



ELECTRET TRANSDUCERS

INSTALLATION MANUAL

B-BAND A3T SIDEMOUNT PREAMP WITH B-BAND UST OR AST TRANSDUCER

This is a basic installation manual and tip sheet. For more information, technical support, and pictures of installations about all B-Band products please check the B-Band website at www.b-band.com or contact your B-Band dealer, distributor or B-Band directly.

Date: 15th May 2007, Version 1.0.

DEAR CUSTOMER,

Thank you very much for purchasing this state-of-the-art B-Band® acoustic transducer system. B-Band takes care to provide the highest quality product and is manufactured and supported in true spirit of acoustic instrument aficionados.

The outstanding sound reproduction of B-Band transducers is based on the technology of a very special, worldwide-patented material that is exclusive to B-Band. This material is very different from, and has nothing to do with, piezo-electric films or transducers.

How is it different? We could write a long story here about the technical characteristics of the material, like how the “microscopic lens-like gas bubbles”™ work inside the permanently charged film, but the most important difference is the sound. Whereas piezo pickups tend to impart a sound of their own (often described as “quacky” or “plastic”), B-Band transducers act in much the same way a condenser microphone does. B-Band systems will provide an excellent reproduction of your instrument’s unique sound.

All of us at B-Band truly hope you enjoy this product.

Please contact us if you have any comments about B-Band products.

Always ready to help you.

Yours sincerely,
Heikki Räisänen, CEO
B-Band Ltd

UST



AST



A3T



1. SAFETY AND PRODUCT CAUTIONS

Although B-Band products could be easy to install by following these instructions carefully and checking the B-Band website and references, we highly recommend the installation be done by a professional qualified guitar craftsman or technician. Some installations require a high knowledge about woodworking and guitar structure.

B-BAND LTD AND B-BAND, INC. WILL NOT BE RESPONSIBLE FOR ANY DAMAGES, PERSONAL INJURIES OR LIABILITIES RESULTING FROM INSTALLATIONS, IMPROPERLY DONE INSTALLATIONS OR MISUSE OF PRODUCT.

Read all of these instructions closely before starting installation.

B-Band transducers (UST and AST) work with all B-Band A-series preamps.

Do not cut, pull, crimp or bend at a sharp angle any B-Band transducers.

B-Band UST and AST CANNOT be shortened or altered in any way. This will cause audible hum and void the warranty.

Long-time exposure of UST or AST to high temperatures (over 50 °C / 120 °F) may reduce the output level permanently.

B-Band transducers will only work with B-Band preamps. B-Band preamps will work with most any external audio preamps, mixers, and instrument amplifiers.

Before installation make sure instrument is in good working condition.

Do not mount battery holder to preamp.

Even with the battery secure in the holder or the battery box lid closed, the battery could get loose when transported. We strongly recommend removing the battery before transporting the instrument in heavy conditions, for example, with freight companies or airlines, to avoid possible damage to the instrument.

When doing any drilling, sawing, cutting or routing at the guitar, be sure to secure the guitar so it will not move when doing such work.

2. OVERVIEW OF B-BAND UST AND AST TRANSDUCERS

Both the B-Band UST (Under-Saddle Transducer) and AST (Acoustic Soundboard Transducer) use the same-patented transducer technology.

They are very flexible, but you should never pull or bend them at a sharp angle.

B-Band transducers themselves do not require electrical power, as they are permanently charged electrets. Because of the very high output impedance (typical for condenser microphones) B-Band UST and AST always require a B-Band preamp.

Standard piezo preamps will not work properly with B-Band transducers. They will produce low output and poor bass response.

The active portion of the B-Band UST transducer is 80 mm (3.15") from the end of the transducer at the opposite side of the connector. The active portion of the 1470 AST is the 14 x 70 mm (.55" x 2.75") area that attaches to the guitar. The rest of the UST and the "lead" wire of the AST are not active. However, for best performance always keep the inactive portion of either UST or AST pickup from touching each other, or touching or rubbing on the inside of the guitar, or touching the battery or output jack wires. These can produce unwanted handling noise.

UST and Model sizes

• Saddle width: 2.3 – 2.9 mm (.090" – .115" (3/32"))

B-Band model #: 22R

UST width: 2.3 mm (.090" (3/32"))

• Saddle width: 3.0 mm (.118" (1/8")) or more B-Band model #: 29R

UST width: 3.0 mm (.118" (1/8"))

3. OVERVIEW OF A3T PREAMP

All B-Band A-series preamps are designed to give optimum performance with B-Band UST and AST transducers. The main criterion in designing these preamps was to deliver studio quality and user-friendly electronics to the diverse needs of acoustic instrument musicians.

