



# **JOSAM**

## **laser AM**

### **Alignment Measuring systems for heavy-duty vehicles**

**Our best, simplest and most reliable alignment system for wheels, axle and frame measurement on trucks, coaches, trailers, semi-trailers and other heavy-duty vehicles.**



***- A system which can also measure chassis frames-***



# JOSAM laser AM



## Accurate measuring system for wheels, axles and frames

When the driver steers the truck straight ahead, he/she assumes that the wheels and chassis roll straight ahead.

He/she controls the front wheels himself and he decides on their direction. But the rest of the wheels can be rolling in another direction if the axles are not correctly positioned in relation to the longitudinal center line of the truck or if the axles are bent. It need not be a big displacement of the axle to have a very detrimental effect. If, for example, **one wheel rolls 5 mm per meter to the right and the other wheel rolls 5 mm per meter to the left, the wheels will diverge from each other 10 meters per kilometer.** This means that the truck rolls with resistance, which increases tire wear and fuel consumption. So it costs money driving around with faulty wheel geometry and axle positions. It is especially important for traffic safety that trucks with trailers have parallel rolling wheels. Everyone who has driven behind a truck or bus knows that very often they take up more room than the maximum allowed vehicle width.

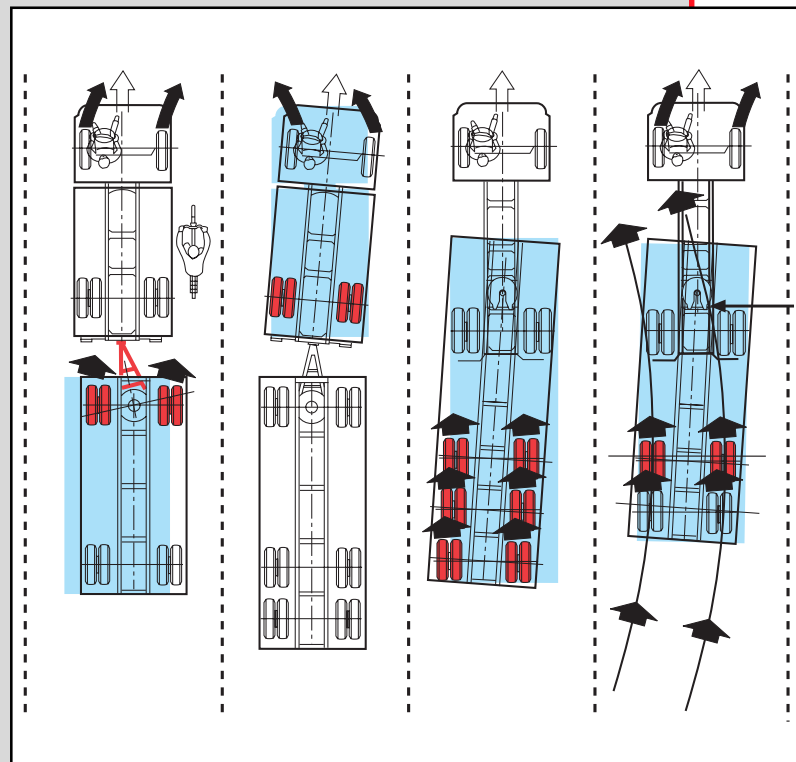
The Josam method is a way to increase traffic safety and driving economy. It is the only absolutely reliable system for measuring axle positions and for measuring wheel Toe-in/Toe-out and camber. Steering axle caster, KPI, maximum turn and toe-out on turn are easily and quickly checked with Josam's wheel alignment gauge.

Measurement and adjustment with JOSAM laser AM results in a balanced carriage where wheels, axles and chassis are rolling in the same direction.

For the workshop, this system is a **money machine**. It is easy to use, calibrate, service and it also speeds up the alignment process.

Measuring takes place on the vehicle and the results are **accurate** with **repeatability** and **reproducibility**.

Moreover, any frame distortion can be diagnosed.





# JOSAM laser AM



The picture shows a standard set of JOSAM laser AM equipment for wheel, axle and frame measuring. In addition, a wall mounted set is available as an option.

