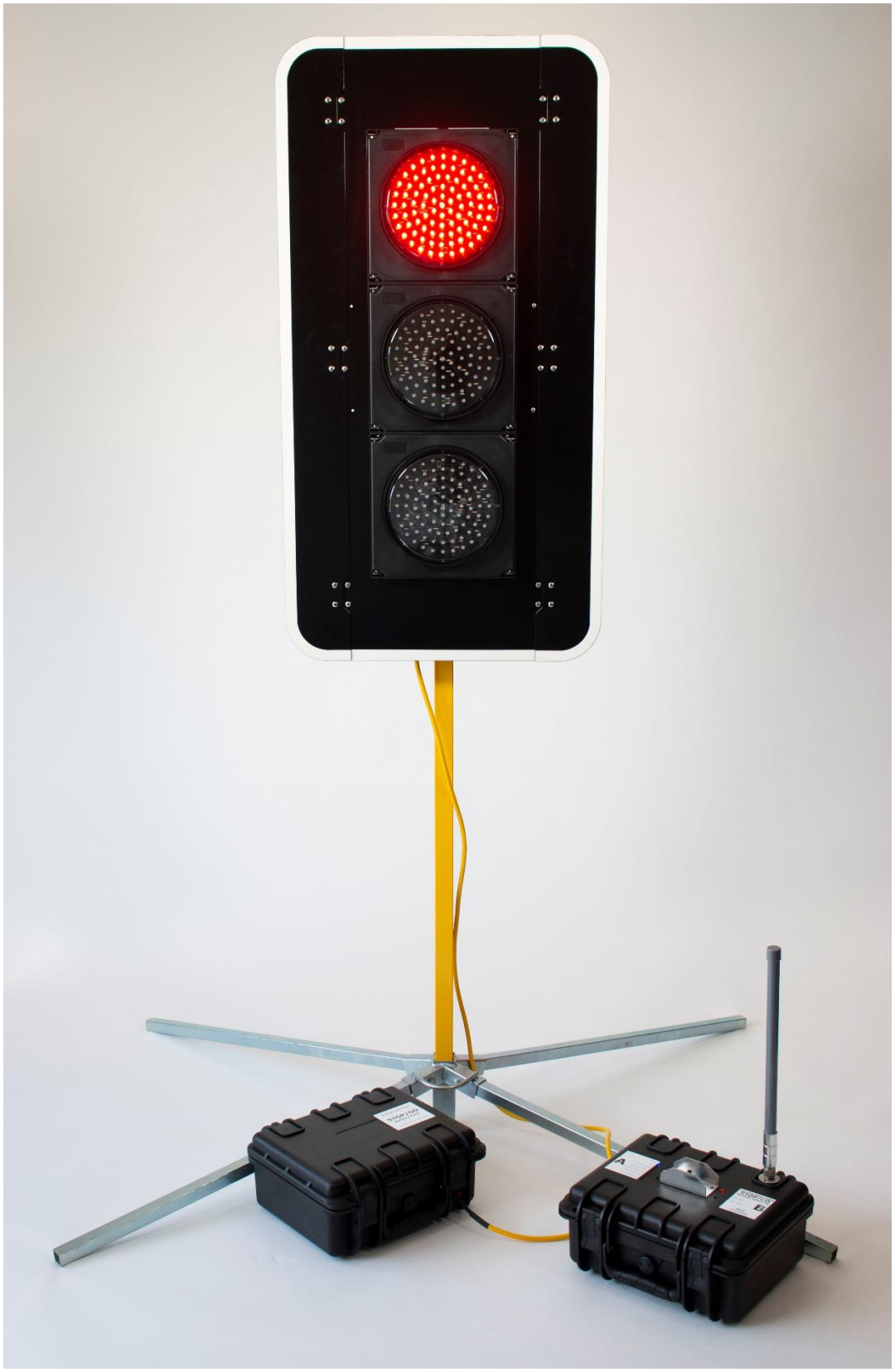
HARVEST.com

Harvest Portable Traffic Lights



tel: +64 6 370 1991 | email: support@harvest.com | www.harvest.com

VERSION 2.0 JANUARY 2023

HARVEST.com

Content:

HARVEST.com

Safety Considerations

The Harvest portable Traffic Lights system (HTL) has been developed as a response to a need for safer working conditions for operators controlling alternating flow situations on job sites. It is designed to remove operators from the hazard zones, but still allowing the operators to manage traffic movement within the worksite from a safe distance. In order to reduce the risk to road workers, traffic controllers and road users, the unit must at all times be operated effectively and consistently by authorized and trained operators.

The lights must be operated in accordance with all safety, operation and service instructions contained in the manufacturer's operation, diagnostics, and service manuals. It is recommended that all operators read and understand these manuals before operating the lights. Operators must understand and comply with the manufacturer's instructions as printed in the manuals accompanying each Harvest Light set or available at www.harvest.com/htl in conjunction with the respective Company's (User's) Safe Work Method Statement.

The Harvest Traffic Lights should only be operated by a designated, competent operator within the scope of on-site operation parameters (such as the company's safe work method statement).

