

# SKF Shaft Alignment System

## TKSA 80

Advanced laser shaft alignment tool that increases alignment knowledge



## Introduction

The TKSA 80 is the most advanced Shaft Alignment System in SKF's alignment family. It is designed to assist users with managing the alignment process for any rotating machinery, which consequently helps prevent decreased production caused by machine misalignment, and promotes reduced energy consumption and increased operating lifespan.

It is known that, for effective machinery alignment efforts, measurements represent only 5% of the process. Best practices in the alignment process itself are critical, and craftspeople often experience difficulties caused by omitting important alignment steps. The TKSA 80 system provides a complete built-in alignment process that properly advances users through the alignment effort, resulting in both improved alignment results and increased machinery alignment knowledge. The TKSA 80's alignment process advances users from preparation and evaluation through correction, and finally to reporting of alignment results.

In addition, the system offers a unique database that stores machine alignment setup data for future use, saving valuable time. And, with its seven inch screen, the TKSA 80 can accommodate large machine train alignment jobs.

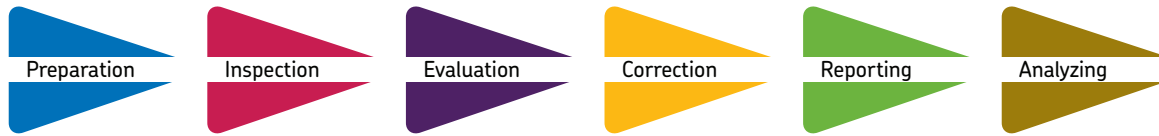
## Key features

- Seven inch colored screen with touch-screen and keypad
- Rugged design for use in harsh environments – 1.2 meter (3.9 feet) drop test to MIL-STD-810F
- Built-in wireless technology
- "Swap view" – enables graphics to be swapped from one side of the machine to the other to accommodate the user's position
- Full template database
- Energy efficiency indicator
- Horizontal and vertical alignment
- Large machine train alignment



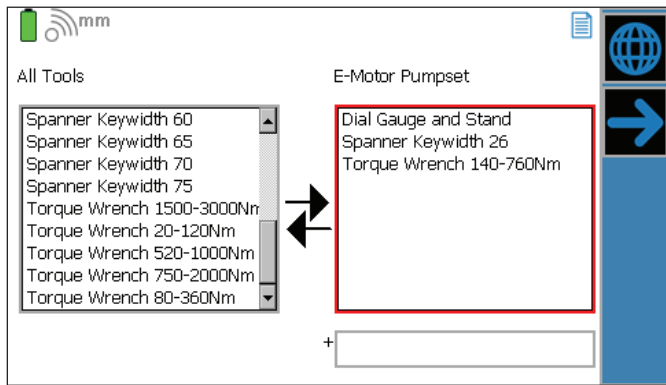
# Built-in pre-defined alignment process

The TKSA 80 integrates a pre-defined alignment process into a portable instrument. It provides users with step-by-step instructions on how to perform alignment in the most effective and efficient sequence.



## Preparation

- The right tools and materials at the right place at the right time
  - The system reminds users of the correct tools and materials to use, before carrying out the alignment job.

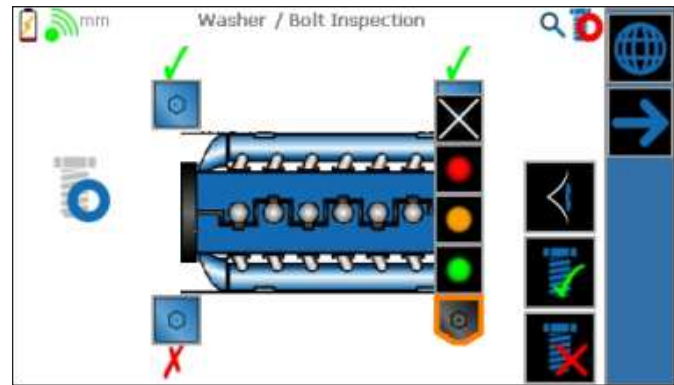


- Database and fast template
  - The instrument offers an extensive database where a wide range of machinery and alignment relevant information can be stored. Based on information in this database, specific templates can be created for each machine, for re-use during future alignment activities.