The A3T has the HzzLess® circuit for outstanding low noise and high output.

The A3T is a side mount preamp with a 4-band “graphic” equalizer, chromatic tuner and low battery LED light. This single input preamp will accept either UST or AST.

The A3T uses a standard 6.3 mm (1/4”) plug to turn on the 9-volt power.

For operation of the A3T see the [User’s Guide](#). If user’s guide is not with package, it can be found as a download at www.b-band.com

4. PACKAGE CONTENTS

Note! In the USA, transducers and preamps are packaged together.

4.1 UST package contents:

- 1 pc UST transducer

4.2 AST package contents:

- 1 pc AST transducer
- 1 pc cardboard installation guide (only AST)

4.3 A3T package contents:

- 1 pc A3T preamp circuitry board
- 1 pc A3T preamp box
- 1 pc A3T preamp box back
- 1 pc faceplate
- 4 pcs 2.2 x 9.5 mm (.09” x .37”) screws (black) for faceplate
- 1 pc output cable with endpin jack and strap attachment
- Strap attachment includes:

- Small hex nut
- Small dress washer
- Lock washer
- Large dress washer
- Large hex nut
- 1 pc battery holder with adhesive
- 1 pc battery cord harness (length 15 cm / 5.90”)
- 2 pcs wire clips
- 1 pc instructions
- 1 pc user guide

5. TOOLS AND MATERIALS NEEDED FOR INSTALLATION

- Drill, preferably with continuously variable speed
- Wood or metal drill bit, 2.3 mm (.09”) or 3 mm (.12”) depending on the width of the transducer
- Wood or metal drill bit, 3 mm (.12”)
- A rotary wood router with sharp 3 mm (.12”) cutting bit
- Screwdriver, Posidriv #1
- Endpin reamer, 12 mm (.47”) or wood drill bit, 12 mm (.47”)
- Allen wrench, 2 mm (.08”)
- Punch (spike)
- 13 mm (.51”) wrench to tighten the nuts on the preamp endpin jack
- Small hand-held mirror
- Flashlight (penlight)
- Small round file
- Masking tape
- If installing 1470 AST – cardboard installation mounting guide (supplied)

6. PREPARING THE GUITAR FOR INSTALLATION

Please read completely before starting the actual procedure.

6.1 Test fitting AST

For test fitting 1470 AST (if applicable), loosen and remove the strings from the tuning machines.

Before removing the strings and bridge pins from the bridge check to see if the AST will fit at the bridge plate correctly. Also

at this time, clean the bridge plate surface with a moist cloth and let dry completely.

The cardboard installation template for the 1470 AST is specifically made for bridges that the saddle is at a slight angle to the bridge pinholes. It may also be that the guide is too long for the space. If so, the template can be trimmed with scissors slightly to accommodate this. If in case the template still does not work the transducer may be installed by hand. Although the instructions do not specify how to do this, if you carefully read the instructions you will be able to adapt them to perform the installation by hand. It really is not that hard or critical to install if you are careful.

For classical guitars the installation the AST is done by hand without the guide. For most classical guitars the AST is placed inside the guitar parallel to center brace that runs parallel to the strings on the bass strings side at the area between the bridge and soundhole. Sometimes there is also a flat brace running parallel under the bridge. The AST should be placed so that the AST is on the bass side of the brace running parallel to the strings and that part of the active area of the AST, that has the lead to the preamp, goes on the brace for the bridge. If the brace there is too tall put the AST in front of the brace. Please read the instructions carefully and adapt them to the installation.

AST at classical guitar type



To test fit the 1470 AST in a guitar with a bridge plate, take the cardboard installation template from the tray in the box. Note! There is a small 4.5 mm (.18") round and a 4.5 mm (.18") elongated part that both need to be punched out to make their respected guide holes. The 4.5 mm round guide hole is for the low "E" bridge pin and the elongated guide hole to fit at the high "E" bridge pin inside the guitar. Peel away the protective covers from the two adhesive dots on the cardboard. Do not peel away the actual AST mounting adhesive protective cover yet!

The placement of the AST is important for connection to the preamp. For the A3T preamp, the AST's lead goes away from the low "E" side of the bridge area and towards the upper bout

of the guitar (see pictures). When using A3T in left-handed guitars the lead of the AST should be turned around, with the red B-Band logo still up, so it goes the opposite way and will reach the preamp.

