

GRIT AUTOMATION®



Hardware Installation
Device Configuration
Operations of GRIT® Systems

GRIT TRACK, SIGNON, AND ASSET TRACKER

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TO OUR CUSTOMERS

Thank you for purchasing your GRIT Automation® system. Please read this manual carefully to ensure that your new products are installed, configured, and maintained correctly.

We're a small company that loves the product we've created, and we're confident you will too! If you ever have any questions or feedback, feel free to contact us at the address below.

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GRIT HUB® + APP

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GETTING STARTED

! Device Power

Attention: Supplying appropriate and sufficient power for your GRIT devices is crucial for optimal performance. Please, carefully read through all power information and recommendations.

Most importantly, remember to unplug or cut the power to any tool you are working on.

Getting Started

Power Requirements

RFiD, Switch charging docks, Gate Control, and Dust Bin Sensor's Strobe Light are all powered with low-voltage power, BUT require different voltages to operate. All low-voltage devices are shipped with 18/2 solid copper thermostat wire.

6v power



6v 1a Power Supply:
A Trigger (or Collector) outputs enough power to operate one RFI device.

GETTING STARTED

9v power



The low-voltage wire can be run from a device to the Power Bank in a "home run" fashion, or, hopped from one Gate Control device to the next on its way to the Power Bank in a "daisy chained" fashion. The Power Bank has two low-voltage jacks, but two sets of wires can be landed in each, if needed.

*Note: These recommendations could slightly increase or decrease based on the frequency with which multiple gates on the same Power Bank open in unison and/or how close to the dust collector the gate is located. Large Gate Control (5'+) devices do use more amperage than the Standard Gate Control (2.5"-4").

Troubleshooting:

- If gates seem "sluggish", decrease the number of gates that operate synchronously on a single Power Bank. If gates aren't receiving sufficient amps, they lose "throw" power.
- If gates keep "re-setting", you may need to ground your ductwork.

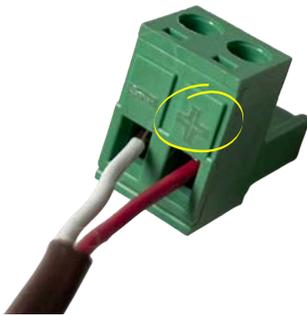
GETTING STARTED

Pay Attention to Polarity

A brief note about the two types of low-voltage connectors used in the GRIT system: Terminals and Jacks. The positive and negative ports for these two connectors are located on opposite sides from each other. When running the low-voltage wire to devices, pay attention to polarity. A good rule of thumb is "Red on Right/Positive." This rule does not hold, however, for the low-voltage jacks found on Switch charging docks, Dust Bin Sensor Strobe Lights , or Power Banks. Refer to the image below.

Low-voltage terminal

- / +



Low-voltage jack

+ / -



GETTING STARTED

GRIT Lock®

The premise of GRIT Lock® is simple: easily lock/unlock tools to increase shop safety. With the use of GRIT Triggers, we are able to not only control the power that reaches your tool, but also, measure the current draw of the machine. Beyond the lock/unlock capability, the system provides an additional safety feature: Emergency Lock. Understanding how GRIT Lock® works and how to fine tune the power profile configuration of each tool/Trigger will ensure the proper current measurement to detect when a tool is running, as well as, optimal response time in the event of an Emergency Lock situation.

Emergency Lock

One of our safety "policies" is that GRIT will NEVER turn off a tool that is running. In the event that the HUB goes offline, someone initiates a system update, or someone is running a tool after the HUB's scheduled lock time, GRIT NEVER CUTS POWER TO A RUNNING TOOL.

An Emergency Lock, or an instance when GRIT will cut power to a tool, is described in the following scenario:

GRIT quickly cuts power to tools left in the 'ON' position prior to that tool's Trigger being unlocked.

Example: The entire shop is locked. Person 'A' walks up to the bandsaw and flips the power switch 'ON'. Since the tool is locked, it will not power on. Mistakenly, person 'A' leaves the tool's power button in the 'ON' position and walks away.

Later, the shop owner enters the shop and unlocks all the tools. When the bandsaw gets the unlock command, the Trigger will switch on the power feeding the bandsaw. As soon as the Trigger unlocks, GRIT immediately checks whether power is flowing. If the Trigger reads power above the activation current level set for the bandsaw, it cuts the power again within 1/60th of a second (1 cycle of AC current). GRIT immediately re-locks the bandsaw and logs an event called 'Emergency Lock'.

You will notice that the LED indicator light will be flashing red. To allow usage of a tool that has been shut off due to Emergency Lock, simply turn off the tool, then press the unlock button again. The LED indicator light on the Trigger will stop flashing red and turn to solid green when it is unlocked and ready for use.

GRIT Lock® and the Importance of Trigger Configuration

The effectiveness of a majority of your GRIT system, including GRIT Lock, is dependent upon properly configuring each tool's Trigger. A Trigger's "job" within the system is, in essence, to measure and control current flow to its tool. All tools vary in the amount of current they pull, the amount they pull when 'on' versus 'running' (i.e., CNCs), the time it takes to reach their full draw (i.e., slow-start router tables), and the consistency with which they pull it while running (i.e., lasers). With your shop's complexity in mind, GRIT has a fully configurable application to completely capture each tool's power profile.

The details for properly configuring Triggers are covered under the Trigger Configuration section.

GETTING STARTED

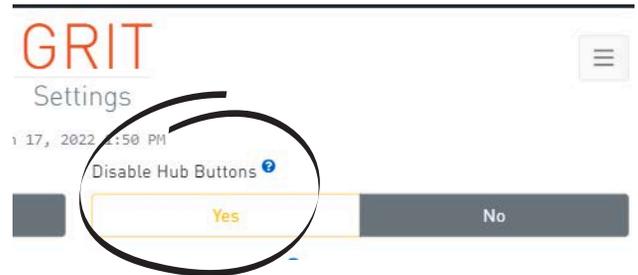
6 Ways to Lock/Unlock Your Tools

Lock/Unlock the entire shop with:

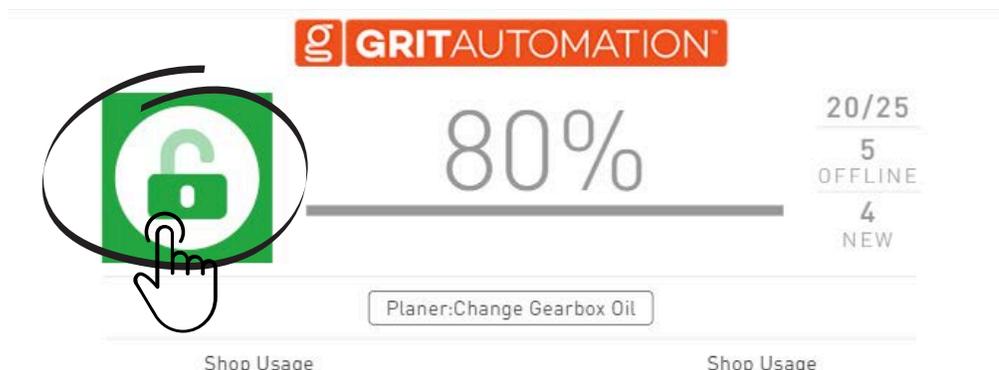
1. The Hub buttons.



*Note: the use of the Hub buttons can be disabled in the Admin section if the Hub is mounted in a location where using the buttons poses a safety concern.



2. The GRIT App Dashboard.

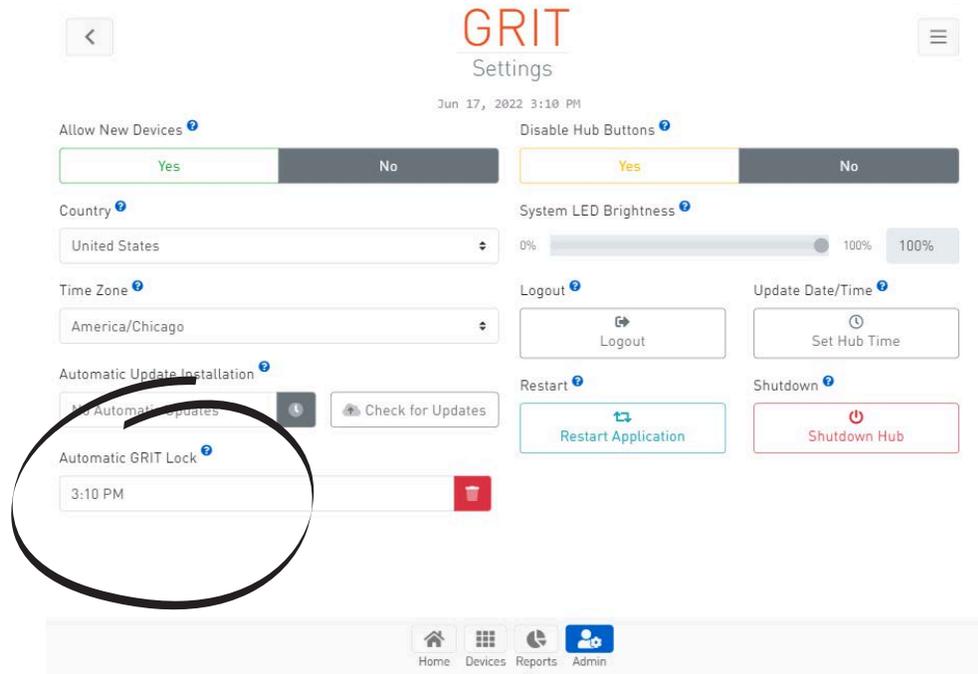


GETTING STARTED

Getting Started

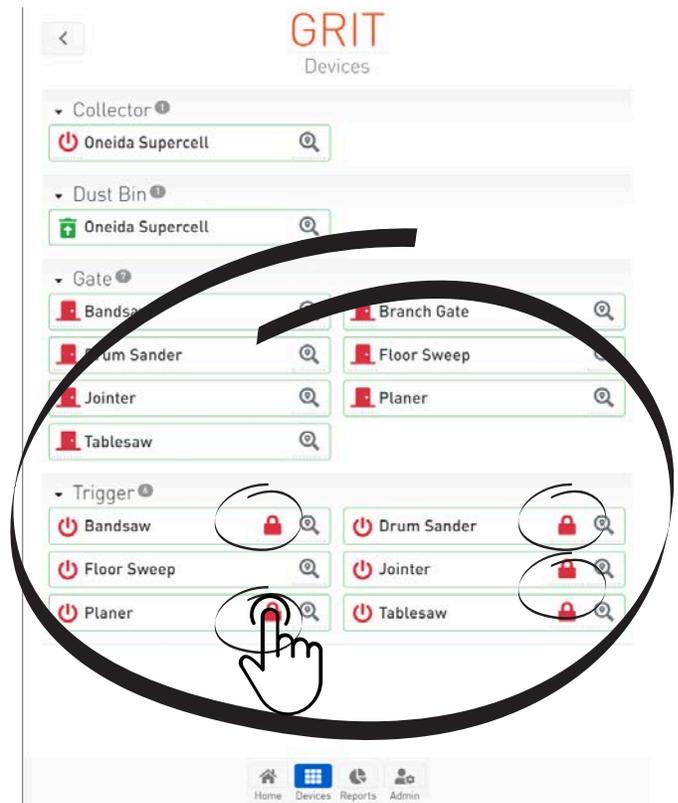
3. The Automatic GRIT Lock setting.

A scheduled system lock can be setup to automatically lock all triggers at the end of the day.



Lock/Unlock a single tool with:

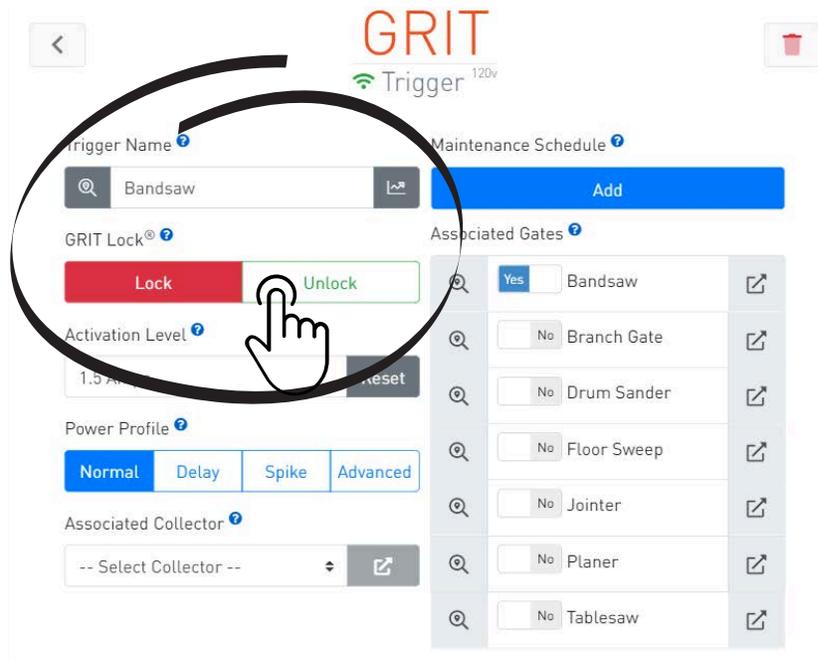
4. The GRIT App Devices screen.



GETTING STARTED

5. The GRIT App Trigger screen.

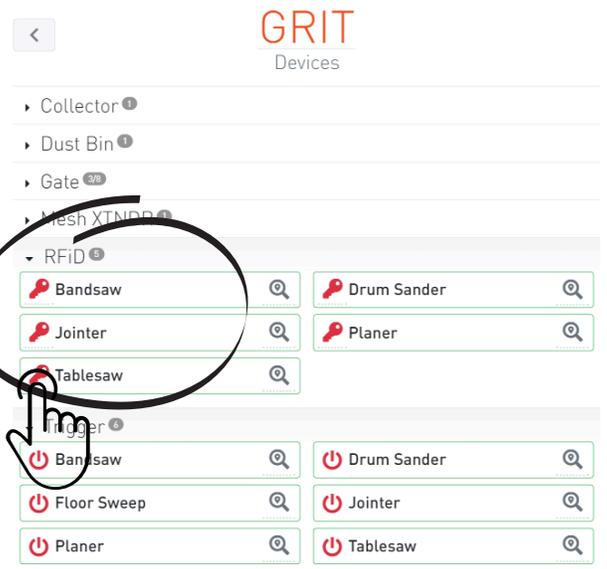
A tool's detailed configuration screen provides a button to toggle the state of that Trigger.



6. GRIT Track[®] RFID devices.

If a tool is outfitted with Access Control, unlock:

- by swiping a RFID card.
- by pressing the key icon in the GRIT App



Initial Setup

The GRIT Hub® is the "brains" of the system and should be installed first.

- Select a location for your Hub that:
 - is centrally located in your shop to support good connectivity with other devices.
 - is located near an ethernet connection or close to your personal Wi-Fi port (if applicable).
 - is located near a 120v outlet.
- The GRIT system does not require internet access to operate, however, in order to access your system remotely and to perform updates, internet access is required and recommended. The two options of accessing the Hub are:
 - **Connect with the Hub via your own local network, or;**
 - **Connect with the Hub via its own projected Wi-Fi***

Plug in the Hub using the provided power supply. Allow the Hub to boot up (can take up to 2 minutes). A QR code is visible on the side display when the Hub is ready for connection.

Choose the connection method you'll be using: Ethernet or the Hub's own Wi-Fi*.

***Note: If planning to connect with your own private Wi-Fi, choose the initial setup option that first connects with the Hub's Wi-Fi. If you switch from the Hub's WiFi to your personal WiFi, wait until you have completed that proc to save the App shortcut to your device Homescreen.**

GETTING STARTED

GRIT Hub® Connection Options

Option 1: Connect to GRIT Hub with ethernet

Step 1:

Plug one end of an ethernet cable into the jack located on the bottom of the Hub, and the other end into your personal router or switch.



Option 2: Connect with GRIT Hub Wi-Fi (ensure ethernet is not plugged in.)

Step 1:

Press the button on the left side of the Hub until a QR code labeled 'CONNECT TO HUB WIFI' appears on the display screen.



Step 2:

Scan the QR code with your phone or tablet's camera to join.

(Note: If your phone/tablet has trouble scanning the QR code, you can manually connect):

- Go to the device's W-Fi settings.
- Select the Wi-Fi network that starts with 'grithub-'.
- The password is gritautomation (all one word, all lowercase).

GETTING STARTED

Access the GRIT App

After connecting with the Hub via ethernet or the Hub's own Wi-Fi, it is now time to access the GRIT App. (Remember, if you plan to switch from the Hub's Wi-Fi to your own personal Wi-Fi connection, wait until that step is completed to save the shortcut to your device as the IP address will change in the process of the switch.)



The GRIT App works on mobile phones, tablets, and PCs. Using the native browser for the mobile device allows for the application to be installed on the home screen.

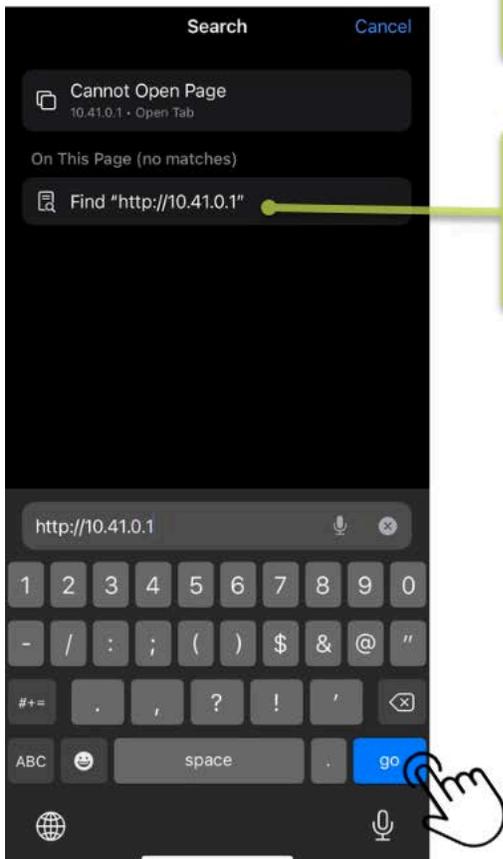
Apple devices use Safari (not Chrome).

Android devices, use Chrome.

Press the button on the left side of the Hub to display the unique IP address QR code. You can either:

Scan the code with your phone/tablet's camera,
or;

Manually enter the IP address displayed into your device's native browser.



GETTING STARTED

Create GRIT Administrator Account



Create Account

First Name Last Name

PIN Password

Choose your 4 digit security PIN 8 characters minimum

Mobile Phone Email

Continue

The 'Create Account' screen will appear after you access the GRIT App IP address.



Create Account

First Name Last Name

PIN Password

Choose your 4 digit security PIN 8 characters minimum

Mobile Phone Email

Continue

Complete this form with the information of the main administrator or shop owner.

The 4-digit PIN can be used to login to the GRIT account in the future, as well as, used on the SignOn kiosk, if applicable.

This is a novel PIN, so no other user can select a duplicate PIN.

Press 'Continue' once you complete all fields.



GETTING STARTED

Switch from Hub WiFi to Personal WiFi

Getting Started



Step 1:
If you would like to continue using the Hub's own WiFi, press 'No'.
If you would like to switch from the Hub's own WiFi to your own personal WiFi network, press 'Yes'.

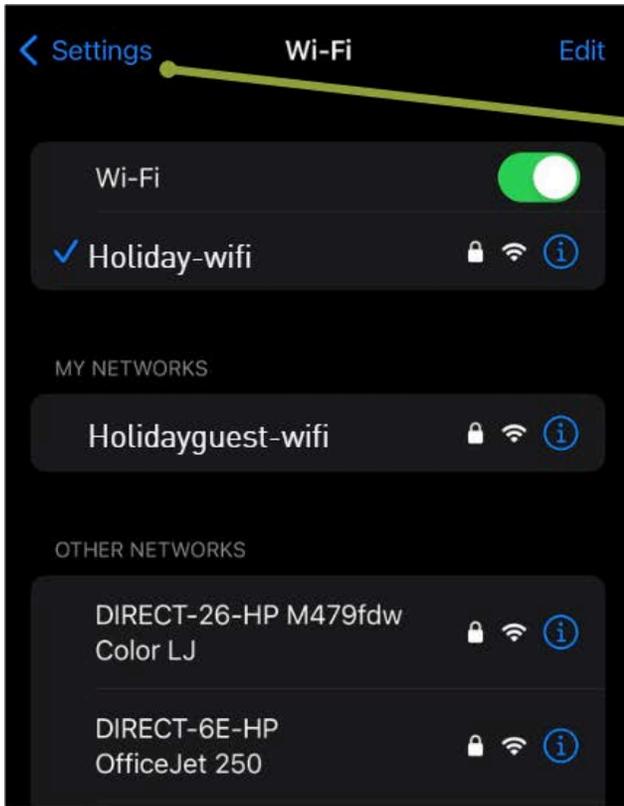


Step 2:
Select your preferred WiFi network from the list of Available Networks. If you do not see yours in the list, press 'Refresh'.
Once selected, enter your WiFi password. Take care to enter the password correctly.
Press 'Next'.



Step 3:
This screen will display when the connection has switched to your personal WiFi network.

GETTING STARTED



Step 4:

Go to your phone/tablet's Settings and make sure your device is on the same WiFi network you selected for your Hub.



Step 5:

Press the button on the side of the Hub until you see the QR code for the new GRIT App IP address.

Scan with your phone/ tablet's camera or enter the IP address into your native browser's search window.

***Please note:** If you enter the wrong password during the WiFi setup, press and hold the button on the side of the Hub for 10 seconds to delete the WiFi settings and start again.

GRIT HUB® + APP

GRIT Hub®

The Hub is the 'brains' of your system and all other GRIT devices communicate through its Mesh Network. All data collected from the system is stored locally.



GRIT HUB® + APP

Installation

The GRIT Hub® can be installed anywhere as long as it can connect to a single device to form the GRIT Mesh Network. However, the following should be considered to avoid having to move it later.

- The more centrally located the GRIT Hub®, the better.
- If your system will be connecting to your local network via ethernet cable, ensure that its placement makes this connection easy.
- If your system will be connecting to a local Wi-Fi network, make sure it is placed with good signal strength.
- If your shop has any thick concrete walls or thick metal walls that separate portions of the space, try to position the Hub central to this barrier. This will ensure the best communication between the areas. If your space has many rooms spread over large distances you may need to purchase the GRIT Mesh Xtndr device to bridge the long distances.
- If your system will not be using GRIT Track® (RFiD), physical access to the hub should be considered to limit access by unauthorized persons (i.e., In a locked closet or office). If your system includes GRIT Track® (RFiD), the GRIT Lock® buttons on the front of the device are not used.
- Access to 120v power is required to power the GRIT Hub®.

When mounting the Hub make sure it has no obstructions that might hinder the communication with the GRIT Mesh Network.



Step 1:

Attach the Hub to the wall.
If the Hub is not to be mounted on a wall, it can lay flat on its back, on a high shelf.

GRIT HUB® + APP



Step 2:
Screw on the antenna and position it pointing up.



Step 3:
Plug the supplied 5v 4a power adapter into the jack on the bottom of the Hub, then into a 120v wall outlet.



Step 4:
If you are using an ethernet cable to connect to your local network, plug one end into a router or switch, and the other end into the jack on the bottom of the Hub.
(Cat5 cable not supplied.)

GRIT HUB® + APP

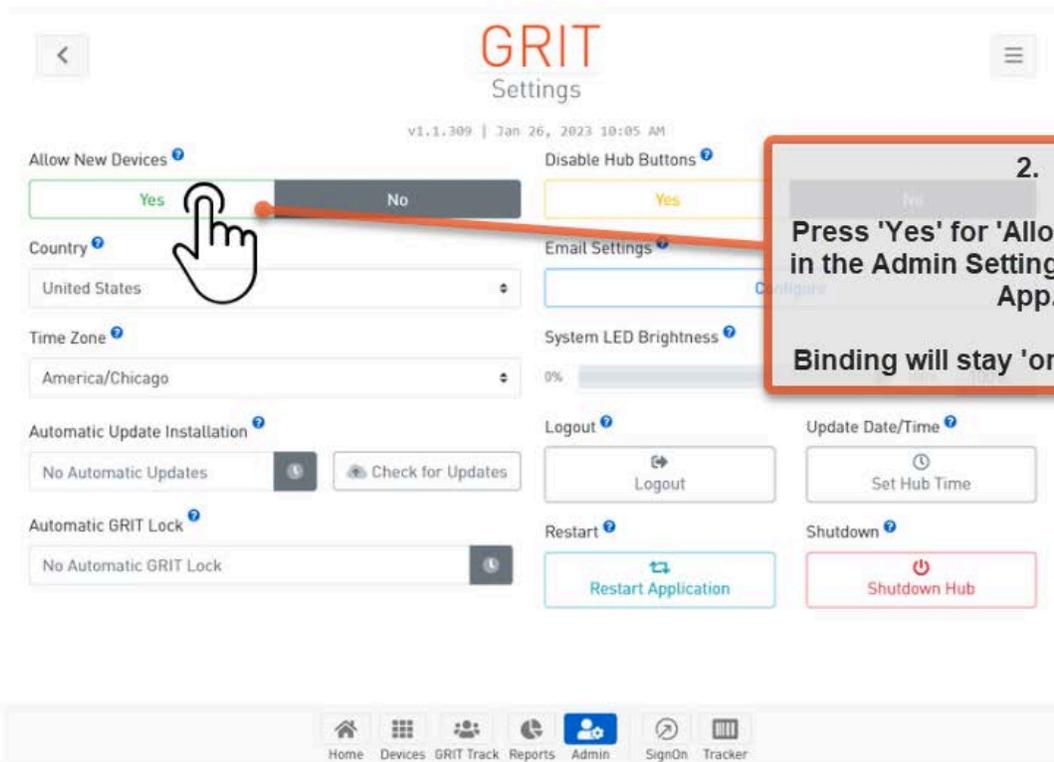
Bind Devices

After physically installing the other GRIT devices in the shop, you must Bind the devices to the Hub.

There are 2 Ways to Bind Devices*



1.
Press the center 'Bind' button on the front of the Hub. It will illuminate in solid blue when binding is activated.
Binding will stay 'on' for 5 minutes.



2.
Press 'Yes' for 'Allow New Devices' in the Admin Settings section of the App.
Binding will stay 'on' for 5 minutes.

GRIT HUB® + APP

*Bind Devices: Multi-Hub Environment

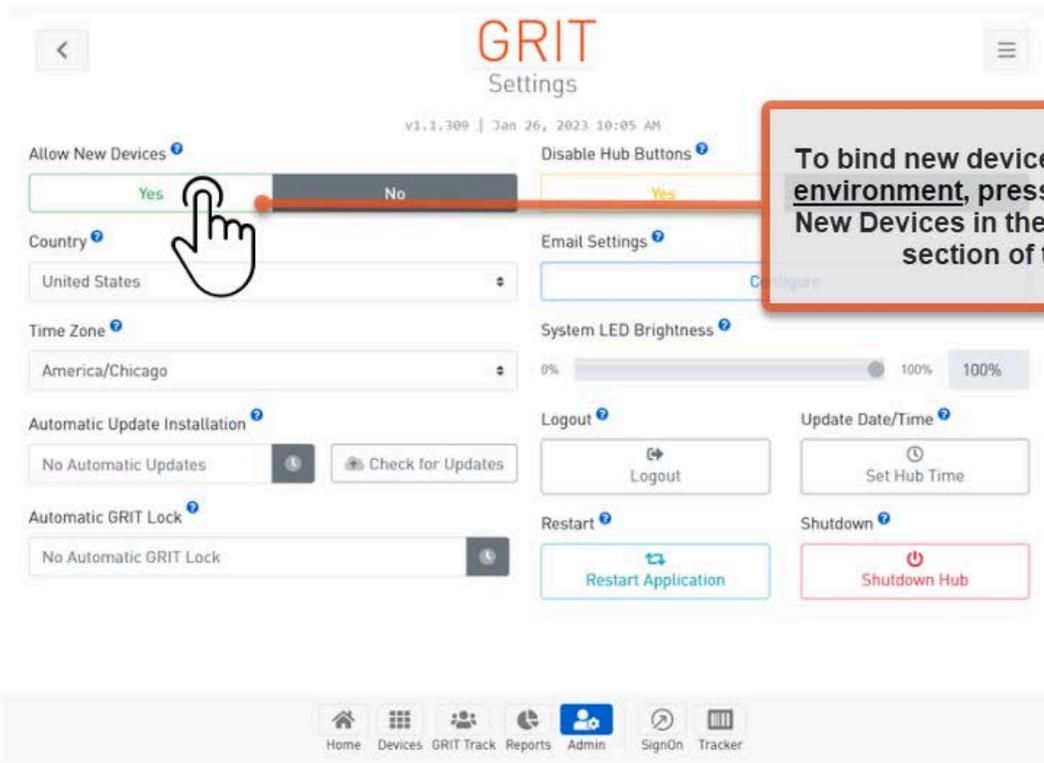
After physically installing the other GRIT devices in the shop, you must Bind the devices to the Hub. If there is another Hub that is close enough to yours to hear projected messages over the mesh network, your Hub will slightly alter its binding process to keep the systems separated.



When you are in an environment where there are multiple HUBs present, the 'Bind' button on the front of the HUB will no longer enable new devices to bind.

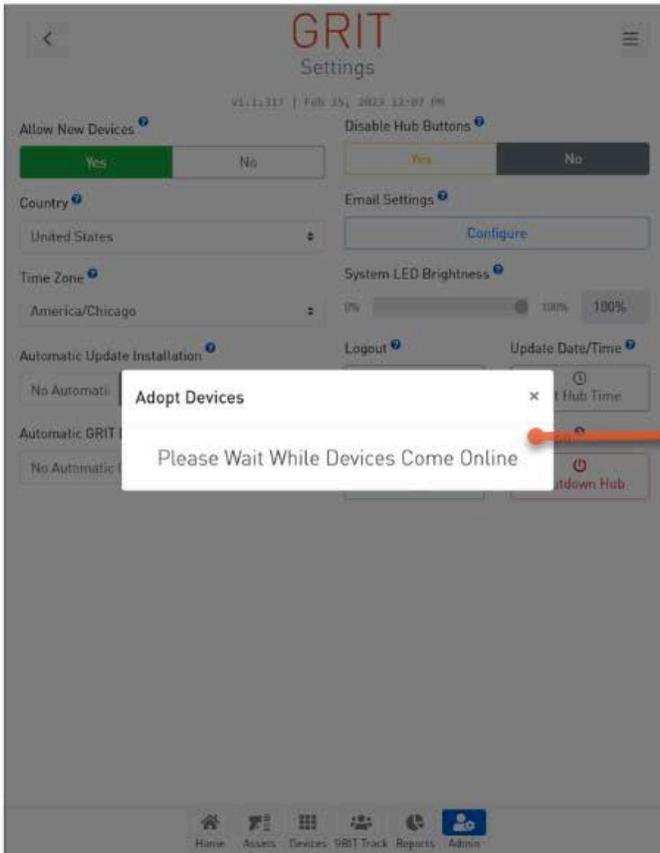
When pushed, it will FLASH blue (rather than being solid) indicating that you must use the App to bind.

GRIT App
Bind Devices

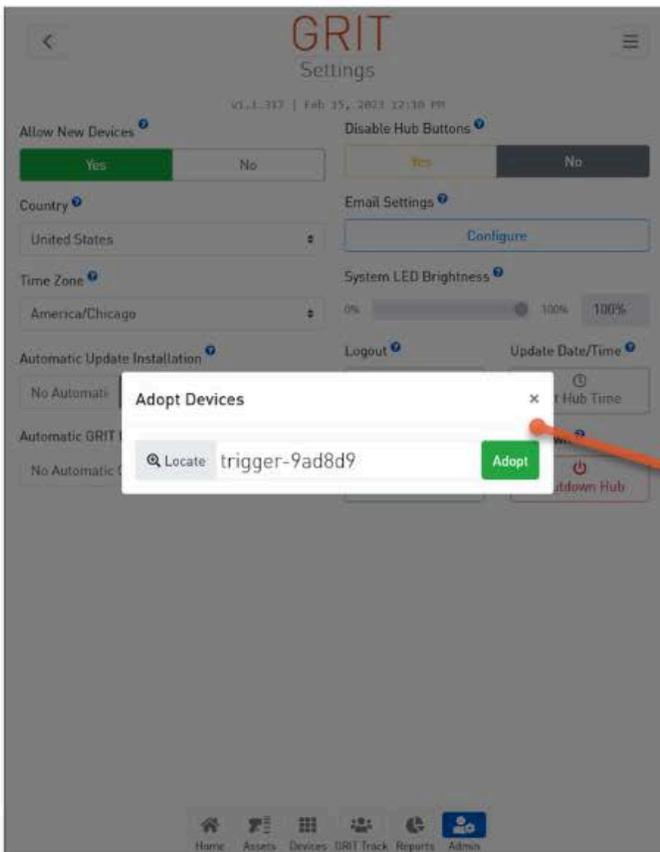


To bind new devices in a Multi-Hub environment, press 'Yes' for 'Allow New Devices' in the Admin Settings section of the App.

GRIT HUB® + APP



After pressing 'Yes', a popup window will appear. If there are no devices waiting to bind, you will see this message.



After pressing 'Yes', a popup window will appear. If there are new devices waiting to bind, you will see this message.

Press 'Adopt' for each device you would like to bind to your HUB.

Be sure to only 'Adopt' devices that are present in your shop, to eliminate the chance that you bind a device from a nearby shop.

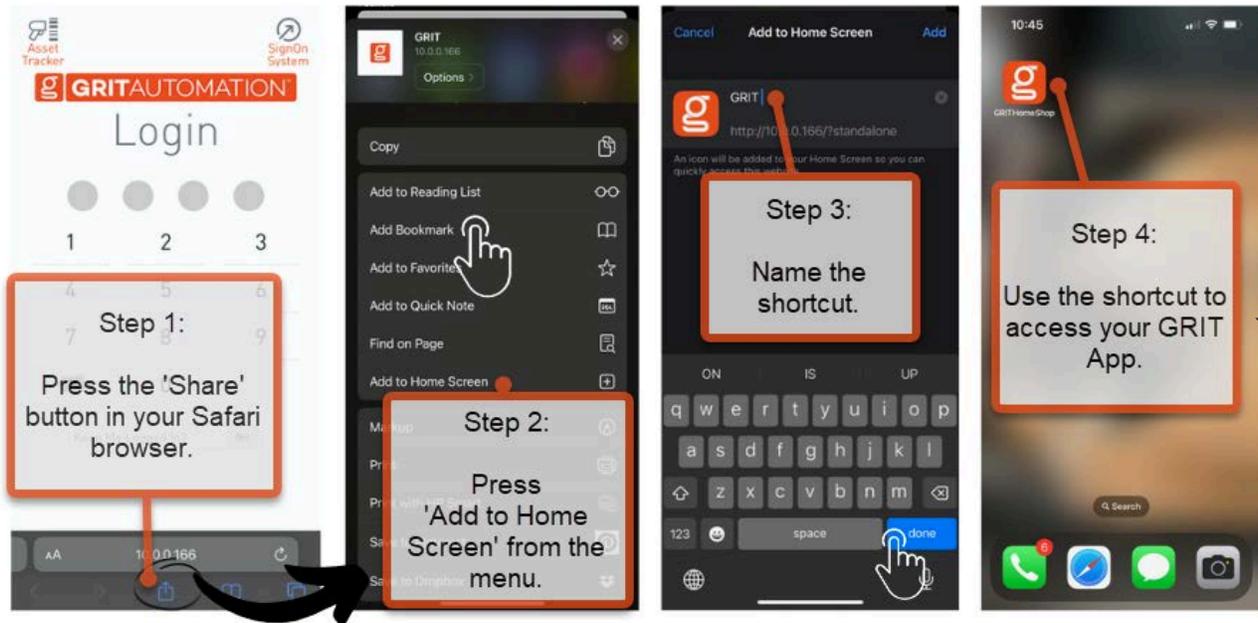
GRIT HUB® + APP

GRIT App

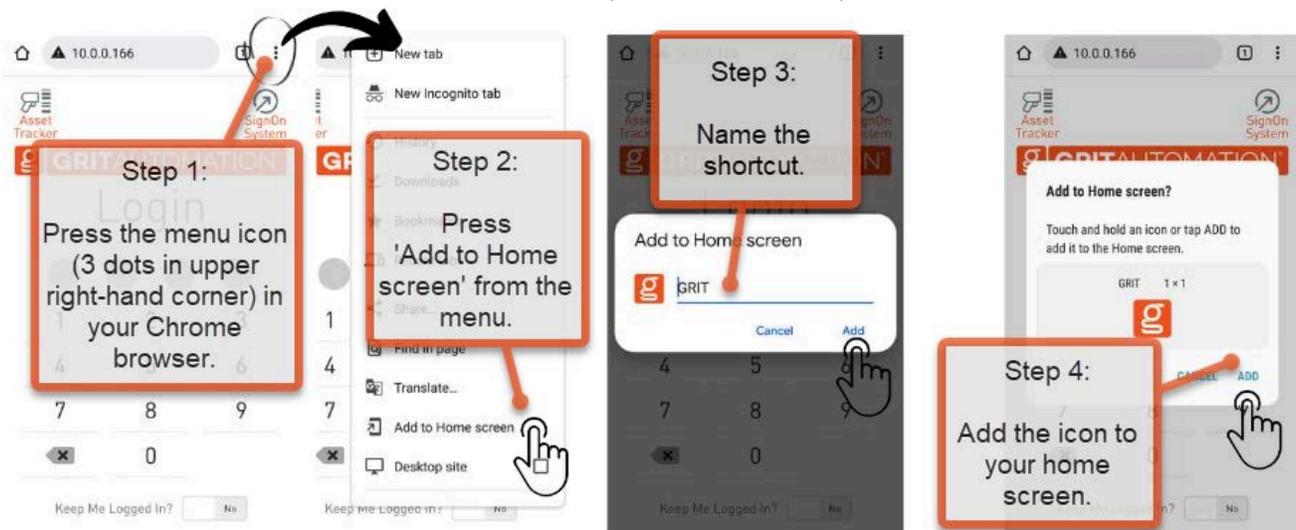
After connecting with your Hub and creating your GRIT administrator account, save the GRIT App shortcut to your Home Screen(s) for easy future access. Be aware that the network your phone/tablet/PC is on must be the same network used by your Hub. You will not be able to access the App from a different network.

