

Analizador Microlog AX de SKF

Colector avanzado de datos/analizador FFT

El Analizador Microlog AX es el analizador de pantalla grande más avanzado que ofrece SKF en la actualidad. Las características del Microlog AX permiten capturar rápidamente una amplia gama de vibraciones.

El analizador proporciona la flexibilidad necesaria para brindar soporte a las aplicaciones más importantes de su programa de mantenimiento predictivo.

Principales características

- Medición simultánea triaxial o de cuatro canales para adquisición rápida de datos.
- Procesador Xscale a 806 MHz, que proporciona mayor velocidad de visualización en tiempo real.
- Robusto, a prueba de polvo/agua, diseño bajo norma IP65 para entorno industrial.
- Batería de litio recargable de hasta ocho horas de toma de datos continua.
- Pantalla color VGA de 6,4" que facilita la visualización y análisis con cualquier tipo de luz.

Combina con el software SKF @ptitude para análisis detallado y preparación de reportes

El Microlog AX combina a la perfección con el software SKF @ptitude Analyst 4.1 mono-usuario y puede ser conectado en red utilizando SKF @ptitude Monitoring Suite. El agregado de SKF @ptitude Decision Support permite la comunicación con su centro CMMS o EAM y automatiza la toma de decisiones de mantenimiento mediante la identificación de posibles fallas y la recomendación de la acción apropiada.

Módulos de aplicación para un Microlog AX a medida del usuario

El Microlog AX tiene un diseño modular que permite a los usuarios seleccionar



Microlog AX es un colector portátil / analizador FFT completamente equipado, con 4 canales y alto rendimiento en ruta o fuera de ruta.

los módulos de aplicación según los requerimientos individuales.

Modelo AX-M

Provisto de Módulo de Análisis de cuatro canales fuera de ruta/bicanal o ruta triaxial simultánea, y Módulo de Balanceo de dos canales. El AX-M puede ampliarse a AX-S o a AX-F.

Modelo AX-S

Todas las características AX-M con módulos de Ensayo de impacto y de Grabación de datos.

Modelo AX-F

Mejora aún más la capacidad mediante el agregado de los módulos Arranque/Parada (RuCd), Función Respuesta en Frecuencia (FRF) y Control de Conformidad.

Todos los módulos se pueden solicitar por separado.



Analizador Microlog AX

El Microlog AX elimina las dificultades inherentes al monitoreo de condición mediante el análisis de vibraciones y variables de proceso, utilizando cuatro canales de medición fuera de ruta y balanceo estático o dinámico en uno o dos planos entre los rangos 10 CPM (0,16 Hz) hasta 4.800.000 CPM (80 kHz). Realiza evaluación de rodamientos utilizando la tecnología de envolvente de aceleración (gE) de SKF, ampliamente comprobada en la industria. El Microlog AX de SKF incorpora los últimos avances en electrónica analógica y digital, incluyendo procesamiento digital de señal (DSP) y convertidores A/D de alta resolución Sigma-Delta, para ofrecer precisión y velocidad en el proceso de recopilación de datos.

Un poderoso software para completar su sistema de análisis

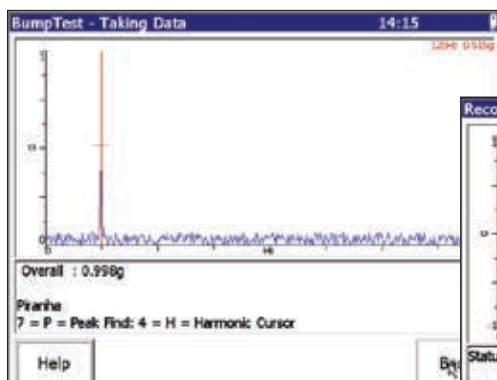
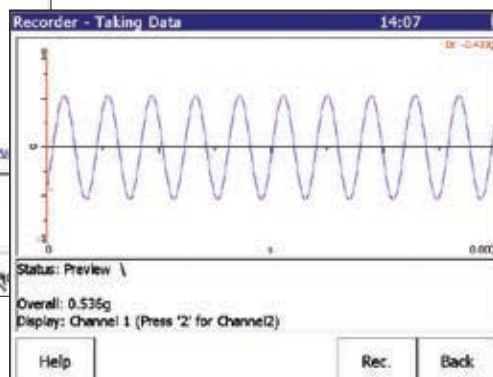
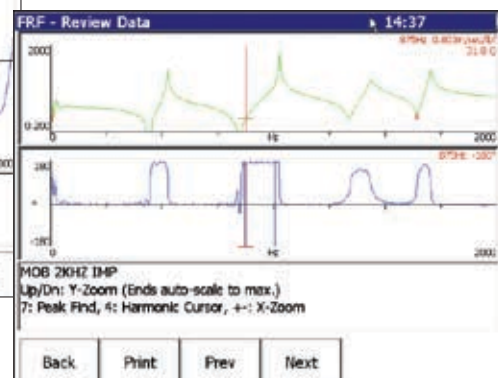
El SKF@ptitude Analyst proporciona almacenamiento, análisis y recuperación de datos de máquinas complejas de manera rápida, eficiente y confiable y permite que la información esté accesible para toda la organización.

- Fácil de aprender a utilizar tanto para usuarios experimentados como para principiantes
- Interconnectividad con otros programas y sistemas
- Opciones de preferencia que permiten que el SKF @ptitude Analyst trabaje como usted trabaja.

