

NZAutoTraps AT220

Android phone app

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CAUTION

The AT220 is a kill trap. It is designed to quickly and humanely kill pest animals like possums, rats, and mice.

NEVER put your hand into a set trap.
NEVER leave a set trap where children may find it.

If you are uncertain about whether a trap is set, treat it like it is.

Installing the app

The NZAutoTraps AT220 Android app is not available from the Google Play Store. Before you can install the app, you must download the installation file using the link provided to you by NZAutoTraps.

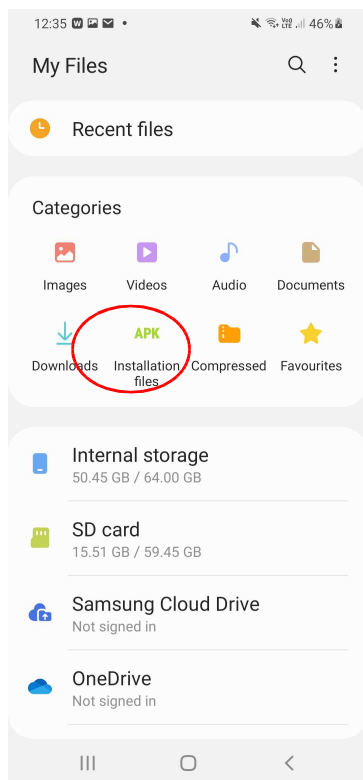
After downloading the installation file, do the following to install the app:

I – Using the file manager on your phone (sometimes called **My Files**), look for **Downloads** or **Installation files**. Select one of these locations.

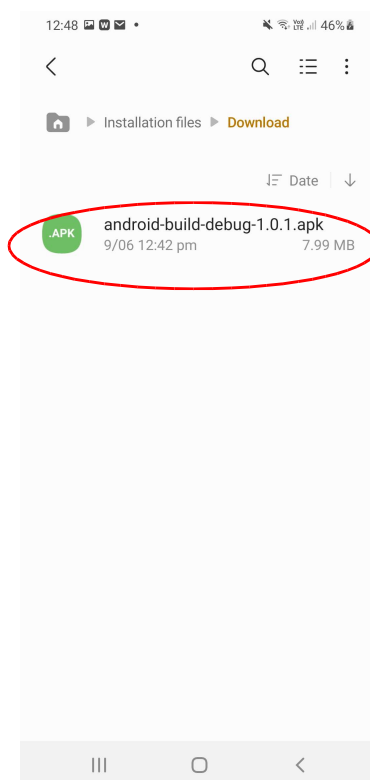
II – Look in Downloads and/or in Installation files for a file called **android-build-debug-1.x.x.apk**, where 1.x.x represents the release version of the app. Select this file.

III – When asked if you want to install this application, select **Install**.

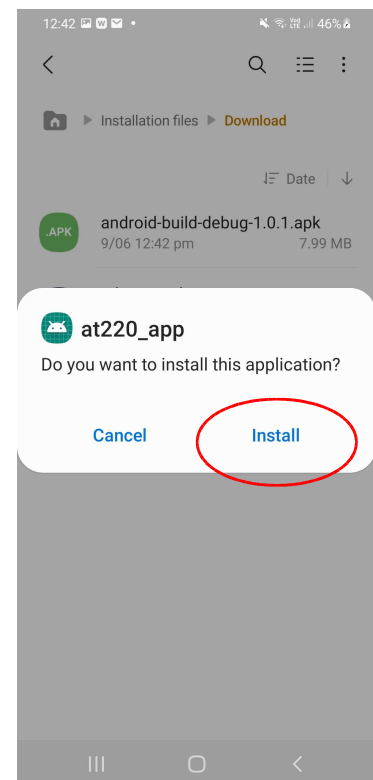
You may also be asked to enable certain settings or to give special permission to allow an unrecognized app to be installed to your device.



I.



II.



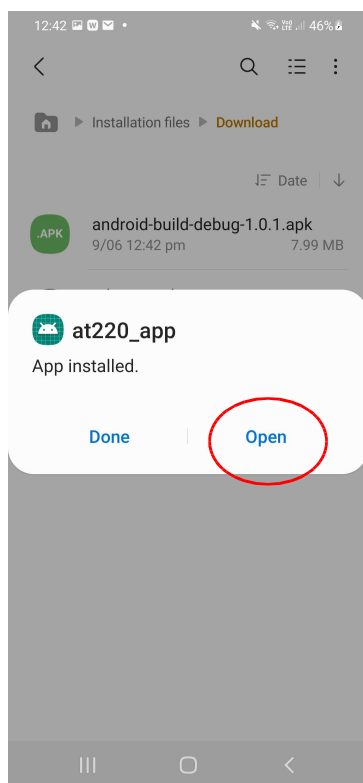
III.

IV - When the installation is complete, select **Open** to start the app.

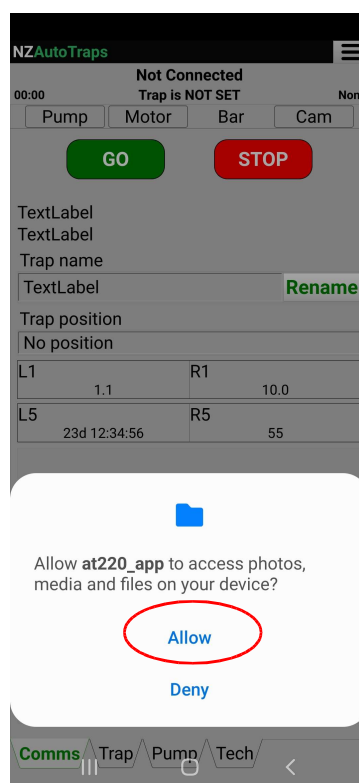
V – You must grant permission for the app to read and write files on your device. The app does not access any files other than those it creates. Select **Allow**.

