



HT-6

# POLYPHONIC TUNER

OWNER'S MANUAL

 **HardWire**<sup>®</sup>

EXTREME PERFORMANCE PEDALS

## DECLARATION OF CONFORMITY

Manufacturer's Name: Harman Signal Processing  
Manufacturer's Address: 8760 S. Sandy Parkway  
Sandy, Utah 84070, USA

declares that the product:

Product name: HT-6

Product option: all (requires Class II power adapter that conforms to the requirements of EN60065, EN60742, or equivalent.)

conforms to the following Product Specifications:

Safety: IEC 60065 -01+Amd I  
EMC: EN 55022:2006  
EN 55024:1998  
FCC Part 15

Supplementary Information:

The product herewith complies with the requirements of the:

Low Voltage Directive 2006/95/EC  
EMC Directive 2004/108/EC.  
RoHS Directive 2002/95/EC  
WEEE Directive 2002/96/EC

With regard to Directive 2005/32/EC and EC Regulation 1275/2008 of 17 December 2008, this product is designed, produced, and classified as Professional Audio Equipment and thus is exempt from this Directive.

With regard to Directive 2005/32/EC and EC Regulation 278/2009 of 6 April 2009, this regulation applies to Class A (single output) external power supplies. The external power supply used with this product is a multi-output power supply and thus is exempt from this Directive.

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Signal Processing  
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Date: March 1, 2011

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If you want to dispose of this product, do not mix it with general household waste. There is a separate collection system for used electronic products in accordance with legislation that requires proper treatment, recovery, and recycling.

Private households in the 25 member states of the EU, in Switzerland and Norway may return their used electronic product free of charge to designated collection facilities or to a retailer (if you purchase a similar new one).

For countries not mentioned above, please contact your local authorities for a correct method of disposal.

By doing so you will ensure that your disposed product undergoes the necessary treatment, recovery, and recycling and thus prevent potential negative effects on the environment and human health.

## ELECTROMAGNETIC COMPATIBILITY

This device complies with part 15 of the FCC Rules and the Product Specifications noted on the Declaration of Conformity. Operation is subject to the following two conditions:

- this device may not cause harmful interference, and
- this device must accept any interference received, including interference that may cause undesired operation.

Operation of this unit within significant electromagnetic fields should be avoided.

- use only shielded interconnecting cables.

## Warning

**For your protection, read the following:**

### Important Safety Instructions

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Do not use this apparatus near water.
5. Clean only with dry cloth.
6. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
7. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
8. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
9. Unplug this apparatus during lightning storms or when unused for long periods of time.
10. No user serviceable parts inside. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
11. **WARNING:** To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture.
12. Refer to labels on the unit, including bottom cover, or other markings and pertinent information.

## WARRANTY:

We at HardWire® are proud of our products and back-up each one with the following warranty:

Please register online at [hardwirepedals.com](http://hardwirepedals.com) within ten days of purchase to validate this warranty.

HardWire warrants this product, when used solely within the U.S., to be free from defects in materials and workmanship under normal use and service.

HardWire liability under this warranty is limited to repairing or replacing defective materials that show evidence of defect, provided the product is returned to HardWire WITH RETURN AUTHORIZATION, where all parts and labor will be covered up to a period of one year (this warranty is extended to a period of six years when the product has been properly registered through our website). A Return Authorization number may be obtained from HardWire by telephone. The company shall not be liable for any consequential damage as a result of the product's use in any circuit or assembly.

Proof-of-purchase is considered to be the burden of the consumer.

HardWire reserves the right to make changes in design, or make additions to, or improvements upon this product without incurring any obligation to install the same on products previously manufactured.

The consumer forfeits the benefits of this warranty if the product's main assembly is opened and tampered with by anyone other than a certified HardWire technician, or if the product is used with voltages outside of the range suggested by the manufacturer.

The foregoing is in lieu of all other warranties, expressed or implied, and HardWire neither assumes nor authorizes any person to assume any obligation or liability in connection with the sale of this product. In no event shall HardWire or its dealers be liable for special or consequential damages or from any delay in the performance of this warranty due to causes beyond their control.