El SKF @ptitude Analyst es parte de SKF Monitoring Suite, un paquete completo de software que integra los datos de una amplia gama de dispositivos colectores portátiles y en línea de SKF.



Microlog AX proporciona una rápida recolección y análisis de datos. Su gran pantalla facilita la visualización con cualquier tipo de luz.



Módulo de Ensayo de Impacto

Se trata de una prueba de impacto realizada para excitar la máquina y medir sus frecuencias naturales. Esto ayuda a determinar si los niveles elevados de ruido o de vibraciones provienen de la resonancia, o si hay un problema potencial en la maquinaria.

Módulo de Grabación de Datos

Las señales de los sensores conectados al AX se registran en forma digital y se almacenan como archivos estándar WAV. Estos archivos se pueden enviar por correo electrónico o transferir directamente al SKF @ptitude Analyst para postprocesamiento. La capacidad de almacenamiento de las tarjetas de memoria SD permite al usuario grabar una gran cantidad de datos sin procesar en forma continua.

Módulo Función Respuesta en Frecuencia

El módulo FRF establece las propiedades mecánicas estructurales (masa, rigidez y amortiguamiento) mediante el análisis modal realizado con martillo calibrado. Las mediciones se pueden exportar para calcular y modelar los modos. El módulo también mide la función transferencia (ratio) entre dos transductores mientras una máquina está funcionando. Las mediciones se pueden exportar para calcular y animar las formas de deflexión operativa (ODS).

Especificaciones

Performance

- Entrada de señales: acelerómetro, velocidad, desplazamiento (manual o a través de transductores instalados), sensores CA/CC, sensores de presión, sensores de temperatura, tacómetro y entrada manual.
- Parámetros de medición: aceleración, velocidad, desplazamiento, gE, temperatura, fase, voltaje, especificados por el usuario.
- Tipos de medición: global, espectro, tiempo, forma de onda de tiempo, fase, órbitas, centro de eje.
- Canales de entrada:
 - Canal 1: conector Fischer de 6 pines C1, C2, C3, C4 (etiquetado R) (entrada CA/CC/ICP™), salida luz estroboscópica
 - Canal 2: conector Fischer de 6 pines, C2 y C3 (entrada CA/CC/ICP™), salida tacómetro +5 V
 - USB HOST/C R/: conector Fischer R de 7 pines (entrada ICP™/CA/CC), USB HOST, salida audio
 - USB DEV/TRIG/PWR: conector Fischer de 7 pines a USB DEV, cargador, entrada disparador salida tacómetro +5 V
- Rango señal de entrada: máximo ± 25 V
- Señal: RMS/Peak / Pk-Pk / True Peak / True Pk-Pk
- Integridad de voltaje de polarización (detección de Circuito abierto y Cortocircuito)
- Rango automático: si
- Rango dinámico: >90 dB

- Rango de frecuencia: CC a 80 kHz
- Condición del rodamiento: gE
- Filtro gE:
 - 5 Hz a 100 Hz
 - 50 Hz a 1 kHz
 - 500 Hz a 10 kHz
 - 5 kHz a 40 kHz
- Resolución FFT: 100 a 25 600 líneas
- Longitud de bloque: 256 a 65 536 muestras
- Promedio: RMS, Time, Peak Hold
- Alarmas: Global y Espectro (Peak y RMS)

Carcasa

- Tamaño:
 - Longitud: 220 mm (8.7 pulg.)
 - Altura: 220 mm (8.7 pulg.)
 - Ancho: 71 mm (2.8 pulg.)
- Peso: 1,54 kg (3.4 lb.)
- Pantalla: 6.4" TFT VGA, LCD, color, iluminada con luz posterior (resolución 640 x 480, 18 bits)

Condiciones ambientales

- Sellado: EN60529 IP 65 (a prueba de polvo y agua)
- Ensayo de caídas: 1,2 m – a MIL STD-810F (con soporte retraído)
- Rango de temperaturas:
 - Temperatura de operación: -10 a $+60$ °C (14 a $+140$ °F)
 - Temperatura de almacenamiento: -20 a $+60$ °C (-4 a $+140$ °F)
 - Humedad: 10 a 90% humedad relativa, sin condensación desde 0 hasta $+50$ °C (32 a $+122$ °F)

- Vibración: MIL STD-810 transporte
- Certificaciones:
 - Certificación de la CE
 - CSA Clase I, División 2, Grupos A, B, C, D,
 - Código de temperatura: T4A@Ta=50C

Sistema

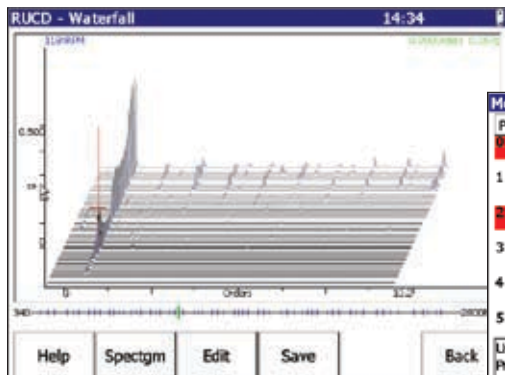
- Comunicación:
 - USB 1.1 (panel posterior y estación de acoplamiento)
 - Protocolo Microlog y Microsoft Active Sync
- Indicadores usuario: LED's azul, verde, ámbar y rojo
- Batería: Ion-litio 6600 mAh con gas integrado (mínimo ocho horas de medición continua)
- Batería recargable: internamente a través de la estación de acoplamiento o mediante cargador externo.
- Sistema Operativo: Microsoft Windows incorporado CE 6.0
- Procesador: Marvell 806 MHz PXA320
- DSP: Freescale DSP56311

Memoria

- Interna RAM:
 - 128 MB DDR SDRAM
 - 128 MB NAND Flash
- Tarjeta de memoria SD: hasta 4 GB

Software Servidor

- El SKF Microlog AX series requiere SKF @ptitude Analyst versión 4.1 o superior y comunicación USB.