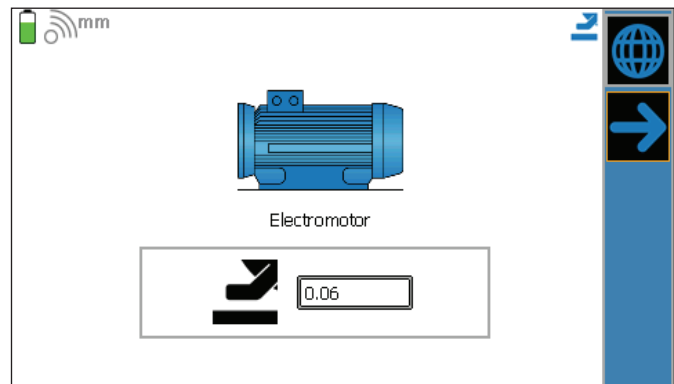


## Inspection

- Visual inspection
  - Inspection fields are provided for oil level, oil leakages, foundation bolt status and wear indications, etc.



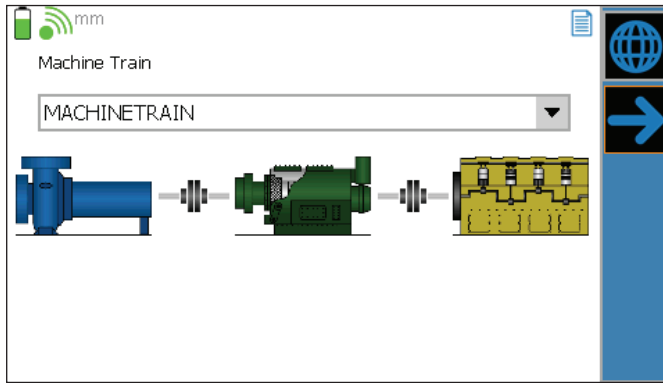
- Soft foot check
  - The system gives users the choice to find, correct and record soft foot conditions by either laser or by feeler gauges.



- Horizontal and vertical shaft alignment
  - Measurements are performed at any of three positions, with a shaft rotation of as little as 30 degrees.



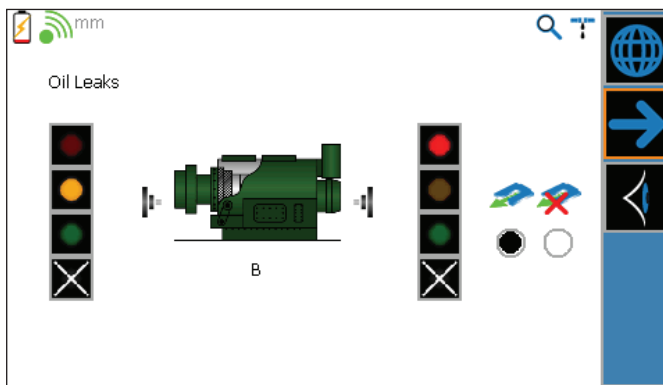
- Machines train
  - Align three machines in a line (accommodates multiple machine train alignment).



- Run-out check
  - The system reminds users to perform a simple measurement that discovers bent shafts.

### Evaluation

- The system assists users to compare inspection results with the information saved in the fast template to identify and prioritize corrective actions.



### Correction

- Real-time correction
  - The system displays the live actual value and direction for accurate misalignment correction.

### Reporting

- Results in graphical format
  - The results are shown in graphical format and the file can be easily downloaded to a USB memory stick from the display unit.
- The results show the machine conditions “as-found” and “as-corrected”. Desired targets and tolerances are also displayed.
- Energy efficiency
  - The system reports estimated extra energy consumption due to misalignment.