NOTE: The information contained in this manual is subject to change at any time without notification. Some information contained in this manual may also be inaccurate due to undocumented changes in the product or operating system since this version of the manual was completed. The information contained in this version of the owner's manual supersedes all previous versions.

## **Introduction**

More than a remarkable achievement, HardWire® represents a collection of significant improvements in effects pedals for guitar. HardWire pedals provide a suite of well-known effects, each with superior tone and control. But these pedals go above and beyond their peers, providing such distinguishing features as true bypass and high voltage operation, making them essential additions to the signal chain of players who know about sound quality and demand the utmost in performance.

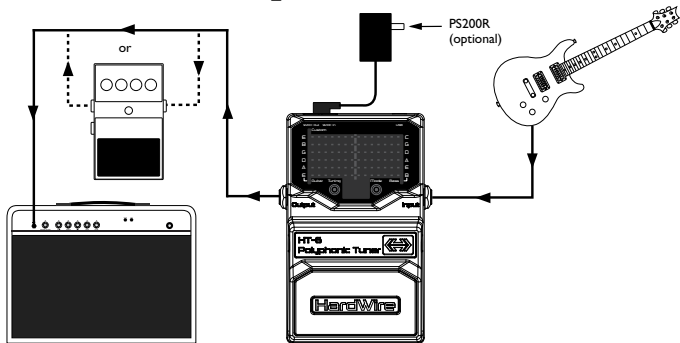
### **Included Items:**

- HardWire HT-6 Polyphonic Tuner
- Foot Switch Glow Sticker
- Hook-and-loop Pedalboard Pad
- Online Warranty Registration Information Card

## Features

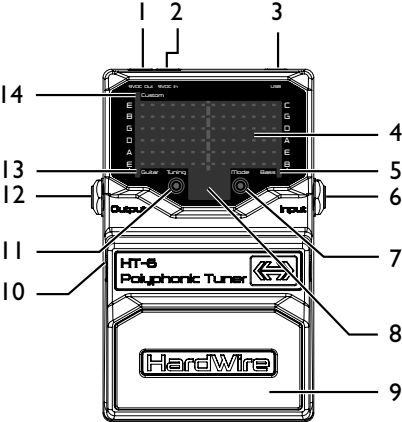
- Polyphonic Tuning (tune all strings at once)
- Single Note Tuning (accurately tune single strings for any note)
- Automatically detects between capo tuning, flat tuning, and standard tuning (+/- 6 semitones)
- Unified Polyphonic/Single Note display
- Muted output when tuner is engaged
- Normal or Strobe display for Single Note tuning
- Adjustable Reference: A440, A $\flat$ , G, G $\flat$ , F, E, and 436 Hz to 445 Hz
- Works with Guitar and Bass
- Battery or AC powered (using optional power supply)
- DC Output connection for powering other pedals
- True Bypass

# Amplifier In-Line Setup



**Notes!** Use unbalanced mono instrument cables only with the HT-6. Any effects devices placed in the signal chain before the HT-6 should be bypassed before tuning an instrument with the HT-6.

# Pedal Interface





## What Does This Do?

- 1. DC Power Output** - This jack is a power output for providing additional power to other pedals. The Harman PS200R power adapter supplies 250mA of additional current when used. If using a different adapter, be sure it has the correct voltage and polarity (9VDC with the center terminal negative), and the maximum current draw of the connected pedals does not exceed 1000mA.

**Note!** Do not power other pedals with the HT-6 Tuner when using battery power!

- 2. DC Power Input** - Connect the optional Harman PS200R power adapter to this jack.

- 3. USB Jack** - This jack is used for updating the pedal's firmware.
- 4. LED Display Matrix** - This area features 90 LEDs in six rows that are used to display both polyphonic and single note tuning states of your instrument. When strumming all strings on your guitar or bass, the six rows will begin lighting and show the tuning state of each independent string (for bass, 4 – 6 rows will light depending on the type of bass). A single row will light when individual strings are being tuned.
- 5. Bass LED** - This LED lights when any of the three Bass Display Modes are selected.
- 6. Input Jack** - Connect your instrument here. This jack enables battery power to the pedal when connected.