Measurement Results			
Pos	Dir	um rms	mm/s rms
0	Hor	1000	112
	Ver	1000	112
	Axi	1000	112
1	Hor	---	---
	Ver	---	---
	Axi	---	---
2	Hor	1000	112
	Ver	1000	112
	Axi	1000	112
3	Hor	---	---
	Ver	---	---
	Axi	---	---
4	Hor	---	---
	Ver	---	---
	Axi	---	---
5	Hor	---	---
	Ver	---	---
	Axi	---	---

Use up/down arrows to select measurement.
Press Fire to take measurement.
Left/right arrows toggle between grade/value.

Help	Graphic	Skip	Finish	Cancel
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Módulo de Arranque/Parada

Este módulo analiza los datos de las máquinas en las que el ruido o los niveles de vibración cambian debido a velocidad, tiempo o carga (aplicaciones que provocan fenómenos transitorios) para establecer las velocidades críticas de resonancia de una máquina. De manera simultánea, el módulo captura un sonido o una señal de vibración, más señal de tacómetro, y almacena los datos como forma de onda de tiempo (un archivo WAV) para su posterior análisis.

Módulo de Control de Conformidad

La funcionalidad de control de conformidad transforma al AX en una herramienta diaria para las rutinas de inspección. Un sistema automatizado de evaluación compara los niveles de vibración con los límites establecidos, para comprobar que el producto cumple con los indicadores de calidad predefinidos o con los estándares requeridos.

Información para pedidos

Colector de Datos/ Analizador FFT Microlog AX-F de SKF

El kit estándar del Microlog AX-F [CMXA 80-F-K-SL] de SKF incluye:

- Unidad CMXA 80-F-SL, programada para cuatro canales de mediciones fuera de ruta, dos canales o ruta triaxial simultánea y balanceo estático o dinámico en uno o dos planos; ensayo de impacto, grabadora de datos, ensayo de arranque/parada, función respuesta en frecuencia y módulo de control de conformidad.
- CD-ROM, manuales de usuario, información de valor y bibliografía.
- Cable USB/energía [CMAC 5019]*
- Cable USB/A a B [CMAC 5082]
- Cubierta del conector SD /dock [CMAC 5083]
- Docking station [CMAC 5068]*
- Paquete de baterías [CMAC 5070]*
- Cable, cable de potencia, UL 110, US [CMVA 3351]*
- Adaptador [CMAC 5022]
- Dos (2) acelerómetros, bajo perfil, Certificado NI (no inflamable) [CMSS 2200]*
- Dos (2) cables, sensor, en espiral [CMAC 5209]*
- Dos (2) bases magnéticas para acelerómetro, tamaño medio, 3,81 cm (1 1/2 pulg.) diámetro [CMSS 908-MD]*
- Maletín de transporte robusto [CMAC 5069]*
- Maletín liviano [CMAC 5071]*
- Dos (2) correas de mano [CMAC 5072]*
- Correa para el hombro [CMAC 5073]*
- Dos (2) protectores de pantalla [CMAC 5074]*
- Cubiertas protectoras para conector Fischer [CMAC 5075]*
- Tarjeta de memoria (SD) 1 GB [CMAC 5077]

* Disponible también como accesorio separado

Modelo SKF Microlog AX-S: Cuatro canales fuera de ruta/dos canales o medición triaxial de ruta, módulos de balanceo, de ensayo de impacto y grabador de datos.

Modelo SKF Microlog AX-M: Cuatro canales fuera de ruta/dos canales de rutas o medición triaxial de ruta, módulo balanceo.

SKF Reliability Systems

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Las patentes de SKF incluyen: #US04768380 · #US05679900 · #US05845230 · #US05854553 · #US05992237 · #US06006164 · #US06199422 · #US06202491 · #US06275781 · #US06489884 · #US06513386 · #US06633822 · #US6,789,025 · #US6,792,360 · US 5,633,811 · US 5,870,699 · #WO_03_048714A1

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Actualizaciones para SKF Microlog AX

- Actualización Ensayo de Impacto, Serie AX [CMXA 80-BMP-SL]
- Actualización Grabador de datos, Serie AX [CMXA 80-REC-SL]
- Actualización Arranque/Parada, Serie AX [CMXA 80-RUCD-SL]
- Actualización Función Respuesta en Frecuencia (FRF), Serie AX [CMXA 80-FRF-SL]
- Actualización Control de conformidad, Serie AX C [CMXA 80-CTC-SL]
- Actualización de AX-M a AX-S [CMXA 80-AXM/S-SL]
- Actualización de AX-M a AX-F [CMXA 80-AXM/F-SL]
- Actualización de AX-S a AX-F [CMXA 80-AXS/F-SL]

Accesorios opcionales

Está disponible un conjunto de accesorios para complementar la serie de SKF Microlog AX.

