WORKINGMAN'S SERIES

BASS COMBOS

OWNER'S MANUAL

INCLUDES:

WORKINGMAN'S 10
WORKINGMAN'S 12
WORKINGMAN'S 15

SWR • SCOTTSDALE, AZ • USA

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INTRODUCTION

Congratulations on your purchase of an SWR Workingman's Series bass combo. By choosing an SWR bass amplification system you have made a ***sound*** desicion that could very well be the best of your life!

Just a little humor there, but true nonetheless. For over 15 years we here at SWR have been putting everything we know about bass into the SWR product line. We've earned a reputation for designing and manufacturing gear that has changed the way bassists hear themselves. That's why you'll find our bass amps, cabinets, and combos on stages and in recording studios all over the world, and why you'll hear SWR on countless recordings, spanning all genres of music.

Inside this User Guide you'll find specifications, features, and usage suggestions for every Workingman's Series bass combo we make. New SWR user and seasoned user alike will benefit from reading through this brief but informative manual.

Thanks for choosing SWR for your bass amplification system.

Sincerely,

SWR

WORKINGMAN'S 10

80 watt, 1x10 combo amplifier with tweeter. A small yet powerful bass cube, extremely portable. The SWR Sound "to go."

Speaker Complement:

(1) Custom Designed 10" SWR driver
(1) Custom Designed Piezo tweeter

Power Output: 80 Watts RMS, 100 Watts RMS @ 4 Ohms (with 8 ohm extension speaker)

Impedance: 8 Ohms (internal)

Dimensions: 16.25" W x 14.5" H x 14" D

Weight: 32 lbs.

TOP PANEL FEATURES

INPUT JACK

This jack accepts any standard instrument cable that connects via 1/4" plugs. The Workingman's 10 Input Jack accomodates both passive and active instruments. The high input impedance assures perfect compatibility for all active/passive/magnetic and piezo pick-up systems.

VOLUME CONTROL

Turning the Volume Control clockwise or toward "Max" increases the volume of the Workingman's 10. Turning it counter-clockwise or toward "Min" decreases the volume. If the Volume Control is in the full counter-clockwise position, no sound will be audible.

Playing your Workingman's 10 at excessive volume can result in clipping of the power amplifier section. If you hear distortion through your speakers, decrease the setting of the Volume Control. Clipping will not harm the Workingman's 10 electronics, but can cause damage to the internal speaker components and is not recommended.

> **NOTE:** *Overdriving the Workingman's 10 for extended periods of time can activate the amplifier's thermal protection circuitry, resulting in temporary loss of output.*

If you require more volume than the Workingman's single 10" speaker can provide, we recommend adding an extension speaker cabinet with an impedance of ***no less*** than 8 ohms.

AURAL ENHANCER

The Aural Enhancer was developed to bring out the fundamental low notes of the bass, reduce certain frequencies that can "mask" fundamentals, and enhance the high-end transients. The effect becomes more pronounced as the control is turned up. The result is a more transparent sound. Listening to a passive bass with the control set all the way down, and then turning it all the way up, can be likened to listening to the bass suddenly becoming "active."

TONE CONTROL SECTION

The Workingman's 10 Tone Control section is a three-band set of level controls centered around the frequencies 80 Hz (bass), 800 Hz (mid range) and 5kHz (treble). Each control can cut or boost its band a maximum of 15dB. Each control has a flat (center click) position that defeats its function.
In this position, the tone controls are inactive.

For each tone control, rotating the knob counter-clockwise from the center "click" position will reduce or cut its designated frequency. Rotating the knob clockwise will boost its designated band or frequency.

Using the Tone Controls

To get the most out of the Tone Controls of your Workingman's 10, it would be best to first understand how the Aural Enhancer works, and how it interacts with the Bass, Midrange and Treble controls. Think of it as a variable tone curve, changing with its position. As you raise the control from "0," or the fully counterclockwise position, you are elevating the whole range of sound (lows, mids, and highs) at frequency points different than those selected for the individual Tone Controls. This remains true up to about the "2 o'clock" position, at which point the mids start to drop off. The curves involved here are gentle, as opposed to the very extreme curves you can create with the Tone Controls. Most significantly, the Aural Enhancer will raise the low end at a point lower than the Bass control itself.

For a typical 4-string bass, the Bass control itself will suffice. For the 5-string player, the Aural Enhancer will help bring out the fundamentals of your instrument (in the 30-60 Hz range). Discretion should be used when doing this without an extension cabinet. True low fundamentals (one of the sonic signatures of all SWR amplifiers) require lots of headroom and air motion. That's why we recommend that 5-string players use an extension cabinet to increase the power output of the amplifier and get more air moving.

Bass Control

The Bass control, as stated above, works in a range that will be useful under most "normal" conditions. Its musical use might be thought of as a "fatness" control. Leaving the Aural Enhancer in a position lower than 12 o'clock will not boost the extreme bottom so much as to make indistinct the working of the Bass control. The overall "punch" of your instrument, from your low E-string on up about two octaves (midway up the G-string), will be determined with this control. With passive instruments, this will be straightforward. With active instruments having bass-boost controls, more exploration will be worthwhile. (Some active tone circuits have boost-cut controls, while others have straight boost controls).

Mid Range Control

The Mid Range control operates in a crucial area for most instruments. Many basses, particularly those strung with roundwound strings, can have a very "honky" or nasal sound. Dropping the Mid Range control can go a long way toward smoothing out your tone. We suggest, though, that what sounds best when you're listening to your tone by yourself may not be what works best in a band or on a recording. Sometimes that objectionable quality may be just the right "hair" on your note to still have an audible presence in the track or on stage.

Treble Control

The Treble control operates in a tonal area that extends through and beyond the usual Treble control range. It may be thought of as a "transparency" control. Boosting the control will open up the sound of a dull instrument, particularly in conjunction with the piezo tweeter in the Workingman's 10. However, this is also the range of string rattle, finger slides, pickup clicks, etc. Again, we recommend you experiment with the control alone with your instrument while finding your tone, and listen again in a band context, both near to and away from the Workingman's 10. Qualities such as punch, fatness, presence and bite can be fairly well spread out. Treble, despite the broad dispersion of the piezo tweeter, is a very directional quality. Spend some time exploring what you hear in this area as you move around.

EFFECTS BLEND

The Effects Blend control mixes the signal coming from your instrument with the sound coming from your effect. With the Blend control fully counterclockwise, no signal from your effect will be heard. As you turn

this control clockwise, more of the effect can be heard in the overall sound. When the Blend control is fully clockwise, no dry or unaffected signal is heard other than the output of your effect device.

This type of control and patching arrangement is very effective in reducing noise caused by effects devices and in maintaining a more natural sound. If your effects device has a similar control, we suggest leaving it set to its maximum effect/minimum dry signal position and using the Effects Blend control for this function. Please read the "Effects Loop" section for more information.

POWER SWITCH

Pressing the Power Switch to the ON position activates the Workingman's 10 electronics as indicated by the LED above the switch.

REAR PANEL FEATURES

TO TUNER

The To Tuner send jack allows the user to connect their instrument tuner to the Workingman's 10 without having to unplug and go back and forth from amp to tuner to amp. This feature is isolated from the rest of the circuitry and no other controls other than your instrument have an effect on it. Being on an isolated sidechain also avoids loading down of the instrument, which can cause a loss in dynamic range.

