MOTION & CONTROL™
NSK

LAB-SET

LASER ALIGNMENT TOOL – BELT

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Why belt alignment is important

Correct alignment of belt drives is increasingly important in an environment where machine performance and maintenance costs are key considerations. Pulley misalignment can result in unnecessary forces being applied to the machinery leading to increased wear and vibration causing premature bearing failure and thereby costly machine downtime.

Traditional belt alignment methods

Typically this involves the use of a straight edge or even string placed on the pulley side. However this is limited by the length of the straight edge and assumes that the pulley side is clean, rust free and parallel to the pulley V-grooves. This method usually does not result in an accurate alignment.

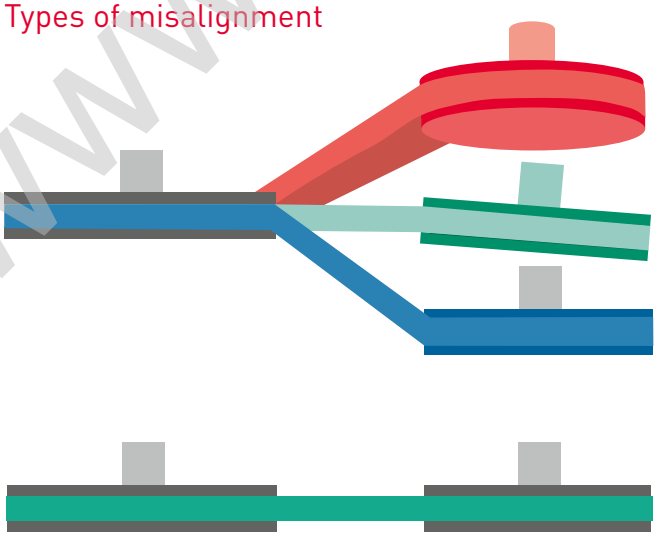
Laser

NSK's Laser alignment tool for belts (LAB-Set) enables truly accurate alignment as the laser heads are fitted directly into the pulley V-grooves. The LAB-Set is very easy to use and allows adjustment with the belt in place.

Benefits of accurate belt alignment

- Increased bearing lifetime
- Increased machinery uptime, efficiency and productivity
- Reduced wear of pulleys and belts
- Reduced unplanned downtime
- Reduced costs for component replacement
- Reduced friction and hence energy consumption
- Reduced vibration and noise

Types of misalignment



Angular vertical

Angular horizontal

Parallel

Correct alignment

Laser Belt Alignment Tool – LAB-Set

LAB-Set – the solution to all your belt alignment needs

With the LAB-Set, you are never in doubt whether your belt transmissions are aligned or not. By using the V-grooves as reference, you will achieve precise alignment which reduces belt wear, bearing failures and vibration.

Two transmitters with visible red laser line

The LAB-Set comes with two line laser transmitters, each equipped with two spring loaded guides which fit into the pulley grooves. The use of two laser transmitters with integrated targets makes it very easy to find out what kind of alignment is required. Parallel offset, angular error and twist are instantly visible to the operator. Within a few minutes the operator can determine if the machine requires alignment or not. This is far more accurate than single laser head types.

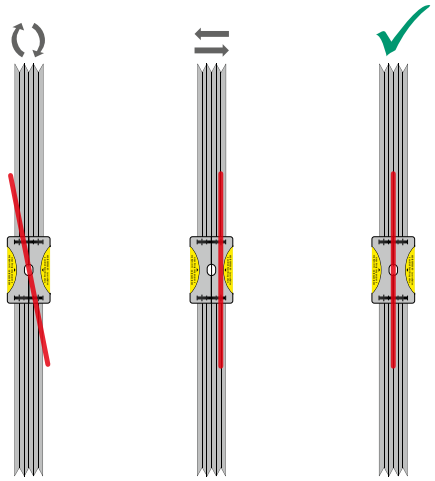
Mounting of the transmitters

The LAB-Set units are very easily mounted on the pulleys, regardless of the condition of the pulley side faces. The spring action probe finds the centre of the belt groove. The built-in industrial magnets snap the units to the pulley with a perfect fit. The LAB-Set is equipped with various sized removable guides to fit standard groove profiles sizes A-E (6 mm - 40 mm). Additional guides for alignment of timing belts are available as accessories.

The alignment process with the LAB-Set

The visible red laser line makes it easy to determine the position of your belt driven machines.

The alignment process is as easy as the mounting. Just turn on the lasers and look at the opposite mounted unit. The laser shows as a line on the target label as in the illustration to the right. If necessary, adjust your machine position until the laser lines are aligned with the centre mark. This is done for both units which ensures accurate alignment at a distance up to 6 m.



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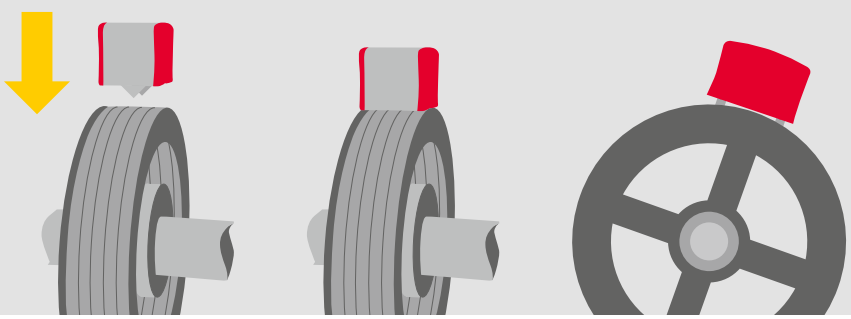
Optional equipment makes it possible to align timing belt driven machines.



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LAB-Set – Technical Data

Complete System	
Weight (incl. all standard parts):	1.5 kg
Storage Temperature:	-20 to 70°C

Case	
Material:	High Impact ABS Plastic
Sealing:	Dust, water (5 m), and air tight with air pressure compensation valve
Drop Test:	3 m on to concrete floor
Dimensions:	250 x 180 x 80 mm

Measuring Units	
Housing Material:	Extruded aluminum (molded PA cover)
Operating Temperature:	0 to 40°C
Relative Humidity:	10 – 90%
Weight:	300 g
Dimensions:	61 x 77 x 61 mm
Environmental Protection:	IP 65
Laser:	630 – 675 nm class II diode laser
Laser Line Fan Angle:	90°
Laser Power:	< 1 mW
Measurement Distance:	50 mm - 6000 mm
Measurement Accuracy:	Better than 0.5 mm or 0.2 degrees
Pulley Diameter Range:	From 75 mm and larger (standard)
Pulley Belt Groove Width:	6 mm – 40 mm (standard)
Power Supply (Battery):	2 pcs of LR03 (AAA) 1.5 V per unit
Operating Time:	20 hours of continuous operation
Laser Safety:	See yellow label on unit

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The complete bearing care package

NSK focusses on the care of your bearings with the comprehensive aip+ package. The different maintenance and service tools will give you support for optimum machine performance resulting in life long operation.

Laser Alignment

NSK's alignment tools minimise losses and ensure your machine gives optimum performance with the lowest energy. Over 50% of machines run out of alignment which causes higher loading resulting in lower overall performance.

Condition Monitoring

NSK's Condition Monitoring Service keeps track on the pulse of your machine, providing the best health check for running machinery.

Mounting Tools

NSK's range of bearing tools ensure all components are handled correctly without damage. Having the correct tools for the job ensures that machines are assembled and dismantled correctly and efficiently.

Lubrication solutions

Keeping your bearings lubricated is essential for extended lifetime. NSK's range of lubricant solutions will help you achieve the best performance.

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