AQ 12
Enclosure

Operating
Manual

FCC CAUTION:

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

NOTE: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

—Reorient or relocate the receiving antenna.

—Increase the separation between the equipment and receiver.

—Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

—Consult the dealer or an experienced radio/TV technician for help.

The equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment,

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

The equipment should be installed and operated with minimum distance 20cm between the radiator and your body.

IC WARNING:

This device complies with Industry Canada licence-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

This Class A digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe A est conforme à la norme NMB-003 du Canada.

the device is compliance with RF exposure guidelines, and the equipment should be installed and operated with minimum distance 20 cm between the radiator and your body.

l'appareil est conforme aux directives d'exposition RF, et l'équipement doit être installé et exploité avec une distance minimale de 20 cm entre le radiateur et votre corps.

ENGLISH

Thank you for purchasing the powered Peavey® AQ™12 powered speaker system. The AQ™12 features a reliable bi-amped power section that provides a total of 1000 Watts of peak available dynamic power with signal compression to prevent audible overload. The analog power amplifiers and linear power supply are coupled with a DSP based crossover and EQ.

The EQ presets are accessed via a one-knob selector switch. The AQ™12 provides a balanced input via a combination jack that accepts balanced TRS 1/4 inch input as well as a balanced XLR input. There is a balanced Thru output via a Male XLR. There is an adjustable Level control as well as an LED indicator that lights when the "soft-limiting" compression circuit is activated.

Features

* Two-way bi-amplified analog amp powered speaker system
* 12" heavy-duty woofer
* DX™14 compression driver, with 1.4 inch titanium diaphragm
* 670 watts peak dynamic woofer power, 330 watts peak dynamic tweeter power
* Bluetooth® streaming and pairing are supported
* DSP processing is 56 bit double-precision
* DSP I/O is at 48 kHz and 24 bits, with low-jitter, professional grade components
* Dynamic bass boost function
* Fan cooled for maximum reliability
* Peavey® Designed Quadratic Throat Waveguide™ technology, 110 by 80 degree coverage
* Input is via a combo female XLR and 1/4" TRS phone jack with balanced input
  OR a Bluetooth ® signal can be streamed to the speaker system.
* A Mic/Line switch provides for two different gain settings
* Thru/Mix output is via a male XLR jack
* Multiple Factory Preset EQ settings for the DSP crossover system
* Rugged plastic injection-molded trapezoidal enclosure
* Cabinet has dual rear corner angled sides for floor monitor use.
* Full-coverage perforated steel grille, with powder coat finish
* Pole mount molded-in for 1 3/8" diameter poles

Applications

The Peavey AQ™12 has a variety of applications such as sound reinforcement, public address, side fill system, karaoke or musical playback.
A typical signal source for the line-Gain inputs of the AQ™12 would be a sound reinforcement mixing console (mixer) or the output from a CD player, MP3 player or tape deck. A dynamic microphone can be connected directly via the XLR input and used when the Mic/Line switch in placed into the "Mic" position as well.

The AQ™12 is a two-way sound reinforcement system based on a heavy-duty 12" woofer and a DX™14 titanium diaphragm dynamic compression driver mounted on a 110 by 80 degree coverage Quadratic Throat Waveguide™. It's contemporary appearance coupled with exceptional performance offer a highly desirable combination.

The light yet durable injection-molded plastic enclosure with molded-in stand mount cup eases portable use for live music or PA sound. The trapezoidal cabinet has three handles for ease of portability, and two extra angled sections on either side to allow use as a floor monitor. A full length black powder coated perforated steel grille provides system protection and a professional appearance.

The heavy-duty 12" woofer has a warm punchy sound for plenty of bass. The DX™14 compression driver tweeter is coupled to a Quadratic Throat™ constant directivity waveguide, an original Peavey® design, with smooth, even response, low distortion and good high frequency dispersion.