The Harvest Traffic Lights shall be installed in a suitable location clear of obstructions. An appropriate risk assessment shall be conducted to ensure the safe and suitable use of the traffic lights. Examples of factors to consider when assessing suitable location are: a safe distance from the traffic path, so that wide loads or turning vehicles will not impact the unit, length of worksite, volume of traffic and topography. The lights should be installed on a level and stable surface with additional hold downs where required.

The unit including the lanterns (red, amber, and green), remote and battery boxes shall be kept clean. The equipment shall be handled with care. The Harvest Traffic Lights batteries (both for the remote control and the lanterns) shall be fully charged before operating the unit.

The Harvest Traffic Lights have been tested and certified compliant in accordance with the New Zealand Transport Agency (NZTA) Technical Note – Portable Traffic Signal Systems, Version 3: November 2015. The HTL are included in the NZTA Code of Practice for Temporary Traffic Management (CoPTTM) register of TTM equipment approved for use on NZ roading network (Section I-19). The application of the HTL system shall be in accordance with these guidelines/standards as well as the respective company's worksite risk assessment and approved Traffic Management Plan (TMP). The temporary signal system is only to be used as part of an approved TMP, following appropriate risk assessment by suitably qualified persons.

It should be noted: the HTL system is a remote-control MANUAL operated system, designed to remove operators from exposure to LIVE traffic. The maximum distance from the controller and therefore the operator to the lantern heads is 1000m. However, the site distance which the Harvest HTL system can be deployed varies from site to site and must be deployed in accordance with the worksite risk assessment and therefore must be set up in accordance with the respective site Traffic Management Plans.

Any modifications made to the HTL system (unless by or approved by Harvest) could compromise the function of the HTL system and therefore the safe application of the units and voids the warranty of the Harvest portable Traffic Lights system.

Static operations

TWO-WAY TWO-LANE ROAD
Single-lane alternating flow
Portable traffic signals

F2.17
Level 1

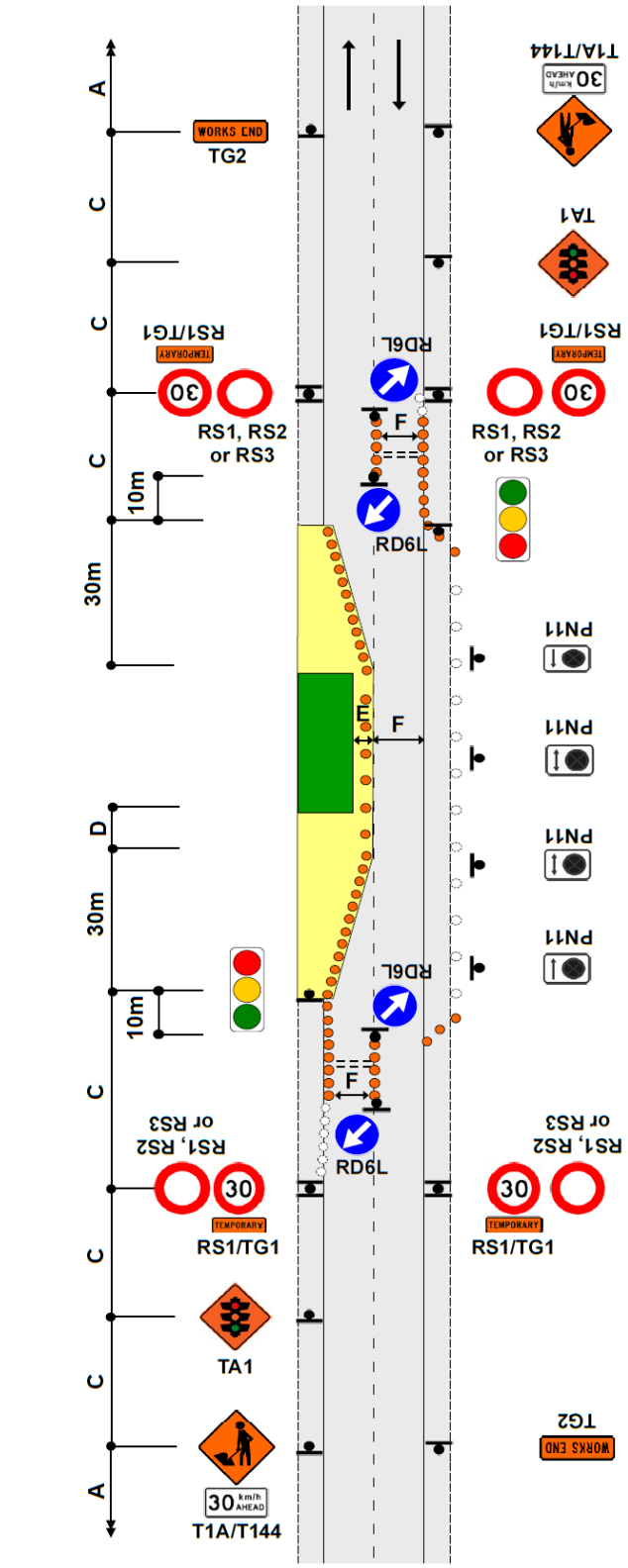
Notes

1. Provide details of make and model of portable traffic signals in the TMP
2. Install temporary limit lines (must be able to be removed upon completion) or use RP61/RP62 signs