Save App to Home Screen

iOS (use Safari)

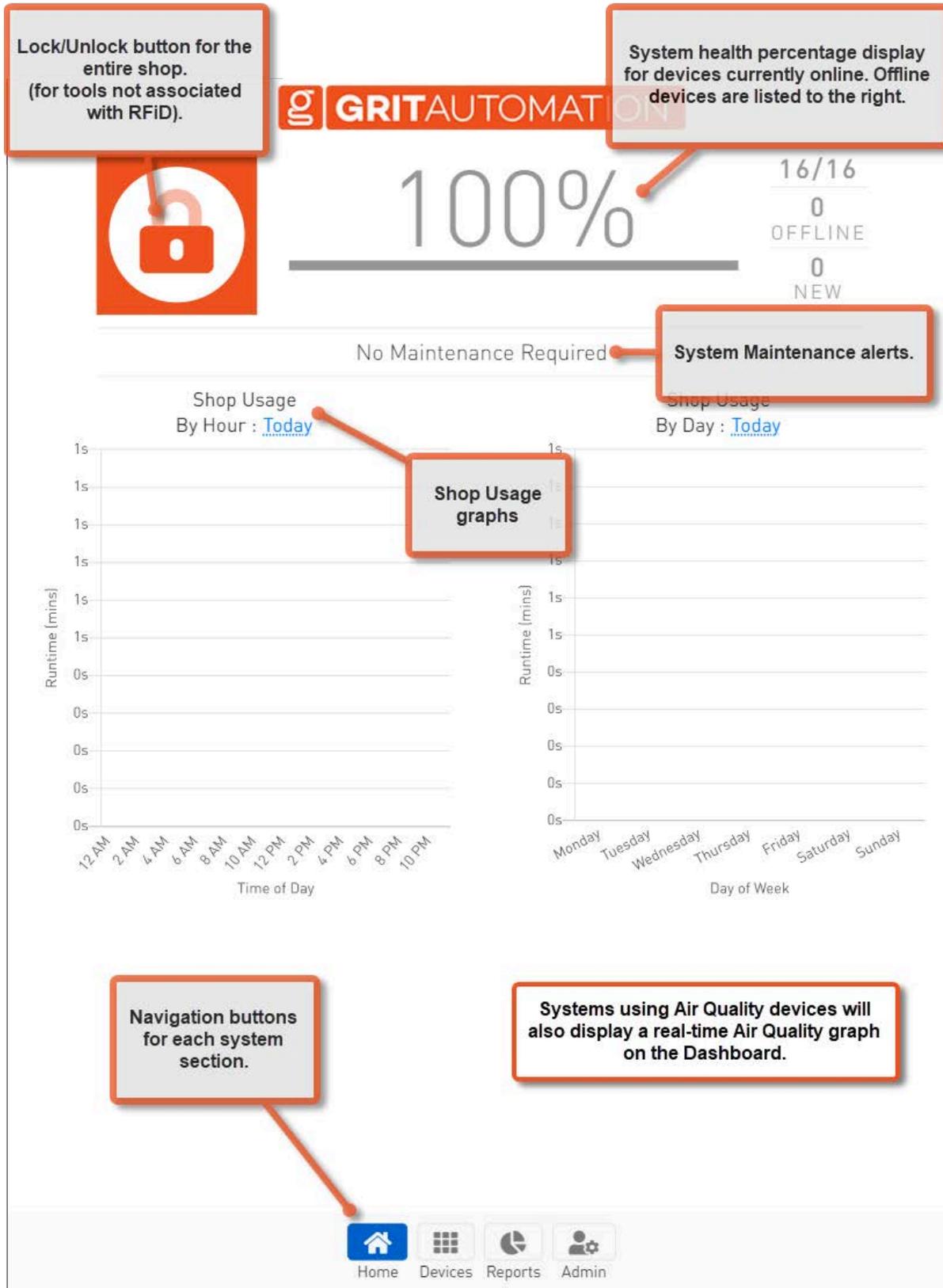


Android (use Chrome)



GRIT HUB® + APP

Common GRIT App Functionality Dashboard



GRIT HUB® + APP

Navigation

Back button for navigating to the previously used section/page.

GRIT Header Home/Dashboard button.

Hamburger menu expands to navigate to subsections

Navigate from one device's configuration page to another's.

Navigate to each subsection in your GRIT system.

GRIT App Functionality

My Profile

Devices

Network

Remote Access

Settings

Close

Home Devices GRIT Track Reports Admin

GRIT HUB® + APP

Icons



Locate button makes device LED lights flash



Displays Green/Red to indicate online/offline status



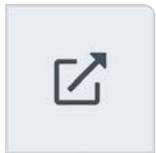
Display device graph



Hamburger menu to expand subsection options



Gives more in depth information about a field



Navigate to another device detail page



Indicates dropdown menu



Delete/Replace device



Displays Red/Locked or Green/Unlocked



Displays Red/Closed or Green/Open

Note: Any icon with these gray dots underneath is a clickable button

GRIT HUB® + APP

Devices Page Overview

The number displayed by each device category indicates the number of that device type bound with the system. A fraction 4/5, for example, would mean that one device is not online.

GRIT
Devices

Collector ¹

collector-dc7451

Dust Bin ¹

dustbin-dc59f0

Gate ⁷

gate-c00e94

gate-c1e31b

gate-fd040

gate-70d20

gate-c00e6c

gate-c00d90

gate-c00e80

Trigger ⁶

trigger-107536

trigger-97b716

trigger-edb3e3

switch-c71e94

trigger-8099e

trigger-98acf5

Generic names are assigned to each device until manually changed during configuration.

GRIT App
Devices

Clicking on a device listed will take you into that device's detail page for further configuration.

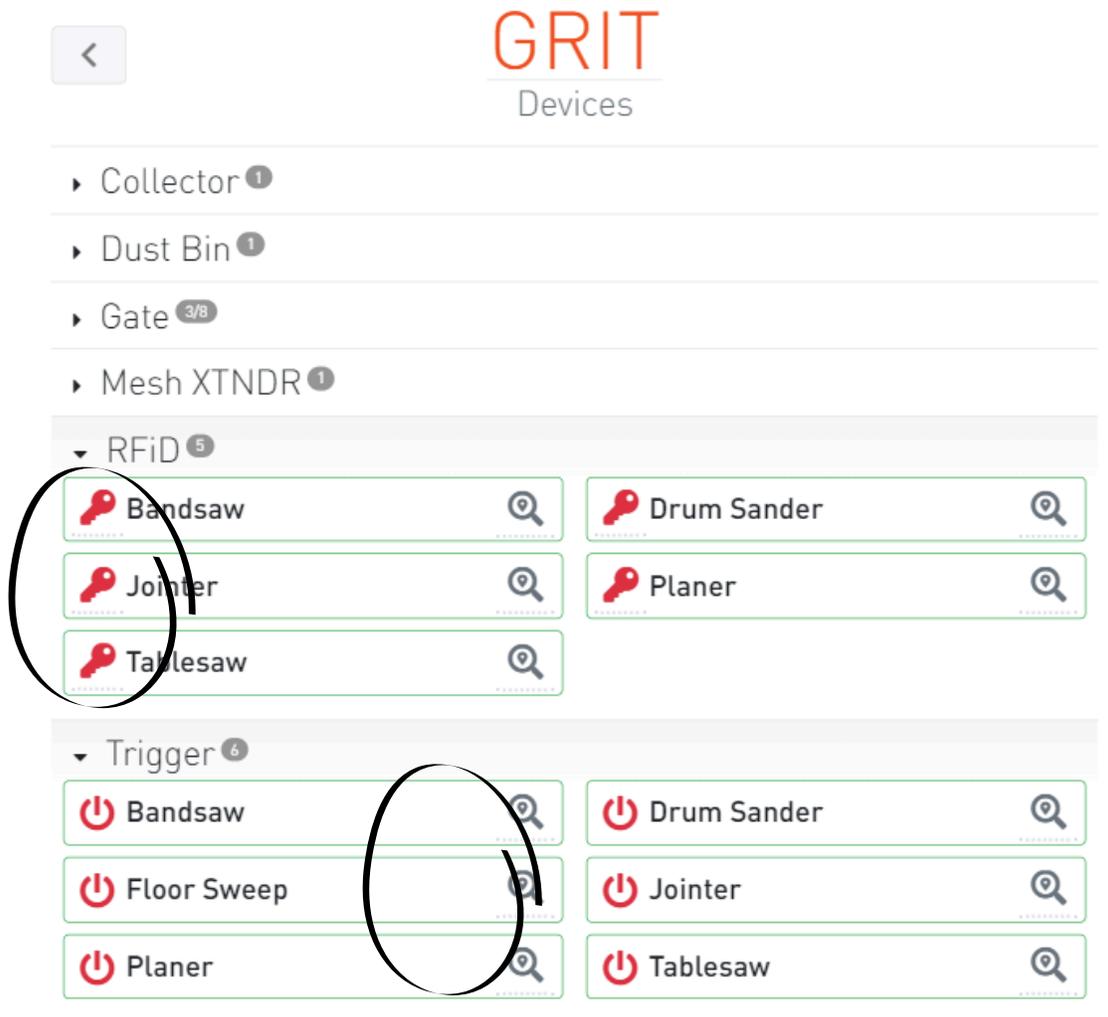
Home Devices Reports Admin

GRIT HUB® + APP

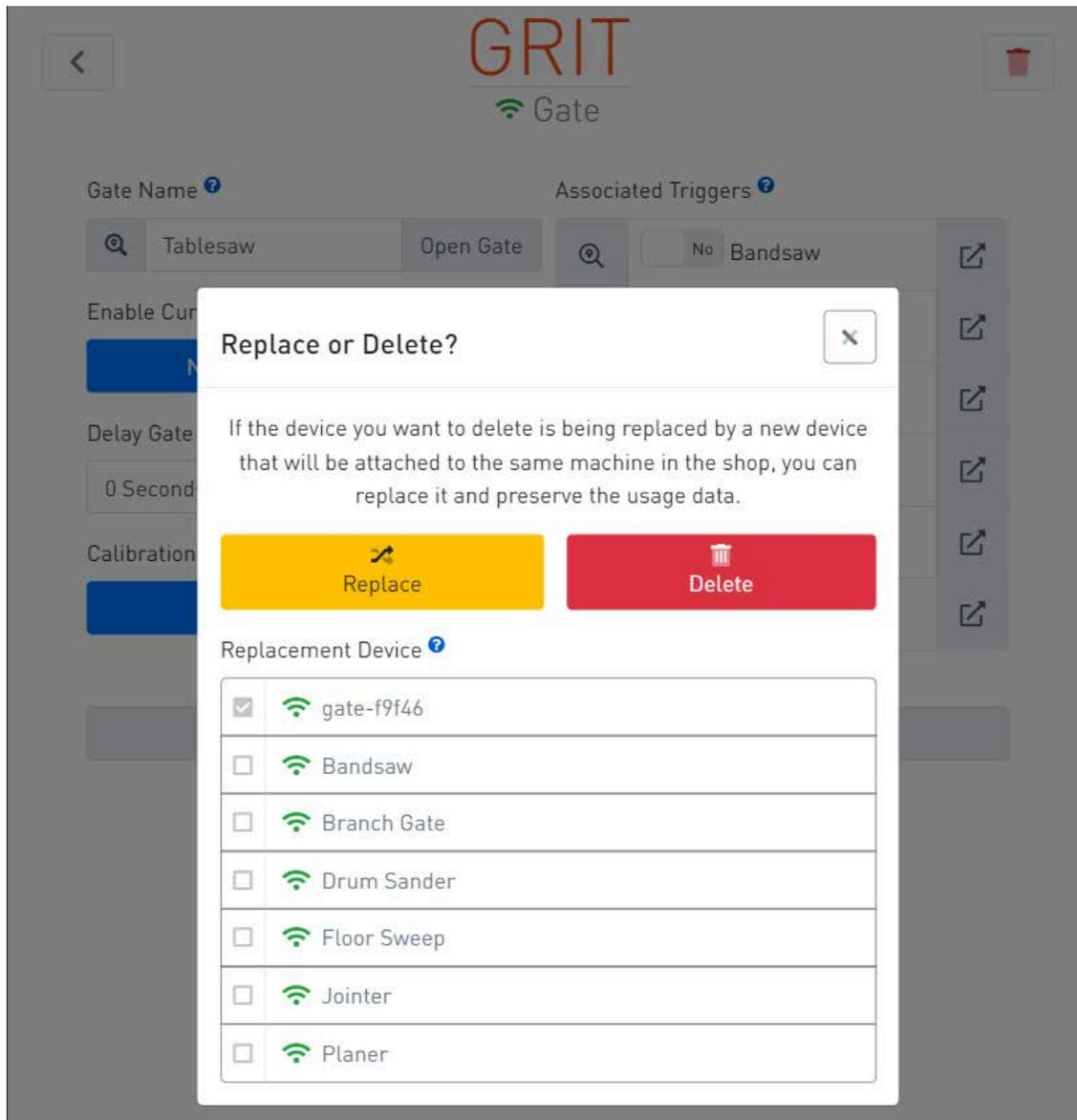
Devices Page Overview with GRIT Track® RFI

The Devices page displays all GRIT devices bound to the Hub. This includes RFI devices when they have been installed in a shop using GRIT Track®.

One notable difference in the Devices page when a shop is using GRIT Track® is that the key icon is present next to each RFI device and the Lock/Unlock icon is no longer located next to Triggers with an associated RFI.



Replace/ Delete Device



- **To Delete** a device, go to the device's detail page and press the trash icon. Then select 'Delete'.
- **To Replace** a device with a new one on the same machine, physically remove the old device then install and Bind the new device. Go to the old device's detail page and press the trash icon. Then select the newly installed device in the Replacement Device list and press 'Replace'.

Administration

Press the hamburger icon to expand navigation to other Admin sections.

GRIT Settings
v1.1.416 | Jul 05, 2023 12:38 PM

Allow New Devices [?] Yes No

Country [?] United States

Time Zone [?] America/Chicago

Automatic Update Installation [?] No Automatic Updates No Updates

Automatic GRIT Lock [?] 12:00 AM

Disable Hub Buttons [?] Yes No

System LED Brightness [?] 0% 100% 100%

Logout [?] Logout

Update Date/Time [?] Set Hub Time

Restart [?] Restart Application

Shutdown [?] Shutdown Hub

Home Assets Devices GRIT Track Reports Admin

The Admin tab opens directly into the Settings section the first time it is opened. After that, it will return to the last section viewed in Admin.

Devices
GRIT® Cloud
Network
Notifications
Remote Access
Settings
Close

Network

The Network page in the Admin tab is used to check internet connection status and connect the Hub with a local WiFi network.

The screenshot shows the 'Network' page in the GRIT App. At the top, there are three status cards: 'Internet' (Connected), 'Ethernet' (10.0.0.88), and 'GRIT Cloud' (Not Available). Below these are input fields for 'WiFi Network Name' and 'WiFi Password', a 'Save' button, and a 'Clear' button. To the right, there is a list of 'Available Networks' including 'Holiday-net1', 'Holiday-Guest', and 'DIRECT-6E-HP OfficeJet 250'. A 'Refresh' button is located below the list. At the bottom, there is a navigation bar with 'Home', 'Devices', 'Reports', and 'Admin' icons.

Internet Connection Status

Network connection method (Ethernet vs. Wi-Fi) display, including the Hub IP address (same as displayed on the Hub display screen).

Internet
Connected

Ethernet
10.0.0.88

GRIT Cloud®
Not Available

WiFi Network Name

WiFi Password

Save

Clear

Available Networks

- Holiday-net1
WPA2
- Holiday-Guest
WPA2
- DIRECT-6E-HP OfficeJet 250
WPA2

Refresh

If connecting through local Wi-Fi, select your Network Name from the list of Available Networks and enter your Network password. Then, press 'Save'. The option to 'Disconnect' is given if connected via Wi-Fi to a local network.

If your desired network is not displayed in the Available Networks list, press 'Refresh' to scan available networks again.

Home Devices Reports Admin

GRIT HUB® + APP

Remote Access

The screenshot shows the 'Remote Access' configuration page in the GRIT Hub application. It includes several callout boxes and a bottom navigation bar.

WireGuard VPN opens the location where you can install WireGuard on a phone, tablet, or computer.

VPN Subdomain sets the custom subdomain that is used to access your GRIT Hub via the WireGuard VPN. An example would be `shopname.grithubapp.com` or `lastname.grithubapp.com`.

Remote Assistance allows for temporary access into your GRIT Hub. The access will automatically expire 1 hour after the invite has been sent. To achieve the remote assistance functionality, the system will create a temporary admin user account and remote access permissions.

Reporting Token (Access Token)

Search to filter who has been given Remote Access.

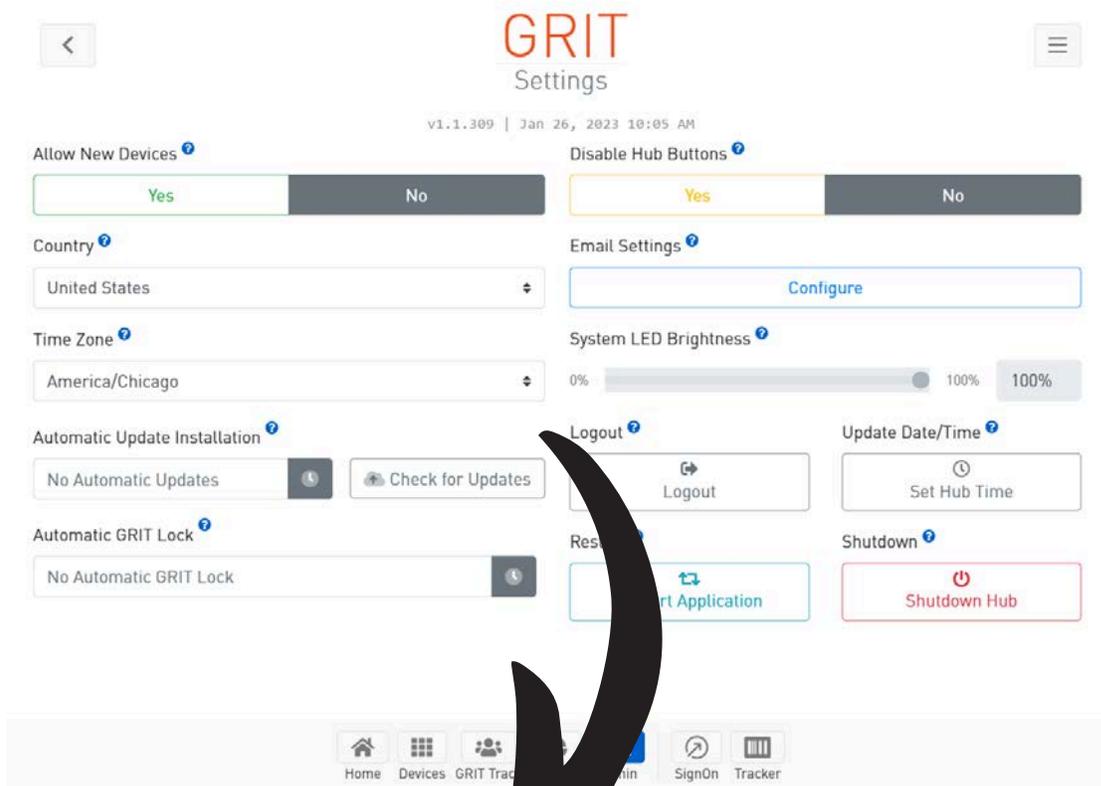
List of users and Access Tokens with Remote Access.

Bottom Navigation Bar: Home, Devices, GRIT Track, Reports, Admin, SignOn, Tracker.

GRIT HUB® + APP

Settings

The Settings page in the Admin tab is used to manage key elements of your GRIT system.



Allow newly installed GRIT devices to Bind to the Hub. This can also be achieved by pressing the Bind button on the front of the Hub.

Set the country for your system so that power and current readings are properly processed.

Set the Time Zone to allow your system to report dates and times correctly and adjust for Daylight Savings Time, if applicable.

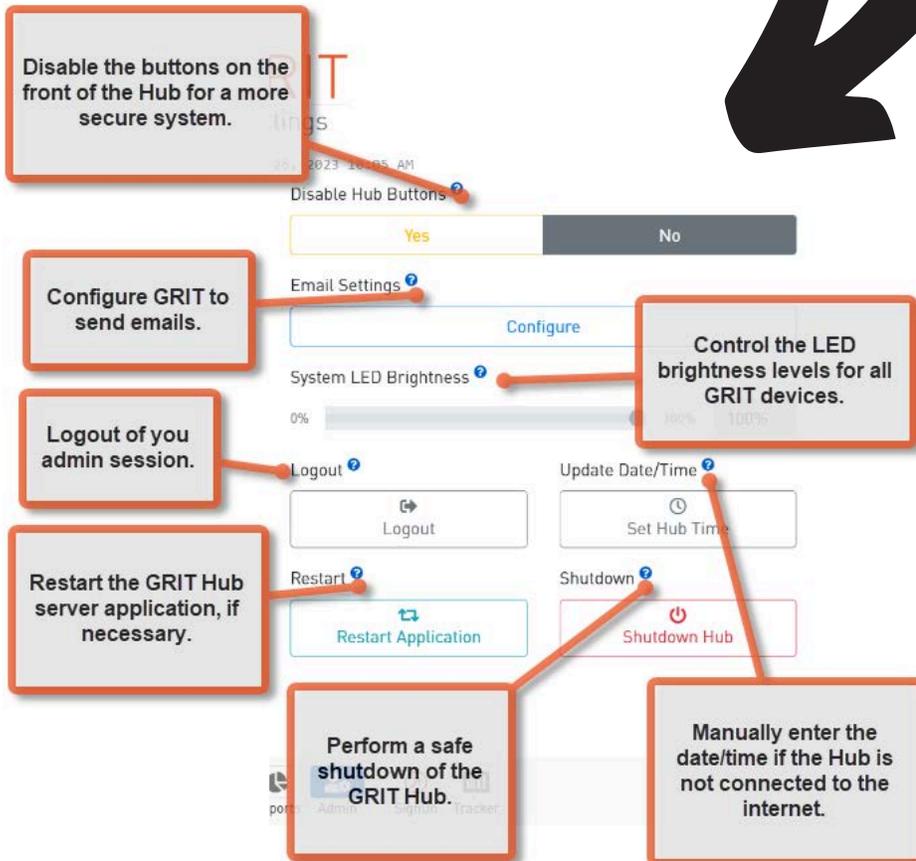
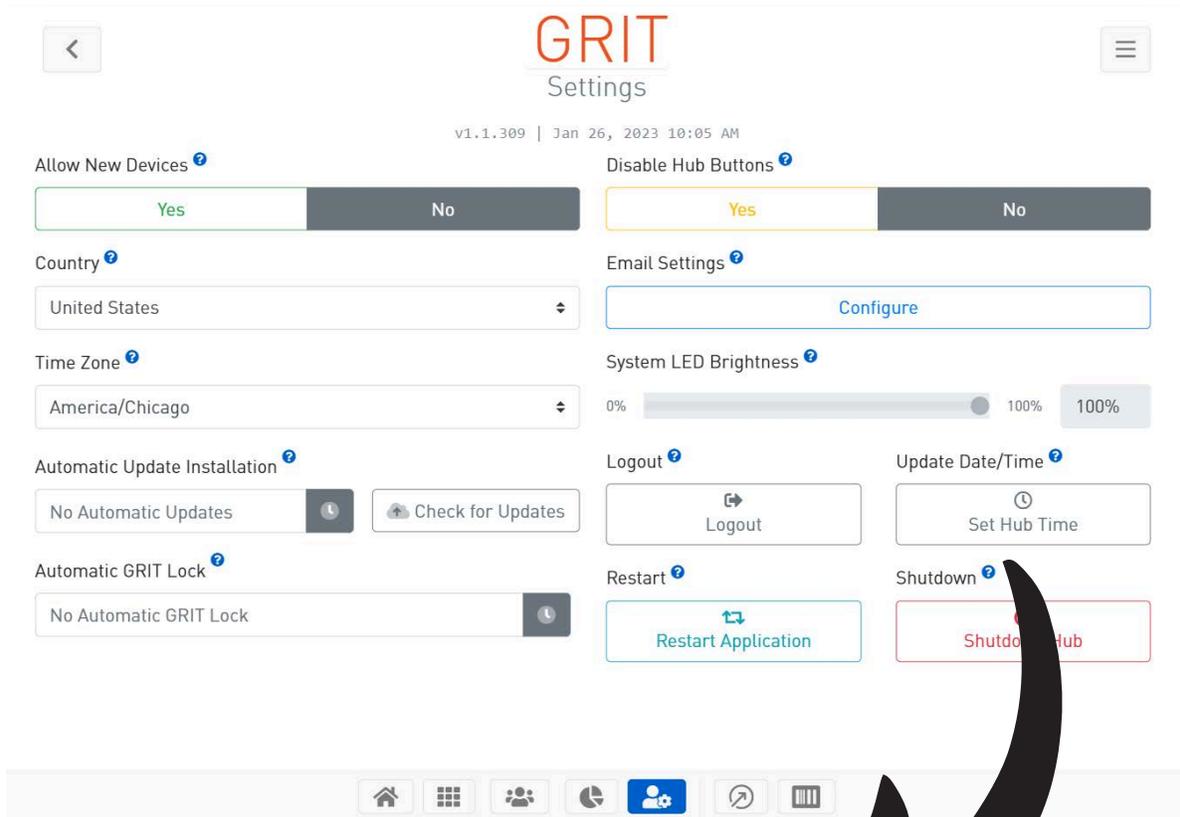
Set the time of day that GRIT will check for updates and automatically install or manually check.

Set the time of day that the system will automatically turn on GRIT Lock for all tools.

This will not have any effect on tools with an RFID connected or GRIT Switch triggers.

GRIT App
Settings

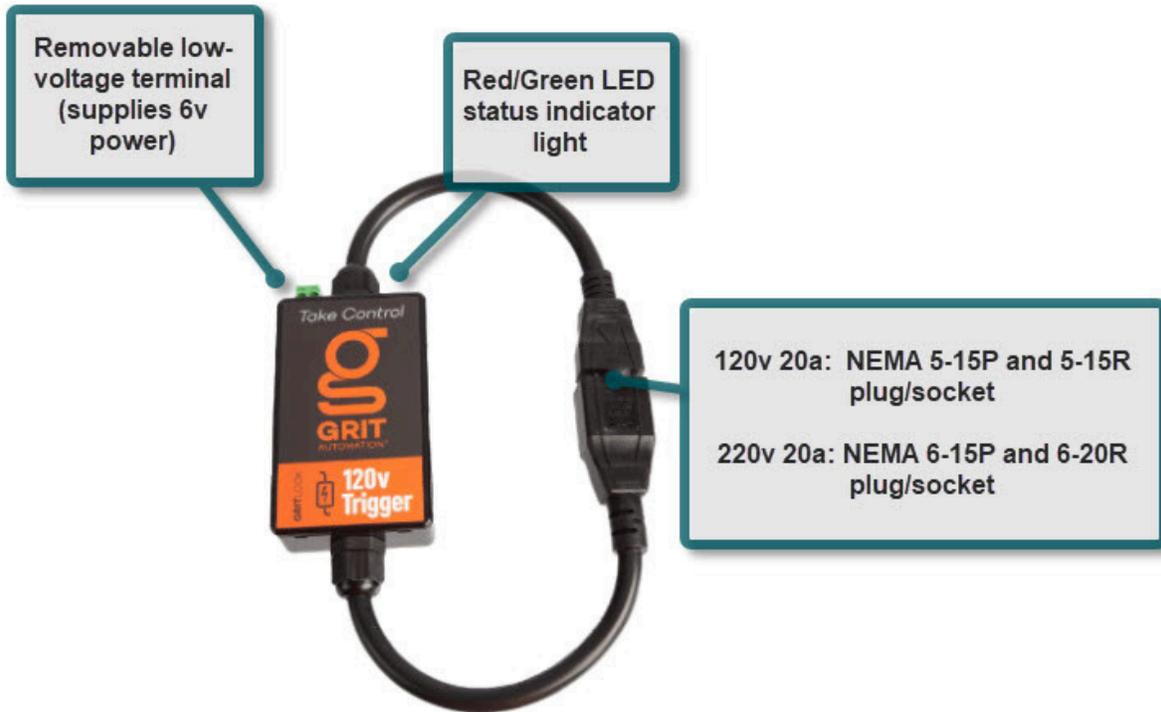
GRIT HUB® + APP



TRIGGERS

Standard 120v and 220v (up to 20a) Triggers

The GRIT Trigger creates a virtual barrier between tools and unauthorized users. This hardware component of GRIT Lock® technology is able to monitor and control the power that reaches your tool.

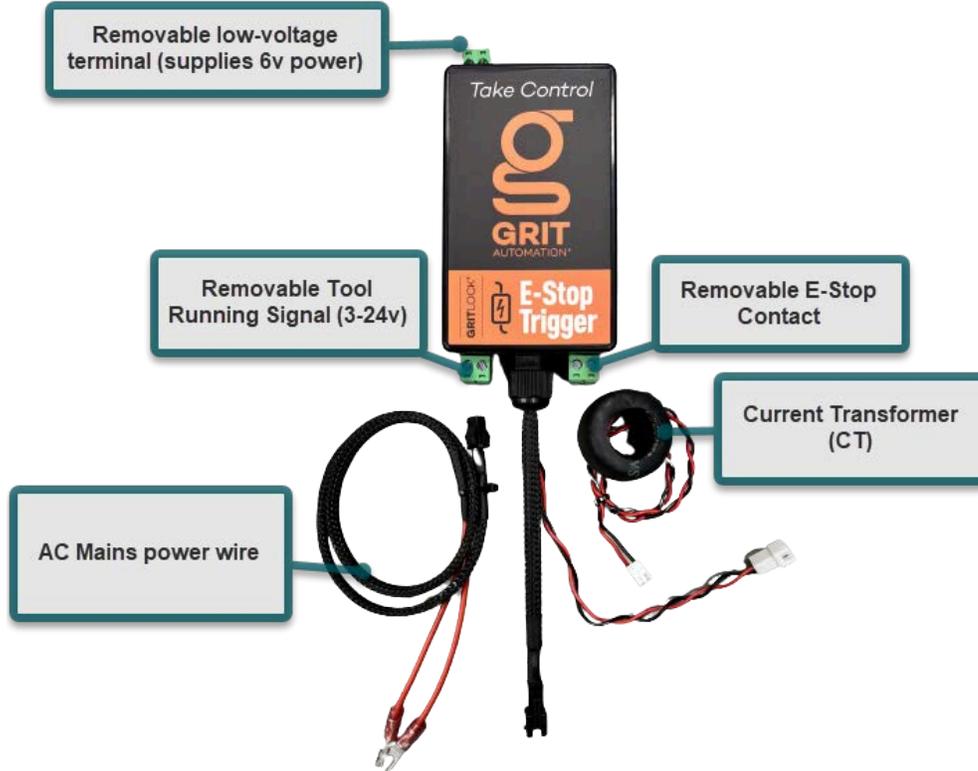


Triggers



TRIGGERS

E-STOP Trigger



Installation Overview

The E-Stop Trigger is a versatile device to measure whether your tool is running. It has various installation options based on your machine and which components are most accessible.

Installation consists of three primary steps:

Step 1: Power the GRIT E-Stop Trigger Device

- use the AC Mains power wires from the GRIT device.

Step 2: Measure Whether the Tool is Running

- Option 1: use the CT from the GRIT device to measure the tool's current, or;
- Option 2: wire the Removable Tool Running Signal from the GRIT device inline with the tool's running signal.

Step 3: Control the Tool's Power

- Option 1: wire the Removable E-Stop Contact from the GRIT device inline with the tool's emergency stop button, or;
- Option 2: wire the Removable E-Stop Contact from the GRIT device inline with the low-voltage wire that controls the tool's contactor coil.

TRIGGERS

This is an example of a completed E-Stop Trigger installation where the user installed the device into their CNC. If the E-Stop device doesn't fit inside your machine, you may need to drill a hole through the contactor box to pass the wires through. Then, mount the E-stop with provided VHB tape.

Step 1:

They've connected the two AC wires.

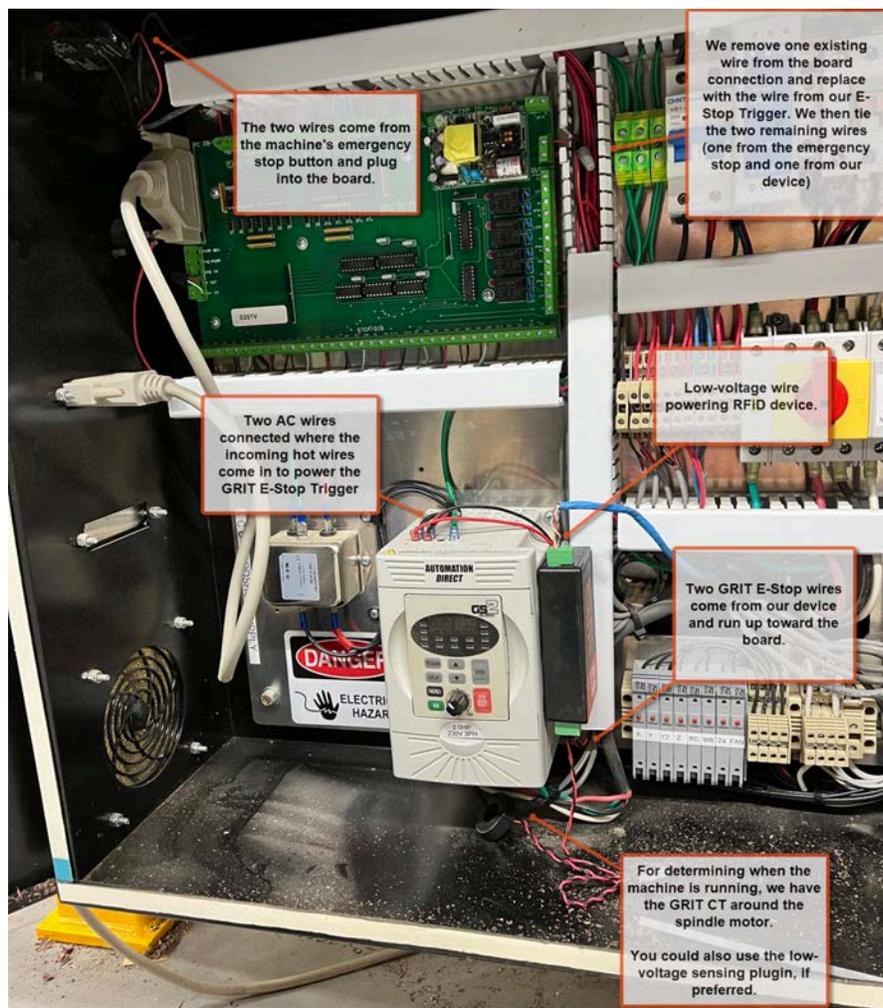
Step 2:

They've measured whether the tool is running with the CT around the spindle motor wire.

Step 3:

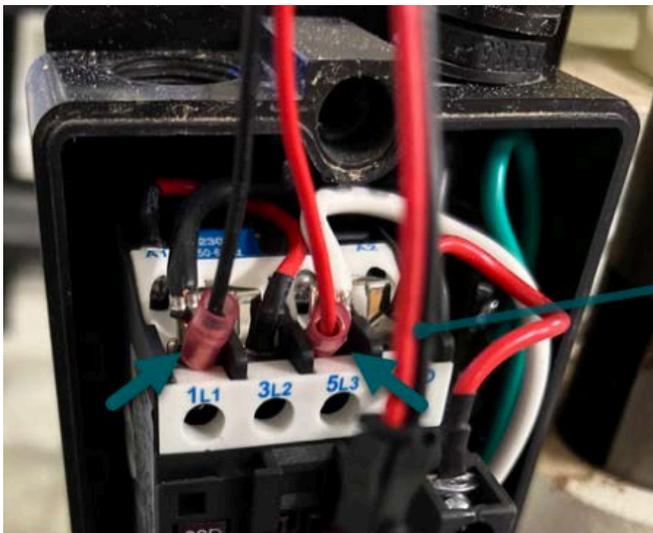
They've controlled the tool's power by wiring inline with the tool's emergency stop button.

Please note that it is possible to install this device without wiring inline with the emergency stop or the contactor coil, but none of the GRIT Lock safety features would be available if you skip the third step, so we do not recommend this.



TRIGGERS

Step 1: Power the GRIT E-Stop Trigger Device



Step 1:
Connect the AC Mains power wires to 110v- 240v AC power by landing the fork connectors into the contactor's terminals with the first two incoming hot wires.



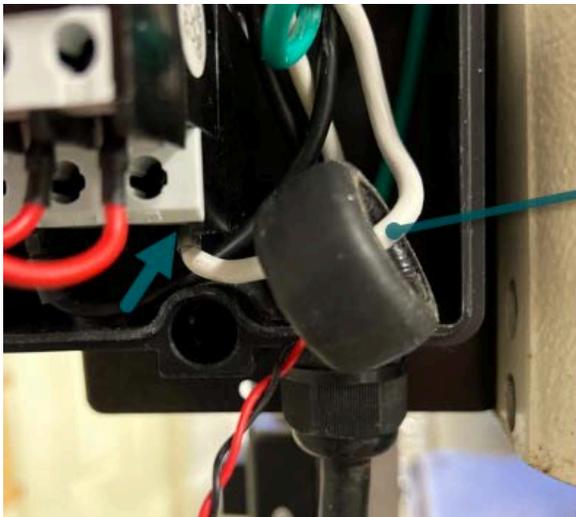
Step 2:
Connect the other end into the black terminal coming from the bottom of the E-Stop Trigger.

TRIGGERS

Step 2: Measure Whether the Tool is Running



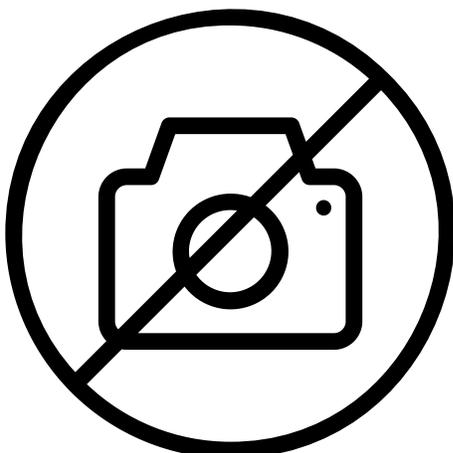
Option 1: Measure with the CT



Unscrew one of the power wires that goes to the tool from the contactor.

Insert it through the middle of the CT, then re-secure it in its contactor terminal.

Option 2: Measure with the Tool's Low-Voltage Running Signal



Not Yet Pictured

Using the Tool Running Signal (must be DV voltage 3v-24v), insert the positive signal wire into the right side of the green terminal (marked with a +).

Connect the negative ground from the tool to the left side of the same green terminal (marked with a -).

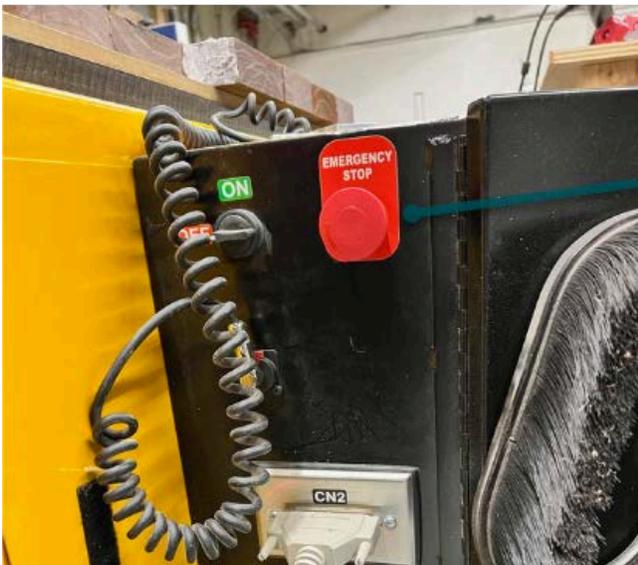
Plug the green terminal back into the E-Stop Trigger.