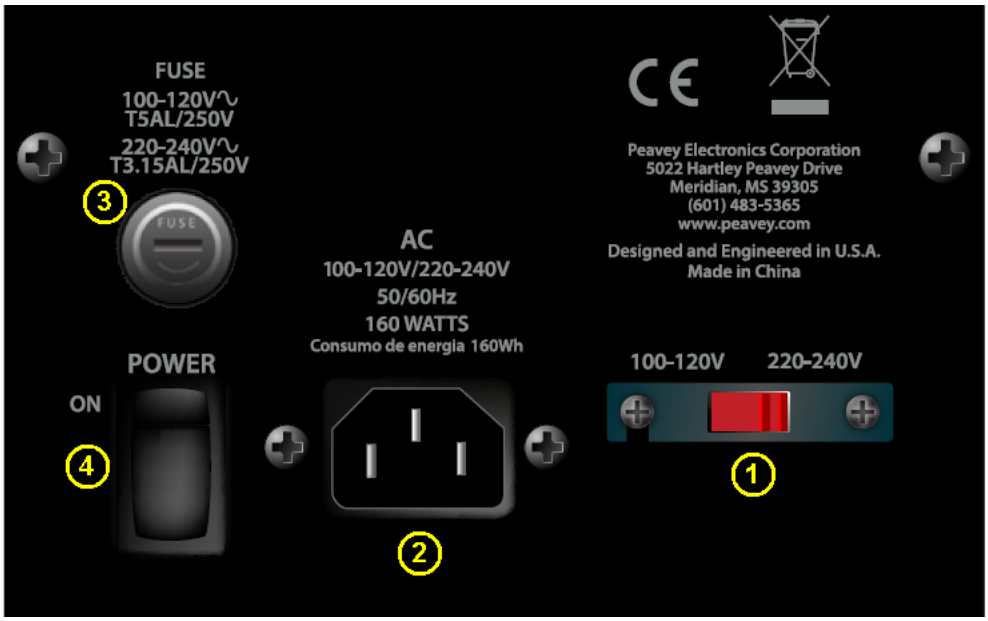
Advanced Digital Signal Processing (A.D.S.P.) provides the crossover function, driver limiting, as well as the driver EQ to

enable the speaker system to provide an accurate and neutral sound for any type of music. The DSP processing uses 56 bit double-precision to insure accurate and transparent sound processing, and the input/output sections use a 48 kHz sampling rate at 24 bits for maximum fidelity. Low-jitter clocking and professional grade components insure the sound quality is superb.

An extremely simple system of user selected Presets is implemented in the speaker system's DSP computing core, and accessible via the rotary selector knob. A total of 6 presets is available, covering the most common applications for this genre of speaker system.

The AQ™12 speaker system power amplifiers providing the bi-amplification are low-distortion reliable fan-cooled units providing a total of 1000W peak available dynamic power for the system.
There is 670W peak available dynamic power for the woofer, and 330W peak available dynamic power for the tweeter. The power supply for both amps is a switching type for low weight coupled with low cost. Both amplifiers feature sophisticated signal compression, which virtually eliminates audible power amplifier clipping. Cooling is provided via a low-noise fan, for reliable operation under any conditions.
A built-in dynamic bass boost function provides the maximum amount of bass in such a small package.
Input is via a combo female XLR and 1/4" TRS phone jack with balanced input to the DSP preamp/EQ electronics, and a Level control. A Mic/Line switch allows for use of a microphone via the extra gain available when in the "Mic" position.
A Thru output has a male XLR jack. This output allows linking of additional speaker systems, or feed of the signal to a powered subwoofer, etc.
Bluetooth® operation's supported include streaming and device pairing, and a separate Level control is provided for the Bluetooth® signal level adjustment.

BOTTOM



VOLTAGE SELECTOR SWITCH (1)

The AQ™12 has a voltage selector switch to allow switching between an input power voltage of 120VAC to a range from 220VAC to 240VAC, all at either 50 or 60 cycles per second (Hz). It should be set to the proper voltage for your country out of the box. However, world conditions are such that some areas have power line voltages differing from the voltage used by the majority of any given locale.
Be sure to check the position of the voltage selector switch to see that it matches the power line voltage used locally. If it does not match, then to change the voltage to the correct one, follow the steps outlined below.

Changing the Voltage Range of the AQ™12
First, make sure the AQ™12 is disconnected from the power line, and that the power switch (3) is in the OFF position.

Second, unscrew the screws holding the clear switch protector on the voltage selector switch (1) just a little, just enough to allow rotation of the clear switch protector. The screws DO NOT need to be unscrewed very far.

Third, rotate the clear plastic protector about 90 degrees to uncover the voltage selector switch. One side of the cover has a slot, the other just a hole, the side with the hole is the side that pivots.