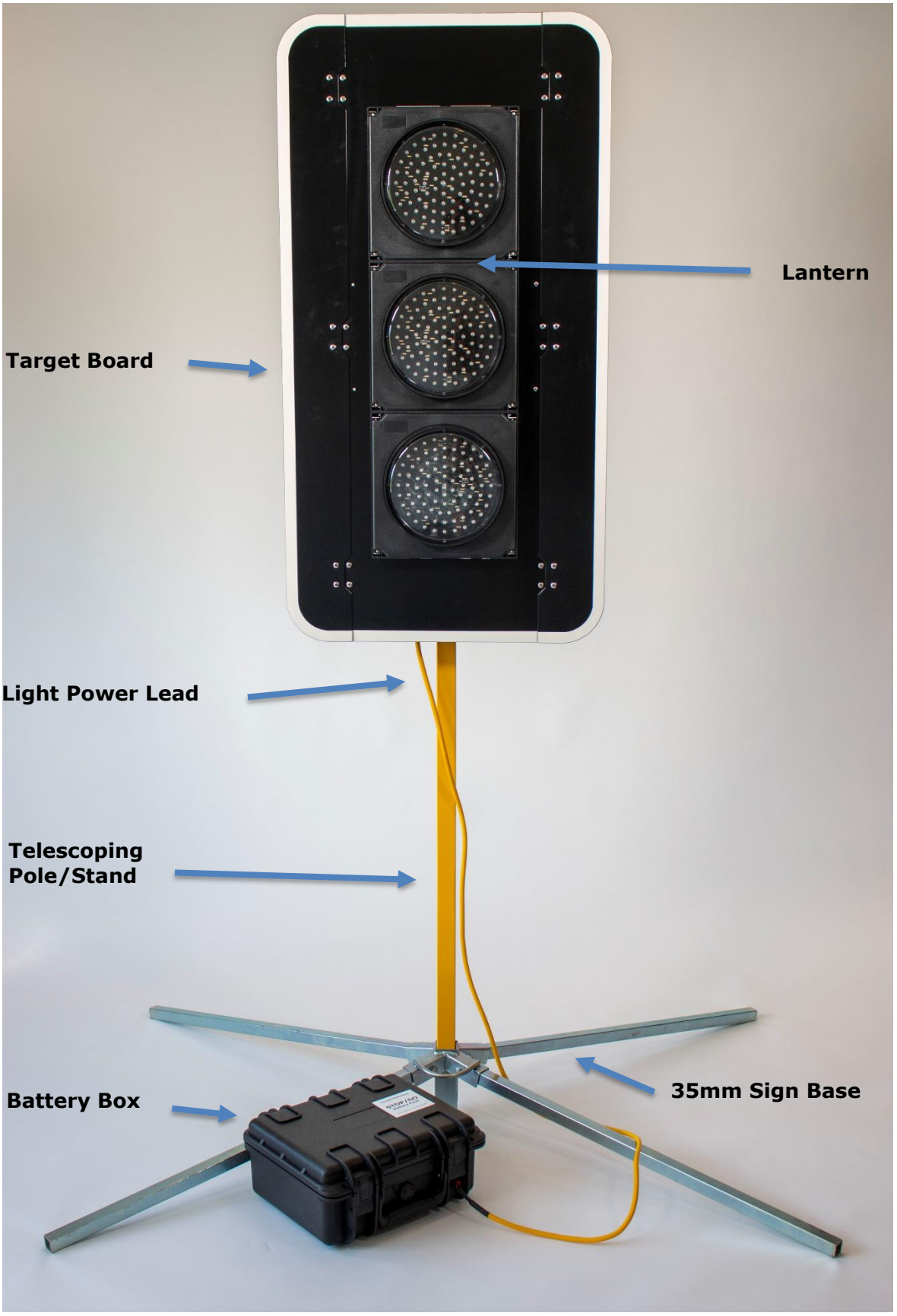
STOP ON RED SIGNAL

STOP HERE ON RED SIGNAL

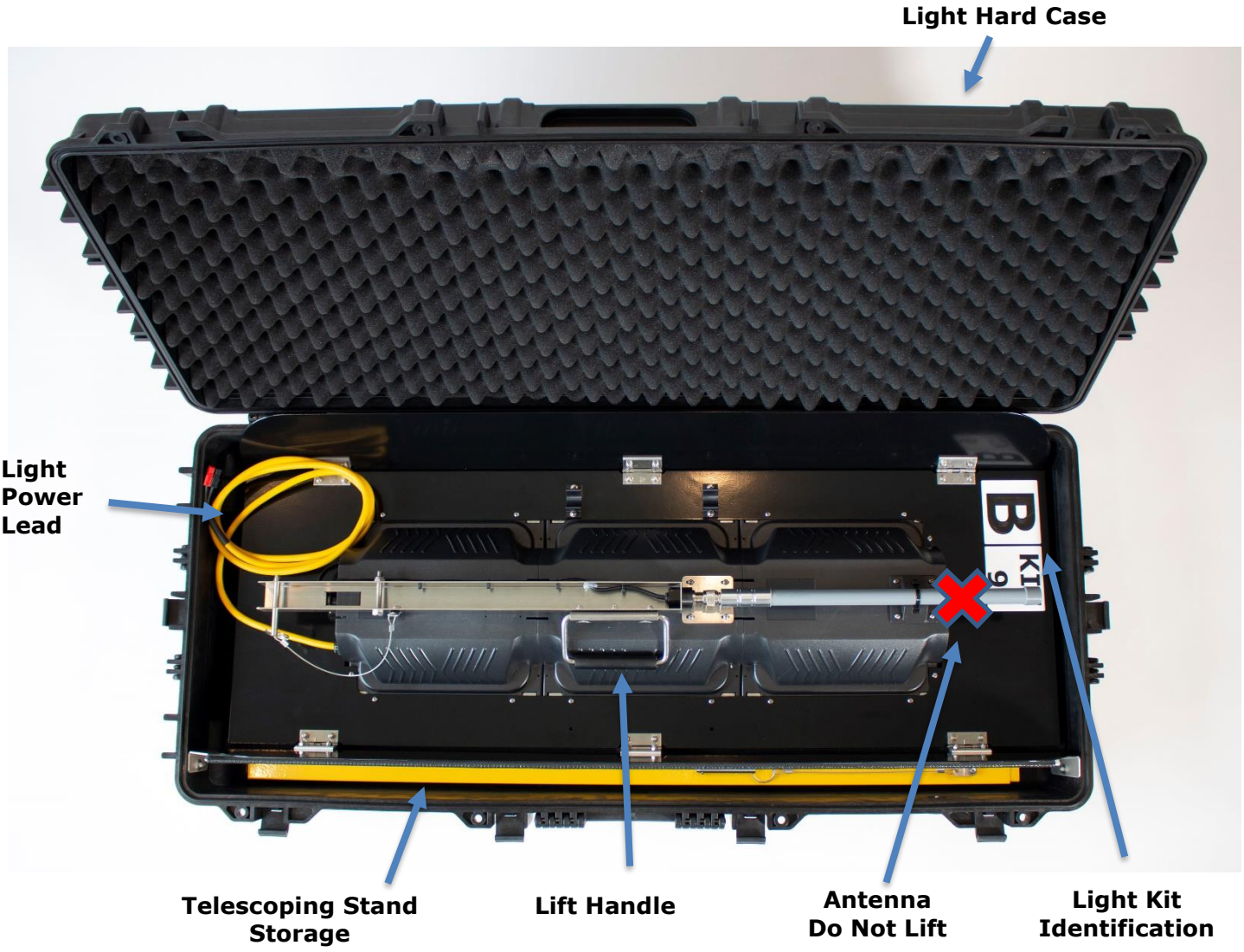
3. Approved temporary speed humps may also be used. Consider use of MTC while speed humps are installed
4. A 30m return taper at the end of the closure is mandatory
5. Cones are required on edge of the temporary lane opposite closure if road is not well defined
6. Extend or place extra advance warning signs towards on-coming traffic beyond any expected traffic queues
7. Use PN11 No Stopping signs, if necessary
8. Minimum 5 cones in cone threshold at:
   - 2.5m centres - less than 65km/h
   - 5m centres - more than 65km/h
9. The T144 30km/h AHEAD sign is optional