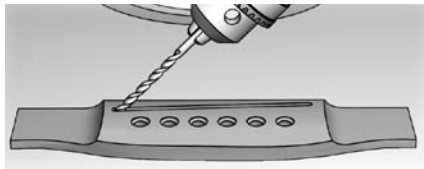
Now mount the AST to the top of the cardboard installation template at the rectangle AST area inscribed on the cardboard. Now put the assembly to the bridge pins, with the AST towards the bridge plate and check the fit. All of the AST's active area must fit at the soundhole side of the bridge plate without hanging over the edge of the bridge plate. Make sure that there is enough space that the bridge pins or string ball-ends will not touch the AST.

Next remove the strings, bridge pins and the saddle. If you are using a UST, check that it fits into the slot easily and that the saddle is sufficiently tight in the slot. Remove the strap button. Carefully enlarge the hole using 12 mm (.47") endpin reamer or 12 mm (.47") wood drill bit. Smooth the edge of the hole with a small file or a sinking drill bit.

6.2 Drilling hole for UST

For UST check the inside of the guitar to find the position of the braces. Drill a preferably 30 - 45 degrees angled, 2.3 mm (.09") or 3 mm (.12") hole (depending on the model of your B-Band UST) for the transducer into the one end of the saddle slot. **Be careful not to damage the braces!** In case you cannot make the hole angled, because of possible damage to the braces, you can make it straight down.

It is very important to smooth the edge of the hole using a bit of rolled sandpaper or a small file, to avoid pinching the UST as the saddle lies on it. For A3T preamp you must drill the hole at the low-E string side of the slot.



6.3 Making holes for A3T preamp

Find a good position for the preamp at the side of the guitar. Be sure that the position is so, that when the holes are drilled that the holes, and the preamp structure, do not interfere with the any of the guitar braces or supports. For this installation it is very important to check inside the guitar body that there is enough clearance for the preamp at the side between the soundboard and the back of the guitar. Be sure to check that the transducer will reach the preamp from its position under the saddle and / or bridge area.

The sides of the guitar where the preamp will be installed should be inspected for accessibility and stability. Inside some guitars there is kerfed lining (the wood reinforcement between the back and sides inside the guitar) and other reinforcements that may make the area too small to install the A3T. If these reinforcements are altered it may cause instability at the guitar's side.

Guitars with solid sides or that have very thin sides may not be stable after cutting a hole to fit the A3T. It may be necessary to reinforce this area from the inside of the guitar with an extra piece of plywood before cutting or drilling holes. The thickness of the guitar side should be at least 2 mm (.08") and preferably 2.5 - 3 mm (.10" - .12"). If needed glue in a piece of plywood of suitable thickness to reinforce that area.

Cover the planned installation area with masking tape and mark the area with a pencil using the provided preamp hole-cutting template at the end of these instructions. Prepare the guitar for cutting the preamp hole with the rotary wood router by securing it in some way so that the guitar does not move while doing the cutting. Cut out the area for the preamp using the rotary wood router with a sharp 3 mm (.12") cutting bit. Do this slowly and very carefully so the router's cutting bit does not accidentally move outside the area that you have marked with the guide. Smooth the edges of the finished hole with a small file or sand paper and remove the masking tape.

6.4 Installing battery holder

Before installing the battery holder it should be checked by inserting a 9-volt battery in and out of it to learn how it works. Once this is checked, find a convenient place inside the guitar where the battery can be reached and that there is good access to the snap. Also check that it is in a place that the battery can be put in and out easily.

Recommended places are at the neck block or at the back of the guitar.

Be sure that the entire adhesive surface will make full contact with surface you are attaching it to. Clean the surface with a moist cloth and let the moist dry completely. Remove the protective liners of the adhesive and install it. Press firmly for about 30 seconds to make it secure. It takes 72 hours for the adhesive to achieve its final holding ability.

7. CONNECTING THE TRANSDUCERS AND WIRES TO THE PREAMP.

Check the circuit board of the preamp and see the picture at these instructions for connections. Connect the transducer, battery cable harness and the output cable. Notice that the small holes on each connector of the transducer and battery cable harness should point upwards. If UST or AST is connected improperly a loud audible hum will occur. Make sure that they are connected correctly.

When transducer, battery wire and output cable are connected to preamp, close the cover by inserting to of the tabs of one side of the back cover to the slots of one side of the preamp box. Then push to insert the tabs of the opposite side to close. If difficult to push the tabs into place it may be necessary to bend the tabs a little so that it will fit. It is recommended to test the systems operation at this point. Insert a battery and connect the output cable to amplifier. You should hear it from the amplifier when you tap on the transducer.



8. INSTALLING THE PREAMP

For the next portion of the installation, be careful not to catch the pickup on anything as you work; inadvertent tugging may cause damage to the transducers or pull the connectors off the pin headers at the preamp.

