



x-DASalign truck

Setting of driver assistance systems on commercial vehicles

Driver assistance systems in the vehicle lead to more security in the traffic. Therefore, the correct setting of the sensors of these systems is indispensable.

Dürr Assembly Products has transferred its knowledge and its experience in the adjustment of driver assistance systems of passenger cars to the setting of these systems in commercial vehicles.

Through the wheel alignment stand x-wheel truck d the chassis parameters such as the driving direction will be determined precisely by means of the x-3Dprofile measuring system and taken into consideration in the calibration of the sensors.

Together with the x-tronic products for ECU communication and the automation software x-line all components which are necessary for sensor setting are made available.

CUSTOMER BENEFIT



Process capable adjustment of driver assistance systems

Short cycle times in consideration of the rising flow-rates

Automated documentation of setting values

Consideration of vehicle parameters determined in the x-wheel truck d (symmetry axis and driving direction)

Expandable for future sensors

Traceable calibration of the test stand as a whole with calibration gauge

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ADAPTIVE CRUISE CONTROL ACC

The Adaptive Cruise Control (ACC) maintains the safety distance to the vehicle driving ahead while considering the selected speed. If there is no vehicle ahead at a critical distance the vehicle will be accelerated to the set speed. Otherwise it will be braked. For a correct functioning of the ACC system the beam direction of the sensor must be adjusted with a tolerance of $\pm 0.25^\circ$ related to the driving axle of the vehicle i.e. with a tolerance of $+ 0,57\text{m}$ at a distance of 130m . This can be achieved by a rotating mirror attached at the Z column which is aligned perpendicular to the driving axle measured in the wheel alignment stand x-wheel truck *d*.

LANE DEPARTURE WARNING LDW

With the Lane Departure Warning (LDW) a camera, which is attached behind the windshield of the vehicle, recognizes if the vehicle leaves the lane and warns the driver with acoustical or haptic signals. For the adjustment of the Lane Departure Warning a precisely manufactured target with a producer-specific pattern will be placed in front of the camera and aligned according to the driving axle of the vehicle. A lighting for evenly illuminating the target can be offered as an option.

TEST STAND CALIBRATION

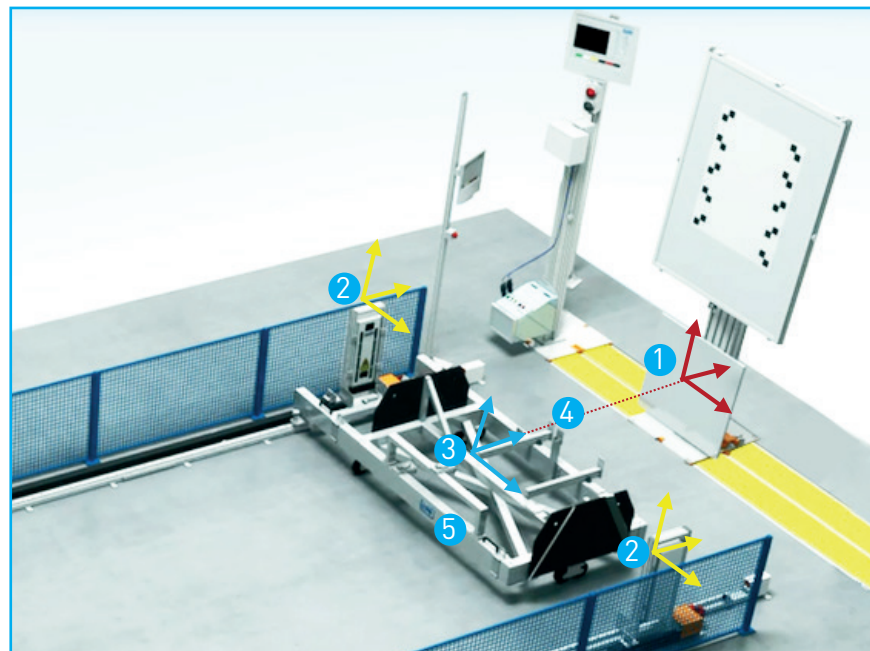
For a correct calibration of the individual sensors with the vehicle the coordinate systems of the corresponding targets and the one of the vehicle have to be transferred into a common coordinate system. The master gauge provides specially manufactured calibration gauges for all measuring systems and targets so that the transfer of the coordinate systems can be proven and be executed efficiently.

SOLUTIONS

For a process-safe setting with optimized cycle time of LDW and ACC at commercial vehicles, Dürr Assembly Products offers two solutions:

- An automatically positioning gantry system with an overhead clearance of 2.2 m for vans and small buses.
- An automatically positioning floor-guided system for trucks and buses with an axle load of up to 10 tons .

For a common adjustment of LDW and ACC the target for the LDW camera and the rotating mirror for the ACC setting can be attached together at the Z column.



SYNCHRONIZATION OF ALL COORDINATE SYSTEMS

- 1 - Coordinate system of the ACC turntable
- 2 - Coordinate system of the wheel geometry measurement systems
- 3 - Coordinate system of the master gauge
- 4 - Laser beam
- 5 - Master gauge

TECHNICAL DATA

Max. overhead clearance gantry system	2,20 m
Max. axle load floor guidance	10 t