TRIGGERS

Step 3: Control the Tool's Power



Option 1: Wire Inline with the Emergency Stop Button



If your machine has an Emergency Stop button, open up the machine and find the two wires leading from the back of the button.



Follow those wires to find their connection on the board.

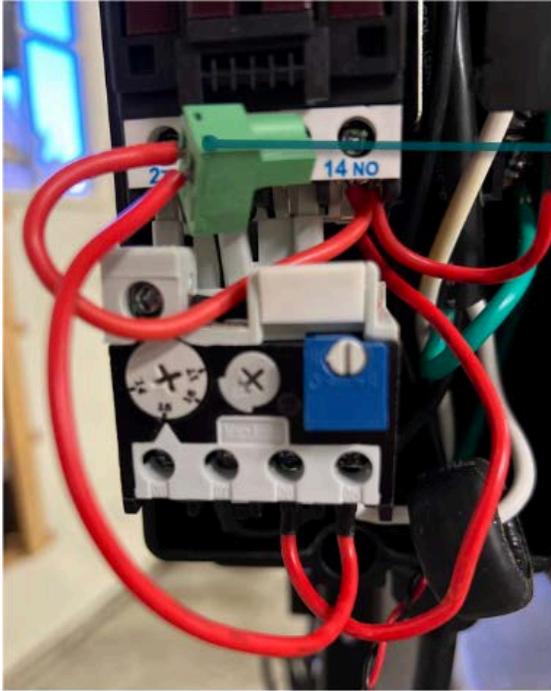
Remove one of the wires from the board, and land it in one side of the E-Stop Contact green terminal. If that wire is not long enough to reach the trigger, connect an extra length of wire with a wire nut.

Next, run an extra segment of wire from the other side of the green terminal and land it where the other wire had been on the board.

TRIGGERS

Option 2: Wire Inline with the Contactor Coil Power Wire

The purpose of this installation choice is to break the connection powering the contactor's magnetic coil.



Find a wire that is going to the contactor's coil. The Removable E-Stop Contact green terminal should then be wired in series with that existing wire (-/+ side does not matter).



Plug the E-Stop Contact green terminal back into the bottom right-hand side of the E-Stop Trigger.

Triggers
Installation

TRIGGERS

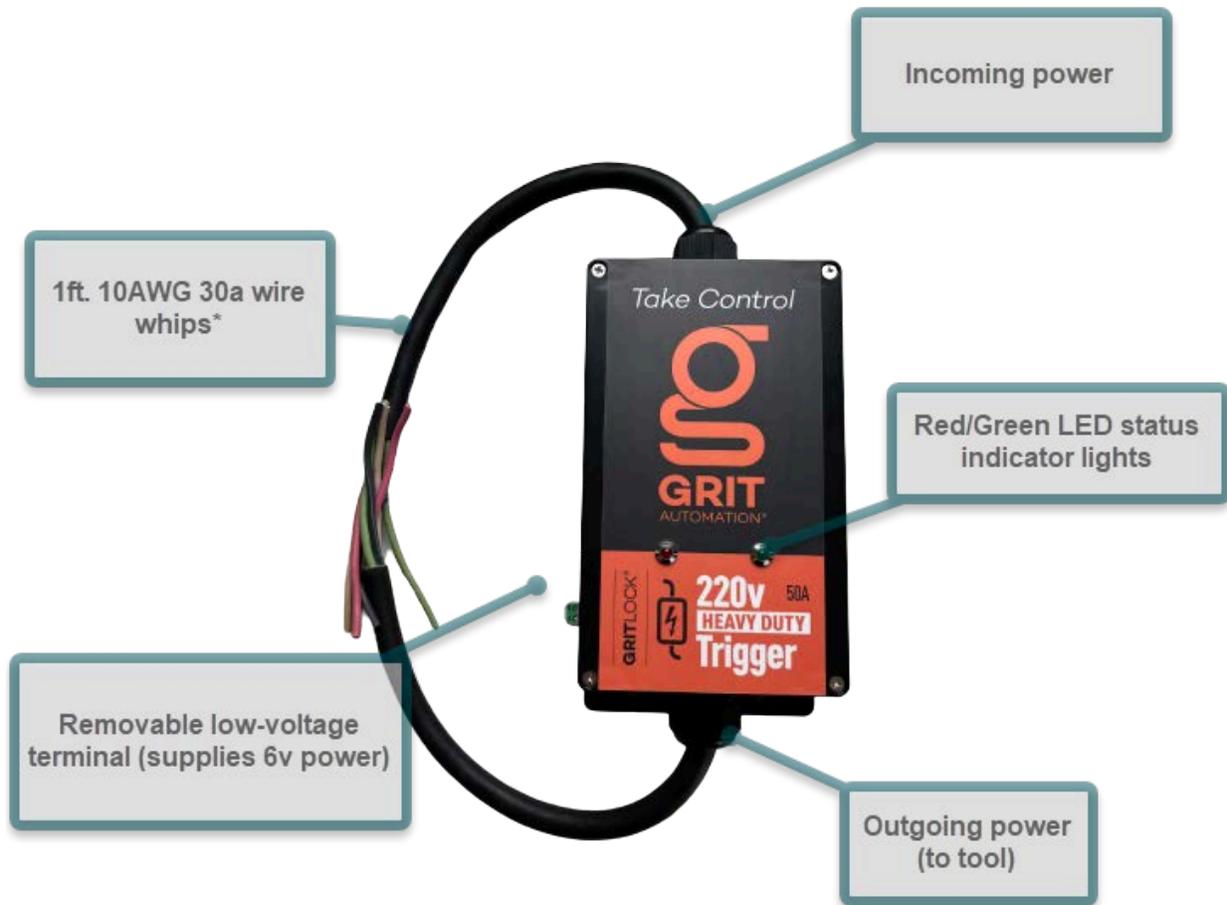


Complete the installation by attaching the E-Stop Trigger with provided VHB tape.



TRIGGERS

Standard 220v Heavy Duty (up to 35a) Trigger



Triggers

*Note: The 220v Heavy Duty Trigger does not come with a plug or socket end attached to the wire whip since tools with this power profile vary widely. The supplied wire whip is rated up to 30a. Customer is responsible for purchasing and wiring appropriate plug/socket or larger gauge wire for their purposes.

Installation

Follow the instructions provided with your chosen plug/socket. Once wiring is complete:

1. Plug your tool into the GRIT Trigger device.
2. Plug GRIT Trigger device into the wall.

TRIGGERS

Industrial 220v Single Phase Trigger



Installation

*Note: We recommend all electrical installation be performed by a licensed electrician. Wire whip, mounting hardware, chase nipple, and FMC connector are not included.

See page 54 for installation instructions for the Industrial 220v 1PH and Industrial 208v 3PH Triggers.

TRIGGERS

Industrial 208v 3 Phase Trigger



Triggers

Installation

*Note: We recommend all electrical installation be performed by a licensed electrician. Wire whip, mounting hardware, chase nipple, and FMC connector are not included.

TRIGGERS

Industrial 220v 1PH + 208v 3PH Trigger Installation



Step 1:

Turn off the breaker leading to the tool.
Disconnect the power wires feeding the tool.



Step 2:

Mount the trigger near the incoming power drop. That may mean attaching the trigger to the wall or the tool itself.



Step 3:

Use one of the existing knockouts, or drill a hole in the back of the enclosure to align with the existing hole where power is already being run to the tool.

Insert and tighten a chase nipple.

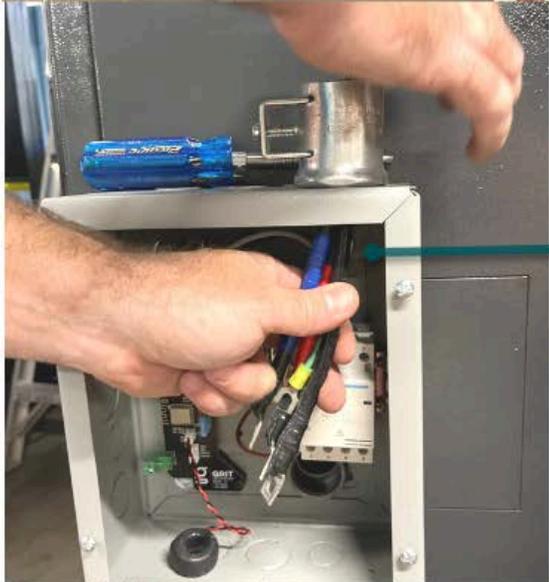
Step 4:

Measure and cut the conduit, if needed.

TRIGGERS



Step 5:
Cut a hole for the incoming power or use one of the existing knockouts.



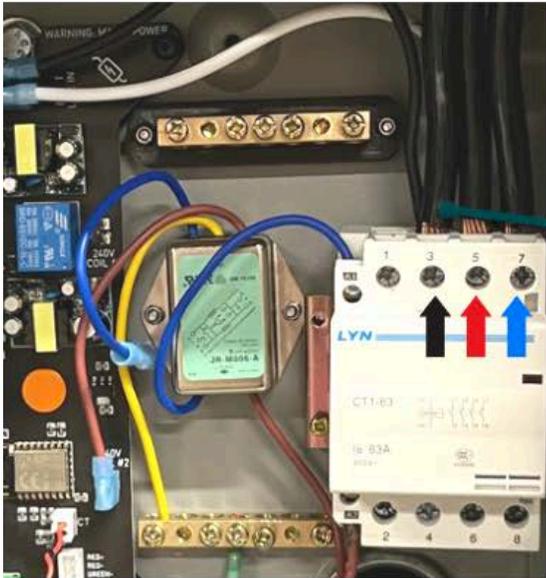
Step 6:
Insert an FMC Connector and feed the incoming wires through the opening.



Step 7:
Secure the incoming conduit.

Triggers
Installation

TRIGGERS



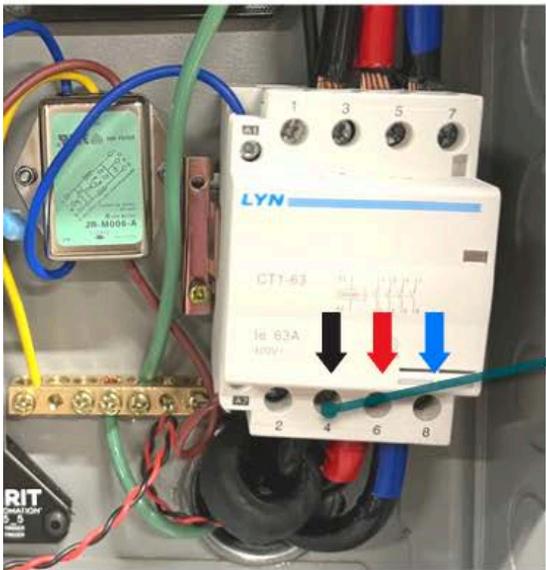
Step 8:

Cut the incoming wires to length, mark with colored electrical tape.

Strip and land the first incoming hot wire in terminal 3 with the Black wire connected to the PCB.

Strip and land the second incoming hot wire in terminal 5 with the White wire connected to the PCB.

If there are three hots coming in, land the third wire in terminal 7.



Step 9:

When landing the outgoing power in the contactor, be sure to keep the wires in line with the incoming wires.

Put the first outgoing hot wire through the CT. Strip and land in terminal 4.

Strip and land the second outgoing hot wire in terminal 6.

If there are three hots, land the third wire in terminal 8.



Step 10:

Cut the incoming ground wire to length and land in the ground terminal (see green arrow). Repeat with the ground wire leading into the tool.

If there is a neutral wire, land in one of the black/gold terminals (see orange arrow).

TRIGGERS



Step 11:
Plug the LED indicator light harness (attached to the lid) into the PCB.



Step 12:
To power an RFID device from an Industrial Trigger, insert the black push-in connector into a small knockout.

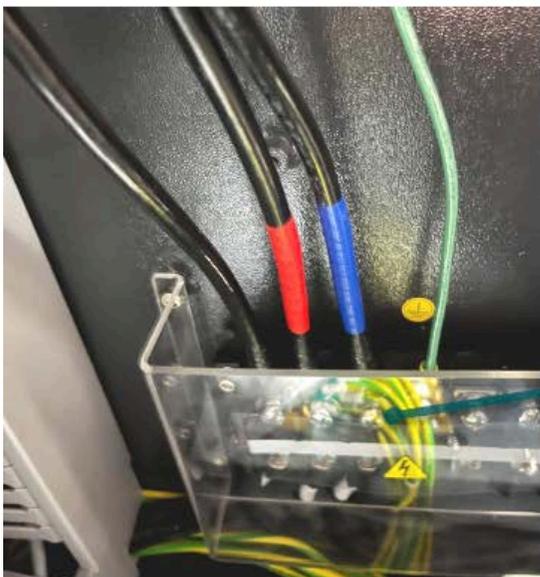


Step 13:
Cut, strip, and land low-voltage wire(s) into the low-voltage terminal located on the PCB.

TRIGGERS



Step 14:
Replace and secure the lid.



Step 15:
Re-land the wires leading into the tool.
Turn on the breaker leading to the tool.

TRIGGERS

Industrial 480v 3 Phase Trigger



Triggers

Installation

*Note: We recommend all electrical installation be performed by a licensed electrician. Wire whip, mounting hardware, chase nipple, and FMC connector are not included.

TRIGGERS

Industrial 480v 3PH Trigger Installation



Step 1:

Turn off the breaker leading to the tool.
Disconnect the power wires feeding the tool.

Step 2:

Mount the trigger near the incoming power
drop or breaker.

Use one of the existing knockouts, or drill a
hole in the enclosure to align with the hole
where power is already being run to the tool
and the incoming power.



Step 3:

The Industrial 480v 3PH Triggers contain a
transformer used to power the GRIT PCB. For
480v power, use the Black wire and the light
Grey wire.



Step 4:

Land the Black wire on a prong of L1 and the
light Grey wire on a prong of L2.

TRIGGERS



Step 5:

Cut the incoming wires to length, mark with colored electrical tape.

Strip and land the first incoming hot wire in the screw terminal L1 (in front of the Black wire landed from the transformer).

Strip and land the second incoming hot wire in the screw terminal L2 (in front of the light Grey wire landed from the transformer).

Strip and land the third incoming hot wire in the screw terminal L3.



Step 6:

Insert and tighten a chase nipple through a knockout.

Insert the outgoing wires leading to/from the tool.



Step 7:

Put the first outgoing hot wire through the CT. Strip and land in terminal T1.

Strip and land the second outgoing hot wire in terminal T2.

Strip and land the third outgoing hot wire in terminal T3.

TRIGGERS



Step 8:

When landing the outgoing power leading to the tool in the contactor, be sure to keep the wires in line with the incoming wires.



Step 9:

Plug the LED indicator light harness (attached to the lid) into the PCB.



Step 10:

To power an RFID device from an Industrial Trigger, insert the black push-in cable connector into a small knockout.

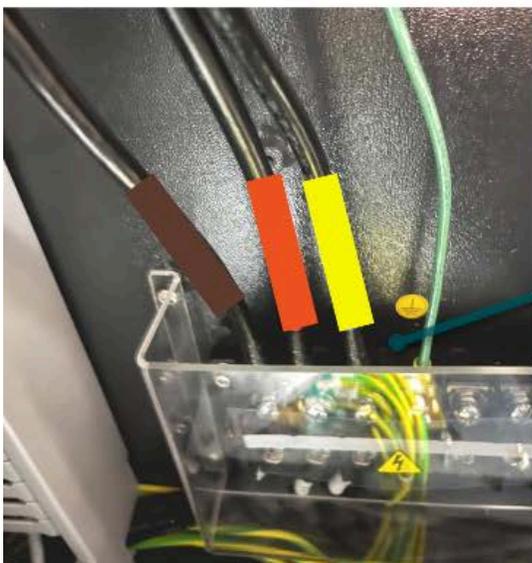
TRIGGERS



Step 11:
Cut, strip, and land low-voltage wire(s) into the low-voltage terminal located on the PCB.



Step 12:
Replace and secure the cover.



Step 13:
Re-land the wires leading into the tool.
Turn on the breaker leading to the tool.

Triggers
Installation

TRIGGERS

Trigger Device Configuration with Associated Collector Device

Each installed Trigger has its own detail configuration page in the GRIT App. As mentioned in the GRIT Lock® section of the manual, it is essential that each Trigger be carefully configured for its specified tool.

The screenshot shows the configuration page for a GRIT Trigger. The page is titled "GRIT Trigger 220v" and features a search bar with "Tablesaw" entered. Below the search bar are "Lock" and "Unlock" buttons. The "Activation Level" is set to "1.50 Amps". The "Power Profile" is set to "Normal". The "Associated Collector" is set to "V3000". The "Associated Gates" list includes "Belt/Disc Sander", "Drum Sander", "Edge Sander", "Floor Sweep", "Jointer", "Left Branch", "Planer", "Right Branch", "Spindle Sander", and "Tablesaw".

Callouts provide the following information:

- Trigger Name:** Rename the device, usually with the name of the tool it is associated with.
- Lock and Unlock this tool:** Lock and Unlock this tool.
- Maintenance Schedule:** Manage maintenance schedule reminders for this tool.
- GRIT Lock®:** Lock and Unlock buttons.
- Activation Level:** Set the power required for this tool to be considered 'ON' by the GRIT.
- Power Profile:** Specify how the tool acts when it gets turned on to ensure GRIT Lock functions properly. See Power Profile section for more detail.
- Associated Collector:** Configure the collector that will turn on when this trigger is running.
- Associated Gates:** Configure the gate or gates that will open when this tool is running.

The bottom navigation bar includes icons for Home, Devices, Reports, Admin, SignOn, and Tracker.

TRIGGERS

Trigger Device Configuration with Associated VFD Device

Each installed Trigger has its own detail configuration page in the GRIT App. As mentioned in the GRIT Lock® section of the manual, it is essential that each Trigger be carefully configured for its specified tool.

The trigger configuration page has the following differences when associated with a VFD device rather than a Collector device.

The screenshot displays the GRIT Trigger configuration interface for a 'Tablesaw' tool. The page includes a search bar with 'Tablesaw' entered and a 'Show' button. A blue 'Add' button is visible under the 'Maintenance Schedule' section. The 'GRIT Lock®' section has 'Lock' and 'Unlock' buttons. The 'Activation Level' is set to '1.50 Amps' with a 'Reset' button. The 'Power Profile' is set to 'Normal'. The 'Associated Collector' is set to 'VFD'. The 'Minimum VFD Speed' is set to 'Collector Default (50%)' with a 'Set To Default' button. A callout box explains: 'When the Associated Collector is a VFD, an additional setting appears on the configuration page.' The 'Associated Gates' list includes: Belt/Disc Sander, Drum Sander, Edge Sander, Floor Sweep, Jointer, Left Branch, Planer, Right Branch, Spindle Sander, Tablesaw, gate-2c18a2, and gate-8330a7. A second callout box explains: 'This setting controls the speed the collector must be running at for this tool. If this value is blank, the speed will be set to the current minimum defined on the actual collector configuration.'

Triggers
Configuration

TRIGGERS

Trigger Device Configuration with GRIT Track® RFI

Each installed Trigger has its own detail configuration page in the GRIT App. As mentioned in the GRIT Lock® section of the manual, it is essential that each Trigger be carefully configured for its specified tool.

The trigger configuration page has the following differences when associated with a GRIT Track RFID device.

The screenshot displays the configuration page for a 'Tablesaw' trigger. Key features include:

- Trigger Name:** Tablesaw
- GRIT Track®:** Login (indicated by a callout box: "Triggers configured with GRIT Track RFID devices can be logged in/out via the mobile app which uses the permissions of the person logged in. A trigger cannot be logged out while the tool is running.")
- Activation Level:** 1.5 Amps (with a Reset button)
- Power Profile:** Normal (selected), Delay, Spike, Advanced
- Associated Collector:** Oneida Supercell
- Associated RFID Reader:** Tablesaw (indicated by a callout box: "Configure the RFID reader with one specific tool.")
- Maintenance Schedule:** Add
- Associated Gates:** A list of gates with checkboxes for logging in/out:
 - gate-f9f46: No
 - Bandsaw: No
 - Branch Gate: No
 - Drum Sander: No
 - Floor Sweep: No
 - Jointer: No
 - Planer: No
 - Tablesaw: Yes

TRIGGERS



Activation Level and Power Profiles

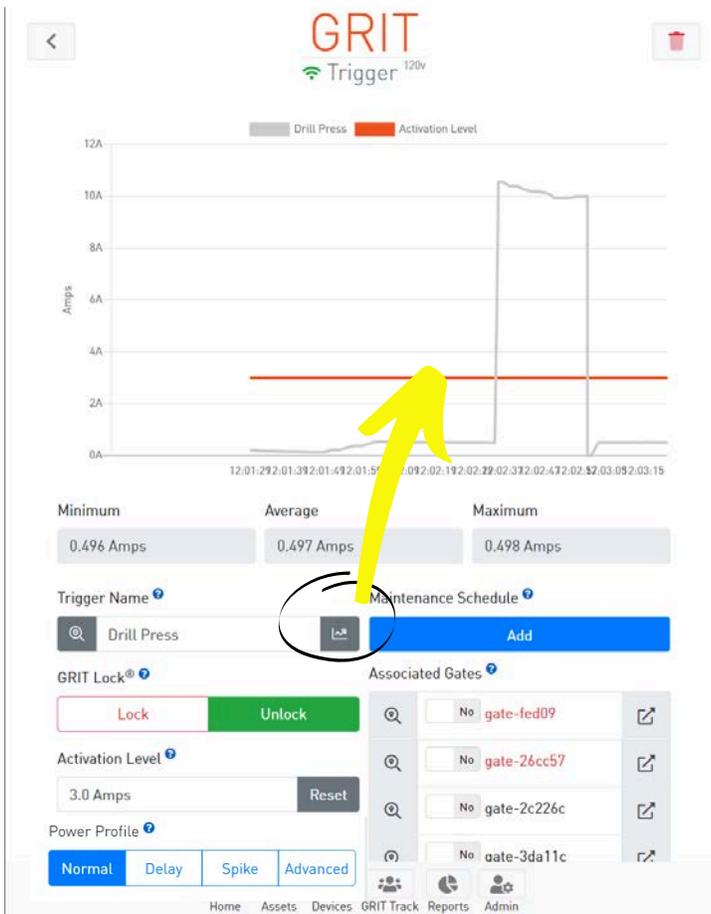
Correctly setting each tool's Activation Level and Power Profile in the trigger's detail configuration screen is essential to the overall functioning of the GRIT system. When GRIT Lock® can accurately assess whether a tool is running, the system can turn on an associated dust collector, open associated blast gates, and quickly initiate an Emergency Lock, but only if the tool's power is accurately captured in its configuration settings.

To further clarify, if the Activation Level is telling GRIT what level to check for, the Power Profile setting tells GRIT when and how to check.

Normal



Tools that roar to life as soon as they are powered on have a "Normal" power profile. To properly configure this type of tool, look at its power graph.

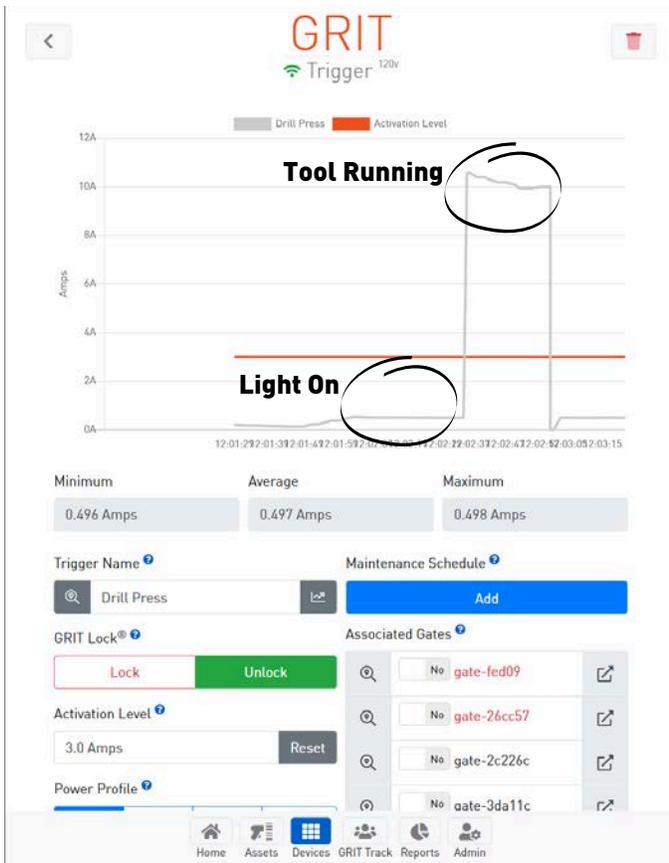


For a tool to be considered running in the GRIT system, the current draw has to exceed the value set for the Activation Level.

In this example the Activation Level is set to 3.0 Amps with the drill press pulling ~10 Amps consistently when running. Setting the Activation Level anywhere between 1.0 Amp and 9.0 Amps would allow GRIT to accurately determine when this tool is running.

Triggers
Configuration

TRIGGERS



This particular drill press has a light that draws about .5 Amp when the trigger is unlocked but the tool is not yet running.

If there is an aspect of the tool that draws power even when it is not running, be sure to set the Activation Level above that amp level. This is to avoid the system thinking the tool is running when it is merely operating other components (i.e., a light, a computer, etc.).

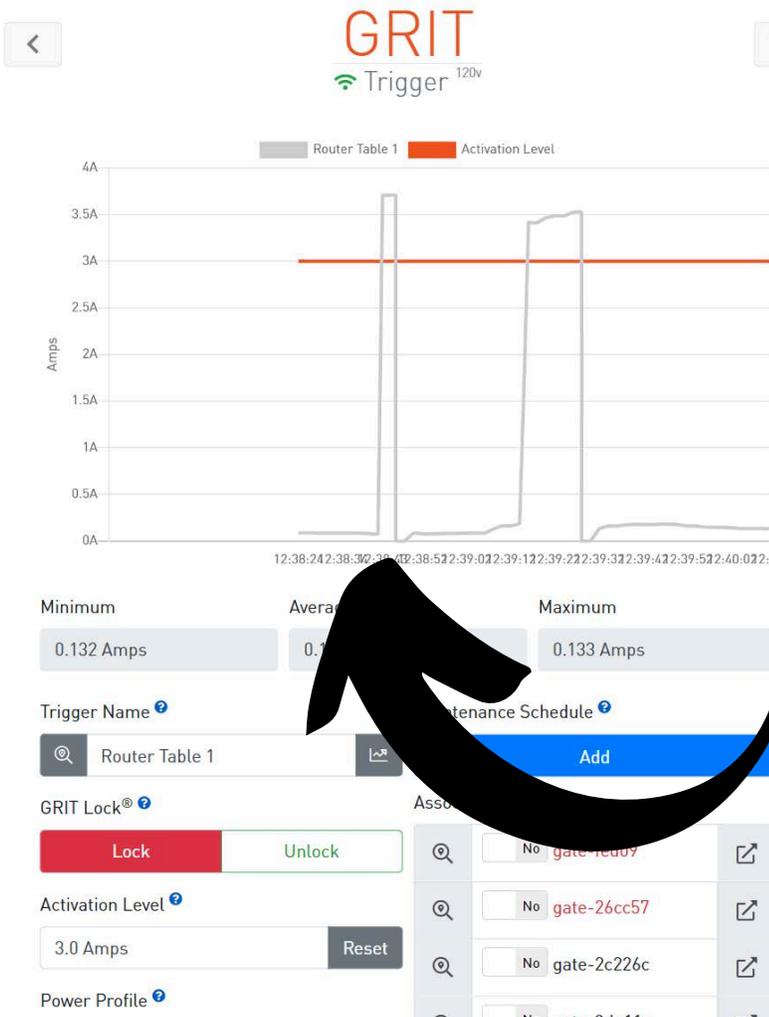
Note: Some incandescent lights actually pull a great amount of power when they are turned on from a cold state. Keep this in mind when setting your Activation Level.

TRIGGERS

Delay



If the tool in question is a router table with a soft start motor, there is a chance that the "Normal" Power Profile might miss the current draw being above the Activation Level immediately after the tool is unlocked. For tools that have a slow or soft start, the trigger should be set to "Delay" for the Power Profile. This setting adds a sub-second pause before measuring the current, allowing the motor to begin pulling power.

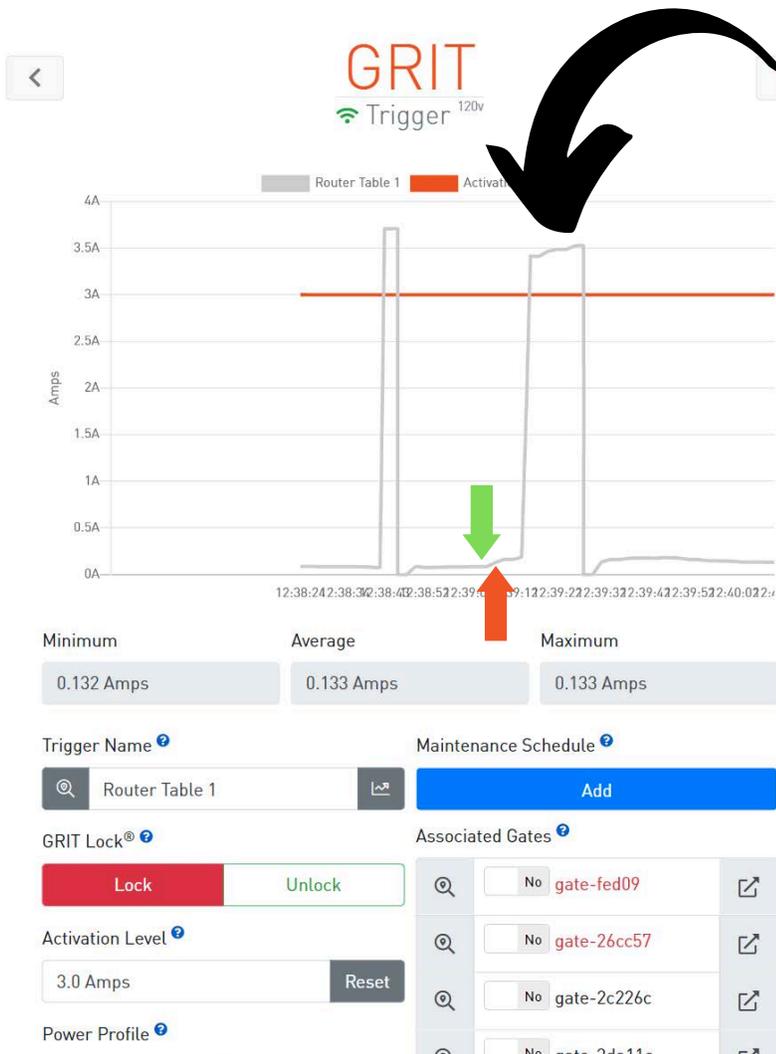


This power graph shows a tool with a slow start motor which requires the Delay Power Profile setting.

The first spike was captured with the Power Profile set to Delay. The system waited 100ms before checking if the tool's power draw was above 3.0 Amps, which was enough time for the motor to reach its full current draw.

Triggers
Configuration

TRIGGERS



The second spike on the graph was captured with a Normal power profile setting. The green arrow shows when the tool was turned on, the orange arrow indicates when GRIT checks whether the tool is pulling power above the set Activation Level.

When a slow start motor is not configured with a Delay Power Profile, the system immediately measures the current after the trigger is unlocked. Because of the time it takes a slow start motor to ramp up to full speed, the system misses the accurate information that the tool is running.

This would impact not only the system turning on an associated collector or opening associated blast gates, but would impact the system's ability to initiate an Emergency Lock, if needed.

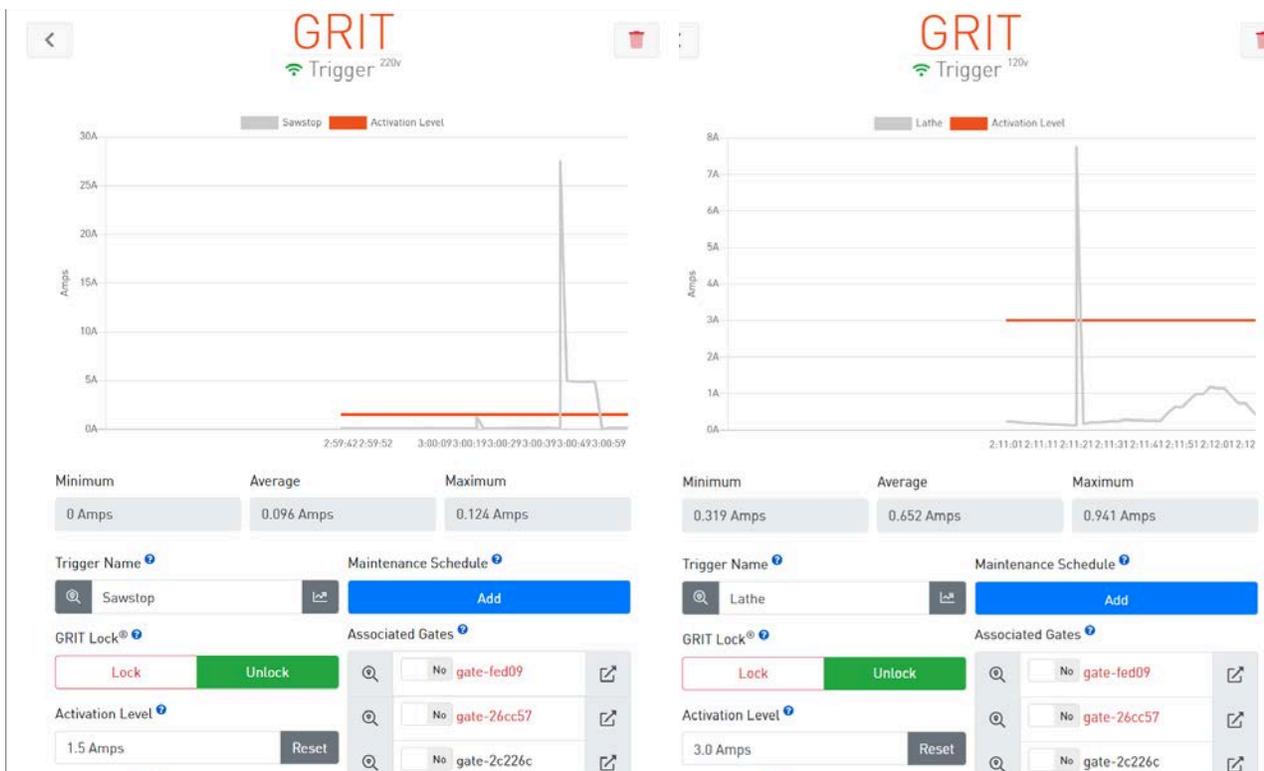
TRIGGERS

Spike



A "Spike" power profile is used for tools that have a huge inrush of current when they are unlocked. An example of this would be a wood lathe with a single phase to 3 phase converter. These will have a huge inrush as capacitors are charged. During this initial inrush, we don't want to measure until the spike has settled down or the system will incorrectly think the tool is on and re-lock it and log an Emergency Lock.

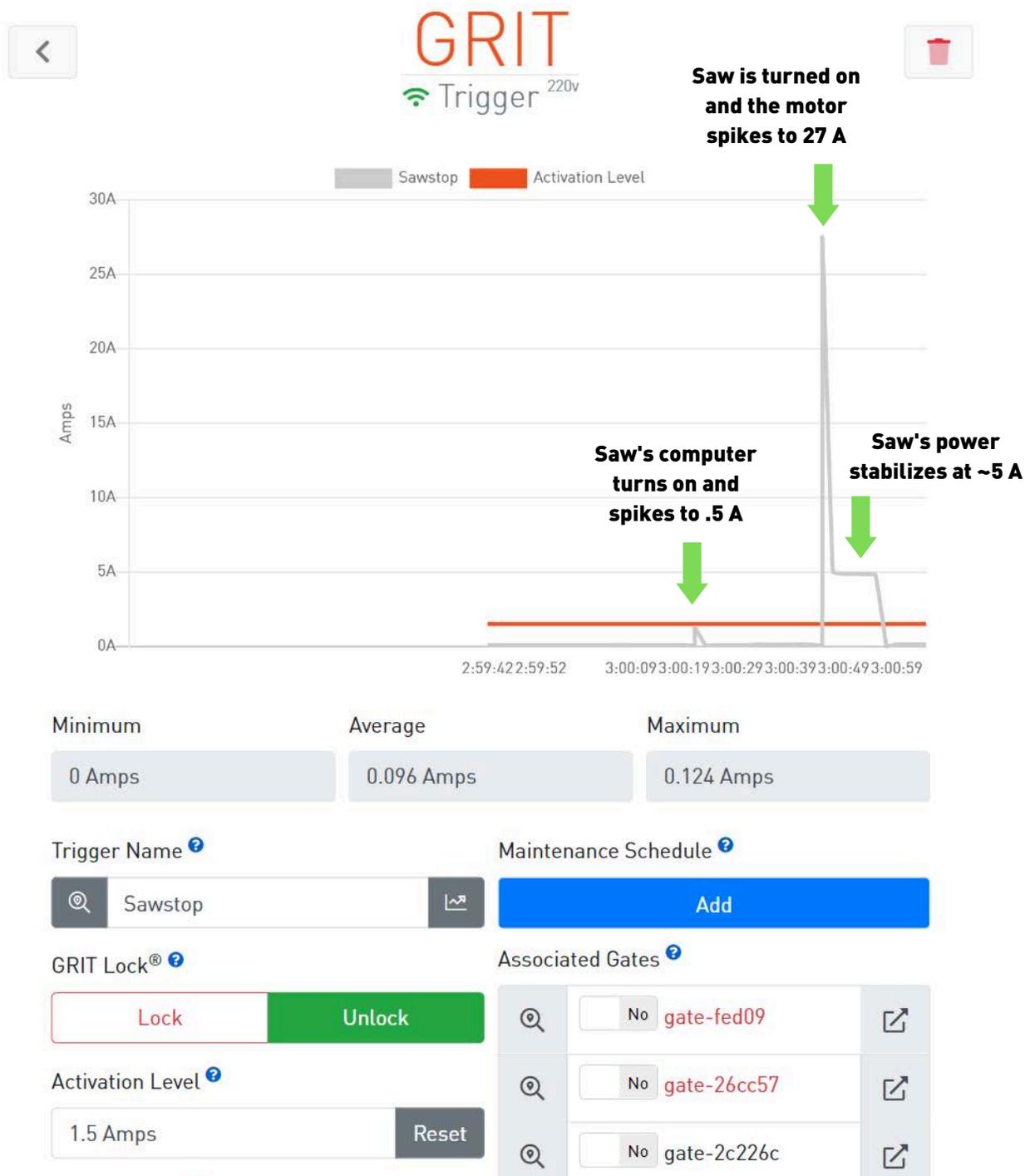
Here are two examples with spikes in the power graph: A Tablesaw and a Lathe. The SawStop can be configured with a Normal power profile and a higher Activation Level. The Lathe, however, requires a Spike Power Profile and a lower Activation Level.