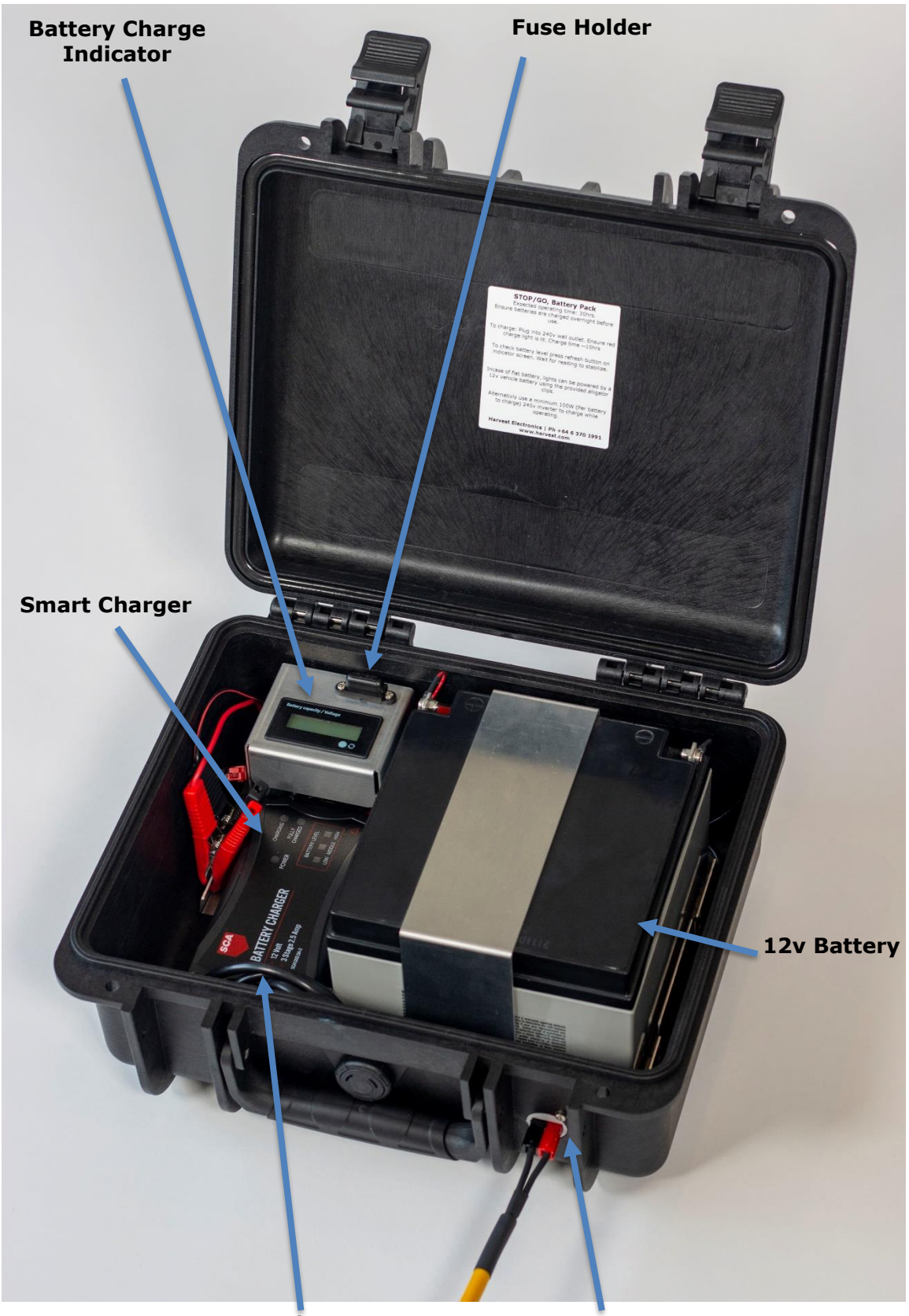
Lights


Lantern
Target Board
Light Power Lead
Telescoping
Pole/Stand
Battery Box
35mm Sign Base

Lights Cont.


Light Hard Case
Light Power Lead
Telescoping Stand Storage
Lift Handle
Antenna Do Not Lift
Light Kit Identification

