

Application Note

Bourns® Model PDB182-GTRB Blend-Balance Guitar Potentiometers in Bass Guitars



Model PDB182-GTRB

Electric guitar manufacturing is a multi-billion dollar industry with major manufacturers established worldwide. From the introduction of the first mass-produced electric guitar in 1950, guitarists have been mesmerized with advances in technology and the wide array of after market parts commercially available for guitar upgrades. Specialty products such as the Bourns® PDB182-GTRB allow the guitarist multiple functions utilizing a single control. This application note addresses utilizing a PDB182-GTRB to blend and balance two pickups in an electric or bass guitar.

Bourns® Model PDB182-GTRB Blend-Balance Guitar Potentiometer

The Bourns® PDB182-GTRB Blend-Balance Guitar Potentiometer is designed to allow the guitarist to blend and balance two pickups with a single 18 mm package size potentiometer. The potentiometer is designed with two independent elements adjusted by a single shaft. Each element has a unique taper as follows:

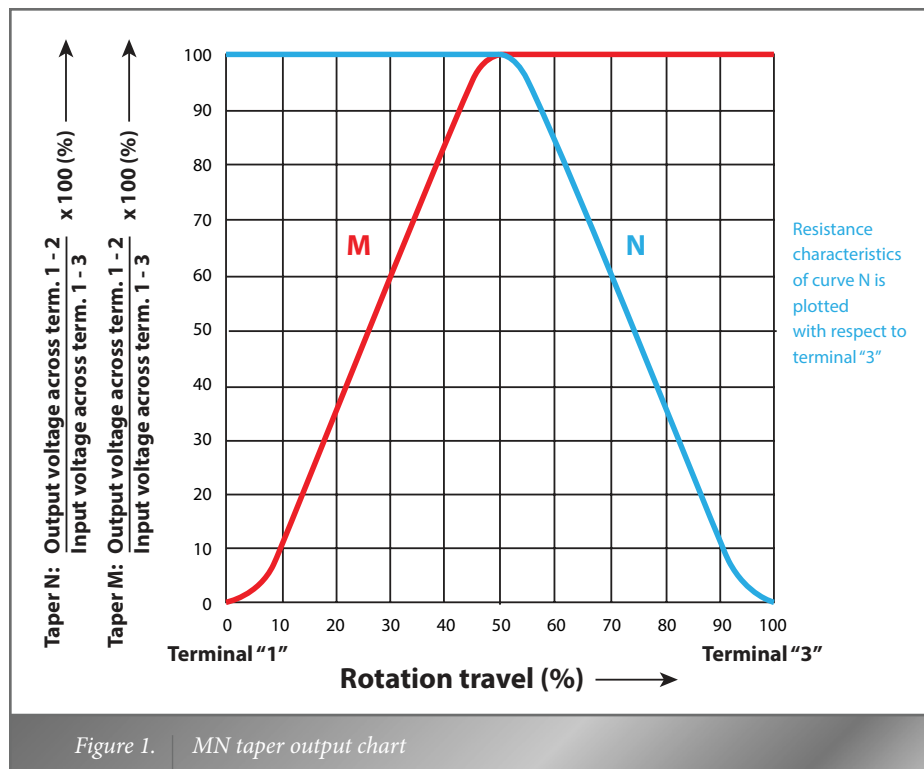
- Element #1 has a linear output increasing from 0 % to 100 % output over 50 % of the mechanical travel in the clockwise direction. The element then stays at 100 % output for the remaining 50 % of mechanical travel. This output curve is identified in figure 1 as the “M” taper.
- Element #2 is at 100 % output over the initial 50 % of mechanical travel in the clockwise direction. The output decreases linear 100 % to 0 % over the remaining 50 % of mechanical travel. This output curve is identified in figure 1 as the “N” taper.



Model PDB182-GTRB

Bourns® Model PDB182-GTRB (Continued)

Figure 1 shows both tapers superimposed on each other. At 50 % of mechanical/electrical travel, both pickups are in the full “on” position. The PDB182-GTRB features a center detent position indicating 50 % of mechanical/electrical travel.