**Notes!** Use unbalanced mono instrument cables only. To prolong battery life, disconnect the cable from the Input Jack when not in use. If using the optional Harman PS200R power supply, this cable can remain connected.

7. **Mode Button** - When the tuner is on, this button is used to select between the two Display Modes: Normal and Strobe.
8. **Note Display** - This series of LEDs is used to show the note played when tuning strings individually and to display the guitar Fret Offset feature when using a capo or lowered tunings.
9. **Foot Switch** - Press this Switch to turn the tuner on and off.
10. **Foot Switch Release Pins** - These two pins are spring-loaded hinges that hold the Foot Switch in place. Push these pins in with the tip of a 1/4" guitar cable to release the actuator from the pedal chassis, exposing the battery compartment.
11. **Tuning Button** - When the tuner is on, this button is used to select between the different Tuning options. Pressing and holding the Tuning button will access the Tuning References.

- 12. Output Jack** - Connect this output to your amp or the input of the next pedal in the signal chain. The signal from this output connection will be muted when the tuner is enabled.
- 13. Guitar LED** - This LED lights when Guitar Standard (G ST) tuning is selected.
- 14. Custom LED (Guitar)** - This LED lights when Drop D (DRPD) tuning for guitar is selected.

# Tuner Display Modes

Pressing the **Tuning Button** multiple times toggles between the below modes:

- **Guitar Standard (EADGBE)** – This mode is indicated when the Guitar LED is lit and “G ST” appears in the Matrix Display.
- **Guitar Drop D (DADGBE)** – This mode is indicated when the Custom LED is lit and “DRPD” appears in the Matrix Display.
- **Bass (4 string – EADG)** – This mode is indicated when the Bass LED is lit, “BASS” appears in the Matrix Display, and “4” appears in the Note Display.
- **Bass (5 string – BEADG)** – This mode is indicated when the Bass LED is lit, “BASS” appears in the Matrix Display, and “5” appears in the Note Display.
- **Bass (6 string – BEADGC)** – This mode is indicated when the Bass LED is lit, “BASS” appears in the Matrix Display, and “6” appears in the Note Display.

## Selecting A Tuner Reference

The HT-6 Tuner has multiple tuning references to select from:

- A=436 - 445 (including A=440 standard tuning)
- A=A $\flat$ \*
- A=G\*
- A=G $\flat$ \*
- A=F\*
- A=E\*

**\*Half step to 5 half steps below standard A440.**

To set the HT-6 Tuner's tuning reference, follow these steps:

1. Press the **Foot Switch** to turn on the tuner.
2. Press and hold the **Tuning Button** for 2 seconds. The currently saved tuning reference will appear in the **LED Display Matrix**.

Successive presses of the **Tuning Button** will select the next tuning reference. Continual pressing will cycle through all references.

- 3.** Once the tuning reference you want to use is displayed, wait 3 seconds and the pedal will return to normal operation and automatically save this tuning reference.

## Polyphonic Tuning

The main benefit of the HT-6 Tuner is the ability to see and tune all six strings simultaneously. To do this, follow these steps:

1. Press the **Foot Switch** to turn the tuner on. The output signal will be muted while the tuner is on.
2. Strum all strings on your instrument. The **LED Display Matrix** rows will begin lighting. Each LED row represents each string on the instrument. The bottom row of LEDs represents the low E string (B string on a 5/6 string bass) and the top row represents the high E string (C string on a 6 string bass). If tuning a 4 string bass, the middle 4 rows will light.
3. If a string is in tune, the three center LEDs (yellow-blue-yellow) will light on the corresponding string's row. If a string is flat, LEDs to the left of



the center blue LED will light. If a string is sharp, LEDs to the right of the center blue LED will light.

4. Tune the strings up or down as needed until each of the center blue LEDs are lit. If some rows are not displaying LEDs, mute and then strum again until all rows are lighting up.
5. When tuning is complete, press the **Foot Switch** to bypass the tuner.

***Troubleshooting Tip!*** If the tuner is not responding as expected, it may be that the Tuning Display Mode (i.e. Bass, Guitar or Custom), the Tuning Reference, or the Fret Offset is set incorrectly. If you are experiencing problems try this:

1. Select the correct Tuning Mode for your application (see page 9).
2. Configure the pedal for the desired Tuning Reference (see page 10).
3. Assign the Fret Offset if using a capo or other lowered tuning (see page 21).