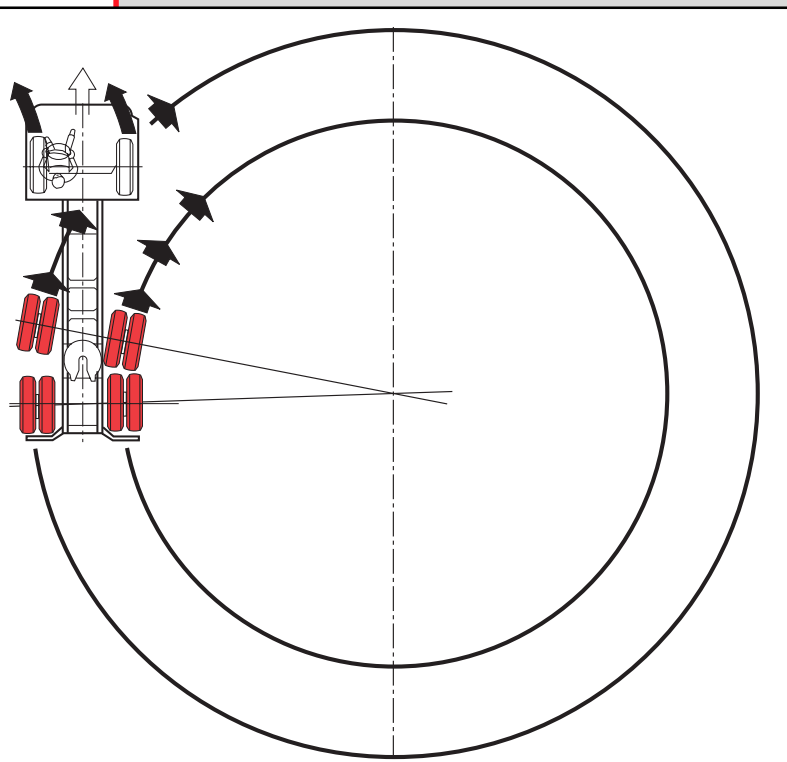


## Measuring camber

The wheel alignment gauge for camber, caster and KPI, is attached to the wheel adapter spindle. Camber angle readings are easily read on the outer scale of the measuring dial (see arrow).



Diode laser and battery charger. The Ni-cad batteries supply up to 50 hours of continuous use.



Before measuring wheel angles, the play detectors are used to check for worn parts.



# JOSAM laser AM



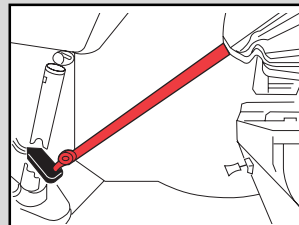
## Measuring caster

When measuring caster the wheel alignment gauge is fixed on the wheel adapter in the same way as for camber measurement. By means of the turn angle gauges or turntables, one can position the wheel into 20° inner and outer turn when measuring. The caster value is read on the inner scale and with the turnable indicator (see arrow).

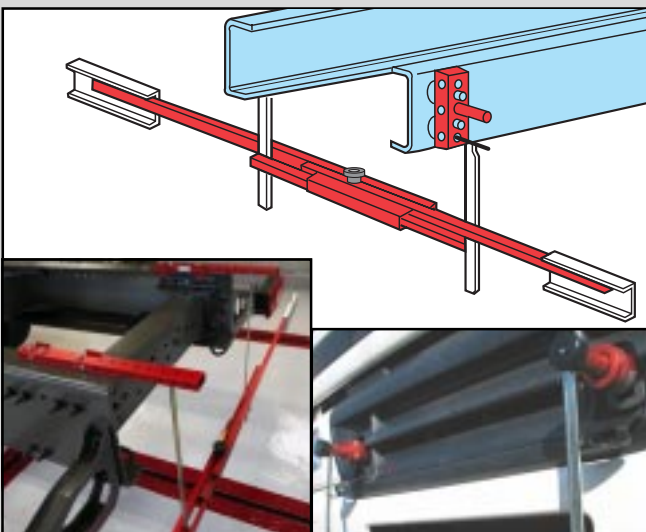


## Measuring KPI

To measure KPI, attach the wheel alignment gauge to the spindle as shown above. The wheels should be locked with a bar for the brake pedal. The ability to position the wheel 20° inner and outer turn is available with the use of our turn angle gauges or turntables. The KPI-value is read on the inner scale and with the turnable indicator (see arrow). The picture above shows our turntable, which is designed to withstand 5000 kg.



