

# PICKUP BENDER™

**Series-Parallel**

**User Guide**

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Patent Pending.

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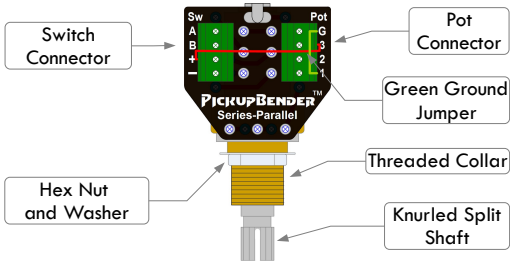
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## What's In The Box?

- ◆ PickupBender™ control switch
- ◆ Jumper wires (ground & output)
- ◆ Install kit (mini screwdriver, hex nut, flat washer, lock washers, hookup wire, B connectors)
- ◆ User guide (this booklet)

# Big Picture



## Before You Install

The PickupBender™ Series-Parallel can be used on guitars with a 4-wire humbucker pickup, and instantly rewires the pickup coils from standard series wiring to parallel wiring.

Series-Parallel can be installed as a volume or tone control. If the connected pickup has its own volume control, it's best to install Series-Parallel as that pickup's volume control.

PickupBender™ control switches are passive (non-powered) devices that combine an integrated switchable wiring mod with a volume/tone control. They replace existing volume or tone controls without the need to drill new holes. They are

easily installed without soldering in most solid and hollow body guitars with passive pickups.

## Mounting Clearances

- ◆ Mounting hole diameter:  $\frac{3}{8}$ (0.375) inch.
- ◆ Threaded collar length:  $\frac{3}{8}$ (0.375) inch.
- ◆ Body cavity depth inside guitar:  $1\frac{1}{4}$  (1.25) inches.
- ◆ Mounting surface thickness:  $\frac{1}{4}$  (0.25) inch maximum.

If mounting PickupBender™ in the guitar body (instead of the pickguard) and the body thickness between the bottom of the control cavity and outside of the body is too thick,

you will need to lower the area around the mounting hole on the inside of the cavity until the threaded collar extends through the body just enough to thread the hex nut on the collar (about  $\frac{1}{8}$  inch). You can use a rotary tool or other tools for this purpose.

**⚠ Lowering the body cavity requires significant skill. If you are not comfortable with doing this yourself, have a qualified guitar technician perform this alteration.**

**Any damage caused during installation is not covered by the product warranty.**



## Control Knob

The PickupBender™ split shaft fits a coarse knurled 18-tooth push-on knob. This is the most common type of push-on knob. A fine 24-tooth push-on knob (usually found on vintage guitars) will fit too tight on the split shaft and may damage the switch when the knob is removed.

You can also use a a set-screw type knob on the split shaft. If you do, be careful to avoid damaging the teeth on the split shaft when tightening the set screw.

**⚠ Damage caused by using a control knob other than a coarse knurled 18-tooth split shaft is not covered by the product warranty.**

# How To Install

## Tools Needed

- ◆ Mini screwdriver (included)
- ◆ Wire cutters and strippers, or scissors and knife
- ◆ Pliers or wrench
- ◆ Crimping tool for B connectors (optional)
- ◆ Masking or cellophane tape
- ◆ Permanent marker, pen, or pencil

## Using B Connectors

The included B connectors and hookup wire can be used to extend your guitar wiring if necessary. B connectors are easy to use and provide a strong dependable connection for splicing wires together.

Strip  $\frac{1}{4}$  inch off the end of the wires, fully insert the wires into the wide opening of the B connector, and flatten the middle section of the connector with pliers, crimper, or similar tool.



Figure A: **B Connector**

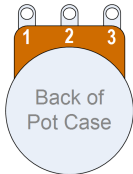
## **Remove Old Control**

- [1] Remove the control knob. For a push-on knob, slowly pull up with a gentle rocking motion. For a set-screw knob, loosen the set screw to remove the knob.
- [2] Loosen control mounting nut. Remove nut and washer(s).
- [3] For a solid body guitar, remove control cover or pickguard to expose pickup wiring.
- [4] For a hollow body guitar, push old control into body and pull the control out through an access hole to expose pickup wiring.

