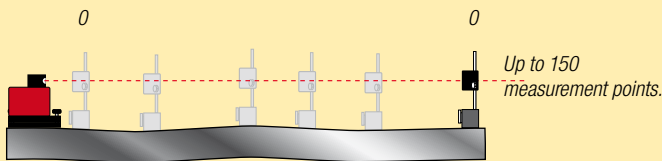


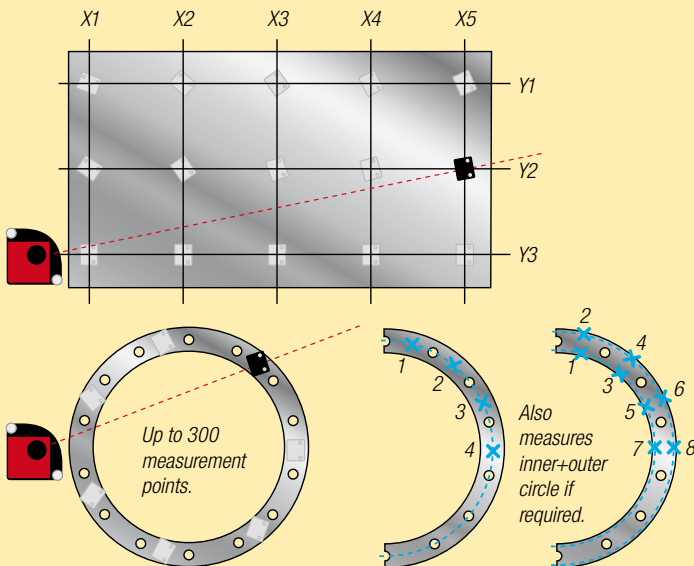
## STRAIGHTNESS

Measuring straightness, like all other geometry measurements, relies on the use of the laser beam as a reference. The beam is roughly aligned along the measurement object or levelled if required. Then position the detector at selected measurement points and record the values. After measuring, set two suitable measurement points to zero, then convert the remaining points to this new reference line. New measurement points can be added to or removed from the existing set. Offset values can be entered for all points for automatic calculation of correct adjustment values.



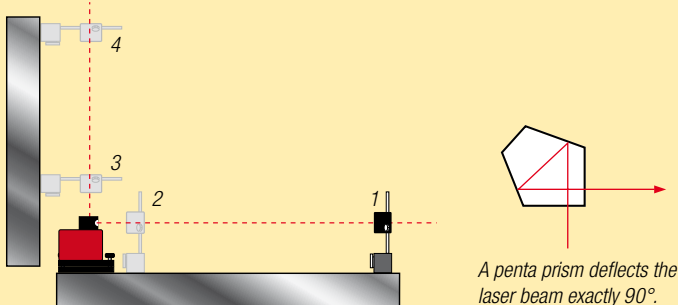
## FLATNESS

Flatness can be measured on a rectangular or circular plane. The only difference is which measurement program is most suitable. First, roughly align the laser beam along and across the measurement object. Then position the detector at selected measurement points and record the values. After measuring, set three of the measurement points to zero, then the remaining points are recalculated to the new reference plane formed.



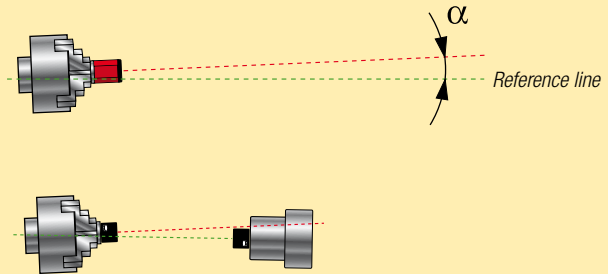
## SQUARENESS

When measuring squareness, first record two measurement values on a single object to create a reference for the angle. Then use the built-in penta prism in laser transmitter D22, which deflects the laser beam 90° (as illustrated), and record two new measurement values on the second object. The measurement values are converted into an angular value, showing any deviation from 90° in the second object.



## SPINDLE DIRECTION

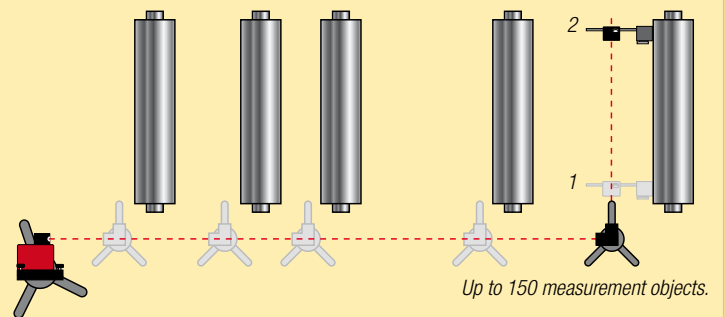
When measuring spindle direction, place a suitable laser transmitter in the machine spindle and the detector on the section that can be moved along with the machine's working area. Record the first measurement value at the first measurement point, then rotate the spindle 180° and record the next value. Then move the detector to the second measurement point and repeat the procedure. (To eliminate any static sag, laser transmitter D146 can be used with a rotating spindle while measuring.)



Another application is alignment of secondary spindle with main spindle. Here it is beneficial to use both measuring units (combined laser/detector) of the Easy-Laser® system D525.

## PARALLELISM

Parallelism measurements can be performed in a number of ways. The example below relies on the use of a penta prism to deflect the laser beam at 90° to the reference laser line. Measurement values are recorded at both ends of the measurement object. The penta prism is then moved to the next measurement object and two new measurement values are recorded. Repeat the procedure for all objects to be measured. The results are displayed in both graphical and digital form, with the base line or any object as reference. (The measurement process requires laser transmitter D22, 2 tripods, a penta prism and a parallelism kit.)



## BORE CENTRE

For bearing positions, the straightness of the bore's centre line both vertically and horizontally should be measured. Position the detector in the bearing position, record the measurement value, then rotate the detector 180° and record a new measurement value. Repeat the procedure for each bearing position. (If bearing halves or bearings with identical diameters are to be measured, an ordinary straightness measurement can be performed instead with just one measurement value per bearing position.) (Different fixtures are required depending on the application. Consult your dealer and read more about it in other brochures.)

