

# TankDriver™ 500

## 500 Series Module



## User Guide

# Radial® TankDriver™ 500 User Guide

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**Congratulations and thank you** for investing in what will possibly be one of the most fun products you have ever owned! No, not because of what it does on its own, but what you could potentially do as you experiment with the effects you will create trying various reverb tanks that may be hidden in your closet! There is no telling what weird or exciting effects you will create.

As with most Radial Products, the TankDriver is designed to be 'plug-and-play' easy to use and as always - if you take a few moments to read the manual you will surely get more out of the unit than by guessing your way through. If you find something is missing, we recommend you visit the TankDriver web page FAQ section. This is where we post questions from users, offer tips and make suggestions. If you do not find what you need, feel free to send email to [info@radialeng.com](mailto:info@radialeng.com) and we will do our very best to reply in short order.

Now get ready to spring forward like never before!

Boing... Boing... Boing...

[www.radialeng.com](http://www.radialeng.com)

Made in Canada 

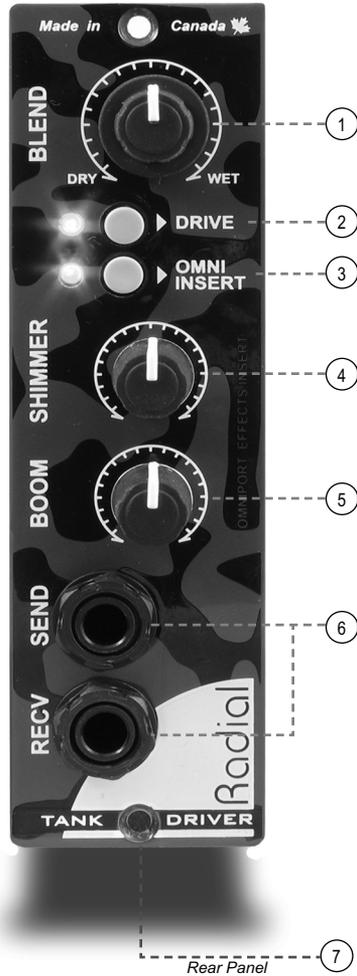


## **WARNING NOTICE TO USER!**

Although preventative safety measures have been designed into Radial 500 series products **we strictly advise against hot-swapping modules** or plugging and unplugging them when the Workhorse or other 500 series rack is powered on. Hot swapping can cause connection sparks at the card-edge connector that could send damaging transients to other equipment. This also greatly reduces the life span of the contacts. Damage due to hot swapping is not covered under warranty. There are no user serviceable parts inside.

**FEATURE SET**

1. **BLEND CONTROL:** Lets you adjust the wet-dry mix between the original unprocessed signal and the reverb tank loop.
2. **DRIVE SWITCH:** Introduces a signal boost at the SEND jack for tanks that need a little more drive to produce a good signal.
3. **OMNI INSERT:** Turns on the Workhorse TRS Omniport insert jack. This is wired in series with the front-panel SEND and RECV jacks and allows the tank to be connected on the rear panel. Available when installed in a Radial Workhorse.
4. **SHIMMER:** Boosts or cuts the high frequency response of the wet return signal.
5. **BOOM:** Boosts or cuts the low frequency response of the wet return signal.
6. **SEND & RECV 1/4" jacks:** Separate send and receive 1/4" jacks are used to connect to and from a spring reverb tank.
7. **OMNIPOINT:** Alternate send and receive 1/4" TRS insert connection for a reverb tank. Available when installed in a Radial Workhorse.



## OVERVIEW

The Radial TankDriver is a unique 500 series module that allows you to convert a balanced line-level signal from a preamp, recorder or mixing console and drive it through a guitar amp's spring reverb tank. You could, for instance blend spring reverb with vocals while recording or try it with drums tracks to create unique sonic signatures during mix-down. Since you probably have more than one guitar amp in your studio you can try different reverbs tanks on different tracks.

The design begins with a low noise output circuit with normal and high-gain settings for new and vintage spring reverbs. Separate Shimmer and Boom EQ controls allow you to adjust the treble and bass response of the reverb. Studio quality buffers produce reverb with less noise and wider bandwidth. A Blend knob gives you full control over the wet/dry mix.

## GETTING STARTED

Before making any connections, start by turning off your audio system and turning all volume levels down. This helps protect equipment from turn-on transients that could damage loudspeakers and other sensitive equipment. We recommend using a power bar with an on/off switch as this makes it easy to turn on and off the 500 series rack, monitors etc. using a single switch. Carefully plug the TankDriver into your 500 series rack making sure to avoid excessive stress on the card edge connector. Screw the module in to ensure it does not accidentally get dislodged.