[5] Note which pot lug is grounded, usually 1 or 2 but can be none. The ground lug may be soldered to the pot case or to a ground wire.

[6] Label each wire and component soldered to the pot lugs using tape with the lug number (**1, 2, 3**) written on it. Label ground wires soldered to the pot case with **G**.

[7] Cut wires and components connected to the pot as close to the lugs as possible, and set pot aside for now.



**Figure B: Pot Lug Numbers**

## Install PickupBender™

**NOTE:** *For hollow body guitars, go to step 2.*

- [1] For solid body guitars, insert the PickupBender™ threaded collar into mounting hole from the inside and fasten with hex nut and flat washer on the outside.

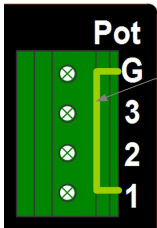
If the collar extends too high above the mounting surface, use 1 or 2 lock washers on the inside of the collar to adjust height.

If the collar is too short to attach the hex nut and flat washer, lower the area around the mounting hole on the inside of guitar cavity (see page 7).

- [2] Insert pot wires labeled **1**, **2**, **3**, or **G** into matching pot connector slots (figure C next page) and tighten screws. **If replacing a tone control, remove and save the output jumper wire.**

***TIP:** Loosen connector screw to open connector clamp so wires will fit in the slot. Tighten the connector screw to close the clamp and hold the wires in place. Use the included mini screwdriver to loosen/tighten the screws.*





Ground jumper typically connects to 1 for volume or 2 for tone

Insert wires into slots on side and tighten screws on top

Figure C: **Pot Connector**

- [3] The ground jumper is installed in pot connector slots **G** and **1** for a typical volume pot. If necessary, move the jumper from slot **1** to the slot with the same number as the grounded lug of the original pot and tighten screw.

**TIP:** *If there are more ground wires than can fit into the **G** slot, connect the multiple ground wires to a short length of wire using a B connector (both included) and insert the single wire into the **G** slot.*

- [4] Identify your pickup wires. Pickups can have from 1 to 4 wires plus a ground wire or braided shielding.

Use the pickup wiring color chart on the next page to identify the colors the pickup maker uses for the start and finish wires of the north and south pickup coils.

If your pickup is not listed, check for an updated list at [www.PickupBender.com](http://www.PickupBender.com) or visit the pickup maker's website.

Pickup Maker	North Start	North Finish	South Start	South Finish
DiMarzio	Red	Black	Green	White
Duncan	Black	White	Green	Red
Fender	Green	White	Red	Black
Gibson	Red	White	Black	Green
Jackson	Green	White	Black	Red
Dean	Black	White	Green	Red

**Figure D: Pickup Wiring Colors**

## North and South Finish Wires

[5] The north and south finish wires are typically connected together. Cut them apart and strip  $\frac{1}{4}$  inch from the end of each wire.

If the north and south finish wires reach the PickupBender™ switch connector, skip to step [7].

[6] Extend the north and south finish wires as follows:

[a] Strip  $\frac{1}{4}$  inch from each end of a length of hookup wire (included) long enough to reach the PickupBender™ switch connector.

- [b] Connect one end of the hookup wire to the finish wire using a B connector (included).
  - [c] Repeat for the other finish wire if needed.
- [7] Insert the **north** finish wire into the **A** switch connector slot, and the **south** finish wire into the **B** switch connector slot (figure E page 26). Tighten screws.