VI – You must grant permission for the app to access your device's location. The app uses this information to geolocate your traps. It does not access location information when it is not running. Select **While using the app**.

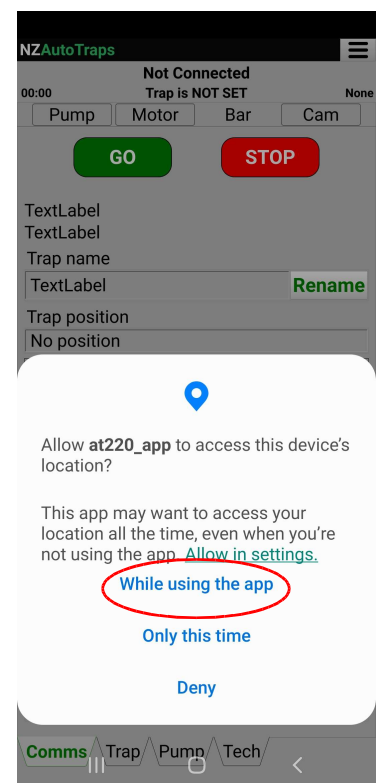
The app is now installed on your phone and available for use anytime. You do not need to be online nor within mobile range to use the app.



IV.

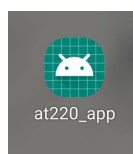


V.



VI.

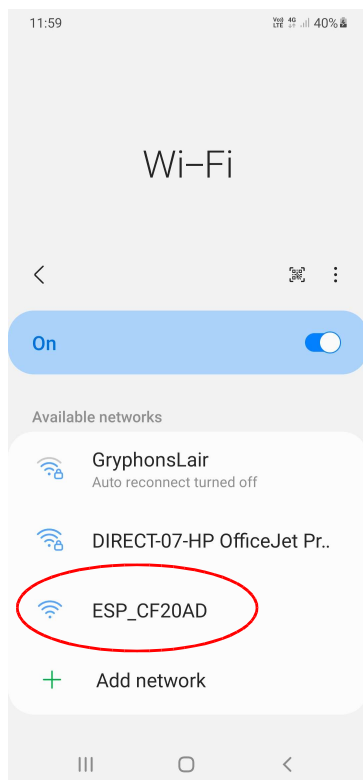
You can use the **at220_app** icon to start the app at any time.



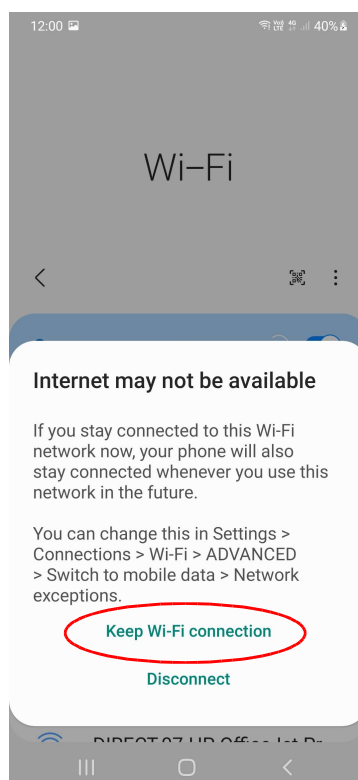
Connect with WiFi

The AT220 app needs a WiFi connection between your phone and the target trap.

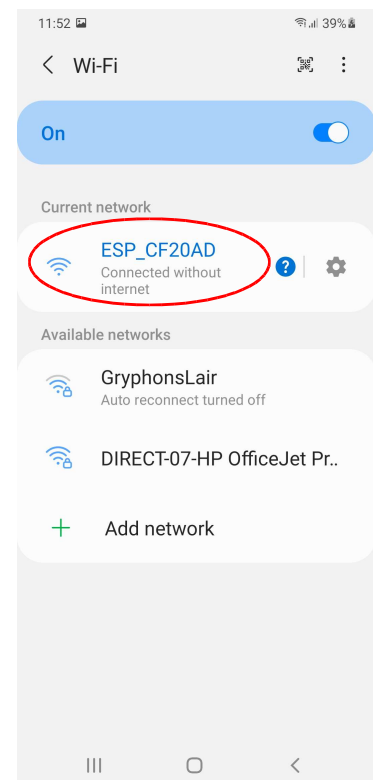
1. Make sure WiFi is enabled on your phone.
2. Press the button on the trap to enable WiFi comms. The LED should flash green about once per second to indicate that WiFi is active.
3. Use your phone's WiFi manager to find the trap network. The trap SSID will be something like "ESP_123ABC" (see *III.* below).
4. Click on the trap network to connect.
5. If your phone complains "Internet may not be available", select "Keep Wi-Fi connection" (see *V.* below).
6. Your phone should now be connected to the trap network (see *VI.* below)
7. If you walk away from the trap or turn off your phone's WiFi, the trap WiFi will stay active for about 5 minutes and then shutdown.



