Laser Shield

Advanced Laser-Based Protection for Press Brakes

Call us

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Safety Without Compromise.
Productivity Without Slowdown.

LASER SHIELD is a next-generation press brake safety system designed to provide maximum operator protection while preserving high machine productivity. Engineered for both new machines and retrofit applications, the system uses a high-precision laser field to protect the critical zone beneath the punch tip without restricting operator movement.

Why LASER SHIELD?

- Prevents finger and hand injuries during press brake operation
- Allows operators to hold the workpiece close to the bend line
- Maintains high closing speed until the last safe moment
- Automatically adapts to tool height, material thickness, and machine behavior
- Designed for harsh shop floor environments

Key Technologies

1. Intelligent Safe Point Detection

Before the first bending cycle, User has to calibrate the system with the press of a button on the touch screen.
Laser Shield automatically sets the optimal Safe point just below the Punch and detects the material surface.
This process is done using the Stepper motors of the system.

2. High-Speed Safe Closing

Unlike traditional light curtains that force early slow-downs, **Laser Shield** allows the ram to close at high speed until just a few millimeters remain, significantly reducing cycle time per bend.

3. Retrofiting possible

The **Laser Shield** can be retrofitted to any existing Press brake without much modifications. It only controls the pedal switching resulting in no change in press operation.

- Compatible with most hydraulic and CNC press brakes
- Suitable for down-acting and selected up-acting machines
- Easy electrical integration with existing safety circuits

4. Multiple Operating Modes

Laser Shield supports multiple bending scenarios with selection of sensors (Front, Back and Center):

- Standard bending
- Box / tray bending
- Back-gauge bending

Laser Shield also supports multiple safety hit scenarios. User can select what happens if the safety beam is broken or hit.

- STOP-RELEASE-REVERSE
- STOP-RELEASE-SLOW-ACTIVE
- STOP-RELEASE-SLOW-DEAD
- NO STOP-SLOW

5. Fast Tool Change

Laser Shield allows very fast tool change.
With Homing button, the Emitter and Receiver goes to home position and the machine punch can be easily changed. With Resume button the Emitter and Receiver goes to earlier positions.

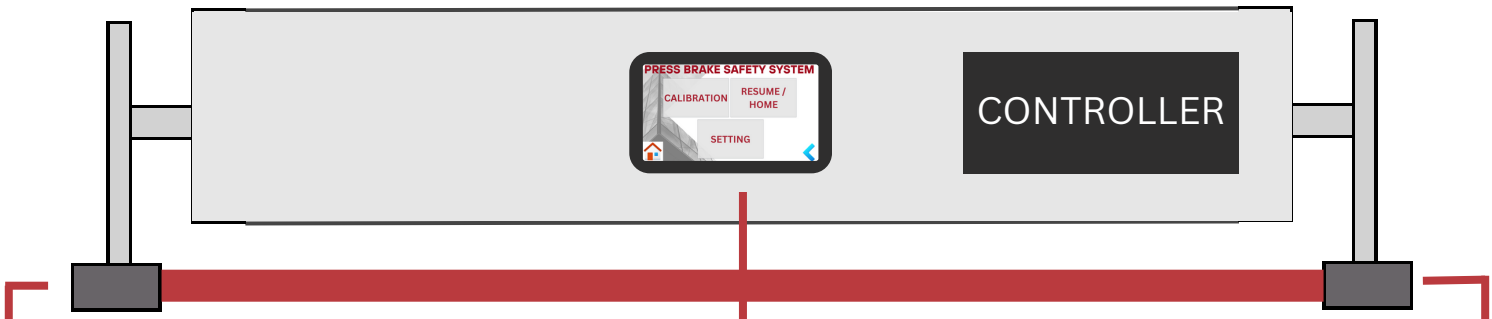
6. Protection Zone

Laser Shield gives a wide protection zone with its 3 sensors. The front and back sensors provides protection for close bending operations.

7. Manual Control

Laser Shield offers manual control in case of non standard punches and dies. Also user specific settings can be done in manual mode.

System Components



Laser Transmitter (TX)

- Emits a stable, visible laser field
- Designed for high vibration tolerance
- Industrial-grade housing for long service life

User Interface Panel

- Touch screen interface
- Clear visual indication of system and machine status
- Simple mode selection
- Intuitive messages for setup and operation

Controller

- Plug and play system
- Safety bypass with manual key
- Over The Air(OTA) update facility

Laser Receiver (RX)

- Wide reception zone for easy alignment
- Integrated status LEDs for fast diagnostics
- High immunity to ambient light and vibration

Product Specifications

Emitter/Receiver	
Laser light source	Visible 650 nm
Laser classification	Class 1
Maximum operating distance	6m
Object detection resolution	4mm
Receiver	Inline Phototransistor array
Number of Receiver Sensors	3 In-line
Connector type	M16 6 pin
Operating temperature	0°C to 50°C
Device dimensions	
Emitter	80X80X300mm
Receiver	80X80X230mm
Dimensions of laser beam at TX output	Circular Beam of approx. 57mm
Stepper Motor	Nema 23 class
User interface panel	
Display 4.3” widescreen colour graphics display	4.3" Colour Display
Connector type	4 Pin Xinya
Mechanical	
C Beam Aluminium Extrusion	80x40mm
C Beam Length	500-700mm
Lead Screw	12X3mm
Mounting System	Plate mounted on Ram of the Press
	4 Allen Head M10 Bolts