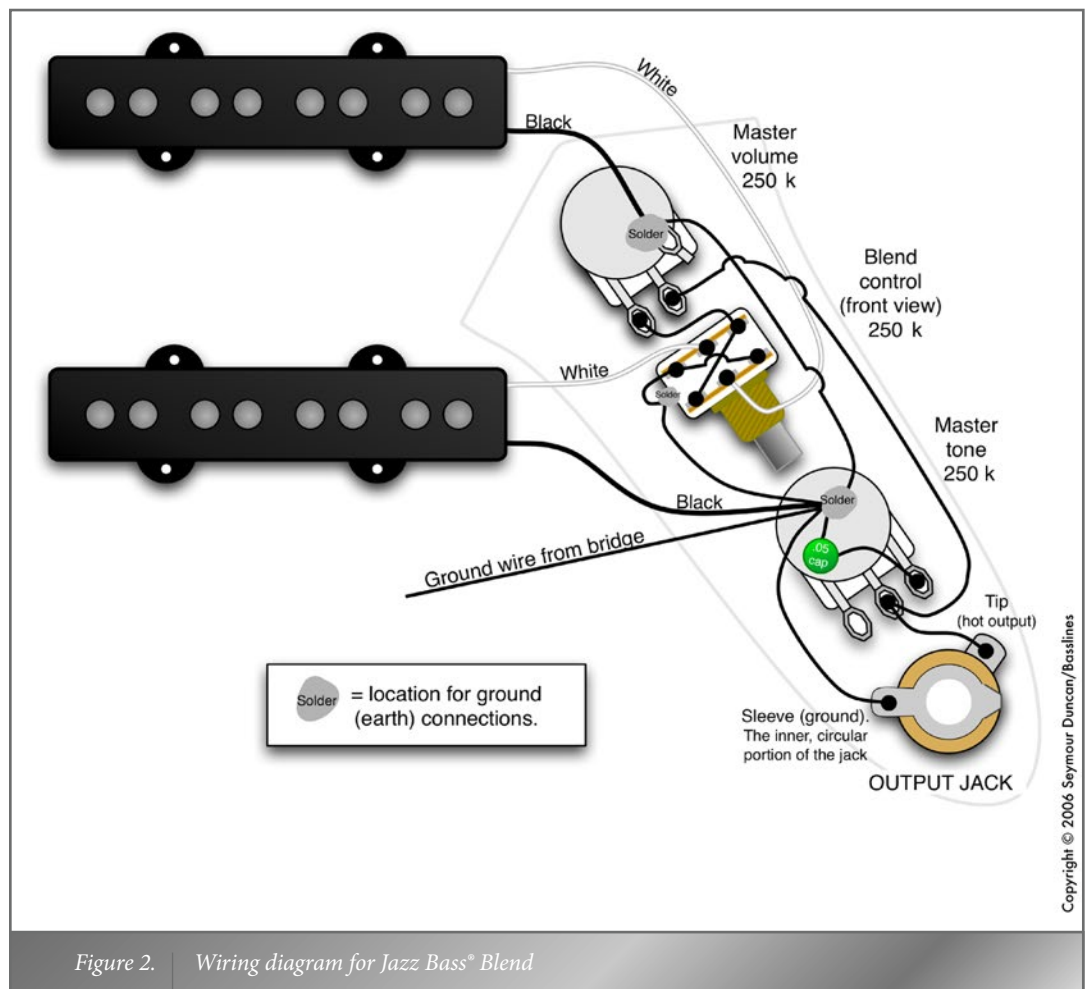


Model PDB182-GTRB

Bourns® Model PDB182-GTRB (Continued)

There are several ways to wire the PDB182-GTRB Blend-Balance Guitar Potentiometer in bass guitars. The following wiring diagrams will demonstrate two wiring configurations where a blend-balance potentiometer has been substituted for a volume control.

Figure 2 shows a wiring diagram for a bass guitar with two pickups, two volume controls and one tone control. The second volume control has been substituted with a blend-balance potentiometer providing added tonal flexibility.



Bourns® Model PDB182-GTRB (Continued)

Figure 3 shows a bass guitar with three pickups, two volume controls and one tone control. The second volume control has been substituted with a blend-balance potentiometer providing added tonal flexibility.



