

## HMI Overview

### STATUS Window

Displays the current system status and user messages.

### ACTION Window

Displays the action required by the machine operator.



Dynamic buttons with functions that change based on the selected screen.

### SYMBOLS Window

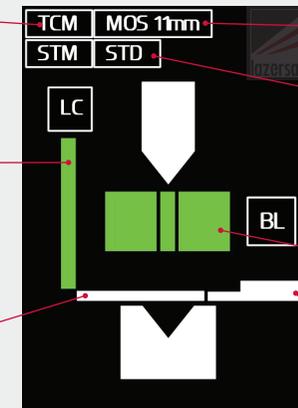
Displays the status of the optical guarding sensors and the active modes.

## Symbols window

Indicates that **Thermal Compensation Mode TCM** or **Special Tools Mode STM** is active.

When a light curtain (*optional*) is active, this symbol indicates the status of the light curtain sensors: **green for clear**, **red for obstructed**.

Indicates that the guarding mode is set to **NORMAL**. The symbol will change when **TRAY 1** or **TRAY 2** mode is selected.



Indicates the **mute off-set MOS** distance setting.

Indicates the mute mode option: **Standard Mode STD**, **Restricted Mode 1 RES1** or **Restricted Mode 2 RES2**.

When laser guarding is active, these symbols indicate the status of the **FRONT**, **MIDDLE** and **REAR** sensors: green for clear, red for obstructed.

Indicates that back-gauge mode is selected.

## TX & RX Status LEDs



Transmitter power.

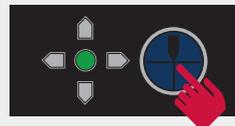
**A** Laser status: Illuminated when laser is turned ON.



Receiver power.

**F** Front sensor **M** Middle sensor **R** Rear sensor  
Illuminated when sensor is obstructed.

## RX TOOL ALIGN Button & Status LEDs



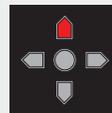
**TOOL ALIGN button.** Press to start a tool scan.

**Green LED:** tool align complete / system ready.

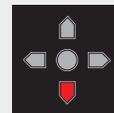
**Red LEDs:** tool scan status / adjustment indicator.



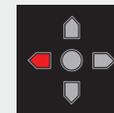
Red LEDs cycling indicate tool scan is in progress.



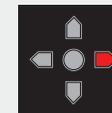
Move the receiver  
**UP**



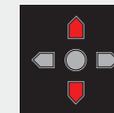
Move the receiver  
**DOWN**



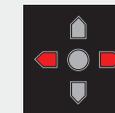
Move the receiver  
**LEFT**  
(towards front of the machine)



Move the receiver  
**RIGHT**  
(towards rear of the machine)



Tool tip not detected.  
Check the TX and RX alignment.



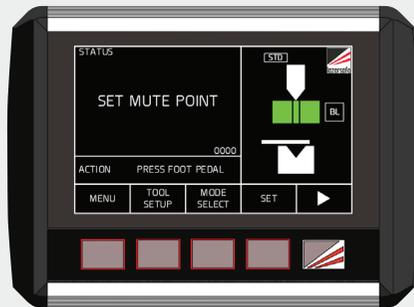
Tool tip position reset.  
Press the TOOL ALIGN button.

## Overrun test



On start-up, the system initiates an automatic overrun test to check the machine stopping performance.

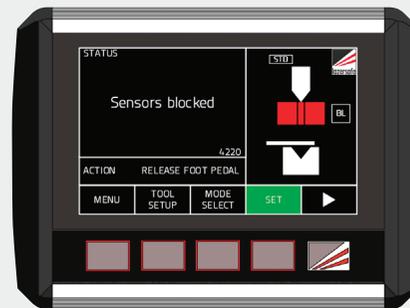
1. Check that the TX and RX are aligned with the upper tool.
2. Open tools to the maximum opening.
3. Press the foot pedal. The tools will start closing, then after a short distance, the system will automatically stop the ram and measure the overrun.
4. When the overrun test is complete, the HMI will prompt you to set the mute-point.