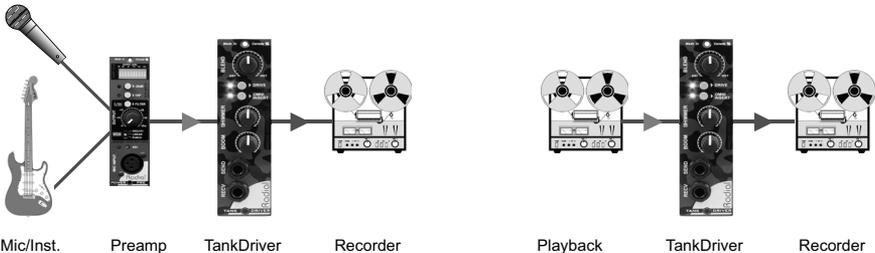
When you plug the TankDriver into your 500 series rack it will automatically route the input and output to the module. When used with the Radial Workhorse™, this is augmented with ¼" TRS connectors, DSubs and a signal to feed the Workhorse mixer. Using the TankDriver with the Workhorse also activates the Omniport. In this instance the Omniport turns into an alternate send and receive I/O that allows the reverb tank to be connected at the rear panel or through a studio patchbay.

### Start by setting up the TankDriver panel controls as follows:

1. Set the BLEND control to the 12 o'clock position.
2. Set the DRIVE switch to normal (switch out).
3. Turn off the Omniport insert (switch out).
4. Set the Shimmer and Boom controls to the 12 o'clock position.

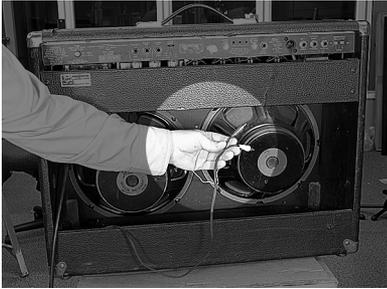
## Plugging In The Module

Connect the balanced line output from an instrument preamp, mic preamp or recording system to the TankDriver's input. The TankDriver will produce a balanced line output that can be connected to additional modules for further processing before connecting to the recording system.

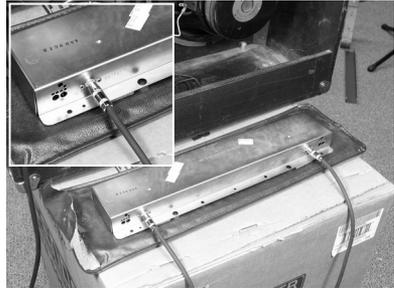


### Filling The Tank

Guitar amps usually have their reverb tank mounted in the bottom of the cabinet and sometimes in a padded vinyl bag. Most reverb tanks use RCA type cables to connect to jacks on the amp chassis.

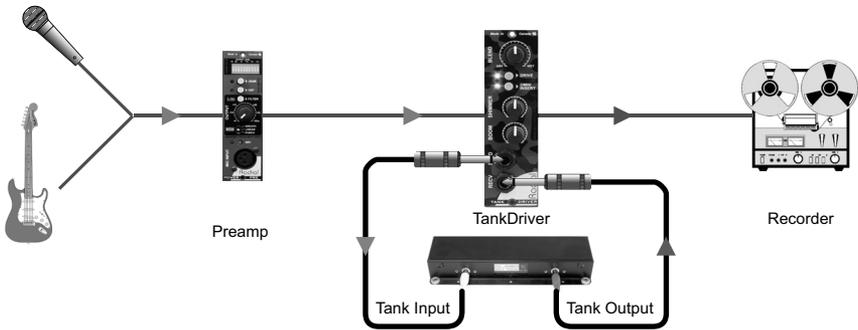


Some amps have jacks on the chassis to disconnect the reverb tank RCA cables.



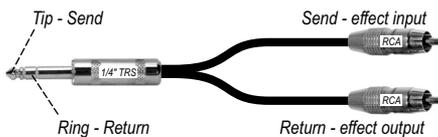
If the tank cables are hard-wired into the chassis you can expose the tank and connect directly to it.

Once you have a connection point to the tank established, patch the front panel send and receive jack to the tank using 1/4" to RCA cables. To ensure optimum signal transfer use high quality cables with good shielding under 20 feet (6m) in length to and from the reverb tank.



