



SQ CLASS D MONO AMPLIFIER

SQ1200.1D

SQ600.1D



OWNERS MANUAL

Please read through this manual to familiarize yourself with your new amplifier. Should your Image Dynamics mobile amplifier ever require service, you will need to have the original dated receipt.

MONO BLOCK CLASS D AMPLIFIERS

Thank you for your decision to purchase a Image Dynamics mobile amplifier! Our new amplifiers are the result of extensive engineering, testing, and bullet proof construction. Their versatility enables compatibility with optional signal and audio processors. These high quality MOSFET amplifiers may be configured to allow maximum flexibility in designing different types of speaker systems.

The Image Dynamics SQ Series are high quality MOSFET amplifiers that are capable of running a system powering multiple subwoofers. It is important that you closely follow the wiring instructions contained in this Owners Manual so that you get the most from your Image Dynamics mobile amplifier.



Δ Caution Δ

High powered audio systems in a vehicle are capable of generating higher than "Live Concert" levels of sound pressure. Continued exposure to excessively high volume sound levels could cause hearing loss or damage. Also, 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 creating a potential traffic hazard. In the interest of safety, Image Dynamics USA highly recommends listening at lower volume levels when driving.

TECHNICAL FEATURES

- Class D Mono Amplifier
- International Rectifier® Chip Set
- Ultra Low Current Draw
- High Damping Control Circuit
- High Efficiency SMD Circuit Technology
- Double Sided Copper Plated PCB
- Digital Sound Optimization Circuitry
- Quiet Switching
- High Current Voltage Ripple Rejection Circuitry
- Virtual Silence Turn On/Off Mute Circuit
- Temperature Controlled Output Current Limiting Protection
- Dual Link Power External Bridging Capable (set to set bridgeable at 2-ohms min)
- Wired Remote Level Control
- Balanced RCA Input Connectors
- 40 Click Bass Freq Control
- 40 Click Sub Sonic Filter Control
- 40 Click LPF Control
- Fan Cooling (SQ1200.1D only)

INSTALLATION EXPERIENCE

Installation of Image Dynamics mobile amplifiers requires detailed knowledge of electronics wiring and proper speaker impedance. We strongly recommend installation by an authorized Image Dynamics dealer. This Owners Manual only provides general installation and operation instructions. If you have any reservations about your installation skills, please contact your local Image Dynamics dealer for assistance.

IMPORTANT: This amplifier is designed for operation in vehicles with 12-volt Negative ground electrical systems only.

PREPARING FOR INSTALLATION

NOTE: The tools listed below may be required for basic installation

- An electric drill with bits
- Philips head and standard screwdrivers
- Wire strippers
- Crimping tool
- VOM (electronic volt ohm meter)
- Heat shrink tubing and heat gun
- Soldering iron
- Electronic (Rosen not Acid Core) Solder

INSTALLATION PRECAUTIONS

NOTE: Proceed only if you are a qualified installer, otherwise, see your Authorized Image Dynamics Dealer to professionally install this amplifier. Always wear protective eyewear when using tools.

- Turn off all stereo and other electrical devices before you begin.
 - Disconnect the negative (-) lead from your vehicles battery.
 - Locate all fuel lines, brake lines, oil lines, and electrical cables when planning the install.
 - Make sure there is at least 2-inches (5 cm) around the air vents on the amplifier.
 - When connecting ground points, make sure all paint is carefully scrapped away from the auto body and contact is made with bare metal.
 - Use a utility knife to trim away fabric from hole locations before drilling or cutting.
 - When running power cables through sheet metal, be sure to use grommets to properly insulate the metal edges from the wire insulation.
 - If possible, use tubing through grommets.
-

WARNING: Check your vehicle's owner's manual before disconnecting the battery. Disconnecting the battery on some vehicles may require an anti-theft code when reconnecting the battery and require the on-board computer to be reset at the dealership. Check with your local dealer if you are uncertain.

MOUNTING THE AMPLIFIER

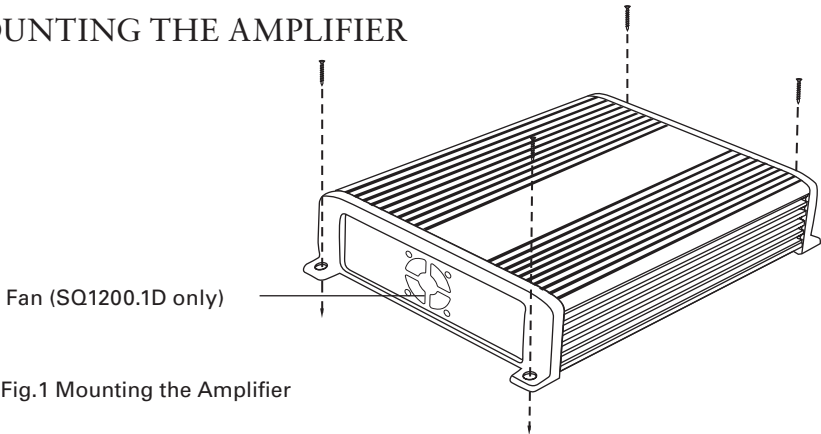


Fig.1 Mounting the Amplifier

Due to the high power output of the Image Dynamics Class D amplifiers, considerable heat may be produced when the unit is in operation. For this reason the amplifier should be mounted in a location which will allow air to circulate freely. A clearance of at least 2-inches (5 cm) to all sides of the amplifier is necessary not only for proper cooling, but also for gaining access to the inputs and other variable controls. Be sure that the power and signal cable connections can enter and leave the amplifier in a straight line to avoid the risk of kinked wires causing malfunction.

MOUNTING LOCATION

Find a clear and well ventilated area to mount your amplifier that is unobstructed by any objects that will cause harm or block ventilation. Despite the fact that this amplifier is compact, it still needs air to cool the heatsink fins. Do not mount under a carpet or an area with dead or stagnant air. Without proper air flow the amplifier may overheat and go into protection where the thermal overload circuitry will shut down the amplifier.