Regarding AST, please note to lift one corner of the protective layer of the mounting adhesive so it is easier to remove later.

Take the preamp assembly inside the guitar and install it to its place. Let the transducer(s) and wire harnesses hang loose inside the guitar at this moment. Install the front plate and attach the screws. It is important that you have a good quality screwdriver to avoid it slipping during tightening and thus scratching the guitar. Be careful to tighten the screws properly. It may be wise to tape the area around the front plate with masking tape in case you slip with the screwdriver. Do not over-tighten the screws as it may strip the screws, or crack the side of your guitar or the preamp's faceplate.

At the output jack unscrew the strap attachment, the small nut and the small dress washer from the endpin jack. Make sure that the large nut; lock washer and large dress washer are threaded onto the jack almost all the way to the opposite end of the output of the jack.

Next, test-fit the jack the endpin hole. It is easier to install the output jack by using an ink pen (or something similar) that fits into the jack. Put the pen through the hole at the guitar where the jack will go and with the other hand holding the output jack, and that going through the sound hole, put the jack on the pen and guide it through the hole of the guitar. Adjust the large nut so that only the smaller threaded section comes almost entirely out of the guitar. Put the dress washer and the small nut onto the threads outside the guitar. Tighten securely using an appropriate wrench. Prevent the jack from rotating during tightening by inserting a small Allen wrench into the holes of the end of the jack. Install the strap attachment. Be careful not to over-tighten it, it just needs to be snug. Connect a fresh 9-volt battery to the snap-in connector and put it in the battery holder. Attach the battery wires to the side of the guitar with the cord clamps.

Roll the extra cord as a "coil" in some of the clamps if necessary.

9. INSTALLING THE TRANSDUCER

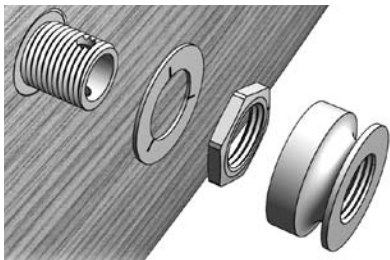
If installing UST, do it now. Thread the B-Band UST up from inside the guitar through the hole in the saddle slot. It is easier to find the hole inside the guitar if you insert a small screwdriver or toothpick from the top through the hole as a guide. Fit the UST all the way to the other end and bottom of the slot. Then put the saddle in place.

For installation of the 1470 AST (steel string guitars; x-braces), place two bridge pins in their holes, one at the low "E" string side and one at the high "E" side. Set the bridge pins normally. This, with the cardboard installation template / AST assembly will guide the AST to fit correctly. Having the AST cardboard installation template / AST assembly lying on the bottom of the guitar, remove the adhesive protective layer from the AST. Lift the assembly up and guide the assembly so the bridge pins insert the guide holes and carefully place it to the bridge plate. Then stick it firmly by holding and pressing firmly with fingers for a short while. Next carefully remove the cardboard installation template. Make sure the AST fits there tight and secure.

Inside the guitar, make sure that the UST or AST leads do not touch anything. We do not recommend attaching the "lead" wires of the UST or AST to the guitar by any means. This may cause excessive handling noise and resonance that sounds like distortion.

For AST remove the adhesive protective layer from the AST. Then stick it firmly by holding and pressing with fingers for a short while. If necessary, you can remove the AST shortly after attaching, but be careful when doing this. Carefully lift under the edge of the AST, with your fingernail, and work it off slowly. Don't attempt to lift the AST off by pulling on the transducer lead. Peel the adhesive off the wood, rather than peeling the pickup off the adhesive. At installation this can be removed and reattached two or three times.

Note! After 24 hours the adhesive will dry and it will be hard to remove. Removal after this time may damage the pickup.



Test the system before putting on the strings. To do this, plug into an amplifier and then tap lightly on the top of the guitar to make sure that you can hear the transducer when you tap. Another good test is to shake the guitar when plugged into amplifier. If anything is loose or if the transducer's leads are touching something you will hear it. This should not happen.

Install the strings and test the system. Now play, keep it real and enjoy!

10. TROUBLE SHOOTING

10.1 No sound at all or intermittent sound

- Check the guitar cable and amplifier / mixer you are using.
- Check that the battery is not discharged. If the sound is noisy or distorted, replace the battery.
- Check that the transducer and battery connectors are inserted onto the pin headers of the preamp correctly.
- Check that the plug is making good connection with the output jack. It may be so that the output jack is not sticking out far enough when the strap button is on. To check, unscrew the strap button off and plug in to the jack. If the symptoms go away the output jack needs to be removed and the nuts adjusted so the jack sticks out further.

