FAULT FINDING

Power Supply

Should be stabilised type, usually between 23.5 and 24.5V. Be suspicious if it is not.

An unregulated supply is not suitable.

The negative wire should be grounded.

The current limit should be a maximum.

There should be no inductive loads on the supply.

The wires should avoid running with motor inverter wires.

All machine parts should be bonded to ground.

Electrical Interference

Inverter drives should be mounted away from guard wires.

Solenoid valves and other inductive devices (especially DC types) should be properly suppressed.

Proper grounding practice should be followed.

Check the OSSD's are not shorted.

Optical Interference

Modulated optical sources (photocells, other light curtains) should not be directed at the receiver head window.

Avoid direct sunlight on the RX head window.

Avoid Xenon beacon light on the RX head.

Muting Problems

Make sure that the pallet loads meet the requirements of the muting system.

Avoid holes in the pallet loads.

Avoid muting on reflective surfaces.

Avoid transparent loads.

Avoid flaps on loads which may cause false pick-ups.

Dirt

The optical window must be clean.

Steam is opaque to infra-red beams.

Static electricity may attract dust to the window.

Flying objects can trigger the guard.

Wiring

Be sure there are no wiring errors.

Check for loose connections.

Check connectors for loose connections.

Check water has not penetrated wires or connectors.

Alignment

Check the range is within specification.

Check mounting is secure.

Check that the Transmitter and Receiver are properly aligned.

LED Indicators

The indicator LED's supply the self-test indication for the boards.

Transmitter Bottom Board –

Amber Light -   This light flashes every 30 scans. It indicates that the processor is running correctly.

Red Lights -   There is one light per beam. The light indicates the current in the transmitter diode. If the light is off the diode is not transmitting. If it is too bright the diode is always ON. Beam 1 is brighter than the rest because it transmits a double pulse.

Transmitter Head Board –

Amber Light - This light flashes every 30 scans. It indicates that the processor is running correctly. Flashing will only occur if it is connected to a bottom board (directly or indirectly).

Red Lights -   There is one light per beam. The light indicates the current in the transmitter diode.   If the light is off the diode is not transmitting. If it is too bright the diode is always on.

Receiver Bottom Board -

Amber Light -   This light is driven by the Control Micro.
                      This light has two modes – normal and fault.
                      If there is no fault detected by the Control Micro:
                              ON-OFF once per second = Guard Clear
                              Continuous ON   = Guard Blocked
                      If there is a fault detected by the Control Micro:
                              1 Flash   = Carry Fault - Carry on at Power Up
                              2 Flashes =   Short Input - Short Detected
                              3 Flashes =   Carry Timeout – No carry from end board.

Red Light -   This light is driven by the Monitor Micro.
                      This light has two modes – normal and fault.
                      If there is no fault detected by the Control Micro :
                              On   = Guard Blocked
                              OFF = Guard Clear
                      If there is a fault detected by the Monitor Micro:
                      This light indicates a fault with the carry signal –
                              1 Flash   = Carry Fault - Carry on at Power Up
                              2 Flash   =   Carry Timeout – No carry from end board
                              3 Flash   =   Carry Lockout –from previous board.

Green Light -   This light is driven by the Monitor Micro.
This light has two modes – normal and fault.
If there is no fault detected by the Control Micro:
       ON   = Guard Clear
       OFF = Guard Blocked
If there is a fault detected by the Monitor Micro:
This light indicates a fault with the output signal.
       1 Flash = Output Disparity –Disparity between feedback and carry status.
       2 Flash = Output Timeout – Output did not go off in glitch test
       3 flash   = Output short – Short on output detected in glitch test.

Receiver Head Board –

Amber Light -   This light has two modes – normal and fault.
If there is no fault detected by the Head Micro:
ON-OFF once per second = Guard clear
CONTINUOUS on   = Guard blocked
If there is a fault detected by the Control Micro:
1 Flash = Carry Fault - Carry on at Power Up
2 Flash = Short Input - Short detected.
3 Flash = Carry Timeout – No Carry from previous board.