NOTE: Make sure not to block the cooling fan (SQ1200.1D only)

The amplifier should be protected from exposure to moisture and direct sunlight. The compact size of the amplifier allows greater flexibility in mounting. The best places to mount your amplifier are: The floor of the trunk, under the driver's seat, or on the back of the rear seat. For alternate installation locations, please consult your authorized Image Dynamics Dealer.

If mounting under a seat, make sure there is at least 1-inch (2.5cm) of space above the amplifiers heatsink to permit proper cooling.

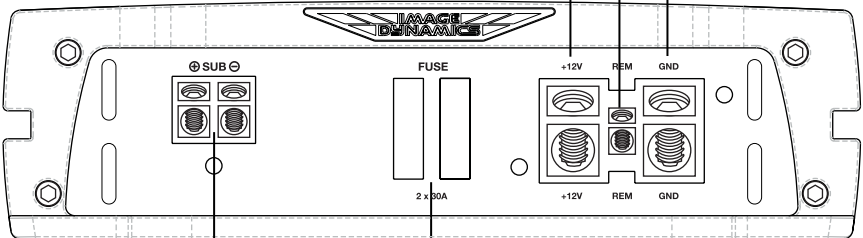
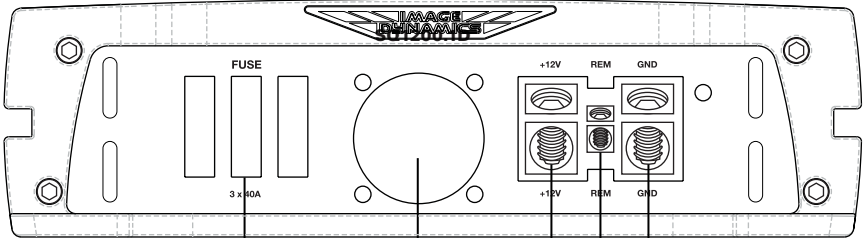
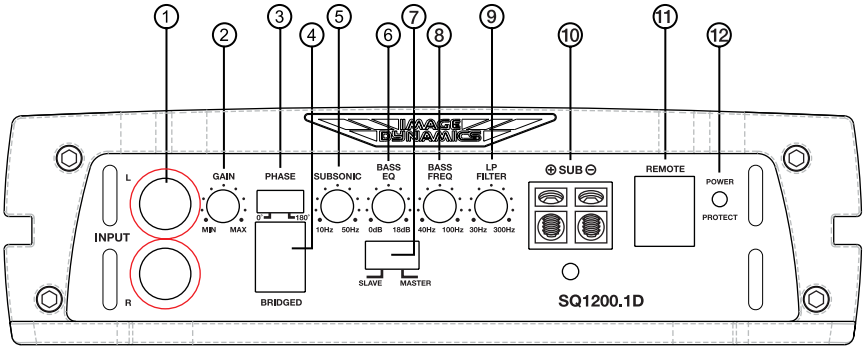
You may use the amplifier as a template and mark the four screw locations with a felt tip pen. Set the amplifier aside before drilling. Use caution to make sure there are no objects behind the installation surface that may become damaged during drilling.

NOTE: Do not use a drill with driver bit to mount the amplifier. Excessive force could cause the plastic mounting feet to crack.

***** WARNING *****

- Upside down mounting will compromise heat dissipation through the heat-sink and could engage the thermal protection circuit.
- Try to avoid mounting the amplifier on a subwoofer enclosure, as extended exposure to vibration may cause malfunction of the amplifier.
- Don't mount the amplifier so that the wire connections are unprotected or are subject to pinching or damage from nearby objects.
- The DC power wire must be fused at the battery positive (+) terminal connection. Before making or breaking power connections at the amplifier power terminals, disconnect the DC power wire at the battery end.
- The battery of the car audio system must be disconnected until the entire wiring and installation is completed.

CONTROL PANEL LAYOUT



SQ600.1D

NOTE: Panel Layout and Controls may differ by model.

1. Line INPUT (RCA) Jacks

These RCA style input jacks are for use with source units that have RCA line level outputs. A source unit with a minimum output of 250mV is required for proper operation. However, this input will accept levels up to 10Vrms.

2. GAIN Control

This switchable control is used to match the input sensitivity of the amplifier to the particular source unit that you are using.

3. PHASE Switch

This switchable control can be used to correct any "phase" or "time delay" effect in the system by bringing the low frequency from the rear of the vehicle to the front.

4. BRIDGED CONNECTION Port

For externally bridging two of the same model Image Dynamics Class D amps together. Connect the BRIDGE PORT of the MASTER amplifier via a standard telephone wire with RJ11 (4-pin) modular connectors to the BRIDGE PORT on the SLAVE amplifier. Then select the MASTER/SLAVE switch properly (see Speaker Output Configuration diagram).

5. SUB SONIC Control 40 Click Detent Control

This control is continuously adjustable from 10Hz-50Hz at 12dB per octave to provide an extra level of speaker protection from bass robbing power at unheard frequencies. (see chart on page 21)

6. BASS EQ Control

This equalization circuit is used to enhance the low frequency response of the vehicle's interior. With up to 18dB of boost varied by the BASS FREQ control, the BASS EQ can be adjusted to meet your own personal taste. (see chart on page 21)

7. SLAVE / MASTER Switch

Two like amplifiers can be connected together and externally bridged into a single 2-ohm (min) load. The preamp controls on the SLAVE amp will be disabled. Only the amplifier you select as the MASTER will control these functions. The Dual Link Power Doubling Circuit increases the output power as follows.

NOTE: If using only one amplifier this switch should remain in the MASTER position.