10.2 Loud hum

- Check to see that the connectors of the UST / AST are inserted with the two holes up. If these connectors are upside down the system will work but it will buzz.

- Check that the connectors are inserted correctly onto their pin headers at the preamp.

10.3 Resonance or distortion with some played notes

There are a couple places where a resonance can typically occur with some notes, causing distorted-sounding output. First, check that the lead portion of the transducer to the preamp is not touching anything and that the battery or output wires are not loose and thus cause resonance.

With the UST, another place, which in some cases has caused resonance, is the UST hole from the saddle slot to the inside of the guitar. Using a soft padding in it has cured these problems effectively.

With the AST, if resonance is occurring, it may be coming from the first 5 mm (20") of the "lead" wire coming from the AST. Using double stick tape, stick this first 5 mm (20") of the lead to the guitar.

10.4 Imbalance, one or several strings sound louder or quieter than the others (with UST)

If there's only a very slight imbalance, let the saddle "shape" on the UST for a few days. The fault may be repaired on its own. Users have reported that after three (3) days the saddle has settled on the UST and the balance becomes perfect.

10.5 Possible reasons for imbalance:

- The saddle or the bottom of the saddle slot is not flat.
- The saddle fits too loosely in its slot.
- The saddle slot might be too tight for the saddle to go in all the way. Try pushing on the saddle firmly to seat the saddle all the way down on the transducer.
- The saddle is too short.
- There is debris in the saddle slot.
- The angle of some of the strings behind the saddle is too low or too high.
- The top of the guitar is bent.
- The pickup is not installed all the way to the end of the saddle slot.
- If the material of the saddle is bone.

Bone is a natural material and the density and grain may not be consistent. This may cause inconsistencies in the way the sound is distributed making some strings louder or softer than others. We highly recommend a manmade material for the saddle.

10.6 If the balance problem does not disappear on its own, do the following:

- Check there is no debris in the saddle slot.
- Check the bottoms of both the saddle slot and saddle. They should be flat and straight. It is common that the guitar top “lives” and moves and because of this the saddle slot could become curved, not straight. This may happen especially during transport or by change of season when the humidity changes. By making the saddle flexible, as in picture, these problems can be greatly avoided.
- Check saddle is not loose in its slot. The saddle should be so tight that you cannot pull it away with your fingers.
- Check string angles behind the saddle. They should be about the same behind every string. If the angle is too low, the string will not put enough pressure on the transducer and that may cause balance problems - usually higher output from the corresponding string. To deepen the angle, you can, for example, file a wedge-shaped groove on the bridge pinhole so that the string will have deeper angle behind the saddle (see the next picture).
- On some instruments the outer most strings are too close to the edge of the saddle, causing balance problems to these strings. It may happen that the E string at the end of the UST does not come as loud as other strings. In this case, make another, shallow hole (not all the way through) at that end of the saddle cavity and move the pickup so the tip of the UST goes in the hole. If nothing else helps, you should machine the saddle slot longer and use a new longer saddle.
- Balance problems may also occur with some string sets, for example with classical guitars the G-string may cause problems.

10.7 If all things mentioned above are correct, and there still is a balance problem, you should try the following tricks:

- The easiest way is to install a spacer, made of soft wood,

underneath the saddle or underneath the UST. The proper thickness is 0.5 - 0.8 mm (.02" - .03"). This will cure imbalance problems effectively.

- A very efficient way is to make the saddle more flexible by modifying it, for example see picture below. Even more efficient it is to cut the saddle into six separate pieces, or to cut it almost through between the strings but leave just a small portion on the bottom side of the saddle, i.e. cut it from the bottom towards the top.
- Most of the balance problems are due the fact that the guitar top lives. By making the saddle flexible, these problems can be greatly avoided.
- If anything else does not help, you can try to add one or two layers of ordinary letter paper under the saddle, underneath the quieter strings. This will cause a better mechanical contact between the saddle and the UST and thus increase the volume. If the volume decreases when adding the paper, the balance problem is due to unequal pressure distribution, not bad mechanical contact. In this case, add the paper underneath the louder strings. Try this as the last choice because it is very time consuming and not so efficient.

10.8 Other problems

If you notice any other problems, please contact the dealer, distributor or manufacturer, for help.

11. CUSTOMER FEEDBACK

If you have any comments, positive or negative, about any B-Band product, please do not hesitate to contact B-Band.

