



# END OF LINE SYSTEM

TRUCKCAM FACTORY



## INTRODUCING: END OF LINE SYSTEM

**THE TRUCKCAM END OF LINE system is based on a centerline measurement principle. The measures are carried out with a patented camera technology in combination with pre-calibrated wheel clamps and semaphore measuring poles placed in a square around the vehicle.**

**In this way it is not necessary to place any frame gauges on the vehicle.**

**ANGLESLIKETOE**, out of square and parallelism are quickly measured and adjusted since up to eight cameras can measure simultaneously.

All measured values are shown live on the computer screen, enabling the operator to adjust to the desired values.

**THE SYSTEM CAN BE CONFIGURED** for all vehicle types with their different axle configurations, and target values as well as tolerances can be entered into the software.

**THE ADJUSTMENTS** can be finished only when all values are in tolerance.

This ensures that every vehicle that leaves the production line is properly aligned. To ensure that the hardware is properly calibrated, TruckCam has included a calibration unit and incorporated a calibration functionality into the software.

The software schedules hardware calibration, to make sure that the End of Line system always produces accurate measurements.

**THE TRUCKCAM CAMERAS** are built for the harsh environment around a truck or bus. They are small and compact with no internal moving parts.

Our cameras are working independently of light conditions as they operate only with infrared light from a built-in flasher.

The precision and accuracy is excellent even at long distances.

For truck and bus assembly lines a short cycle time is very important.

Camera technology permits up to eight cameras to operate simultaneously enabling TruckCam to offer the most efficient solution.





## MEASURING WITH THE END OF LINE SYSTEM

**THE OPERATOR STARTS** by entering required vehicle data like chassis ID, wheel base and vehicle type. This can be done with a bar code scanner or by manual input.

When the necessary data have been entered, the reflective markers swing up automatically.

**THE PNEUMATIC LOCKS** in the floating plates placed in the floor are released and the system enters into measuring mode.

The operator mounts the pre-calibrated wheel clamps with cameras onto the wheels using a magnetic click-on functionality to keep the clamps in place.



**THE ACTUAL MEASUREMENT** process starts as the operator aims the camera forward, clicks the OK-button, turns the camera to point backwards and clicks again.

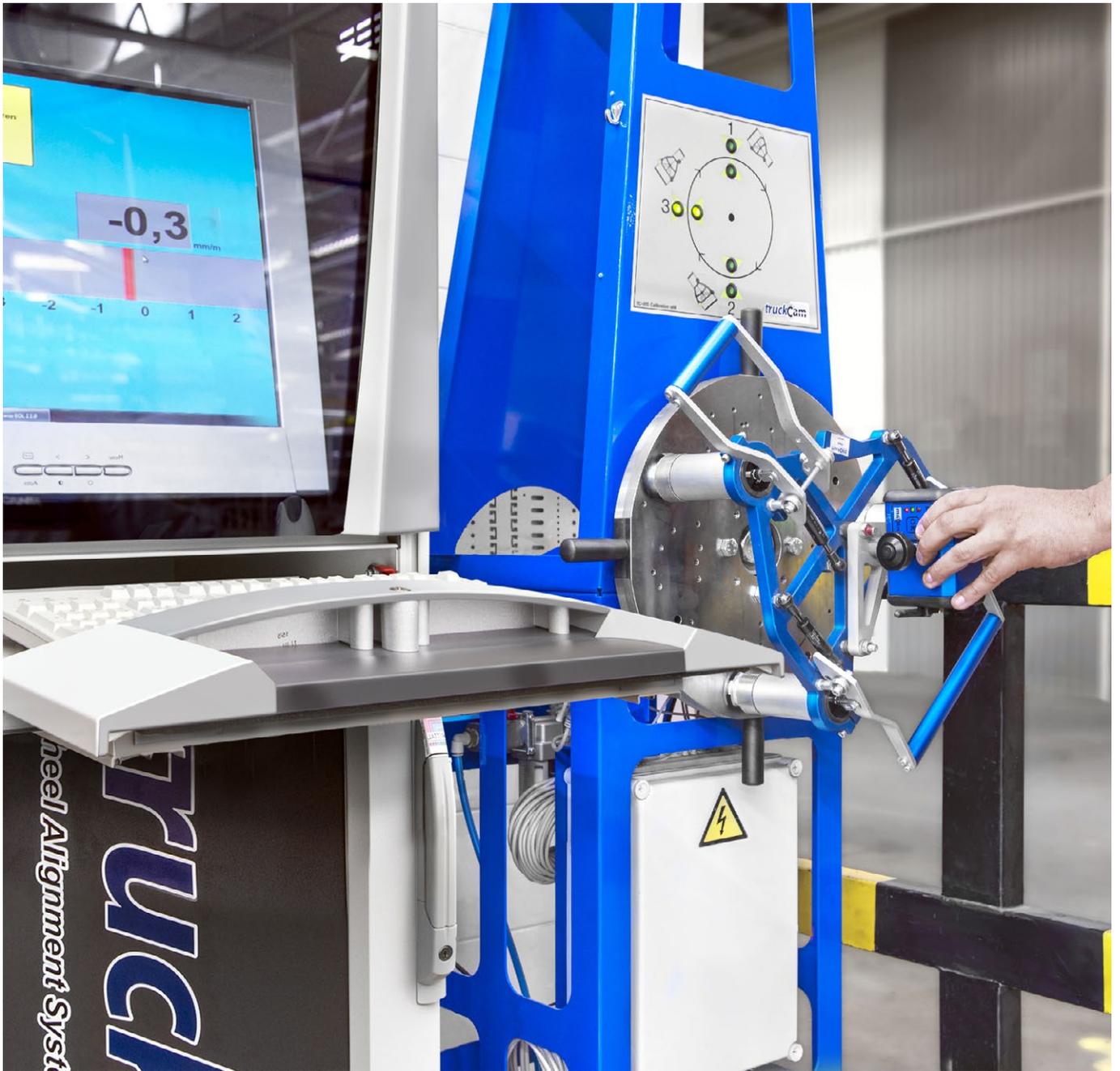
This click-turn-click procedure is done once for each wheel, giving the software enough input to calculate angles like toe, out of square and parallelism. Parallelism of all axles is calculated with the rear axle as reference.

The End of Line system continues to produce live values all through the adjustment process.

**THIS ALLOWS THE** operator to adjust the wheel angles within tolerance in a very easy way by just looking at the bar graphs presented on the computer screen.

When all the necessary adjustments are made, the vehicle specific data are stored in a database in relation to each chassis number.

The operator demounts the equipment and the system is ready for another vehicle, this all in a matter of minutes.



## HARDWARE CALIBRATION IS ESSENTIAL

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**CALIBRATION OF CAMERAS and wheel clamps in the TruckCam End of Line system is controlled by the system's software.**

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**THE SOFTWARE WILL INDICATE** to the operator when the cameras and wheel clamps needs to be calibrated. It also prevent any measurements until the hardware has been properly calibrated. This is to ensure that the measurement values presented by the system are always accurate.



## MAIN ADVANTAGES

- **Wireless communication**
- **Very short cycle time allows for measuring and adjusting a complete vehicle in less than six minutes**
- **Simultaneous alignment of up to four axles by continuous measurement values**
- **Secure process by easy step-by-step software**
- **Calibration of equipment scheduled by software**
- **Complete documentation of every vehicle in a database**
- **Pre-calibrated wheel clamps eliminates need for run-out compensation**
- **Measurements can only be ended and stored when all values are within tolerance**

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