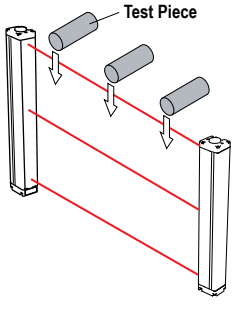
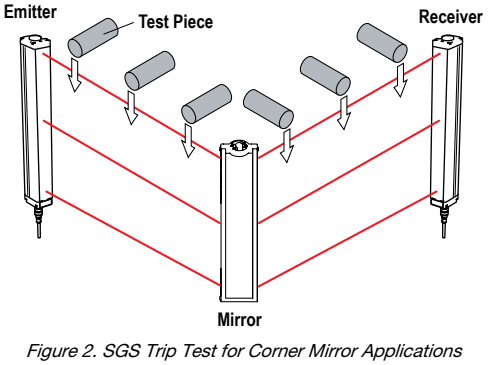
Daily Checkout Procedure (Muting Systems)

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, perform this checkout 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 SGS. Hard guarding or supplemental presence-sensing devices must be installed, wherever needed, to prevent any person from reaching over, under, or around the light grid 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 SGS Instruction Manual (Emitter/Receiver with Integral Muting p/n *203065*; Active/Passive with Integral Muting p/n *203064*). **Safety Distance (minimum distance):** _____
☐	3	**Verify** that the safety distance (minimum distance) from the closest hazard point of the guarded machine to the light grid 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 SGS 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 SGS is in Run mode—the receiver/active transceiver status indicators should be as follows: **OSSD Outputs On indicator**—Green **Diagnostic Display**—0 to 3 horizontal lines, based on signal strength A manual reset may be required in Manual Start/Restart (Latch) Output Mode. (Refer to the *Operating Features* section of your SGS Safety Grid System Instruction Manual.)
☐	7	Test the effectiveness of the SGS using the trip test. **Use an appropriately sized test piece, such as the STP-15 60 mm test piece.**
☐	8	With the guarded machine at rest, **pass the test piece** downward through each beam in three paths: near the receiver/active transceiver, near the emitter/mirror assembly, 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 1. SGS Trip Test*  *Figure 2. SGS Trip Test for Corner Mirror Applications*

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Perform the following procedure at every power-up, shift change, and machine setup:		
☐	9	**Verify** that when the test piece is blocking a beam: • The OSSD Outputs Off indicator is red while any or all beams are blocked • Auto Start/Restart (Trip) Output Mode—The OSSD Outputs Off indicator must turn red and remain red while the test piece remains blocking a beam. If not, the installation as failed the trip test. If the status indicator turns green while the test piece is blocking a beam, the installation has failed the trip test. ⚠ **WARNING:** If the SGS does not respond properly to the trip test, do not attempt to use the machine. If this occurs, the SGS cannot be relied upon to stop dangerous machine motion when a person or object enters the light grid. Serious bodily injury or death may result. Check for correct sensor orientation, for the presence of reflective surfaces, or for unguarded areas. **Eliminating Problems with Reflective Surfaces**—If possible, relocate the emitter and/or receiver to move the light grid 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 light grid, 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.
☐	10	When the test piece is removed from the beam: • Perform a manual reset if the System is operating in Manual Start/Restart (Latch) Output Mode • **Verify** that the OSSD Outputs On indicator is green
☐	11	⚠ **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. With the SGS not muting, **initiate** machine motion of the guarded machine. While it is moving, use the test piece to block one of the grid beams. Do not attempt to insert the test piece into the dangerous parts of the machine. **Verify** that when any beam is blocked, the dangerous parts of the machine come to a stop with no apparent delay.
☐	12	**Remove** the test piece from the beam and **verify** that: • The machine does not automatically restart • Initiation devices must be engaged to restart the machine
☐	13	With the guarded machine at rest, use the test piece to block a beam and **verify** that the guarded machine cannot be put into motion while the test piece is blocking a beam.
☐	14	Initiate machine motion of the guarded machine, verify muting operation. During the non-hazardous portion of the machine cycle: • Mute lamp flashes Amber • OSSD Outputs On indicator is Green • Display shows 0 to 3 horizontal lines, based on signal strength • External mute indicator (if used) is ON During the hazardous portion of the machine cycle: • Mute lamp is off, • OSSD Outputs On indicator is Green • Display shows 0 to 3 horizontal lines, based on signal strength • External mute indicator (if used) is OFF If the SGS is muted during the hazardous portion of the machine cycle (e.g. closing of power press die, robot motion, etc.), immediately remove power from the machine and do not use until the system is working properly.
☐	15	Check carefully for external signs of damage or changes to the SGS, 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 SGS/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.

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