To use this feature, plug in a shielded patch cord from this jack to the INPUT of your tuning device. Turn the amp on and you're ready to go. If you don't want to monitor your sound while tuning, turn down the Volume control or position the selector switch on the back panel to the "headphones only" (middle) position.

EFFECTS LOOP

The Effects Loop is located POST EQ in the signal path. The level appearing at the Send jack is controlled by the Volume control on the front panel. If you are getting too hot a signal to the input of your effect, reduce the level of the Volume control. By using the Volume and Effects Blend controls, optimum performance should be easily obtainable with any effects device.

The Effects Loop is designed as a "sidechain" (parallel) function similar to those found on mixing consoles. Use of the Effects Loop should greatly reduce noise generated by effects devices (as compared to in-line effects loops). Additional features of this type of loop can be found below under "Receive Jack."

Send Jack

Run a shielded patch cable from the Send jack to the input of your effects device. This jack may be used as an additional line level output, in which case its level is determined by the setting of the Volume control.

Receive Jack

Run a shielded patch cable from the output of your effects device to the Receive jack.

One unique feature of the Receive jack is the ability to practice along with pre-recorded music. Insert a sound source into the Receive jack (make sure it is a mono source). Use the Effects Blend control to mix the level of the recorded music with your instrument's level. The combined signal will be heard through the internal speakers or your headphones. The send jack is not used.

NOTE: *Inserting a plug into the Receive jack activates the Effects Blend control by receiving a "command" through the ground created. Therefore, only a mono (2-conductor) phone plug should be*

used. If you have a stereo (3-conductor) plug only, tie the ring and the sleeve (ground) together.

If you are not getting any "effect" through the speakers, check the position of the Effects Blend control.

EXTENSION SPEAKER JACK

Use an unshielded 2-conductor cable (NOT A GUITAR CORD!) to connect an additional speaker cabinet. Use a high quality, heavy gauge cable of at least 18 gauge (the lower the gauge, the heavier the cable). The impedance of the speaker should be 8 ohms or greater. If you wish to connect two additional cabinets be sure their combined impedance is not less than 8 ohms (equivalent to two 16 ohm speaker cabinets in parallel).

Recommended speaker cabs from SWR are: *Workingman's 1X10T, Workingman's 1X15T, Workingman's 2X10T, Workingman's 4X10T.*

STEREO HEADPHONES JACK

By inserting a set of stereo headphones into this jack you will be able to monitor your sound or practice without disturbing your neighbors. The headphone volume level is adjusted by the Volume control. We suggest you begin with the Volume off (fully counterclockwise), then slowly bring the volume up to your desired level. If you hear some distortion in your headphones that is not present with the speakers on, turn down the volume—you are overdriving your headphones and could ruin them.

Any impedance stereo headphones will work. However, optimum impedance is 75 ohms.

THREE WAY SELECTOR SWITCH

The top position, labeled **Full Range**, activates both the tweeter and the 10" woofer in the WorkingMan's 10, as well as the extension speaker jack. This position is the most typical setting.

The middle position, labeled **Headphones Only**, disconnects the signal going to the internal speakers and extension speaker jack. Use this position when listening with heaphones only or for silent tuning (refer to To Tuner section). The Headphones jack is always active regardless of the switch's position.

The bottom position, labeled **Horn Off**, disconnects the tweeter located in the upper right hand corner of the speaker cabinet. It will not affect the 10" woofer, headphones or any extension cabinet. If you prefer a "darker" sound or are getting a lot of fret buzz, clicks, or pick or finger noise, you may want to use this position.

BALANCED DIRECT RECORD OUT

The Balanced XLR output is a true balanced output. No front panel controls affect its signal. The tone and output level are controlled only by the instrument plugged into one of the input jacks. To use this feature, run an XLR (Cannon) cable from the Balanced D.I. to the input of a tape machine, mixing console, etc. This output is also suitable for sending a signal to a house mixer in live situations.

Wiring for the XLR connector is as follows: Pin 1 = ground, Pin 2 = +, Pin 3 = –. (American standard)

NOTE: *Do not apply phantom power (48V supply) to this output. Doing so may damage the internal circuitry.*

A/C LINE FUSE

The line fuse can open (blow) due to power surges or high powerline transients. This fuse will also open in the event of an electronics failure inside your amplifier. Correct size and rating of the Line (Mains) fuse: 3AG, 2 amp slo-blow for 120V operation (North America), and 1 amp slo-blo for 240V operation.