SQ1200.1D x 2 = 2,400 watts RMS (2 ohms min)

SQ600.1D x 2 = 1,200 watts RMS (2 ohms min)

8. BASS FREQ Control

This control is variable from 40Hz to 100Hz and allows you to choose the exact frequency you want to boost using the BASS EQ feature. (see chart on page 21)

9. LPF (Low Pass Filter) Control 40 Click Detent Control

This filter allows low pass of frequency and is adjustable from 30Hz through 300Hz to eliminate unwanted high frequencies. (see chart on page 21)

10. SUBWOOFER Output Terminals

As shown in the wiring diagrams, be sure to observe speaker polarity through the system and speaker impedance. This specially tooled solderless terminal is designed to accommodate up to 10 gauge speaker wire.

11. REMOTE LEVEL (RJ12 Jack)

This is the 6-pin connector port for the Remote Level Control. Now the amplifiers secondary gain circuit can be adjusted from the driver's seat.

12. POWER/STATUS Indicator Light

This clear LED lights BLUE for power and normal operation, or lights RED when there is a problem. This LED will light RED when the built-in protection circuitry is activated. This indicates there is a problem with the system in relation to the amplifier (see Troubleshooting Tips pg 23).

13. FUSES

For convenience most Image Dynamics amplifiers utilize common automotive ATC type fuses. For continued protection in the event that a fuse blows, replace the fuse only with the same value.

CAUTION: These power fuses on the amplifier chassis are for protecting the amp against overdrive. To protect the vehicles electrical system, an additional fuse should be used within 18-inches of the battery on the 12V+ cable.

SQ1200.1D 40A x 3

SQ600.1D 30A x 2

14. COOLING FAN

Variable speed fan pulls cool air in - do not block so air can enter (SQ1200.1D only)

15. BATT+ (Power Input Connection)

This solderless terminal is the main power input for the amplifier and must be connected directly to the positive (+) terminal of the car battery. This solderless terminal accepts up to 4 gauge wire. (see Power Cable Selection Chart for recommended wire gauge for each model).

16. REM (Remote Input Connection)

All Image Dynamics amplifiers must be turned on by applying 12 volts to this terminal. This can be found on the rear of the source unit in the form of a remote output. If this is not available you can wire to the ACC position on the key. An 18 gauge wire is sufficient to run the REMOTE.

17. GND (Ground Input Connection)

A good quality ground is required for your Image Dynamics Class D amplifier to operate at peak performance. A short length of cable the same gauge as your power cable should be used to attach the ground terminal directly to the chassis of the vehicle. Make sure that all of the paint is sanded or scraped away to ensure a quality ground connection.

POWER WIRING AND SIGNAL CONNECTIONS

***** WARNING *****

Disconnect the negative (-) battery terminal before you start any wiring work!
The battery of your car audio system must be disconnected until the entire wiring installation is completed.

Your Image Dynamics Class D amp will draw large levels of current, so use the largest gauge power/ground cable as possible. Using too small of power cable can result in unnecessary over-heating of the amplifier, distortion at high volume levels and might even cause the thermal protection circuitry to shut-off the amplifier. Remember, bigger wire is better!

- Use rubber grommets when running cables through any metal or sharp plastic, to prevent accidental shorting or shearing. Make sure the cables do not interfere with normal operation of the vehicle.
- The audio signal cables (RCA interconnects) should be kept far away from any potential sources of electrical interference such as electronic vehicle management systems (relays, engine computers wiring harnesses, fuel pumps etc.)

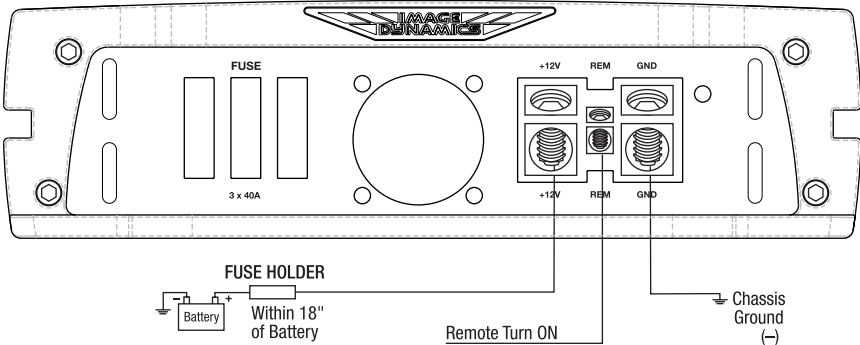


Fig.3 Power Input Connection

This amplifier is designed to work within a 10-16 volt DC range. Before any wires are connected, the vehicles electrical system should be checked for correct voltage supply with the help of a voltmeter.

First, check the voltage at the battery with the ignition in the OFF position. The voltmeter should read no less than 12V. If your vehicles electrical system is not up to these specifications, we recommend having it checked by an auto electrician before any further installation. Once the vehicle is checked, make certain the correct cable gauge is used. We recommend using as large a gauge cable as possible, use the Power Cable Selection Chart to calculate the correct power wire size for your application.

POWER WIRING

BATT+ (Power)

This amplifier should be wired directly to the vehicle battery using the appropriate size cable. Start at the vehicle battery and run the power cable through to the amplifier. Avoid running the power cable over engine components and near heater cores. **The use of an inline fuse or circuit breaker is a must**; this will prevent the risk of a potential fire caused by a short in your power cable. Connect the fuse holder or circuit breaker as close to the battery positive (+) terminal as possible (no farther than 18" from that battery). This fuse or circuit breaker should be no greater than the sum of the fuses found on the chassis of your amplifier (also see specifications chart). You may now connect the cable to the battery, but remember to leave the fuse out or circuit breaker "off" until all other cable connections are made.

GND (Ground)

When grounding your amplifier, locate a metal area close to the amplifier that is good source of ground (preferable the floor pan). Once again, investigate the area you wish to use for electrical wires, vacuum lines, and brake or fuel lines. Use either a wire brush or sandpaper to eliminate unwanted paint for better contact of the ground.

Secure the ground cable to the body using a bolt, star washer and nut. Spread silicon over the screw and bare metal to prevent rust and possible water leaks.