Light Batteries

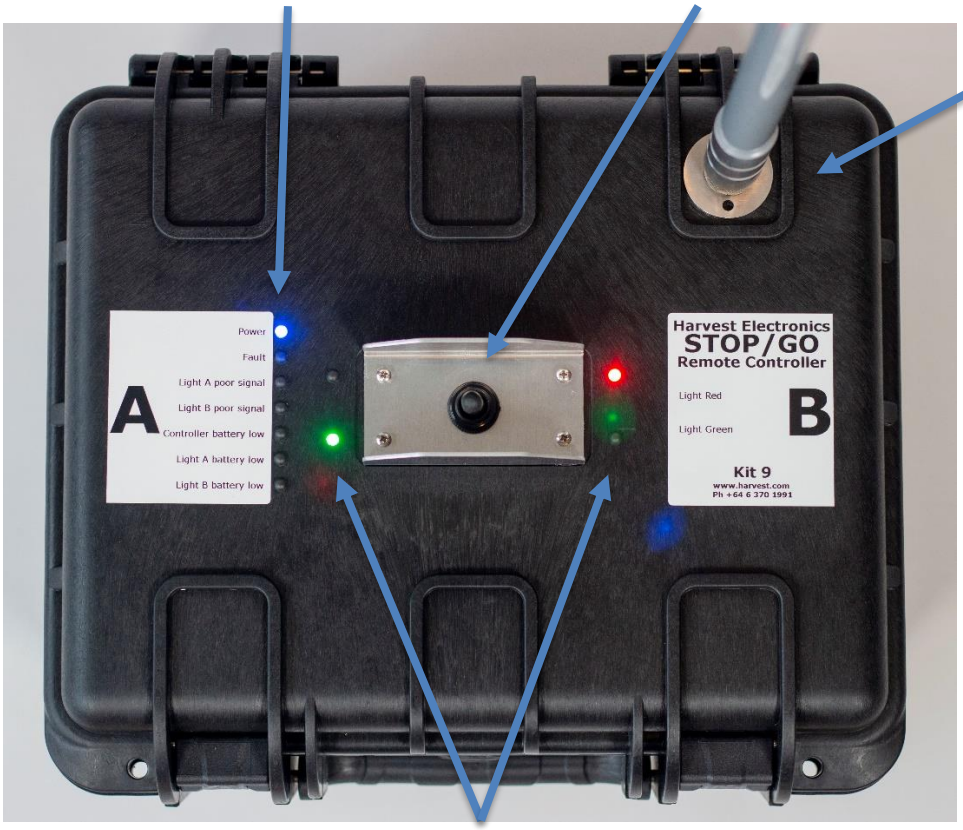


Remote Controller

Controller and Light Information Indicators

A Green / Red-Red / B Green Main 3 Position Switch

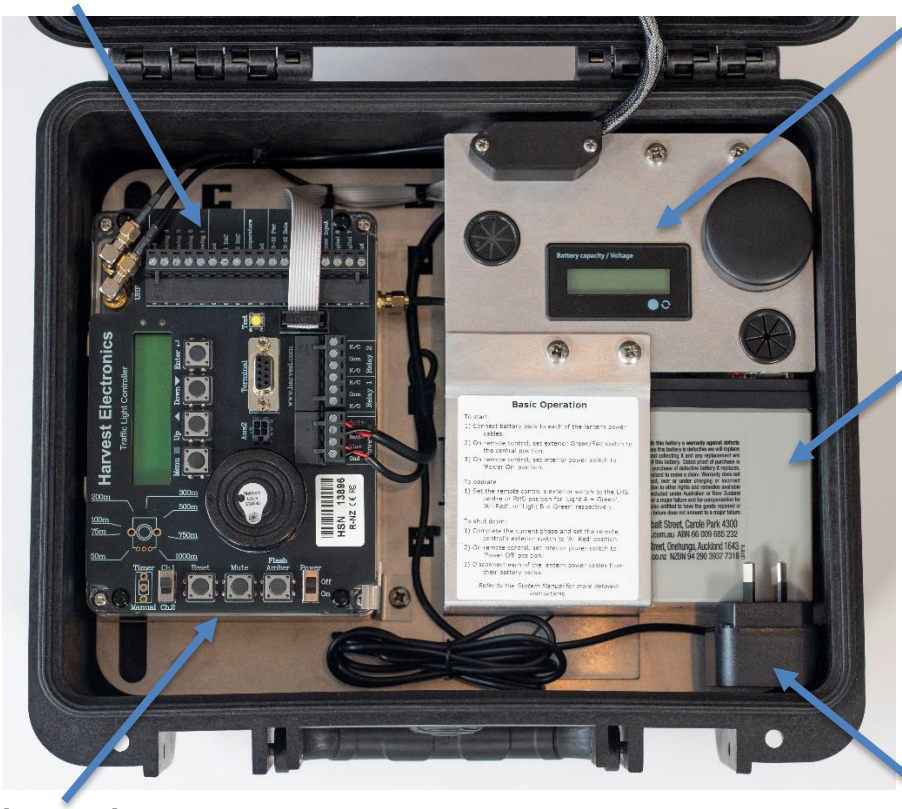
Antenna



A and B Light State Indicators

ITU (Industrial Telemetry Unit)

Battery Charge Indicator



12v Battery

Internal Switches and Buttons

220/240v Charger

Remote Controller Indicators

The indicators on the front of the controller are intended to give quick on-site information and help with fault diagnostics as required.

- **Power:** Illuminated when the controller power switch is on or flashing when charging (See charging section for more information).
- **Fault:** Illuminated in the case of loss of or no communication or a light or controller fault. The fault alarm will also sound when this is illuminated (See diagnostic guide at www.harvest.com/htl for more information).
- **Light A Poor Signal:** Illuminated if the signal to light A is poor or communication with light A is lost or never established. Once the internal power switch is "On" and the lights are powered on this indicator will actively illuminate or go out as signal to each light declines or restores, so can be used to help identify a suitable controller location.
- **Light B Poor Signal:** As above for light B.
- **Controller Battery Low:** Illuminates if the controller battery has less than approximately 2 hours of operating time remaining.