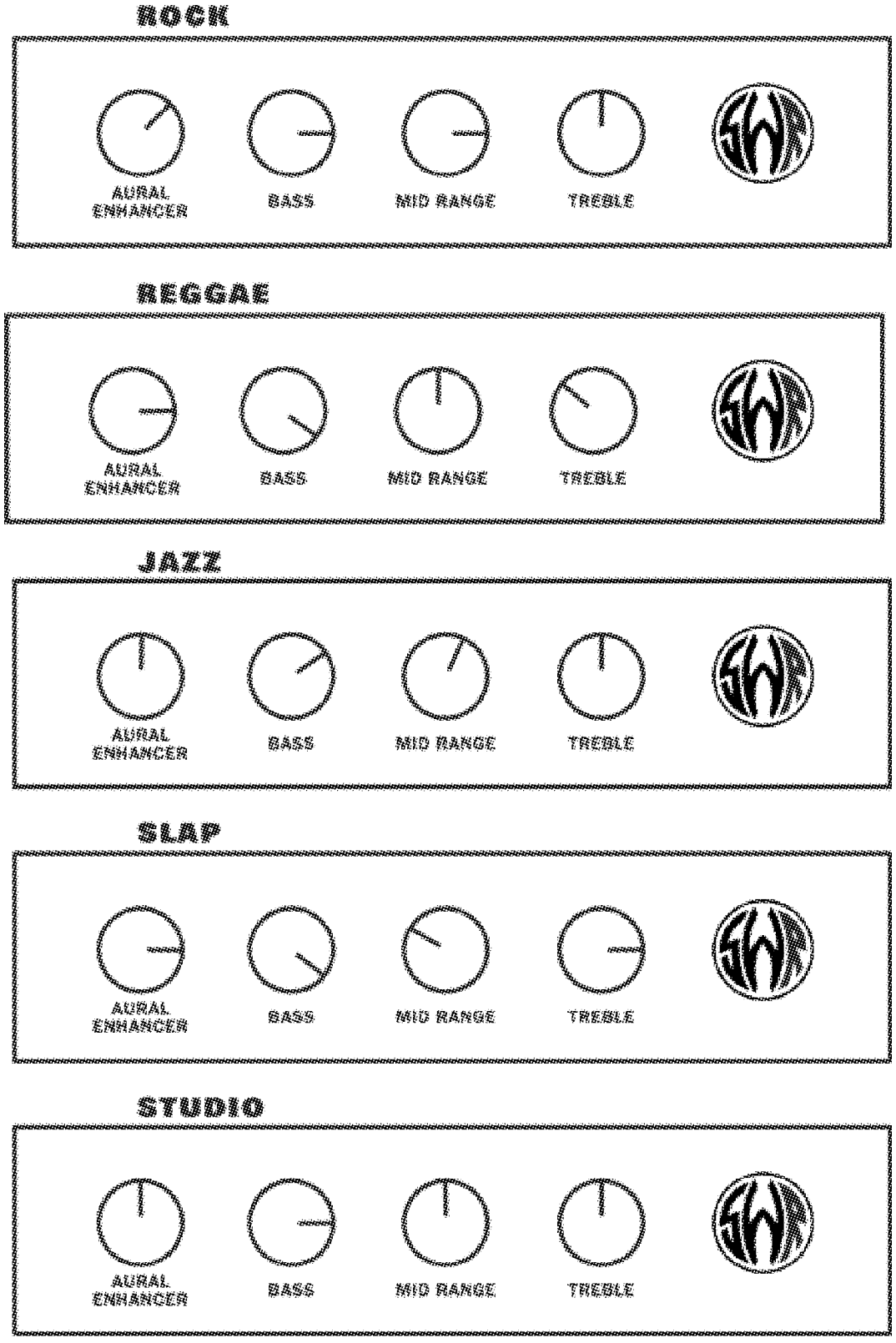
A/C LINE CORD RECEPTACLE

Accepts a standard A/C power cable (supplied with the Workingman's 10 in the United States), used with almost all current musical, professional and household electronic devices. If it becomes misplaced,

replacement will be easy at almost any computer, electronics or pro audio store.

NOTE: *The rating for this cable is 3-conductor, 10 amperes. This is a rating of the current capacity of the cable, designated for higher power-drawing devices like amplifiers. If replacement is necessary, or if you wish to buy a longer cable, look for the rating on the cable and be sure it is at least 10 amps.*

Suggested Settings



WORKINGMAN'S 12

120 watt, 1x12 combo amplifier with tweeter. A little powerhouse. Great for both electric and upright basses.

Speaker Complement:

(1) Custom Designed 12" SWR driver
(1) Custom Designed Piezo tweeter

Power Output: 120 Watts RMS, 160 Watts RMS @ 4 Ohms (with 8 ohm extension speaker)

Impedance: 8 Ohms (internal)

Dimensions: 15.5" W x 22.25" H x 15.25" D

Weight: 47 lbs.

FRONT PANEL FEATURES

BALANCED DIRECT RECORD OUT

The Balanced XLR output is a true balanced output. No front panel controls affect its signal. The tone and output level are controlled only by the instrument plugged into one of the input jacks. To use this feature, run an XLR (Cannon) cable from the Balanced D.I. to the input of a tape machine, mixing console, etc. This output is also suitable for sending a signal to a house mixer in live situations.

Wiring for the XLR connector is as follows: Pin 1 = ground, Pin 2 = +, Pin 3 = –. (American standard)

TO TUNER

The To Tuner send jack allows the user to connect their instrument tuner to the Workingman's 12 without having to unplug and go back and forth from amp to tuner to amp. Like the Balanced D.I. output, this feature is isolated from the rest of the circuitry and no other controls other than your instrument have an affect on this feature. Being on an isolated sidechain also avoids loading down of the instrument, which can cause a loss in dynamic range.

To use this feature, plug in a shielded patch cord from this jack to the INPUT of your tuning device. Turn the amp on and you're ready to go. If you don't want to monitor your sound while tuning, turn down the Master Volume control or position the selector switch on the back panel to the "headphones" (middle) position.

INPUT JACKS

Two separate and independent input jacks are provided so that the best signal-to-noise ratio can be obtained without overloading the preamp section. The Passive input has over twice the gain than that of the Active input. Both inputs can be used simultaneously without affecting the volume or tone of the other. One use of these inputs would be to plug your bass into the Passive input and practice along with a drum machine by plugging it into the Active input. A more detailed explanation of these inputs follows.

Passive Input

This input can and should be used if your instrument has passive electronics (no built-in preamp). Some pickups employ batteries for operation and will work perfectly using this input. Technically speaking, this input should be used if your instrument has an output voltage of 1 volt RMS or LESS. Consult the owner's manual that came with your instrument or ask the manufacturer if you are unsure.

NOTE: *Generally speaking, you should try the Passive input jack first. If you hear a small amount of distortion and the Preamp Clip LED is not activated, try using the Active input jack. Some passive*

pickups DO distort. Because of the hi-fi nature of all SWR products, even the smallest amount of distortion originating at the source (instrument) may be heard.

Active Input

The Active input jack should be used with instruments having a built-in (on-board) preamp that will produce signals over 1 volt RMS. Some really "hot" pickups installed in your instrument may find the Active input more compatible. The best judge is your own ears.

NOTE: *Using the Active input with passive basses may result in a loss of high-end transients. Players who roll off their high-end starting at around 2k to 3kHz may find this input more to their liking.*

If your hear some distortion from your active bass and are using the Active input jack, check your battery. Also, make sure the Preamp Clip LED is not lighting.

PREAMP CLIP LED

The Preamp Clip LED will light whenever the Preamp, Tone section or output buffer reach clipping (that is, run out of headroom). In the event the Preamp Clip LED lights, turn down the Gain control. Since the Preamp Clip also monitors the Tone section, boosting any one of the tone controls can cause the LED to activate. Again, turn down the Gain control if this happens.

NOTE: *Constant clipping of the preamp will not harm the electronics in your Workingman's 12. However, damage can occur to speakers due to near-DC content present in a clipped waveform.*

GAIN CONTROL

The Gain control adjusts the volume of the preamp section. After the Tone controls, Aural Enhancer and any effects you may be using have been set to your liking, the Gain control should be set to where the Preamp Clip LED barely flashes upon hitting your loudest note. After setting the Gain, use the Master Volume to set the desired volume level. Using these controls in this manner assures the maximum signal-to-noise ratio with no distortion caused by the preamp circuits clipping. Since the Gain control is similar to a "pad," a small amount of signal will get through with the Gain control turned all the way down. The Gain also adjusts the level sent to the Effects send jack. If your effect is being overdriven, turn down the Gain control.

TONE CONTROL SECTION

The Workingman's 12 Tone Control section is a three-band set of level controls centered around the frequencies 80 Hz (Bass), 800 Hz (Mid Range) and 5kHz (Treble). Each control can cut or boost its band a maximum of 15dB. Each control has a flat (center "click") position that defeats its function. In this position, the tone controls are inactive.

For each tone control, rotating the knob counter-clockwise from the center "click" position will cut (reduce) its designated frequency. Rotating the knob clockwise will boost its designated band or frequency.

Using the Tone Controls

To get the most out of the Tone Controls of your Workingman's 12, it would be best to first understand how the Aural Enhancer works, and how it interacts with the Bass, Mid Range and Treble controls. Think of it as a variable tone curve, changing with its position. As you raise the Aural Enhancer from "0," or its fully counterclockwise position, you are elevating the whole range of sound (lows, mids, and highs) at frequency points different than those selected for the individual Tone Controls. This remains true up to about the "2 o'clock" position, at which point the mids start to drop off. The curves involved here are gentle, as opposed to the very extreme curves you can create with the Tone Controls.

Most significantly, the Aural Enhancer will raise the low end at a point lower than the Bass control itself. For a typical 4-string bass, the Bass control itself will suffice. For the 5-string player, the Aural Enhancer will help bring out the fundamentals of the instrument, in the 30-60 Hz range. Discretion should be used when doing this without an extension cabinet. True low fundamentals (one of the sonic signatures of all SWR amplifiers) require lots of headroom and air motion. That's why we recommend that 5-string players use an extension cabinet to increase the power output of the amplifier and get more air moving.