III.



V.



VI.

Main Display

The app main display is divided in three sections as shown below.

Top – Current Status

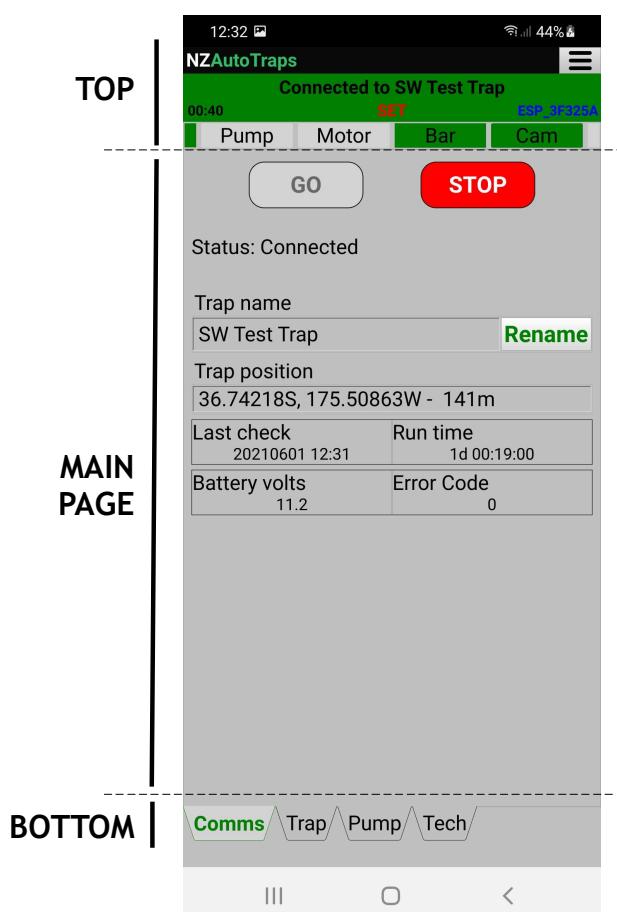
The top panel always shows the current status of the app and the trap.

Main Page – Operations

The main part of the display changes from page to page. Here you can view trap details and control certain features.

Bottom – Page Selection Tabs

The bottom of the display shows three or more tabs which can be selected to view different main pages.

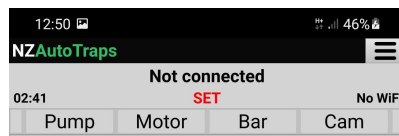


Current Status

The top section of the display shows the current status of the trap.

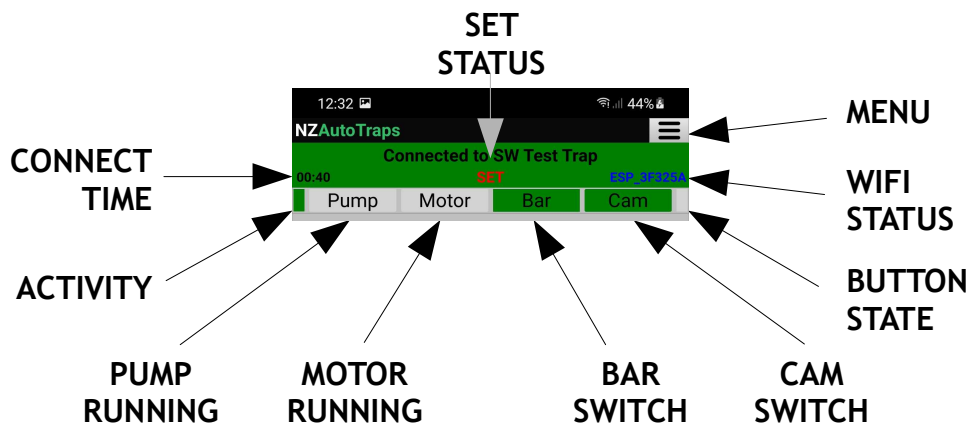
Not connected

If the app is not talking to a trap the top status shows 'Not connected'. The WiFi status may show 'WiFi Active'; other indicators will be greyed out.



Connected

If the app is talking to a trap, the top status turns green and shows 'Connected to' and the name of the trap. The various indicators show the current status of the trap.



Set Status – Red "SET" indicates the trap is set and ready to trigger

Connect Time – How long the app has been talking to this trap

Activity – Flashes with each message sent from the app to the trap

Pump Running – Green when the bait pump is running (pumping bait)

Motor Running – Green when the bar motor is running (resetting the trap)

Bar Switch – Green indicates the bar is in the up position

Cam Switch – Green indicates the bar is at the arming point (ready to trigger)

Button State – Blue indicates the button is pressed on the trap

WiFi Status – Blue indicates WiFi is active on the phone – the SSID may be displayed

Menu – Opens the main menu to access other app functions

Page Selection Tabs

The page selection tabs at the bottom of the page let you move between different types of information: communications, trap, and pump. Each page shows different realtime status about the trap components.