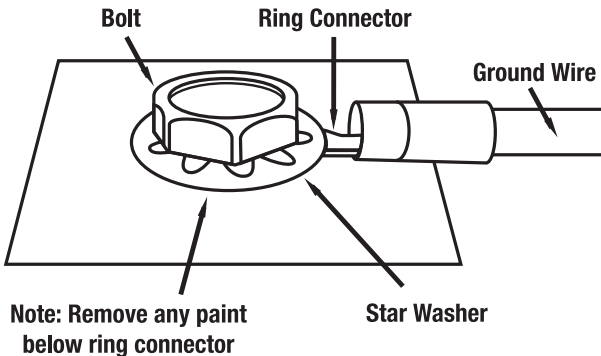


Fig.4 Ground Connection

Now it's time to connect the power and ground cables to the amplifier. Cut both cables to length. Strip off 1/2 inch (12mm) of the insulation so that the bare wire fits all the way in the terminal block on the side panel of the amplifier, seating it firmly so no bare wire is exposed. Use an Allen wrench to loosen the BATT+ and the GND connections on the amplifier. Insert the ground first, and then the +12V and please make sure that you place them into the correctly marked terminals. Then tighten the screws down securely by hand.

REM (Remote Trigger)

This terminal must be connected to a switched +12V source. Typically, a remote turn-on lead is provided at the source unit that will turn on and off the amplifier in correspondence with the source. If this lead is not at the source unit, then a switched +12V supply must be used, like the ACC, +12V.

Run a minimum of 18 gauge wire from the amplifier location to the source of the switched +12V lead. If possible, route this wire on the same side of the vehicle as your power cable. Connect the source remote output to the wire. Go back to the amplifier and cut the wire to length. Loosen the screw terminal marked REM on the amplifier. Insert the stripped (bare) portion of the wire into the terminal and tighten the screw securely.

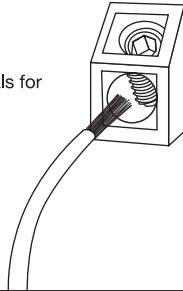
FUSE REQUIREMENTS

While the panel on your Image Dynamics amplifier may use one or more fuses, these do nothing to protect the vehicle from a dangerous short circuit. It is absolutely vital that the main power lead to the amplifier(s) in the system be fused within 18-inches (45cm) of the connection to the vehicle battery. The value of this fuse (or circuit breaker) should be no greater than the sum of the fuses found on all of the equipment being connected to that power wire.

CONNECTIONS TO AMPLIFIER FOR BATT+, GND, REM AND SPEAKERS

Your Image Dynamics amplifier features specially tooled solderless terminals for Power (BATT+), Ground, Remote and Speaker connections. For maximum transfer of Voltage and Signal, the bare wire needs to be inserted as far as possible into the terminal before tightening the set screw.

For Power (BATT+) and Ground connections it is highly recommended that the bare ends of the wires are tinned with solder before inserting them into the terminal. Hand tighten the set screw and make sure the connection is secure to prevent possible arcing due to loose screws.



RCA INTERCONNECT WIRING

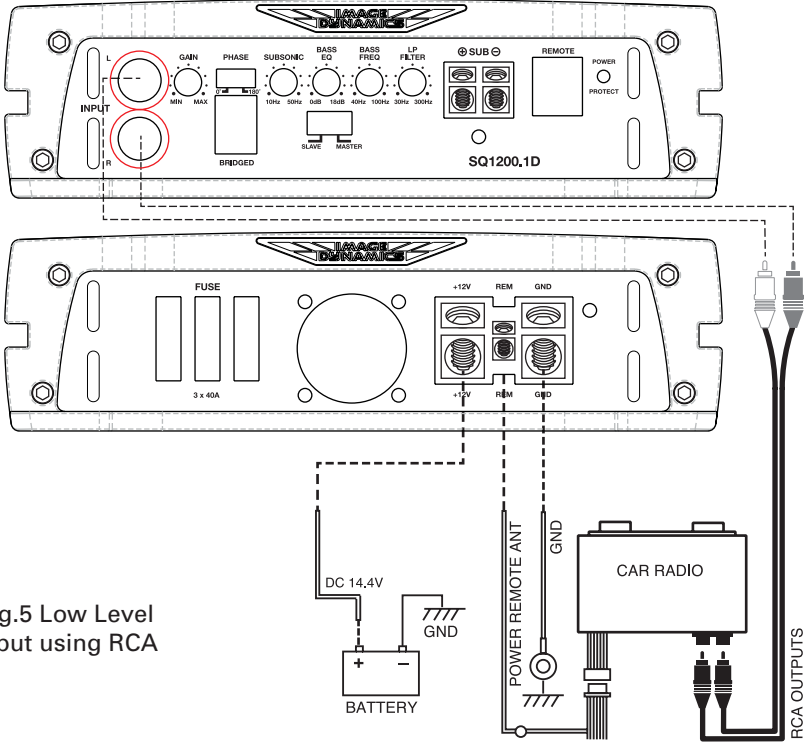


Fig.5 Low Level Input using RCA

Low Level Input - Choose the correct length and style of RCA interconnects for your needs. Always use high quality RCA audio cables (not supplied) for signal connections—those with multiple layers of shielding or a twisted pair variety for better noise rejection.

Be extra careful when routing your RCA audio interconnect cables. Car environments are notorious for poorly insulated wires. This means that hiss, engine noise, and fan noise can easily be picked up through RCA cables if run incorrectly.

Make sure that the cables for power and audio signal are not on the same side of the vehicle and that they do not cross each other; this will help reduce any noise that may radiate from the power cable and the signal cable. If an audio cable is too close to a power cable, it may pick up the magnetic field generated by the power cable, which could lead to a loss of quality in your signal.

NOTE: This is the preferred method.

SET UP ADJUSTMENTS



Fig.7 GAIN Control

Input GAIN Adjustment

This control allows you to match the input level of the amplifier to the output level of your head unit. Matching the input can be accomplished in four simple steps:

1. Make sure that the remote level control is not plugged in until after the master gain control is set.
2. Set the GAIN control on the amplifier to Min (completely counter clock wise).
3. Turn on the head unit and adjust volume to 2/3 maximum, and set the BASS and TREBLE to zero.
4. Adjust the GAIN control clockwise until the sound just begins to distort, then back off slightly to cut distortion and operate at optimum gain.