Bass Control

The Bass control, as stated above, works in a range that will be useful under most "normal" conditions. Its musical use might be thought of as a "fatness" control. Leaving the Aural Enhancer in a position lower than 12 o'clock will not boost the extreme bottom so much as to make indistinct the effect of the Bass control. The overall "punch" of your instrument, from your low E-string on up about two octaves (midway up the G- string), will be determined with this control. With passive instruments, this will be straightforward. With active instruments having bass-boost controls more exploration will be worthwhile. (Some active tone circuits have boost/cut controls, while others have straight boost controls).

Mid Range Control

The Mid Range control operates in a crucial area for most instruments. Many basses, particularly those strung with roundwound strings, can have a very "honky" or nasal sound. Dropping the Mid Range control can go a long way toward smoothing out your tone. We suggest, though, that what sounds best when your listening to your tone by yourself may not be what works best in a band or recording. Sometimes that objectionable quality may be just the right "hair" on your note to still have an audible presence in the track or on stage.

Treble Control

The Treble control operates in a tonal area that extends through and beyond the usual Treble control range. It may be thought of as a "transparency" control. Boosting the control will open up the sound of a dull instrument, particularly in conjunction with the piezo tweeter. However, this is also the range of string rattle, finger slides, pickup clicks, etc. Again, we recommend you experiment with the control alone with your instrument, and listen again in a band context, both near to and away from the WorkingMan's 12. Qualities like punch, fatness, presence and bite can be fairly well spread out. Treble, despite the broad dispersion of the piezo tweeter, is a very directional quality. Spend some time exploring what you can hear in this area as you move around.

AURAL ENHANCER

The Aural Enhancer was developed to bring out the fundamental low notes of the bass, reduce certain frequencies that can "mask" fundamentals and enhance the high-end transients. The effect becomes more pronounced as the control is turned up. The result is a more transparent sound. Listening to a passive bass with the control set all the way down, and then turning it all the way up, can be likened to listening to the bass suddenly become "active."

EFFECTS BLEND CONTROL

The Effects Blend control mixes the signal coming from your instrument with the sound coming from your effect. With the Blend control fully counter-clockwise, no signal from your effect will be heard. As you turn this control clockwise, more of the effect can be heard in the overall sound. When the Blend control is fully clockwise, no dry or unaffected signal is heard other than the output of your effect device.

This type of control and patching arrangement is very effective in reducing noise caused by effects devices and in maintaining a more natural sound. If your effects device has a similar control, we suggest leaving it set to its maximum effect/minimum dry signal position and using the Effects Blend control for this function. Please read the "Effects Loop" section for more information.

MASTER VOLUME

The Master Volume control adjusts the signal level going to the power amplifier. It DOES NOT control the output of the effects send jack or Balanced Direct Record XLR output. It DOES affect the output of the internal speakers, headphones, and extension speaker jack. Losses caused by effects units can be recovered by increasing the Master Volume.

NOTE: *If you need more volume than the Workingman's single 12" can provide, add an extension speaker cabinet. The extension cabinet should have an impedance of 8 ohms or greater.*

LIMITER CIRCUIT

The Workingman's 12 Limiter Circuit is a soft knee type limiter that prevents distortion of attack transients or peaks. The Limiter can be used as an effect and is also helpful in preventing speaker damage. The circuit is located after (post) the master volume and before (pre) the power amplifier; it is driven by the Master Volume control. Its threshold (starting point) is preset by the factory so that the user can get maximum overall apparent volume without unduly overdriving the power amplifier.

LIMITER LED

The Limiter LED lights when your signal has reached the Limiter threshold, letting you know that the Limiter circuit has been activated.

NOTE: *No harm is being done to your amplifier when this LED lights or stays lit.*

POWER SWITCH

Pressing the Power Switch to the ON position activates the Workingman's electronics as indicated by the red LED above the switch.

REAR PANEL FEATURES

EFFECTS LOOP

The Effects Loop is located POST EQ and PRE Master Volume in the signal path. The level appearing at the Send jack is controlled by the Gain control on the front panel. If you are getting too hot a signal to the input of your effect, reduce the level of the Gain control and raise the level of your Master Volume control to retain similar overall volume levels. By using the Gain, Master Volume and Effects Blend controls, optimum performance should be easily obtainable with any effects device.

The Effects Loop is designed as a "sidechain" (parallel) function similar to those found on mixing consoles. Use of the Effects Loop should greatly reduce noise generated by effects devices (as compared to in-line effects loops). Additional features of this type of loop can be found below under the "Receive Jack" section.

Send Jack

Run a shielded patch cable from the Send jack to the input of your effects device. This jack may be used as an additional line level output, in which case its level is determined by the setting of the Gain control.

Receive Jack

Run a shielded patch cable from the output of your effects device to the Receive jack.

One unique feature of the Receive jack is the ability to practice along with pre-recorded music. Insert a sound source into the Receive jack (make sure it is a mono source). Use the Effects Blend control to mix the level of the recorded music with your instrument's level. The combined signal will be heard through the internal speakers or your headphones. The send jack is not used.

> **NOTE:** *Inserting a plug into the Receive jack activates the Effects Blend control by receiving a "command" through the ground created. Therefore, only a mono (2-conductor) phone plug should be used. If you have a stereo (3-conductor) plug only, tie the ring and the sleeve (ground) together.*

If you are not getting any "effect" through the speakers, check the position of the Effects Blend control.

EXTENSION SPEAKER JACK

Use an unshielded 2-conductor cable (NOT A GUITAR CORD!) to connect an additional speaker cabinet. Use a high quality, heavy gauge cable of at least 18 gauge (the lower the gauge, the heavier the cable). The impedance of the speaker should be 8 Ohms or greater. If you wish to connect two additional cabinets be sure their combined impedance is not less than 8 ohms (equivalent to two 16 ohm speaker cabinets in parallel).

> **Recommended speaker cabs from SWR are:** *Workingman's 1X10T, Workingman's 1X15T, Workingman's 2X10T, Workingman's 4X10T, Son Of Bertha, Goliath III and Big Ben.*

STEREO HEADPHONES JACK

By inserting a set of stereo headphones into this jack you will be able to monitor your sound or practice without disturbing your neighbors. The headphone volume level is adjusted by the Master Volume. We suggest you begin with the Master Volume off (fully counterclockwise), then slowly bring the volume up to your desired level. If you hear some distortion in your headphones that is not present with the speakers on, turn down the volume—you are overdriving your headphones and could ruin them.

Any impedance stereo headphones will work. However, optimum impedance is 75 ohms.

THREE WAY SELECTOR SWITCH

The top position, labeled **Full Range**, activates both the tweeter and the 12" woofer in the Workingman's 12, as well as the extension speaker jack. This position is the most typical setting.

The middle position, labeled **Headphones Only**, disconnects the signal going to the internal speakers and extension speaker jack. Use this position when listening with heaphones only or for silent tuning (refer to To Tuner section). The Headphones jack is always active regardless of the switch's position.

