SIX MONTHLY CHECK-OUT

THIS CHECK-OUT PROCEDURE SHOULD BE PERFORMED EVERY SIX MONTHS FOLLOWING SYSTEM INSTALLATION ISTRUCTIONS OR WHENEVER CHANGES ARE MADE TO THE SYSTEM (POSSIBLY AT EACH ESPE CONFIGURATION CHANGE).

- Check-out procedure must be carried out by qualified personnel only, according to the indications included in the special sections (refer to chapters of the Instruction Manual) and in the applicable standards. A copy of the check-out form has to be kept on or near the machine or equipment where the Laser Sentinel is installed as detailed in the **CEI IEC 61496-1**: 2004 European Safety Standard.

- **Make sure that the protection level assured by the Laser Sentinel is compatible with the danger level of the working machine, according to EN ISO 13849-1 or EN 62061.**

The safety laser scanner must be positioned so that the operators can be detected while entering into the dangerous zone. The operator must avoid to directly approach the dangerous zone without the safety detection of the Laser Sentinel.

This procedure must be carried-out in strict order as follows:

1. Examine the controlled machine to verify that it is a type and design compatible with the ESPE Type 3.
2. Make sure that the minimum safety distance from the closest danger point of the protected machine to controlled area is not less than calculated distance, as specified in the formula given in the Instruction manual “Minimum installation distance” chapter 5.4.1. and according to the EN-ISO-13855 standard.

Verify that:

3. The Access to any dangerous part of the machine is not possible from any direction not protected by the Laser Sentinel or any other safety system or device.
4. Any operator cannot stand between controlled area and dangerous parts of the machine.

5. For ESPE with Manual restart, verify that the restart command is:
- mounted outside the dangerous area;
- mounted allowing the operator to have full view of the dangerous area;
- mounted so that it is not possible to reach it from inside the dangerous area;
- mounted in order to prevent improper or dangerous use of the command;

6. Verify that the electrical connections between the OSSD outputs of the Laser Sentinel and the machine follow the requirements specified in the chapter 7 “Electrical Connections” of the user manual.

7. If there are reflecting surfaces and/or homologous devices near the protected area follow the procedures specified in the chapter “High reflecting background” of the Instruction Manual. If necessary remove the causes of dangerous interferences.

8. Verify that the machine is not powered.

9. Check if there are any obstructions in protected area.

10. Apply power only to Laser Sentinel.

Verify that the ESPE is in one of the states listed below (refer to “Diagnostic Functions - User Interface” chapter from User Manual).

- If ESPE is in the **GO** (**ON**) condition proceed with the following step.

- If ESPE is in the **INTERLOCK** condition, after the closing (for at least 0.5 sec) of a normally open external contact (TEST/RESET button), after the RESTART procedure, the ESPE returns to **SAFETY** condition. We can now proceed to the following step.

- If ESPE is in the **STOP** (**OFF**) condition, the protected area has been or is occupied. To correct this situation proceed as follows:
  - **i.** Verify carefully if there is an obstruction in the protected area and if necesssary remove it.
  - **ii.** Verify that the the optical window is not covered by dust and dirt. If necessary, clean it by following the procedure described herinafter.
  - **iii.** If one or more safety zones are configured on the device, verify the correct working of each condition and the correct use of the external electrical systems releated to these functions.

Do not continue until ESPE passes ALL tests listed above !

During the following tests take care not to expose operators to hazard !

If effective resolution configured on device is different than mechanical resolution specified on device label, use a “Test Piece” with size equal to effective resolution for all following checks.

- Access inside the safety area with a specific “Test Piece” and verify that the machine cannot be put into motion while area is occupied.

- Power on the controlled machine and while it is moving use the “Test Piece” to block protected area. Do not attempt to insert the “Test Piece” into dangerous parts of the machine. Dangerous parts of machine must be stopped within T = time used to calculate minimum installation distance (refer to the Instruction Manual “Minimum installation distance”).

- Remove “Test Piece” from controlled area. Verify that:
  - **a.** if ESPE with Automatic restart, the machine must automatically restart with restart command;
  - **b.** if ESPE with Manual restart, the machine must not restart until receiving restart command;

- Remove electrical power to ESPE. Verify that both the OSSD outputs automatically switch into OFF status and make sure that the machine is not capable of starting until power is re-applied to ESPE.

- If ESPE has the Manual restart, restart the device by pressing the corresponding button for at least 0.5 secs and then release it.

- Verify the total machine stopping time by using an instrument designed for this purpose. Verify that the time is equal or less than the time specified by the machine manufacturer.

Do not continue to use the ESPE and the equipment until the check-out procedure is complete and all problems are corrected !

- If any decrease in the machine stopping ability has occurred, make the necessary adjustaments/repairs, recalculate Minimum Safety Distance S (refer to instruction manual “Minimum installation distance” of user manual), record new value obtained and proceed with the checks described in chapter 10.5 “Periodical checks” of Instruction Manual.

- Verify MACHINE PRIMARY CONTROL ELEMENT (MPCE) and any intermediary controls (such as safety modules, control units, etc.) to check that they are functioning correctly and do not require maintenance or replacement.

- Verify that the connections between MPCE and ESPE have not been modified which could jeopardise system functioning.

DO NOT USE MACHINE UNTIL SYSTEM IS WORKING PROPERLY.
IF ALL OF THESE CHECKS HAVE NOT HAD POSITIVE RESULTS, DO NOT ATTEMPT TO USE ESPE UNTIL DEFECTS OR PROBLEMS HAVE BEEN CORRECTED.
ATTEMPTS TO USE THE MACHINE UNDER SUCH CONDITIONS COULD RESULT IN SERIOUS BODILY INJURY OR DEATH OF OPERATORS.

Window cleaning

The Laser Sentinel optic window needs periodical cleaning, and the frequency depends on the type of environment in which the device operates.

The device may present failure, if the optic window becomes scratched. In case of abrasive particle deposits, pay specific attention to rub gently against the window during cleaning in order to avoid damage. If the optic window becomes scratched, replacement of the optic head is recommended.

It is recommended to use the anti-static cleaner (SLS-CLEANER order no.95ASE2990) and the disposable cloths (SLS-CLOTH order no.95ASE3000) to remove dirt and dust deposits from the optic window.
Otherwise use a soft non-electrostatic cloth and a non-aggressive and non-abrasive cleaning agent.

ACCORDING TO 42/2006/EC: EC MACHINE DIRECTIVE
THIS DOCUMENT MUST BE ATTACHED
TO THE TECHNICAL DOSSIER OF THE MACHINE
WHERE THE ESPE IS INSTALLED.
A COPY OF THE CHECKOUT RESULTS SHOULD BE KEPT
ON OR NEAR THE MACHINE.