Hardware

- Kit tacómetro láser [CMAC 5030-K]
- Soporte de referencia de fase SKF Microlog [CMSS 6156]
- Kit de balanceo SKF Microlog (con Sensor óptico) [CMCP 850-01]
- Kit de balanceo SKF Microlog (con Sensor Láser) [CMCP 850-02]
- Kit de balanceo SKF Microlog (con Sensor Láser) [CMCP 850-03]
- Pinza amperométrica CA / CC [CMAC 5208]
- Pistola infrarroja de temperatura [CMAC 4200-SL]
- Kit de referencia de fase óptica [CMSS 6155X-K-CE]
- Kit de referencia de fase láser [CMSS 6195AX-K-CE]
- Kit de martillo modal con acelerómetro para medir masas de 210 g y más [CMAC 5056-GXHK-1]
- Kit de martillo modal con acelerómetro para medir masas de 56 g y más [CMAC 5057-GXHK-2]
- Kit de martillo modal [CMAC 5058]
- Luz estroboscópica [CMSS 6165K-AX]

Acelerómetros

- Kit Acelerómetro Triaxial [CMAC 4370-K]
- Acelerómetro, sección reducida, 2 m cable integrado, provisto con base magnética. [CMSS 2111]
- Acelerómetro, alta frecuencia [CMSS 2114]
- Acelerómetro, clasificación CSA [CMSS 797-CAX]

Cables

- Entrada de tacómetro BNC (1 m) [CMAC 5211]
- Cable de prolongación entrada de señal CX (5 m) [CMAC 5026]
- Cable de prolongación entrada de señal CX (10 m) [CMAC 5037]
- Tacómetro (CMAC 5030-K), cable de prolongación (5 m) [CMAC 5043]
- Tacómetro (CMAC 5030-K), cable de prolongación (10 m) [CMAC 5044]
- Convertidor, dos pines Mil/BNC [CMAC 3715]
- Cable para el acelerómetro triaxial para uso con kit de acelerómetro triaxial CMAC 4370-K [CMAC 5009]
- Cable para auricular de audio [CMAC 5023]
- Cable separador de cuatro canales, cantidad: dos (2) para tomar mediciones de cuatro canales con el SKF Microlog AX. Se requerirán cables divisores para mediciones en tres y cuatro canales [CMAC 5079]
- Cable de salida, luz estroboscópica [CMAC 5406]
- Cable de entrada, luz estroboscópica [CMAC 5404]

Accesorios Internacionales

Nota

Todas las nuevas unidades se proveerán con cables norteamericanos.

Con respecto a los cables eléctricos internacionales, se proveen dos (2) cables: el estándar norteamericano y el internacional requerido.

- Cable eléctrico, Australia [CMAC 4222-AU]
- Cable eléctrico, Suiza [CMAC 4222-CH]
- Cable eléctrico, Dinamarca [CMAC 4222-DK]
- Cable eléctrico, Europeo [CMAC 4222-EUR]
- Cable eléctrico, Israel [CMAC 4222-IL]
- Cable eléctrico, Italia [CMAC 4222-IT]
- Cable eléctrico, Japón [CMAC 4222-JP]
- Cable eléctrico, Reino Unido [CMAC 4222-UK]

Planes de Soporte de Productos

Está disponible una gama de Planes de Soporte Técnico para proteger su inversión. Contacte a su representante local de SKF Reliability Systems para obtener información adicional.



SKF Shaft Alignment Tools

Accurate shaft alignment really matters

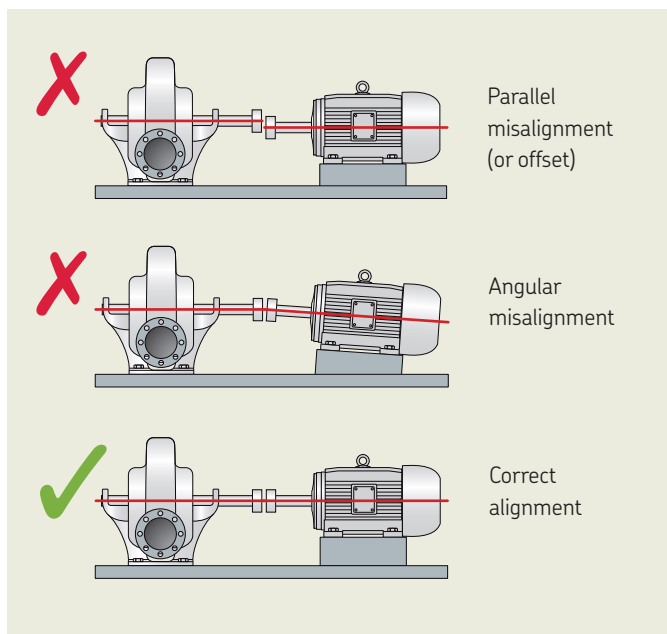




Accurate shaft alignment really matters

Reduce machinery breakdowns and increase your uptime

It's a fact. Shaft misalignment is a major contributor to rotating machinery breakdowns. Accurately aligning shafts can prevent a large number of machinery breakdowns and reduce unplanned downtime that results in a loss of production. In today's challenging environment of reducing costs and optimising assets, the necessity of accurate shaft alignment is now greater than ever.