Fourth, using a small flat blade screwdriver, push the red selector switch slide plate to the other side from where it was. The voltage that is now visible on the red slide plate is the one you have selected.

Fifth, rotate the clear plastic protector back underneath the loosened screws, and tighten one down while holding the clear plastic protector in place. Tighten the other screw down, and make sure both screws are tight.
If the screws are over-tightened, this could damage the voltage selector switch clear plastic cover, so do not apply excessive force to the screws!

The IEC power cord that is correct for your locale can now be plugged into the IEC receptacle (2), and the Power

switch (3) activated to turn on the powered AQ™12 speaker system.

IEC POWER CORD CONNECTION (2)

This receptacle is for the IEC line cord (normally supplied with the correct pins and wiring for your locale) that provides AC power to the unit. It is very important that you ensure the PVs 12 Sub has the proper AC line voltage supplied. You can find the voltage setting for yourPVs12 Sub by checking the voltage selector switch on the rear panel of the unit. See above section.

Please read this guide carefully to ensure your personal safety as well as the safety of your equipment. Never break off the ground pin on any equipment. It is provided for your safety. If the outlet used does not have a ground pin, a suitable grounding adapter should be used and the third wire should be grounded properly. To prevent the risk of shock or fire hazard, always be sure that the mixer and all other associated equipment are properly grounded.

IEC POWER CORD CONNECTION (2)

This receptacle is for the IEC line cord (supplied) that provides AC power to the unit. It is very important that you ensure the AQ™12 has the proper AC line voltage supplied. You can set the proper voltage for your AQ™12 using the Voltage Selector switch (1) on the rear panel of the unit.

Please read this guide carefully to ensure your personal safety as well as the safety of your equipment. Never break off the ground pin on any equipment. It is provided for your safety. If the outlet used does not have a ground pin, a suitable grounding adapter should be used and the third wire should be grounded properly. To prevent the risk of shock or fire hazard, always be sure that the mixer and all other associated equipment are properly grounded.

ON-OFF SWITCH (3)

This rocker switch supplies AC power to the AQ™12 when switched to the ON position. The ON position is with the top side of the switch pushed “in” or nearly flush with the rear panel.

Rear Panel

LEVEL (4)
Controls the gain or output level of the input signal from the input jack (6). It is used to directly set the system output level for a given input signal.

SIG LED (5)
Shows when a signal is present at the input (6)

INPUT (6)
The line input is of the medium impedance balanced type. The jack is a combo female XLR and 1/4" TRS connector.
Sensitivity of this input is 0.50 volts for full output, when the MIC/LINE switch (7) is in the LINE position

MIC/LINE switch (7)
Switches between LINE level gain (out position) and MIC level gain (in position). MIC position increases gain 20 dB to allow use of most dynamic microphones.
NOTE: Phantom power is not supplied on the INPUT (6) jack.

GRND LIFT switch (8)
Allows the input cable shield to be disconnected from the chassis ground to alleviate hum from ground loops

SPKR LINK LED and button (9)
LED illuminates blue when the Spkr Link button is pushed and the Bluetooth® link is established

BT PAIR LED and button (10)
LED illuminates blue when the BT Pair button is pushed and the speaker is paired with another Bluetooth® device.

BT LEVEL (11)
Controls the gain or output level of the input signal from the Bluetooth® signal feed. It is used to directly set the system output level for a given Bluetooth® input signal.

SIG LED (12)
Illuminates green when a signal source is present at either the analog input jack (6), or the Bluetooth® signal source. Extremely low level signals will not cause it to illuminate, but any normal level signal will do so.

Preset Selector Switch (13)
Allows the user to select which Preset EQ function is engaged.
For reference purposes, the Acoustic preset is nominally the flattest response.

THRU/MIX OUT jack (14)
This jack is intended for the use of linking multiple AQ™12's in a line
or to provide a feed to a powered subwoofer, or other electronics that needs to receive a full range version of the input signal. When the MIX/DIR button is engaged (in), it provides a mixed signal consisting of the signal at the input jack (6) and the Bluetooth® signal source

MIX/DIR button (15)
When in the normal (out) position, the THRU/MIX OUT jack (14) passes the input signal present at the input jack (6) thru to another device. Pushing the button in engages the MIX function, where the Bluetooth® signal source is mixed with the analog input present at the input jack (6).