Remember, the **GAIN control is not a volume control**. Ignoring these steps above may leave you with damaged speaker and/or a damaged amplifier.



Fig.8 Sub Sonic Adjustment

SUB SONIC 40 Click Detent Control

The subsonic control will filter out all frequencies below where the control is set and prevent those frequencies from going to your subwoofer(s). This will prevent your subs from playing any low frequencies that may harm the speaker. When this amplifier is used with a subwoofer in a Vented Woofer application it is important to set the frequency of the filter to cutoff $\frac{1}{2}$ octave below the vent frequency. This will prevent the woofer unloading from bass notes which are too low for the vented woofer. Once the woofer is unloaded it is operating as a free air driver and may experience damage by striking the back plate or by shearing off the spider. Proper setting of the subsonic filter is critical.

See the chart on page 21 to set the subsonic filter to the precise cutoff frequency.



Fig.9 Low Pass Control

LPF (Low Pass Filter) Adjustment

The crossover frequency adjustment filters out frequencies that you don't want your subwoofer(s) to reproduce. Using the LPF control, adjust the Low Pass Frequency to limit the amount of mid range you want going to your woofer(s). Since musical tastes vary, adjust the crossover by ear while listening to the music of your choice. Be sure to set the tone controls of your source unit to flat before adjusting the crossover.

See the chart on page 21 to set the Low Pass filter to the precise frequency.



Fig.10a Bass EQ Control



Fig.10b Bass FREQ Control

Adjusting the BASS EQ and BASS FREQ Controls

The BASS EQ is adjustable from 0-18dB, thus allowing you to tailor your sound system to your particular tastes. The BASS FREQ control has 40 click detents that allow you to choose precisely the frequency the BASS EQ will boost. Refer to the chart on page 21 and find the setting of the BASS FREQ and determine what frequency you want the BASS EQ to boost. You will want to experiment with both controls—begin your adjustments at low volume. Next turn the BASS EQ control about half-way up. Adjust the controls until you find the right combination that sounds best with the music you listen to most.

NOTE: More is not always better. By turning the BASS EQ all the way up to 18dB you can overwork the amplifier and send the unit into thermal protection.

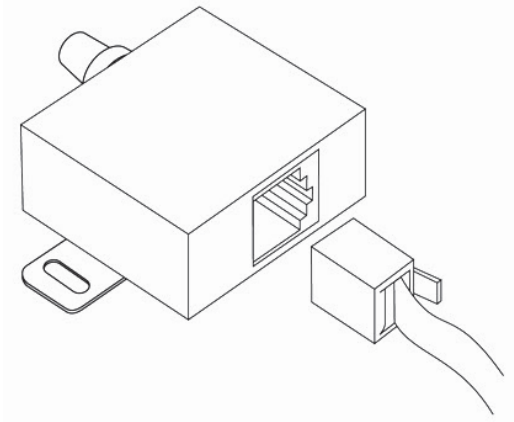


Fig.11 Connection with RJ12 Jack

REMOTE LEVEL Controller Connection

Your Image Dynamics Class D amp includes a Remote Level control module. It uses standard telephone wire and telephone RJ12 connectors. To connect the Remote Level Control to the amplifier, simply insert one end of the 6-pin telephone plug into the REMOTE LEVEL port. Plug the other end into the remote module. Install the module within easy reach on or under your dash.

SPEAKER WIRING AND CONFIGURATIONS

Speaker Load

Keep in mind your Image Dynamics Class D amp is a high power amplifier and not a high current amplifier. **In other words it requires a minimum impedance of 1 ohm. Unless you are externally bridging two amplifiers in which case the minimum load is 2-ohms.** If you are unsure of calculating impedance loads please consult your Authorized Image Dynamics Dealer before damaging your amplifier.

Lower impedance will send the amplifier into protection and possibly damage the electronics inside.

Note: Know your load before connecting speakers.

SPEAKER OUTPUT CONFIGURATIONS

Speaker Wiring

Choose the correct speaker wire for your application. We recommend a minimum of 10 gauge wire. Route these using the same precautions as you did when you ran the power cable. Terminate these wires at the speaker end using insulated speaker terminals (not supplied) or by soldering the connection to the speaker. Be certain to maintain correct polarity throughout the system. Make sure the speaker connections are positive-to-positive and negative-to-negative. Most speaker wire has some indicator (color code, ribbing, or printing) on one of the two wires to help you distinguish the positive (+) and negative (-) leads.

At the amplifier end, insert the stripped (bare) speaker wires into the properly marked terminals. Use an Allen wrench to loosen the speaker terminals on the amplifier. Make certain that no bare wire ends touch each other. Such contact could result in an electrical short and cause the amplifier to turn off (short circuit protection) or malfunction.

NOTE: It is highly recommended that an Allen wrench is used to tighten the set screws in the terminal blocks by hand and NOT a power drill. This will prevent stripping or other possible damage to the amplifier.