Triggers Configuration

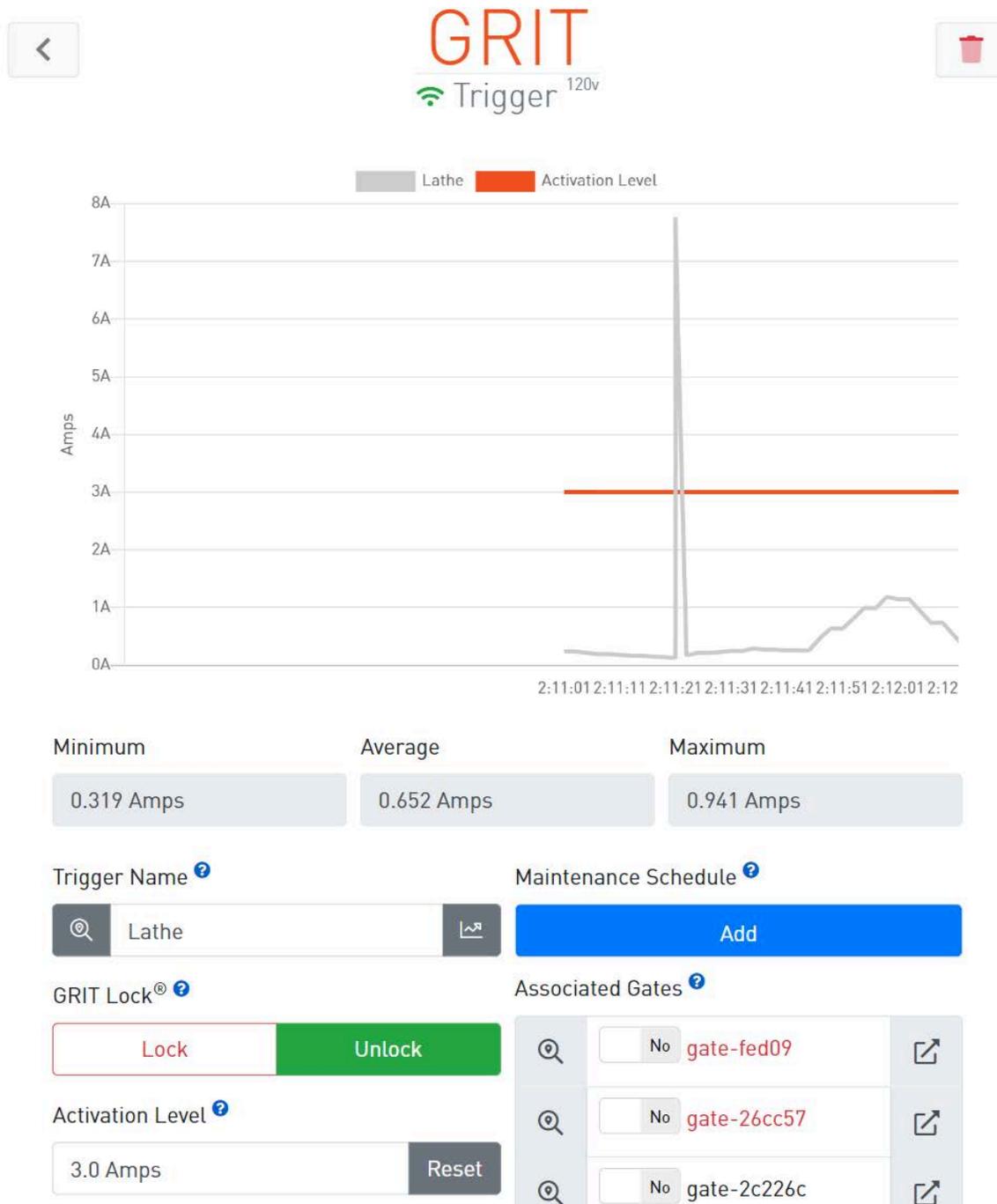
TRIGGERS

Although the Tablesaw has a power spike when the trigger is unlocked, it does not need to be configured with a Spike power profile because the inrush spike level is still less than when the saw is actually running. Configure this trigger with a Normal power profile and increase the Activation Level to 1.5 Amps (higher than the computer spike but lower than the consistent current draw when the saw is running).



TRIGGERS

The lathe, however, requires a Spike power profile because the spike level is higher than the level of current when the lathe is running. The system must then wait until after the initial spike to determine if the tool is running. Configure this trigger with a Spike power profile and lower the Activation Level to 3 Amps.



GRIT
Trigger^{120v}

Legend: Lathe (Grey), Activation Level (Red)

Y-axis: Amps (0A to 8A)

X-axis: 2:11:01 2:11:11 2:11:21 2:11:31 2:11:41 2:11:51 2:12:01 2:12:12

Minimum	Average	Maximum
0.319 Amps	0.652 Amps	0.941 Amps

Trigger Name: Lathe

Maintenance Schedule: Add

GRIT Lock: Lock Unlock

Associated Gates:

- No gate-fed09
- No gate-26cc57
- No gate-2c226c

Activation Level: 3.0 Amps [Reset]

Triggers
Configuration

TRIGGERS

Advanced

Power Profile [?]

Normal Delay Spike **Advanced**

Activation Delay [?] **1**

0 Seconds

Deactivation Delay [?] **2**

0 Seconds

Unlock Measurement Delay [?] **3**

0sec 3sec 0 ms

The Advanced power profile setting is for finetuning how the trigger operates. If none of the other preset settings accurately capture the tool's specific power startup timing/levels, you can set all of them manually in Advanced. This will show three new settings: Activation Delay, Deactivation Delay and Unlock Measurement Delay.

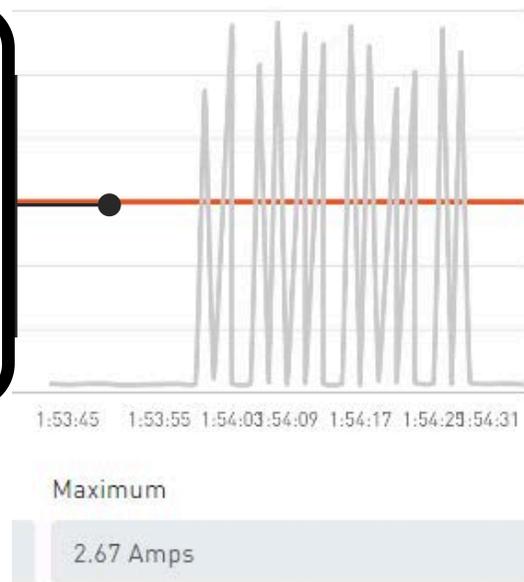
Two machines that frequently require "Advanced" power profiles are CNC machines and Lasers.

1. The Activation Delay setting controls how long the trigger needs to sense the current flowing before the attached device/tool is considered running. This setting is used when a tool such as a CNC machine might cause a current spike when the gantry moves, but this should not send out the messages to open gates and turn on the collector. Only when the current level sensed is above the Activation Level setting and for the amount of time specified here, should the tool be considered running. The same applies for how long the tool needs to be without current to be considered off. The system uses this to understand when to turn on an associated collector, air quality device, and move associated gates.

TRIGGERS

2. The Deactivation Delay setting controls how long the trigger needs to not sense the current flowing before the attached tool is considered off. This setting is used when a tool might cause repeated on/off current spikes (e.i., CNC or laser). The desired functionality is that these quick power spikes should not be viewed as lots of on/off commands, but instead wait for the current to stop flowing for the length of time specified in this setting before considering the tool to be off.

Example: A power graph of a laser would show the need for a Deactivation Delay setting set above 0 sec. so that the system does not think the machine is no longer running each time the laser stops firing.



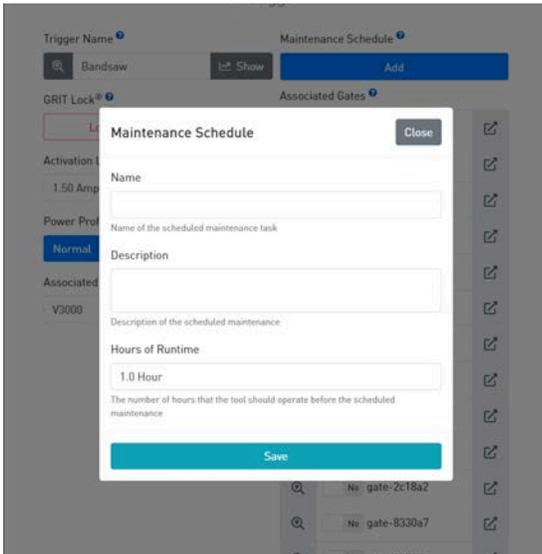
Triggers
Configuration

3. The Unlock Measurement Delay* setting controls how long the trigger will wait between unlocking and measuring the current from the attached tool. For instance, some tools have a soft start that require this value be set above zero. If you find that GRIT is not correctly sensing a tool that was left in the ON position when the trigger is unlocked, this value needs to be adjusted higher. The higher the value, the longer GRIT will wait before checking for current flow.

***Be aware, the downside of this setting is that if it is set too high, it will allow a tool to unintentionally run longer than it would need to during an Emergency Lock situation.**

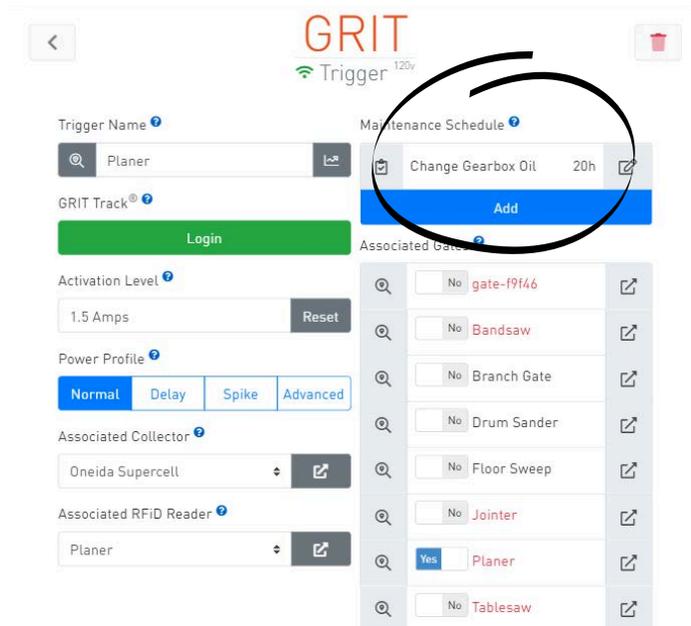
TRIGGERS

Maintenance Schedule



Set tool-specific maintenance tasks. Alerts for maintenance are displayed on the GRIT Dashboard after the configured number of hours has been reached. Optionally, email/SMS can be sent and can be specified in the Admin Settings.

Example: A Maintenance Schedule has been set for this Planer to Change the Gearbox Oil after 20 hours of runtime. The time remaining will update after each use of the planer. Once the 20 hours has passed it's red and negative.

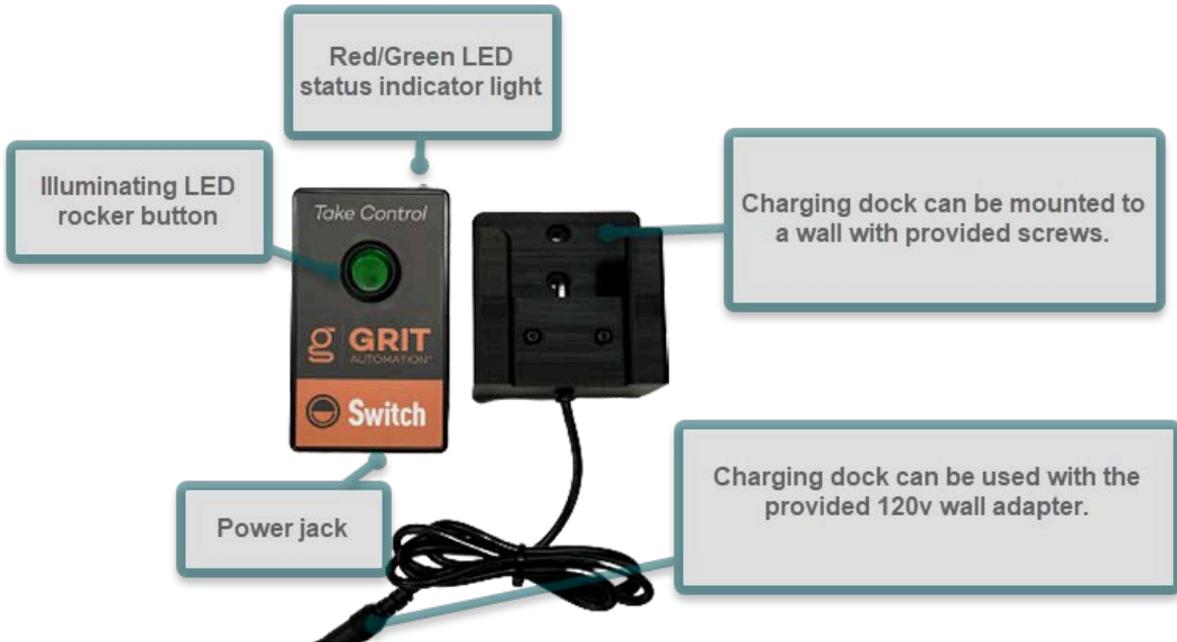


Example: Maintenance alert on Dashboard.

TRIGGERS

GRIT Switch

The GRIT Switch is a wireless trigger that can be configured exactly the same as other triggers, except instead of having the tool activate the collector, the toggle switch does. These are often used for a shop's floor sweep or for a work station that has rotating tools or wood lathes.



Installation



Triggers
Switch

TRIGGERS

Switch Device Configuration

GRIT Trigger SWITCH

Trigger Name **Associated Gates**

Battery Level

Associated Collector

<input type="checkbox"/> No	Belt/Disc Sander	
<input type="checkbox"/> No	Drum Sander	
<input type="checkbox"/> No	Edge Sander	
<input type="checkbox"/> No	Floor Sweep	
<input type="checkbox"/> No	Jointer	
<input type="checkbox"/> No	Left Branch	
<input type="checkbox"/> No	Planer	
<input type="checkbox"/> No	Right Branch	
<input type="checkbox"/> No	Spindle Sander	
<input type="checkbox"/> No	Tablesaw	
<input type="checkbox"/> No	gate-2c18a2	
<input type="checkbox"/> No	gate-8330a7	
<input type="checkbox"/> No	gate-3d7f8b	

Callout Boxes:

- Trigger Name:** If you press Locate, the Switch will beep and flash when on the charging dock, but will take up to 30 seconds for the device to wake up and beep if it is operating on battery only.
- Associated Gates:** Configure the gate or gates that will be opened when this Switch is on.
- Trigger Name (Field):** Rename the device with the name of the tool it is associated with.
- Battery Level:** Battery Level is displayed or the charging status, if on its dock.
- Associated Collector:** Configure the collector that will turn on when this Switch is on.

COLLECTORS

120v and 220v Collectors

The GRIT Collector device controls dust collectors. It can be linked to triggers and will turn on/off automatically.



Installation



Step 3: Turn on your collector's manual switch (not pictured).

COLLECTORS

MagSwitch Collectors



Installation

The installation options for your MagSwitch Collector are listed below. You will need the following tools to complete:

- Power drill with step bit
- Flathead screwdriver (provided)
- Phillips screwdriver

Option 1: Oneida Collector with Oneida remote module

Option 2: Contactor with motor starter*

Option 3: Laguna Collector

*If the contactor enclosure is large enough, the MagSwitch Collector device can be put inside. If it cannot fit in the enclosure, the knockout must be at least 5/8".

COLLECTORS

Option 1: Onedia Collector with Oneida remote module

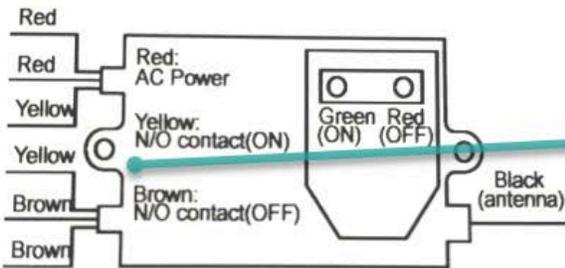


module

Step 1: Remove the Cover.

If you have a Gorilla Pro, only remove the top cover to the VFD.

RG7 Remote Control Voltage: AC 220-240V



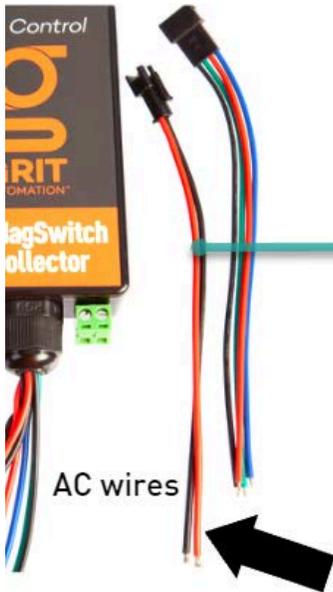
Step 2: Connect the Control Wires

Replace the yellow wires from the existing remote module with the **BLACK** and **GREEN** control wires from the MagSwitch device (side does not matter).

Then, replace the brown wires from the existing remote module with the **RED** and **BLUE** control wires from the MagSwitch device (side does not matter).

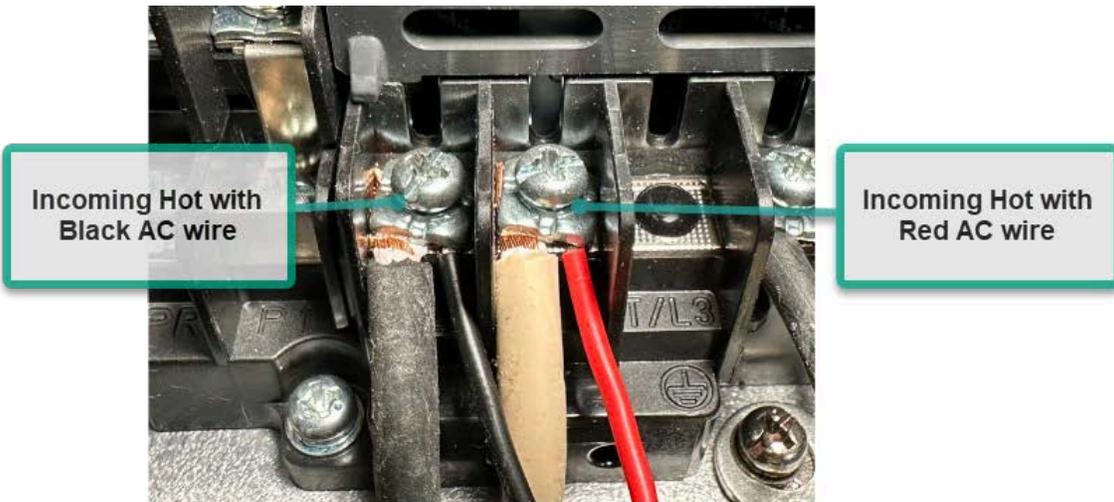


COLLECTORS



Step 3: Connect the AC Wires

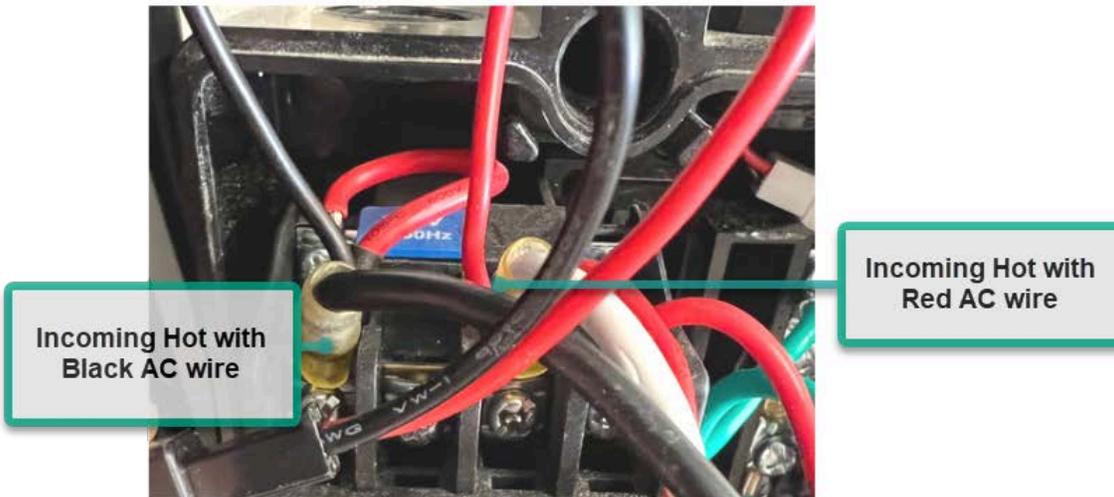
To power the MagSwitch device, install the **BLACK** and **RED** AC wires with the incoming hot wires in the contactor (side does not matter).



Incoming Hot with Black AC wire

Incoming Hot with Red AC wire

Pictured: Oneida Gorilla Pro



Incoming Hot with Black AC wire

Incoming Hot with Red AC wire

Pictured: Oneida Supercell

COLLECTORS



Step 4: Install the Current Transformer (CT)

Unscrew ANY ONE OF THE outgoing load wires. Pass the wire through the middle of the CT and place back into its same terminal. Screw to secure.



Pictured: Oneida Gorilla Pro



Pictured: Oneida Supercell

COLLECTORS

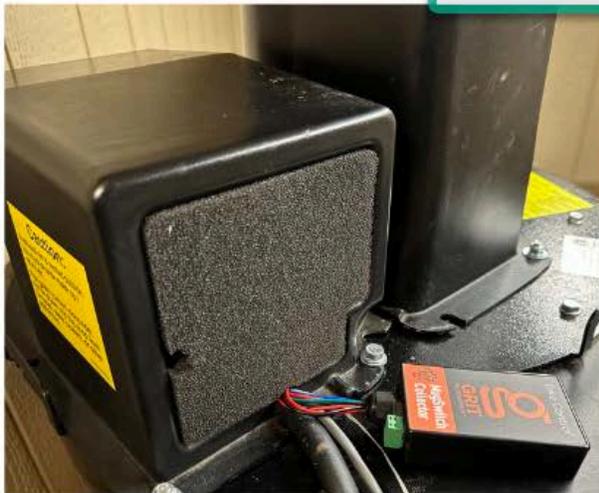


Step 5: Connect the Installed Wires to the MagSwitch Device.

Connect the AC wires, Control wires, and CT.

Step 6: Replace the Cover.

Replace the contactor cover and mount the MagSwitch device with provided VHB tape, if desired.



Pictured: Oneida Gorilla Pro



Pictured: Oneida Supercell

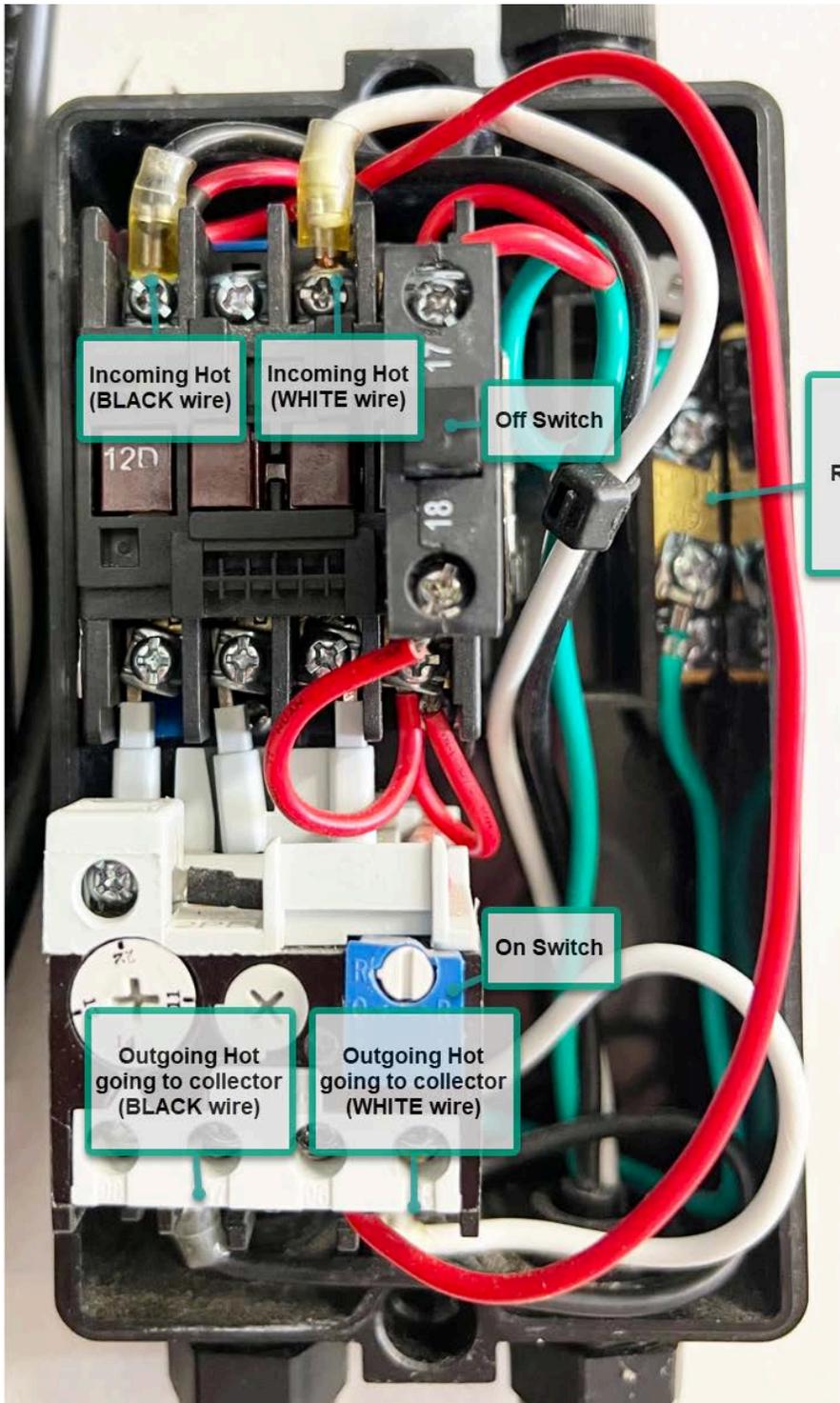
COLLECTORS

Option 2: Contactor with Motor Starter

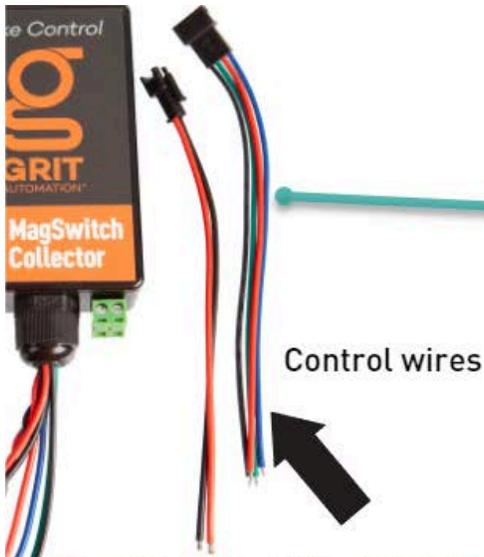
Installation Video



SCAN ME



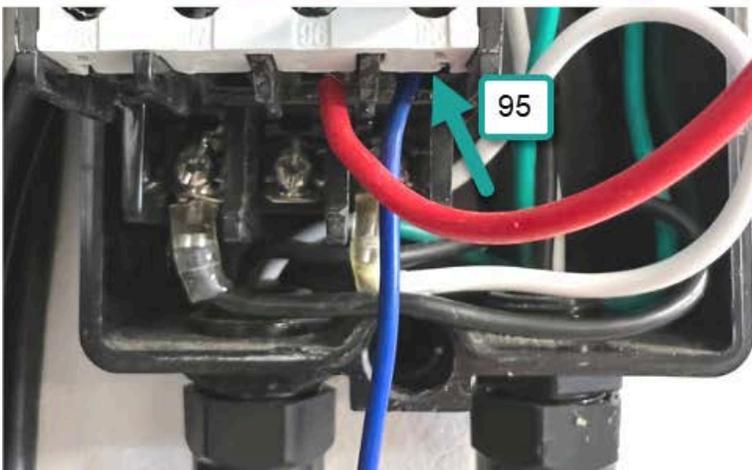
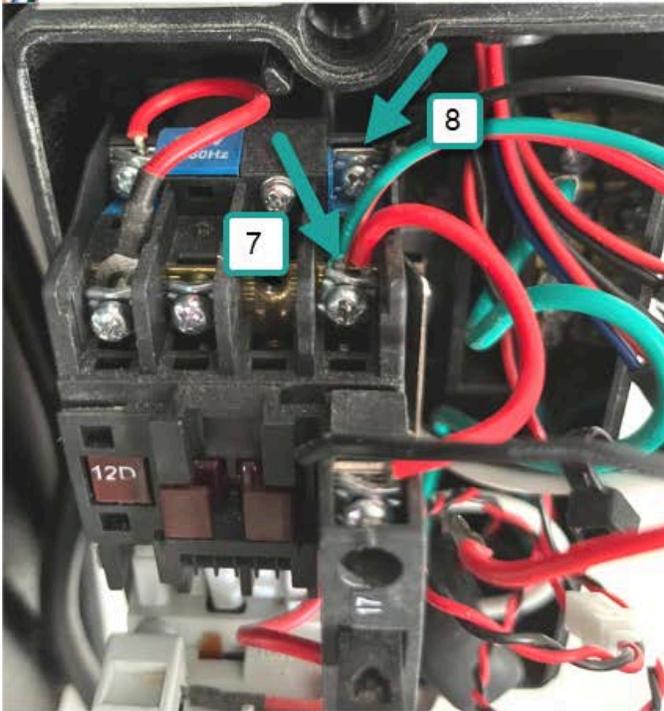
COLLECTORS



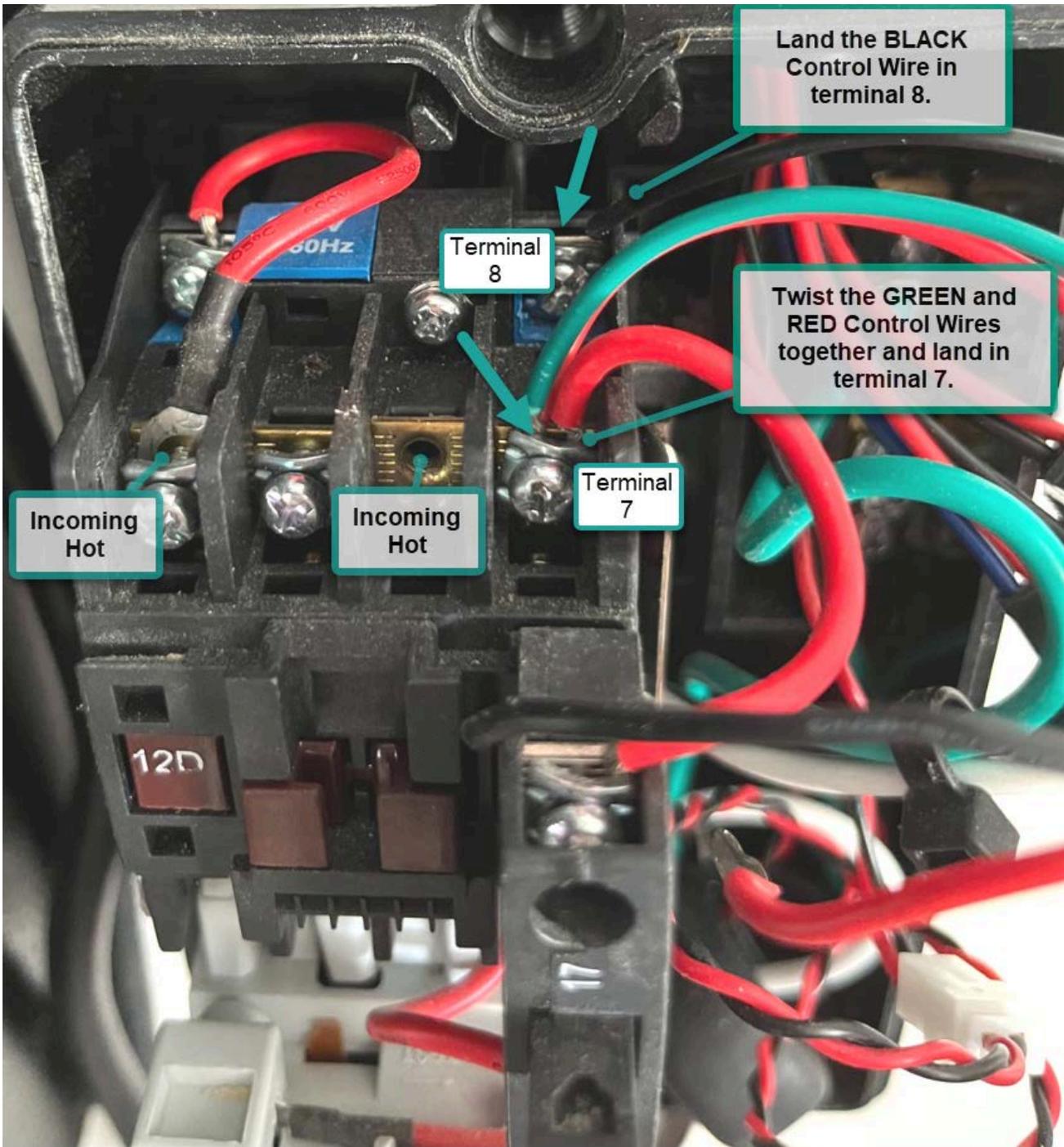
Step 2: Connect the Control Wires

The control wires for this installation option will be landed in terminals 7 and 8 at the top of the contactor and in terminal 95 at the bottom of the contactor.

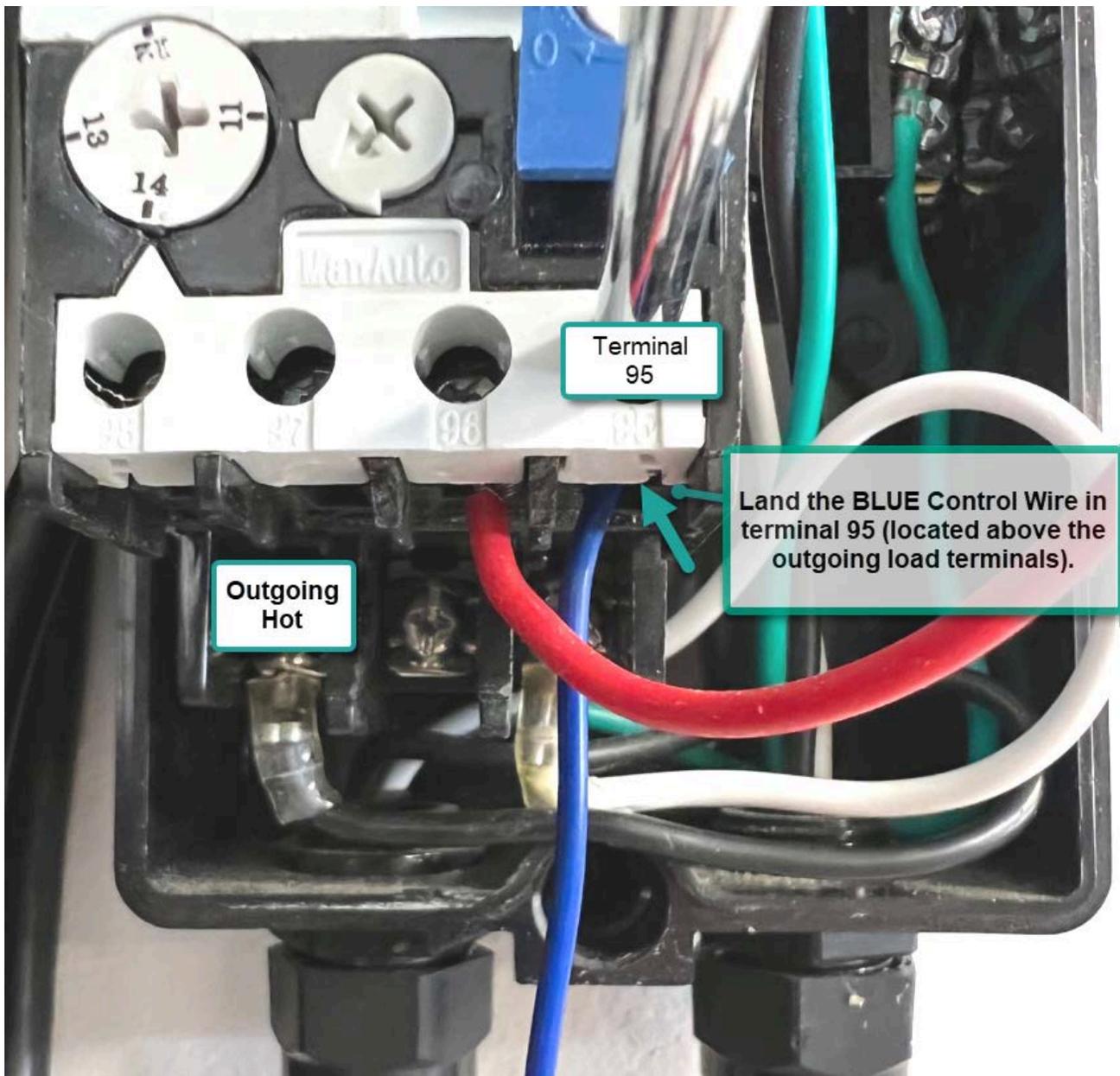
Control wires



COLLECTORS



COLLECTORS

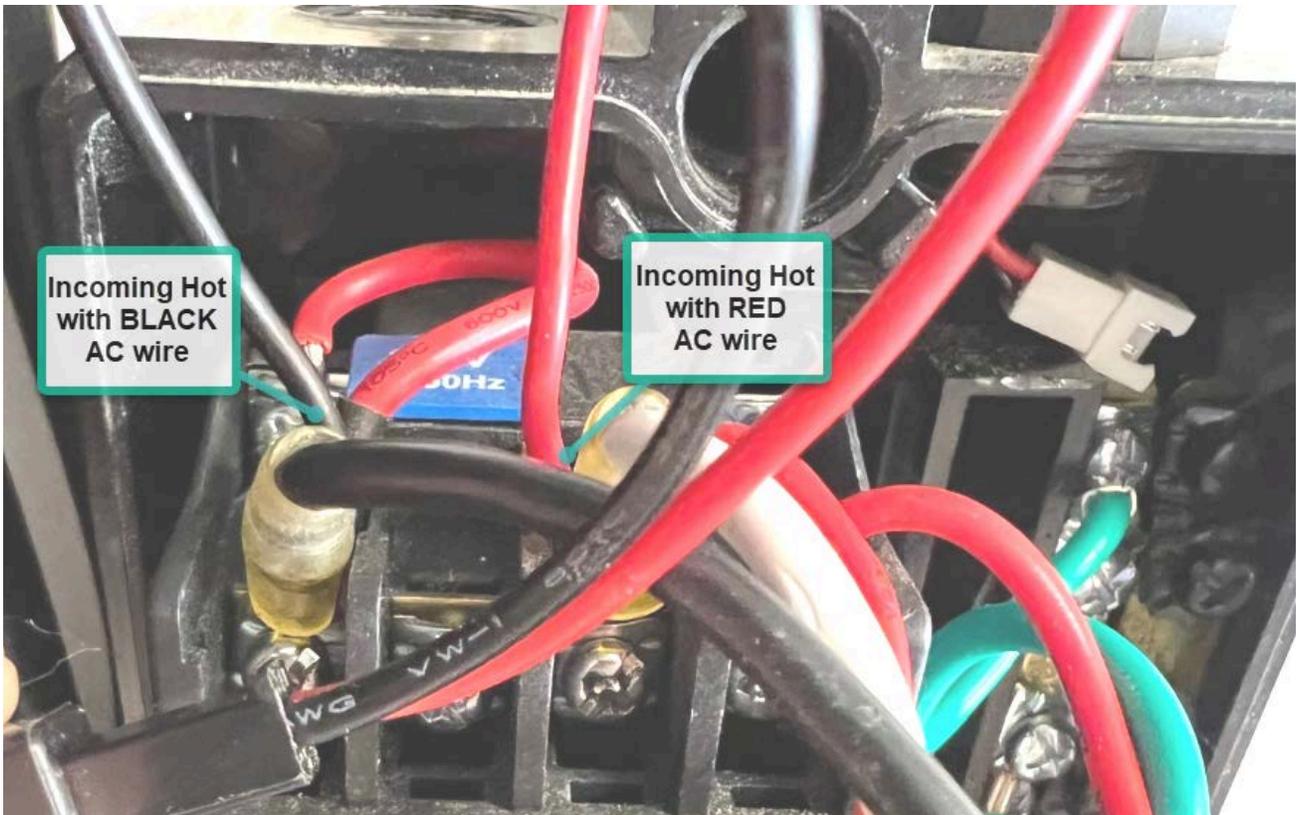


COLLECTORS



Step 3: Connect the AC Wires

To power the MagSwitch device, install the **BLACK** and **RED** AC wires with the incoming hot wires in the contactor (side does not matter).