12. A3T SPECIFICATIONS

- S/N ratio: Greater than -90 dB
- Distortion: 0.05 %
- Frequency response: 50 Hz - 40 kHz
- Low-cut slope: -6 dB/octave
- Input channel voltage gain: +30 dB
- Input impedance: 100 MΩ \parallel < 20 pF
- Output impedance: < 3.5 kΩ
- Bass control range: -12 dB @ 70 Hz

(± 3 dB @ 300 Hz)

Middle control range: -12 dB @ 400 Hz

(Q = 0.5)

Treble control range: -12 dB @ 2.5 kHz

(Q = 0.5)

Presence control range: -12 dB @ 12 kHz

(± 3 dB @ 2.2 kHz)

Nominal output level: -10 dB u (0.245 VRMS)

Power supply: 9 V battery (not included)

Current consumption: 0.8 mA typical

Connections: Transducer input: 2.54 mm

(.10") header; Output: 6.3 mm (.25") jack

Weight (with accessories): 90 g

Dimensions: L 60 mm (2.36"), W 47 mm

(1.85"), H 25 mm (1.00")

--Weight (with accessories): 90 g

--Dimensions: L 60 mm / 2.36", W 47 mm / 1.85", H 25 mm / 1.00"

13. EU / DECLARATION OF CONFORMITY

This B-Band product has been designed, manufactured and tested to comply with the requirements of EMC directive 89/336/ EEC and CE mark directive 93/68/EEC and carry the CE marking accordingly.

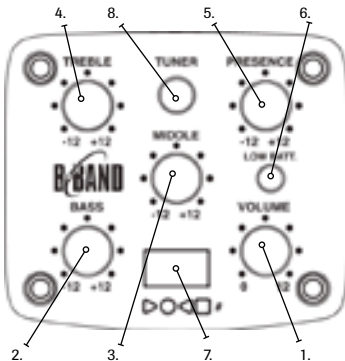
LED's in this product are Class 1 in accordance to EN 60825-1.

Statement of EU Declaration of Conformity is available from manufacturer upon request.

B-BAND A3T USER'S GUIDE.

Reading this guide thoroughly will give you the information necessary to fully understand the capabilities of this instrument and make the operation a simple and pleasurable experience.

CONTROLS



1. VOLUME
2. BASS
3. MIDDLE
4. TREBLE
5. PRESENCE
6. LOW BATT. (LOW BATTERY LED LIGHT)
7. CHROMATIC TUNER
8. TUNER ON / OFF BUTTON

DESCRIPTION OF CONTROLS

1. VOLUME The VOLUME controls the output volume. At "0" it is completely OFF. At "12" it is LOUD!
2. BASS (for bass tones)
3. MIDDLE (for midrange tones)
4. TREBLE (for high tones)
5. PRESENCE (for very high tones)

The BASS, MIDDLE, TREBLE, and PRESENCE controls are a 4-band equalizer for controlling tone.

The BASS TREBLE and PRESENCE tone controls are normal boost / cut shelving controls.

The MIDDLE (midrange) tone control is a normal boost / cut tone filter.

The center detent on these tone controls yields a flat tone response. "+12" boosts the tone; "-12" cuts the tone.

6. LOW BATT. (LOW BATTERY LED LIGHT)

The LED will light when the battery has lost power. Replace the battery when this light is on.

This LED light will flash when a cable is connected to the output jack of the pickup system. This shows the battery is good.

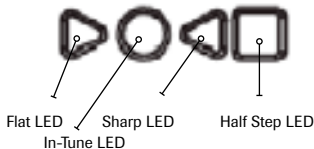
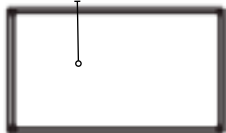
BATTERY

A 9-volt battery powers the B-Band A5T preamp. Before connecting the instrument to an amplifier or mixer please check that a fully charged 9-volt battery is connected.

7. CHROMATIC TUNER

8. TUNER ON / OFF BUTTON

Note Readout Display



The tuner will work with or without a cable plugged into the output jack.

Pushing the tuner button (8) turns ON the tuner. When the tuner is active the pickup system output is muted. No sound will go to the amplifier or mixer when the tuner is active.

Pushing the tuner button (8) again turns the tuner OFF and the pickup system output will be active and sound will go to the amplifier.

If the tuner is ON and the tuner button is not pushed within 2 minutes the tuner will turn OFF automatically and sound returned to the output.

The tuner has a seven Note Readout Display; Half-step (#) LED; Sharp arrow LED; Flat arrow LED and In-Tune LED.

The tuner Note Readout Display shows the nearest note of one plucked string's sound. If the note showing is a half step (for example A#; C#, D# and so), the half-step (#) LED will light.

If the Sharp LED is showing the string needs to be lowered in pitch.

If the Flat LED is showing the string needs to be raised in pitch.

