

NEXT.assembly

# InLine Testing – Wheel Alignment Stand

## Wheel alignment in the assembly line

The wheel alignment stand in the assembly line (InLine Testing) offers an adequate alternative to conventional drive-through test stands at the end of line.

The advantages of the principle lie in the use of an existing conveyor system, which enables automated transport of the vehicle. Another point in favor of this system is that a separate end-of-line area, including test stand pits and the necessary technical building equipment, can be economized or reduced.

### FUNCTIONALITY

The test stand itself operates in cycle mode, which is the ideal condition for loading the axles accordingly and supplying automated tools. Another advantage of the principle is that the axles are measured and automatically adjusted directly after installation, as this position provides optimal accessibility to the adjustment points.

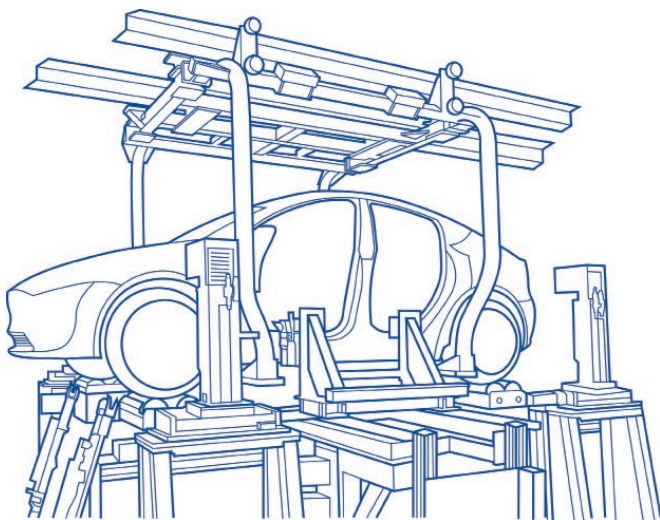


Illustration InLine Testing x-wheel

### CUSTOMER BENEFITS



Less floor area required

No pits

Lower requirements on technical building equipment

Use of existing conveyor technology for automated transport

Optimal conditions for full automation

Optimized cycle time and quality

### MEASURING WHEEL GEOMETRY

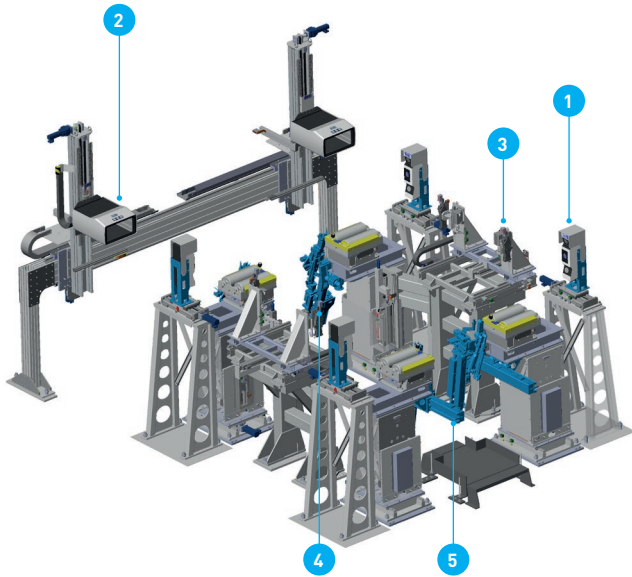
Depending on the vehicle assembly phase, the body is held down at different points.

Measurement of the wheel geometry is carried out on the rotating vehicle wheels. For this purpose, conventional floating plates with drum motors are moved to the vehicle wheels by means of lifting units. During wheel geometry measurement, the wheels are driven by the drum motors. Depending on the vehicle type, the adjustment of the toe values is carried out at the front axle as well as at the rear axle. This is done fully automatically using setting tools developed by Dürr. Exact positioning of the setting tools to the respective setting points is realized via corresponding supply units or robots. Test stand control and visualization are conducted by the x-line automation software developed by Dürr.

Measurement and setting of the headlamps are carried out in parallel with the wheel alignment. To ensure an efficient setting process, the vehicle should have self-adjusting headlamps.

# InLine Testing – Wheel Alignment Stand

## Wheel alignment in the assembly line

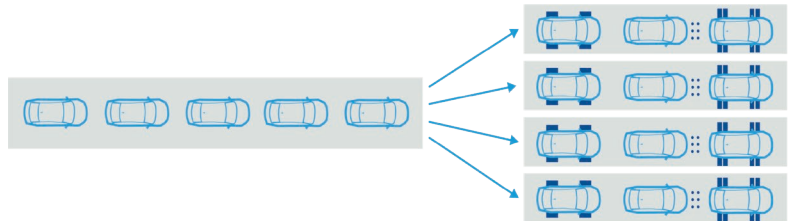


### Layout InLine Testing

- 1 Measuring system x-3Dsurface
- 2 Headlamp measuring and aiming system x-light
- 3 Hold-down unit
- 4 Setting tools front axle
- 5 Setting tools rear axle

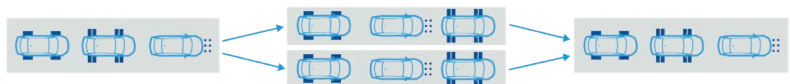
### TRADITIONAL END OF LINE (STATUS QUO)

- Assembly line is split into several test lines at the end of line
- Operators manually transfer the fully assembled vehicles into the respective test stands (in some cases also automatic transfer via belt conveyors)
- High demands on infrastructure (space requirements, pits, technical building equipment)



### INLINE CONCEPT

- Relocation of the test stands into the assembly line
- Full automation of the measuring and adjustment processes
- Use of the existing conveyor technology for automatic transport of the vehicles
- No need for a separate end-of-line area, including the pits and the necessary technical building equipment



### FEATURES

- Cycle mode (Stop-&-Go driving)
- Realization of different loads to the vehicle (e.g. design height)
- Automated chassis measurement and toe adjustment