

THE BLACK ANGEL™ PIEZO DP235  
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INSTRUCTIONS FOR PREPARING HOT HIDE GLUE

- 1) Begin preparing the hide glue 60 - 90 minutes before you plan to apply it.
- 2) Measure and thoroughly mix 1 part hide glue granules with 2 parts clean, cold water in a small container. We recommend using a shot glass or baby food jar for this purpose. Store in refrigerator.
- 3) Allow mixture to soak for 1 - 2 hours or more. After soaking, the mixture will have formed into clumped globules that resemble small tapioca pearls.
- 4) When ready to use, heat the glue to between 140 and 150°F (60 - 66°C) in a double boiler, and maintain at that temperature. **DO NOT BOIL OR SUBJECT THE GLUE TO EXCESSIVE HEATING** as it may cause deterioration and reduce its adhesive strength.
- 5) An alternate method of heating the soaked transformed glue pearls is to use a microwave oven. Heat at 50% power in 15 second increments until it is 140 - 150°F (60 - 66°C).
- 6) If this is the first time you are using hot hide glue, we suggest giving it a trial run by mixing a small portion (1 measuring spoonful of granules plus 2 measuring spoonfuls of water) of the enclosed granulated hide glue, gluing and clamping 2 random wooden items together (popsicle sticks are ideal), and allowing them to cure for a minimum of 12 hours in order to familiarize yourself with the use of hot hide glue.
- 7) We recommend the use of a thermometer to gauge the temperature of the heated glue, and a small glue brush or the enclosed measuring spoon to apply the hot hide glue. All leftover glue and utensils used should be cleaned or discarded at the end of the day's work to avoid bacterial contamination.
- 8) If you are uncomfortable with mixing and using the enclosed granulated hide glue, Titebond® Original Wood Glue or Titebond® Genuine Liquid Hide Glue are acceptable alternatives.

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FIG. 1

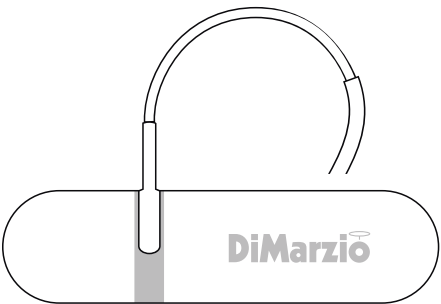


FIG. 2

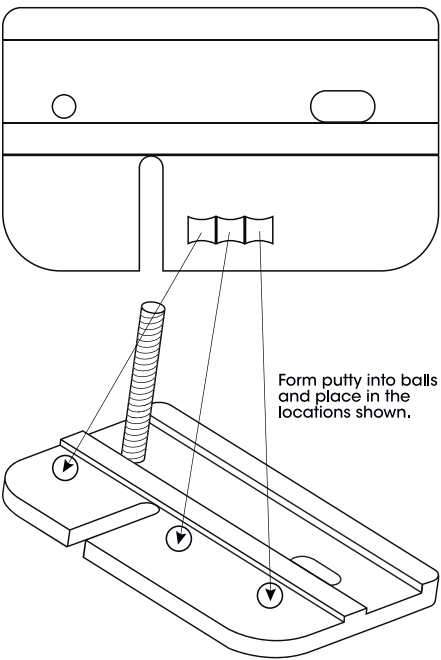
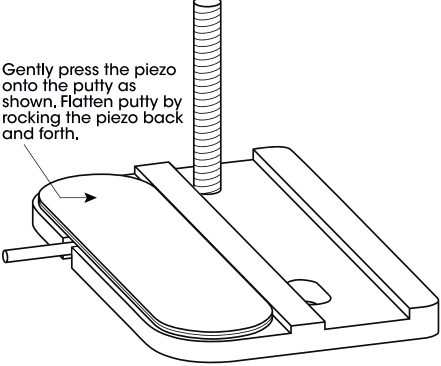


FIG. 3



The Black Angel™ Piezo (DP235) is a stand-alone pickup that delivers a beautiful, natural acoustic guitar sound. It retains all the percussive resonance of the body, plus the transparent clarity of the strings. The Black Angel™ Piezo uses our new stratifying technology that stacks our transducer elements between layers of maple, distributing the energy across the entire sensor array. It is designed to work with standard bronze, nickel-wound, or compound strings.

**PLEASE REVIEW ALL INSTRUCTIONS BEFORE BEGINNING THE INSTALLATION**

**INCLUDED IN THIS PACKAGE**

- (1) The Black Angel™ Piezo with endpin jack cable assembly
- (1) assembly bracket
- (2) nylon alignment/clamping screws and nuts
- (1) packet granulated hide glue with measuring spoon
- (1) 3/32-inch Allen wrench
- (2) self-adhesive cable retainer clips
- (1) instruction sheet
- (1) warranty card

**PREPARE THE HOT HIDE GLUE MINIMUM OF 60 MINUTES IN ADVANCE OF USE**

We recommend using hot hide glue to mount the piezo. It will take approximately 60 - 90 minutes to prepare the glue for application using the enclosed packet of granulated hide glue.