- **Light A Battery Low:** Illuminates if light A's battery has less than approximately 2 hours of charge remaining. Will clear if the battery is put on charge or a fully charged replacement battery is attached.
- **Light B Battery Low:** As above for light B.

Remote Controller Internal Switches

The internal switches provide additional functionality during setup, pack down and fault diagnosis.

- **Channel Select (Ch1 / Ch2):** Used to select communication channel. This is required if using two sets in an area (4-way intersection for example) or where radio interference is causing poor communication reliability.
- **Reset:** Resets the system running back through the start-up sequence. This is required if communication is lost or never established or to return from "Flashing Amber".
- **Mute:** Mutes the fault alarm for the current fault.
- **Flash Amber:** Sets both lights to flash amber, this may be preferred to setting the lights off during pack down.
- **Power:** "On" puts the controller into its operating mode and begins the start-up sequence verifying communication with each light and running through flashing amber. "Off" commands the lights to turn off then puts the controller into its low power mode, only logging GPS and reporting to our servers when in cellular coverage.

HARVEST.com

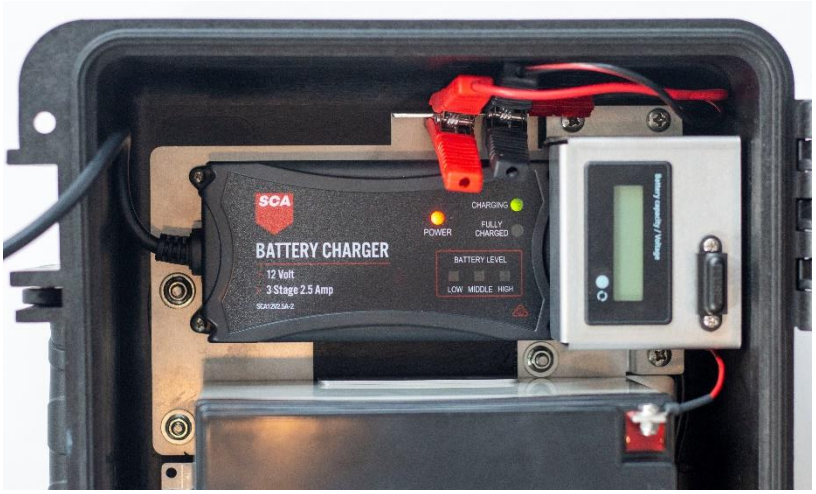
Charging and Checking Batteries

Charging Controller

Plug the 240/220v to 18v adapter inside the controller into a power outlet. The power indicator on the front of the controller will begin to flash indicating charging. This can take up to 30sec to start and stop flashing so be patient.