## Display Modes (Single Note Mode Only)

The HT-6 Tuner has two different tuning display modes when using Single Note tuning mode: Normal and Strobe.

### **Normal Mode**

When Normal mode is selected, single or groups of LEDs will be lit on the row corresponding to the string that is played, indicating tuning status. LEDs to the left of the center BLUE LED will be lit if the note is flat and the note needs to be tuned up. LEDs to the right of the center BLUE LED will be lit if the note is sharp and the note needs to be tuned down. When only the center BLUE LED is lit, the note is in tune.

### **Strobe Mode**

When Strobe mode is selected, the string's tuning LEDs will cycle in motion in the direction of the note's current pitch. If the note is flat, the LEDs will be in motion to the left meaning the note needs to be tuned up. If the note is sharp, the LEDs will be in motion to the right meaning the note needs to be tuned

down. The speed of the motion indicates how far out of tune the note is. The speed will gradually slow down as the note is brought in tune. When the note is in tune, the cycling LEDs will stop moving indicating the note is in tune.

## Selecting Display Modes

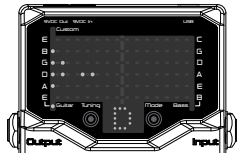
To select display modes, follow these steps:

1. Press the **Foot Switch** to turn on the tuner.
2. Press the **Mode Button**. The currently saved display mode will appear in the **LED Display Matrix**, “NOR” (normal) and “STRB” (strobe/streaming). Successive presses of the **Mode Button** will alternately select between these two tuning display modes.
3. Once the mode you want to use is displayed, wait 3 seconds and the pedal will return to normal operation and automatically save the last display mode selected.

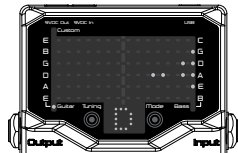
# Single Note Tuning - Normal Mode

To tune your guitar or bass, one string at a time, follow these steps:

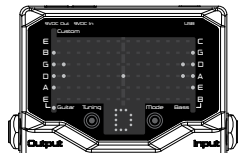
1. Press the **Foot Switch** to turn the tuner on. The output signal will be muted while the tuner is on.
2. Play a note on your instrument. The note being played will now show in the **Note Display**. If the note is the sharp of the note, a sharp symbol will appear to the right of the **Note Display**. Flat instances of a note (e.g. G $\flat$ ) are not displayed on the HT-6. These notes will be displayed as their nearest sharp equivalent (G $\flat$  will be displayed as F $\sharp$ ).
3. If the displayed note's pitch is flat, LEDs to the left of the center blue LED will be lit. A set of red LEDs on the left side of the LED Display Matrix will also form an arrow pointing inward.



4. If the displayed note's pitch is sharp, LEDs to the right of the center blue LED will be lit. A set of red LEDs on the right side of the LED Display Matrix will also form an arrow pointing inward.



5. When only the center blue LED and two sets of red LEDs pointing inward are lit, the note is in tune.



6. Continue to tune the rest of your strings in this same fashion.
7. When tuning is complete, press the **Foot Switch** to bypass the tuner.

**Single Note Tuning Tip!** For the best results when tuning individual strings, try to mute any strings that are not being tuned.

**Troubleshooting Tip!** If the tuner is not responding as expected, it may be that the Tuning Display Mode (i.e. Bass, Guitar or Custom), the Tuning Reference, or the Fret Offset is set incorrectly. If you are experiencing problems try this:

1. Select the correct Tuning Mode for your application (see page 9).
2. Configure the pedal for the desired Tuning Reference (see page 10).
3. Assign the Fret Offset if using a capo or other lowered tuning (see page 21).