POWER LED (16)
It illuminates when the power switch is on and power is present.

LIMIT LED (17)
It turns Red when the power amp engages the "Soft Limiting" and Compression system. Should only be blinking occasionally, if it is on all the time, or most of the time, the signal will be highly compressed.

Cautions

The unit must be disconnected from the AC power source before any work is done on it. Refer all servicing to qualified service personnel.

The back plate can become hot to the touch. Do not block or cover the fan or the exhaust louvers from ventilation. There must be a minimum of 12" of space behind the fan. Do not allow the airflow to be become blocked by objects such as curtains or drapes, thermal building insulation, etc. It is recommended that the rear of the AQ™112 not be placed in a closed space or a space that has no fresh, cool airflow.

Be sure to keep the microphone away from the front of the speaker after connecting it to the input, and while setting the microphone level, or very loud feedback will occur! Damage to the system is likely if this occurs!
DO NOT connect the inputs of the AQ™12 to the output of a power amplifier. The inputs are meant to be driven from a line-Gain strength signal.

DO NOT remove the protective metal grille.

WARNING! The AQ™12 is very efficient and powerful! This sound system can permanently damage hearing! Use extreme care setting the overall maximum loudness!

The apparent sound level of the AQ™12 can be deceiving due to its clear, clean sound output. The lack of distortion or obvious distress can make the sound level seem much lower than it actually is. This system is capable of SPL in excess of 125 dB at 1 M from the speaker!

Connecting AC Power To The AQ™12
The AQ™12 comes with an 6-foot IEC connection AC power cord. If you are using an extension cord or power strip with this powered speaker, make sure it is of good quality and of a sufficient current capacity to maintain safety and maximize the power output capability of the AQ™12. For maximum undistorted output, do not connect any other device to the same extension cord that the AQ™12 is connected to. Do not exceed the rated current capacity of the extension cord with the sum total of all units connected to it.
When first plugging in the AC cord, make sure the power switch is in the Off position, and then turn it On only once the power cord has been connected. Built-in muting will engage when the proper sequence of steps is taken.

Use of the AQ™12 with a Speaker Stand
The AQ™12 has a stand mount cup molded-in so that the system can be stand mounted on a standard 1 3/8" (36mm) diameter stand pole.
When using stands or poles, be sure to follow these precautions:
A. Check the stand or pole specs to make sure that it can support the weight of the AQ™12 (34 lbs./15.4 kg), and observe all safety precautions stated by the stand manufacturer, including the maximum height the stand is rated for.
B. Always place the stand on a flat, level and stable surface, and be sure to fully extend the stand legs as per the stand manufacturer's instructions.
C. Try to make sure that the stand legs are oriented for the least danger of tripping to those in the vicinity of the stand. Never block a doorway or hallway with the legs of a stand.
D. Try to route cables so that people will not trip over them, or tip the speaker over. Use of duct tape, cable channels or guards, or other appropriate tie-down/cover –up devices should be carefully considered and implemented.

E. When installing or de-installing the speaker on the stand, it is a good practice to have a helper if possible, it can be hard to "thread the needle" and mate the stand cup to the stand pole while holding the AQ™12 speaker system at arm's length. It is also helpful if someone holds the speaker stand and pole down while the AQ™12 is removed from the stand pole, this prevents the AQ™12 from pulling the pole up with it.
F. When using stands outdoors, never attach banners or flags to the stands or the AQ™12 speaker system, strong winds may cause the speaker to blow over. If there is a possibility of windy conditions, then it may be prudent to consider weighting or locking down the stand legs to prevent the AQ™12 speaker system from being blown over.

Use of the AQ™12 with an PVs™15 Sub or PVs™18 Sub
The PVs™15 Sub or PVs™18 Sub can be used with a AQ™12 using the threaded 1 3/8" diameter pole supplied with the Sub. All the precautions stated for use of the AQ™12 with a speaker stand should be applied as appropriate to use of the AQ™12 with a PVs™15 Sub or PVs™18 Sub. That would be primarily items B, D, E and F.
Information about the adjustment of levels and polarity settings is contained in the PVs™15 Sub and PVs™18 Sub Owner's Manuals.

Connecting a Signal to the AQ™12
There are a variety of ways to input a signal to the AQ™12.
The input (5) provides either a balanced mic- or line-level input, allowing the use of a 1/4" TRS (ring-tip-sleeve) type phone plug or a male XLR plug.

