

FINN Models: Bark Blowers 302 (BB302) and 5-Series (MB50)

This troubleshooting guide is designed to illustrate and explain the steps necessary to check your remote control unit that came with your BB302 or MB50 should it stop working. Follow this guide to reset your remote or to establish the malfunction. Following these steps could eliminate the problem.

Use this guide first before returning the remote to Finn. Most malfunctions can be eliminated through the solutions provided. After attempting to use this guide to fix the problem, then contact Finn customer service by calling 1-800-543-7166 (Monday - Friday, 8 am to 5 pm, EST).

Remote



Green **POWER** Button

Operation Lights

Operation Lights

- TX** TX - indicates that the remote is transmitting signal
- RX** RX - indicates that the remote is receiving signal
-  **Error Light** - indicates that the remote is not operating correctly
-  **Battery Light** - indicates that the power level of the remote is not correct in some way

First Step - Turn the Remote On

To turn the remote on, push and hold the green **POWER** button, which is located on the back of the remote. Release the button.

If the **TX** (transmit) and **RX** (receive) LEDs flash rapidly (10 times per second), then the remote is synched to the machine. The machine has power and is ready to use.



Check the Remote

Does the **TX** (transmit) LED flash rapidly (10 times per second)?

If yes, the remote is ready to use. Move forward to the Receiver Troubleshooting section of this guide.

If the **TX** (transmit) LED **DOES NOT** flash rapidly (10 times per second), continue on to the next part of the **Troubleshoot Remote** section.



Troubleshoot Remote

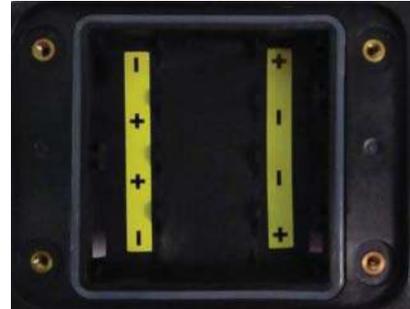
STEP 1

If none of the LEDs illuminate at all, check the batteries first.

Install new batteries. Pay attention to the diagram inside the battery compartment.

Batteries **ARE NOT** arranged in typical “up, down, up, down” order.

If lights do not come on after replacing batteries and restarting the remote, return the remote for service.



STEP 2

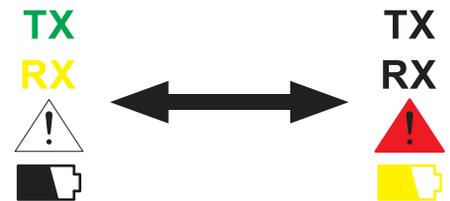
Remote has power, but LEDs are flashing in repeating pattern.

TX and **RX** flash together first; then **Error Light** and **Battery Light** flash together.

Holding the green power button on the back of the remote too long can cause this to happen. Let go of the green power button and see if the problem goes away.

This error can also indicate a switch is stuck. Check all switches on the remote are in the center position. Move all switches up and down and release.

If the problem continues after checking all switches, return the remote for service.



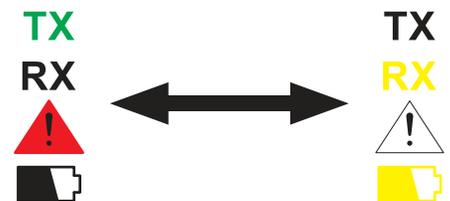
STEP 3

Remote has power, but LEDs are flashing in repeating pattern.

TX and **Error Light** flash together first; then **RX** and **Battery Light** flash together.

This error indicates the E-Stop button on the remote is not in the “up” position. Release E-Stop by rotating red button gently clockwise. If button “pops” up, retry powering up the remote (*First Step - Turn the Remote On*).

If the problem continues after E-Stop is in the “up” position, return the remote for service.



Troubleshoot Receiver

If **TX** LED is flashing on the **remote**, it is sending out information. With the remote sending out information, check the receiver.

STEP 1

If the machine is powered up and **RX** LED on the remote is **NOT** flashing on the remote, the machine receiver and remote are not communicating.

Receiver power LED should be lit (power LED is LED #1). If not, check for 12 volt power at battery, key switch, harness and module plug.

If power is applied and power LED is not lit on the receiver, there is a fault with the receiver. Return the receiver to the factory for evaluation.



STEP 2

Is the **HEALTH** LED on the receiver flashing **green** once per second?
(**HEALTH** LED is LED #3)

NO:

If the **HEALTH** LED is out or is lit steady, the main microcontroller has stalled.