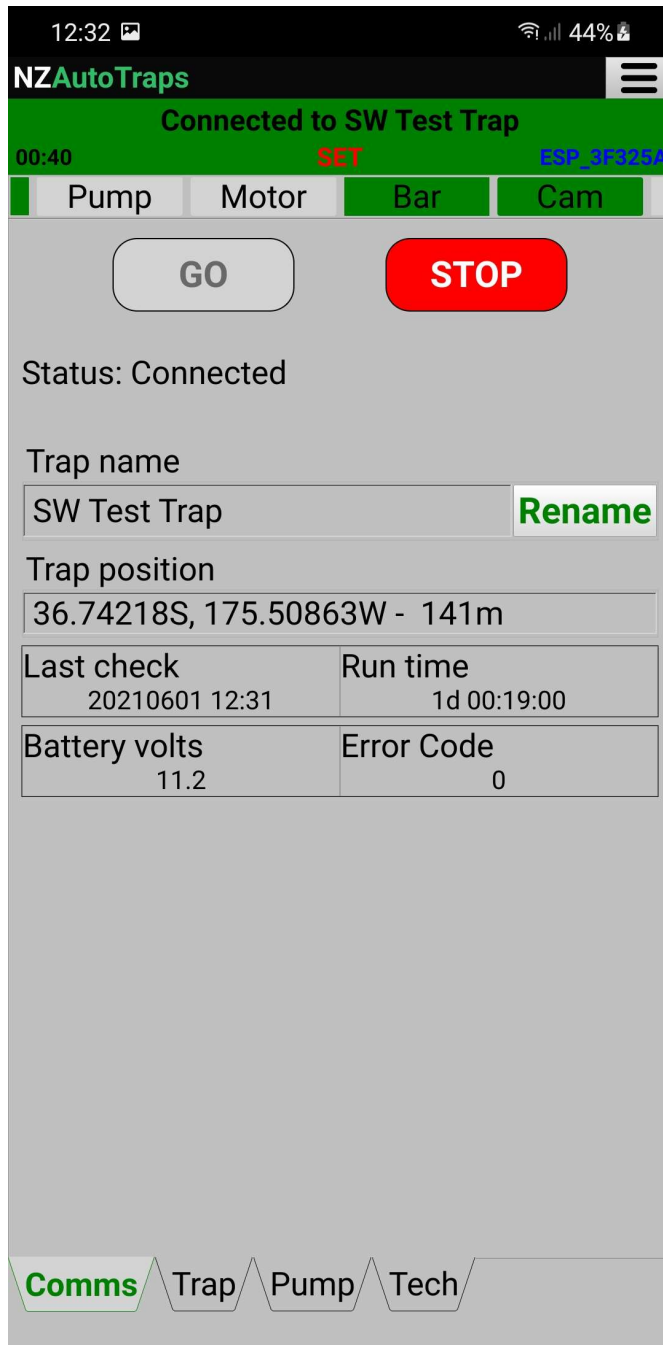
The active tab is show in green. Inactive tabs are black/grey.

The **Tech** tab will be greyed out unless **Tech Access** has been enabled on your device.



Main Page – Comms

The **Comms** page is the starting page of the app. It is where you control the app-to-trap conversation. Here you can also see basic status about the trap.



STOP | GO – The **STOP** and **GO** lollipops control the conversation between the app and the trap.

If WiFi is active but no conversation is in progress, the **GO** button will be illuminated and the **STOP** button will be greyed out.

While a conversation is going on, the **STOP** button will be illuminated and the **GO** button will be greyed out.

The trap will stay awake as long as the conversation is in progress. After pressing **STOP** to complete the conversation, the trap will timeout in a few minutes and go back to sleep.

Status – This is the status of the port connection to the trap. If you have troubles connecting, let the trap go back to sleep and then wake it again.

Trap name & Rename – The trap can be given any convenient name up to 15 characters long. This is optional.

Trap position – Your phone's position is recorded in the conversation record. This can be used later to retrieve your trap's location.

Last check – This is the date and time of the previous check of this trap by any user (not just by you).

Run time – This is an approximate time that this trap has been running without interruption. Changing the battery will zero this time.

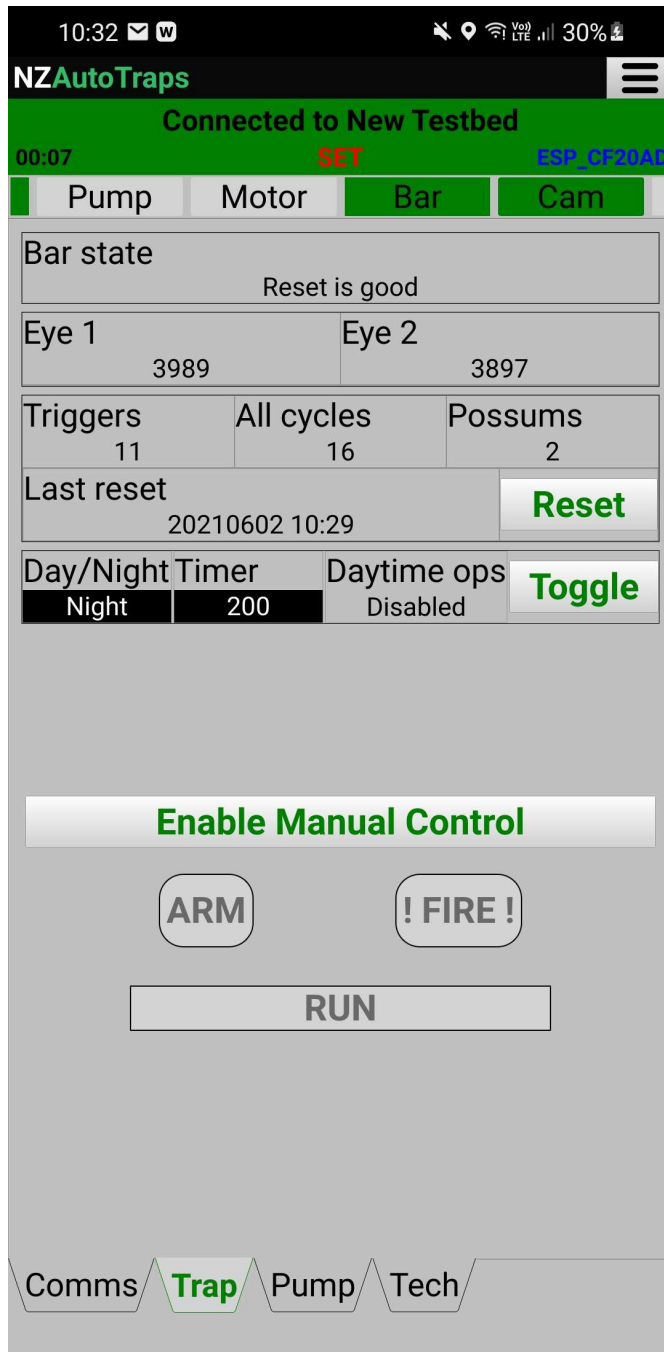
Battery volts – Normal battery voltage is 10 or above. Below 10, this field will turn yellow or red to alert