Bar for brake pedal



*It is sometimes difficult to find a suitable place to hang the measuring gauge. Included in the system are various adapters and brackets which can easily provide lateral and longitudinal extensions to the vehicle.*



*The non-friction plate makes it easier to move the wheels for the toe adjustment and while working with double steering front axles.*



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## How the measuring system works

The JOSAM method for measuring axle positions shows accurately the rolling direction of the wheels in relation to the true geometric center line of the vehicle. This is done by means of a laser beam from a projector fixed to the wheel rim. The beam is projected onto scales at both ends of the truck. The scales are fixed on self-centering frame gauges which make it possible to line-up the center line at the side of the truck.

The scales are divided into 2 mm increments and located at the pin on the frame gauges. When the laser beam shows the same value on both scales it means that the wheel rolls straight ahead, thus parallel to the longitudinal center line.

The laser projector is fixed onto a universal wheel adapter, which is adjustable for different sized rims. Then the axle is lifted with a jack so the wheel can be rotated. The adapter on which the laser is fixed can be adjusted to eliminate the deformation of the rim. This is done easily by means of the laser beam, the scales and adjusting knobs. The adjustment compensates for run-out of the wheel rim.

Note that even the fact that a rim is severely damaged does not influence the attainment of very exact measuring results. Run-out of the wheel can be compensated for with the adjustment knobs on the adapter. Calibration of the measuring system can be done while measuring takes place and only takes a minute.

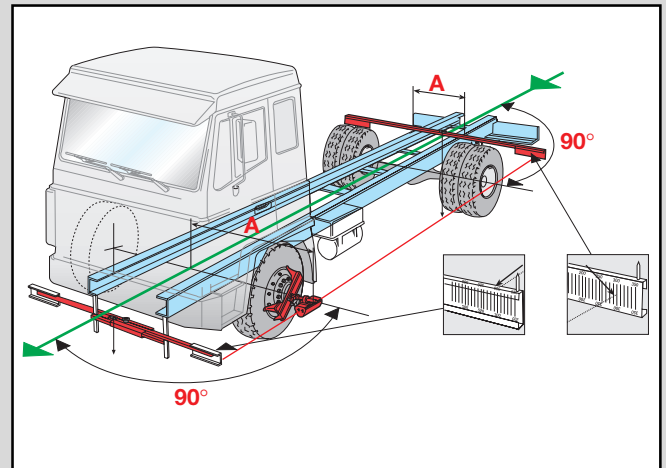
When the adjustment of the laser has been completed, the laser beam indicates the rolling direction of the wheel.

When the laser is aimed at the front scale, the indicated value is taken and recorded. The laser is then aimed at the rear scale. Any difference between the two values indicates the deviation of the wheel from the correct rolling direction. Tracking error can be calculated by dividing the measured difference with the distance between the scales. The deviation is given in mm per meters. Our recent PC software JOSAM communicator calculates and depicts this directly in your PC.

A new feature for our JOSAM communicator is that it is now adapted to a so-called "Pocket PC". This means that the operator can register and calculate the measurements taken around the vehicle and then load in the measurements over to a conventional PC. A perfect tool for those of you who are on the move or who don't have easy access to a PC.

