by Cybernetic Solutions

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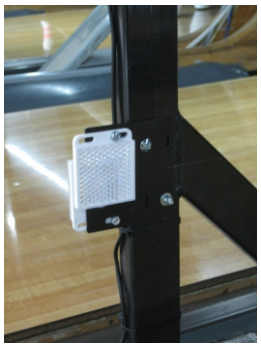
MachineMinder
Cutout-2 Module

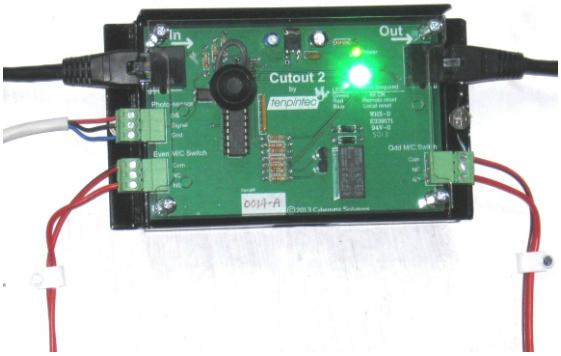
tenpintec.com

for Brunswick A and A2 Pinsetters

MachineMinder is a system of components that link together to create a safer Pinspotter or Pinsetter machine.

Cutout-2 is the first stage towards compliance with AS4024.1-2006, the Australian Machine Safety Standard. This Standard is similar in most respects to other modern international standards for machine safety.





Operation and Procedure

During normal operation, the MachineMinder Cutout-2 status LED will show GREEN.

If the MachineMinder IR beam at the front of the machine pair is blocked, the MachineMinder Cutout-2 status LED will FLASH BLUE. This indicates E-Stop mode and will cause the Pinspotter chassis to sense an E-Stop condition. This will turn off the machine pair. This significantly increases safety but by itself will not ensure complete compliance with AS4024.1-2006, because mains power is still present in the machine.

Before attempting to restart the Pinsetter pair, check to see that the IR beam is no longer blocked and that the machines are safe. It is recommended that the MachineMinder Cutout-2 module is mounted on the curtain wall, so that the operator has a clear view of the front area of the machines when performing a reset.

Restarting the Pinsetter is a 2 STEP process:

1. Press the RESET button on the MachineMinder Cutout-2 module. The status LED should return to GREEN.

   Note: if all MachineMinder Cutout-2 modules have been subject to a global E-Stop (ie from a remote E-Stop button that will shut down all machines), the status LED will FLASH RED. Resetting the remote E-Stop button will reset all the MachineMinder modules to their normal (GREEN LED) condition.

2. Press the FLASHING BLUE RESET button on the Dual Channel Safety Relay module.

   The GREEN Relay A indicator will light and the Pinsetter will restart.

Monthly Testing Procedure
1. All machines running
2. Ensure Green LED is lit in all MachineMinder Cutout-2 modules
3. Place a hand or other item to block the IR beam on each lane pair
4. Ensure that pair of lanes turns off
5. Indicator in Cutout-2 module should be FLASHING BLUE
6. Reset button on the Dual Channel Safety Relay Module should be FLASHING BLUE

7. Push RESET button on Cutout-2 Module - indicator should turn GREEN
8. Push RESET button on Dual Channel Safety Relay Module (machines will restart)
9. Turn off machines as required

Monthly Inspection Procedure
1. Check all IR beams for damage and alignment
2. Check all IR reflectors for damage and alignment
3.Check all cables and connectors for damage and security

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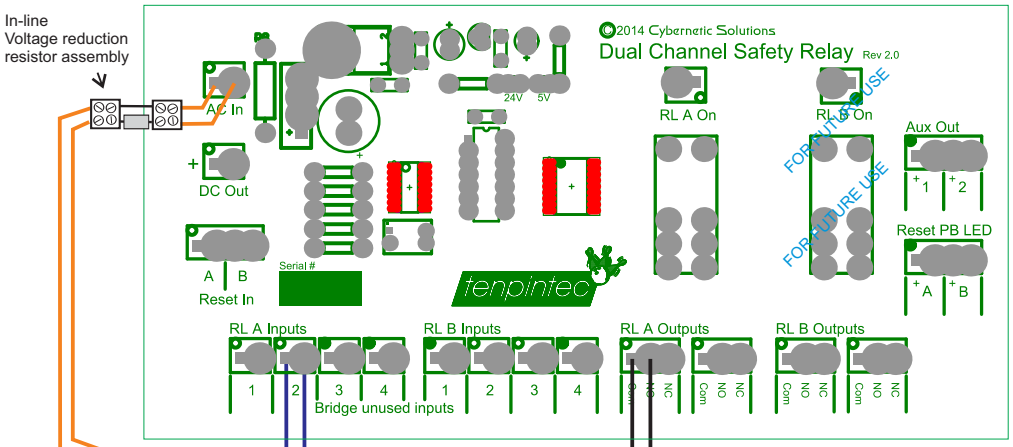
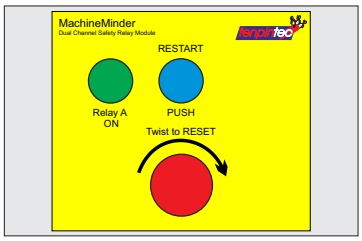