you to a low battery situation.

Error Code – Any error detected by the trap will be shown here. If the field has an error code in it, the field will turn red. Please notify NZAutoTraps of the Error Code.

Main Page – Trap

The **Trap** page shows the status of the trapping mechanism and allow you to manually control the trap motor.



Bar state – The current state of the kill bar. Normally this would be **Reset is good** if the trap is set. A complete list of bar states is in the appendix.

Eye values – A measure of the strength of the infrared light beam reaching the detector eyes. Normal values are 1500 and above. Lower values suggest the eyes may be blocked or need cleaning.

Triggers – The number of times the trap has been triggered by the detector eyes.

All cycles – The number of times the trap kill bar has been set. This includes triggers, recalibrations, and slips, if any.

Possums – The number of times a larger animal has been detected following a trigger.

Last reset – The date and time the above three counters were reset to zero by the user.

Reset – Resets the counters to zero. The date and time are recorded in **Last reset**.

Day/Night – Indicates if the trap thinks it is now daytime or nighttime.

Timer – A 200-second up/down counter used to delay the switching between daytime and nighttime.

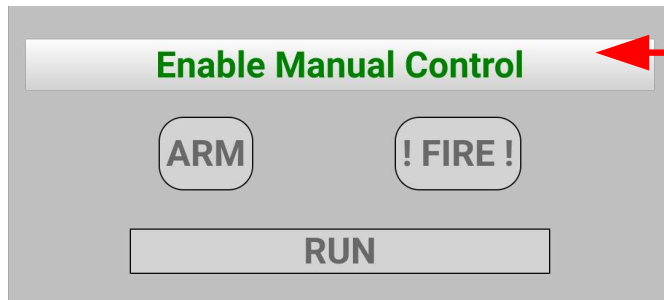
Daytime ops – When **Disabled** the detector eyes will not trigger the trap during daytime. This is a safety feature to minimize the risk to birds, pets, children, etc.

Toggle – Switches **Daytime ops** between **Disabled** and **Enabled**. *Only enable Daytime ops in circumstances where no risk to non-target animals exists.*

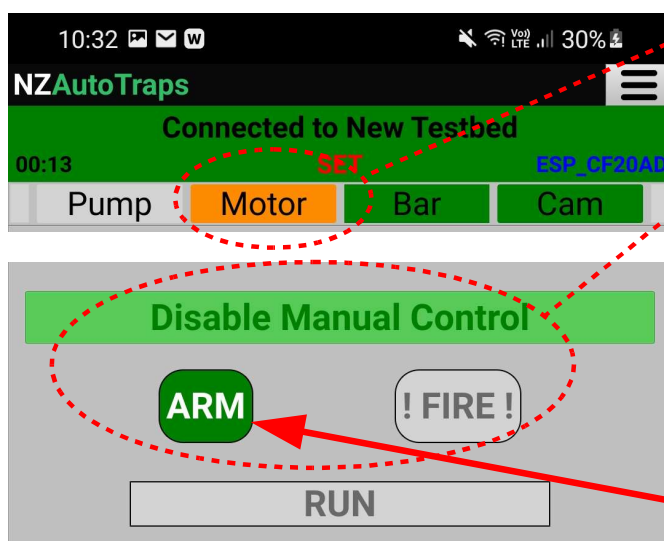
CAUTION – When WiFi is active, regardless of the **Daytime ops** setting, the detector eyes are active and can trigger the trap!!

Manual trap operation – Firing a set trap

A set trap can be fired prior to cleaning or to test the trap mechanism.



Step 1 – Press the **Enable Manual Control** button.

