# TX & RX Status LEDs // Calibration

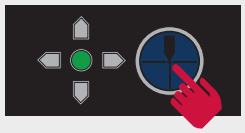
LS-CS-M-110 Rev 1.0

## 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** **DOWN**

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

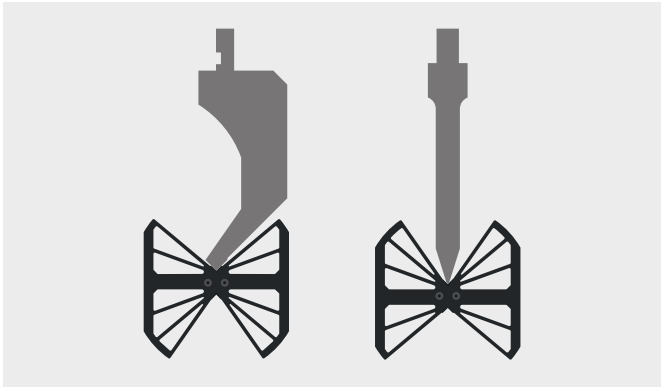
Tool tip not detected.
Check the TX and RX alignment.

Tool tip position reset.
Press the TOOL ALIGN button.

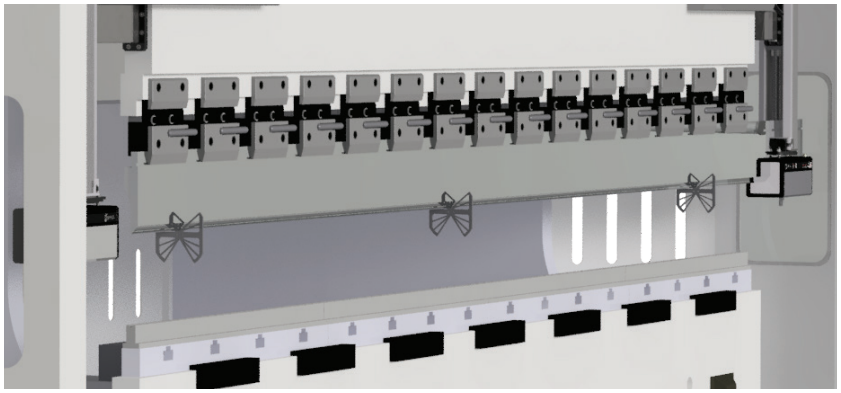
## Angle measurement calibration tool

For best results, calibration is recommended after a tool change or when starting a new bend program. The calibration process will vary depending on the CNC system. Please contact the press brake manufacturer or your machinery dealer for more information and instructions specific to your machine. Replacement calibration tools can be ordered from the press brake manufacturer.

## Calibration tool orientation



## Calibration tool positions



Perform the calibration at three positions (left, middle, right) along the length of the upper tool. Refer to the instructions on the CNC screen.

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# Measurement Accuracy



## Estimate of expected measurement accuracy

Measurement accuracy is based on image quality and the level of image data available for the system to process. Accuracy is determined by a combination of machine, tooling, and part profile factors. This information is provided as a general guide to the level of measurement accuracy that the system can return.

Colours are used throughout this guide to represent the level of expected measurement accuracy based on individual aspects of the machine, the tools, the material and the part profile. To estimate the overall expected measurement accuracy for a specific setup, use the table to determine the combined average of the expected results of the individual elements of the machine, tools and material.

| Measurement accuracy | Up to 0.25 degrees | Up to 0.4 degrees | Up to 0.5 degrees |
|---|---|---|---|
| Machine length | 0-2m | 2-3 m | 3-4 m |
| Bending position | 0-2m | 2-3 m | 3-4 m |
| Punch profile | Standard | Gooseneck | |
| Tool length | 0-2m | 2-3 m | 3-4 m |
| Part profile | Open | Closed | |
| Material length | 0-2m | 2-3 m | 3-4 m |
| Limb length | >18 mm | 14 mm - 18 mm | 11 mm - 14 mm |

**Example #1**
The table shows mostly green, so the expected measurement accuracy would be up to +/- 0.25 degrees.

| Measurement accuracy | Up to 0.25 degrees | Up to 0.4 degrees | Up to 0.5 degrees |
|---|---|---|---|
| Machine length | 0-2m | 2-3 m | 3-4 m |
| Bending position | 0-2m | 2-3 m | 3-4 m |
| Punch profile | Standard | Gooseneck | |
| Tool length | 0-2m | 2-3 m | 3-4 m |
| Part profile | Open | Closed | |
| Material length | 0-2m | 2-3 m | 3-4 m |
| Limb length | >18 mm | 14 mm - 18 mm | 11 mm - 14 mm |

**Example #2**
The table shows a mix of green, blue and red, so the expected measurement accuracy would be up to +/- 0.4 degrees.