COLLECTORS



Step 4: Install the Current Transformer (CT)

Unscrew ANY ONE OF THE outgoing load wires. Pass the wire through the middle of the CT and place back into its same terminal. Screw to secure.



COLLECTORS

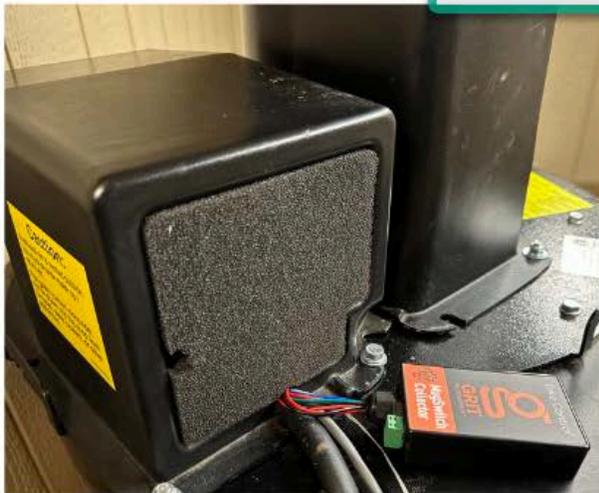


Step 5: Connect the Installed Wires to the MagSwitch Device.

Connect the AC wires, Control wires, and CT.

Step 6: Replace the Cover.

Replace the contactor cover and mount the MagSwitch device with provided VHB tape, if desired.



Pictured: Oneida Gorilla Pro



Pictured: Oneida Supercell

COLLECTORS

Option 3: Laguna Collector

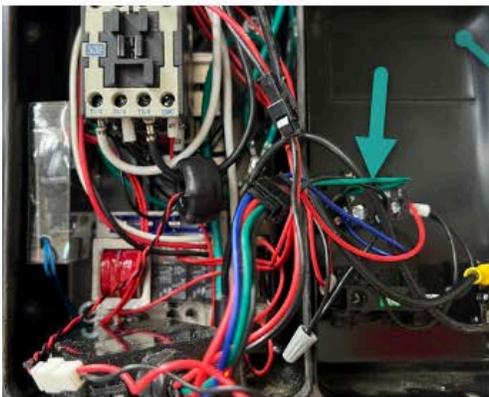
Installation Video



SCAN ME



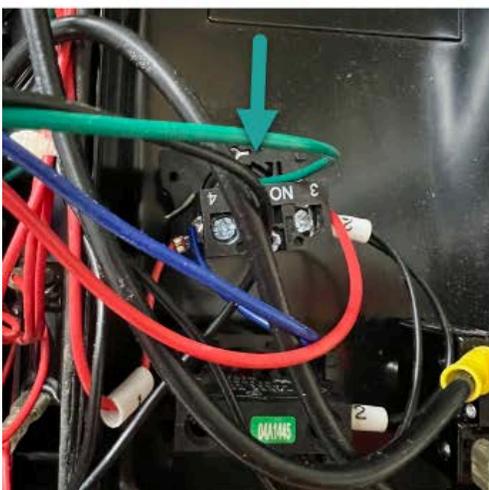
Step 1: Open the Cover.



Step 2: Connect the Control Wires.

Replace the yellow wires from the existing remote module with the **BLACK** and **GREEN** control wires from the MagSwitch device (side does not matter).

Replace the brown wires from the existing remote module with the **RED** and **BLUE** control wires from the MagSwitch device (side does not matter).

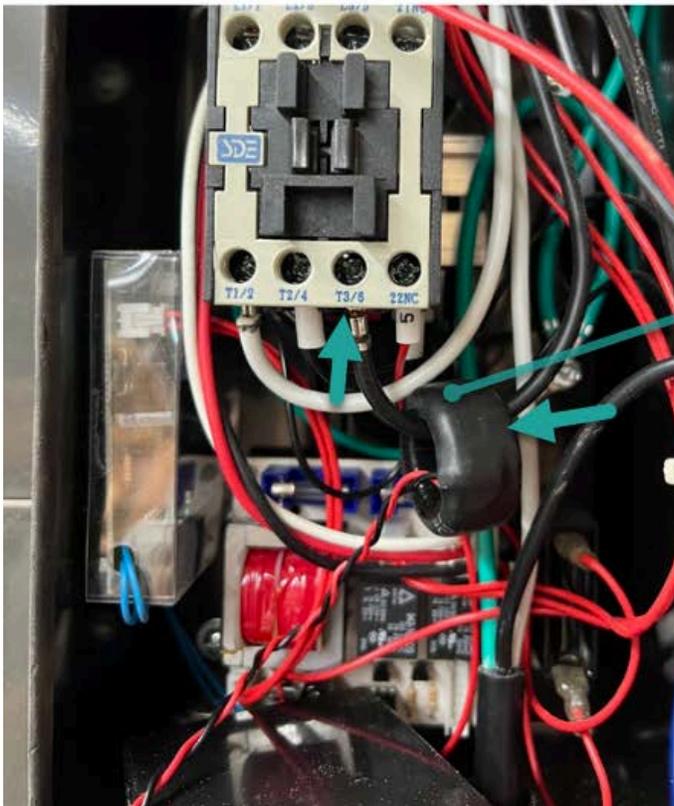


COLLECTORS



Step 3: Connect the AC Wires

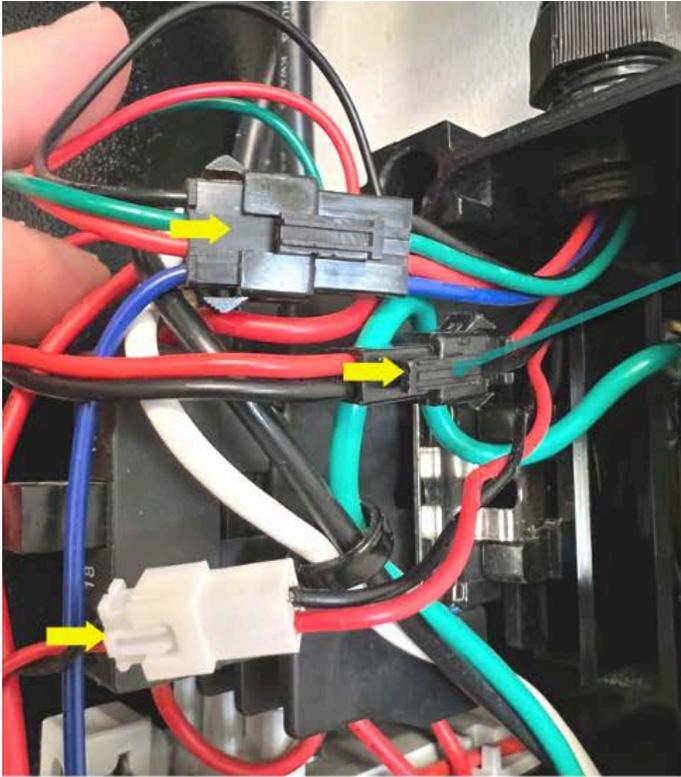
To power the MagSwitch device, install the **BLACK** and **RED** AC wires with the incoming hot wires in the contactor (side does not matter).



Step 4: Install the Current Transformer (CT)

Unscrew **ANY ONE OF THE** outgoing load wires. Pass the wire through the middle of the CT and place back into its same terminal. Screw to secure.

COLLECTORS



Step 5: Connect the Installed Wires to the MagSwitch Device.

Connect the AC wires, Control wires, and CT.



Step 6: Close the Cover.

Mount the MagSwitch device with provided VHB tape and close the cover.

COLLECTORS

Collector Device Configuration

Select the associated GRIT Dust Bin Sensor, if applicable.

Rename the device with the name of the collector it is associated with.

Configure the trigger or triggers that will cause the collector to be turned on.

Turn On

Set the number of seconds that the collector should wait to turn on after a trigger has been activated. If no gates need to be changed, the collector will immediately turn on. This setting gives the system a chance to move the gates first when a collector is too powerful. The LED on the Collector will flash green to indicate that it has received the message to turn on.

Set the minimum number of gates for this collector. The system finds all gates connected to this collector through the associated triggers and ensures that the number of gates that are open is at least this number.

Set the number of minutes that the collector must run after it has been turned on. The timer for this feature starts when the collector first turns on. If all triggers have been deactivated and this minimum time has not elapsed, the collector will remain on until this minimum time has passed. If the value is set to 0, the feature is disabled.

Set the number of seconds that the collector should wait to turn OFF after all associated triggers have been deactivated. The LED will flash red to indicate that it has received the message to turn off.

GRIT Collector 120v

Collector Name: V3000

Associated Triggers:

<input checked="" type="checkbox"/>	Belt/Disc Sander
<input type="checkbox"/>	switch-8ca200
<input type="checkbox"/>	switch-8c9575
<input type="checkbox"/>	Drum Sander
<input checked="" type="checkbox"/>	Edge Sander
<input type="checkbox"/>	Jointer
<input type="checkbox"/>	Left (60%)
<input checked="" type="checkbox"/>	Spindle Sander
<input checked="" type="checkbox"/>	Tablesaw

Associated Dust Bin Sensor: V3000

Delay On Timer: 0.0 Seconds

Delay Off Timer: 4.0 Seconds

Minimum Run Timer: 0.0 Minutes

Minimum Open Gates: 1 Gate

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COLLECTORS

VFD Device Configuration

Collector Name **Minimum VFD Speed** **Maximum VFD Speed**

Turn On

VFD Configuration

Associated Dust Bin Sensor

Delay On Timer

Delay Off Timer

Minimum Run Timer

Minimum Open Gates

Number Of Tools For Max Speed

Associated Triggers

<input type="checkbox"/> No	Belt/Disc Sander	<input type="button" value="Edit"/>
<input checked="" type="checkbox"/> Yes	switch-8c97de	<input type="button" value="Edit"/>
<input type="checkbox"/> No	switch-8392eb	<input type="button" value="Edit"/>
<input type="checkbox"/> No	Drum Sander	<input type="button" value="Edit"/>
<input type="checkbox"/> No	Edge Sander	<input type="button" value="Edit"/>
<input type="checkbox"/> No	Floor Sweep	<input type="button" value="Edit"/>
<input type="checkbox"/> No	Jointer	<input type="button" value="Edit"/>
<input checked="" type="checkbox"/> Yes	L	<input type="button" value="Edit"/>
<input type="checkbox"/> No	Planer	<input type="button" value="Edit"/>
<input type="checkbox"/> No	P	<input type="button" value="Edit"/>

Home **Devices** **GRIT Track** **Reports** **Admin**

Callout Boxes:

- Collector Name:** Rename the device with the name of the collector it is associated with.
- Minimum VFD Speed:** Set the minimum speed for this VFD.
- Maximum VFD Speed:** Set the maximum speed for this VFD.
- VFD Configuration:** Configure how your device communicates. Select your VFD model or select 'Custom' if your model is not listed.
- Delay On Timer:** Set the number of seconds the collector should wait before turning on after an associated trigger is activated.
- Delay Off Timer:** Set the number of seconds the collector should wait before turning off after all associated triggers have been deactivated.
- Minimum Run Timer:** Set the number of minutes the collector must run after it has been turned on.
- Minimum Open Gates:** Set the minimum number of open gates for this collector.
- Number Of Tools For Max Speed:** Set the number of tools that must be running for the VFD to operate at specified maximum speed.
- Associated Triggers:** Configure the trigger or triggers that will cause the collector to be turned on.

GATE CONTROL

Gate Control



**For Step-by-Step
Instructions,
Watch our
Installation Video**

Installation Tool Requirements

You will need the following tools to complete installation:

- Power drill with 5/32" drill bit (provided)
- Drill Guides (provided)
- Flathead screwdriver (provided)
- H2 Driver bit (provided)
- 7mm Socket driver (provided)
- Phillips screwdriver
- Wire stripper



SCAN ME

Gate Control
Installation

GATE CONTROL

Orientation

GRIT Gate Control devices, when powered properly, operate in any orientation. Some placement considerations can be made, however, to assist in their best performance.

- If you notice strain when opening/closing, consider mounting the actuator so that:
 - the arm operates parallel to the floor, or;
 - the arm opens up toward the ceiling.

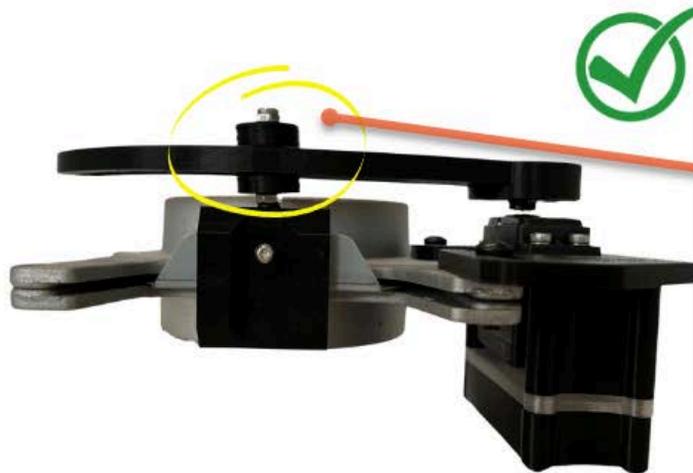


GATE CONTROL

GATE CONTROL

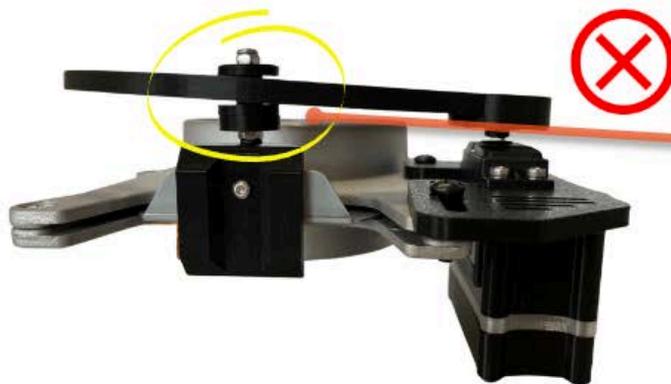
Finetune the Arm Position

To make sure your Gate Control Arm slides smoothly, take care in placing the correct configuration of Hat and Flat washers on the Slide Bracket post so that the Arm is level and secure. The best configuration will vary from gate-to-gate, so use these images as a guide.

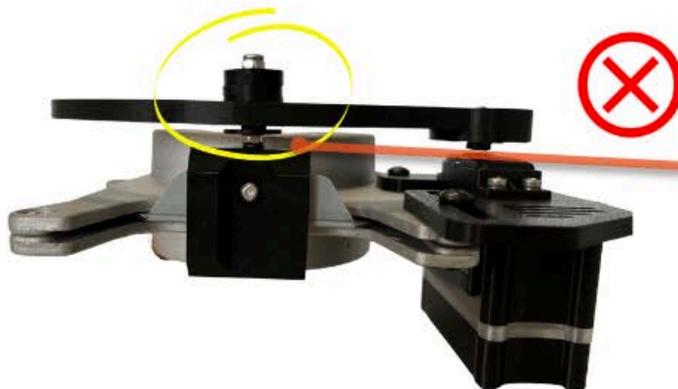


This Arm is fairly level and supported with no additional tension being placed at its connection point with the servo.

For reference, this configuration has a 3mm and 1mm washer placed below the Arm with a hat washer, 3mm, and 1mm washer placed above.



This Arm is pitched up at an angle due to too many flat washers being placed below the Arm.

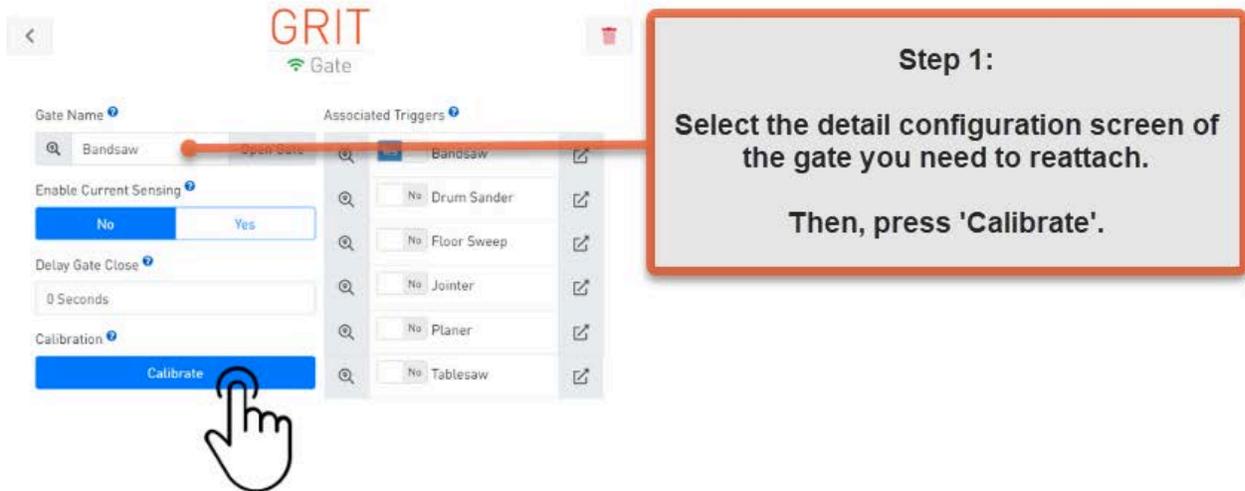


While this Arm is fairly level, it is not adequately supported with flat washers underneath the Arm.

GATE CONTROL

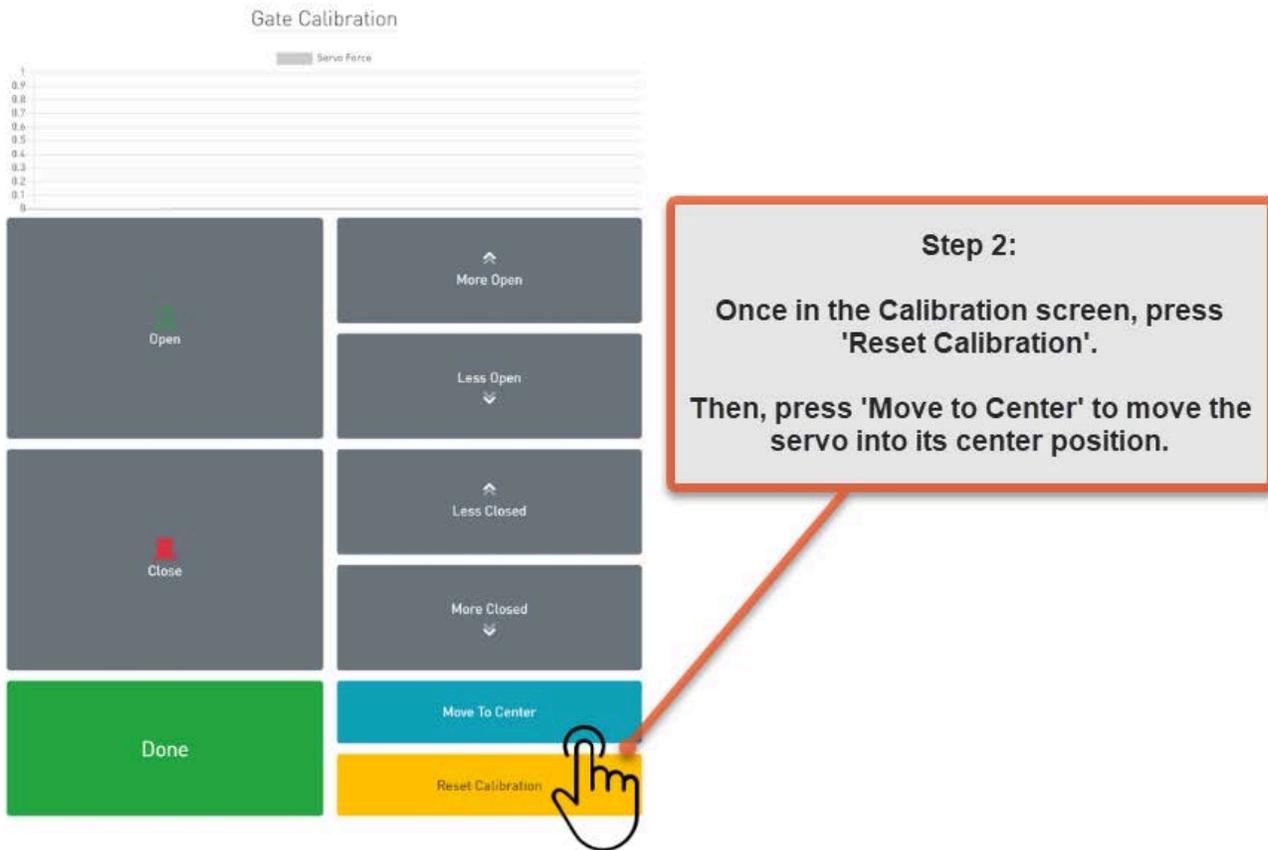
Reattach the Arm

The Arm of the Gate Control device arrives attached in the proper placement for calibration and does not need to be removed during the installation process. If for any reason you need to remove the Arm, please follow these steps to reattach it properly.



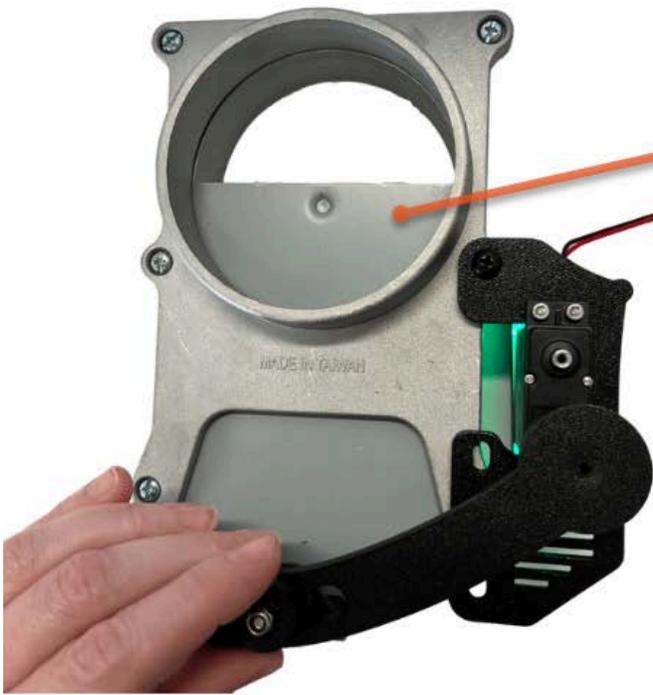
Step 1:
Select the detail configuration screen of the gate you need to reattach.
Then, press 'Calibrate'.

Gate Control
Installation



Step 2:
Once in the Calibration screen, press 'Reset Calibration'.
Then, press 'Move to Center' to move the servo into its center position.

GATE CONTROL



Step 3:
Manually slide the gate's tab so that the gate is approximately half open.



Step 4:
While keeping the gate's tab half open, push the Arm down onto the servo.
Secure with the M3 screw.
Finish calibrating the open and closed positions per the 'Calibration' instructions.

GATE CONTROL

GATE CONTROL

Gate Control Device Configuration

GRIT Gate

Gate Name ?

Bandsaw Open Gate

Delay Gate Close ?

0 Seconds

Calibration ?

Calibrate

Associated Triggers ?

<input checked="" type="checkbox"/> Yes	Bandsaw	
<input type="checkbox"/> No	Drum Sander	
<input type="checkbox"/> No	Floor Sweep	
<input type="checkbox"/> No	Jointer	
<input type="checkbox"/> No	Planer	
<input type="checkbox"/> No	Tablesaw	

Open Gate

Home Assets **Devices** Reports Admin

Callout 1: Rename the device, generally, with the name of the tool it is associated with.

Callout 2: Configure the trigger or triggers that will cause the gate to open.

Callout 3: Set the Open and Closed positioning for the gate.

Callout 4: Configure the number of seconds to wait before closing the gate. This setting allows the dust to be cleared after all tools associated with this gate turn off.

GATE CONTROL

Calibration

Gate Calibration

The screenshot displays the 'Gate Calibration' interface. At the top, a 'Servo Force' graph shows a power curve against the gate actuator. Below the graph are four main control panels: 'Open' (with 'More Open' and 'Less Open' buttons), 'Close' (with 'Less Closed' and 'More Closed' buttons), 'Done' (a green button), and 'Move To Center' (a blue button). A yellow 'Reset Calibration' button is located at the bottom right. Callout boxes provide instructions for each button.

Servo Force power graph shows the amount of stress against the gate actuator.

Press 'Open' to swing the Arm into the open position. Press More Open/ Less Open to adjust.

Press 'Close' to swing the Arm into the closed position. Press More Closed/ Less Closed to adjust.

Press 'Done' to close calibration screen and return to Gate Control detail page.

Press 'Move to Center' to place Arm in its center swing position.

Press 'Reset Calibration' to clear previous settings made. The Open/Closed positions will return to the values it had when it was first bound.

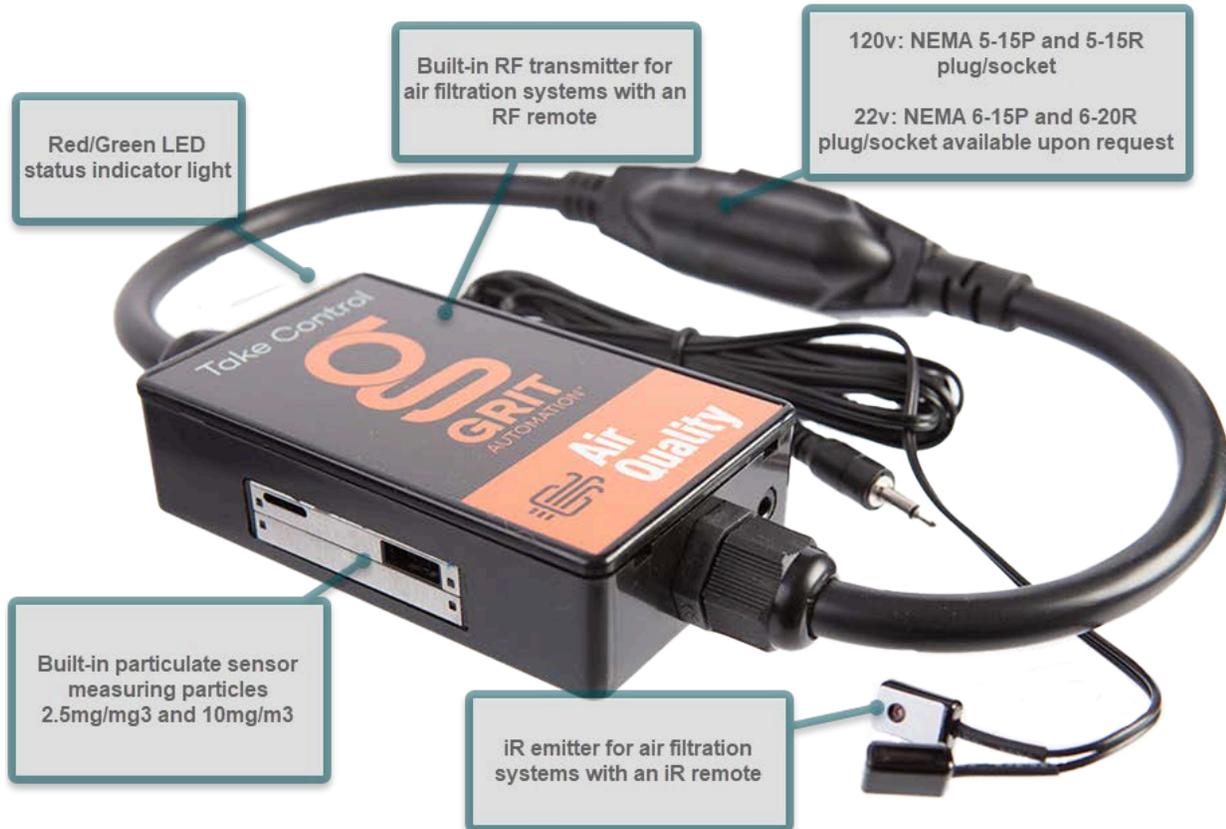
Gate Control
Configuration

***Tips/Tricks:** The LEDs on the Gate will flash each time you adjust its Open/Close position. Decrease the amount of the Open/Close if the stress on the servo becomes high. Indications that the position is too far in one direction is servo shuttering, the gate opening/closing spontaneously, or the LEDs turning off and the gate resetting.

AIR QUALITY

Air Quality

The GRIT Air Quality device automatically controls air filtration units. It continuously monitors air quality levels and activates the air filter system based on the configured settings.



AIR QUALITY

Installation



Step 1:

Plug your air filter into the GRIT Air Quality device.



Step 2:

Plug the GRIT Air Quality device into the outlet.

Steps 3 and 4 are only used for air filtration systems with an iR remote. Basic on/off systems or systems with an RF remote will not use the included iR emitter.



Step 3:

Plug the jack of the iR emitter into the port on the bottom of the GRIT Air Quality device.



Step 4:

Remove the white sticker from the back of the iR emitter and place on top of the eye on the air filtration system.

Dusty environments might need more tape.

Note: If your shop has multiple Air Quality devices, you may need to cut off the second emitter to avoid sending signals to other devices.

Air Quality
Installation

AIR QUALITY

Air Quality Device Configuration

GRIT
Air Quality AQI 4

Callout Boxes:

- Air Quality Device Name:** Rename the device, usually, with the name of the air filtration unit it is associate with.
- Air Quality Levels:** Current air quality readings from the sensor.
- Activation Level:** Set the level of dust in the air that triggers the air filter to turn on.
- Override On Timer:** Set the length of time the air filter should run regardless of automatic activation levels.
- Automatic Mode:** Set whether the air quality device should automatically turn on the air filter according to activation settings.
- Minimum Run Timer:** Set the number of minutes the air filter should run after it would normally turn off (i.e., air levels are below set activation levels.)
- Control Type:** Select the type of on/off control for your air filter.
- Activation Speed:** Select the speed of the air filter when it is initially turned on by GRIT.
- IR Command Setup:** Select a predefined model or 'Custom' to train the GRIT system for your specific device.
- Air Quality Indicator:** A visual indicator that represents the current air quality relative to the set activation levels.
- Associated Triggers:** Select the trigger or triggers that, when running, will cause the air filter to turn on.

Configuration Fields:

- Air Quality Device Name:** Search: GRIT Shop, Show
- Air Quality Levels:** 1.0 PM2.5 $\mu\text{g}/\text{m}^3$, 1.0 PM10.0 $\mu\text{g}/\text{m}^3$, 85/15 Dylos #/.01ft³
- Activation Level:** 15 PM2.5 $\mu\text{g}/\text{m}^3$ OR PM10.0 $\mu\text{g}/\text{m}^3$, Dylos #/.01ft³
- Override On Timer:** 30 Minutes, Turn On
- Automatic Mode:** On / Off
- Minimum Run Timer:** 10.0 Minutes
- Control Type:** Inline, iR Remote, RF Remote
- Activation Speed:** Low, Medium, High
- IR Command Setup:** -- Select Command Setup --

Associated Triggers List:

- No switch-8392
- No Belt/Disc Sander
- No Drill Press
- No Drum Sander
- No Edge Sander
- No Floor Sweep
- No Jointer
- No Spindle Sander
- No Tablesaw

Navigation: Home, Devices, Reports, Admin

AIR QUALITY

Air Quality Device Configuration with an iR or RF Remote

To program the GRIT Air Quality device to your air filtration system, first determine if the remote is iR or RF. If you are unsure, you can determine this by looking for a clear LED bulb on the remote or a tinted plastic window on the top of your remote. If none is present, it is RF.



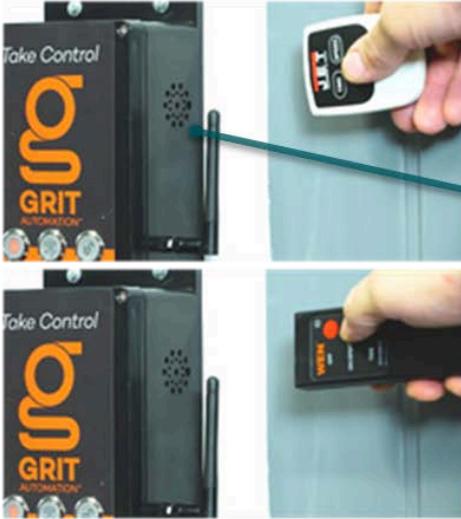
**For Step-by-Step
Instructions,
Watch our
Video**



SCAN ME

Air Quality
Configuration

AIR QUALITY



Step 5:

Point the remote (iR or RF) at transmitter located inside the vent on the side of the Hub.

RF Command Setup [?]

Custom

RF Remote: On Command [?]

Clear

Test

RF Remote: Off Command [?]

Learn

RF Remote: Speed Command [?]

Learn

Step 6:

Select 'Learn' for each command you need to program.

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Step 7:

A timeout popup will display on the screen. Follow the prompts to finish programming that command. The popup will disappear once the command has been learned.

Repeat the 'Learn' sequence for each command.

Learning The 'ON' Command

Time Remaining

17

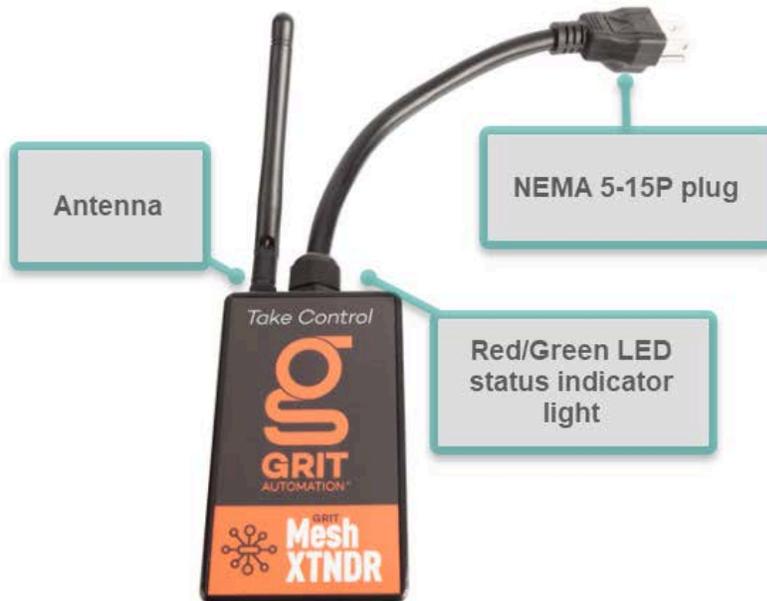
Stop

Home Devices GRIT Track Reports Admin

MESH XTNDR

Mesh XTNDR

The Mesh Xtndr device extends the range of the GRIT mesh network in situations where devices are having trouble communicating.



Installation



MESH XTNDR

Mesh XTNDR Device Configuration

The screenshot displays the GRIT Mesh XTNDR configuration page. At the top, the GRIT logo and 'Mesh XTNDR' text are visible. Below this, there are two main configuration options:

- Mesh XTNDR Name:** A text input field containing 'xtndr-b767a4'. A callout box points to this field with the text: "Rename the device, usually, with its location in the shop."
- Show Network Activity:** A toggle switch currently set to 'Yes'. A callout box points to this toggle with the text: "Choose to enable the display of mesh network activity through the XTNDR device. If set to 'Yes', the LED indicator light will flicker each time it transmits messages through the mesh."

GRIT Track®

Overview

As discussed in the previous section on GRIT Lock®, shop safety is our number one objective. GRIT Track® builds on the lock/unlock functionality with individual user access control per tool. Usage of dangerous shop equipment and tools can now be limited to users with the correct trainings that have been granted access from a shop manager.

GRIT wants you to get the most out of what your system can offer!

Use GRIT Track® to:

- Create shop user profiles with contact information and configurable demographic information.
- Assign administrator privileges to a user or multiple users.
- Give a user permissions for a tool or a group of tools.
- View detailed reports of which tools are used, when, how long, and by whom.
- View which tools a user has permissions for, when permissions were granted, and by which administrator(s).
- Determine which user damaged a tool.
- Revoke permissions for a user, if needed.
- Create, view, and organize notes for individual users.
- View overall shop and tool usage trends to make informed decisions on shop staffing, shop hours, future tool purchases, and more.