If the **HEALTH** LED is flashing rapidly, there is a memory fault with the receiver.

Return the receiver to the factory for evaluation and service.

YES:

If the **HEALTH** LED flashes **green** twice, then pauses for 2.5 seconds and repeats, the receiver is resetting.

Move on to STEP 3 of the **Troubleshoot Receiver** section to continue checking the receiver.

If the **HEALTH** LED flashes **green** once per second, the receiver is receiving signal from the remote.

Move on to STEP 4 of the **Troubleshoot Receiver** section to continue checking the receiver.



Troubleshoot Receiver

STEP 3

If the receiver keeps resetting, check the keypad.

Do the keypad buttons flash **orange** when power is applied to the machine?

NO:

Check power wiring to the keypad.

If the wiring is damaged, repair the wiring.

If the wiring is okay, *replace the keypad. Return to STEP 2.*

YES:

Check can bus wiring to keypad controller.

If the can bus wiring is damaged, repair wiring.

If the wiring is okay, *replace the keypad. Return to STEP 2.*



STEP 4

Is the **TX/RX** light on the receiver flashing **amber**? (TX/RX LED is LED #4)

NO:

The light is flashing **red**, the **TX** (transmit) only is active.

Possible causes:

1. The remote and receiver are not associated. Follow directions to resynch the remote and receiver.
2. There is interference. Move the bark blower or remote away from buildings or chainlink fences.
3. Antenna or cable is broken/damaged. Replace broken/damaged antenna or cable.



Troubleshoot Receiver

STEP 5

Is the **TX/RX** LED on the receiver flashing **amber**?
(TX/RX LED is LED #4)

YES:

Check the LEDs on the remote. Are the **TX/RX** LEDs flashing rapidly on the remote (10 times per second)?

Continue to test machine functions; move to STEP 6.

TX
RX



NO:

If the **TX/RX** LEDs **ARE NOT** flashing rapidly on the remote (10 times per second), try associating a known-good remote to the receiver.

If a new remote will not associate to the receiver, *return the receiver for service.*

If a new remote will associate to the receiver, *return the remote to the factory for service.*



STEP 6

The **TX/RX** LED on the receiver is flashing **amber**.
(TX/RX LED is LED #4)

The **TX/RX** LEDs on the remote are flashing, but the remote is not controlling the machine.

TX
RX



If **NO** part of the machine can be controlled:

Check supply voltage:

Is the supply voltage over 28 volts? (Note: very fast “spikes” count - this may not be detectable on most digital volt meters)

YES: The receiver is faulting on an over-voltage condition; this requires power cycle (turn OFF, turn ON) to regain control. Inspect power supply (battery, battery lugs, alternator, wiring) and correct any issues.

NO: Continue on; voltage is not too high.

Is the supply voltage under 7 volts?

YES: The receiver is starving for power. Load test the battery and check the power supply wiring.

NO: Check wiring to ensure that all hydraulic valve coil returns and any other output load returns are tied to the same point and that point is tied to battery negative and the “-VDC” (ground) pin on the receiver.