The bottom position, labeled **Horn Off**, disconnects the tweeter located in the upper right hand corner of the speaker cabinet. It will not affect the 12" woofer, headphones or any extension cabinet. If you prefer a "darker" sound or are getting a lot of fret buzz, clicks, or pick or finger noise, you may want to use this position.

A/C LINE FUSE

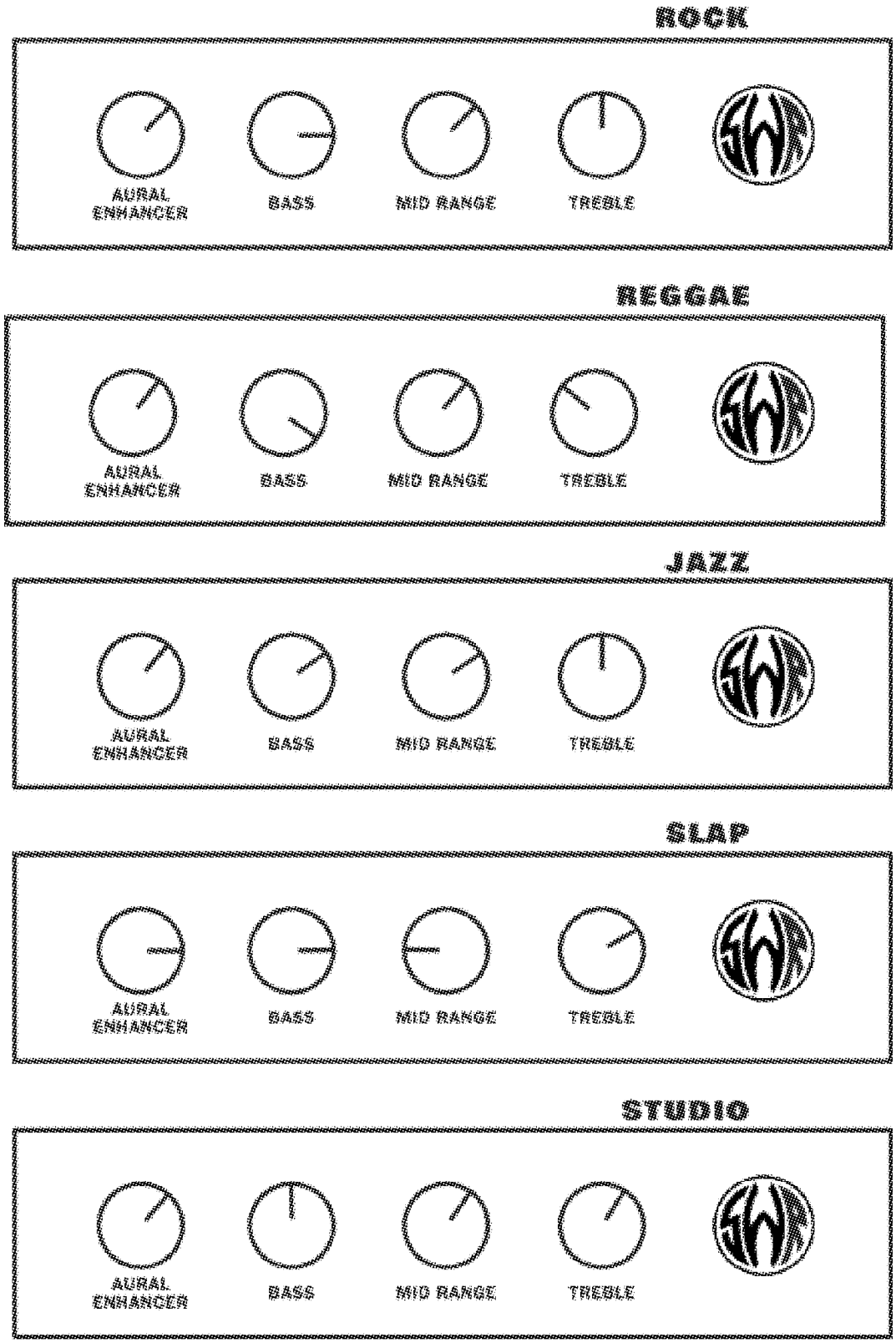
The line fuse can open (blow) due to power surges or high powerline transients. This fuse will also open in the event of an electronics failure inside your amplifier. Correct size and rating of the Line (Mains) fuse: 3AG, 3 amp slo-blow for 120V operation (North America), and 1 1/2 amp slo-blo for 240V operation.

A/C LINE CORD RECEPTACLE

Accepts a standard A/C power cable (supplied with the Workingman's 12 in the United States), used with almost all current musical, professional and household electronic devices. If it becomes misplaced, replacement will be easy at almost any computer, electronics, or pro audio store.

> **NOTE:** *The rating for this cable is 3-conductor, 10 amperes. This is a rating of the current capacity of the cable, designated for higher power-drawing devices like amplifiers. If replacement is necessary, or if you wish to buy a longer cable, look for the rating on the cable and be sure it is at least 10 amps.*

Suggested Settings



WORKINGMAN'S 15

200 watt, 1x15 combo amplifier with tweeter. Perfect for small to medium size gigs. Lightweight!

Speaker Complement:

(1) Custom Designed 15" SWR driver
(1) Custom Designed Piezo tweeter

Power Output: 160 Watts RMS, 200 Watts RMS @ 4 Ohms (with 8 ohm extension speaker)

Impedance: 8 Ohms (internal)

Dimensions: 20.75" W x 27.625" H x 16.25" D

Weight: 55 lbs.

FRONT PANEL FEATURES

BALANCED DIRECT RECORD OUT

The Balanced XLR output is a true balanced output. No front panel controls affect its signal. The tone and output level are controlled only by the instrument plugged into one of the input jacks. To use this feature, run an XLR (Cannon) cable from the Balanced D.I. to the input of a tape machine, mixing console, etc. This output is also suitable for sending a signal to a house mixer in live situations.

Wiring for the XLR connector is as follows: Pin 1 = ground, Pin 2 = +, Pin 3 = –. (American standard)

TO TUNER

The To Tuner send jack allows the user to connect their instrument tuner to the Workingman's 15 without having to unplug and go back and forth from amp to tuner to amp. Like the Balanced D.I. output, this feature is isolated from the rest of the circuitry and no other controls other than your instrument have an affect on it. Being on a sidechain (isolated) also avoids loading down of the instrument, which can cause a loss in dynamic range.

To use this feature, plug in a shielded patch cord from this jack to the INPUT of your tuning device. Turn the amp on and you're ready to go. If you don't want to monitor your sound while tuning, turn down the Master Volume control or position the selector switch on the front panel to the "headphones" (middle) position.

INPUT JACKS

Two separate and independent input jacks are provided so that the best signal-to-noise ratio can be obtained without overloading the preamp section. The Passive input has over twice the gain than that of the Active input. Both inputs can be used simultaneously without affecting the volume or tone of the other. One use of these inputs would be to plug your bass into the Passive input and practice along with a drum machine by plugging it into the Active input. A more detailed explanation of these inputs follows.

Passive Input

This input can and should be used if your instrument has passive electronics (no built-in preamp). Technically speaking, this input should be used if your instrument has an output voltage of 1 volt RMS or LESS. Consult the owner's manual that came with your instrument or ask the manufacturer if you are unsure.