When the In-Tune LED lights the string is at the correct pitch of the note displayed at the Note Readout Display.

SETTING UP THE PREAMP FOR USE

Tune the guitar. See the tuner instructions at 10 and 11.

Before plugging a cable into the guitar's output jack, turn the volume control OFF ("0"), turn the 4-band EQ controls to the middle position center detent (half way between "-12" and "+12") and turn the tuner OFF.

Check that the 9-volt battery is good.

Make sure that the amplifier or mixer volume is OFF and the EQ tone controls are at flat or off. Plug a guitar cable into the output jack of the guitar and into the input of the amplifier or mixer.

Turn the volume control of the A3T half way up (half way between "0" and "+12"). Turn the volume of the amplifier or mixer up enough to get a good level of sound. Refer to the amplifier or mixer instructions on how to set up best gain structure with an instrument for the cleanest possible sound.

Once the desired volume level is found use the EQ on the A3T preamp to find your tone.

Try turning the MIDDLE CONTROL down a little to cut this tone. This will bring some smoothness to the sound. Turn up the BASS control some to add fullness to the sound. Use the PRESENCE control to brighten the sound. Experiment and find a tone that suits your taste.

Use the EQ tone controls at the amplifier or mixer to fine-tune the tone.

Good luck and turn it UP!

B-BAND LIMITED WARRANTY STATEMENT

In the unlikely event that your product needs guarantee service, please contact your dealer, distributor or manufacturer. To avoid any unnecessary inconvenience on your part, we recommend you read this instruction manual carefully before seeking guarantee service.

YOUR GUARANTEE

By this Guarantee, B-Band guarantees the product to be free from defects in materials and workmanship at the date of original purchase for a period of one (1) year from that date.

If within the guarantee period the product is determined to be defective (at the date of original purchase) due to improper ma-

terials or workmanship, B-Band will, without charge for labor or parts, repair or (at B-Band's discretion) replace the product or its defective parts subject to the terms and limitations below. B-Band may replace defective products or parts with new or refurbished products or parts. All products and parts replaced become the property of B-Band.

TERMS

1. Guarantee services will be provided only if the original invoice or sales receipt (indicating the date of purchase, model name and dealer's name) is presented with the defective product within the guarantee period. B-Band may refuse free-of-charge guarantee service if these documents are not presented or if they are incomplete or illegible. This Guarantee will not apply if the model name or serial number on the product has been altered, deleted, removed or made illegible.

2. This Guarantee does not cover transport costs and risks associated with transport of your product to and from B-Band.

3. This guarantee does not cover:

- a) periodic maintenance and repair or parts replacement due to wear and tear.
- b) consumables (components that are expected to require periodic replacement during the lifetime of a product)
- c) damage or defects caused by use, operation or treatment of the product inconsistent with normal use
- d) damage or changes to the product as a result of:
 1. misuse, including:
 - treatment resulting in physical, cosmetic or surface damage or changes to the product
 - failure to install or use the product for its normal purpose or in accordance with B-Band's instructions on installation or use
 - failure to maintain the product in accordance with B-Band's instructions on proper maintenance
 - installation or use of the product in a manner inconsistent with the technical or safety laws or standards in the country where it is installed or used
 2. the condition of or defects in systems with which the product is used or incorporated except other B-Band's

products designed to be used with the product
3. use of the product with accessories, peripheral equipment and other products of a type, condition and standard other than prescribed by B-Band

4. repair or attempted repair by persons who are not B-Band employees

5. adjustments or adaptations without

B-Band's prior written consent, including:

- upgrading the product beyond specifications or features described in the instruction manual, or

- modifications to the product to conform it to national or local technical or safety standards in countries other than those for which the product was specifically designed and manufactured

6. neglect

7. accidents, fire, liquids, chemicals, other substances, flooding, vibrations, excessive heat, improper ventilation, power surges, excess or incorrect supply or input voltage, radiation, electrostatic discharges including lighting, other external forces and impacts.

4. This guarantee covers only hardware components of the product.

EXCLUSIONS AND LIMITATIONS

EXCEPT AS STATED ABOVE, B-BAND MAKES NO WARRANTIES (EXPRESS, IMPLIED, STATUTORY OR OTHERWISE) REGARDING PRODUCT PERFORMANCE, ACCURACY, RELIABILITY, FITNESS FOR A PARTICULAR PURPOSE, OR OTHERWISE. If this exclusion is not permitted or fully permitted by applicable law, B-Band excludes or limits its warranties only to the maximum extent permitted by applicable law. Any warranty that cannot be fully excluded will be limited (as far as permitted by applicable law) to the duration of this Guarantee.