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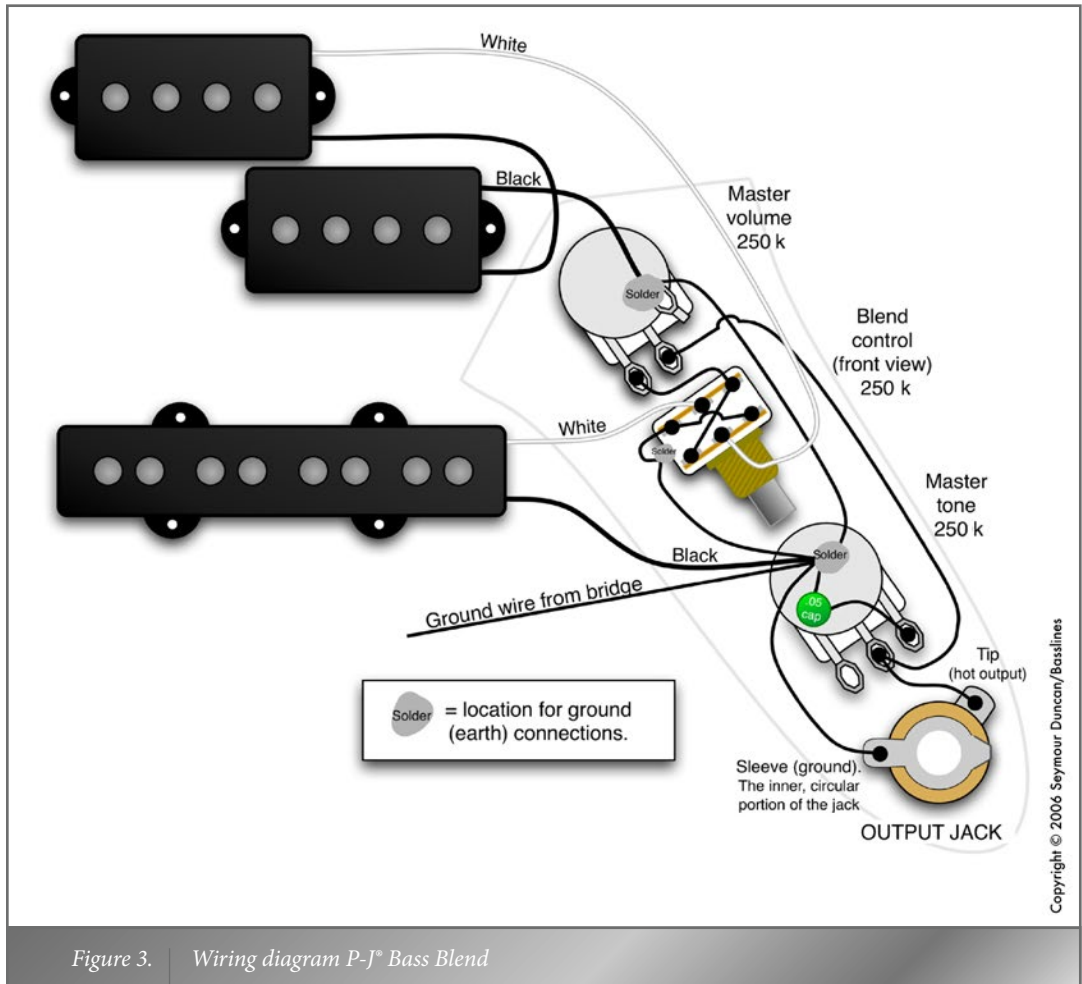


Figure 3. Wiring diagram P-J® Bass Blend

Bourns® Model PDB182-GTRB Blend-Balance Guitar Potentiometers in Bass Guitars

OTHER BOURNS® GUITAR POTENTIOMETERS AVAILABLE

Bourns® Sensors and Controls Product Line now offers a full line of guitar potentiometers including the following:



Model PDB182-GTRB

- Model 82 Vintage Guitar Potentiometer
- Model 95 Premium Guitar Potentiometer
- PDB241-GTR Series Standard 24 mm Guitar Potentiometer
- PDA241-HRT Series 24 mm Guitar Potentiometer with high torque
- PDB181-GTR Series 18 mm Mini-Guitar Potentiometer
- PDB183-GTR Series 18 mm Guitar Potentiometer with push-pull switch for phase switching capability

For further technical support and for complete pro audio solutions, please visit

www.bourns.com/proaudio

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