NOTE: *Generally speaking, you should try the Passive input jack first. If you hear a small amount of distortion and the Preamp Clip LED is not activated, try using the Active input jack. And please note, some passive pickups DO distort. Because of the hi-fi nature of all SWR products, even the smallest amount of distortion originating at the source (instrument) may be heard.*

Active Input

The Active input jack should be used with instruments having a built-in (on-board) preamp that will produce signals over 1 volt RMS. Some really "hot" pickups installed in your instrument may find the Active input more compatible. The best judge is your own ears.

NOTE: *Using the Active input with passive basses may result in a loss of high-end transients. Players who roll off their high-end starting at around 2kto 3kHz may find this input more to their liking.*

If your hear some distortion from your active bass and are using the Active input jack, check your battery. Also, make sure the Preamp Clip LED is not lighting.

PREAMP CLIP LED

The Preamp Clip LED will light whenever the Preamp, Tone section or output buffer reach clipping (that is, run out of headroom). In the event the Preamp clip indicator lights, turn down the Gain control. Since the Preamp Clip also monitors the Tone section, boosting any one of the tone controls can cause the LED to activate. Again, turn down the Gain control if this happens.

NOTE: *Constant clipping of the preamp will not harm the electronics in your Workingman's 15. However, damage can occur to speakers due to near-DC content present in a clipped waveform.*

GAIN CONTROL

The gain control adjusts the volume of the preamp section. After the Tone controls, Aural Enhancer and any effects you may be using have been set to your liking, the Gain control should be set to where the Preamp Clip LED barely flashes upon hitting your loudest note. After setting the Gain, use the Master Volume to set the desired volume level. Using these controls in this manner assures the maximum signal-to-noise ratio with no distortion caused by the preamp circuits clipping. Since the Gain control is similar to a "pad," a small amount of signal will get through with the Gain control turned all the way down. The Gain also adjusts the level sent to the Effects send jack. If your effect is being overdriven, turn down the Gain control.

TONE CONTROL SECTION

The Workingman's 15 Tone Control section is a three-band set of level controls. The Bass and Treble controls are centered around the frequencies 80 Hz (Bass), and 5kHz (Treble). The Mid Range controls comprise a level control and a frequency control knob.

Each control (except Mid Frequency) can cut or boost its band a maximum of 15dB. Each control has a flat ("center click") position that defeats its function. In this position, the tone controls are inactive.

For each tone control (except Mid Frequency), rotating the knob counter-clockwise from the center click position will reduce or cut its designated frequency. Rotating the knob clockwise will boost its designated band or frequency.

Using the Tone Controls

To get the most out of the Tone Controls of your Workingman's 15, it would be best to first understand how the Aural Enhancer works, and how it interacts with the bass, mid range and treble controls. Think of it as a variable tone curve, changing with its position. As you raise the control from its "0," or fully

counterclockwise position, you are elevating the whole range of sound (lows, mids, and highs) at frequency points different than those selected for the individual Tone Controls. This remains true up to about the "2 o'clock" position, at which point the mids start to drop off. The curves involved here are gentle, as opposed to the very extreme curves you can create with the Tone Controls.

Most significantly, the Aural Enhancer will raise the low end at a point lower than the Bass control itself. For a typical 4-string bass, the Bass control itself will suffice. For the 5-string player, the Aural Enhancer will help bring out the fundamentals of your instrument, in the 30-60 Hz range. Discretion should be used when doing this without an extension cabinet. True low fundamentals (one of the sonic signatures of all SWR amplifiers) require lots of headroom and air motion. It is for this reason that we recommend that 5-string players use an extension cabinet to increase the power output of the amplifier and get more air moving.

Bass Control

The Bass control, as stated above, works in a range that will be useful under most "normal" conditions. Its musical use might be thought of as a "fatness" control. Leaving the Aural Enhancer in a position lower than 12 o'clock will not boost the extreme bottom so much as to make indistinct the effect of the Bass control. The overall "punch" of your instrument, from your low E-string on up about two octaves (midway up the G- string), will be determined with this control. With passive instruments, this will be straightforward. With active instruments having bass-boost controls more exploration will be worthwhile. (Some active tone circuits have boost/cut controls, while others have straight boost controls).

Mid Range Controls

The Mid Range controls operate in a crucial area for most instruments. The Mid Level control cuts or boosts the frequency, which is set by the Mid Frequency control. Starting at mid-position, turning the Mid Level control counter clockwise cuts the frequency determined by the Mid Frequency control. Turning the Mid Level control clockwise boosts the frequency determined by the Mid Frequency control.

Many basses, particularly those strung with roundwound strings, can have a very "honky" or nasal sound. Adjustments made with the Mid Range controls can go a long way toward smoothing out your tone. We suggest, though, that what sounds best when your listening to your tone by yourself may not be what works best in a band or recording. Sometimes that objectionable quality may be just the right "hair" on your note to still have an audible presence in the track or on stage.

> **NOTE:** *When the level control is set at the "center click" (mid) position, turning the frequency control will have no effect on the sound.*

To find the mid range area you are looking for:

1. Adjust the Mid Level control to the full boost or cut position.
2. Rotate the Mid Frequency control until the desired area you wish to cut or boost is found.
3. Adjust the Mid Level control to the desired amount of cut or boost for the frequency you have selected.

The Mid Frequency control sets the area that is to be cut or boosted by the Mid Level function. If the Level control is set at mid-position, turning the Frequency knob will have NO affect.

Some hints: If you need to "cut through" the band a little more, try boosting 200 to 400 Hz. If you like a more transparent sound, try cutting at 800 Hz. The midrange area is especially useful in controlling fretless basses and their inherent qualities.

Treble Control

The Treble control operates in a tonal area that extends through and beyond the usual Treble control range. It may be thought of as a "transparency" control. Boosting the control will open up the sound of a dull instrument, particularly in conjunction with the piezo tweeter in the Workingman's 15. However, this is also the range of string rattle, finger slides, pickup clicks, etc. Again, we recommend you experiment with the control alone with your instrument while finding your tone, and listen again in a band context, both near to and away from the Workingman's 15. Qualities such as punch, fatness, presence and bite can be fairly well spread out. Treble, despite the broad dispersion of the piezo tweeter, is a very directional quality. Spend some time exploring what you can hear in this area as you move around.

Transparency Control

The Transparency control is a shelving type tone control that cuts or boosts the high frequencies a full octave above the treble function. Shelving point for this control is about 5 kHz.

AURAL ENHANCER

The Aural Enhancer was developed to bring out the fundamental low notes of the bass, reduce certain frequencies that can "mask" fundamentals, and enhance the high-end transients. The effect becomes more pronounced as the control is turned up. The result is a more transparent sound. Listening to a passive bass with the control set all the way down, and then turning it all the way up, can be likened to listening to the bass suddenly become "active."

EFFECTS BLEND CONTROL

The Effects Blend control mixes the signal coming from your instrument with the sound coming from your effect. With the Blend control fully counter-clockwise, no signal from your effect will be heard. As you turn this control clockwise, more of the effect can be heard in the overall sound. When the Blend control is fully clockwise, no dry or unaffected signal is heard other than the output of the effect device.

This type of control and patching arrangement is very effective in reducing noise caused by effects devices and in maintaining a more natural sound. If your effects device has a similar control, we suggest leaving it set to its maximum effect/minimum dry signal position and using the Effects Blend control for this function. Please read the "Effects Loop" section for more information.