The GRIT Track® system interfaces with RFID devices and the GRIT SignOn system.

GRIT TRACK® RFID

GRIT Track® RFiD

GRIT Track® RFiD allows the shop administrator(s) to control and monitor access to all tools by assigning access to individual users. Users carry a GRIT RFiD card and use it to unlock tools they are allowed to use.



Installation



Step 1:

Adhere the RFID device to your tool using the provided VHB tape and press firmly until adhered. Be sure the area is clean or tape will not adhere properly.



Step 2:

To power the RFID, run the provided low-voltage wire from the green low-voltage terminal on the RFID to the green terminal of the Trigger.

Use zip ties or cord wrap to secure the low-voltage wire to the tool's power wire for a tidy install.



GRIT Track® RFI Device Configuration

Taking time to accurately configure each tool's RFID device is extremely important for the operation and safety of GRIT in your shop. The configuration of a tool's RFID device could vary as much as the configuration of its Trigger. The various configuration abilities are detailed in this section. Please note that additional examples may be available by clicking on the '?' next to any setting in the App.

Rename the device, usually, with the name of the tool it is associated with.

Press 'Login' to login to the tool under the name of the administrator logged into the App.

Configure the Trigger that this RFID is connected to.

Control whether this RFID device and associated Trigger should operate with the GRIT Track system.

GRIT Lock Timeout sets the number of minutes that the associated Trigger remains unlocked when the tool is not running. Use decimals for sub-minute increments (for

The 'Keep Trigger On' setting is used with tools that require 'boot up' or initializing time when first powered on (i.e., a SawStop or Vayager drill press). When 'Yes' is selected, the Trigger will keep the power to the tool on. A 'GRIT Lock Emergency Lock' will occur only if the tool is turned on to run before the operator swipes their RFID card. Select 'No' for tools that do not require 'boot up' time.

Set the number of minutes of additional time added to the normal GRIT Track Timeout when a tool is first logged into and the trigger is unlocked. This setting is used when machines have a substantial boot up sequence and it should remain logged into during that boot period.

Lockout setting allows you to completely lock the use of a tool from all users. If 'Yes' is selected, the tool will not unlock (i.e., a tool being taken offline for

'Tap In/Tap Out' is an option for setting how this RFID will log a user out of a tool. If 'Yes' is selected, the tool will unlock once an authorized user taps their GRIT card, and will remain unlocked until that user taps their card again to log out.

'Only Timeout when Offline' is an option for setting how this RFID will log a user out of a tool. If 'Yes' is selected, the RFID and associated Trigger will remain logged in until they are offline/without power for ~2 minutes. This setting is used primarily with water jets.

Set the number of seconds this RFID device should flash red and beep to indicate that its tool is being used and the user is no longer logged in. After this duration has elapsed, the tool will emergency lock. This setting is used primarily with tools that have a long boot up process.

RFID Reader Name: Tablesaw

Associated Trigger: Tablesaw

Enable GRIT Track: Yes

GRIT Lock® Timeout: 1.0 Minute

Keep Trigger On: Yes

Initial Boot Up Time: 0.0 Minutes

Lockout: Yes

Tap In/Tap Out: Yes

Only Timeout When Offline: Yes

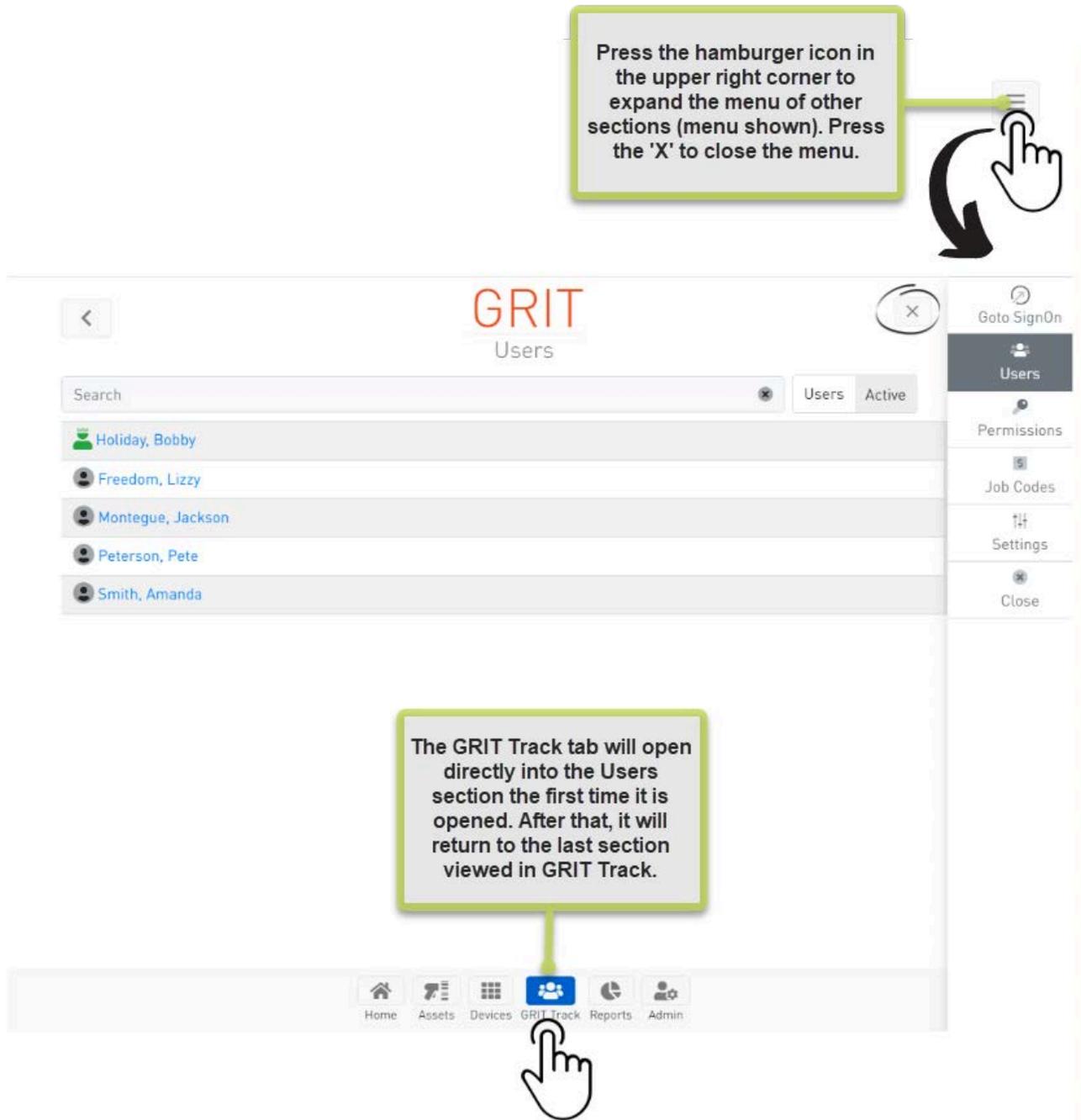
Emergency Stop Delay: 0 Seconds

Home Assets Devices GRIT Track Reports Admin

GRIT TRACK® RFID

GRIT Track® Administration

After the installation and configuration of your RFID devices, use the GRIT Track® section in the App to create and manage users, create and assign tool permissions, assign permanent RFID access cards, manage demographic settings, and more.



GRIT TRACK® RFID

Users

Search for a specific user.

Toggle between viewing Active Users and All Users.

Press '+' to create a new user.

System Admin(s) will be marked with a crowned avatar.

Press the pie chart icon to run a report for that user.

GRIT
Users

Search

Users Active +

- Holiday, Bobby
- Freedom, Lizzy
- Montegue, Jackson
- Peterson, Pete
- Smith, Amanda

GRIT Track®
Users

When 'All Users' view is toggled, inactive users are displayed in red.

GRIT
Users

Search All Users +

- Holiday, Bobby
- Freedom, Lizzy
- Montegue, Jackson
- Peterson, Pete
- Smith, Amanda
- Watson, Mark

Note: When more than 25 users are in the system, it shows a pagination control at the top and bottom of the list.

GRIT TRACK® RFID

Create User

Step 1:
Press '+' in the upper right corner of the main Users screen.

GRIT
Users

Search [x] Users Active

- Holiday, Bobby
- Freedom, Lizzy
- Montegue, Jackson
- Peterson, Pete
- Smith, Ann

Step 2:
Complete the fields with the new user's information. Setting a novel 4-digit PIN is optional and is typically reserved for users requiring frequent, quick access (for example: admins, permanent staff, and student employees only.)

Step 3:
Save the entry.

Cancel Save

First Name* [?] Last Name* [?] PIN [?]

Email [?] Phone [?] Password [?]

After saving, you will be taken to the new user's Profile screen to complete extended user profile information.

Extended User Profile

The screenshot shows a web interface for editing a user profile. At the top, there is a 'Return' button. Below it is a 'Profile' header with a user icon. The form contains several input fields: 'First Name*' with the value 'Lizzy', 'Last Name*' with 'Freedom', and 'PIN'. Below these are 'Email', 'Phone', and 'Password' fields. There are also buttons for 'GRIT Track® RFID' (labeled 'Assign GRIT Track card') and 'Tool Access'. A 'Swipe Card' section shows a grey bar and a 'Swipe Card' button. A 'Sex' dropdown menu is set to '-- Select Sex --'. A 'Notes' text area is empty. At the bottom, there is an 'Active' toggle switch.

In the new user's Extended User Profile, you can:

- Assign a permanent GRIT Track card.
- Assign an identifying Swipe Card (available only with SignOn systems).
- Enter Demographic information (these fields are created under 'GRIT Track -->Settings'.)
- Add Notes about the user.
- View a list of all Tool Access permissions.
- Change user status from Active to Inactive.

*Note: All changes auto-save. Press Return to go to the main Users screen.

GRIT TRACK® RFID

Modify Existing User

The image shows a two-step process for modifying a user in the GRIT Track RFID system. The top screenshot shows the 'Users' list with 'Freedom, Lizzy' selected. The bottom screenshot shows the user's profile page with various fields for editing.

Step 1:
Select the user's name from the main Users list you wish to modify.

Step 2:
Edit the desired information/ fields.

Step 3:
Press 'Return'.

The profile page includes the following fields and options:

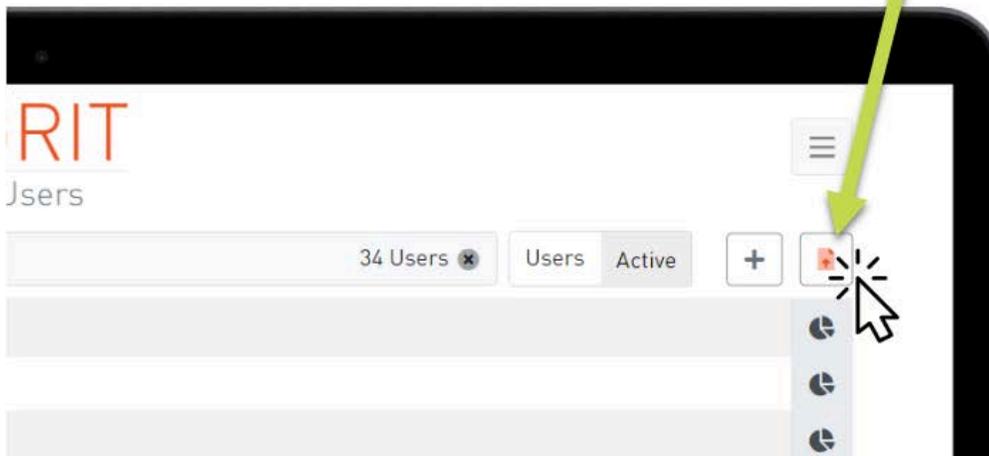
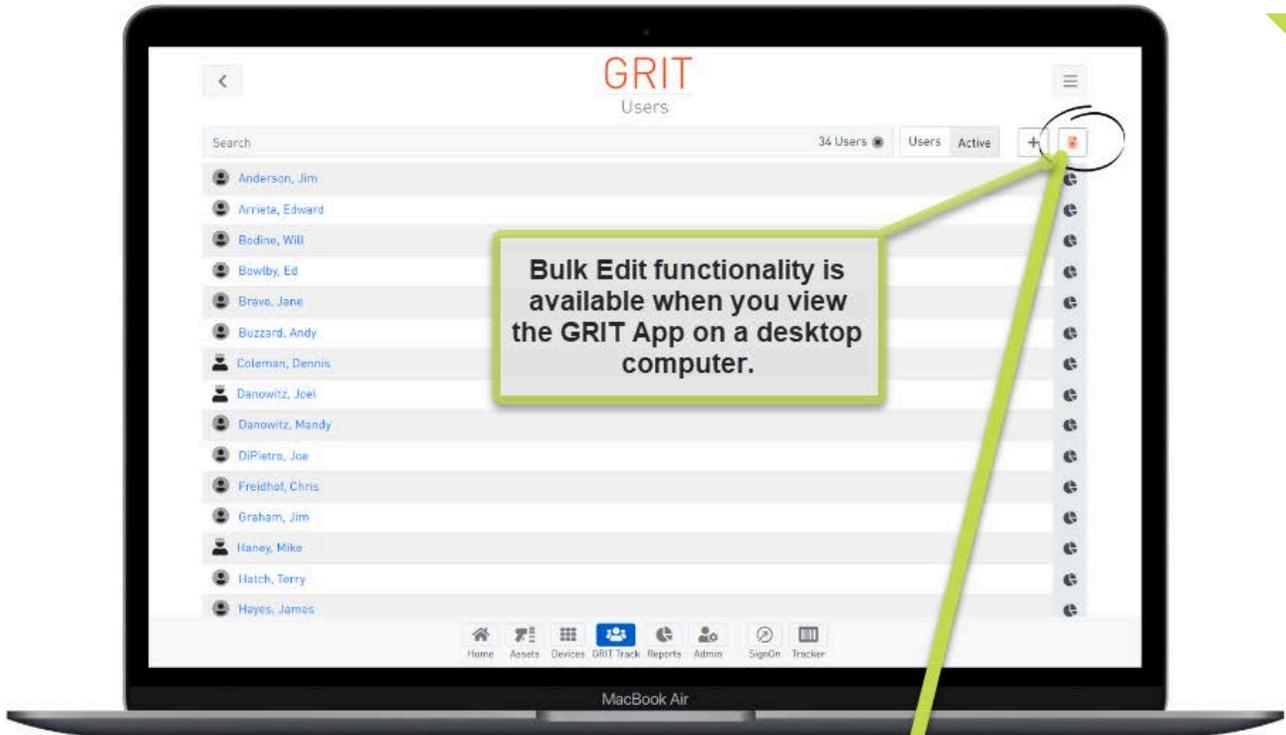
- First Name*: Lizzy
- Last Name*: Freedom
- PIN*: [Redacted]
- Email*: lizzy@freedom.com
- Phone*: 555-555-5555
- Password*: [Redacted]
- GRIT Track® RFID: Assign GRIT Track card
- Swipe Card: [Redacted] Swipe Card
- Sex: -- Select Sex --
- Notes: Lizzy plans to study abroad during Spring 2023 semester, but will return in SSII.
- Active:

GRIT TRACK® RFID

Bulk Edit

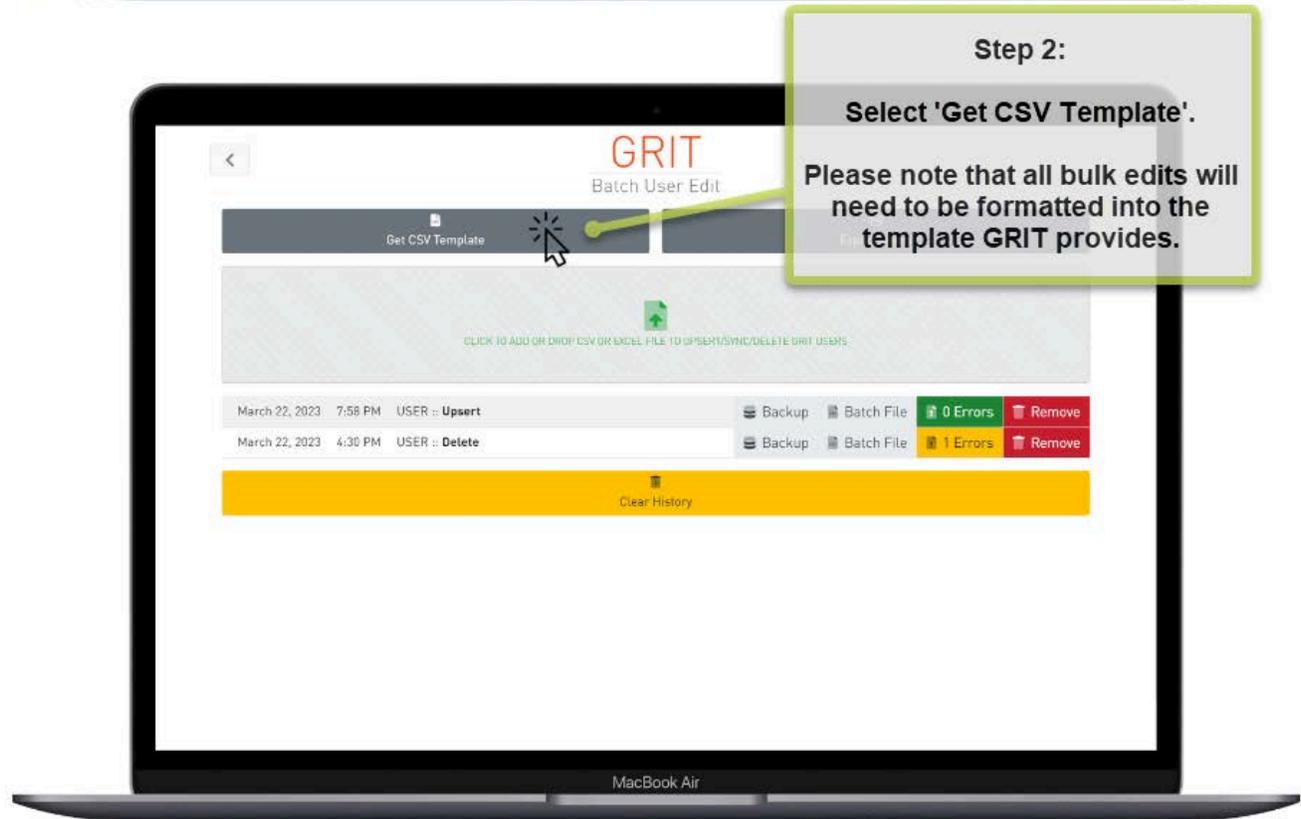
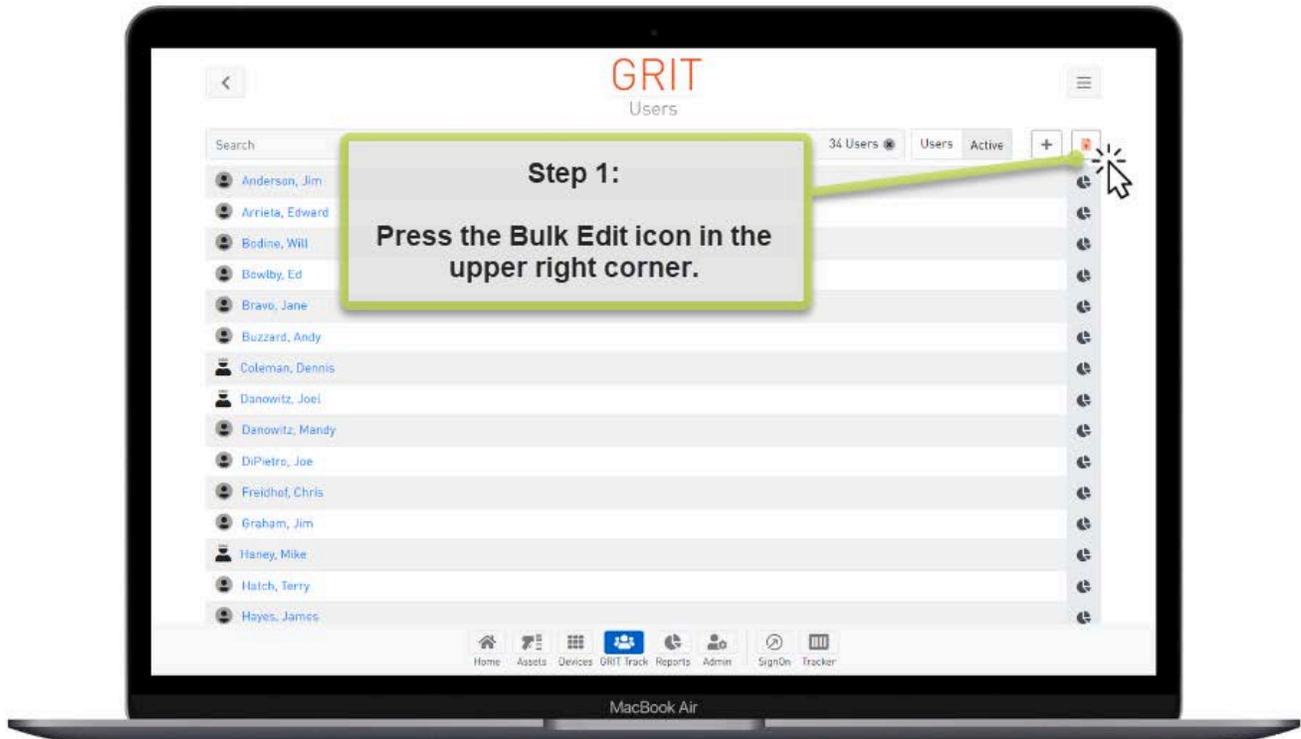
The Bulk Edit feature is only available for users who have a SignOn System, but will be used in the GRIT Track section of the App.

GRIT Track®
Users

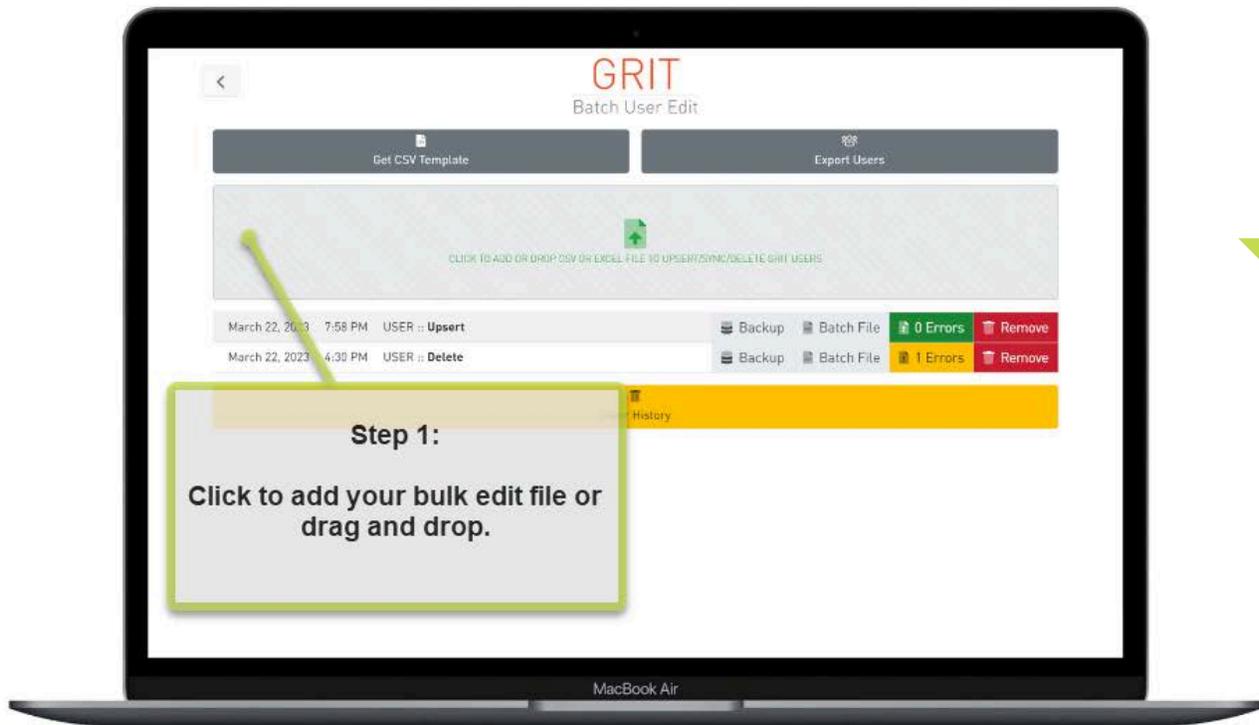


GRIT TRACK® RFID

Bulk Edit Templates

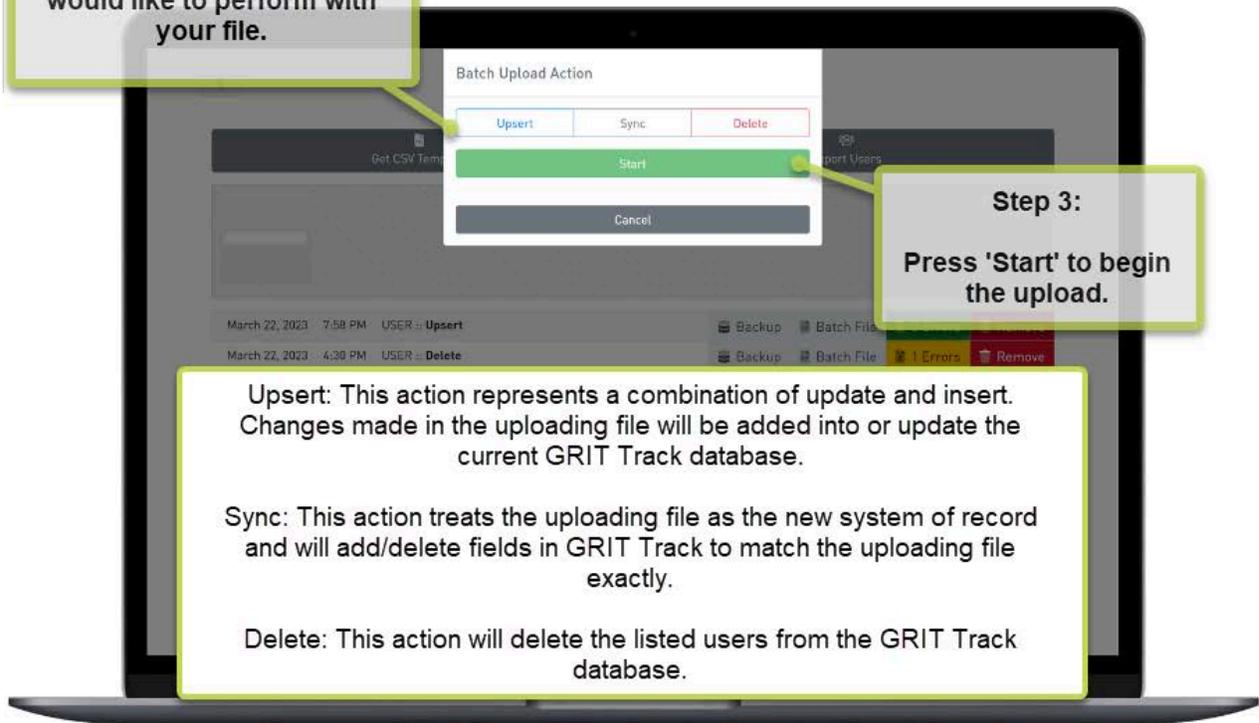


Bulk Edit File Upload



Step 1:
Click to add your bulk edit file or drag and drop.

Step 2:
Select the type of action you would like to perform with your file.



Step 3:
Press 'Start' to begin the upload.

Upsert: This action represents a combination of update and insert. Changes made in the uploading file will be added into or update the current GRIT Track database.

Sync: This action treats the uploading file as the new system of record and will add/delete fields in GRIT Track to match the uploading file exactly.

Delete: This action will delete the listed users from the GRIT Track database.

GRIT TRACK® RFID

Upload Errors

Batch Process Had 1 Error

Row Num	Error Messages
1	Cannot delete the user that is currently logged in (Danowitz, Joel :: 179).

CLICK IN ACTION HISTORY ON SCREENS TO OPERATE/UPDATE AND USERS

Date	Time	User	Action	Errors	Remove
March 22, 2023	10:58 PM	USER - Upsert	Backup Batch File	0 Errors	Remove
March 22, 2023	4:11 PM	USER - Delete	Backup Batch File	1 Errors	Remove

Clear History

MacBook Air

All upload errors will display in yellow next to the upload action in the History.

Press 'View' to see details of the error.

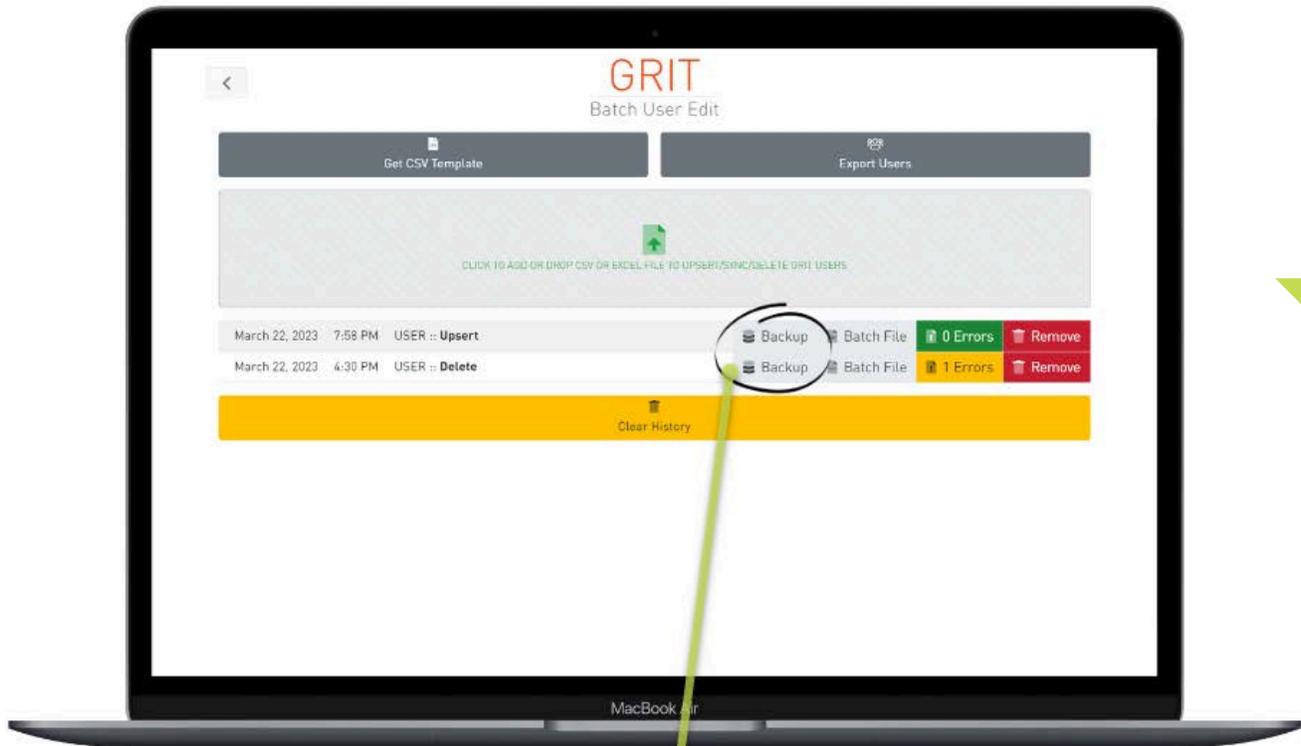
Return

Id: 179	Externalid:
Active: x	Firstname: Joel
Lastname: Danowitz	Address:
City:	State:
Zip:	Phonenumber: (217) 840-4549
Email: j@j.com	Systemadmin: x
Signonadmin: x	Assetcheckoutadmin: x
Demographic1: Male	Demographic2:
Demographic3:	Demographic4:
Demographic5:	Createdat: 2023-03-22 00:05:43
Notes:	Photourt:
Photobase64:	Lastseenat:
Pg:all Tools: x	Pg:all Assets: x
Pg: Router Tables:	Pg:sanders:
Pg:test Group:	Pg:big Tools:

Clear History

MacBook Air

Previous Backup Version



The **Backup** button next to each upload action has the **GRIT Track** database version prior to that bulk edit action.

If you need to go back to that previous version of the database:

- Press 'Backup' to download that file.
- Upload that backup file with a 'Sync' upload action.

GRIT TRACK® RFID

Assign User Swipe Card for SignOn

Return

Profile

First Name* Lizzy Last Name* Freedom PIN

Email Phone Password

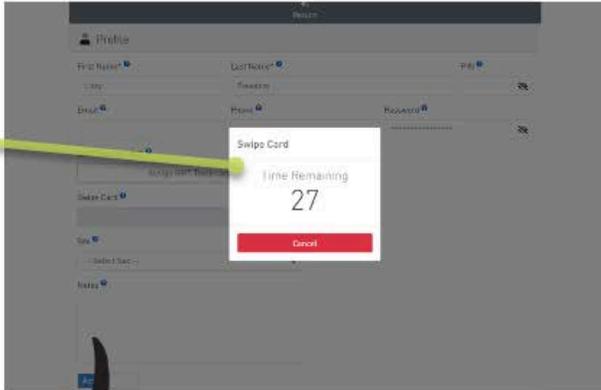
GRIT Track® RFID Assign GRIT Track card Tool Access

Swipe Card

Swipe Card

Step 1:
With the user's ID card you wish to use for SignOn purposes in hand, press 'Swipe Card'.

Step 2:
A timeout pop-up screen with a countdown will appear. Swipe the user's ID through the SignOn system's magnetic swipe device. This pop-up screen will disappear once the ID has been successfully swiped.



Return

Profile

First Name* Lizzy Last Name* Freedom PIN

Email Phone Password

GRIT Track® RFID Assign GRIT Track card Tool Access

Swipe Card

6515246389217

Swipe Card

The ID card's number will appear in this field when the pop-up disappears.

GRIT TRACK® RFID

Assign Permanent GRIT Track® card

GRIT Track®
Users

Return

Profile

First Name* Lizzy Last Name* Freedom PIN

Email Phone Password

GRIT Track® RFID Assign GRIT Track card Tool Access

Step 1:
With the blank GRIT RFID card you wish to assign in hand, press 'Assign GRIT Track card'.

Step 2:
A pop-up screen with every available RFID device will appear. Select any RFID device you wish to use to scan the permanent card.

Pair a tag with Lizzy

Select an RFID reader

Band Saw	Drum Sander
Jointer	Planer
Table Saw	GRIT Sign On

Step 3:
When the selected RFID device begins to flash, tap the blank GRIT Track card on the front of the device.

Pair a tag with Lizzy

When the light is flashing, scan the new tag.

Cancel

Step 4:
Once the permanent card is tapped, the card's unique ID will be displayed in the user's profile information. Press 'Return' to exit the user's profile.

Return

Profile Sign In

First Name* Lizzy Last Name* Freedom PIN

Email Phone Password

GRIT Track® RFID CBE277D0 Tool Access

GRIT TRACK® RFID

Imported User with Proximity Card

Return

Profile

External ID: 371527500572007

First Name*: Joel
Last Name*: Johnson
PIN: [Redacted]

Email: [Redacted]
Phone: (217) 840-5074
Password: [Redacted]

External Proximity Card: 05813ED47D7200

Assign Card

Tool Access: Jet Planer, Test, b353cb, b350fb

GRIT Track@ RFID

Assign GRIT Track card

Mobile GRIT Card

Add to Apple Wallet

Gender: Male

Board Of Directors: -- Select Board Of Directors --

Notes

Active

If you have a GRIT SignOn System and utilize the Bulk Edit feature for importing GRIT Track users, you will see their External ID and External Proximity Card numbers will import.

These numbers may differ from one another, so if users will be using their student/staff ID cards to sign in, be sure that both numbers are included in the upload file.

Return

Profile

Sign In

External ID: 371527500572007

First Name*: Joel
Last Name*: Johnson
PIN: [Redacted]

Email: [Redacted]
Phone: (217) 840-5074
Password: [Redacted]

External Proximity Card: 05813ED47D7200

GRIT Track@ RFID: 05813ED47D7200

Tool Access: Jet Planer, Test, b353cb, b350fb

Mobile GRIT Card

Add to Apple Wallet

Gender: Male

Board Of Directors: -- Select Board Of Directors --

Notes

Active

A student/staff ID card can also be saved in the system as a permanent GRIT Track RFID card by pressing 'Assign Card' under the user's profile or by selecting that option in the upload file.

This will allow users to tap to sign in, as well as, tap to operate tools with their ID card.

Permissions

Setting Permissions is an integral part of fully utilizing the GRIT Track® system. This section covers how to create tool permissions, assign them to users, and grant administrative permissions to users.

To access the Permissions section of GRIT Track®:

Step 1:
Press the hamburger icon to reveal the navigation bar.

Step 2:
Select 'Permissions'.

Step 3:
The main Permissions screen will show all current permission groups.

Permission Group	Description
All Assets	Use this permission group to allow user access to all assets in the shop.
All Tools	Use this permission group to allow user access to all tools in the shop.
Saws	All Saws
Single table saw	
Sanders	Use this permission group to allow user access to routers Thanks
Tablesaw	Use this permission group to allow user access to the CNC machine

The 'All Assets' and 'All Tools' permission groups are the default groups for GRIT Track®, however, it is easy to add custom permission groups.

GRIT TRACK® RFID

Create New Permission Group

Step 1: Press '+' on the main Permission page.

Step 2: Name the new group.

Step 3: If using a SignOn system, decide if this permission group display as part of the new user screen on the SignOn kiosk.

Step 4: Select the Group Type for the new permission group (more details about this in the 'Group Type' section).

Step 5: Describe the permission group further (i.e., Permission for all saws in the shop).

Step 6: Select the tools and assets that are included in this permission group by toggling to 'Yes' for all that apply.

Step 7: Verify that this list of tools under 'Current Selection' is correct.

Step 8: Press 'Save' to create the group.

The screenshot shows the 'GRIT Permissions' page with a list of existing groups. The 'Create Permission Group' form is open, showing the following details:

- Permission Group Name: Saws
- Group Type: Standard (selected)
- Show On SignOn Screen: Yes (selected)
- Description: (empty)
- Tools: 8 (selected)
- Assets: 1 (selected)
- Current Selection: Band Saw, Chop Saw, Table Saw A, Table Saw B

Tools	Assets
rfid-6c7055	<input type="checkbox"/>
rfid-6c6e58	<input type="checkbox"/>
rfid-658ba6	<input type="checkbox"/>
rfid-639a87	<input type="checkbox"/>
Band Saw	<input checked="" type="checkbox"/>
Chop Saw	<input checked="" type="checkbox"/>
Table Saw A	<input checked="" type="checkbox"/>
Table Saw B	<input checked="" type="checkbox"/>

Group Type

Setting permissions for tool usage through GRIT Track® ensures that users can only unlock tools they have permission to use. There are three types of tool permission groups: Standard, Toolset, and Simultaneous Usage.

