

To Be Performed Every Six Months Following System Installation:

For a detailed description of this procedure, see Section 6 of your EZ-SCREEN Grid Instruction Manual. Perform this checkout procedure as part of System installation (after the System has been interfaced to the guarded machine as described in Section 3.7), or whenever changes are made to the System (either a new configuration of the EZ-SCREEN System or changes to the machine). Semi-Annual checkouts must be performed by a Qualified Person (as defined by OSHA and in the Safety Glossary of the manual). A copy of the checkout results should be kept on or near the machine: see OSHA 1910.217(e)(1).

To prepare the System for this checkout, set the System configuration as it will be during machine operation.

4 The Qualified Person must:

- 1) **Examine the guarded machine** to verify that it is of a type and design compatible with the EZ-SCREEN Grid System. See page 2 of the Instruction Manual for a list of misapplications.
- 2) **Verify that the minimum separation distance** from the closest hazard point of the guarded machine to the light grid is not less than the calculated distance, determined in Section 3.3.1 of the Instruction Manual and indicated here: _____.
- 3) **Verify that:**
 - **Access to any dangerous parts of the guarded machine** is not possible from any direction not protected by the EZ-SCREEN Grid System, hard guarding, or supplemental safeguarding, and
 - **It is not possible for a person to stand** between the Safety Light Grid and the dangerous parts of the machine, or
 - **Supplemental safeguarding and hard guarding**, as described by the appropriate safety standards, are in place and functioning properly in any space (between the Safety Light Grid and any hazard) which is large enough to allow a person to stand undetected by the EZ-SCREEN Grid System.
- 4) **Verify that:**
 - **The Reset switch is mounted outside the guarded area**, out of reach of anyone inside the guarded area and
 - **The key or other means of preventing inadvertent use is in place.**
- 5) **Examine the electrical wiring connections** between the EZ-SCREEN Grid System OSSD outputs and the guarded machine's control elements to verify that the wiring meets the requirements stated in Section 3.7.
- 6) **Inspect the area near the light grid** (including work pieces and the guarded machine) for reflective surfaces. (Reflective surfaces may cause System beams to reflect around a person in the light grid, preventing the person from being detected and not stopping the machine motion.) Remove the reflective surfaces as possible by relocating them, painting, masking or roughening them. Remaining problem reflections will become apparent during step 10.
- 7) **Apply power to the EZ-SCREEN Grid System. Ensure that power to the guarded machine is OFF.** Remove all obstructions from the light grid. If the System is configured for Latch mode, the receiver Reset indicator will be double-flashing. Perform a manual reset (close the Reset switch for 1/2 to 2 seconds, then open the switch). Verify that the Reset indicator is ON steady.
- 8) **Observe the receiver 7-segment display** to verify that the system is set to the desired operating mode (Trip Output - “-”; Latch - “L”).
Observe the status indicators on the receiver to determine light grid status:
 - **A blocked condition** is indicated by the Status indicator steady Red, and one or more Beam Status indicator(s) steady Red.

NOTE: If beam 1 is blocked, all other Beam Status indicators will be OFF, because beam 1 provides the synchronization signal for all the beams.

 - **A clear condition** is indicated by all Beam Status indicators steady Green. (Beam Status indicators will flicker Green if excess gain is marginal.)
 - **A latch condition** is indicated by the receiver Status indicator steady Red. Beam Status indicators may be Red, Green, or flashing Green, depending on the status of each beam. In Latch mode, the outputs come back ON *only when all beams are clear and after a manual reset.*
 - **A lockout condition** is indicated by the Status indicator single-flashing Red, and the Reset indicator OFF.
- 9) **If in a clear condition, go to step 10. If in a lockout condition, refer to Section 5.** A blocked condition indicates that one or more of the beams is misaligned or interrupted. To correct this situation:
 - a) **Check carefully for any obstruction** in the path of the beam(s).
 - b) **Check for contamination.** Clean the emitter and receiver windows as required (see Section 5.4 of the manual).
 - c) **If the light grid is completely clear of obstructions**, realign the emitter and receiver, as described in Section 3.6 of the manual.

If the system is in a latch condition, perform a manual reset.

- 10) **n** Once the System Status indicator and all Beam Status indicators are steady Green, **perform the trip test** (described in Section 6.2 and on the Daily Checkout card) to verify proper



WARNING . . . If Trip Test Indicates a Problem

If the EZ-SCREEN System does not respond properly to the trip test, do not attempt to use the System. If this occurs, the System cannot be relied upon to stop dangerous machine motion when a person or object enters the light grid. **Serious bodily injury or death could result.**

system operation and to detect possible reflection problems.

- 11) **n** **Apply power to the guarded machine and verify that the machine does not start up.** Block one of the grid beams and verify that it is not possible for the guarded machine to be put



WARNING . . . Before Applying Power to the Machine

Verify that the guarded area is clear of personnel and unwanted materials (such as tools) before applying power to the guarded machine.

Failure to do so could result in serious bodily injury or death.

into motion while the beam is blocked.

- 12) **n** **Initiate machine motion of the guarded machine** and, while it is moving, use the supplied test piece to block one of the grid beams. Do not attempt to insert the test piece into the dangerous parts of the machine. Upon blocking any beam, the dangerous parts of the machine should come to a stop with no apparent delay. Upon removal of the test piece from the beam, verify that **the machine does not automatically restart**, and that the initiation devices must be engaged to restart the machine.
- 13) **n** **Remove electrical power to the EZ-SCREEN Grid System.** All OSSD outputs should immediately turn OFF, and should not be capable of turning ON until power is re-applied and, if in Latch

Output mode, a manual reset is performed (Trip Output mode requires no manual reset).

- 14) **n** **Test the machine stopping response time**, using an instrument designed for that purpose, to verify that it is the same or less than the overall system response time specified by the machine manufacturer. (Banner's Applications Engineering Department can recommend a suitable instrument.)

Do not continue operation until the entire checkout procedure is complete and all problems are corrected.

- 15) **n** **If any decrease in machine braking ability has occurred**, make the necessary clutch/brake repairs, readjust separation distance (Ds) appropriately, record the new Ds calculation on the Daily Checkout Procedure card and/or in Section 6.4 of the manual, and re-perform the Daily Checkout procedure.
- 16) **n** **Examine and test the machine primary control elements** (MPCEs) and any intermediary controls (such as interface modules) to verify that they are functioning correctly and are not in need of maintenance or replacement.
- 17) **n** **Inspect the guarded machine to verify that no other mechanical or structural problems could prevent the machine from stopping** or assuming an otherwise safe condition when signalled to do so by the EZ-SCREEN Grid System.
- 18) **n** **Examine and inspect the machine controls and connections to the EZ-SCREEN Grid System** to verify that no modifications have been made which adversely affect the System.



WARNING . . . Do Not Use Machine Until System Is Working Properly

If all of these checks cannot be verified, do not attempt to use the EZ-SCREEN System/guarded machine until the defect or problem has been corrected (see Section 5 of the manual).

Attempts to use the guarded machine under such conditions could result in serious bodily injury or death.