LIMITER DEFEAT SWITCH

Pulling out the Effects Blend knob until a click is felt deactivates the Internal limiter circuit. Pushing the control back in, activates the circuit.

MASTER VOLUME

The Master Volume adjusts the signal level going to the power amplifier. It DOES NOT control the output of the effects send jack or Balanced Direct Record XLR output. It DOES affect the output of the internal speakers, headphones, and extension speaker jack. Losses caused by effects units can be recovered by increasing the Master Volume.

> **NOTE:** *If you need more volume than the Workingman's single 15" can provide, add an extension speaker cabinet. The extension cabinet should have an impedance of no less than 8 ohms.*

LIMITER CIRCUIT

The Workingman's 15 Limiter Circuit is a soft knee type limiter that prevents distortion of attack transients or peaks. The Limiter can be used as an effect and is also helpful in preventing speaker damage. The circuit is located after (post) the master volume and before (pre) the power amplifier; it is driven by the Master Volume Control. Its threshold (starting point) is preset by the factory so that the user can get maximum overall apparent volume without unduly overdriving the power amplifier.

LIMITER LED

The Limiter LED lights when your signal has reached the Limiter threshold, letting you know that the Limiter circuit has been activated.

NOTE: *No harm is being done to your amplifier when this LED lights or stays lit.*

THREE WAY SELECTOR SWITCH

The top position, labeled **Full Range**, activates both the tweeter and the 15" woofer in the Workingman's 15, as well as the extension speaker jack. This position is the most typical setting.

The middle position, labeled **Headphones Only**, disconnects the signal going to the internal speakers and extension speaker jack. Use this position when listening with heaphones only or for silent tuning (refer to To Tuner section). The Headphones jack is always active regardless of the switch's position.

The bottom position, labeled **Horn Off**, disconnects the tweeter located in the upper right hand corner of the speaker cabinet. It will not affect the 15" woofer, headphones or any extension cabinet. If you prefer a "darker" sound or are getting a lot of fret buzz, clicks, or pick or finger noise, you may want to use this position.

STEREO HEADPHONES JACK

By inserting a set of stereo headphones into this jack you will be able to monitor your sound or practice without disturbing your neighbors. The headphone volume level is adjusted by the Master Volume. We suggest you begin with the Master Volume off (fully counter-clockwise), then slowly bring up the volume to the desired level. If you hear some distortion in your headphones that is not present with the speakers on, turn down the volume—you are probably overdriving your heaphones and could ruin them.

Any impedance headphones will work. However, optimum impedance is 75 ohms.

POWER SWITCH

Pressing the Power Switch to the ON position activates the Workingman's 15 electronics as indicated by the LED above the switch.

REAR PANEL FEATURES

EFFECTS LOOP

The Effects Loop is located POST EQ and PRE Master Volume in the signal path. The level appearing at the Send jack is controlled by the Gain control on the front panel. If you are getting too hot a signal to the input of your effect, reduce the level of the Gain control and raise the level of your Master Volume control to retain similar overall volume levels. By using the Gain, Master Volume and Effects Blend controls, optimum performance should be easily obtainable with any effects device.

The Effects Loop is designed as a "sidechain" (parallel) function similar to those found on mixing consoles. Use of the Effects Loop should greatly reduce noise generated by effects devices (as compared to in-line effects loops). Additional features of this type of loop can be found below under the "Receive Jack" section.

Send Jack

Run a shielded patch cable from the Send jack to the input of your effects device. This jack may be used as an additional line level output, in which case its level is determined by the setting of the Gain control.

Receive Jack

Run a shielded patch cable from the output of your effects device to the Receive jack.

One unique feature of the Receive jack is the ability to practice along with pre-recorded music. Insert a sound source into the Receive jack (make sure it is a mono source). Use the Effects Blend control to mix the level of the recorded music with your instrument's level. The combined signal will be heard through the internal speakers or your headphones. The send jack is not used.

> **NOTE:** *Inserting a plug into the Receive jack activates the Effects Blend control by receiving a "command" through the ground created. Therefore, only a mono (2-conductor) phone plug should be used. If you have a stereo (3-conductor) plug only, tie the ring and the sleeve (ground) together.*

If you are not getting any "effect" through the speakers, check the position of the Effects Blend control.

EXTENSION SPEAKER JACK

Use an unshielded 2-conductor cable (NOT A GUITAR CORD!) to connect an additional speaker cabinet. Use a high quality, heavy gauge cable of at least 18 gauge (the lower the gauge, the heavier the cable). The impedance of the speaker should be 8 Ohms or greater. If you wish to connect two additional cabinets be sure their combined load impedance is not less than 8 ohms (equivalent to two 16 ohms speaker cabinets in parallel).

> **Recommended speaker cabs from SWR are:** *Workingman's 2X10T, Workingman's 4X10T, Workingman's 1X15T, Goliath III and Big Ben.*

A/C LINE FUSE

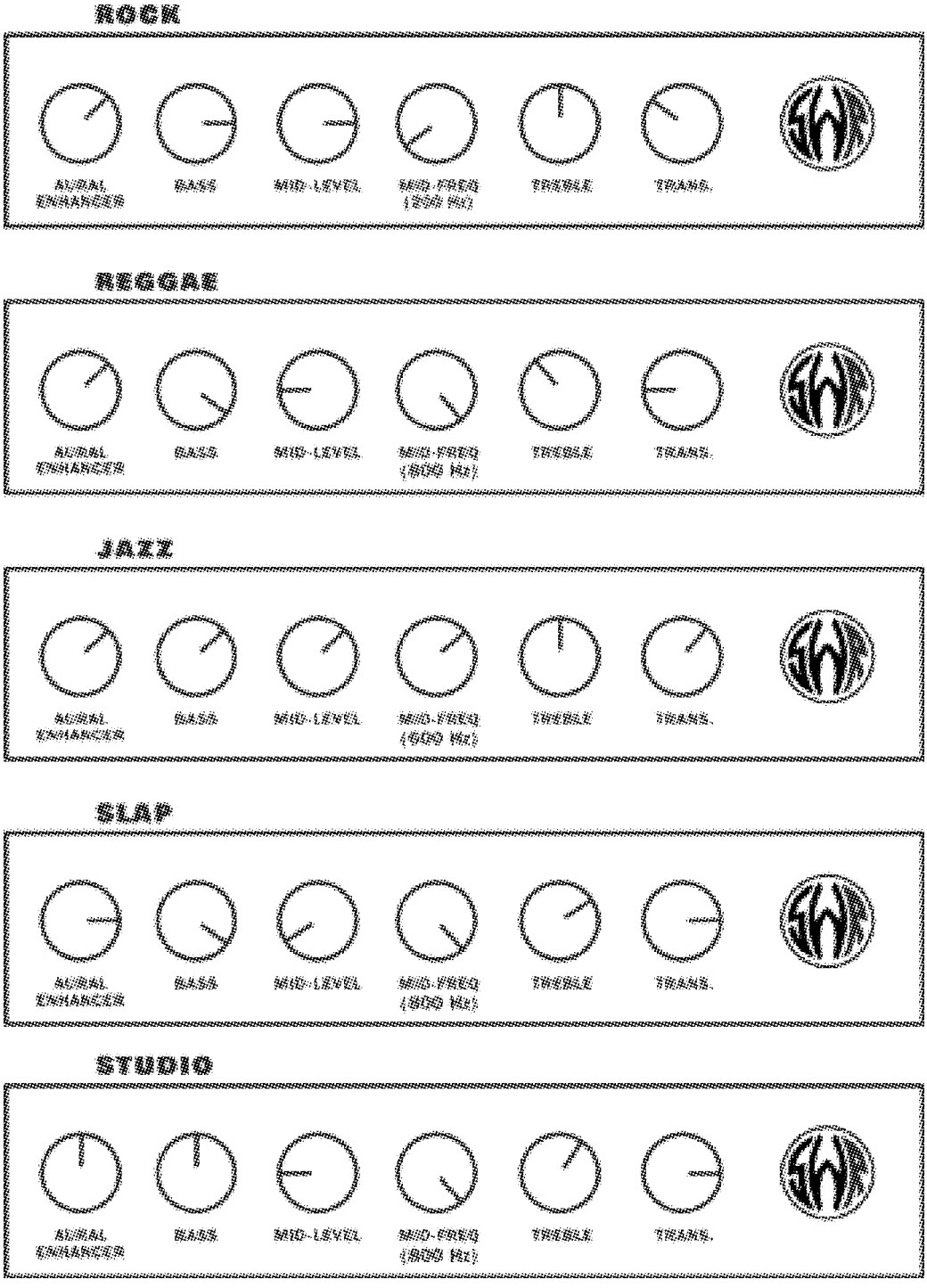
The line fuse can open (blow) due to power surges or high powerline transients. This fuse will also open in the event of an electronics failure inside your amplifier. Correct size and rating of the Line (Mains) fuse: 3AG, 4 amp slo-blow for 120V operation (North America), and 2 amp slo-blo for 240V operation.