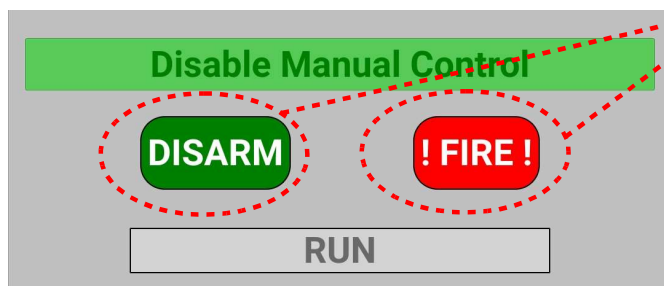


The **Motor** indicator will turn orange to indicate manual motor mode.

The Enable button will turn green and the label will change to read **Disable Manual Control**.

The **ARM** button will turn green.

Step 2 – Press and hold the **ARM** button.



The **ARM** button will change to **DISARM** and the **! FIRE !** button will turn red.

Step 3 – Press and hold the **! FIRE !** button. The trap will fire and manual motor mode will be disabled.

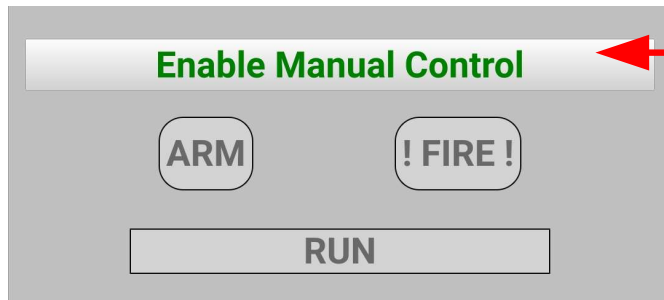
Firing the trap manually behaves just like a trigger caused by the detector eyes: the **Triggers** count will increment and the pest detective software will try to determine whether the trap has caught a possum or a rat/mouse.

If you shake the trap within 30 seconds of firing it, a possum will be detected and the delay to reset will be about 30 minutes.

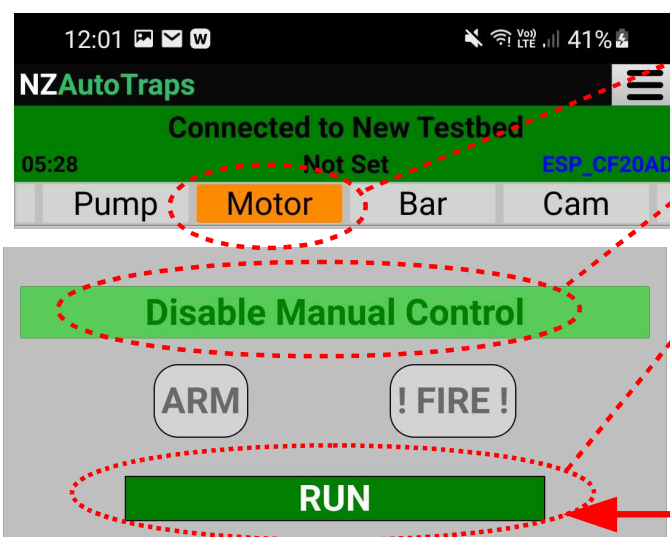
If you leave the trap motionless for a minute after firing, a rat will be detected. The delay to reset will be about 5 minutes and the trap will automatically recycle once.

Manual trap operation – Running the motor

A trap that is not set can be manually controlled.



Step 1 – Press the **Enable Manual Control** button.

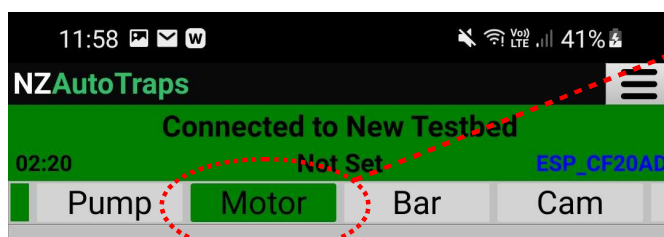


The **Motor** indicator will turn orange and the LED on the trap will display red to indicate manual motor mode.

The Enable button will turn green and the label will change to read **Disable Manual Control**.

The **RUN** button will turn green.

Step 2 – Press and hold the **RUN** button. Release the button to stop.



While the button is depressed, the Motor indicator will turn green and the motor will run.