SPEAKER OUTPUT CONFIGURATIONS

1-OHM STABLE DESIGN Minimum Impedance Load is 1-Ohm

1. A SINGLE VOICE COIL SUBWOOFER SPEAKER

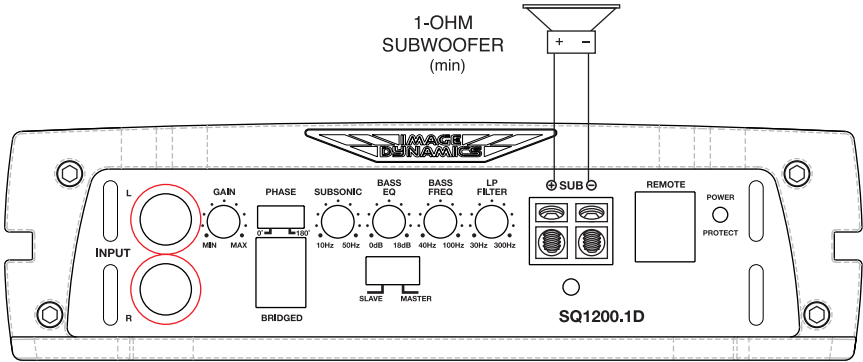


Fig.12 A Single Voice Coil Subwoofer (1~4 ohm)

2. TWO SINGLE VOICE COIL SUBWOOFER SPEAKERS

(Note: Don't connect speaker impedance under 1 ohm)

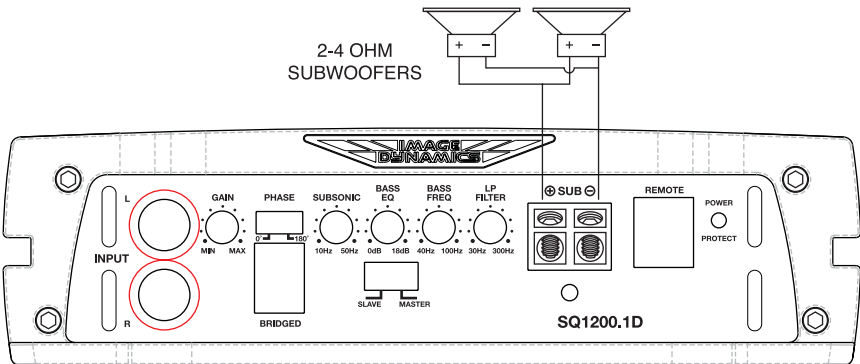


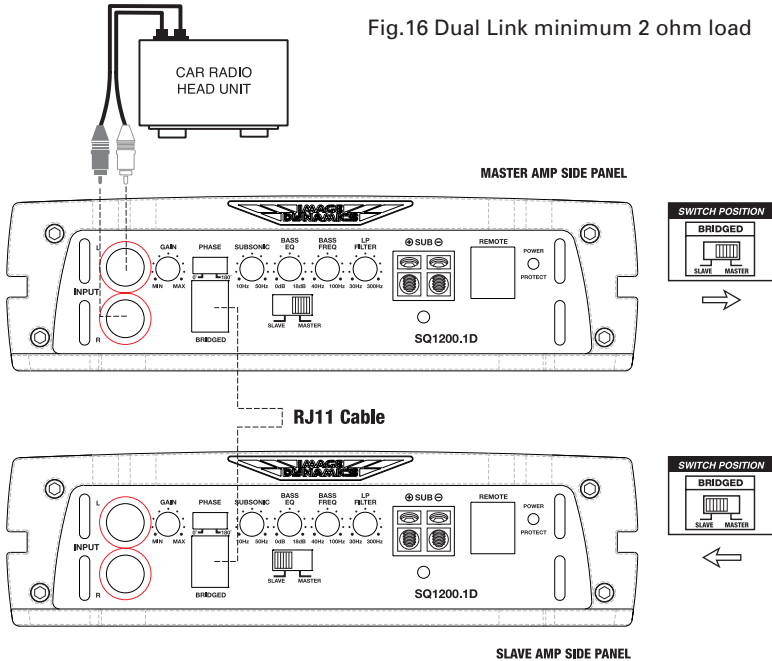
Fig.13 Two 2 ohm Subwoofers with Single Voice Coil (1 ohm min)

DUAL LINK AMP TO EXTERNAL BRIDGING

The Image Dynamics SQ Class D Mono amplifiers are equipped with a special Dual Link circuitry that allows you to link (strap) two like amplifiers together and double the output power at a minimum 2-ohm load. External Bridging two amplifiers (must be the same models) can be done via the **MASTER** and **SLAVE** switches, BRIDGED CONNECTION cable and proper speaker wiring. Doing so will allow only the preamp controls (Gain, X-Over, Subsonic, Bass EQ, etc) on the **MASTER** amplifier to control both amplifiers. The preamp controls on the **SLAVE** amplifier will become inactive. This holds true for the Remote Level Control as well, it will only function with the **MASTER** amplifier.

Follow the preceding diagrams carefully when using the Dual Link function. Make sure the **MASTER** and **SLAVE** switches are properly selected on each amplifier as shown in Fig 16. Failure to do so will result in damage to the system.

NOTE: This switch should always be be set to the MASTER position for standard operation of one amplifier. Changing the position to SLAVE will result in no output



Plug the RJ-11 (4-pin) telephone style cable into the BRIDGED CONNECTION port on both amplifiers.

When configured for Dual Link (external bridging) the minimum impedance load increases from 1-ohm to 2-ohms. DO NOT install or use these amplifiers by wiring woofers rated at 2-ohm or lower in parallel to achieve a 1-ohm (or lower) total impedance.

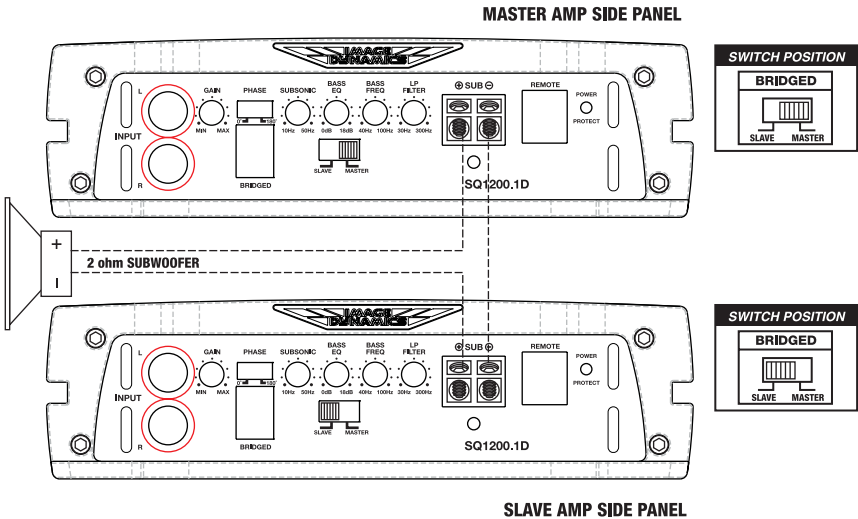


Fig.17 Dual Link minimum 2 ohm load

The mono woofer must be connected between the speaker positive (+) terminals of the two amplifiers and use at least 10-gauge speaker wiring. Install a 10-gauge wire link between the speaker negative (-) terminals of the two bridged amplifiers. Permanent amplifier damage, smoke and overheating could result from improperly bridging the amplifiers.