What is shaft misalignment?

Machines need to be aligned in both the horizontal and vertical plane. The misalignment can be caused by both parallel or angular misalignment. The possible consequences of shaft misalignment are serious to any company's bottom line and include:

- Increased friction and thereby energy consumption
- Premature bearing and seal failure
- Premature shaft and coupling failure
- Excessive seal lubricant leakage
- Failure of coupling and foundation bolts
- Increased vibration and noise



What methods can be used to align shafts?

In general, it's clear that laser alignment systems are quicker and easier to use than dial indicators, have better accuracy and don't require special skills to get accurate results virtually every time.

Which type of laser alignment system should be considered?

Before purchasing a system, identify the applications where it is to be used and make a list of requirements. Buying an expensive system that can accommodate virtually every need can be a costly mistake, as the technicians need to be skilled in using it.

The majority of alignment tasks consist of such things as a horizontally placed electric motor with a pump or fan with a single coupling. For such tasks, the technician needs a system that is quick and easy to use and doesn't need a long set up time.

What can SKF offer?

SKF has developed, after extensive consultation with users, a range of affordable, easy to use shaft alignment tools that are suitable for a majority of alignment tasks.

	Straight edge	Dial indicators	Laser shaft alignment
Accuracy	--	++	++
Speed	++	--	+
Ease of use	++	--	+

New technology makes shaft alignment easier and more affordable

SKF Shaft Alignment Tool TKSA 11



The SKF TKSA 11 is an innovative shaft alignment tool that uses smartphones and tablets and intuitively guides the user through the shaft alignment process. With a focus on the core alignment tasks, the TKSA 11 is designed to be a very easy-to-use instrument that is especially suitable for alignment learners and compact applications. The SKF TKSA 11 is the first instrument on the market that uses inductive proximity sensors, enabling accurate and reliable shaft alignment to be affordable for every budget.

- Live view of the instrument and motor position makes the measurement and horizontal alignment intuitive and easy.
- The TKSA 11 app offers a fully functional demonstration mode allowing the complete alignment process to be experienced without the need to purchase the TKSA 11.
- The TKSA 11 is designed to give a fast return on its investment and is also affordable for almost every budget.
- By using inductive proximity sensors, the measurement is no longer affected by bright sunlight, the influence of backlash is reduced and the instrument becomes more robust. All enabling the TKSA 11 to deliver accurate and reliable shaft alignments.
- Automatic alignment reports give a complete overview of the alignment process and results. Reports can easily be shared via email or cloud services.



The intuitive and affordable laser shaft alignment system

SKF Shaft Alignment Tool TKSA 31

The TKSA 31 is SKF's most affordable solution for easy laser shaft alignment. The ergonomic display unit with touch screen makes the instrument very easy to use and the built-in machine library helps storing alignment reports for multiple machines. Large sized laser detectors in the measuring heads reduce the need for pre-alignments and the embedded soft foot tool helps establish the foundation for a successful alignment. Additional functions such as live view and automatic measurement support fast and effective alignment tasks and make the TKSA 31 an innovative laser shaft alignment tool that is affordable for almost every budget.

- Easy measurements can be performed by using the well-known three position measurement (9-12-3 o'clock) with additional positioning flexibility of 40° around each measurement position.
- High affordability is achieved by focussing on the standard shaft alignment process and essential functions to allow quick and effective shaft alignments.
- "Automatic measurement" enables hands-free measurements by detecting the position of the heads and only taking a measurement when the heads are in the right position.
- Automatic reports are generated after each alignment and can be customised with notes about the application. All reports can be exported as pdf files.
- The machine library gives an overview of all machines and alignment reports. It simplifies the machine identification and improves the alignment workflow.



Live view supports intuitive measurements and facilitates horizontal and vertical machine position corrections.



The advanced laser shaft alignment system with enhanced measuring and reporting capabilities

SKF Shaft Alignment Tool TKSA 41



Free measurement allows alignment measurements to start at any angle and finish with an angular sweep of just 90°.



Machine library gives an overview of all machines and alignment reports.

The TKSA 41 is an advanced laser alignment solution for achieving accurate shaft alignments. With two wireless measurement units, large sized detectors and powerful lasers, the instrument performs precise measurements in even the most challenging conditions.

The ergonomic display unit with intuitive touch screen navigation makes your alignments fast and easy, whilst innovative features, like the “free measurement”, increase the alignment performance. With the focus on improving alignment practices, the SKF Shaft Alignment Tool, TKSA 41, is one of the industry's best value alignment solutions.

- Wireless communication improves instrument handling and allows alignments of difficult to reach applications from a safe position.
- Automatic measurement enables hands-free measurements by detecting the head position and taking a measurement when the heads are rotated into the right position.

- Automatic reports are generated after each alignment. The reports can be customised with notes and pictures from the built-in camera for the most comprehensive overview. All reports can be exported as pdf files.
- Live view supports intuitive measurements and facilitates horizontal and vertical alignments.
- The simplicity of the TKSA 41 provides greater confidence for the performance of alignment tasks on all types of horizontal rotating machines.
- QR codes can be used to further simplify machine identification and improve the alignment workflow.

Comprehensive and intuitive shaft alignment utilising tablets and smart phones

SKF Shaft Alignment Tool TKSA 51



The TKSA 51 shaft alignment tool provides high measurement flexibility and performance suitable for entry-level to expert alignment jobs. Designed to work with the SKF shaft alignment apps on a tablet or smart phone, this intuitive tool is easy to use and requires no special training.