## Single Note Tuning - Strobe Mode

To tune your guitar or bass, one string at a time, follow these steps:

1. Press the **Foot Switch** to turn the tuner on. The output signal will be muted while the tuner is on.
2. Play a note on your instrument. The note being played will now show in the **Note Display**. If the note is the sharp of the note, a sharp symbol will appear to the right of the **Note Display**. The LEDs in the row that correspond to the string being played will also light in the **LED Display Matrix** showing the current notes tuning status.
3. Begin adjusting the tuning of your instrument based on the behavior of the LEDs in the **LED Display Matrix**. If LEDs are in motion to the left, the note displayed is flat and needs to be tuned up. If LEDs are in motion to the right, the note displayed is sharp and needs to be tuned down. As the string gets closer to being in tune, with the note displayed,

the LED movement will slow down. When the LED array stops moving, the note is in tune.

4. Continue to tune the rest of your strings in the same fashion.
5. When tuning is complete, press the **Foot Switch** to bypass the tuner.

**Single Note Tuning Tip!** For the best results when tuning individual strings, try to mute any strings that are not being tuned.

**Troubleshooting Tip!** If the tuner is not responding as expected, it may be that the Tuning Display Mode (i.e. Bass, Guitar or Custom), the Tuning Reference, or the Fret Offset is set incorrectly. If you are experiencing problems try this:

1. Select the correct Tuning Mode for your application (see page 9).
2. Configure the pedal for the desired Tuning Reference (see page 10).
3. Assign the Fret Offset if using a capo or other lowered tuning (see page 21).



## Setting the Fret Offset

The Fret Offset mode works by setting the expected notes for each string to be a fixed offset (in semitones) from a standard setting. This is a useful feature for guitarists who occasionally use a capo or a guitar tuned down 1/2 or a whole step during a performance. Changing the Fret Offset can be accomplished either automatically or manually.

### Setting The Fret Offset Automatically

1. If your guitar is already roughly in tune (for example you just placed a capo on the guitar), you can automatically set the offset by holding down the **Foot Switch**.
2. After 2 seconds, the **LED Matrix Display** will show "FRET" and the **Note Display** will show the current offset (usually 0 if being set for the first time).

3. Strum your guitar while holding down the **Foot Switch**. The offset will be detected and will show in the **Note Display** (-6 to 6).
4. Releasing the **Foot Switch** will put you back into “Ready to Tune” mode.

### Setting The Fret Offset Manually

1. Hold down the **Foot Switch** until the **LED Matrix Display** shows “FRET” and the **Note Display** shows the current offset (usually 0 if being set for the first time).
2. While holding down the **Foot Switch**, press the **Tuning Button** or **Mode Button** to set the fret offset (-1 to -6 for drop tune, 0 for no offset, or 1 to 6 for capo).

3. Once the offset you want is selected, release the **Foot Switch**. The “Ready to Tune” state is re-entered after no button presses for 3 seconds.

**Note!** Setting the Fret Offset does not change the tuning reference. Therefore, when tuning while using a Fret Offset, the true pitch of the note being played will be displayed. This means if A440 is the selected tuning reference and you set the Fret offset to +1 and then play the low E string (without a capo), E will be the displayed note, which is the actual true pitch of the note.

## Using the HT-6 to Power Other Pedals

The HT-6 Tuner has the ability to power other pedals in your pedalboard using an optional multi pedal power cable. To use this feature, follow these steps:

1. Connect the PS200R power adapter to the HT-6 Tuner's DC Power Input jack.
2. Connect one end of the power chain multi pedal power cable to the HT-6 Tuner's DC Power Output jack.
3. Connect your other pedals to the available multi pedal power cable.

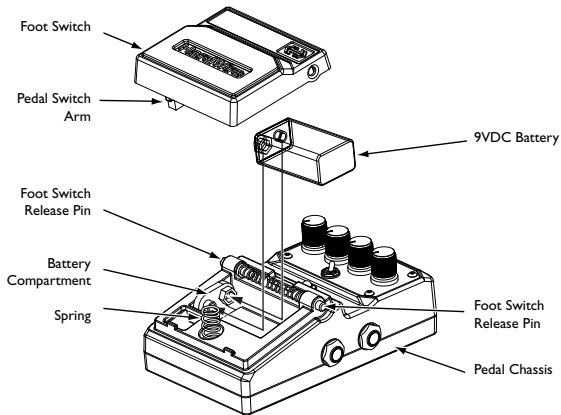
**Note!** Do not power other pedals with the HT-6 Tuner when using battery power! When using the PS200R power adapter, the total current draw of all connected pedals should not exceed 250 mA. Consult your other pedal's power requirements and make sure they can be connected to the HT-6 Tuner in this manner. Failing to do so may cause damage to your other pedals and the HT-6 Tuner.