Hot hide glue is the traditional glue used by guitar manufacturers and luthiers due to its organic nature, strength (it can actually be stronger than the wood itself), and because it can be easily dissolved in order to perform repairs.

Please see instructions for preparing hide glue on page 4.

**THE BLACK ANGEL™ PIEZO INSTALLATION & SETUP**

In order to gain access to the tail block and bridge plate, remove the guitar strings before proceeding with installation.

For The Black Angel™ Piezo to function properly, it should be in full contact with the bridge plate. **Do not install the piezo in any other location.** Improper installation will negatively affect the performance and string balance. If your guitar does not have bridge pins, please contact DiMarzio Tech for a referral to an alternate DiMarzio pickup.

**DiMARZIO TECH:** Telephone (718) 816-8112 12:00 N – 5:00 PM EST  
Email tech@dimarzio.com

If you are unconfident about installing The Black Angel™ Piezo and pre-wired endpin jack, we recommend that the installation be done by a qualified guitar technician.

**PLACE THE PUTTY ON THE PIEZO ASSEMBLY BRACKET**

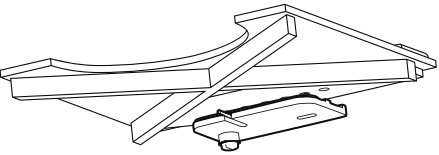
The assembly bracket comes pre-loaded with putty. Separate the putty into 3 portions, and shape into 3 equal sized balls with your fingers.

Place putty balls in the locations shown. **[SEE FIG. 2]**

Place the piezo — logo-side-down — aligned snugly against the raised edge of the

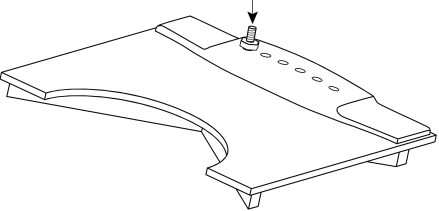
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**FIG. 4**

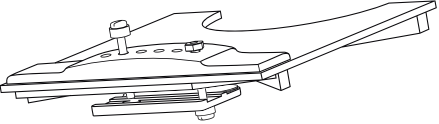


**FIG. 5**

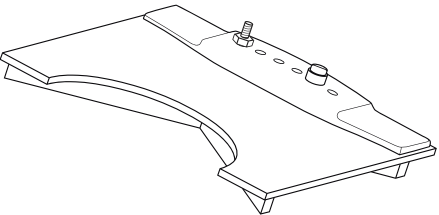
Install assembly into guitar as shown. Do not tighten. Nut should be loosely secured.



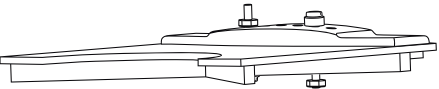
**FIG. 6**



**FIG. 7**



**FIG. 8**



assembly bracket, with the cable inserted through the slot. Gently press the piezo onto the putty. **[SEE FIG. 3]** Flatten the putty by slightly rocking the piezo back and forth against the assembly until it is firmly and evenly seated.

**CHECK FOR PROPER FIT BEFORE GLUING**

When the piezo is seated onto the assembly bracket and before you apply the hot hide glue, place the entire module inside the guitar. Using a guitar inspection mirror, check the interior to see that the assembly bracket aligns properly with the bridge plate before applying glue. Once you have checked the position, making sure that it fits and aligns properly, you are ready remove the assembly bracket and apply the hot hide glue.

**STOP THE INSTALLATION IF ...**

- 1) ... the bridge plate on your guitar is undersized (i.e., if the assembly bracket hangs off the front edge of the bridge plate.)
- 2) ... your guitar has narrow X-brace (i.e., if the included clamp doesn't fit the piezo with proper registration to the bridge pins.)

**APPLY THE HOT HIDE GLUE AND CLAMP PIEZO IN PLACE**

Apply prepared \*hot hide glue to the back surface of the piezo. Apply an even coat of glue, taking care to avoid getting glue on the piezo edges and assembly bracket. Be sure to add enough glue, as too little will give uneven signal transmission. Any excess glue may be wiped off with a damp paper towel.

The 2 nylon screws and nuts enclosed will be used to align and, subsequently, clamp the assembly bracket into position.