Do not connect cables to the jacks while the unit is ON and the Gain knob is turned up! While a standard single-ended 1/4" phone plug-equipped cable will work well and the balanced input circuitry will provide some interference rejection, a balanced cable using either the balanced TRS 1/4" phone plug or the XLR plug will provide superior interference rejection and performance.

Sometimes, with difficult interference problems, it will be helpful to lift the shield ground (Pin #1 of an XLR) of a balanced cable at the AQ™12 end. Check any input changes carefully, always turning the level control down before plugging and unplugging cables, or lifting the ground.

Use of high quality, premium cables is recommended for the AQ™12, as these usually have better shielding and materials and will provide greater long-term reliability. The best option is a shielded balanced cable no longer than necessary to reach the AQ™12. It is usually a good idea to leave some slack at the input to the AQ™12 and also to tape the cables down or run them under a cable guard to avoid anyone tripping over them or pulling the AQ™12 over when stand mounted..

Level Control Adjustment
The AQ™12 is equipped with a level control (4) on the input to facilitate use in many different applications. With the Level control adjusted fully clockwise, gain is at maximum and the input sensitivity is 0.50 V RMS for full-rated output with the line level position of the Mic/Line Switch (7). When driving the AQ™12 from a mixer, it may be advantageous to reduce the input sensitivity by turning the level control to the halfway point. The AQ™12 will now more closely match a typical power amp.

If the mixing board indicates clipping of its output signals, then all of the AQ™12 power capability is not being utilized cleanly. Clipping the signal before it gets to the AQ™12 is not optimal. Reduce the mixer output Gain and turn up the level control on the AQ™12.
The amplifiers in the AQ™12 are fed by a signal that has a "Soft Limiting" and Compression system applied, and the LED indicator will show when this circuitry has engaged. If the sound seems heavily compressed, check these indicators; if it is blinking RED more than occasionally, then the drive level from the mixer (or the level

control on the AQ™12) needs to be reduced.

When first turning on the sound system, switch on all upstream electronics first, then the AQ™12 with its level control fully counterclockwise (all the way down). Begin checking levels with the mixer output Gain controls all the way down, and bring them up slowly with the AQ™12 level control set to the desired setting (one-third way up recommended to start).

It is not good practice to turn the level control on the AQ™12 all the way up and then try to control level only from the mixer, this approach would tend to pick up excess noise. Best practice would be to run a "hot" signal from the mixer down the cable to the AQ™12, and then turn the AQ™12 level control up only as much as necessary to reach full desired output. With this approach, it is necessary to verify the mixer output is not clipping.

Bluetooth

Bluetooth® Pairing
Use this button (10) to link your Bluetooth® source (phone, tablet, etc...) to the speaker. See Bluetooth® Operation below.

Bluetooth® Stereo Link
Use this button (9) to link your speaker to second AQ™12 speaker. See Bluetooth® Operation below.

Bluetooth® Operation:
Pairing: To pair your Bluetooth® source to the speaker, use the following steps:
1. Press mode button (10) on the back of the speaker to make the speaker discoverable. The pairing LED should start blinking.
2. Go to your devices Bluetooth® screen and select the available Peavey speaker. Once paired, the pairing LED should light continuously.

Stereo Linking: To link two compatible Peavey AQ™ series speakers, use the following steps:
1. First, use the previous steps to pair your Bluetooth® device to the first speaker.
2. Press Pairing button (10) on the second speaker to turn the Bluetooth® on.
3. Press Stereo Link button (9) on both speakers. Once the connection has been made, the Stereo Link LED 's on both speakers should be on continuously.
4. To disconnect, press the Stereo Link button again on either speaker.

Difficulties Pairing or Linking Speakers
If you experience any difficulty in getting the Peavey speaker to pair with your Bluetooth® signal source device, make sure that it is not still paired to a different Bluetooth® signal source device that it was paired with earlier, one that is On, and within range of the AQ™12 speaker system. If such a condition exists, then Disconnect the Peavey speaker from the previous Bluetooth® signal source device, and then go through the relevant steps outlined above.

Bluetooth® Range Information
This is a Class 2 Bluetooth® device, and as such is designed to have a typical maximum range of approximately 10m (33 feet).
However, any intervening materials, such as walls, shelves, screens, people, or most anything made of a substantial amount of metal, can reduce and affect that range.