Charging Light Batteries

Plug the 240/220v charger plug into a power outlet. The power and charging indicators on the front of the smart charger will illuminate.

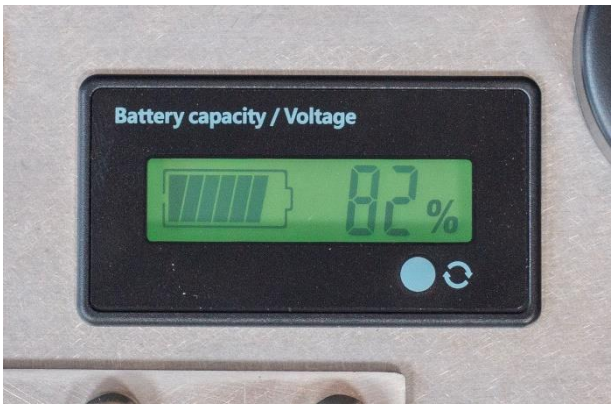


Low Batteries in the Field

If the batteries run low in the field the controller or light batteries can be charged through an inverter or generator while operating. Each requiring at least 100w of power to charge.
Each battery box also contains alligator clips to connect the light power lead to an **12v** car battery.

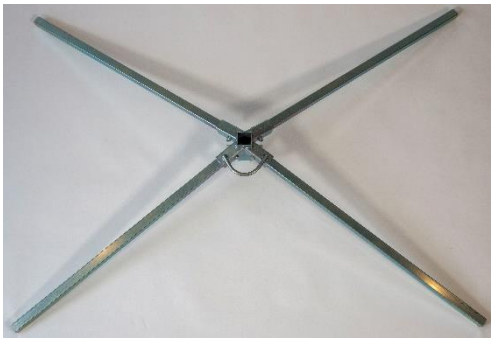
Checking Battery Charge

The controller and each light battery contain a battery charge indicator. **When the chargers are disconnected** press the refresh button on this display to check battery voltage and charge percentage. The reading will take a moment to stabilize once refresh is pressed.



Assembly and Setup

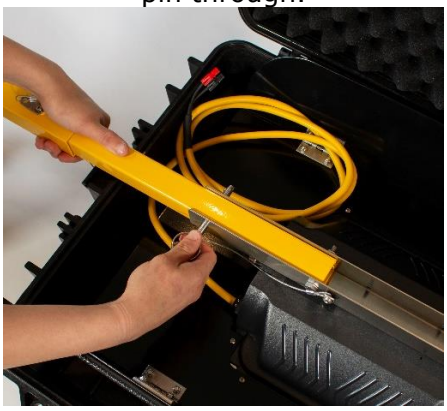
Find a suitable level surface and expand legs of 35mm sign base.



Retrieve the telescoping stand from the light hard case and slide the inner section out so the mounting slot and hole are accessible.

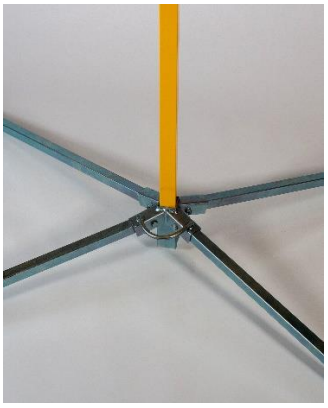
Holding the inner portion of the telescoping stand slide the slot into the mounting bolt at the back of the lights.

Fit the pin attached to the light through the light bracket and stand. You may need to wiggle the stand up and down to assist getting the pin through.

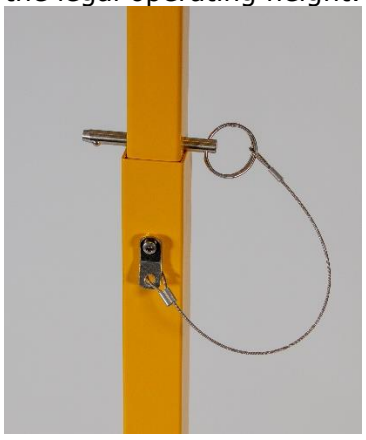


Lift the light and stand by the outer portion of the stand and the handle on the back of the light.

Orientate the light to the correct direction and slide the stand into the base.



Lift the light and inner stand so the pin hole is visible in the inner stand and fit the pin to set the lights at the legal operating height.



Place the battery box by the base and plug the light power lead in.

Repeat for the second light.

Assembly and Setup Cont.

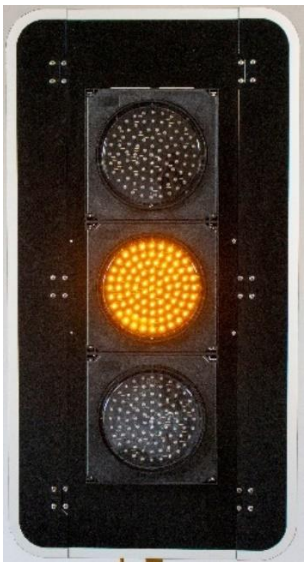
The controller antenna should be stowed on the back of one of the lights. Retrieve this.

