by Cybernetic Solutions

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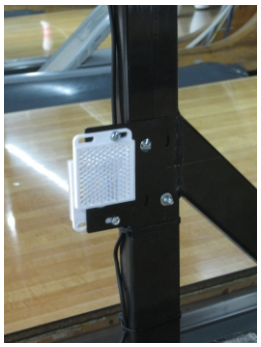
MachineMinder
Cutout-2 Module

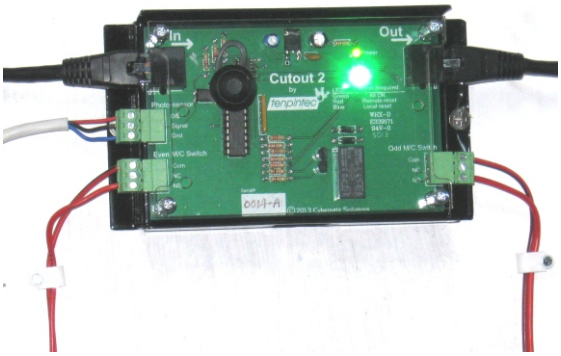
tenpintec.com

for AMF 82-70 Pinspotters with SS Chassis

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 Circuit Breaker (CB) in the rear control box of both Pinspotters of the pair to trip.

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 Pinspotter 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 Pinspotter pair 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. Then turn on the Circuit Breaker (CB) on the rear control box of each Pinspotter. The machine 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. White CB on rear control box on both machines should be off (down)
6. Indicator in Cutout-2 Module should be FLASHING BLUE

7. Push RESET button on Cutout-2 Module - indicator should turn GREEN
8. Turn on white CB on rear control box of both machines (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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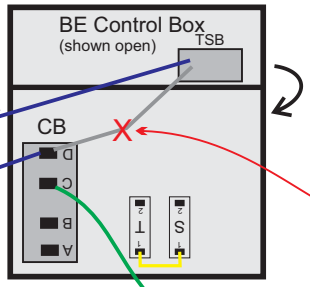
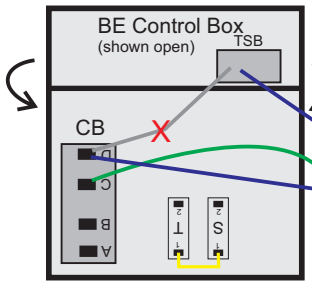
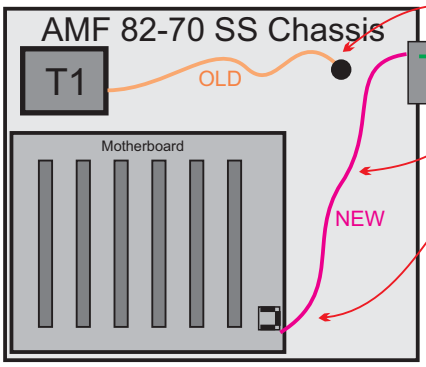
EVEN machine



Remove both ends of the wire connected between CB terminal D and TSB.
Replace with new 'figure 8'.

ODD machine



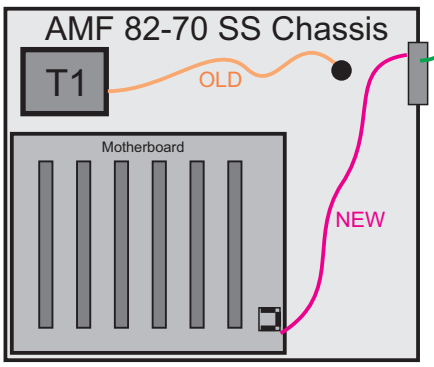


Locate the wire that goes from the T1 secondary to C2A-22j and remove it from the C2A block.
Cut off the connector and insulate the end of the wire (take care as it will still be live with 90VAC).

Replace with new wire (supplied).

Connect the other end of the new wire to one of the terminals in the lower RH corner of the motherboard. The three terminals are all connected together and one terminal should already have a wire connected to it.

If this wire is not present it may be because it was removed when an Omega-Tek or "XO-P" board was installed and some redundant components were removed. In this case, the new wire may then be connected directly to TS-4 (terminal strip under T1).
This terminal will also be connected to the anode of D3.

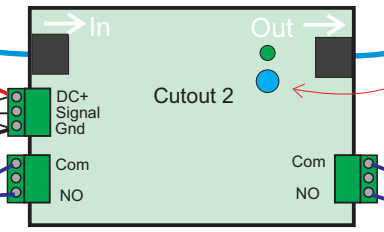


From previous Cutout-2 and 24VDC power supply

To next Cutout-2

Module mounted on curtain wall.

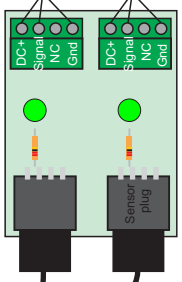
The first module in a 'chain' will have 24Vdc connected to these terminals in addition to the sensor.