Install the assembly bracket into the inside of the guitar as shown. **[SEE FIG. 4]** Insert the pre-threaded nylon bolt through the high "E" string bridge pin hole to align the assembly. Place one of the nuts on the nylon screw to align. **Do not tighten nut.** Nut should be loosely secured until the assembly is complete. **[SEE FIG. 5]**

Feed the second nylon bolt through "A" string bridge pin hole and through the oval opening of the assembly bracket to line up the assembly. **[SEE FIG. 6]**

Install lower nut. Screw down nut until you feel some resistance. **[SEE FIG. 7]**

Now you can tighten the entire assembly. **Do not use tools to tighten.** Assembly should be finger tight. Leave clamped and undisturbed for a minimum of 12 hours. **[SEE FIG. 8]**

After at least 12 hours — when the glue has cured and hardened — remove the assembly bracket, nylon screws, and nuts used to align and clamp the piezo to the bridge plate.

You are now ready to install the pre-wired endpin jack.

**INSTALLING THE PRE-WIRED ENDPIN JACK**

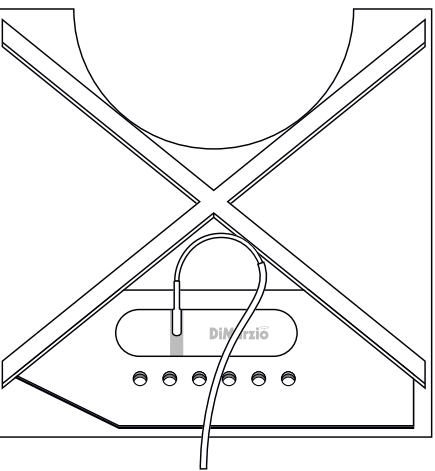
The pre-wired endpin jack **[SEE FIG. 10]** requires a clean <sup>15</sup>/<sub>32</sub>-inch (11.9 mm) hole in the tail block of the instrument.

- IMPORTANT NOTE:** If your guitar already has a hole of the correct diameter for this endpin jack in the tail block, proceed to the paragraph below to complete the installation of the endpin jack. If your guitar does not already have a hole of the correct diameter for this endpin jack in the tail block, we strongly recommend that a qualified guitar technician install the endpin jack as follows:
- Remove the existing endpin and place a piece of masking tape on the

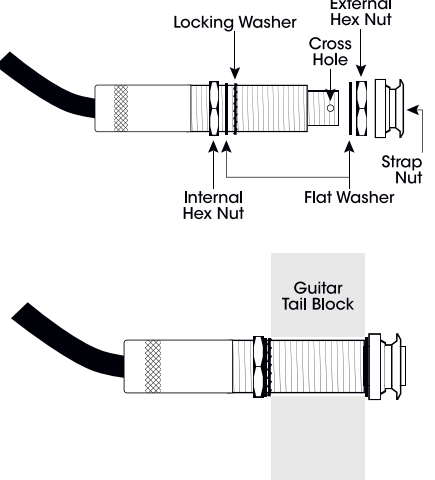
\*or woodworking glue, if you elected to use it

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**FIG. 9 – Final Assembly**



**FIG. 10**



- outside of the instrument over the endpin area to prevent chipping of the guitar finish.
- Enlarge the hole with a <sup>15</sup>/<sub>32</sub>-inch (11.9 mm) tapered reamer, available from Stewart-MacDonald ([www.stewmac.com](http://www.stewmac.com)), part number 4323.
  - Remove the masking tape and proceed with the installation.

Remove the strap nut, hex nut, and one flat washer from the end of the jack assembly. There should still be one locking washer, one flat washer, one hex nut, and a threaded barrel remaining on the jack.

Using care to keep the washers on the jack, bring the jack down through the soundhole into the body and insert it into the hole in the tail block.

Adjust the internal nut so that the larger threaded section of the jack remains recessed <sup>1</sup>/<sub>16</sub>-inch (1.5 mm) below the outside surface of the instrument, and most of the smaller threaded section protrudes from the guitar.

With the jack in place, lay the remaining flat washer over the threads outside the instrument and install the external hex nut finger tight.

Insert the included <sup>3</sup>/<sub>32</sub>-inch Allen wrench through the cross hole in the jack, and hold firmly while tightening the nut. Use of a proper wrench instead of pliers will help prevent damage to the guitar. To avoid cracking the guitar finish, do not over-tighten the nut.

**NOTE:** If the jack will not tighten firmly, remove the external hex nut and re-adjust the internal hex nut until the larger threaded section is recessed at least <sup>1</sup>/<sub>16</sub>-inch (1.5 mm) below the outer surface of the instrument.

Finish by installing the strap nut finger tight. It should cover the retaining nut and washer. The end of the jack must protrude slightly from the end of the strap nut so that when a plug is inserted, it will snap securely in place.

Once the endpin jack is installed, install two of the self-adhesive cable retainer clips on the inner back surface of the guitar to hold down the cable and prevent it from vibrating against the guitar.