### Analyzing

- Alignment reports are recorded in the system, which helps users periodically compare the alignment history and monitor the machine’s health trend.

## Standard programs

The following standard programs are available for the TKSA 80:

- |  |                        |  |                           |
|--|------------------------|--|---------------------------|
|  | • Horizontal alignment |  | • Vertical alignment      |
|  | • Soft foot by laser   |  | • Soft foot manually      |
|  | • Chocking arrangement |  | • Bolt torque input       |
|  | • Fast template        |  | • Database                |
|  | • Visual inspection    |  | • Alignment target        |
|  |                        |  | • Machine train alignment |

# Technical data

## Complete System

- Measure distance\*: Up to 10 m (33.0 ft.)
- Relative humidity: 10 to 90%
- Temperature range: -10 to +50 °C (+14 to +122 °F)
- Weight (with case): 7.64 kg (16.84 lb.)

\* Range can be compromised when operating in bright sunlight.



## Display unit

- Display: Seven inch backlit color LCD, daylight viewable with touch screen and keypad
- Power: Rechargeable Li-ion battery and external power supply
- Operating time on battery: Typical ten hours continuous operation
- Storage memory: 64 MB
- Housing: PC / ABS plastic with integrated lockable stand
- Dimensions (height × width × depth): 276 × 160 × 53 mm (10.9 × 6.3 × 2.1 in.)
- Weight: 1 060 g (37.4 oz.)
- Environment protection: IP 65
- Connectivity: Low-power, industrial wireless network, 802.15.4 compliant
  - USB: Host v1.1, device v1.1
- Drop test: 1,2 m (3.9 ft.) to MIL-STD-810F

## Measuring units (A, B)

- Type of laser: Red diode laser
- Laser wavelength: 635 nm
- Laser safety class: Class II
- Laser output power: <1 mW
- Displacement measurement accuracy: ±5 µm, ±0,5%
- Detector: Linear CCD with length 36 mm (1.4 in.)
- Relative accelerometer accuracy\*: ±0,1° (at 24 °C / 75 °F)
- Accelerometer resolution: 0,1°



\* Relative accelerometer accuracy is the difference between the angles reported by the two measurement units when held at the same absolute angle.

- Thermal sensors: ±2 °C (±3.5 °F)
- Housing material: Chassis, aluminum sides, glass filled PBT
- Dimensions (height × width × depth): 96 × 93 × 36 mm (3.8 × 3.7 × 1.4 in.)
- Weight: 326 g (11.5 oz.)
- Environment protection: IP 65
- Ambient light protection: Optical filtering and ambient light signal rejection
- Power supply: Two (2) AA alkaline batteries or rechargeable battery

## Rod / fixing bar

- Length: 4 off 90 mm, 4 off 150 mm, can be screwed together to increase length

## Standard shaft diameter

- Up to 300 mm (11.8 in.)

# Ordering information

## The TKSA 80 Shaft Alignment System consists of:

- Display unit TKSA 80-DISPLAYUNIT, one (1) each
- Measuring unit TKSA 60/80 V2-HA and TKSA 60/80 V2-HB, one (1) each
- Mechanical shaft fixtures, two (2) each
- Adjustable chains with tightening pin, two (2) each
- Rods, four (4) each
  - 90 mm
  - 150 mm
- Measuring tape, one (1) each
- Screw driver, one (1) each
- Tommy bar, two (2) each
- USB cable, one (1) each
- Charger for display unit, one (1) each
- Quick start guide, one (1) each
- CD with instructions for use, one (1) each
- Extension Chain, two (2) each

For a tailored solution for available applications, please contact your local SKF sales office.

Please contact:

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Tel: +44 (0) 1506 470011 • Fax: +44 (0) 1506 470012

**Web: [www.skf.com/alignment](http://www.skf.com/alignment)**

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