B-BAND'S ONLY OBLIGATION UNDER THIS GUARANTEE IS TO REPAIR OR REPLACE PRODUCTS SUBJECT TO THESE GUARANTEE TERMS AND CONDITIONS. B-BAND IS NOT LIABLE FOR ANY LOSS OR DAMAGE RELATING TO PRODUCTS, SERVICE, THIS GUARANTEE OR OTHERWISE, INCLUDING -

ECONOMIC OR INTANGIBLE LOSSES - THE PRICE PAID FOR THE PRODUCT - LOSS OF PROFITS, REVENUE, DATA, ENJOYMENT OR USE OF THE PRODUCT OR ANY ASSOCIATED PRODUCTS - INDIRECT, INCIDENTAL OR CONSEQUENTIAL LOSS OR DAMAGE. THIS APPLIES WHETHER THAT LOSS OR DAMAGE RELATES TO: IMPAIRED OR NON-OPERATION OF THE PRODUCT OR ASSOCIATED PRODUCTS THROUGH DEFECTS OR UNAVAILABILITY WHILE WITH B-BAND, WHICH CAUSED DOWNTIME, LOSS OF USER TIME OR BUSINESS INTERRUPTION INACCURACY OF OUTPUT FROM THE PRODUCT OR ASSOCIATED PRODUCTS.

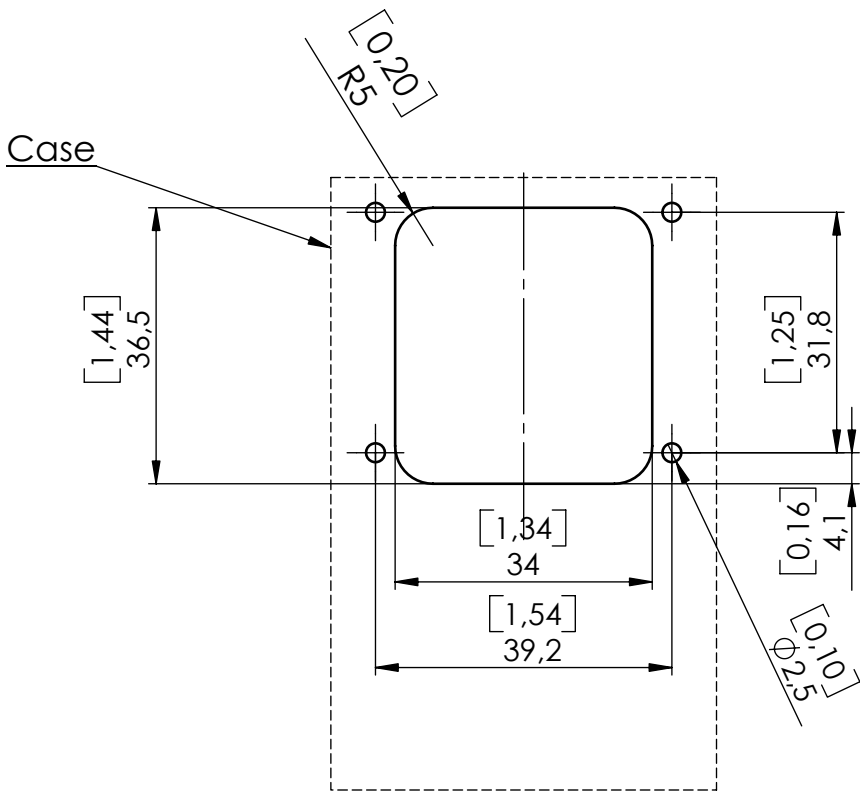
THIS APPLIES TO LOSS AND DAMAGES UNDER ANY LEGAL THEORY, INCLUDING NEGLIGENCE AND OTHER TORTS, BREACH OF CONTRACT, EXPRESS OR IMPLIED WARRANTY, AND STRICT LIABILITY (EVEN WHERE B-BAND HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES).

Where applicable law prohibits or limits these liability exclusions, B-Band excludes or limits its liability only to the maximum extent permitted by applicable law. For example, some countries prohibit the exclusion or limitation of damages resulting from negligence, gross negligence, willful misconduct, deceit and similar acts. B-Band's liability under this guarantee will in no case exceed the price paid for the product, but if applicable law permits only higher liability limitations, the higher limitations apply.

YOUR LEGAL RIGHTS RESERVED

Consumers have legal (statutory) rights under applicable national laws relating to the sale of consumer products. This guarantee does not affect statutory rights you may have nor those rights that cannot be excluded or limited, nor rights against the person from whom you purchased the product. You may assert any rights you have at your sole discretion.

A3T OPENING





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