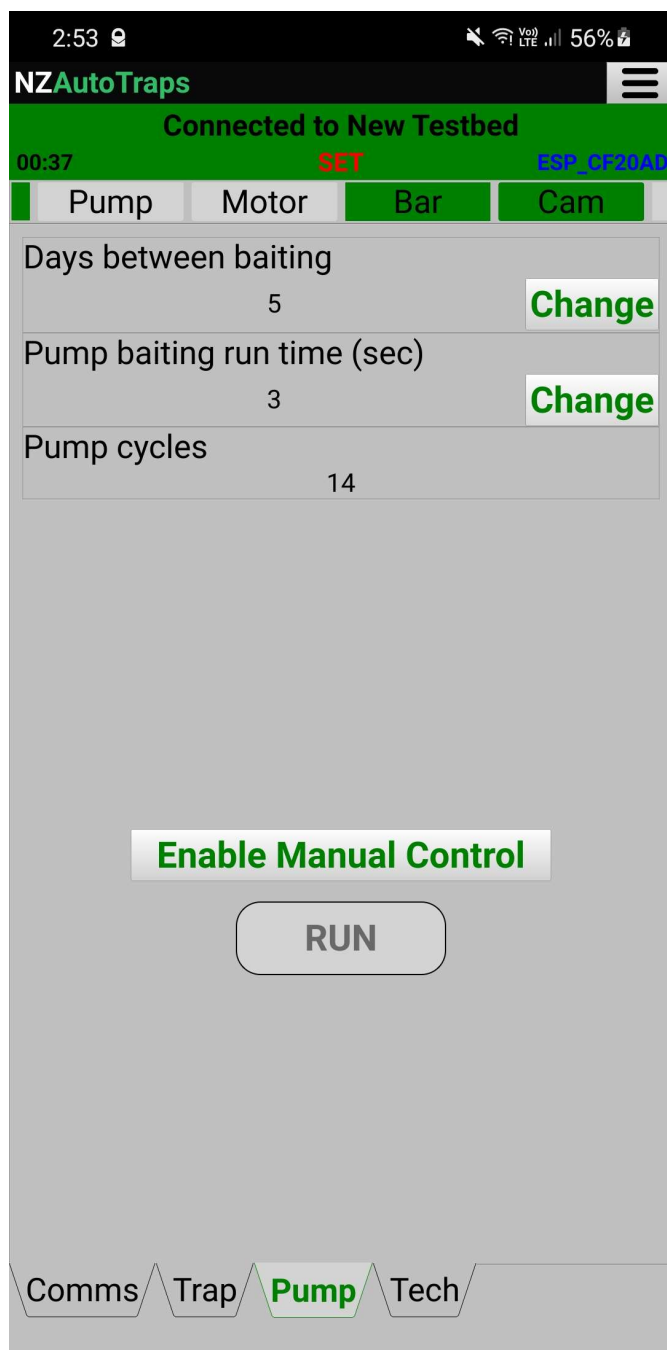
When you are finished with manual motor mode, press **Disable Manual Control** or switch away from the **Trap** page.

Manual motor control can be used to position the kill bar safely for clearing the trap of debris and for cleaning the infrared LED and the detector eyes.

Manual control mode can also be used to skip the delay until reset after triggering the trap. Normally, the trap would delay 30 minutes for a possum or 5 minutes for a rat before beginning to reset. Enabling and disabling manual control of either the motor or the pump will terminate the delay and immediately begin the reset sequence.

Main Page – Pump

The **Pump** page gives you information about the pump settings and allows you to manually run the pump.



Days between baiting – If no pests are caught within this number of days, the pump will automatically run once to refresh the bait. This will occur shortly after dark.

Regardless of the number set here, each time a pest is caught the pump will automatically run after the trap resets. This can happen up to a maximum of three times in one 24-hour period.

Change – You can set the days between baiting from 1 to 99 days.

Pump baiting run time – When the pump runs to refresh the bait, it runs for this number of seconds. Running longer will pump more lure; running less will pump less lure. You can adjust this time based on the consistency and temperature of the lure.

Change – You can set the run time from 1 to 10 seconds.

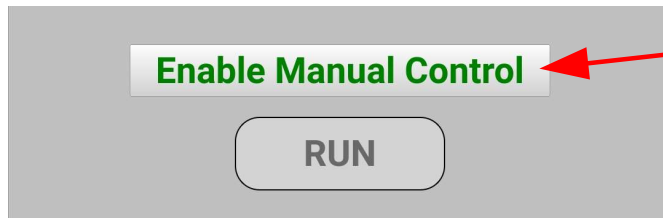
Pump cycles – This is a count of the number of times the pump has run to refresh the bait. It does not count manual cycles that you perform.

This number is reset to zero from the Trap page.

You can change the **Days between baiting** and the **Pump baiting run time** based on your experience with your trap. New bait should be pumped often enough to stay fresh and appealing. Running the pump too often or for too long will waste bait, just running excess lure down the tree trunk. Different lure formulations may also require different pump run times to apply an appropriate amount of lure to the bait tray.

Manual pump operation

The bait pump can be run manually to apply more lure and to test the baiting system.

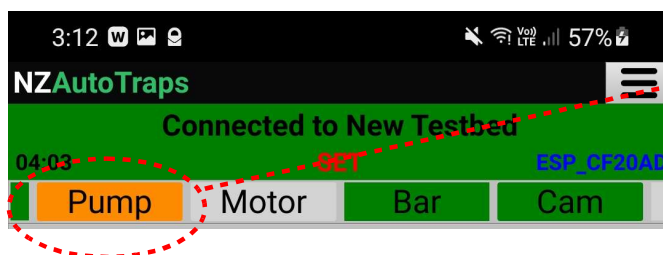


Step 1 – Press the **Enable Manual Control** button.

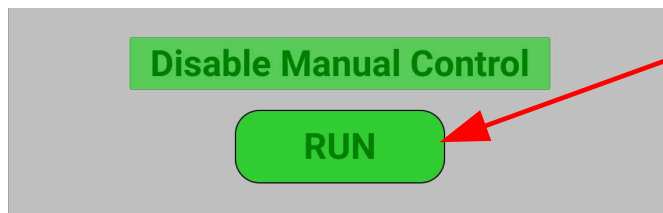


The button will turn green and the label will change to read **Disable Manual Control**.

