Daily Checkout Procedure (Cascaded Systems)

Daily checkout and checkouts after tooling and machine changes must be performed by a Designated Person (appointed and identified in writing by the employer). During continuous machine run periods, this checkout must be performed at regular intervals. Keep a copy of the checkout results on or near the machine (see OSHA 1910.217(e)(1)).

Perform the following procedure at every power-up, shift change, and machine setup:		
☐	1	Verify that: • Access to the guarded area is not possible from any area not protected by the EZ-SCREEN LS. Hard guarding or supplemental presence-sensing devices must be installed, wherever needed, to prevent any person from reaching over, under or around the defined area or entering into the hazard area • All supplemental guarding devices and hard guarding are in place and operating properly
☐	2	Calculate and record the safety distance (minimum distance) according to the formula provided in the EZ-SCREEN LS Instruction Manual (p/n *179480*). Safety Distance (minimum distance): _____
☐	3	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 distance calculated above.
☐	4	Verify that it is not possible for a person to stand inside the guarded (dangerous) area, undetected by the EZ-SCREEN LS or other supplemental guarding (as described in appropriate standards).
☐	5	If used, verify that: • The Reset switch is mounted outside the guarded area, out of reach of anyone inside the guarded area • The means of preventing inadvertent use, such as rings or guards), is in place
☐	6	With power On, verify that the EZ-SCREEN LS is in Run mode—the receiver #1 status indicators should be as follows: Status indicator: Green: Solid or flashing (if blanking is used) All Alignment indicators: Green: Solid or flashing (if blanking is used) Run indicator: Yellow: Solid Diagnostic Display: –
☐	7	Test the effectiveness of the EZ-SCREEN LS using the trip test. Select the appropriate test piece: 14 mm models: STP-13 23 mm models: STP-19 40 mm models: STP-20
☐	8	With the guarded machine at rest, pass the test piece downward through the defined area of emitter/receiver pair #1 in three paths: near the receiver, near the emitter, and midway between them: • If the emitter and receiver are far apart, a second person may be needed to monitor the indicators while the test piece is used near the emitter or in the midway position • If corner mirrors are used in the application, the beams must be tested in three places on each leg of the beam path—between emitter and mirror, and also between mirror and receiver

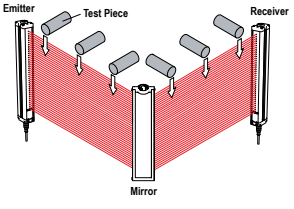

Figure 2. EZ-SCREEN LS Trip Test for Corner Mirror Applications

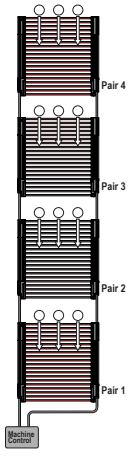

Figure 1. Cascaded EZ-SCREEN LS Trip Test

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Perform the following procedure at every power-up, shift change, and machine setup:		
☐	9	With the guarded machine still at rest, pass the test piece downward through the defined area of emitter/receiver pair #2 in three paths as described in the previous step. Repeat for each emitter/receiver pair in the cascade.
☐	10	Verify whenever the test piece is interrupting the defined area: • At least one alignment indicator must be red. The red alignment indicator must change with the position of the test piece within the defined area.  NOTE: If beam 1 is blocked or if the emitter and receiver scan codes do not match, alignment indicator 1 will be red and all other alignment indicators will be off, because beam 1 provides the synchronization signal for all the beams. The display will sequentially indicate “CH1”. • Emitter/Receiver pairs #2, 3, or 4—at least one alignment indicator on the blocked receiver must be solid red. The particular red alignment indicator(s) that is illuminated changes according to the position of the test piece. • Trip Output Operation – The status indicator must turn red and remain red while the test piece remains in the defined area. If not, the installation has failed the trip test. If all alignment indicators are green or do not follow the position of the test piece, or if the status indicator turns green while the test piece is interrupting the defined area, the installation has failed the trip test.  WARNING: If the EZ-SCREEN LS does not respond properly to the trip test, do not attempt to use the machine. If this occurs, the EZ-SCREEN LS cannot be relied upon to stop dangerous machine motion when a person or object enters the defined area. Serious bodily injury or death may result. Check for correct sensor orientation, for the presence of reflective surfaces, or for unguarded areas created by the use of blanking. Check for the correct sensor orientation, for the presence of reflective surfaces, or for unguarded areas created by the use of blanking. Eliminating Problems with Reflective Surfaces—If possible, relocate the emitter and/or receiver to move the defined area away from the reflective surface(s), being careful to maintain adequate safety distance (minimum distance) (see step 2 above). Otherwise, if possible, paint, mask, or roughen the surface to reduce the reflectivity. Where these are not possible (as with a shiny workpiece), include a means of restricting the receiver’s field of view or the emitter’s spread of light in the sensor mounting. Repeat the trip test to verify that these changes have eliminated the problem reflection(s). If the workpiece is especially reflective and comes close to the defined area, perform the trip test with the workpiece in place.  Important: Do not continue with this checkout procedure or operate the guarded machine until the situation is corrected and the indicators respond properly as described above.
☐	11	Verify when the test piece is removed from the defined area: • All alignment indicators turn solid green (or flashing if blanking is used) • Verify that the receiver status indicator is solid green (or flashing if blanking is used)
☐	12	 WARNING: Before applying power to the machine, verify that the guarded area is clear of personnel and unwanted materials (such as tools). Failure to do so may result in serious bodily injury or death. 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 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.
☐	13	Remove the test piece from the defined area, and verify that: • The machine does not automatically restart • Initiation devices must be engaged to restart the machine
☐	14	With the guarded machine at rest, insert the test piece into the defined area and verify that the guarded machine cannot be put into motion while the test piece is in the defined area.
☐	15	Check carefully for external signs of damage or changes to the EZ-SCREEN LS, the guarded machine, and their electrical wiring. Any damage or changes found should be immediately reported to management.

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

 WARNING: Do not use machine until the system is working properly. If any of these checks cannot be verified, do not attempt to use the EZ-SCREEN LS/guarded machine until the defect or problem has been corrected (see the Troubleshooting section of the Instruction Manual). Attempts to use the guarded machine under such conditions may result in serious bodily injury or death.