Retrieve the controller and stow the protective cap from the antenna base in the case. This should be fitted anytime the antenna is removed.

Check the antenna and base are free of moisture, corrosion or dirt then fit the antenna by tightening the locking ring just finger tight.

Open the controller case and switch the internal power switch to on.

The controller will now check communication to the lights and begin the flashing amber start-up sequence.



Once complete the controller will display the light state. The main 3 position switch can now be used to set each side to green as required.

Disassembly and Pack down

Set the power switch on the controller "Off" or if preferred select "Flashing Amber".

Disconnect each light from the battery box and pack up in reverse of setup.

If "Flashing Amber" was used set the controller power to "Off".

Un-screw the controller antenna from the antenna base and fit the protective cap.

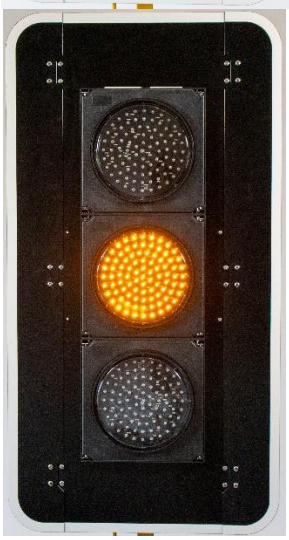
Stow the antenna on the back of one of the lights so it is not misplaced between worksites.

Light Control

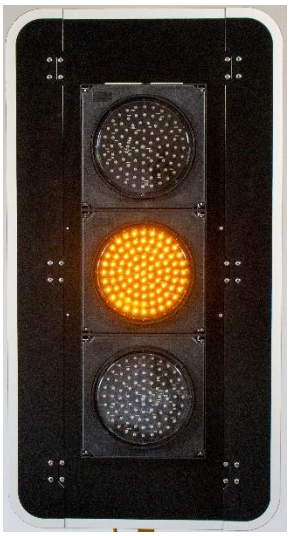
The Lanterns are controlled via the main 3 position toggle switch on the front of the controller. By default, the switch should be left in the centre position which will set both lanterns red. The indicators on the remote will indicate what colour the lights are currently set to, Displaying red for red, green for green, and blank for flashing or solid amber. It is not possible to have both lights set to green.

Switch in centre red-red position

Switch set to A side green position



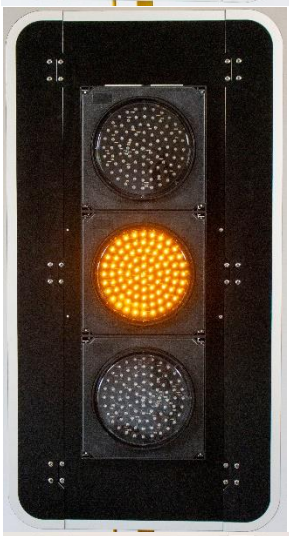
Pressing the "Flash Amber" button inside the controller will set both lights to flashing amber. Press the "Reset" button to re-run the start-up sequence and return to normal operation

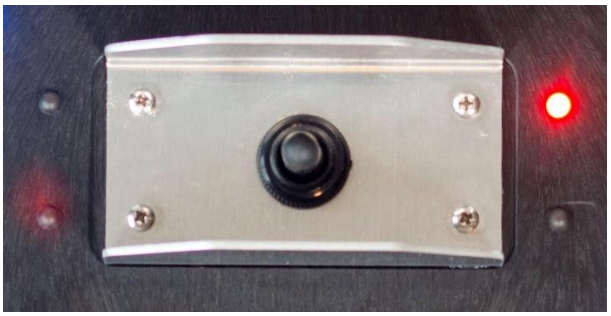


Light Phasing Example

When the controller is switched from green to red the following light phasing will be observed.

Starting with in left, A green position.





With the switch set to the centre, red-red position the A side lights are blank indicating solid amber.

Once the amber time has completed the controller and light will display red-red.

Limitations and Best Practice

Where possible the controller and lights should be positioned so there is line of sight between the controller and each light. This should also be a position so as traffic passes through the site the signal between controller and lights won't be blocked. In most cases the signal will be sufficient to pass through trees and shrubs but hills, concrete structures, metal buildings or vehicle bodies will likely block the signal.

There is a limitation of two kits operating within an area, one on each channel. As the lights and controller can transmit over a long range this area can be as small as a city block or valley where the signals are blocked by buildings or hills and as large as 10s of kilometres if multiple kits have line of sight of each other.

The Lights and controller are water resistant and suitable for use in the rain, though the inside of the controller and battery boxes must be kept dry to prevent damaging the electronics. It is also best to dry the lights and target boards after use in the rain and keep the light cases open overnight to prevent moisture build-up in the cases foam, which leads to corrosion and mould growth.

Troubleshooting and Support

A diagnostic flow chart is available at www.harvest.com/htl. This will get modified and added to over time, so it is best to check for a new version every so often and keep a copy saved in case you run into issues outside of cellular coverage.

If further troubleshooting is required or a kit requires repair or replacement parts, contact our support team at (06)370 1991, 0800 HARVEST or email support@harvest.com.