

REDUCING PLANT OPERATING ZONE RISK USING TECHNOLOGY

The Stop It remote E-Stop system replaces original E-Stops on mobile and fixed plant with the added functionality of remote activation.

The Stop It remote E-stop allows for remote activation and resetting via a remote button with a range of up to 100 meters.

This enables a designated spotter to stand outside of the plant operating zone with a fob and stop the machine in the event of imminent danger.



Thompson Safety Stop It – remote E-Stop system installed on a project excavator (left). Spotter's remote activation of E-Stop system simulating control of traffic (right).

The situation

Every year, serious incidents occur due to plant and people interaction across enclosed worksites and sites that interface with public areas.

A common industry control is the use of a spotter under positive communication strategies to manage high risk hazards, such as overhead or underground services and plant / people interfaces.

However, in serious events where every second counts, positive communication methods can result in delayed or undeliverable communications between operator and spotter.

An alternative to positive communications are E-Stops, which are installed on mobile to allow immediate deactivation of the plant. However, the location of the E-Stop on mobile plant requires a person to enter the plant operating zone to activate.



Scan QR Code to watch video of Stop It in action

The solution

The Stop It system is installed in place of the regular E-Stop and adds remote functionality to plant and equipment. This allows authorised spotters to stop the machine from up to 100 meters away without delays that are sometimes caused by radio chatter and communication difficulties.

This design eliminates the need for the spotter to enter the operating zone of plant and equipment. The Stop It system is a simple, cost effective device that is easily fitted in place of the regular E-Stop for a wide range of plant and equipment.

The trial implementation of Stop It deemed the device as effective in the following circumstances:

- When height and slew restrictors are not available or deemed ineffective on mobile plant
- Where spotters are required to maintain large exclusion zones from plant and equipment
- When safe exclusion zones cannot be maintained
- Low cost and (often) direct replacement installation with minimal down time required.

Benefits and learnings

- When fitted to a wheeled excavator there is residual inertia movement after the machine is shut down. This did not diminish the benefits of the device and when fitted to tracked excavators, shut down occurred with minimal movement from inertia.
- Low cost: \$896.90 ex GST, plus \$20 freight. Often direct replacement installation with minimal down time required.
- Installation is simple and can be done by an Auto Electrician.
- Easy to fit and transfer to other plant and swap back to original set ups.
- Retains manual function of the E-Stop with no impact to plant/equipment insurances and warranties.
- Frequencies are interchangeable, and 'fob's can be upgraded to include multiple equipment (up to 5).
- Multiple fobs can be applied to one wireless e-stop unit.
- Eliminates lag in response times caused by congested radio channels and/or communication difficulties.

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