Attached under rear catwalk



RED E-Stop takes the place of SW-1 to stop the machine

From old SW-1 (Rear Switch)
The old switch must be removed from the channel

To MachineMInder
Cutout 2 Module NC contacts

If you are getting more than 26VAC between these two terminals, use a resistor in-line to reduce the voltage.

To TS2-9 or TDM 14
To TS2-6 or TDM 13

IMPORTANT
Maximum 26VAC

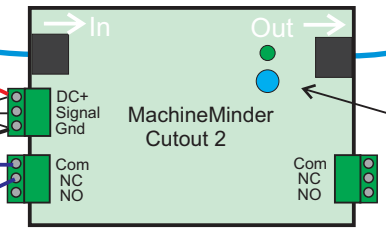
Pinsetter Electrical Box

From previous Cutout-2
and 24VDC power supply

To next Cutout-2

Module mounted on curtain wall.

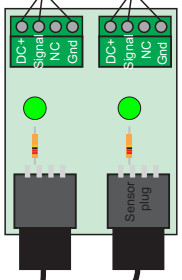
The first module in a 'chain' will have 24Vdc connected to these terminals in addition to the sensor.



LED Colour legend:

- GREEN = All Ok machine operating normally
- RED FLASH = A remote E-Stop or Panic Button etc has been tripped and needs to be RESET
- BLUE FLASH = The IR beam on this machine pair has been tripped. Ensure machine is clear, push black RESET button on Cutout2 Module and then Press BLUE RESET on the Dual Safety Relay Module

to next pair

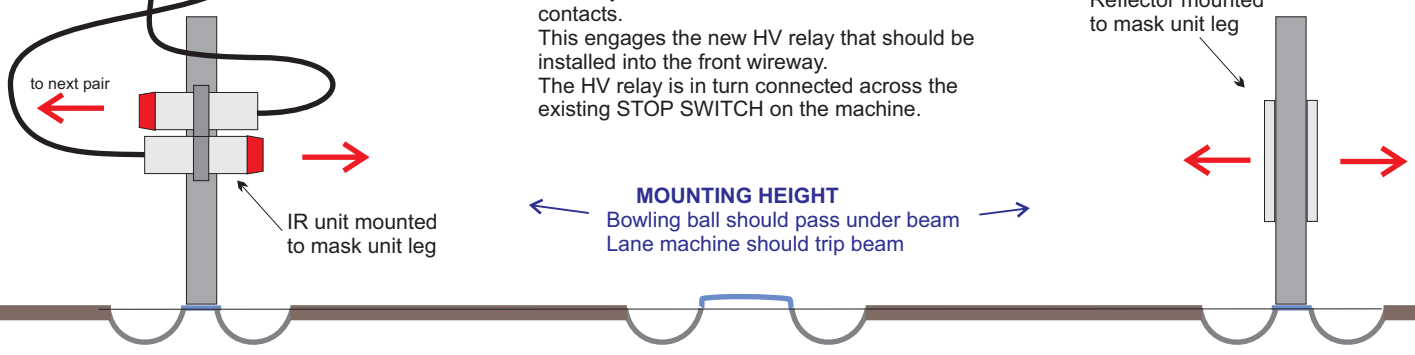


Use suitable cable (4 core alarm etc.)

Mount to mask unit leg

When the IR beam connected to the Cutout 2 is broken, or an external signal is received, the relays on the Cutout 2 close their NO contacts.
This engages the new HV relay that should be installed into the front wireway.
The HV relay is in turn connected across the existing STOP SWITCH on the machine.