| | | | |
|---|---|---|---|
| Machine length | 0-2m | 2-3 m | 3-4 m |
| Bending position | 0-2m | 2-3 m | 3-4 m |
| Punch profile | Standard | Gooseneck | |
| Tool length | 0-2m | 2-3 m | 3-4 m |
| Part profile | Open | Closed | |
| Material length | 0-2m | 2-3 m | 3-4 m |
| Limb length | >18 mm | 14 mm - 18 mm | 11 mm - 14 mm |

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# Measurement Accuracy // Machine Parameters

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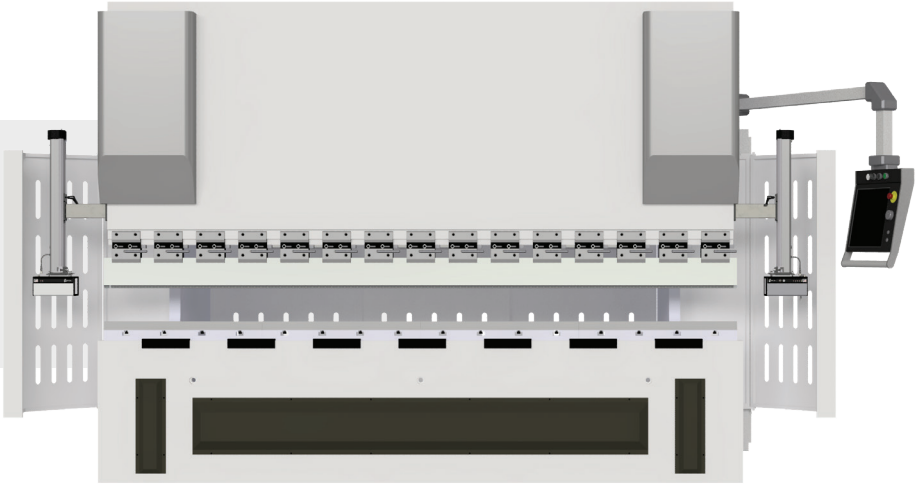
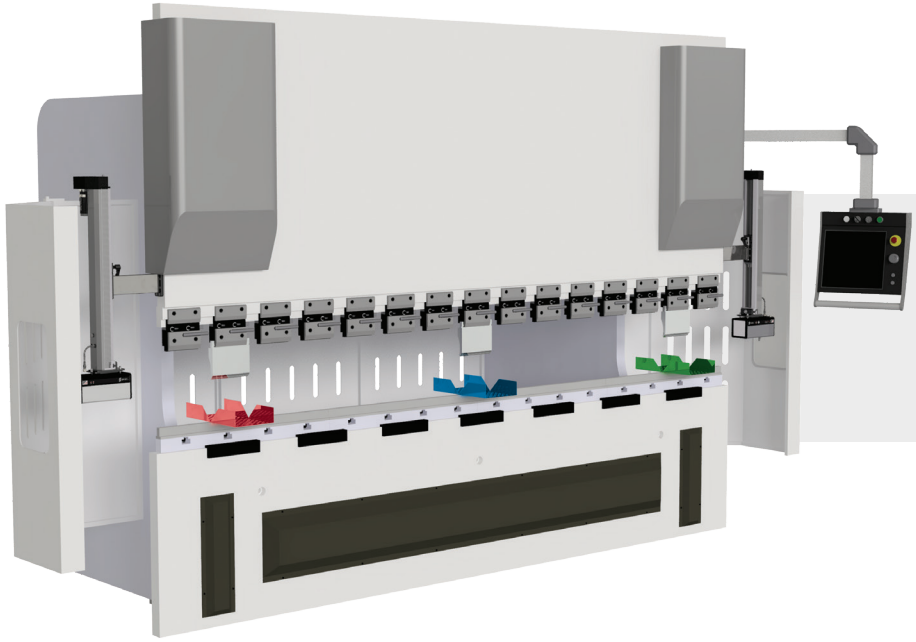
## Machine length

| Measurement accuracy | Up to 0.25 degrees | Up to 0.4 degrees | Up to 0.5 degrees |
|---|---|---|---|
| Machine length | 0-2m | 2-3 m | 3-4 m |

Image quality is affected by the distance the images are taken from the camera receiver.
Optimal accuracy results can be achieved on machines with a bed length of three meters or less.





## Bending position

| Measurement accuracy | Up to 0.25 degrees | Up to 0.4 degrees | Up to 0.5 degrees |
|---|---|---|---|
| Bending position | 0-2m | 2-3 m | 3-4 m |

Bending small parts closer to the camera receiver (right side of the machine) improves image quality, especially on machines with a longer bed length.

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This guide is intended to provide general information about the measurement capabilities and accuracy of the IRIS Plus BendVision technology. The measurement capabilities and accuracy are provided as a guide only. Actual results may vary based on a range of factors including system integration, machine design and environmental conditions. Please note that IRIS Plus BendVision technology is tailored for each press brake manufacturer, and custom integrated with the CNC system software. Functionality and capabilities will vary between manufacturers. Please consult the press brake manufacturer for information and user manuals specific to your machine model.