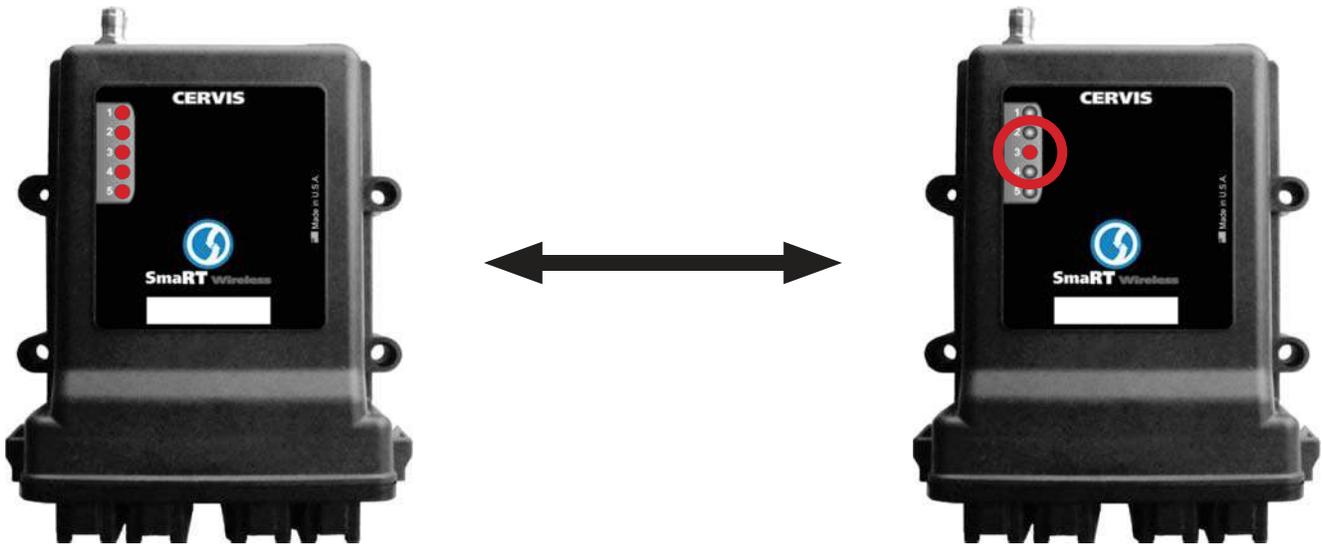
Troubleshoot Receiver

STEP 7

If all the receiver LEDs flash **red**, then radio link is lost and **HEALTH** LED flashes **red** twice before radio link is re-established when a function is activated.

(**HEALTH** LED is LED #3)

Check wiring to ensure that all hydraulic valve coil returns and any other output load returns are tied to the same point and that point is tied to battery negative and the “-VDC” (ground) pin on the receiver.



STEP 8

If one or more, but not **ALL** functions, are disabled, check remote **TX** LED while activating suspected function.

Does remote **TX** LED brighten up when control is activated?

NO:

Remote is faulty.

Return the remote for evaluation and service.

YES:

Continue to STEP 9.



Troubleshoot Receiver

STEP 9

One or more, but not **ALL** functions, are disabled. Check remote **TX** LED while activating suspected function.

Remote **TX** LED **DOES** brighten up when control is activated?

Possible cause:

An open-circuit on one or more output channels.

Possible solution(s):

Check wiring for broken connections.

Check hydraulic valve coils for continuity (typical valve coil resistance is 25 Ohms or less).

Swap connectors from suspected bad valve to one that is known to work to verify function.



Does suspected output channel operate the “new” function?

YES:

Replace suspected valve.

NO:

Possible damage to the output channel.

Return the receiver for evaluation and service.

Move to [Troubleshoot Range Issue](#).

Troubleshoot Range Issue

Radio control operates the machine properly, but only when the operator is near the machine.

The system is designed to operate at a typical 300 feet or greater line-of-sight.

Line-of-sight means the operator can see the receiver (or antenna in those systems with an external antenna) and that there are no obstructions between the remote and the receiver's antenna (this includes the machine itself).

In typical operating line-of-sight range, metal obstructions will "shadow" the signal.

Expanded metal or chain link fencing can sometimes be even more of a detrimental obstacle than a solid sheet of metal (even though you can see through chain link fencing).

Is the radio control system operating under line-of-sight conditions?

NO:

Obstructions are limiting the radio range.

To correct, reposition the operator or the machine to maintain line-of-sight conditions as much as possible.

YES:

Even though line-of-sight is established, large metal objects near the machine or operator may be reflecting radio energy from the remote control system in such a way that the reflections are interfering with the line-of-sight signal.

- or -

Another radio signal is interfering with the remote control's radio signal. Disassociate and reassociate the remote and receiver. This will allow the remote to scan the radio channels that it can operate on and determine the best channel to work with. If there is an interfering signal it may take several attempts to be synched.

Damage to the remote or antenna can also reduce the range of the system.

Replacement Remote Troubleshooting

All replacement remotes must be associated to the receiver **before** the remote can operate the machine.

Every remote and receiver have a unique ID code which must be exchanged.

If a remote was replaced because it is suspected as the cause of a malfunction with the system, the receiver may be the culprit instead.

Check the "WS number" of the remote and receiver. The "WS number" determines the project specifications under which each piece of a Cervis, Inc. radio system is configured. If the "WS number" does not match between a receiver and remote, they are likely incompatible.

Many pieces from different systems look identical to each other but are not configured the same. The "WS number" can be found on the faceplate label of the receiver and inside the battery compartment of the remote.

Even if the remote will associate to the receiver, there may be a mismatch in functionality. It is possible that not all functions will operate or that switches and controls will not operate the function that is expected that is expected, but it will operate a different function which could pose a dangerous situation.