The included accessories enable use of the TKSA 51 for a wide range of alignment applications with horizontal and vertical shafts, such as motors, drives, fans, pumps, gearboxes and more. The apps include tutorial videos to show operators how to perform accurate measurements.

- **Measurement flexibility** - The well-known, three-position measurement gains additional flexibility as measurements can start at any angle and require a total minimal rotation of only 40 degrees. This enables operators to perform alignments of applications with limited space.
- **Automatic reports** - Alignment reports are generated automatically and can be customised with notes, a machine picture and a signature via touchscreen. The reports can be easily exported as PDF files and shared with other mobile apps.
- **Comprehensive and compact** - A range of included components, such as magnetic mounting brackets and extension rods and chains, increase the TKSA 51's versatility, yet it remains compact, lightweight and easy to carry.
- **3-D live view** - This feature enables intuitive positioning of the heads for quick alignment measurements and displays the horizontal and vertical alignment correction live. The apps enable 3-D rotation of the virtual motor to correspond with the actual machine position view.
- **Disturbance compensation** - Measurement values are averaged over time to provide greater accuracy in presence of external disturbances.

Alignment applications

The TKSA 51 uses dedicated apps for alignments of horizontal and vertical shaft and the correction of soft foot. The apps are icon-driven and very easy to use. All apps are free of charge and features a fully functional demonstration mode that allows the alignment process to be experienced before purchasing the instrument.



Shaft alignment



Vertical shaft alignment



Soft foot

Versatility and performance for professional alignment

SKF Shaft Alignment Tool TKSA 71



TKSA 71 delivers precision and durability

Designed for professional alignment in harsh industrial environments, the TKSA 71 complements SKF's offering with a high-end shaft alignment tool. The instrument is very versatile with ultra-compact measuring units for use in extremely narrow spaces. Its dedicated software applications enable different types of alignments, including horizontal and vertical shafts, spacer shafts and machine trains.

Superior alignment performance and long-term industrial durability are achieved with an innovative instrument design that offers high measurement accuracy and excellent protection against dust and water in harsh environments.

- **Easy-to-use** - Intuitive software applications, guided alignment processes and explanatory videos
- **Wide range of applications** - Comprehensive accessories and dedicated software applications
- **Superior alignment performance** - Up to 10 m measurement distance, disturbance compensation, measurement flexibility, only 40° total rotation, automatic measurement and customised alignments with target values
- **Protection against harsh environments** - Completely sealed measuring units (IP67) to withstand dust and water
- **Ultra-compact measuring units** - Use in extremely narrow spaces
- **Robust carrying case** - Excellent protection, convenient transport and wireless in-case charging

Complete system for your alignment needs

The TKSA 71 base model includes standard accessories for most alignment tasks. It is supplied in a rugged case that meets most airline requirements for cabin luggage.

The TKSA 71/PRO model includes additional accessories such as sliding brackets, magnetic bases and offset brackets that are useful for more demanding alignment jobs.

This model is supplied in a larger, rugged trolley case.

Measuring device: (1) Measuring units (M & S) with standard V-bracket, (2) Wireless charging pods with USB cable, (3) Tape measure

Standard accessories: (4) Extension chains, (5) Extension rods, (6) Mounting magnets

Advanced accessories: (7) Sliding brackets, (8) Offset brackets, (9) Additional extension rods, (10) Magnetic bases



Alignment applications

The TKSA 71 functions quickly and intuitively using six software apps tailored for different alignment jobs. Designed for use without prior training, these simple-to-use apps are available free of charge for both Android and iOS platforms. Common features include comprehensive, automatic reports, export and sharing options, machine library with QR code identification, instructional videos within the app, built-in tolerance guidelines, 3-D live view, disturbance compensation and a fully functional demonstration mode.



Shaft alignment

Easy and intuitive alignments of horizontal shafts with additional features including automatic measurement, minimal 40° total rotation, 9-12-3 guidance and alignment customisation with target values¹⁾.



Spacer shaft alignment

Accommodates special requirements of spacer shafts and facilitates the alignment process²⁾.



Vertical shaft alignment

Easy and intuitive alignment of vertical shaft machines with shimming support for different bolt configurations¹⁾.



Values

Allows the shaft alignment tool to be used as digital dial gauges; operators can record absolute, zeroed and halved readings to perform customised alignments with manual calculations²⁾.



Machine train shaft alignment

Enables operator to align three connected machines, giving a complete overview of machine train alignment and allowing the operator to select stationary feet²⁾.



Soft foot

Assists technician in verifying that machine is standing evenly on all four feet. The app supports the operator identifying and correcting a soft foot¹⁾.



¹⁾ Compatible with: TKSA 51, TKSA 71, TKSA 71/PRO. ²⁾ Compatible with: TKSA 71, TKSA 71/PRO.