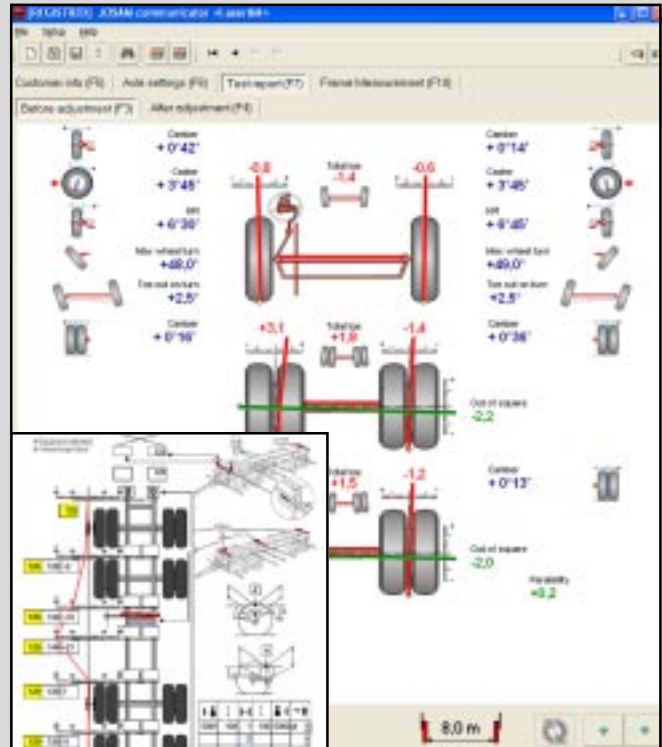
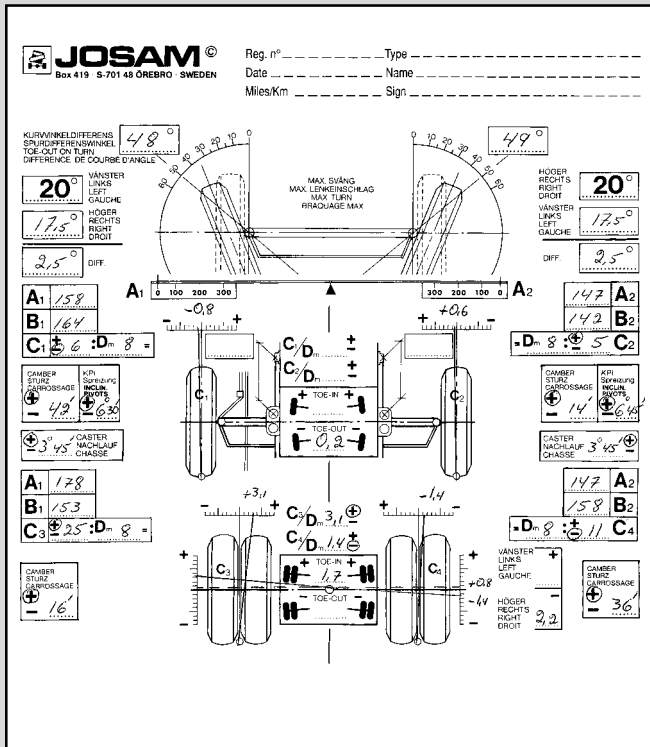
### Frame measurement

The JOSAM laser AM can easily be configured to measure chassis frames. This is possible with additional frame gauges and a supplementary report sheet/software. A frame check is part of every alignment procedure.





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## Report sheets

Included in the JOSAM laser alignment measuring system are test report sheets on which the angles for toe-in, toe-out, camber, caster and KPI can be noted as well as the toe-out on turn and the maximum turning angle. On vehicles with twin steering front axles it is of the utmost importance to note the deviation of the parallel axles between pairs of wheels and to adjust the setting.

On JOSAM's test report sheets it is also possible to indicate the displacement of fixed axles. Between two or more axles the non-parallelism can be indicated, which must then be adjusted because otherwise the vehicle will not drive straight ahead. Axles which are not parallel to each other cause a lot of wear, not only to the wheels of these axles but also to the rest of the wheels on the vehicle.

## Software for PC/Pocket PC

These reports are now offered as a Windows application and are suitable for use in your PC. This program, JOSAM communicator, is designed for Windows and makes it easier for you to calculate and store the test results when measuring wheels and angles.

The program functions with a database where measurements, customer information and comments can be entered, stored and printed out. As all data is stored in a database, quality control can be maintained at a professional level.

JOSAM communicator is delivered on CD and is available in several languages.

As the system can also measure frames, there is a new option for frame measurement included in the software.

Representative:

Manufacturer:



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