

EZ-SCREEN® Type 2 Light Screen



System Semi-Annual Checkout Procedure

To Be Performed Every Six Months Following System Installation:

Perform the procedure contained on this Semi-Annual Checkout card every six months following System installation, or whenever changes are made to the System (either a new configuration of the EZ-SCREEN Type 2 or changes to the machine). Semi-Annual checkouts must be performed by a Qualified Person (as defined by OSHA and in the *Glossary* in the Instruction Manual). A copy of the checkout results should be kept on or near the machine: see OSHA 1910.217(e)(1).

✓ **The Qualified Person must:**

- 1) Examine the guarded machine to verify that it is of a type and design compatible with the EZ-SCREEN Type 2. See *Appropriate Applications and Limitations* in 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 defined area is not less than the calculated distance, determined in *Calculating the Safety Distance (Minimum Distance)* in the Instruction Manual and indicated here: _____.
- 3) Verify that:
 - Access to any hazardous parts of the guarded machine is not possible from any direction not protected by the EZ-SCREEN Type 2, hard guarding, or supplemental safeguarding, and
 - It is not possible for a person to stand between the light screen 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 light screen and any hazard) which is large enough to allow a person to stand undetected by the EZ-SCREEN Type 2.
- 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 Type 2 OSSD outputs and the guarded machine's control elements to verify that the wiring meets the requirements stated in *Electrical Connections to the Guarded Machine* in the Instruction Manual.
- 6) Inspect the area near the defined area (including work pieces and the guarded machine) for reflective surfaces. (Reflective surfaces may cause light screen beams to reflect around a person in the defined area, 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 Type 2. Ensure that power to the guarded machine is OFF. Remove all obstructions from the defined area.

Latch Output models: The receiver Alignment indicators will be flashing Yellow. Perform a manual reset (open the reset switch for 1/4 second, then close it).

Verify that the Status Clear indicator is ON Green.

- 8) Observe the status indicators on the receiver to determine System status:

- **Blocked:** Both Alignment indicators OFF (sync beam blocked), or
Top Alignment indicator ON Yellow, or
Both Alignment indicators ON Yellow, and
Status Blocked indicator ON Red, and
Status Clear indicator OFF

- **Clear:** Alignment indicators ON Yellow
Status Blocked indicator OFF
Status Clear indicator ON Green

- **Latch:** Alignment indicators flashing Yellow
(defined Status Blocked indicator ON Red
area clear) Status Clear indicator OFF

If indicator status is different from options described above, refer to *Recovery Procedures* in the Instruction Manual for possible fault conditions and recovery procedures.

- 9) If in a Clear condition, go to step 10. If in a Lockout condition, refer to *Troubleshooting and Maintenance* in the Instruction Manual. 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 beam path.
- b) Check for contamination. Clean the emitter and receiver windows as required (see *Servicing and Maintenance* in the Instruction Manual).
- c) If the defined area is completely clear of obstructions, realign the emitter and receiver, as described in *Initial Power-Up and Optical Alignment* in the Instruction Manual.

If the EZ-SCREEN Type 2 is in a Latch condition, perform a manual reset.

- 10) After both Alignment indicators are ON Yellow and the Status Clear indicator is ON Green, **perform the trip test** (described on the Daily Checkout card) to verify proper System operation and to detect possible reflection problems.



WARNING . . . If Trip Test Indicates a Problem

If the EZ-SCREEN Type 2 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 defined area.

An increased risk of harm could result.

- 11) **Apply power to the guarded machine and verify that the machine does not start up.** Insert the test piece into the defined area and verify that it is not possible for the guarded machine to be put into motion while a beam is blocked.



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 an increased risk of harm.

- 12) **Initiate machine motion of the guarded machine** and, while it is moving, insert the supplied test piece into the defined area. Do not attempt to insert the test piece into the hazardous parts of the machine. Upon blocking any beam, the hazardous parts of the machine should come to a stop with no apparent delay. Upon removal of the test piece from the defined area, verify that **the machine does not automatically restart**, and that the initiation devices must be engaged to restart the machine.
- 13) **Remove electrical power to the EZ-SCREEN Type 2.** All OSSD outputs should immediately turn OFF, and should not be capable of turning ON until power is re-applied and, if a Latch Output model, a manual reset is performed (Trip Output models require no manual reset).

- 14) **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) **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 the Instruction Manual, and re-perform the Daily Checkout procedure.
- 16) **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) **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 signaled to do so by the EZ-SCREEN Type 2.
- 18) **Examine and inspect the machine controls and connections to the EZ-SCREEN Type 2** to verify that no modifications have been made which adversely affect the System.

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

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 Type 2/guarded machine until the defect or problem has been corrected (see *Troubleshooting and Maintenance* in the Instruction Manual).

Attempts to use the guarded machine under such conditions could result in an increased risk of harm.