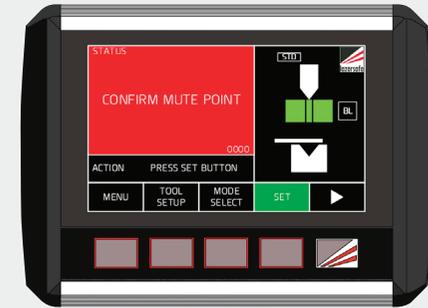
## Setting the mute-point



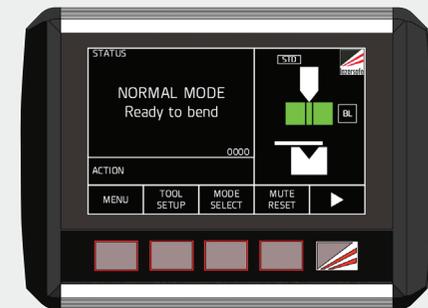
1. Place the flat part or sample material on the die (the same thickness as part to be formed).
2. Press the foot pedal. The tools will close at slow speed until the sensors detect the material.



3. After the ram has stopped, release the foot pedal.



4. Press the **SET** button to confirm the mute-point position (or open the tools to try again).



**The system is now ready.**

To set a new mute-point after a tool change or a change in material thickness, press **MUTE RESET**.

# SENTINEL PLUS Guarding Modes

LS-CS-M-104 Rev 1.0

QUICK  
REFERENCE  
GUIDE

## Mode Selection Screen



Press **MODE SELECT** to display the guarding mode buttons.



Press **ESC** to exit.

Press **GUARD MODE** to cycle between NORMAL mode, TRAY 1 mode and TRAY 2 mode.

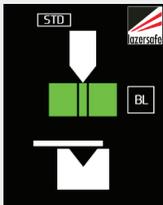
Press **FIELD MUTED** to select FIELD MUTED mode.

Press **MUTE STOP** to select MUTE STOP mode.

Press **BACK GAUGE** to select BACK GAUGE mode.

*NOTE: A greyed out button indicates that the mode selection is unavailable or has been disabled in the system parameters.*

## Summary of Operation

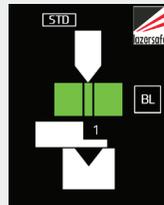


### NORMAL mode

All sensors are active at the start of each cycle. Single pedal press to start each cycle. Ram will stop when any sensor is blocked.

If all sensors are clear, press the pedal again to resume cycle in high-speed with all sensors active.

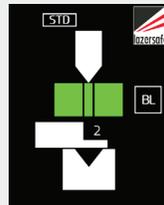
If any sensor remains blocked, press the pedal again to resume cycle in safe speed with all sensors muted (unless RESTRICTED mode is enabled).



### TRAY 1 mode

All sensors are active at the start of each cycle. Single pedal press to start each cycle. Ram stops when a side flange is detected by the front or rear sensors. Press pedal again to resume cycle with front and rear sensors muted.

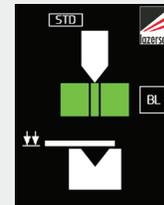
Ram will stop if middle sensor is blocked. Press pedal again to resume cycle in safe speed with all sensors muted (unless RESTRICTED mode is enabled).



### TRAY 2 mode

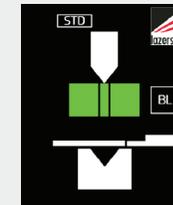
Double pedal press to start each cycle. Front and rear sensors muted for entire cycle.

Ram will stop if middle sensor is blocked. Press pedal again to resume cycle with all sensors muted (unless RESTRICTED mode is enabled).



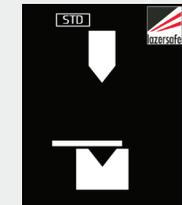
### MUTE STOP mode

The ram will stop at the mute-point on every cycle. Press the pedal again to resume the cycle.



### BACK GAUGE mode

The rear sensor is automatically muted 16mm above the mute-point to avoid interference with the back gauge fingers.



### FIELD MUTED mode

The laser is turned off and machine will only operate in safe speed (mode unavailable when RESTRICTED mode is enabled).