Disconnecting AC Power to the AQ™12
We recommend that the Power switch (3) be used to turn the unit off first, and then the AC power cord can be removed, this minimizes stress to the power amplifiers and the transducers from turn-off transients. The power switch has an arc suppression capacitor to help during turn-off, and tends to make a clean disconnect from the AC power, while the power cord IEC connector can make intermittent contact before finally becoming fully disconnected, e.g., as when wiggling the cord.

EQ Presets
There are a number of Factory defined Presets quickly available to the user via the Preset Selector Switch (13). Here is a listing of those Presets:

VOICE
ACOUSTIC
MONITOR
PRGM MUSIC
DJ
LIVE MUSIC

Here is a brief description of what each Preset does to the nominally flat response of the speaker system:

VOICE Preset
Filters out the low and high frequencies outside the normal voice bandwidth to reduce booming or sibilance, and provides a mild presence boost to help with intelligibility.

ACOUSTIC Preset
This Preset provides a nominally flat frequency response, within the limits of the systems drivers and nearby acoustic environment.

MONITOR Preset
Mild low-shelf cut to account for the floor location, mid-bass EQ to counter the floor bounce notch, and mild presence boost for vocals, very slight roll-off of extreme high frequencies to minimize hash.

PRGM MUSIC Preset
This Preset is intended for use with recorded music, with a mild bass-boost, a slight upper mid-bass emphasis for punch, and some high frequency boost with subsequent extreme high frequency taper off. Dynamic bass boost employed.

DJ Preset
Provides maximum bass boost, with some EQ for punch and presence, with some high frequency boost with subsequent extreme high frequency taper off.
Dynamic bass boost employed.

LIVE MUSIC Preset
Very mild bass boost, with mild EQ for punch and presence, with some high frequency boost with subsequent slight extreme high frequency taper off.
Dynamic bass boost employed.

Troubleshooting

No Output at All
First, make sure the unit has AC power and is turned ON. Make sure the LED on the power amp module is illuminated.

If not, make certain the ON/OFF switch (3) is in the ON position and check the IEC power cord connection (2) by ensuring it is fully engaged and seated. Make certain the AC line cord is plugged into a working AC outlet.

Once assured your unit is getting AC power, check that the AQ™12 is getting a signal. Temporarily disconnect the cable running to its inputs and connect it to some other device capable of reproducing the signal (i.e., a power amp and speaker). If this produces a signal, make sure that all Gain controls being used have been turned up to a satisfactory level (one-third to halfway).

If the AQ™12 has been subjected to direct sunlight or excessive heat, the built-in thermal protection may have been triggered. If so, turn off the AQ™12 and let it cool for a sufficient amount of time.

If there is still no output, contact your authorized Peavey dealer or the Peavey International Service Center.

Hum or Buzz
If the AQ™12 is producing a hum or buzz, this can be AC outlet related. Try plugging the AQ™12 into a different AC outlet. Sometimes, if a different
circuit (breaker) is used for the mixer and for the AQ™12, it can cause hum problems. Unless it is not practical, it is best to use the same wall outlet (breaker) to supply power to both the mixer and the powered speaker.

Ensure that shielded cables have been used to route the signal to the AQ™12's input. If speaker cables with 1/4" plugs are used as input cables instead of shielded cables, they will be prone to hum or buzz.

Hum may be ground loop related. It may be helpful to lift the shield ground (Pin #1) on a balanced cable at the AQ™12 end. Check any input changes carefully by first turning down the level control, before plugging and un-plugging cables, or lifting the shield ground at the speaker end.

Check to make sure light dimmers are not on the same circuit as the AQ™12, the mixer or any source devices. If light dimmers are used, then it may be necessary to turn them full ON or full OFF to eliminate or reduce hum. This is a typical AC wiring/light dimmer interference problem, not a design flaw of the AQ™12.

The third wire (ground plug) on the AC plug should NEVER be removed or broken off, as this is a potential safety hazard.

Distorted or Fuzzy Sound
First, ensure the mixer (signal source) is not clipping or being overdriven. Make sure the LEVEL control (4) on the AQ™12 has not been set too low. Check that the input plug is fully seated in the input jack on the rear panel of the AQ™12. Ensure that a power amp has not been plugged into the input jack of the AQ™12. If an extension cord is being used to provide the AC power to the unit, insure that it is of sufficient current capacity and that it is not also being used to supply power to any other device.