Reflector mounted to mask unit leg



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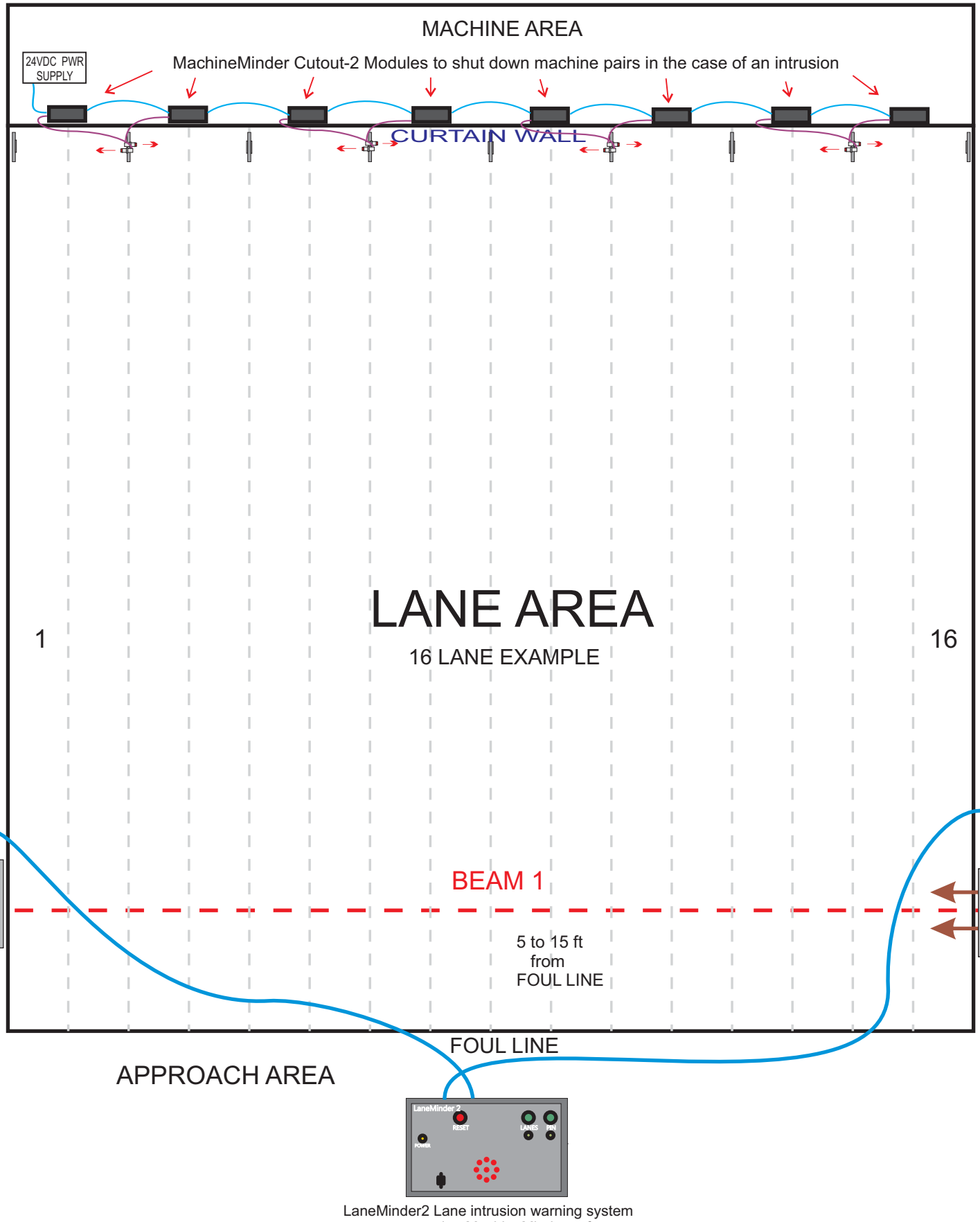
MachineMinder Cutout-2 Modules mount to the curtain wall above and between each pair of machines.
The Modules are daisy-chained together with Cat-5 cables to supply 24VDC power, shut-down and reset signal.
Entering either machine of a pair from the front will break the IR beam and shut down that pair.
Note: Guards need to be in place to stop a person moving to the next pair of machines once behind the mask units.



LaneMinder2 Lane intrusion warning system
- not connected to MachineMinder safety system