## Battery Operation

In the event that battery power is completely depleted, HardWire® pedals automatically switch into bypass. This eliminates the need to remove the pedal from your pedal chain if the battery is dead. To replace the battery, do the following:

1. Using the tip of a 1/4" guitar cable, push one of the Release Pins in on either side of the Foot Switch, and remove it from the pedal chassis.
2. Remove the battery from the battery compartment and disconnect the battery cable.
3. Connect a new battery to the battery cable and put it back in the battery compartment. Make sure the battery cable does not interfere with the spring or pedal switch arm.
4. Place one hole of the Foot Switch over its corresponding pin.
5. Push the opposite pin in and lower the other side of the Foot Switch into place over the depressed pin. Release the pin. When the Foot

Switch is properly fastened, both release pins are flush with the outer side of the pedal.



## Low Battery Message

When using the HT-6 Polyphonic Tuner with a battery, the display will flash BATT approximately 30 minutes before the end of the battery's life. This low battery message will only be displayed while the tuner is enabled and not when it is bypassed.

It is advised to replace the battery promptly when this message is displayed to continue uninterrupted operation of the HT-6.

**Note!** Typical battery life expectancy will be about 8 hours (continuous use). Switching the pedal to bypass mode—when not in use—will prolong battery life.

## **HardWire® Performance Accessories**

The performance accessories make integrating a HardWire® pedal into any pedal board a snap. The following accessories are included:

- Hook-and-loop Pedalboard Pad (designed to attach to the surfaces found on most commercial pedalboards)
- Foot Switch Glow Sticker (easily visible on dark stages)



## Hook-and-loop Pedalboard Pad

To attach the Pedalboard Pad, do the following:

1. Peel off the existing rubber skid pad from the bottom of the pedal.
2. Peel the adhesive protector from the back of the Pedalboard Pad.
3. Apply the Pedalboard Pad to the bottom of the pedal.



## Foot Switch Glow Sticker

To attach the Foot Switch Glow Sticker, do the following:

1. Peel the adhesive backing from the Foot Switch Glow Sticker.
2. Apply the Glow Sticker to the top of the Foot Switch.



# Specifications

<b>Controls:</b>	On/Off Foot Switch, Mode Button, and Tuning Button
<b>Jacks:</b>	Input, Output
<b>Tuning Range:</b>	27.5 Hz - 1320 Hz
<b>Tuning Accuracy:</b>	+/- 1 cent
<b>Input Impedance:</b>	Tuner On: >1 M $\Omega$ Tuner Off (Bypass): True hardwire bypass
<b>Power Supply:</b>	9 V Alkaline dry battery or Harman PS200R, 9 VDC power supply
<b>Current Draw:</b>	Tuner On: 45 mA (typical at 9 VDC) Tuner Off (Bypass): 15 mA (typical at 9 VDC)
<b>Power Consumption:</b>	Tuner On: 400 mW (typical w/optional PS200R) Tuner Off (Bypass): 135 mW (typical w/optional PS200R)
<b>Battery Life Expectancy:</b>	8 hrs (continuous use)/Prolonged battery life when in bypass mode
<b>DC Power Output Current:</b>	250 mA max w/optional Harman PS200R power supply 1000 mA max w/power supply rated 1050 mA or above
<b>Dimensions:</b>	5.25"(L) x 3.5"(W) x 2.15"(H)
<b>Weight:</b>	1.3 lbs.
<b>Optional Power Supply:</b>	PS200R-100 (100 V~ 50/60 Hz) 9.6 VDC @ 300 mA PS200R-120 (120 V~ 60 Hz) 9.6 VDC @ 300 mA PS200R-230 (230 V~ 50 Hz) 9.6 VDC @ 300 mA PS200R-240 (240 V~ 50 Hz) 9.6 VDC @ 300 mA



EXTREME PERFORMANCE PEDALS

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