The AQ™12 has built-in EQ to smooth and extend the natural response of the speakers. If excessive additional bass boost or HF boost have been added externally to the PA™112, it could cause premature overload at high SPL. Reduce the amount of any external (mixer, rack) EQ and see if that clears up the distortion.

Finally, realize that even though the AQ™12 is a powerful and high output unit, it does ultimately have limits, and it may need additional powered units (or a subwoofer) to provide enough sound output or coverage. In this case, try turning the mixer levels down a little to see if that clears things up. If, after checking all the things listed to check and anything else you can think of to check safely, and the system still exhibits problems, carefully note all conditions and check with your Peavey dealer for advice.

Care and Maintenance
Your AQ™12 is a sturdy and durable product and will provide years of reliable use if properly cared for. Use common sense and read the safety warnings to avoid hazardous operating conditions.

The unit must be disconnected from the AC power source before any work is done on it. Refer all servicing to qualified service personnel.

Sunlight/Heat
Avoid prolonged exposure to direct sunlight, as this may cause the unit to overheat and thermally shut off. Excessively hot operating conditions can also cause a thermal shutdown.
Do not store in extremely hot or cold conditions or extremely high humidity. Always allow unit to come to room temperature before use.

Cleaning
Never clean the AQ™12 while plugged in or turned ON! When the unit has been fully disconnected from AC power sources, use a dry cloth to remove soil or other dirt. Never use strong solvents on the AQ™12, as they could damage the cabinet. Do not allow ANY fluids to drip inside the AQ™12.

Touchup
For an overall finish enhancement and protective coating, use gloves to apply a plastic finish protector, such as Armor-All® protectant or a similar product, to the surface of the plastic cabinet only. Note that the cabinet will be slippery after these treatments; rub them down vigorously with a dry, lint-free cloth to minimize this.

Check for Secure Hardware
After the first few weeks of use and periodically thereafter, check the hardware of the AQ™12 for tightness, including the rear panel screws and the screws that hold the baffle and rear cabinet together.
The unit is subject to a great deal of vibration, and this could cause them to loosen with use.

Architectural and Engineering Specifications
The powered loudspeaker system shall have a frequency response from 68 Hz to 19 kHz. The peak SPL with inaudible distortion shall reach 125 dB with music as a source, when measured at a distance of 1M and driven to full output capacity. The system shall utilize a 12" heavy-duty woofer and a
Peavey® DX™14 1.4" titanium diaphragm dynamic compression driver. The nominal radiation pattern shall be 110° in the horizontal plane, and 80° in the vertical plane. Axis of the vertical main polar lobe is angled down 10 degrees, resulting in the angular pattern with respect to straight ahead being +30, -50 degrees.

The powered, bi-amplified loudspeaker system shall have an input channel consisting of a medium impedance input connector consisting of one combo female XLR and 1/4" TRS phone jack on the rear panel. There shall also be a means to connect to the speaker system via Bluetooth®, and for the speaker system to be paired with another Bluetooth® capable speaker.

There shall be a Thru/Mix (output) connector consisting of a male XLR jack.
It can provide either a Thru signal or a Mixed signal via a push button selection.

The system power amplifiers shall have an unfiltered frequency response of 20 Hz to 20 kHz which deviates no more than +1, -3 dB up to rated power, hum and noise better than 90 dB below rated power, and THD and IMD typically of less than 0.7%.
The woofer amplifier shall be capable of 240W* sine wave power output into a 4 ohm nominal load, and the tweeter amplifier shall be capable of 120W* sine wave power output into a 8 ohm load, and both shall incorporate independent signal compression.
The input signal shall be electronically divided into high frequencies and low frequencies by a Linkwitz-Riley fourth order slope line-level crossover at 2.0 kHz. The low frequencies shall be processed to provide bass boost, subsonic filtering and overall response shaping, and the high frequencies shall be equalized for response-shaping.
The enclosure shall be constructed of injection-molded plastic with a UL flame rating, and reinforcing ribs internally. A handgrip shall be incorporated on each side near the woofer and towards the rear, and on the top rear edge of the cabinet.
A full-length powder-coated metal grille shall be provided for horn and woofer protection. The cabinet shall incorporate a pole mount for speaker stand use, four tall sturdy rubber feet for floor standing use.
The outside dimensions shall be: 28.3" (71.9 cm) tall x 16.8" (42.6 cm) wide x 15.0" (38.1 cm) deep, and the weight shall be 34 lbs. Power requirements shall be: 200 Watts nominal, 120 VAC, 50/60 Hz Domestic and 220-240 VAC, 50/60 Hz (Export). The loudspeaker system shall be called a Peavey® AQ™12
* Before DSP compression and limiting engages