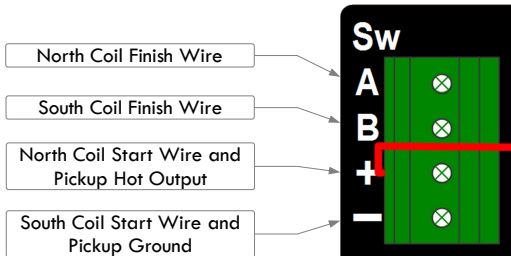
## North Start Wire

- [8] If the north start wire **IS** connected to the PickupBender™ pot connector:
- [a] Insert one end of the included output jumper into the same pot connector slot as the north start wire and tighten screw.
  - [b] Insert the other end of the output jumper into the + switch connector slot (figure E page 26).
  - [c] Skip to step [12].

- [9] If the north start wire is **NOT** connected to the PickupBender™ pot connector, cut the wire approximately in the middle, and strip ¼ inch from each end of the cut wire.
- [10] If both ends of the cut north start wire reach the PickupBender™ switch connector, insert them into the + switch connector slot (figure E page 26), remove and save the output jumper, and tighten screw. Skip to step [12].
- [11] If both ends of the cut north start wire do not reach the PickupBender™ switch connector:



- [a] Strip  $\frac{1}{4}$  inch from each end of a length of hookup wire (included) long enough to reach the PickupBender™ switch connector.
- [b] Connect one end of the hookup wire to both ends of the cut north start wire using a B connector (included) so all 3 wires are connected together.
- [c] Insert the other end of the hookup wire into the + switch connector slot (figure E page 26), remove and save the output jumper, and tighten screw.



**Figure E: Switch Connector**

## South Start Wire

- [12] Cut the south start wire approximately in the middle, and strip  $\frac{1}{4}$  inch from each end of the cut wire.
- [13] If both ends of the cut south start wire reach the PickupBender™ switch connector, insert both wires into the – switch connector slot (figure E page 26), and tighten screw. Skip to step [15].
- [14] If both ends of the cut south start wire do not reach the PickupBender™ switch connector:
- [a] Strip  $\frac{1}{4}$  inch from each end of a length of hookup wire (included).

- [b] Connect one end of the hookup wire to both ends of the cut south start wire using a B connector (included) so all 3 wires are connected together.
  
- [c] Insert the other end of the hookup wire into the — switch connector slot (figure E page 26), and tighten screw.

- [15] Check wires attached to the connectors by **gently** tugging on each wire. If a wire pulls out, loosen screw, reinsert wire fully into slot, and firmly tighten screw.
- [16] For hollow body guitars, feed the PickupBender™ back through access hole, insert threaded collar into mounting hole, and fasten with nut and flat washer.

**TIP:** Feed a string or wire into body through mounting hole and attach it to the split shaft. Pull the string to guide the PickupBender™ through the mounting hole from inside of guitar.

[17] For a push-on knob, align knob with knurling and carefully push knob onto the knurled split shaft. For a set-screw knob, place knob on knurled split shaft and tighten set screw to hold it in place (be careful to avoid damaging knurled split shaft).

## Using Series-Parallel

Pull out on the PickupBender™ Series-Parallel control knob to switch the connected pickup to parallel coil mode. Push in on the knob to switch back to standard series coil mode.

Parallel coil mode produces a thin/bright sound (similar to a single coil pickup) that varies based on the model of humbucker pickup. Switching to parallel coil mode does **not** disable the humbucker's noise canceling function.

## **Product Warranty**

Manufacturer warrants product to be free from defects in materials and workmanship under normal use and service for a period of one (1) year from date of purchase. Manufacturer, at their discretion, will either repair or replace defective product.

Modifying product in any way will void this warranty. Damage caused by improper installation or misuse of product are not covered under this warranty.

Manufacturer is not be liable for any consequential damage as a result of the product's use in any circuit or



assembly including damage caused by installation, use or misuse of product, or from any delay in the performance of this warranty due to causes beyond their control.

The foregoing warranty is in lieu of all other warranties, expressed or implied. Manufacturer neither assumes nor authorizes any person to assume any obligation or liability in connection with the sale of this product.





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