Selection chart						
	TKSA 11	TKSA 31	TKSA 41	TKSA 51	TKSA 71	TKSA 71/PRO
User interface Type of display device	phone, tablet (iOS & Android)	touch screen display device	touch screen display device	phone, tablet (iOS & Android)	phone, tablet (iOS & Android)	phone, tablet (iOS & Android)
Display device included	no	yes	yes	no	no	no
Measurement positions The "9-12-3" measurement directs the user to three pre-defined measurement positions. The "free" measurement allows the user to freely select the measurement positions. All measurements are guided.	9-12-3	9-12-3	free	free	free	free
Wireless measuring heads	●	—	●	●	●	●
Measurement distance Maximum possible distance between the brackets of the measuring heads.	18,5 cm	2 m ²⁾	4 m	5 m	10 m	10 m
Minimal shaft rotation Describes the minimal required total shaft rotation angle to perform alignment measurements.	180°	140°	90°	40°	40°	40°
Camera Machine picture(s) can be taken and added to alignment reports.	●	—	●	●	●	●
Machine library Overview of all registered machines and previous alignment reports.	—	●	●	●	●	●
QR code recognition QR labels can be used to simplify the machine identification and increase the usage convenience.	—	—	●	●	●	●
Machine view The machine view describes how the machine is shown on the display. The free 3D rotation allows to view the machine from all directions.	fixed 2D view	fixed 3D view	fixed 3D view	free 3D rotation	free 3D rotation	free 3D rotation
Target values Using target values for alignment, it is possible to compensate for thermal expansion or similar adjustments.	—	—	—	●	●	●
Disturbance compensation Measurement values are averaged over time, allowing accurate measurements in the presence of laser distortions from air temperature gradients or similar disturbances.	—	—	—	●	●	●

Supported alignment applications	TKSA 11	TKSA 31	TKSA 41	TKSA 51	TKSA 71	TKSA 71/PRO
Horizontal shaft alignment	●	●	●	●	●	●
Soft foot correction	—	●	●	●	●	●
Vertical shaft alignment	—	—	—	●	●	●
Spacer shaft	—	—	—	—	●	●
Machine train	—	—	—	—	●	●
Digital dial gauge mode	—	—	—	—	●	●

Alignment accessories	TKSA 11	TKSA 31	TKSA 41	TKSA 51	TKSA 71	TKSA 71/PRO
Extension chains	optional	optional	optional	included	included	included
Extension rods	optional	optional	included	included	included	included
Magnetic V-brackets	optional	optional	optional	included	included	included
Offset brackets	optional	optional	optional	optional	optional	included
Sliding brackets	optional	optional	optional	optional	optional	included
Magnetic base	—	optional	optional	optional	optional	included
Spindle bracket	optional	—	—	optional	optional	optional

¹⁾ With supplied USB cables

Accessories		Compatible				
Ordering designations	Content and description	TKSA 11	TKSA 31	TKSA 41	TKSA 51	TKSA71(/PRO)
Extension chains						
TKSA 41-EXTCH	2 × Extension chains of 500 mm (19.7 in.) for shaft diameters up to 300 mm (11.8 in.)	—	●	●	—	—
TKSA 51-EXTCH	2 × Extension chains of 1 m (3.3 ft.) for shaft diameters up to 450 mm (17.7 in.)	●	—	—	●	●
Rods						
TKSA ROD90	4 × threaded rods of 90 mm (3.5 in.)	—	●	●	—	—
TKSA ROD150	4 × threaded rods of 150 mm (5.9 in.)	—	●	●	—	—
TKSA 51-ROD80	4 × threaded rods of 80 mm (3.1 in.)	●	—	—	●	●
TKSA 51-ROD120	4 × threaded rods of 120 mm (4.7 in.)	●	—	—	●	●
Magnetic V-brackets						
TKSA MAGVBK	2 × Magnetic V-brackets, supplied without rods or chains	—	●	●	—	—
TKSA 51-VBK	1 × Standard V-bracket, supplied with 2 × threaded rods of 80 mm (3.2 in.), 1 × standard chain of 480 mm (18.9 in.) and 4 × magnets	●	—	—	●	●
Spindle brackets Rods						
TKSA 51-SPDBK	1 × Spindle bracket, supplied with 2 × threaded rods of 80 mm (3.2 in.)	●	—	—	●	●
Sliding brackets						
TKSA 51-SLDBK	1 × Adjustable sliding bracket for use with shaft diameters >30 mm (1.2 in.) or bore diameters >120 mm (4.7 in.), supplied without rods	●	—	—	●	●
TKSA SLDBK	2 × Wheels to be used with standard V-Bracket (TKSA VBK), supplied without V-bracket	—	●	●	—	—
Offset brackets						
TKSA EXT50	2 × Offset brackets of 50 mm (2 in.) compatible with standard (TKSA VBK) and magnetic V-brackets (TKSA MAGVBK) and magnetic base (TKSA MAGBASE)	—	●	●	—	—
TKSA EXT100	2 × Offset brackets of 100 mm (3.9 in.) compatible with standard (TKSA VBK) and magnetic V-brackets (TKSA MAGVBK) and magnetic base (TKSA MAGBASE)	—	●	●	—	—
TKSA 51-EXT50	1 × Offset bracket 50 mm (2 in.), supplied with 2 × rods 80 mm (3.2 in.)	●	—	—	●	●
Magnetic base						
TKSA MAGBASE	2 × Magnetic bases, supplied with 2 × fixation screws M8 × 20 mm	—	● ¹⁾	● ¹⁾	●	●
Other accessories						
TKSA 11-EBK	2 × Extendable V-brackets, supplied with 4 × threaded rods of 120 mm (4.7 in.) and 4 × threaded rods of 80 mm (3.1 in.), supplied without chains	●	—	—	—	—
TKSA VBK	2 × Standard V-brackets, supplied without rods or chains	—	●	●	—	—
TKSA 41-QR	5 × A5 sheets with 6 × QR code stickers per sheet (total of 30 × stickers)	—	—	●	●	●

¹⁾ Requires offset brackets TKSA EXT50 or TKSA EXT100 for usage with TKSA 31 and TKSA 41.