Specifications

Frequency Response: 68 Hz to 19 kHz, +/- 6 dB, anechoic environment

Usable Low Frequency limit (-10 dB point anechoic): 55 Hz

Nominal sensitivity (1W @1M, swept sine input in anechoic environment):
95 dB (average)

Maximum Sound Pressure Gain (1 meter):
125 dB SPL peak with music

Radiation Angle measured at -6 dB point of polar response:
Nominal: 110 degrees horizontal X 80 degrees vertical
(Axis of the vertical main polar lobe is angled down 10 degrees, resulting in the angular pattern with respect to straight ahead being +30, -50 degrees)

Transducer Complement:
Heavy-duty 12" woofer with 2" voice coil & 44 oz. magnet
DX™14 1.4" titanium diaphragm dynamic compression driver

Box Tuning Frequency: 52 Hz

Electroacoustic crossover frequency: 1.9 kHz

Crossover type:
Internal Electronic DSP based two-way crossover with driver EQ, level matching, bass boost, limiting and sub-sonic filtering.

Crossover Slopes:
Linkwitz-Riley 24 dB/octave (4th order) low pass, 24dB/octave (fourth order) high pass, both with driver EQ incorporated.

Input Connections:
One combo female XLR / 1/4" phone jack providing balanced line-level operation from the 1 / 4" jack section, and the XLR section.
Bluetooth® input via wireless link, with pairing options.

Output Connections:
One male XLR jack. The Thru/Mix jack is intended for the use of linking multiple AQ™12's in a line or to provide a feed to a powered subwoofer, or other electronics that needs to receive a full range version of the input signal.
The Mix function converts this jack to provide a mixed signal of the input jack and the Bluetooth® source.

Enclosure Materials & Finish:
Black injection-molded plastic with textured surface, black powder-coated perforated full-coverage grille.

Mounting provisions:
Four rubber feet provide vibration free floor or stage use, and a molded-in stand mounting cup with industry standard 1 3/8" inside diameter for use with subwoofer poles and speaker stands is on the bottom. Unit is not designed to be flown overhead.

Overall Dimensions (H x W x D)
25.3"H x 14.38"W x 14.00"D
643 mm x 366 mm x 356 mm

Weight: 34 lbs. (15.4 kg)

ELECTRONICS AND AMPLIFIER SPECIFICATIONS:

Internal power amplifiers (@120 VAC line):
Total of 1000 watts peak dynamic power
Woofer - 670 watts peak dynamic power
Sine Wave Power: 240 watts @ less than 1% distortion*
Tweeter - 330 watts peak dynamic power
Sine Wave Power: 120 watts @ less than 1% distortion
* Before DSP compression and limiting engages

Electronic Input Impedance (Nominal):
Line: 4.5 k ohms balanced (XLR or 1/4")
Mic: 4.5 k ohms balanced (XLR) No phantom power available.

Input Sensitivity for Full Output (LEVEL full CW): 0.50 V RMS
(Switch in LINE position)

Input Overload Point (Switch in LINE position): +18 dBV

Infrasonic filter protection: 36 dB/octave roll-off

Nominal Amplifier Frequency Response: +1, -3 dB from 20 Hz to 20 kHz

Hum and Noise: Greater than 90 dB below rated power

THD and IM: Typically less than 0.7 %

Power requirements of Peavey AQ™12 System:
Nominal 200 Watts, 120 VAC 60 Hz

www.peavey.com

Warranty registration and information for U.S. customers available online at
www.peavey.com/warranty
or use the QR tag below

Features and specifications subject to change without notice.

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Logo referenced in Directive 2002/96/EC Annex IV
(OJ(L)37/38,13.02.03 and defined in EN 50419: 2005
The bar is the symbol for marking of new waste and
is applied only to equipment manufactured after
13 August 2005