A/C LINE CORD RECEPTACLE

Accepts a standard A/C power cable (supplied with the Workingman's 15 in the United States), used with almost all current musical, professional and household electronic devices. If it becomes misplaced, replacement will be easy at almost any computer, electronics, or pro audio store.

> **NOTE**: *The rating for this cable is 3-conductor, 10 amperes. This is a rating of the current capacity of the cable, designated for higher power-drawing devices like amplifiers. If replacement is necessary, or if you wish to buy a longer cable, look for the rating on the cable and be sure it is at least 10 amps.*

Suggested Settings



IMPORTANT SAFETY INSTRUCTIONS

CAUTION: TO REDUCE RISK OF ELECTRIC SHOCK, DO NOT REMOVE THE COVER OR BACK.
NO USER-SERVICEABLE PARTS INSIDE. PLEASE REFER TO A QUALIFIED SERVICE TECHNICIAN.

A. Read Instructions: *All safety and operation instructions should be read before the product is operated.*

B. Retain Instructions: *The safety and operating instructions should be retained for future reference.*

C. Heed Warnings: *All of the warnings on this product and in the operating instructions should be adhered to.*

D. Follow Instructions: *All operating and use instructions should be followed.*

E. Cleaning: *Unplug this product from the wall outlet before cleaning. Do not use liquid cleaners or aerosol cleaners. Use a slightly damp cloth for cleaning.*

F. Water and Moisture: *Do not use this product near water; for example, near a swimming pool, wet basement, and the like.*

G. Accessories: *Do not place this product on an unstable cart, stand, tripod, bracket or table. The product may fall, causing serious injury to a child or adult, and serious damage to the product.*

H. Ventilation: *Slots and openings in the unit are provided for ventilation and to ensure reliable operation of the product, to protect it from overheating, thus these openings must not be blocked or covered. This product should not be placed in a built-in installation such as a bookcase or rack unless proper ventilation is provided or the manufacturer's instructions have been adhered to.*

I. Grounding: *This product is equipped with a three-wire grounding-type plug, a plug having a third (grounding) pin. This plug will only fit into a grounding-type power outlet. This is a safety feature. If you are unable to insert the plug into the outlet, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the grounding-type plug.*

J. Power Cord Protection: *Power supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon them, paying particular attention to cords at plugs and the point where they exit the product.*

K. Lightning: *For added protection of this product during a lightning storm or when it is left unattended and unused for long periods of time, unplug it from the wall outlet. This will prevent damage to the product due to lightning and power-line surges.*

L. Overloading: *Do not overload wall outlets or extension cords as this can result in a risk of fire or electric shock.*

M. Object and Liquid Entry: *Never push objects of any kind into this product through the openings as they may touch dangerous voltage points or short out parts that could result in a fire or electric shock. Never spill liquid of any kind on the product.*

N. Servicing: *Do not attempt to service this product yourself as opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.*

O. Damage Requiring Service: *Unplug this product from the wall outlet and refer servicing to qualified service personnel under the following conditions:*

1) When the power supply cord has been damaged
2) If liquid has been spilled or objects have fallen into the product
3) If the product has been exposed to rain, water, or other conductive liquids
4) If the product does not operate normally by following the operating instructions
5) If the product has been dropped or damaged in any way
6) When the product exhibits a distinct change in performance.

P. Replacement Parts: *When replacement parts are required, be sure the service technician has used replacement parts specified by the manufacturer or have the same characteristics as the original part. Unauthorized substitutions may result in fire, electric shock, or other hazards.*

Q. Safety Check: *Upon completion of any service or repairs to this product, ask the service technician to perform safety checks to determine that the product is in proper operating condition.*

R. Heat: *The product should be situated away from heat sources such as radiators, heat registers, stoves or other products that produce heat.*

SWR LIMITED WARRANTY

All **SWR Workingman's Series Bass Combos** are warranted to the original consumer purchaser for a period of ONE (1) YEAR from the date of purchase, against defects in materials and workmanship and provi--ded that it is purchased from an Authorized SWR Dealer. This warranty applies only to products purchased in the USA or Canada. This warranty is VOID if the unit has been damaged due to accident, improper handling, the installation or operation, shipping damage, abuse or misuse, unauthorized repair or attempted repair, or if the serial number has been defaced or removed. FMIC reserves the right to make such determination on the basis of inspection by an Authorized FMIC Service Center.

SHOULD YOUR SWR COMBO SHOULD REQUIRE SERVICE OR REPAIR, PLEASE USE THE FOLLOWING PROCEDURE:

1. Locate your original receipt showing date of purchase, model and serial number.

2. Determine the closest Authorized FMIC Service Center to your location. The fastest way to get a complete list of Authorized FMIC Service Centers is on the web, at:

   http://www.mrgearhead.com/faq/allservice.html

   You can also get this information by calling FMIC Consumer Relations at (480) 596-7195.

3. To receive warranty service, return the complete product to an Authorized FMIC Electronics Service Center, with proof of purchase, during the applicable warranty period. Transportation costs are not included in this Limited Warranty.

4. Defective products that qualify for coverage under this warranty will be repaired or replaced, at FMIC's discretion, with a like or comparable product, without charge.

COVERS & REPLACEMENT PARTS

Waterproof covers made from high-quality black Cordura are available for most SWR speaker enclosures and may be ordered through your local Authorized SWR Dealer.

Replacement parts (such as fuses, corners, etc.) are also available and may be ordered through your local Authorized SWR Dealer.