DUAL LINK CAUTION! When externally bridging the speaker outputs as shown above, the amplifier must see a 2-ohm load or higher. If an impedance load of less than 2-ohms is used, you will eventually damage the internal electronic components and void your warranty!

Tech Support
 8:30am-5:30pm Pacific Time
 (909) 930-1377
www.imagedynamicsusa.net

SQ600.1D/1200.1D



40 CLICK PRECISION ROTARY CONTROLS

These controls allow precise setting of the electronic crossover and subsonic settings on the amplifier, thus taking the guesswork out of tuning your speakers.

Using a small slotted screwdriver make sure the controls are turned all the way to the left (counter clockwise).

Refer to the chart and count the clicks (advancing one detent at a time clockwise) until you have reached the desired frequency.

This precise method of setting the crossover controls is available for the LPF, SUBSONIC and BASS FREQ features on this amplifier.

| Click Position | Low Pass Freq | Subsonic Freq | Bass Freq | Bass EQ |
|----------------|---------------|---------------|-----------|---------|
| 1 | 30Hz | 10Hz | 46Hz | 0 dB |
| 2 | 30Hz | 10Hz | 46Hz | 0 dB |
| 3 | 30Hz | 10Hz | 46Hz | 0 dB |
| 4 | 30Hz | 10Hz | 46Hz | 0,1 dB |
| 5 | 30Hz | 10Hz | 46Hz | 0,2 dB |
| 6 | 31Hz | 10Hz | 46Hz | 0,2 dB |
| 7 | 33Hz | 10Hz | 47Hz | 0,4 dB |
| 8 | 35Hz | 10Hz | 47Hz | 0,6 dB |
| 9 | 38Hz | 11Hz | 47Hz | 0,8 dB |
| 10 | 41Hz | 12Hz | 48Hz | 1,2 dB |
| 11 | 45Hz | 12Hz | 48Hz | 1,6 dB |
| 12 | 50Hz | 13Hz | 49Hz | 1,8 dB |
| 13 | 55Hz | 13Hz | 50Hz | 2,25 dB |
| 14 | 61Hz | 14Hz | 52Hz | 2,6 dB |
| 15 | 68Hz | 14Hz | 53Hz | 2,8 dB |
| 16 | 78Hz | 15Hz | 54Hz | 3,1 dB |
| 17 | 90Hz | 15Hz | 56Hz | 3,3 dB |
| 18 | 102Hz | 16Hz | 58Hz | 3,6 dB |
| 19 | 110Hz | 16Hz | 59Hz | 3,9 dB |
| 20 | 124Hz | 17Hz | 61Hz | 4,2 dB |
| 21 | 128Hz | 17Hz | 62Hz | 4,4 dB |
| 22 | 132Hz | 18Hz | 64Hz | 4,8 dB |
| 23 | 137Hz | 19Hz | 67Hz | 5,2 dB |
| 24 | 143Hz | 21Hz | 69Hz | 5,6 dB |
| 25 | 150Hz | 23Hz | 71Hz | 6 dB |
| 26 | 160Hz | 24Hz | 74Hz | 6,5 dB |
| 27 | 166Hz | 26Hz | 77Hz | 7,2 dB |
| 28 | 176Hz | 29Hz | 80Hz | 8 dB |
| 29 | 187Hz | 32Hz | 82Hz | 9 dB |
| 30 | 200Hz | 36Hz | 86Hz | 10,4 dB |
| 31 | 214Hz | 42Hz | 90Hz | 11,6 dB |
| 32 | 231Hz | 43Hz | 94Hz | 12,2 dB |
| 33 | 235Hz | 47Hz | 96Hz | 13 dB |
| 34 | 243Hz | 49Hz | 98Hz | 13,6 dB |
| 35 | 250Hz | 50Hz | 100Hz | 14 dB |
| 36 | 257Hz | 51Hz | 100Hz | 14,8 dB |
| 37 | 268Hz | 52Hz | 101Hz | 15,5 dB |
| 38 | 277Hz | 53Hz | 101Hz | 16,2 dB |
| 39 | 283Hz | 54Hz | 102Hz | 16,7 dB |
| 40 | 300Hz | 54Hz | 102Hz | 18 dB |

RECOMMENDED WIRE SIZES

| Power Cable Selection Chart | | | | | | | |
|------------------------------------|-----------------------------|--------------|---------------|----------------|-----------------|-----------------|-----------------|
| Fuse Total | 4Ft | 4-7Ft | 7-10Ft | 10-13Ft | 13-16 Ft | 16-19 Ft | 19-22 Ft |
| In Amperes | Length of Wire/Gauge | | | | | | |
| 150A - 200A | 2 GA | 2 GA | 2 GA | *1/0* | *1/0* | *1/0* | *1/0* |
| 125A - 150A | 4 GA | 4 GA | 4 GA | 4 GA | 2 GA | 2 GA | 2 GA |
| 105A - 125A | 8 GA | 8 GA | 8 GA | 4 GA | 4 GA | 4 GA | 2 GA |
| 85A - 105A | 8 GA | 8 GA | 8 GA | 4 GA | 4 GA | 4 GA | 4 GA |
| 65A - 85A | 10 GA | 8 GA | 8 GA | 8 GA | 4 GA | 4 GA | 4 GA |
| 50A - 65A | 10 GA | 10 GA | 8 GA | 8 GA | 8 GA | 8 GA | 8 GA |

PERSONAL NOTES:

