EZ-SCREEN S4B Safety Light Curtain Semi-Annual Checkout

Procedure

Banner Engineering highly recommends performing the System checkouts as described. However, a Qualified Person (or team) should evaluate these generic recommendations, considering their specific application, and determine the appropriate frequency of checkouts. This will generally be determined by a risk assessment, such as the one contained in ANSI B11.0. The result of the risk assessment will drive the frequency and content of the periodic checkout procedures and must be followed.

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 S4B 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).

The Product Manual is p/n 230287.

Perform the following every six months following the system installation.		
☐	1	**Examine** the guarded machine to verify that it is of a type and design compatible with the S4B. Refer to the manual for a list of misapplications.
☐	2	**Verify** that the Safety Distance (Minimum Distance) from the closest hazard point of the guarded machine to the defined area is not less than the calculated distance as determined in the manual. **Safety Distance (Minimum Distance): _____**
☐	3	**Verify** that: • Access to any dangerous parts of the guarded machine is not possible from any direction not protected by the S4B, hard guarding, or supplemental safeguarding, and • It is not possible for a person to stand between the safety 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 safety light screen and any hazard) which is large enough to allow a person to stand undetected by the S4B.
☐	4	If used, **verify** that: • The reset switch, if used, is mounted outside the guarded area, out of reach of anyone inside the guarded area and • The means of preventing inadvertent use (e.g., rings or guards) is in place.
☐	5	**Examine** the electrical wiring connections between the S4B OSSD outputs and the guarded machine's control elements to verify that the wiring meets the requirements stated in the manual.
☐	6	**Inspect** the area near the defined area (including work pieces and the guarded machine) for reflective surfaces. (Reflective surfaces may cause System beams to reflect around a person in the light screen, 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 S4B. **Ensure** that power to the guarded machine is OFF. **Remove** all obstructions from the defined area.
☐	8	**Observe** the status indicators on the receiver to determine System status: • **Lockout:** Status flashing red; Zone 1, Zone 2, or Zone 3 red • **Blocked:** Status red; One or more Zone indicators red • **Clear:** Status green; All Zone indicators green
☐	9	If the machine is in a **Clear** condition, go to step 10. If the machine is in a **Lockout** condition, refer to the Troubleshooting section of the manual. If the machine is in a **Blocked** condition, one or more of the beams is misaligned or interrupted. To correct this situation: 1. Check carefully for any obstruction in the beam path. 2. Check for contamination. Clean the emitter and receiver windows as required (see the manual). 3. If the defined area is completely clear of obstructions, realign the emitter and receiver, as described in the manual.

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Original Instructions
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		Perform the following every six months following the system installation.
☐	10	After the Status indicator and all Zone indicators are green, **perform the trip test** (described on the Daily Checkout card, p/n 230288) to verify proper System operation and to detect possible reflection problems. **WARNING:** • **Trip test failure** • Using a system that has failed a trip test can result in serious bodily injury or death. If the trip test has failed, the system might not stop dangerous machine motion when a person or object enters the sensing field. • Do not attempt to use the system if the system does not respond properly to the trip test. **WARNING:** • **Clear the guarded area before applying power or resetting the system** • Failure to clear the guarded area before applying power could result in serious injury or death. • Verify that the guarded area is clear of personnel and any unwanted materials before applying power to the guarded machine or before resetting the system.
☐	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.
☐	12	**Initiate** machine motion of the guarded machine and, while it is moving, insert the optional test piece into the defined area. Do not attempt to insert the test piece into the dangerous parts of the machine. **Verify** that, whenever the test piece is in the defined area the dangerous parts of the machine 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 S4B.** All OSSD outputs should immediately turn off and should not be capable of turning on until power is re-applied.
☐	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.) **IMPORTANT:** 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 Safety Distance (Minimum Distance), "D" or "S", appropriately, record the new distance calculation on the appropriate Daily Checkout Procedure card and/or in the 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 S4B.
☐	18	**Examine and inspect** the machine controls and connections to the S4B to verify that no modifications have been made which adversely affect the System.

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

WARNING:
- **Do not use the system until the checkouts are verified**
- Attempts to use the guarded/controlled machine before these checks are verified could result in serious injury or death.
- If all these checks cannot be verified, do not attempt to use the safety system that includes the Banner Engineering Corp. device and the guarded/controlled machine until the defect or problem has been corrected.

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