power, they simply convert the current and voltage you give them into wattage. If your charging system is insufficient, your amp will not produce its full rated output. If the current or voltage supply drops too low, even for milliseconds, damage can be caused resulting in amplifier failure. This type of failure is not considered a manufacturer's defect. The addition of even a small amplifier will increase the demand on your charging system. If you are unsure or have questions about your charging system, have it tested by a professional technician to determine its capability.

INSTALLATION



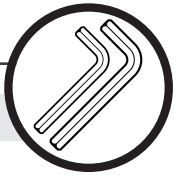
1. Disconnect the negative cable from the car battery.
2. Due to the power requirements of any aftermarket amplifier, the +12V connection should be made directly to the positive (+) terminal of the battery. For safety measures, install an in-line fuse (not included) as close to the battery's positive (+) terminal as possible. The fuse ampere rating should not exceed the total value of the amplifier's rated maximum current draw. If the fuse is further than 18 inches (wire length) from the battery you should re-evaluate the wire and fuse placement.

   Run the power wire from the battery to the amplifier's mounting location. To avoid a potential short to the body and a possible fire, this cable should never be run outside of the vehicle. You will also need to make sure no trim screws or sharp body metal will penetrate the power cable shielding. Don't install the fuse yet. This will be the last thing you do.
3. Connect a ground wire directly to the chassis of your vehicle. The grounding location should be made on metal as close to the amplifier as possible and should be no longer than 3 feet from your amplifier's mounting location. Remove all paint, sound deadener, etc. from the area of grounding connection. Do not use seat belt bolts for grounding. It is advisable to test the ground with an ohmmeter. Test between the grounding point and the negative battery cable to insure a good low resistance connection (<0.5 Ohm).
4. Determine the proper turn on/off method for your installation. For some amplifiers REM will be the only option.
   - REM: If there is a Turn On Mode selector set it to REM then run an 18 gauge wire from an ignition controlled +12V source. This will be connected to the REM terminal on the amplifier and used to turn "ON/Off" the amplifier remotely. Generally this will connect to the REM output of your source unit.
   - DC Offset: Set the amplifier Turn on Mode to DC and proceed to step 5.
   - Signal Sense: Set the amplifier Turn On Mode to SE and proceed to step 5.
5. Run RCA signal cables from your signal source.
6. Run the speaker wire from the speakers to be powered to the amplifier's mounting location. It is advised that you leave some extra length of wire at this point to ensure there is enough wire to easily make your connections once the amp is mounted. You can "clean it up" later.
7. Connect the power and ground wires to the amplifier. Make sure the polarity (+ and -) is correct to avoid damaging the amplifier. Only after this step should you install the fuse at the battery.

INSTALLATION *(continued)*

8. Connect the remote wire to the amplifier. At this time you should turn on the amp and make sure it turns on properly.
9. Turn the amplifier off and connect the speaker wires to the amp. Pay attention to the polarity (+ and -). If hooked up incorrectly it can cause poor sound due to phasing issues.
10. Connect the RCA signal cables.
11. Double check the amplifier's crossover controls to verify they are roughly set for your system application. E.g. subwoofer, tweeters, midrange.
12. Now you can turn on the system and begin the fine tuning process. Turn the amp gain all the way down. Turn the head unit volume to somewhere around 75%. While playing a musical track, similar to the content that will most commonly be played on the system, turn the GAIN or SENS up until you see the corresponding clipping indicator on the amplifier or the remote gain knob begin to flash on the music.
13. Take your time and make only one adjustment at a time. It may take some time to get the system fully adjusted. During this time the amp is drawing current from the battery. You should check the battery voltage from time to time and re-charge it if it gets low. Low battery voltage can affect the way the amplifier performs.
14. If installing the amplifier with new speakers you may notice a slight change in your sound due to the natural breaking in of your speakers. At this time you may want to do some slight re-tuning to optimize your systems performance.

TROUBLESHOOTING:



NO POWER

- Check GND connection.
- Check voltage at the amplifier's +12V and REM terminals.
- Check fuses.

NO SOUND (NO OUTPUT)

- Check the signal cables and speaker outputs with a test tone, 50Hz (sub amps) or 1kHz (full range), and AC Voltmeter to see if there is voltage present at the output of the signal cables.
- Check all cable routing for shorts or faulty connections.
- Check speakers to verify they are in proper operating condition.

PROTECTION (MOST COMMON CAUSES)

- SPEAKER SHORT: A connected speaker has a shorted or damaged speaker lead or voice coil.
- THERMAL: The amplifier overheated. The amplifier will automatically return to normal operation once its temperature drops below the thermal shutoff temperature. Make sure there is proper airflow with no obstructions around the amplifier to avoid further issues. In some applications an external fan may be required to keep the amplifier temperature below the thermal protection level.
- OVERLOAD: The connected speaker/s has too low of an impedance.
- HI/LOW VOLTAGE: The power input voltage has gone outside the voltage range of 9V-16V.
- DC Offset: There is a damaged transistor in the output section.

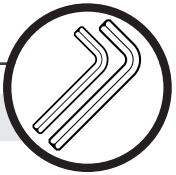
DISTORTION

- Make sure the input gain level is set appropriately. Also check the speaker quality when playing on another amplifier.

POOR BASS RESPONSE

- Check the crossover sections for incorrect settings and check the speaker cables for reversed polarity connections.

TROUBLESHOOTING *(continued)*:



BUZZING SOUND

- Check the amplifier and source unit ground connections.
- Check RCA cable connections and possibly replace RCA cables with a better shielded cable or reroute RCA cables away from power cables.

ALTERNATOR / ENGINE NOISE

- This type of noise is caused by grounding issues. This can be related to the amplifier, source unit, signal processor, battery or alternator. If you can remove the signal cables from the amplifier and the noise goes away the sound is not being generated by your amplifier, but by an external grounding issue. If you can feed a signal into the amp from an external source unit and the noise is not present the sound is not being generated by your amplifier.

If you have any questions regarding setup, installation or warranty please contact the DD AUDIO® technical support team by email at **service@ddaudio.com** or by phone at **(405) 239-2800**.

AUDIO TRUE TO THE SOURCE®

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