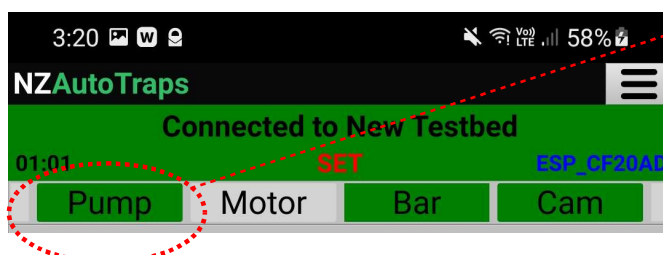
The **RUN** button will turn green.



The **Pump** indicator and the LED on the trap will both turn orange to indicate manual pump mode.



Step 2 – Press and hold the **RUN** button.

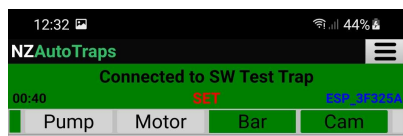


The pump will run and the **Pump** indicator will turn green.

To disable manual pump operation press the **Disable Manual Control** button or switch away from the **Pump** page.

Note that the blue button on the trap cannot be used for manual pump operation when the app has enabled manual control.

Kill bar issues



Normally the trap will be found in the set state, ready to trigger.

The **Set status** will be **SET**.

The **Bar** and **Cam** indicators will be green.

The **Bar state** will be **Reset is good**.

CAUTION - Any time you are working with the kill bar mechanism, keep in mind the trap is designed to kill small animals. **NEVER** put your hand in a set trap regardless of settings. **DO NOT** put your hand in a set trap even if there is no battery.

Stuck mouse or rat

Small animals like mice or rats will sometimes get stuck in the trap mechanism. If they are not interfering with the detector eyes or the movement of the kill bar, then they can be left in the trap as an attractant for other pests.

If they have blocked the eyes or if the bar is not in the **Reset is good** state, then the carcass and any debris should be removed.

Blocked/Dirty eyes

The triggering action depends on a clear line of sight between the infrared LED and the two detector eyes. Over time these devices may get dirty from debris, mildew, and/or algae.

If the bar is not resetting properly or the status of the detector eyes is yellow or red, then the infrared LED and eyes should be cleaned.

Clearing a trap

To clear the trap, the kill bar must be partially raised.

If the trap is set, use manual motor control to first **!FIRE!** the trap.

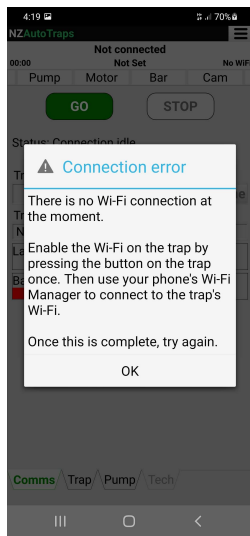
Use the manual motor control **RUN** function to partially raise the kill bar until it is at about a 45-degree angle to the base.

Keep manual motor control enabled. This will prevent the kill bar from moving any further.

Use a small stick to clear the trap of any dead animals, debris, etc.

Use a plastic toothbrush to scrub the infrared LED and the two detector eyes.

Dealing with connection problems



No WiFi connection – In order for the app to start a conversation with a trap, your phone must first be connected to the trap's WiFi hotspot.

- 1 - Your phone's WiFi must be enabled.
- 2 - The trap's WiFi must be enabled. Wake the trap from its sleep state by pressing the blue button once.

- If the trap LED is flashing green on/off/on/off at an even rate, WiFi is enabled.
- If the trap LED is displaying a quick green flash, the WiFi is not enabled. Try letting the trap timeout (the LED goes dark) and then restarting the trap.

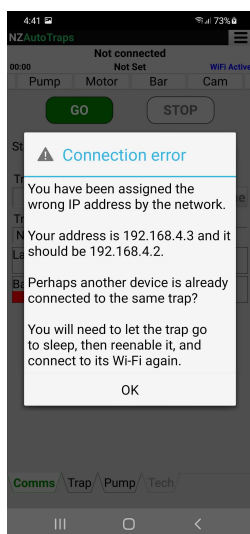
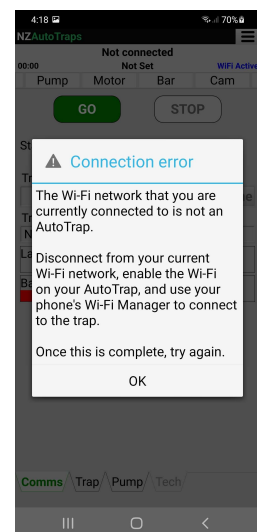
- 3 - Your phone must be connected to the trap's WiFi network. The SSID shown in your phone's WiFi manager will be something like ESP_123ABC. It is okay that there is no internet available.

Wrong WiFi network – Your phone must be connected to the trap's WiFi hotspot.

If your phone is connected to a network other than a trap, you may see the **WiFi Active** indicator light up on the app, but the app will not be able to start a conversation with a trap.

You will need to disconnect from your normal WiFi network. You may need to tell your phone to "Forget" this network and/or to temporarily disable the network's "Auto reconnect" feature.

Then enable the trap's WiFi, connect your phone to that network, and try again.



Wrong network address – In certain circumstances, the trap may assign your phone the wrong network IP address. This can happen if another phone had already been connected to the same trap.

In this case, you must disconnect from the trap's WiFi network and allow the trap to timeout and go back to sleep.

Then start by waking up the trap and connecting your phone to its WiFi network. At this point, you should be able to start the app conversation with the trap normally.