### **⚠ WARNING: NO OPTICAL PROTECTION IN FIELD MUTED MODE**

In Field Muted mode, all optical guarding is deactivated. Although the Sentinel Plus Press Brake Guarding System ensures that the machine does not exceed safe speed in this mode, particular caution must still be exercised.

# Automatic Bracket Adjustment (Optional)

LS-CS-M-104 Rev 1.0

## 1. Automatic Bracket Selection



From the main screen, press **▶** to display to the next set of buttons.

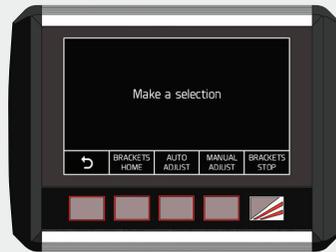


Press **◀** to display to the previous set of buttons.

Press **INFO** to display the bracket connection status and software version.

Press **AUTO BRACKETS** to display the Automatic Brackets screen (Refer to panel 2. Automatic Adjustment Screen).

## 2. Automatic Adjustment Screen



Press **◀** to return to the previous screen.

Press and release **BRACKETS HOME** to automatically drive brackets to the home position. Brackets parked clear for side loading the upper tools.

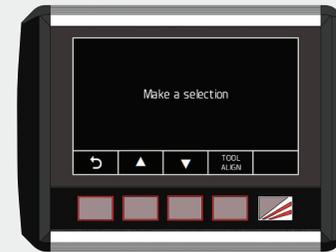
Press and hold **BRACKETS HOME** for 3 seconds if the brackets are out of synchronisation.

Press **AUTO ADJUST** to start the automatic adjustment and tool scan process. The RX LED will turn green when finished. Press **◀** then **▶** to return to the main screen, then follow the prompts to set a new mute-point.

Press **MANUAL ADJUST** to display the manual adjustment buttons (Refer to panel 3. Manual Adjustment Screen).

Press **BRACKETS STOP** to cancel the automatic bracket adjustment.

## 3. Manual Adjustment Screen



Press **◀** to return to the previous screen.

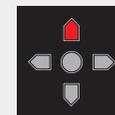
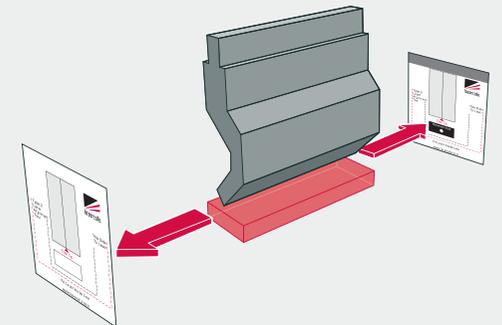
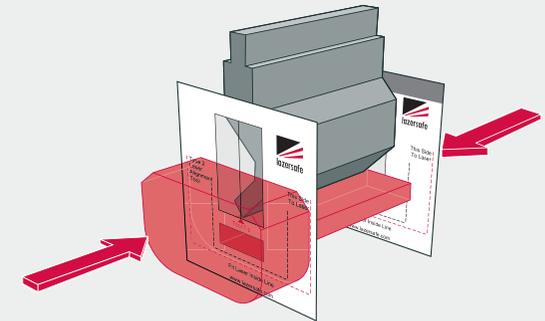
1. Place the alignment cards at each end of the upper tool.

Press and hold **▼** to manually drive both brackets down. Release the button to stop.

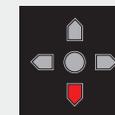
Press and hold **▲** to manually drive both brackets up. Release the button to stop.

2. After the TX and RX are set to the correct tool height, remove the alignment cards.

3. Press **TOOL ALIGN** to start a tool scan. Check the RX LED indicators and make any necessary adjustments, then repeat the tool scan. The RX LED will turn green when the tool scan is complete. Press **◀** then **▶** to return to the main screen, then follow the prompts to set a new mute-point.



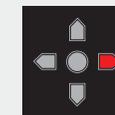
Move the receiver **UP**



Move the receiver **DOWN**



Move the receiver **LEFT**  
(towards front of the machine)



Move the receiver **RIGHT**  
(towards rear of the machine)



Tool scan is complete when the RX LED is green.