# Measurement Accuracy // Tool Parameters

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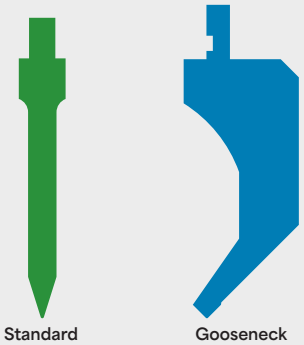
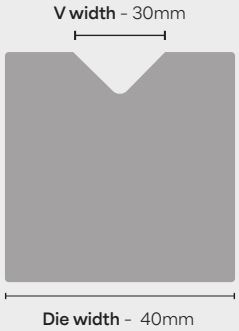
## Punch profile



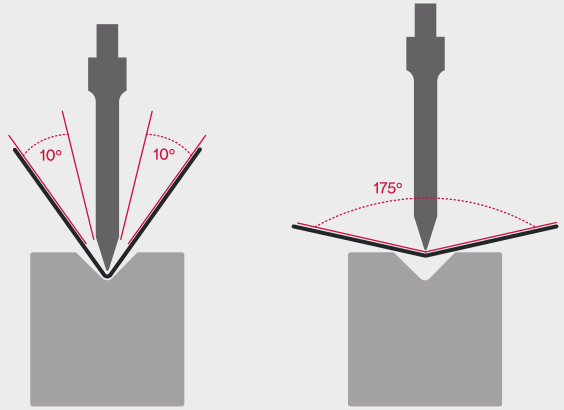

Using a gooseneck tool may only return the outside angle if there is insufficient space between the material and the tool.

## Die width

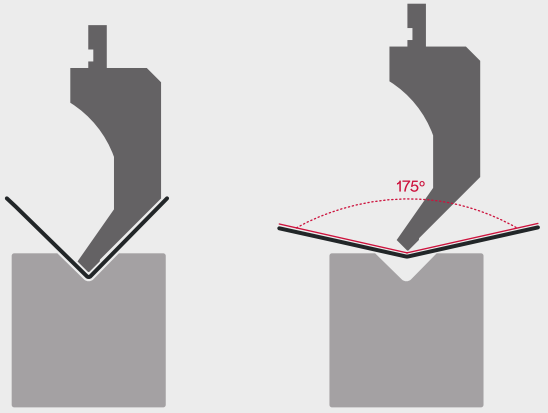



Maximum recommended V width = 30 mm.
Maximum recommended die width = 40 mm.

## Measurement range




**Standard punch**
Maximum angle = 175°
Minimum angle = to the punch angle +10°.




**Gooseneck punch**
Maximum angle = 175°
Minimum angle = to the punch angle.

## Tool length

For best results, avoid installing full-length tooling when not necessary.
Where possible, install the tool length to suit the part length.

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# Measurement Accuracy // Material Parameters

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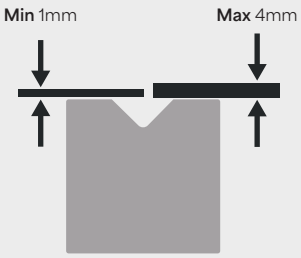
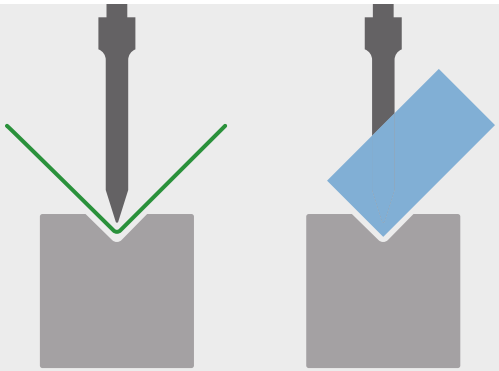
## Material thickness



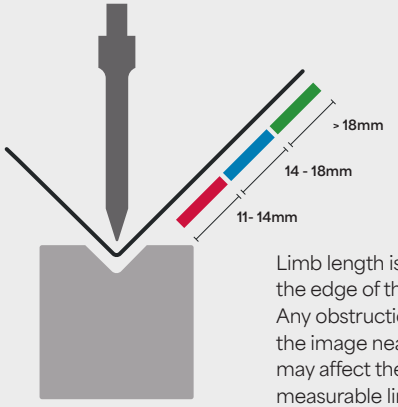

IRIS Plus can measure material with a minimum thickness of 1mm to a maximum thickness of 4mm.

## Part profile



When bending a box profile, the system can only measure the outside angle during a pre-bend springback measurment.

## Limb length

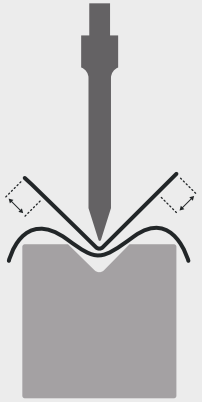



Limb length is measured from the edge of the die shoulders. Any obstruction or distortion in the image near the die shoulders may affect the minimum measurable limb length.

## Material length


Measurement accuracy is generally higher when working with shorter length material. For best results, ensure that the system is correctly calibrated

## Protective die film



The use of die film may affect the minimum measurable limb length.

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