Standard

The Standard permission for GRIT assumes that one person can only perform one task at a time, and generally speaking, that means one tool at a time. In a Permission Group with multiple tools, selecting a Standard Group Type means that users are still only able to access one tool at a time. It is a shorthand way of assigning permissions to a number of tools, while still only allowing use of one at a time for a user.

For example, if a user has been given permission to use all of the saws in the shop (in a tool permission group named 'Saws') and is cutting a sheet of plywood on the table saw, they cannot also be using the chop saw. They could use these saws one after the other, but cannot log in to both at the same time using their GRIT card.

The screenshot shows the 'Create Permission Group' interface in the GRIT system. The 'Permission Group Name' is 'Saws'. The 'Group Type' is set to 'Standard', which is circled in red. The 'Show On SignOn Screen' is set to 'Yes'. Below, there is a list of tools with checkboxes for authorization. The 'Current Selection' list is empty.

Tools	Assets	Current Selection
rfid-6c7055		Band Saw
rfid-6c6e58		Chop Saw
rfid-658ba6		Table Saw A
rfid-639a87		Table Saw B
Band Saw		
Chop Saw		
Table Saw A		
Table Saw B		

Selecting a 'Standard' Group Type for a Permission Group means a user can only access/turn on one tool at a time.

GRIT TRACK® RFID

Toolset

The Toolset permission for GRIT assumes that one person can only perform one task at a time, but that it might involve using more than one tool at a time to complete that task.

For example, if a user is building 5-piece construction doors using a rail and stile router bit set, they may need two different router tables operating at the same time. With a Standard Group Type, this is not allowed, but with a Toolset Group Type, it is. Creating a Toolset permission group means that all of the tools in the group can be accessed and run by a user concurrently.

The screenshot shows the 'GRIT Create Toolset Group' form. The 'Group Type' is set to 'Toolset', which is circled in red. The 'Permission Group Name' is 'Routers', and the 'Description' is 'For concurrent use of 2 router tables.' The 'Current Selection' shows 'Router A' and 'Router B'.

Select tools that are authorized for use with this group	Current Selection
rfid-6c7055	Router A
rfid-6c6e58	Router B
rfid-658ba6	
rfid-639a87	
Router A	
Router B	
Spindle Sander	
Table Saw B	

Selecting a 'Toolset' Group Type for a Permission Group means a user can access/ turn on any number of tools in the permission group at the same time.

Simultaneous Usage

The Simultaneous Usage Group Type assumes that there are tools that can be turned on and run autonomously for a majority of its operation. In those cases, a user could be working elsewhere in the shop.

For example, if a user is running a job on a CNC, after the initial setup, they could work on other tasks simultaneously. With a Standard permission group, this is not allowed, but with a Simultaneous Usage group, it is. A user can log into another tool or toolset group that they have permissions for while running the CNC machine specified in this group.

The screenshot shows the 'Create Simultaneous Usage' form in the GRIT Track RFID interface. The form includes a 'Group Type' dropdown menu with three options: 'Standard', 'Toolset', and 'Simultaneous Usage'. The 'Simultaneous Usage' option is selected and circled. Below the dropdown is a 'Show On SignOn Screen' toggle with 'Yes' and 'No' options. A 'Description' field contains the text 'Use 1 other tool or toolset that user has permissions for while running the CNC'. Below the description is a table with columns 'Select tools that are authorized for use with this group' and 'Current Selection'. The table lists several tools with checkboxes for authorization: 'rfid-6c7055', 'rfid-6c6e58', 'rfid-658ba6', 'rfid-639a87', 'CNC', 'Edge Sander', 'Spindle Sander', and 'Table Saw B'. The 'CNC' row has a 'Yes' checkbox selected. At the bottom of the form are 'Save' and 'Delete' buttons.

Selecting a 'Simultaneous Usage' Group Type for a Permission Group means a user can access/ turn on the tool (or tools) specified in the selected tool list **AND** any other tool or toolset they have permissions for at the same time.

GRIT TRACK® RFID

Edit Permission Group

To Edit a Permission Group:

Step 1:
Select the group on the main Permissions page that you wish to edit.

Step 2:
Make any edits necessary, whether that be the group name, tool selection, etc.

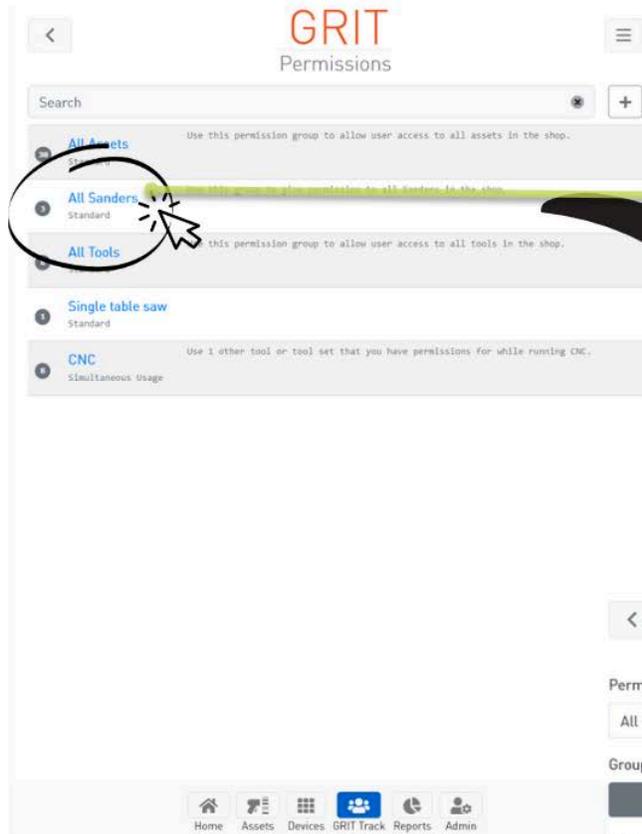
Step 3:
Press 'Save' once edits are complete.

The image shows a three-step process for editing a permission group in the GRIT system. Step 1 involves selecting a group from the main 'Permissions' page. Step 2 involves editing the group's name and tool selection. Step 3 involves saving the changes.

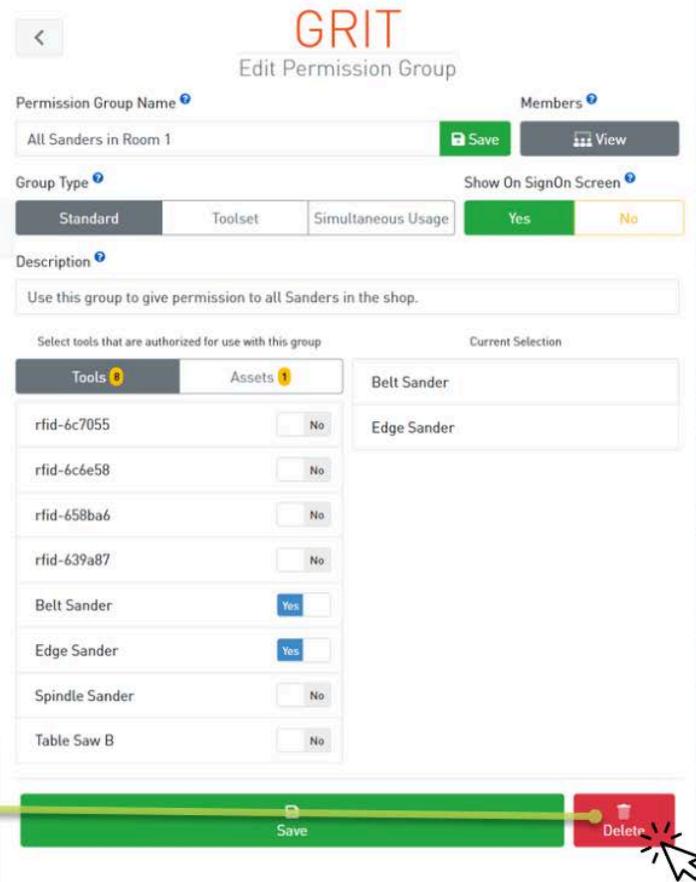
Tools	Assets	Current Selection
rfid-6c7055	<input type="checkbox"/>	No
rfid-6c6e58	<input type="checkbox"/>	No
rfid-658ba6	<input type="checkbox"/>	No
rfid-639a87	<input type="checkbox"/>	No
Belt Sander	<input checked="" type="checkbox"/>	Yes
Edge Sander	<input checked="" type="checkbox"/>	Yes
Spindle Sander	<input type="checkbox"/>	No
Table Saw B	<input type="checkbox"/>	No

Delete Permission Group

To delete a Permission Group:



Step 1:
Select the group on the main Permissions page that you wish to delete.



Step 2:
Press 'Delete' in the bottom right corner.

The image shows two screenshots from the GRIT Track interface. The first screenshot shows the 'Permissions' page with a list of permission groups. The 'All Sanders' group is circled in red, and a mouse cursor is pointing at it. A callout box labeled 'Step 1' points to this group. The second screenshot shows the 'Edit Permission Group' page for 'All Sanders in Room 1'. At the bottom right, there is a red 'Delete' button with a trash icon, which is highlighted by a callout box labeled 'Step 2'. A large black arrow points from the 'All Sanders' group in the first screenshot to the 'Delete' button in the second screenshot.

Assign Permissions to User

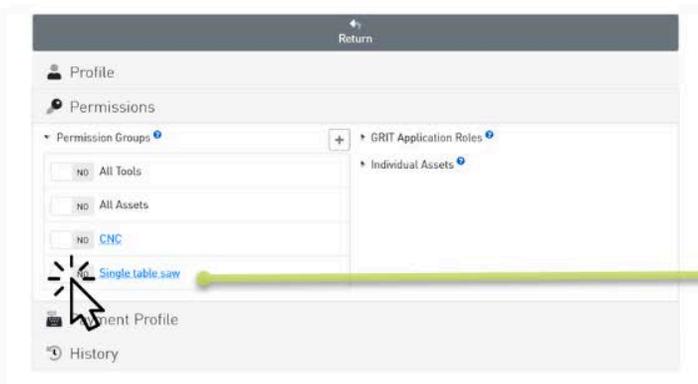
Give users permission to use a tool or a group of tools in the shop by assigning a tool permission to their user permissions page.



Step 1:
Go to the list of Users in GRIT Track. Select the user that you will be adding a permission for.



Step 2:
Once you are taken to that user's detail menu, select 'Permissions' to assign tool permissions, GRIT Application Roles, and/or Asset permissions to this user.

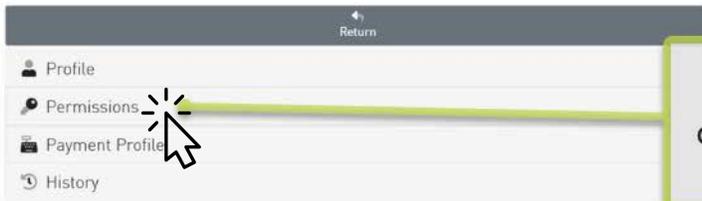


Step 3:
Assign tool permissions by toggling the desired group(s) to 'Yes'.

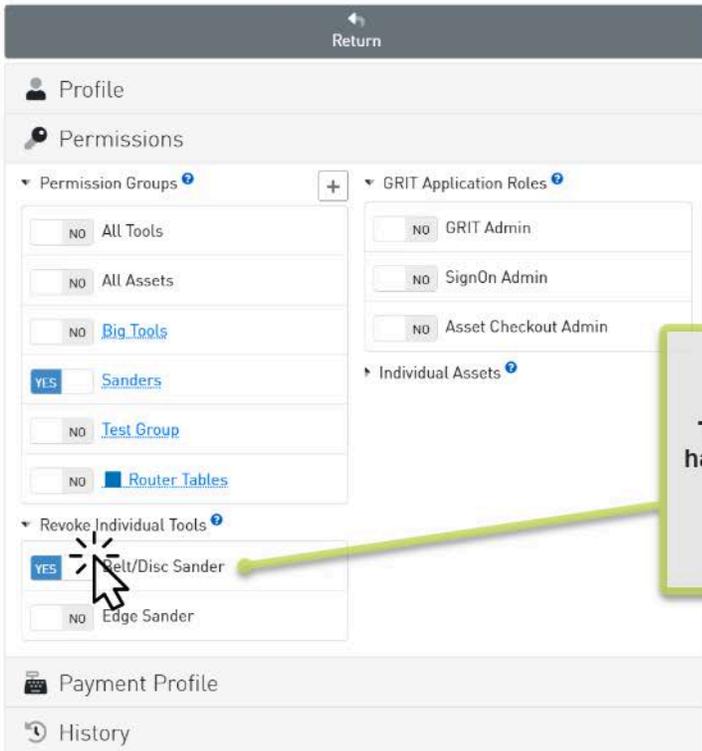
Revoke Permissions from User



Step 1:
Go to the list of Users in GRIT Track. Select the user that you will be revoking a permission from.



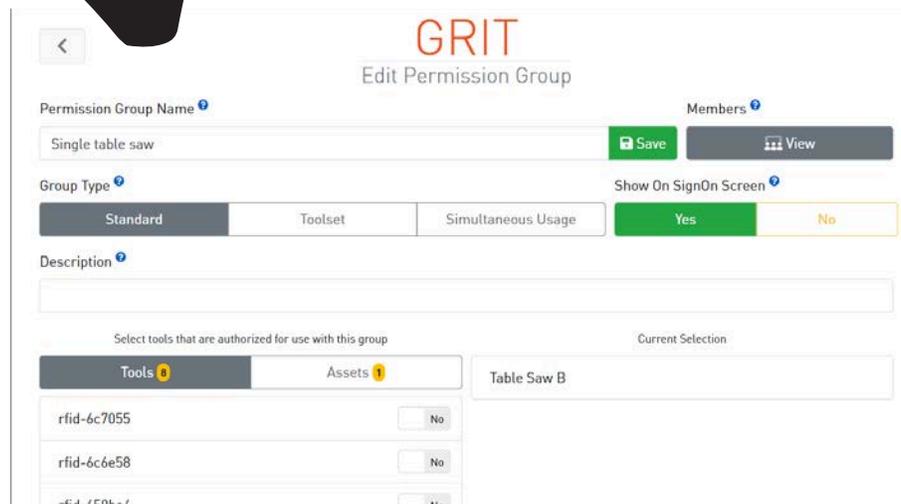
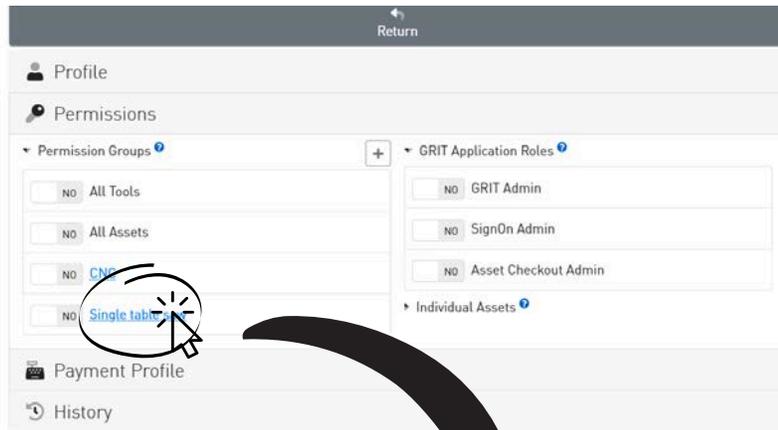
Step 2:
Once you are taken to that user's detail menu, select 'Permissions'.



Step 3:
Toggle to 'Yes' for any tool they've previously has permissions for to revoke for that individual tool.
Toggle to 'No' to return that permission.

Navigate to Tool Permission Group

To navigate to a tool permission group's edit screen, click the group's name (highlighted in blue) from the user's permissions page.



Assign GRIT Application Roles to User

Give users administrative access in various roles.

- GRIT Admin: User with system-wide Administrative access
- SignOn Admin: User with authentication authority on SignOn kiosk
- Asset Checkout Admin: User with authentication authority on Asset Tracker kiosk

Step 1:
Go to the list of Users in GRIT Track. Select the user that you will be adding a permission for.

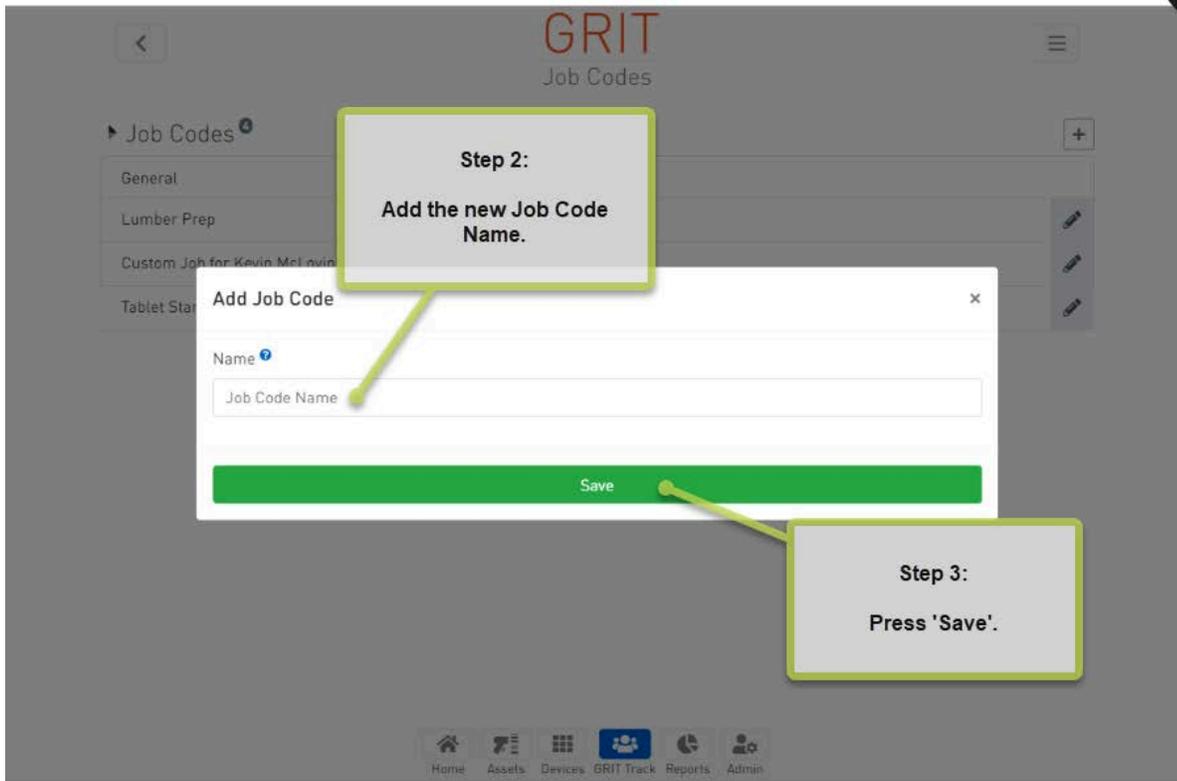
Step 2:
Once you are taken to that user's detail menu, select 'Permissions' to assign too permissions, GRIT Application Roles, and/or Asset permissions to this user.

Step 3:
Toggle the arrow next to 'GRIT Application Roles' to expand options.

Step 4:
Assign administrative permissions by toggling the desired role(s) to 'Yes'.

Add Global Job Codes

Job Codes are only available and visible in the App if you have the GRIT SignOn System.



Edit Global Job Codes

Job Codes are only available and visible in the App if you have the GRIT SignOn System.

The screenshot shows the GRIT Job Codes app interface. At the top, there is a back arrow, the GRIT logo, and a menu icon. Below the title 'Job Codes', there is a list of job codes: 'General', 'Lumber Prep', 'Custom Job for Kevin McLovin', and 'Tablet Stand Product'. A plus sign is in the top right corner. A callout box labeled 'Step 1: Press pencil icon to the right of the job code you wish to edit.' points to a pencil icon next to 'Lumber Prep'. A large black arrow points from this step to the next screenshot.

Step 1:
Press pencil icon to the right of the job code you wish to edit.

The second screenshot shows the 'Edit Job Code' dialog box. The dialog has a title bar with 'Edit Job Code' and a close button. It contains a 'Name' field with 'Lumber Prep' entered and a 'Delete' button. At the bottom is a green 'Save' button. A callout box labeled 'Step 2: Edit the Job Code.' points to the 'Name' field. Another callout box labeled 'Step 3: Press 'Save'.' points to the 'Save' button.

Step 2:
Edit the Job Code.

Step 3:
Press 'Save'.

At the bottom of the app, there is a navigation bar with icons for Home, Assets, Devices, GRIT Track, Reports, and Admin.

Settings

The screenshot shows the 'GRIT Settings' page with several configuration options and callout boxes:

- Enable GRIT Track RFID System:** A toggle switch set to 'Yes'. Callout: 'Enable GRIT Track RFID System' controls if the installed RFID devices will control the GRIT Lock of connected triggers. Select 'Yes' to enable every RFID device.
- Require User To SignOn:** A toggle switch set to 'Yes'. Callout: 'Require User To SignOn' is only available when using a GRIT SignOn system. Select 'Yes' to require all users to sign in before they are able to use tools.
- Allow User Search From SignOn:** A toggle switch set to 'Yes'. Callout: 'Allow User Search From SignOn' is only available when using a GRIT SignOn system. Select 'Yes' only if you would like users to be able to search by name rather than requiring they swipe their ID card during the sign in process.
- Deactivate Inactive Users:** A toggle switch set to 'No'. Callout: Set the amount of time without accessing GRIT before a user is deactivated.
- Automatic Sign Out:** A toggle switch set to 'No Automatic'. Callout: 'Automatic Sign Out' is only available when using a GRIT SignOn system. Set the time of day when all users will be automatically signed out of GRIT.
- SignOut All Users:** A button labeled 'SignOut All Users'. Callout: Manually sign out all users.
- Configure Demographics:** A section with five 'Configure Demographic Data' buttons. Callout: Configure up to 5 demographic fields to store additional data about users. These fields allow you to define a set of possible values and are displayed in a user's 'Profile'.

Configure Demographics Manually

Demographic data fields can be configured and maintained manually, or uploaded during bulk edits (if you have a SignOn System).

To configure a new demographic data field, click on a blank 'Configure Demographic Data' field.

Enter the name of the field and a descriptor in the Help Text.

Choose whether this data field will display on the kiosk of SignOn, if applicable.

Select 'Manual'.

Press the green '+' icon to add response options for this new demographic field.

GRIT TRACK® RFID

GRIT Settings

New Options ⓘ

Enter in new options, each new line is a new option. Copy/Paste all entries into this text area to add new options.

Back Next

Type or Copy/Paste the response option(s) into the text box. One per line. Responses entered will display alphabetically, or if another order is preferred, use numbers to set the order.

Then press 'Next'.

GRIT Settings

Home Assets Devices GRIT Track Reports Admin

Back Delete

Name Of Demographic Field ⓘ
Board Of Directors

Help Text ⓘ
This field indicates if the user is on the board of directors

Show On SignOn Screen ⓘ Data Source For Options ⓘ
Yes No Manual Batch Upload/API

Options ⓘ +

- No
- Not Cool
- President
- Sometimes
- This is cool
- Yes

The added option will then display in the list of options.

Home Assets Devices GRIT Track Reports Admin

GRIT TRACK® RFID

GRIT Track®
Demographics

The screenshot shows the 'GRIT Settings' interface. At the top, there is a 'Back' button and a 'Delete' button. Below these are several input fields: 'Name Of Demographic Field' with the value 'Year', 'Help Text' with the value 'Student year in school.', and a 'Show On SignOn Screen' toggle set to 'Yes'. Under the 'Options' section, there is a list of four items: '1. Freshman', '2. Sophomore', '3. Junior', and '4. Senior'. To the right of this list is a vertical column of icons: a green '+' icon at the top, followed by three red trash can icons. A green arrow points from the '+' icon to the text box on the right.

The responses entered on the previous screen will display in list form under 'Options'.

- To add another response, press the green '+' icon.

-To edit a response, click in its text box and type.

-To delete a response, press the red trash can icon.

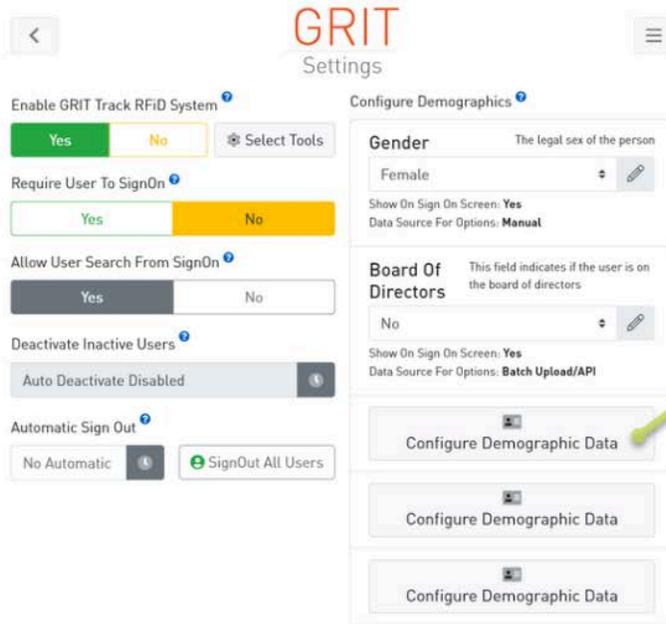
Press 'Back' when done editing this Demographic Field.

The screenshot shows the 'GRIT Settings' interface with the 'Configure Demographics' section expanded. On the left, there are three toggle switches: 'Enable GRIT Track RFID System' (set to 'Yes'), 'Deactivate Inactive Users' (set to 'No'), and 'Auto Deactivate Disabled' (set to 'Auto Deactivate Disabled'). The 'Configure Demographics' section shows a 'Year' field with the value '1. Freshman' and a 'Show On Sign On Screen' toggle set to 'Yes'. Below this are four 'Configure Demographic Data' buttons. A black circle highlights a pencil icon next to the '1. Freshman' text box, with a mouse cursor pointing at it. A green arrow points from this icon to the text box on the right.

To edit an existing demographic field, press the pencil icon.

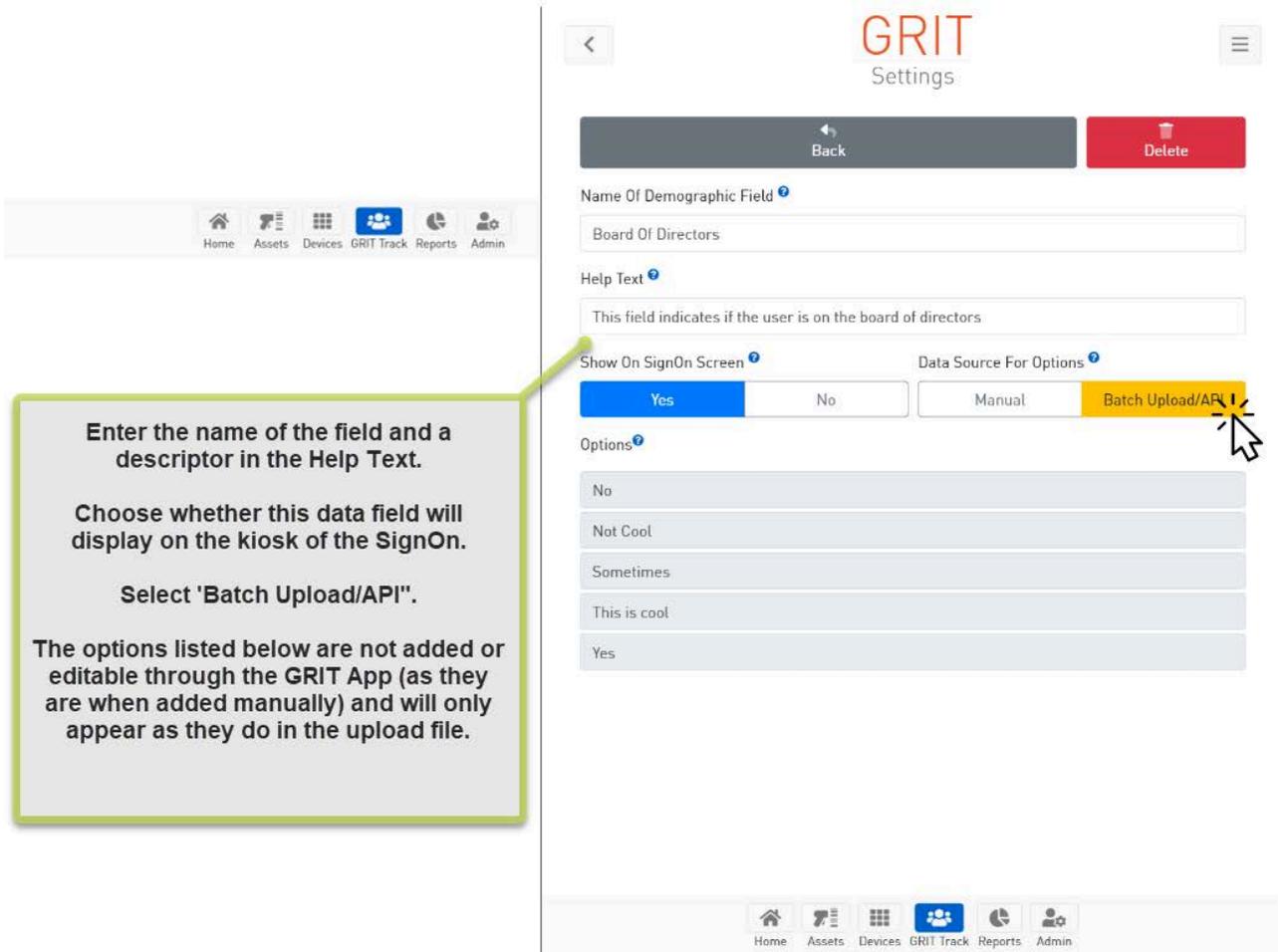
Configure Demographics

Batch Upload



Demographic data fields can be configured and maintained manually, or uploaded during bulk edits (if you have a SignOn System).

To configure a new demographic data field, click on a blank 'Configure Demographic Data' field.



Enter the name of the field and a descriptor in the Help Text.

Choose whether this data field will display on the kiosk of the SignOn.

Select 'Batch Upload/API'.

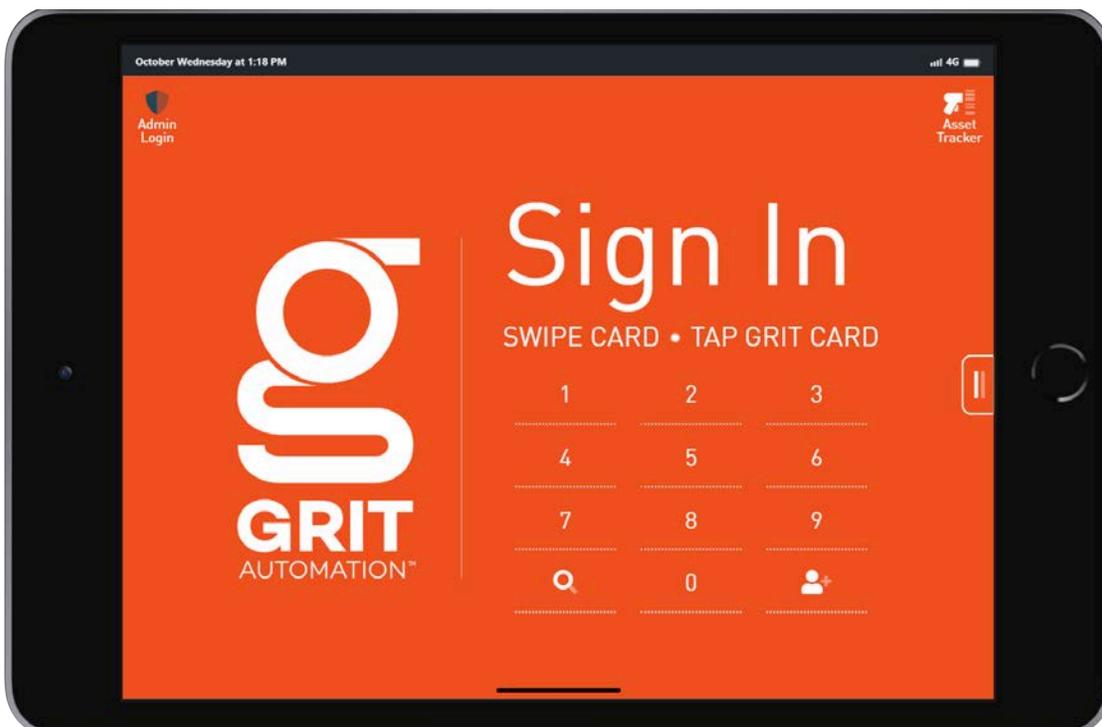
The options listed below are not added or editable through the GRIT App (as they are when added manually) and will only appear as they do in the upload file.

Overview

The Grit SignOn system is built for shops that fall into one of the following categories:

- Users have a separate identification card, such as a school ID or corporate ID. Instead of issuing them yet another ID card, the SignOn system will allow the user to sign in with an alternate form of identification and have a temporary card issued.
- Certain groups of users might lose the cards (educational environments), or;
- Large number of transient users. Educational and makerspace environments will see turnover regularly and with SignOn the administrative burden is lessened because of the self-service kiosk functionality in the SignOn system.
- Shops that want to add time tracking capabilities. The system tracks tool usage and user access, plus total time spent in the shop environment. This is extremely valuable for shops that want to bill users based on rented shop time.

Grit SignOn is a public kiosk with an integrated touch-screen tablet outfitted with a magnetic swipe card reader or scanner. All backend administrative settings for SignOn functionality are covered in the GRIT Track® Users, Permissions, and Settings sections.



GRIT SIGNON

GRIT SignOn System

The GRIT SignOn system enhances shops with GRIT Track® RFID to manage large or revolving user groups. Assign temporary cards from a self-serve kiosk-style touch screen and magnetic swipe card reader. *QR code/barcode scanner is available in place of the magnetic swipe card reader, if preferred.



Installation

Place 10" touchscreen tablet and GRIT SignOn device in an easily accessible location for users to sign in/out (can be wall-mounted with provided hardware or placed on a desk).

1. Plug power adapter into the jack on the bottom of the SignOn device.
2. Plug power adapter into a standard 120v wall outlet.
3. Plug the tablet into the side of the SignOn device using the supplied USB-C cable.
4. Place temporary GRIT Track® RFID cards in a nearby location for users signing in.

GRIT SIGNON

SignOn Device Configuration



Unlike other device configuration, SignOn configuration must be done from its associated tablet. Press the 'Connect' button to pair the device you're using to the SignOn device.

Only one device/screen can be connected to the SignOn device at a time.

Connecting a new screen to the SignOn device will disconnect a previously associated one.

Rename the device, usually as 'GRIT SignOn' or 'Main Shop SignOn', in the case of more than one.

Connect the provided tablet to your SignOn device for the best user interface.

Go To SignOn Screen
Goto SignOn System

Navigate to the SignOn system front end (Kiosk).
This will only work if you're using the associated tablet.

Press 'Disconnect' to disconnect the associated tablet.

SignOn Configuration

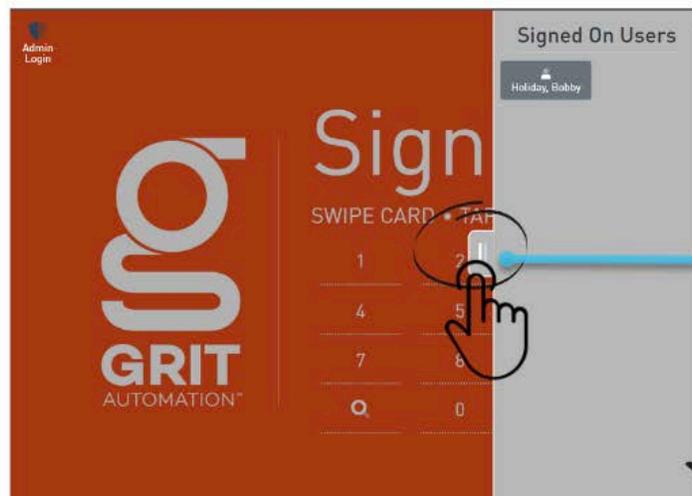
GRIT SIGNON

GRIT SignOn Kiosk

View Signed On Users



Step 1:
To view all users currently signed into the shop, tap the slide-out panel tab located on the right hand side of the screen.



Step 2:
All signed in users are listed in the expanded panel.
To collapse the slide-out panel, tap again.



GRIT SIGNON

Create User

SignOn
Create User



Step 1:
To Create a New User from the SignOn Kiosk, a SignOn Administrator presses the 'Add User' button.



Step 2:
The SignOn Administrator must tap their own RFID card or enter their PIN to continue.



*** Please note:**
If the person attempting to create a new user does not have SignOn Administrator permissions, this screen will appear.

GRIT SIGNON

Admin Login

Asset Tracker

Create User

First Name * Last Name *

Email External Id

CREATE PERMISSIONS IN THE GRIT APP *

Step 3:

Complete Name and Email fields.

Have the new user swipe their ID after pressing 'Swipe Card'. Then press 'Save'.

* Please note: A message saying 'Create Permissions in the GRIT App' will display if none have been created in the GRIT Track Permissions section.

Otherwise, a 'Select Permission' button will appear (if 'Show on SignOn' is marked as 'Yes' in the GRIT Track Permissions configuration).

Admin Login

Asset Tracker

Success

FREEDOM, LIZZY

Step 4:

This screen displays once the new user has been successfully created.

Admin Login

Asset Tracker

Sign In

SWIPE CARD • TAP GRIT CARD

1	2	3
4	5	6
7	8	9
🔍	0	👤

The SignOn tablet display will then return to the Main SignOn screen.

GRIT SIGNON

Find User



Step 1:

To Find a User from the SignOn Kiosk:

- enter their PIN (if applicable),
- swipe their ID in the Magnetic card reader,

or;

- tap their GRIT RFID card on the SignOn device.

SignOn
Find User



*** Please note:**

To Find a User from the SignOn Kiosk when the user does not have a PIN, ID, or permanent GRIT RFID card, press the 'Locate' icon to search by their name.

This feature can be disabled in the GRIT Track Admin Settings for security purposes.



To use the 'Locate' feature, type the name of the user you're searching for in the text bar. All existing users with that name will pop up below.

Select the corrector user.