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 and then RESET Circuit Breaker on Rear Control Box.

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 'shorts' out the pindication power supply through terminals C & D of the BE circuit breaker. The circuit breaker will 'trip' instantly, stopping the Pinspotter.
This pindication power supply is protected by its own overload device and will not be damaged by the operation of the Cutout 2 module.

Reflector mounted to mask unit leg

to next pair

IR unit mounted to mask unit leg

on all the time
am is being received

MOUNTING HEIGHT
Bowling ball should pass under beam
Lane machine should trip beam

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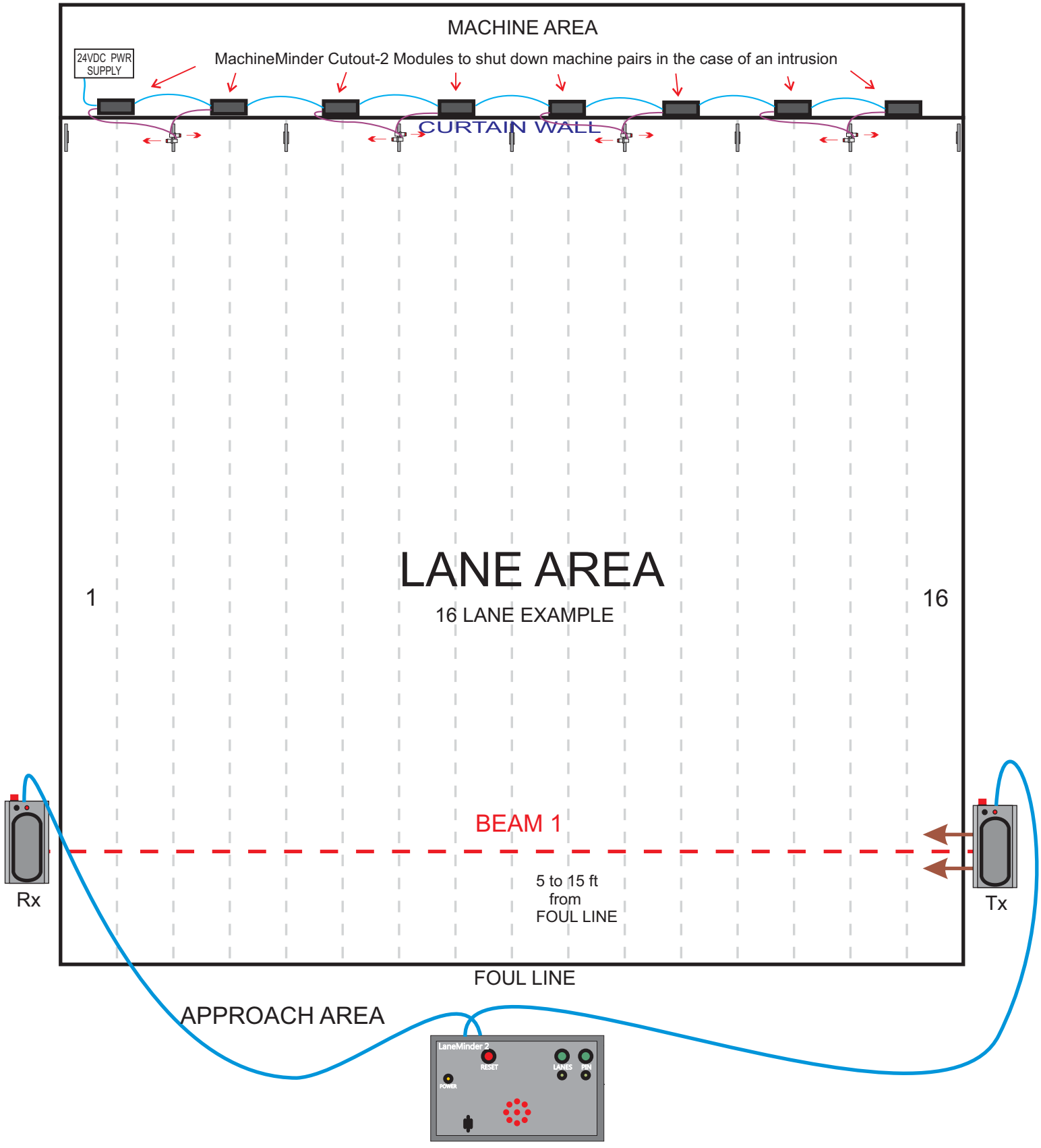
MachineMinder Cutout-2 Modules mount to the curtain wall above and between each pair of machines.
The Modules are daisy-chained together with Cat-5 cables to supply 24VDC power, shut-down and reset signal.
Entering either machine of a pair from the front will break the IR beam and shut down that pair.
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