Name: _____

Date Purchased: _____

Dealer: _____

Installed By: _____

Model: _____

Serial Number: _____

Miscellaneous: _____

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TROUBLESHOOTING TIPS

| Problem | Solution |
|--|---|
| Power LED not ON | With a Volt Ohm Meter (VOM) check: <ul style="list-style-type: none"> • +12 Volt power terminal (should read +12 to +16VDC) • Remote turn-on terminal (should read +12 to +16VDC) • Ground Terminal |
| Power LED lights BLUE, no output | <ul style="list-style-type: none"> • Check RCA connections • Test speaker outputs with known good speaker • Substitute known good Source Unit • Check for signal on the RCA cable with VOM in AC position • Make sure the SLAVE/MASTER switch is set to the MASTER position |
| Red Status Protection LED is ON, no output and 1. Amp is VERY HOT 2. Amp shuts down ONLY when the vehicle is running 3. Amp has no output | <ul style="list-style-type: none"> • Thermal protection is engaged. Check for proper impedance at speaker terminals. Also check for adequate air flow around the amplifier. • Voltage protection engaged. Voltage to the amp is not within the 10-16 VDC operating range. Have the battery/charging system inspected. • Possible short circuit. Check speaker wiring. Must completely turn off amplifier and restart to resume play. |
| Alternator noise (varies with RPM) | <ul style="list-style-type: none"> • Check for damaged RCA cable. • Check routing of RCA cable • Check Source Unit for good ground • Check amp gain setting, turn down if set too high |
| Poor Bass Response | <ul style="list-style-type: none"> • Check speaker polarity, reverse the connection of one speaker only. |

NOTE: If the Status L.E.D. is activated and glows RED with no speakers connected to the amplifier, and all the power connections are correct, this would indicate an internal problem with the amplifier. Contact Image Dynamics USA or your local dealer.

SPECIFICATIONS FOR SQ CLASS D MONO AMPLIFIERS

| Image Dynamics Class D Model | SQ1200.1 | SQ600.1D |
|-------------------------------------|-----------------|-----------------|
| Power Output @ 14.4 VDC Input | | |
| 1 Ohms RMS at THD <0.4% | 1200 x 1 | 600 x 1 |
| 2 Ohms RMS at THD <0.4% | 800 x 1 | 400 x 1 |
| 4 Ohms RMS at THD <0.4% | 400 x 1 | 200 x 1 |
| Peak Music Power | 2400 watts | 1200 watts |
| External Bridged 2 Ohms RMS | 2400 x 1 | 1200 x 1 |
| Signal to Noise Ratio (EIA Rated) | > 95dB | > 95dB |
| Frequency Response | 10Hz - 300Hz | 10Hz - 300Hz |
| Crossover | | |
| Low Pass Filter | 30Hz - 300Hz | 30Hz - 300Hz |
| Crossover Slope | 24dB | 24dB |
| Sub Sonic Filter | 10Hz - 50Hz | 10Hz - 50Hz |
| Variable Bass EQ | 0 - 18dB | 0 - 18dB |
| Bass Frequency | 40Hz - 100Hz | 40Hz - 100Hz |
| Input Gain Control | 250mV - 10.0 V | 250mV - 10.0 V |
| Fuse Rating / Style | 40A x 3 | 30A x 2 |
| Dimensions | | |
| Width (W) x | 7.25" (184mm) | 7.25" (184mm) |
| Height (H) x | 2.0" (51mm) | 2.0" (51mm) |
| Length (L) mm | 15.0" (381mm) | 10.5" (267mm) |

IMPORTANT NOTES:

- Due to continuing improvements these specifications are subject to change without any notice.
- Do not attempt to fix or repair this unit. Unauthorized repairs will void the manufacturer's warranty.

IMAGE DYNAMICS ELECTRONICS LIMITED WARRANTY POLICY

Image Dynamics USA, Inc. offers limited warranty on Image Dynamics products under normal use on the following terms:

Image Dynamics Amplifiers are to be free of defects in material and workmanship for a period of one (1) year.

This warranty applies only to Image Dynamics products sold to consumers by Authorized Image Dynamics Dealers in the United States of America. Products purchased by consumers from a Image Dynamics dealer in another country are covered only by that country's Distributor and not by Image Dynamics USA.

This warranty covers only the original purchaser of Image Dynamics product. In order to receive service, the purchaser must provide Image Dynamics with the receipt stating the consumer name, dealer, product and date of purchase.

Products found to be defective during the warranty period will be repaired or replaced (with a product deemed to be equivalent) at Image Dynamics's discretion and will not be liable for incidental or consequential damages. Image Dynamics will not warranty this product under the following situations:

- Amplifiers received with apparent rust or corrosion
- Any evidence of liquid damage or exposure to excessive heat
- Attempted repairs or alterations of any nature
- Product that has not been installed according to this owners manual

Any implied warranties including warranties of fitness for use and merchantability are limited in duration to the period of the express warranty set forth above. Some states do not allow limitations on the length of an implied warranty, so this limitation may not apply. No person is authorized to assume for Image Dynamics any other liability in connection with the sale of this product.

Please call (909) 930-1377 for Image Dynamics Customer Service. You must obtain an RA# (Return Authorization Number) to return any product to Image Dynamics. The RA number must be prominently marked on the outside of the shipping carton or the delivery will be refused. Please pack your return carefully; we are not responsible for items damaged in shipping. Return the defective product along with a copy of the original dated retail sales receipt, plus \$12.00 for handling and diagnostic evaluation to:

Image Dynamics USA, Inc.,

Attn: Returns (RA#_____)

2133 S. Green Privado, Ontario, CA 91761

Residents of HI, AK and US territories will be charged for return shipping. All inquires regarding service and warranty should be sent to the above address.

Removed or altered serial numbers will void this warranty

Image Dynamics USA, Inc.
2133 S. Green Privado – Ontario, CA 91761
Tel. (909) 930-1377 – Fax (866) 239-4399
www.imagedynamicsusa.net