### OMNIPOINT

If you have a Radial Workhorse 500 rack you can use the Omniport to connect the reverb tank using a 1/4" TRS insert cable. This cleans up the front panel and allows permanent connection to a studio patchbay.

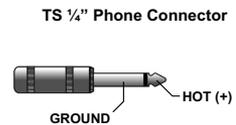
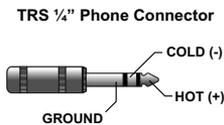
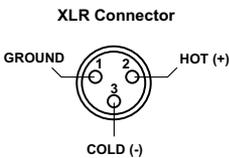


Insert Cable: 1/4" TRS to RCA

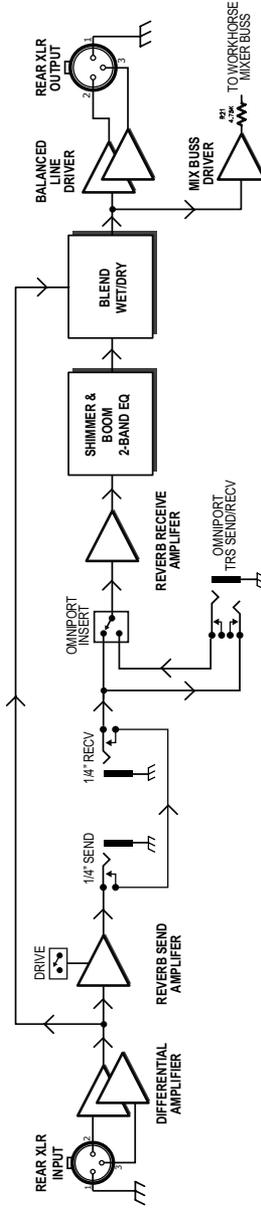
**RADIAL TANKDRIVER 500 SPECIFICATIONS**

Circuit Type:	Class-A, transformer coupled
Current Draw:	60mA, +/-16VDC (maximum draw)
Frequency Response:	20Hz ~ 20KHz +/-1.0dB
Input Impedance:	600 Ohms
Maximum Input:	+11dB
Send Gain To Tank:	Normal Drive: +10dB @ 4kHz Boosted Drive: +20dB @ 4kHz
Output Impedance:	75 Ohms @ 1kHz
Maximum Output:	+22dBu
Dynamic Range:	101dB to 115dB - (varies with frequency)
Noise:	-90dB below 0dBu
Total Harmonic Distortion (THD+N):	< 0.012% @ 1kHz and 600 Ohm Load
XLR Configuration:	Follows AES spec: pin-1 ground, pin-2 (+), pin-3 (-)
Size:	Standard 500 Series format
Weight:	1.5 lbs. (0.7 kg)
Compliance (API):	Yes
Compliance (Radial WHOS):	Yes
Warranty:	3 years, transferable

**CONNECTOR WIRING**



**RADIAL TANKDRIVER BLOCK DIAGRAM**



## THREE YEAR TRANSFERABLE LIMITED WARRANTY

RADIAL ENGINEERING LTD. ("Radial") warrants this product to be free from defects in material and workmanship and will remedy any such defects free of charge according to the terms of this warranty. Radial will repair or replace (at its option) any defective component(s) of this product (excluding finish and wear and tear on components under normal use) for a period of three (3) years from the original date of purchase. In the event that a particular product is no longer available, Radial reserves the right to replace the product with a similar product of equal or greater value. In the unlikely event that a defect is uncovered, please call 604-942-1001 or email [service@radialeng.com](mailto:service@radialeng.com) to obtain an RA number (Return Authorization number) before the 3 year warranty period expires. The product must be returned prepaid in the original shipping container (or equivalent) to Radial or to an authorized Radial repair center and you must assume the risk of loss or damage. A copy of the original invoice showing date of purchase and the dealer name must accompany any request for work to be performed under this limited and transferable warranty. This warranty shall not apply if the product has been damaged due to abuse, misuse, misapplication, accident or as a result of service or modification by any other than an authorized Radial repair center.

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This product is intended for professional use only.  
The user should be familiar and experienced with  
the 500 series rack and module format.



True to the Music

Radial Engineering Ltd.  
1588 Kebet Way, Port Coquitlam, British Columbia, V3C 5M5  
tel: 604-942-1001 • fax: 604-942-1010 • email: [info@radialeng.com](mailto:info@radialeng.com)

**[www.radialeng.com](http://www.radialeng.com)**

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