GRIT SIGNON

Edit User



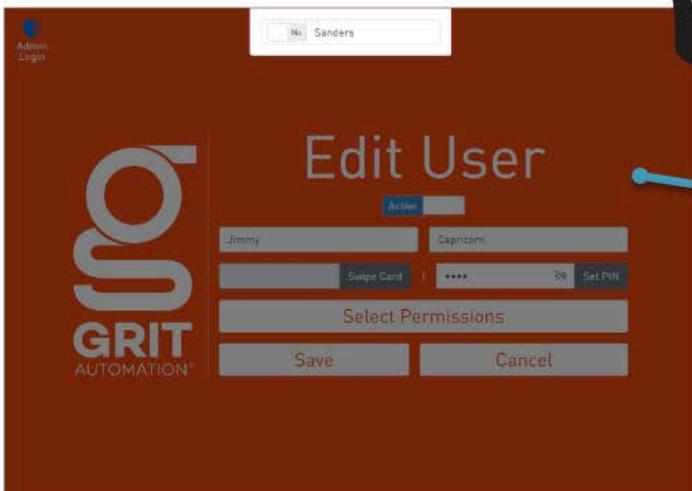
Step 1:

To Edit a User from the SignOn Kiosk, enter their PIN, swipe their ID, or tap their GRIT RFID card.



Step 2:

Once their profile is found in the system, select 'Edit'.



Step 3:

From this screen you can:

- edit/ update name spelling errors,
- assign a new swipe card,
- change PIN,
- update permissions

Press 'Save' when changes are complete.

Please note: The user's ID can only be changed with the 'Swipe Card' when they are not currently signed in.

GRIT SIGNON

Sign In with a Permanent GRIT Card



Step 1:
When signing in with a permanent GRIT RFID card, tap the card on the SignOn device.



Step 2:
The User Screen displays. From here, the user can:

- edit their profile
- assign/ create a job code
- assign a temporary card
- sign in



Step 3:
The 'Welcome' screen displays briefly after pressing 'Sign In'.

SignOn
SignIn

GRIT SIGNON

Sign In with a PIN or ID



Step 1:

To sign in with an ID, swipe the card through the magnetic card reader.

To sign in with a PIN, enter via the number pad displayed on the tablet.

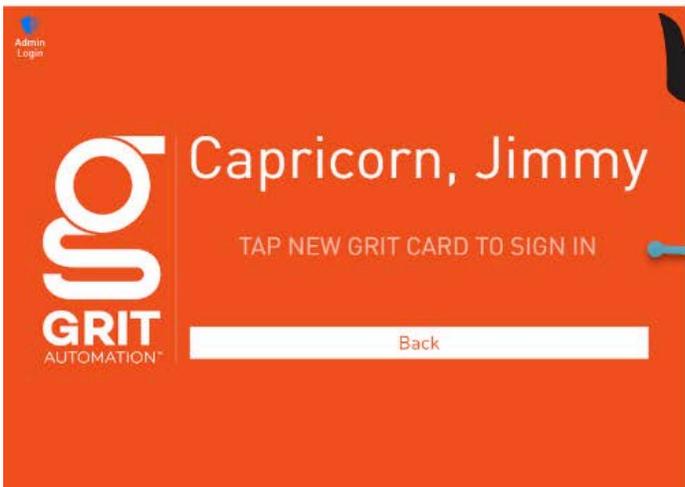


Step 2:

The User Screen displays. From here the user can:

- edit their profile
- create/ modify job codes
- assign themselves a temporary GRIT RfID card.

Press 'Assign Temporary Card'.



Step 3:

Tap a blank temporary GRIT RfID card on the SignOn device to complete the sign in process.

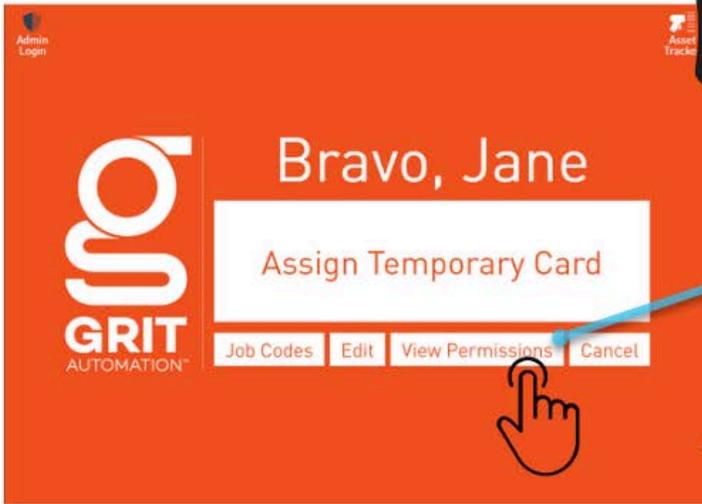
The 'Welcome' screen displays briefly after tapping the temporary card.

GRIT SIGNON

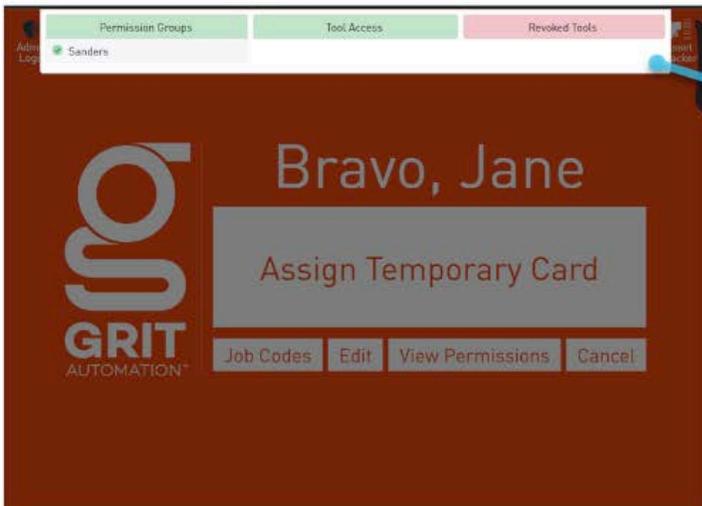
View Permissions on SignOn



Step 1:
To view a user's permissions on the SignOn kiosk, tap their permanent card, enter their PIN, or search.



Step 2:
Press 'View Permissions'.



All of the user's permissions will appear in the pop-up window.

SignOn
View Permissions

GRIT SIGNON

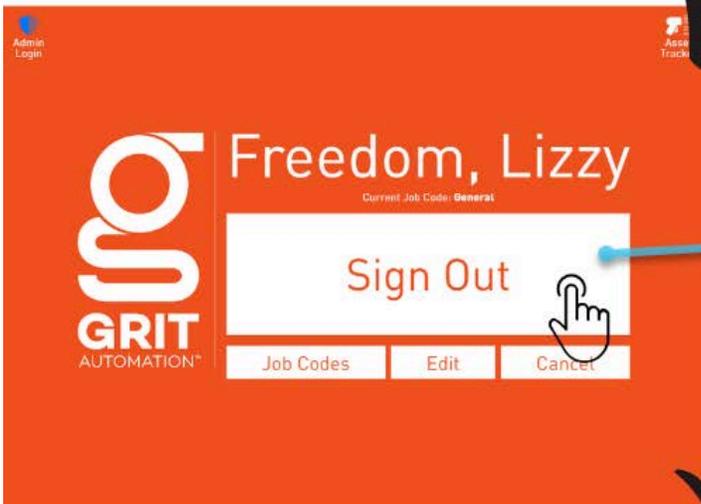
Sign Out



Step 1:
To sign out, tap your temporary or permanent GRIT RFID card on the SignOn device,

or

Enter your PIN.



Step 2:
Press 'Sign Out'.



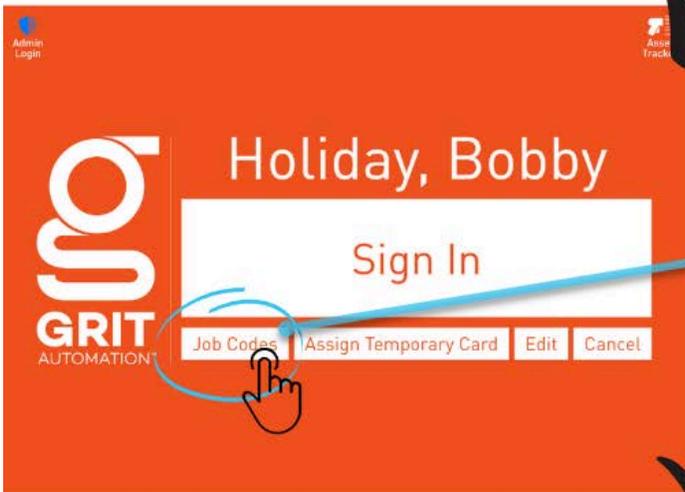
Step 3:
The 'Goodbye' screen displays briefly after pressing 'Sign Out'.

GRIT SIGNON

Manage Personal Job Codes before Signing In



Step 1:
Tap your RFID card, swipe your ID, or enter your PIN.



Step 2:
Press 'Job Codes'.



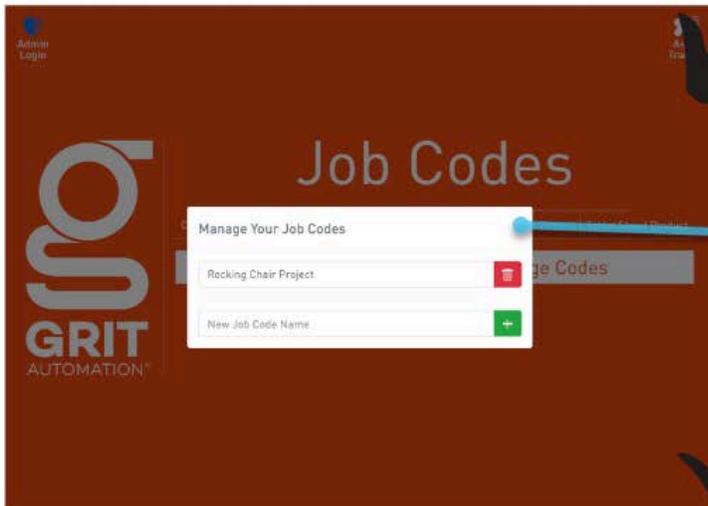
Step 3:
In the Job Codes screen, either select an existing job code from the list, or select 'Manage Codes'.

SignOn
Job Codes

GRIT SIGNON



Step 4:
If you want to make changes to your job codes, press 'Manage Codes'.



Step 5:
In the 'Manage Codes' screen, you can:
- add a new personal job code
- delete an existing code



Step 6:
After you have selected the preferred job code to sign in, or are done managing codes, press 'Back' to return to the User Screen to complete your Sign In.

GRIT SIGNON

Manage Personal Job Codes after Signing In



Step 1:

If you need to manage job codes after you've already signed in or change the job code for the remainder of the time you are signed in, tap your GRIT card, enter your PIN, or swipe your ID.

Press 'Job Codes'.



Step 2:

To change the job code you are signed in with, select the new job code from the listed codes.

To manage codes, press 'Manage Codes'.



Step 3:

The newly selected job code will be displayed on the User Screen.

Select 'Cancel' to remain signed in.

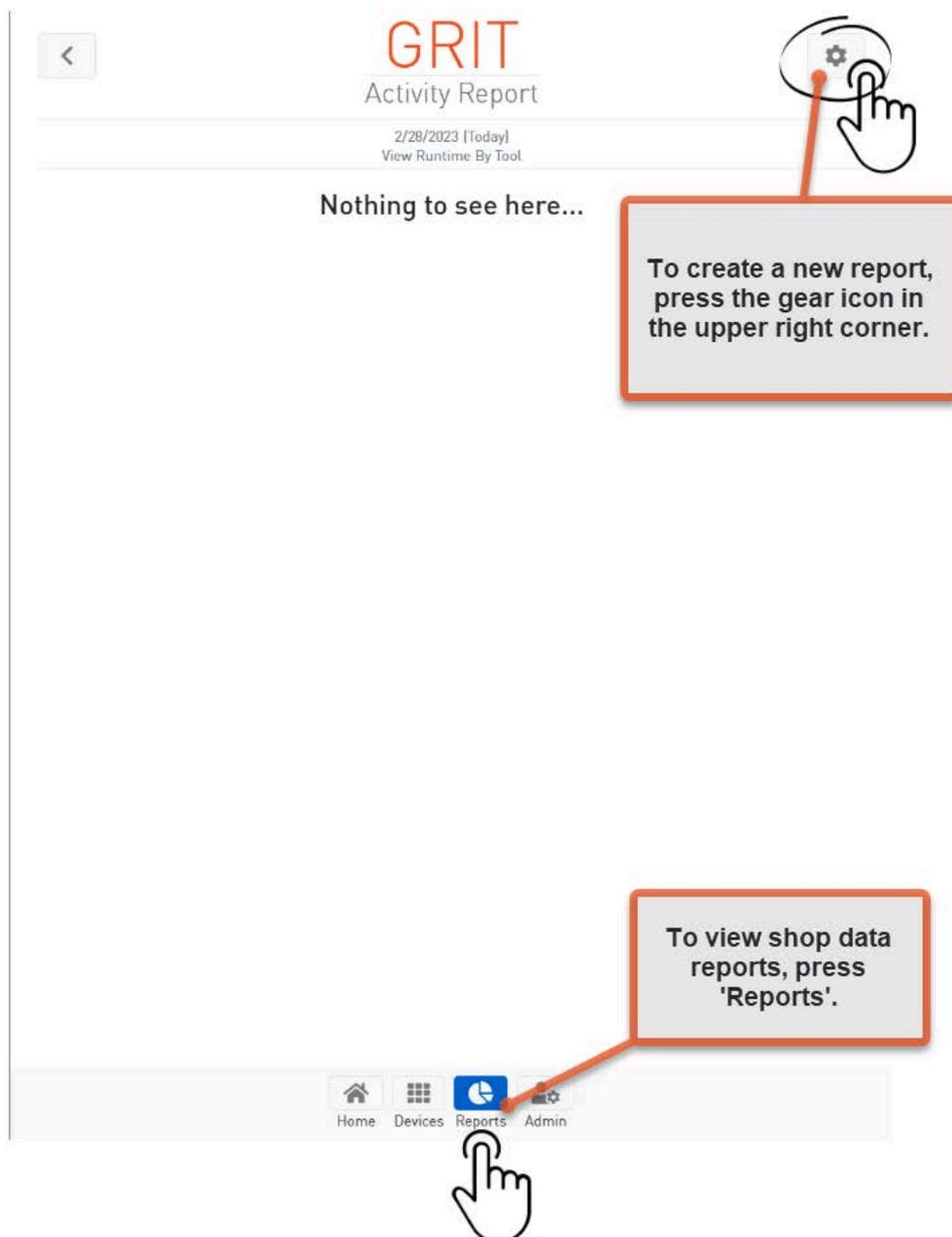
SignOn
Job Codes

GRIT REPORTS

Six types of reports available:

1. Activity Reports
2. Maintenance Reports
3. Permissions Reports
4. SignOn Reports (when you have the SignOn System)
5. Tool Reports
6. User Reports

Activity Reports



GRIT REPORTS

Step 1:
Select the type of report

Step 2:
Select the Date Range for the report.

Step 3:
Select whether you would like seconds data displayed in the timestamps.

Step 4:
Select whether you would like online/offline data about the system (used mainly for troubleshooting).

Step 5:
Select the type of activity for the report.

Step 6:
Press 'Refresh Report'

Reports
Activity Reports

GRIT REPORTS

The screenshot shows the GRIT Activity Report interface. At the top, it displays 'GRIT Activity Report' and the date range '2/20/2023 - 2/26/2023 (Last Week)'. Below this, there are two tabs: 'View 1' and 'View 2'. The 'View 1' tab is selected, showing a list of tools for each date from Feb 20, 2023, to Feb 23, 2023. The tools listed for Feb 23, 2023, are: Table Saw (16, 3m 16s), Router Table (11, 7m 43s), Shop Sweep (3, 1m 29s), Bandsaw - Small (2, 2m 12s), Sanders - Flat (2, 1m 39s), and Remote Switch (2, 11m 08s). At the bottom, there is a navigation bar with icons for Home, Devices, Reports, and Admin.

View 1: Tools
A list of activity for each date in the selected date range.

Press the dropdown menu for a detailed view of activity for each tool on a given date.

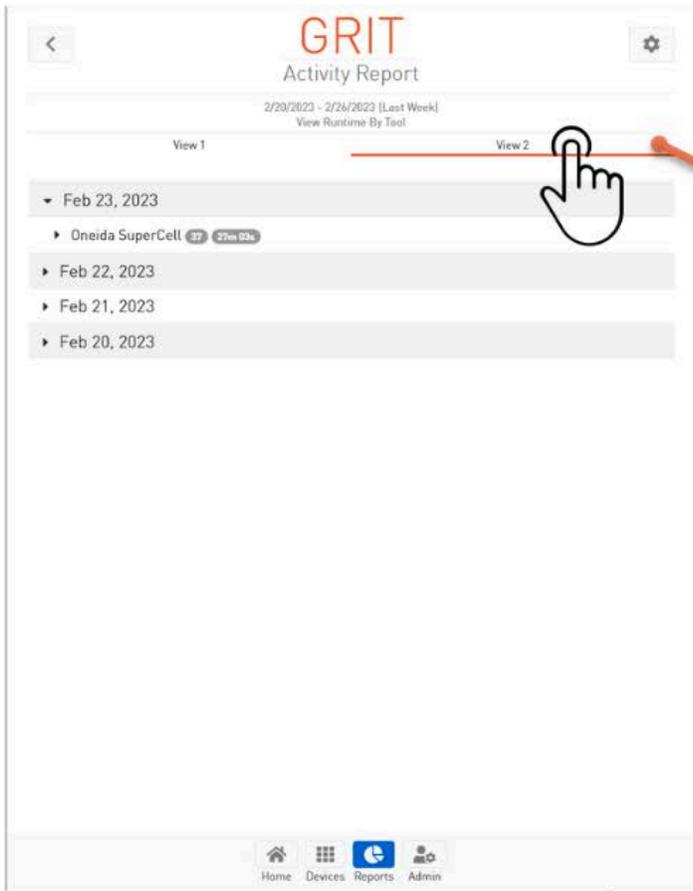


The screenshot shows the GRIT Activity Report interface with the 'View 1' tab selected. The date range is '2/1/2023 - 2/28/2023 (This Month)'. The 'Feb 23, 2023' date is selected, and the 'Table Saw' tool is expanded to show a detailed list of activity. The activity is as follows:

Time	User	Duration
1:29 PM	Gifford, Ryan	>> 3s
1:17 PM	Gifford, Ryan	>> 12s
1:16 PM	Gifford, Ryan	>> 10s
1:15 PM	Gifford, Ryan	>> 11s
1:14 PM	Gifford, Ryan	>> 10s
12:42 PM	Gifford, Ryan	>> 11s
11:09 AM	Gifford, Ryan	>> 8s
11:07 AM	Gifford, Ryan	>> 8s
11:03 AM	Gifford, Ryan	>> 8s
10:59 AM	Gifford, Ryan	>> 7s
10:58 AM	Gifford, Ryan	>> 10s
10:57 AM	Gifford, Ryan	>> 21s
10:22 AM	Gifford, Ryan	>> 14s
10:21 AM	Gifford, Ryan	>> 19s

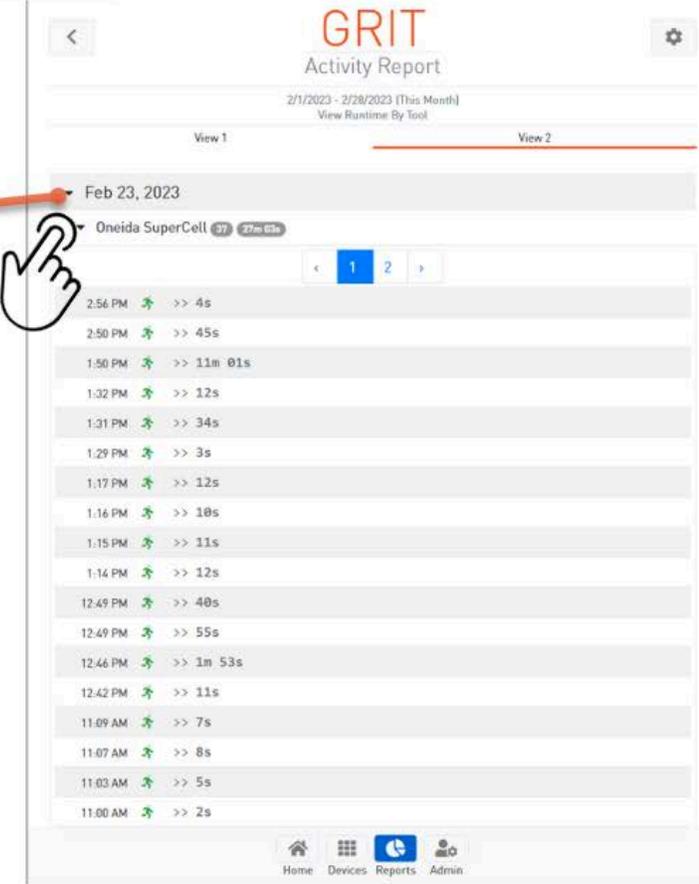
At the bottom, there is a navigation bar with icons for Home, Devices, Reports, and Admin.

GRIT REPORTS



View 2: Collectors
A list of activity for each date in the selected range.

Press the dropdown menu for a detailed view of activity for each collector on a given date.



Reports
Activity Reports

GRIT REPORTS

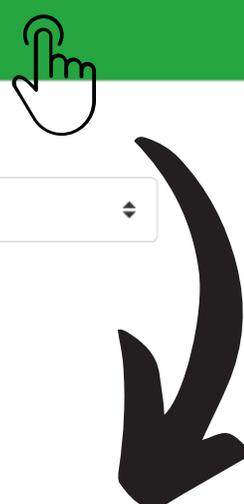
Maintenance Reports

Return Refresh Report

Activity
Maintenance
Tool

Date Range
This Month

Select the date range for the maintenance report



GRIT Maintenance Report

6/1/2022 - 6/17/2022 (This Month)

Tool	Task	Time Remaining
Planer	Change Gearbox Oil	36s

Details

Frequency: 36s

Description:
Change the gearbox oil with the correct fluid.

Activities

Completed On	Performed By	Notes
Jun 16, 2022 5:44 PM	Danowitz, Joel	I completed this task.

Home Devices Reports Admin

GRIT REPORTS

Permissions Reports

Step 1:
Select the type of report

Step 2:
Select whether you want a report on Tool Permissions or User Permissions.

Step 3:
Select the Tool or User from the dropdown menu.

Step 4:
Press 'Refresh Report'

Reports
Permissions Reports

GRIT REPORTS

SignOn Reports

Step 1:
Select the type of report

Step 2:
Select the Date Range for the report

The screenshot shows the 'Sign On' report configuration screen. The 'Date Range' is set to 'This Month'. The 'Include Job Codes' option is set to 'No'. The 'User Selection' is set to 'All Users'. A 'Refresh Report' button is visible at the top right.

Step 3:
Select whether you would like Job Codes included in the report.

Step 4:
Select whether you want All Users or a Single User in the report.

The screenshot shows the 'Sign On' report configuration screen. The 'Date Range' is set to 'This Month'. The 'Include Job Codes' option is set to 'No'. The 'User Selection' is set to 'Single User'. A 'Refresh Report' button is visible at the top right. A dropdown menu for 'Select User' is open, showing 'Holiday, Bobby'.

* If you select Single User, select which user from the dropdown menu.

Step 5:
Press 'Refresh Report'

The screenshot shows the 'Sign On' report configuration screen. The 'Date Range' is set to 'This Month'. The 'Include Job Codes' option is set to 'No'. A 'Refresh Report' button is visible at the top right.

GRIT REPORTS

Tool Reports

Return **Refresh Report**

Activity
Maintenance
Tool

Date Range: This Month
Select the date range for the tool report.

Tool Selection: **All Tools** | Single Tool

View 1: All Tools Report
A list of total tool runtime for all tools in the shop for the selected date range.

GRIT
Tool Report

2/1/2023 - 2/28/2023 (This Month)
Tools: 9 | Total Runtime: 6h 12m

Tool	Duration
Sanders - Hand	2h 03m
Remote Switch	1h 38m
Sanders - Flat	1h 02m
Table Saw	36m 25s
Router Table	16m 31s
Shop Sweep	16m 12s
Bandsaw - Small	12m 51s
Drill Press	4m 26s
Bandsaw - Large	1m 16s

View 2: Most Used Tools

Tool	Duration
Sanders - Hand	2h 03m
Remote Switch	1h 38m
Sanders - Flat	1h 02m
Table Saw	36m 25s
Router Table	16m 31s
Shop Sweep	16m 12s
Bandsaw - Small	12m 51s
Drill Press	4m 26s
Bandsaw - Large	1m 16s

GRIT REPORTS

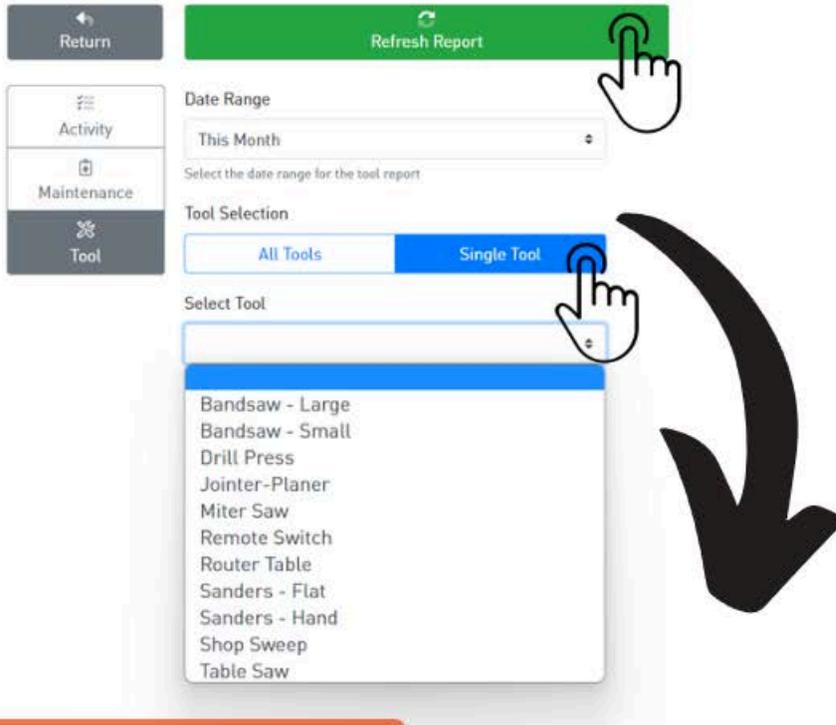
The screenshot displays the GRIT Tool Report interface. At the top, the title 'GRIT Tool Report' is centered. Below it, the date range '2/1/2023 - 2/28/2023 (This Month)' and summary statistics 'Tools: 9 | Total Runtime: 6h 12m' are shown. The main content area features a table with columns for 'Tool', 'User', and 'Duration'. A date selector at the top of the table allows switching between 'View 1' (current view) and 'View 2'. A callout box points to the 'View 2' toggle, stating: 'View 2: All Tools Report. A list of all tool runtime for each date in the selected range.' The table lists various tools used by 'Gifford, Ryan' on different dates in February 2023.

Tool	User	Duration
Feb 23, 2023		
Bandsaw - Small	Gifford, Ryan	2m 02s
Remote Switch	Gifford, Ryan	11m 05s
Router Table	Gifford, Ryan	7m 49s
Sanders - Flat	Gifford, Ryan	1m 39s
Shop Sweep	Gifford, Ryan	1m 29s
Table Saw	Gifford, Ryan	3m 18s
Feb 22, 2023		
Feb 21, 2023		
Feb 20, 2023		
Feb 17, 2023		
Feb 16, 2023		
Feb 15, 2023		
Feb 14, 2023		
Feb 11, 2023		
Feb 9, 2023		
Feb 8, 2023		
Feb 5, 2023		

View 2: All Tools Report
A list of all tool runtime for each date in the selected range.

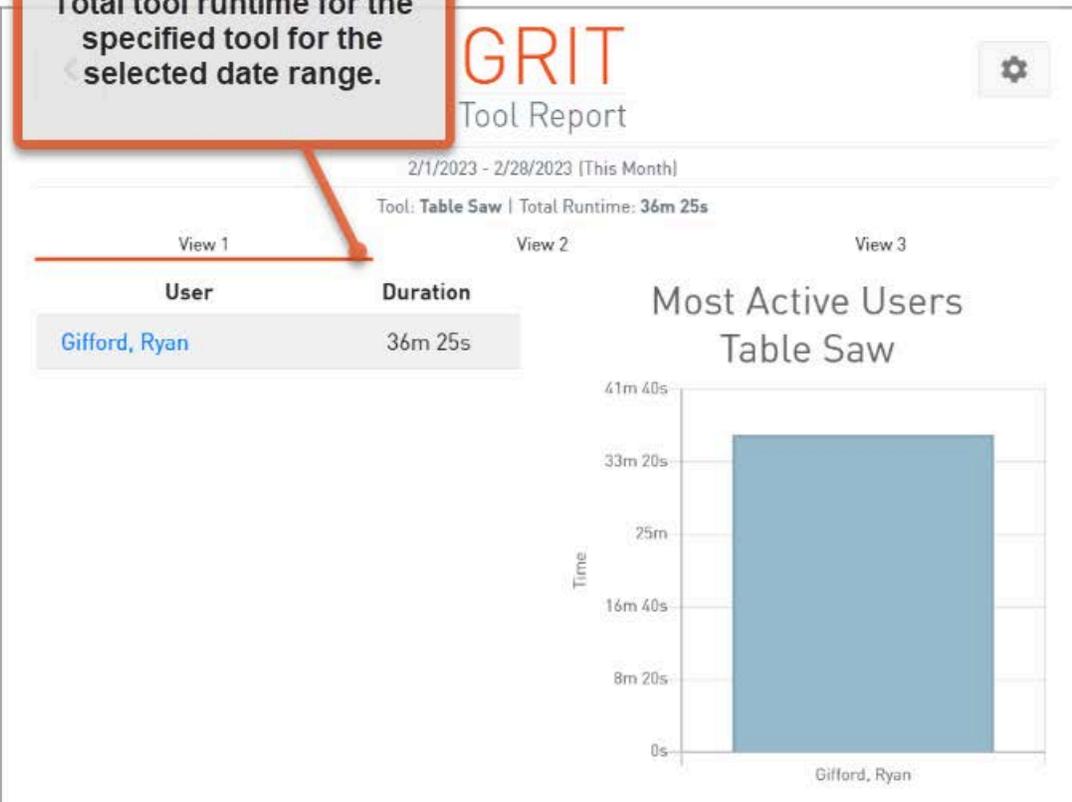
Home Devices Reports Admin

GRIT REPORTS



View 1: Single Tool Report

Total tool runtime for the specified tool for the selected date range.



GRIT REPORTS

GRIT
Tool Report

2/1/2023 - 2/28/2023 [This Month]

Tool: Table Saw | Total Runtime: 36m 25s

User	Duration
Feb 23, 2023	
Gifford, Ryan	3m 18s
Feb 20, 2023	
Gifford, Ryan	17m 16s
Feb 11, 2023	
Gifford, Ryan	10s
Feb 9, 2023	
Gifford, Ryan	22s
Feb 8, 2023	
Gifford, Ryan	13m 48s
Feb 4, 2023	
Gifford, Ryan	1m 31s

View 2: Single Tool Report
Tool runtime for each date in the selected range.

View 3: Single Tool Report
Each individual instance of tool use in the selected range.

GRIT
Tool Report

2/1/2023 - 2/28/2023 [This Month]

Tool: Table Saw | Total Runtime: 36m 25s

Time	User	Duration
Feb 23, 2023		
10:05 AM	Gifford, Ryan	12s
10:07 AM	Gifford, Ryan	34s
10:21 AM	Gifford, Ryan	19s
10:22 AM	Gifford, Ryan	14s
10:57 AM	Gifford, Ryan	21s
10:58 AM	Gifford, Ryan	10s
10:59 AM	Gifford, Ryan	7s
11:03 AM	Gifford, Ryan	8s
11:07 AM	Gifford, Ryan	8s
11:09 AM	Gifford, Ryan	8s
12:42 PM	Gifford, Ryan	11s
1:14 PM	Gifford, Ryan	10s
1:15 PM	Gifford, Ryan	11s
1:16 PM	Gifford, Ryan	10s
1:17 PM	Gifford, Ryan	12s
1:29 PM	Gifford, Ryan	3s
Feb 20, 2023		
13:24 AM	Gifford, Ryan	1m 25s

View 3: Single Tool Report
Each individual instance of tool use in the selected range.

GRIT REPORTS

User Reports

Step 1:
Select the Date Range for the report.

Step 2:
Select whether you want a report on All Users or on a Single User.

***All Users Reports can be grouped by Demographics data.**

The screenshot shows a sidebar with menu items: Return, Activity, Maintenance, Sign On, Permissions, Assets, Tool, and User. The main panel has a 'Refresh Report' button at the top. Below it is a 'Date Range' dropdown menu set to 'This Month'. Underneath is a 'User Selection' section with two buttons: 'All Users' (highlighted with a hand icon) and 'Single User'. Below that is a 'Group Data By Demographic Field' section with checkboxes for 'User', 'Position', and 'Gender'. The 'User' checkbox is checked.

Step 3:
Press 'Refresh Report'

***Single User Reports provide a dropdown menu to select the desired user.**

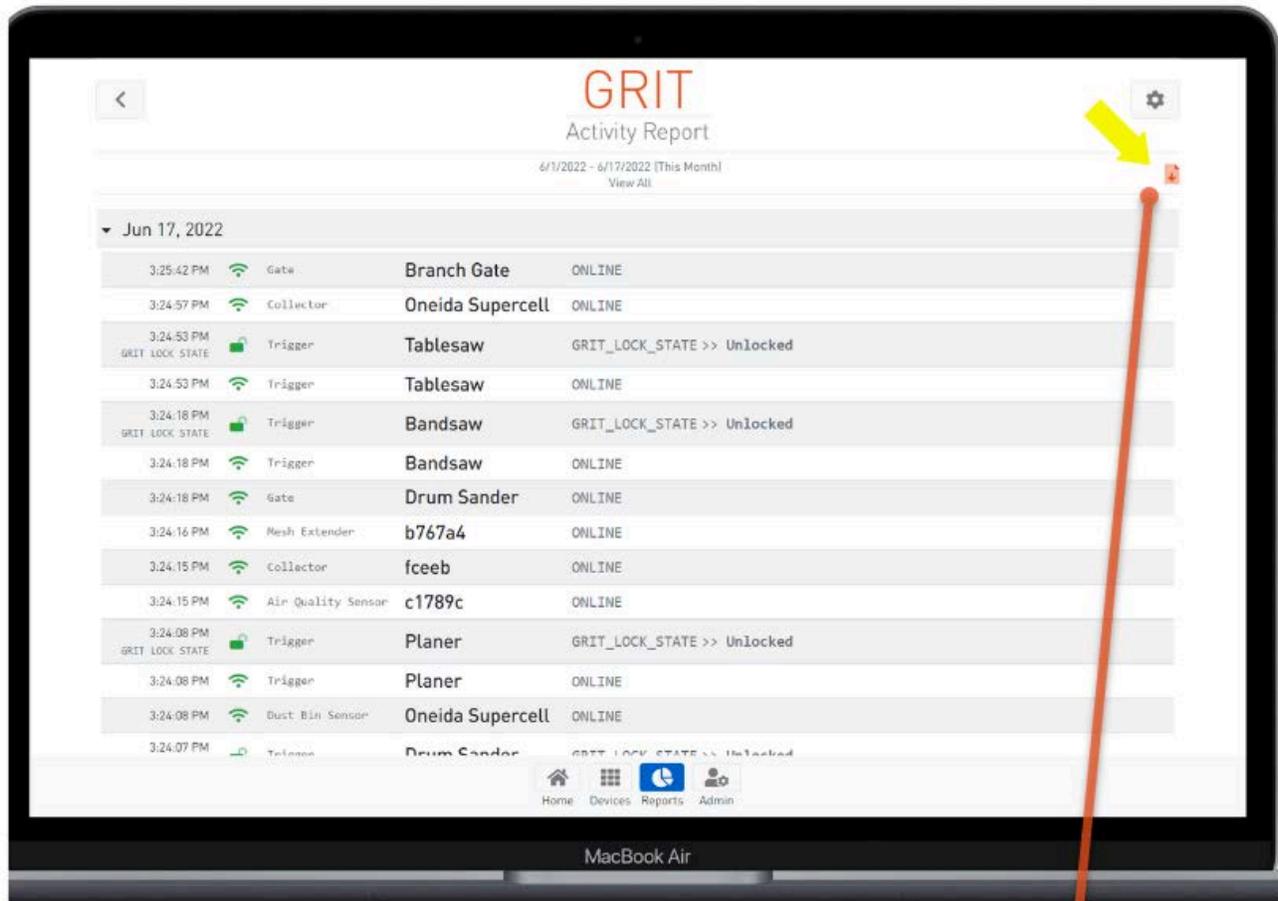
The screenshot shows the same sidebar and 'Refresh Report' button. The 'Date Range' dropdown is still 'This Month'. In the 'User Selection' section, the 'Single User' button is highlighted with a hand icon. Below it is a 'Select User' dropdown menu showing 'Holiday, Bobby'. The 'Refresh Report' button is highlighted with a hand icon.

The screenshot shows the sidebar and the 'Refresh Report' button. The 'Date Range' dropdown is 'This Month'. The 'User Selection' section is partially visible.

Reports
User Reports

GRIT REPORTS

Download Reports



When running reports on a Desktop, reports can be exported as an Excel file by pressing the red download icon.



GRIT AUTOMATION, INC. 12-MONTH LIMITED WARRANTY

1. GRIT Automation, Inc. ("GRIT", "us", "we", "our") warrants all products sold directly from us to be free from defects in workmanship and materials for a period of twelve (12) months from the original shipment date when installed and used in accordance with the GRIT Automation Owner's Manual. Warranty repairs may require you to install a replacement part provided by GRIT, or require you to return the product to us for warranty service or replacement.

2. Such repair or replacement is subject to verification of the defect or malfunction. If we conclude shipping is necessary we will provide you with a shipping label. You are solely responsible for any damage to the returning product, so please ensure packaging is sufficient to protect all components therein.

3. This warranty does not cover repairs or replacements for:

GRIT products used for a purpose or used in any manner for which the product was not intended.

GRIT products damaged as a result of incorrect or inadequate maintenance or care.

Damages resulting from misuse, abuse, negligence, accidents, or shipping damage.

Damages that are a result of normal wear and tear.

Damages incurred during assembly or maintenance.

Damages that are determined to be from repairs made by third parties.

Without limiting the generality of the foregoing, this warranty will be void for products if you do any of the following:

Install any firmware not specifically issued by GRIT.

Make any change or modification to the electronics or computer components of GRIT.

Use or attempt to use GRIT components to control or move any device or object not specifically issued or authorized by GRIT.

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4. Technical support is done through email only at info@gritautomation.com. To obtain warranty service, first email and include your order number, order date, and contact information along with a brief explanation of the issue you are having. Support will work with you via email to diagnose the issue. This may require you to send pictures and/or videos to help with the diagnostics. Do NOT send any products or components back to GRIT without prior approval from Tech Support.

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