HOW TO INSTALL THE GRIT LASER TRIGGER

How to Install the GRIT Laser Trigger

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Draft: This wiring has not yet been tested on a laser. Check the controller model, Trigger version and cable connections before use.

The GRIT Laser Trigger tells the Hub when to start the laser's exhaust and open its gates. It can detect a running job from the machine's current draw or a signal from its controller. Choose the method that works with your laser and Trigger before connecting the signal cable.

Short version: Check the Trigger's label and version, connect its power supply as instructed, and follow the wiring guide for your laser. Connecting the controller's running signal requires a separate cable as well as the Trigger's power cord.

BEFORE YOU BEGIN

Install the GRIT Hub first. Check the laser's electrical requirements against the Trigger's voltage, current and connector ratings. Follow separate instructions for any plug changes or E-Stop wiring.

Have a qualified installer connect any wiring inside the laser, using the machine's electrical drawings. Follow the machine's lockout procedures and check that all hazardous energy has been isolated before opening it. Leave its protective interlocks intact.

STEP 1: CHECK THE POWER AND SIGNAL CONNECTIONS

1. Read the Trigger's label and check its hardware version. The AC power rating does not tell you the voltage allowed at the signal input.

2. Connect the Trigger's power supply following the instructions and ratings supplied with it.

3. Find the signal input. The 5042 revision 6 circuit uses an RCA sensing jack, AV1: **center contact = pin 2, EXT-RUN; outer shell = pin 1, EXT-GND**. DC3 is a separate power connector. Older versions can have different connectors.

4. Choose a sensing method supported by both the Trigger and the machine.

Sensing method	What to check
Machine running signal	Which controller output to use, what it indicates, its voltage and polarity, the return connection and any extra parts needed
Current sensing	A reliable difference between the machine's idle and active current, then an activation level suited to that machine

For BOSS 24 V wiring, use the 24 V signal-input version of the GRIT Laser Trigger. Do not connect 24 V to an input rated for a lower voltage. Contact GRIT if you are unsure which version you have.

STEP 2: CONNECT THE SIGNAL AND SET UP THE TRIGGER

1. For a matching BOSS controller and a Trigger with a 24 V signal input, follow How to Install the GRIT Laser Trigger on BOSS Lasers. Use a plain sensing cable.

2. For another machine or controller, use wiring instructions for that model. Do not copy the BOSS terminal numbers to a different controller.

3. Bind the Trigger to your Hub, then open **Devices > Trigger > select the Laser Trigger**.

4. Choose the **Activation Method** that matches your wiring. The BOSS guide uses **Low Voltage Signal**, with **Low Voltage Activation = High**.

5. Close and reopen the Trigger page to check that the settings were saved. Check that the correct collector and gates are assigned to it.

These setting names are from Hub v1.1.1089. Test the power connection, running signal and any access controls separately.

STEP 3: TEST THE CONNECTION

1. Confirm the Trigger is idle with no job active.

2. Start a job. Check that the Trigger shows running and the correct exhaust starts according to its settings.

3. Pause the job and check the result against the instructions for that controller signal.

4. Stop or complete the job and confirm the Trigger returns to idle. Exhaust can continue for its configured run-on time.

If the Trigger shows the opposite state or does not change, check the app settings and cable polarity against the machine guide. Turn off and isolate power before changing the wiring. Check the Trigger's status in the app as well as its LED.

RELATED ARTICLES

- Install the Laser Trigger on BOSS lasers
- GRIT documentation library

REVISION HISTORY

Revision	Date	Change
1.3 draft	October 22, 2026	Clarifies the 24 V input requirement for BOSS wiring.

Still stuck? Email support@gritautomation.com.