Technical data			
Designation	TKSA 11	TKSA 31	TKSA 41
Sensors and communication	2× Inductive proximity sensors Inclinometer ±0.5°, Bluetooth 4.0 LE	29 mm (1.1 in.) CCD with red line laser Class 2 Inclinometer ±0.5°, Wired, USB cables	29 mm (1.1 in.) CCD with line laser Class 2 Inclinometer ±0.5°; Bluetooth 4.0 LE and wired, USB cables
System measuring distance	0 to 185 mm (0 to 7.3 in.) between brackets 3 × reference bars included up to 200 mm (7.9 in.)	0,07 to 4 m (0.23 to 13.1 ft) (up to 2 m (6.6 ft) with cables supplied)	0,07 to 4 m (0.23 to 13.1 ft)
Measuring errors	<2%	<0,5% ±5 µm	< 0,5% ±5 µm
Housing material	PC/ABS plastic	20% Glass filled Polycarbonate	20% Glass filled Polycarbonate
Operating time	Up to 18 hours, rechargeable LiPo battery	N/A	Up to 16 hours Rechargeable LiPo battery
Dimensions	105 × 55 × 55 mm (4.1 × 2.2 × 2.2 in.)	120 × 90 × 36 mm (4.7 × 3.5 × 1.4 in.)	120 × 90 × 36 mm (4.7 × 3.5 × 1.4 in.)
Weight	155 g (0.34 lb)	180 g (0.4 lb)	220 g (0.5 lb)
Operating device	iPad Mini recommended iPad, iPod Touch, iPhone SE, Galaxy devices (not included)	5.6" colour resistive touchscreen LCD display. High Impact PC/ABS with overmould	5.6" colour resistive touchscreen LCD display. High Impact PC/ABS with overmould
Software/App update	Apple AppStore or on Google Play Store	via USB stick	via USB stick
Operating system requirements	Apple iOS 9 or Android 9 (and above)	N/A	N/A
DU Operating time	N/A	Up to 7 hours (100% backlight)	Up to 8 hours (100% backlight)
Dimensions	N/A	205 × 140 × 60 mm (8.1 × 5.5 × 2.4 in.)	205 × 140 × 60 mm (8.1 × 5.5 × 2.4 in.)
Weight	N/A	420 g (0.9 lb)	640 g (1.4 lb)
Alignment method	Alignment of horizontal shafts 3 position measurement 9–12–3	Alignment of horizontal shafts, 3 position measurement 9 -12 -3 (with min. 140° rotation), automatic measurement, soft foot	Alignment of horizontal shafts, 3 position measurement 9 -12 -3, automatic measurement, measurement (with min. 90° rotation), soft foot
Live correction values	Only for horizontal	Vertical and horizontal	Vertical and horizontal
Extra features	Automatic .pdf report	Machine library, screen orientation flip, automatic .pdf report	Machine library, QR code reading, screen orientation flip, automatic .pdf report
Fixture	2× V-brackets with chains, width 15 mm (0.6 in.)	2× V-brackets with chains, width 21 mm (0.8 in.)	2 × V-brackets with chains, width 21 mm (0.8 in.)
Shaft diameters	20 to 160 mm (0.8 to 6.3 in.)	20 to 150 mm (0.8 to 5.9 in.) 300 mm (11.8 in.) with optional extension chains (not included)	20 to 150 mm (0.8 to 5.9 in.) 300 mm (11.8 in.) with optional extension chains (not included)
Max. coupling height ¹⁾	55 mm (2.2 in.) with standard 80 mm rods (Unit should be mounted on the coupling when possible)	105 mm (4.2 in.) with standard rods 195 mm (7.7 in.) with optional extension rods (not included)	105 mm (4.2 in.) with standard rods 195 mm (7.7 in.) with extension rods (included)
Power adapter	Charging via micro USB port (5V) Micro USB to USB charging cable supplied Compatible with 5V USB chargers (not included)	Input: 100V-240V 50/60 Hz AC power supplier Output: DC 12V 3A with EU, US, UK, AUS adapters	Input: 100V-240V 50/60 Hz AC power supplier Output: DC 12V 3A with EU, US, UK, AUS adapters
Operating temperature	0 to 45 °C (32 to 113 °F)	0 to 45 °C (32 to 113 °F)	0 to 45 °C (32 to 113 °F)
IP rating	IP 54	IP 54	IP 54
Carrying case dimensions	355 × 250 × 110 mm (14 × 9.8 × 4.3 in.)	530 × 110 × 360 mm (20.9 × 4.3 × 14.2 in.)	530 × 110 × 360 mm (20.9 × 4.3 × 14.2 in.)
Total weight (incl. case)	2,1 kg (4.6 lb)	4,75 kg (10.5 lb)	4.75 kg (10.5 lb)
Calibration certificate	Supplied with 2 years validity	Supplied with 2 years validity	Supplied with 2 years validity
Case content	Measuring unit; 3 reference bars; 2 shaft brackets with chains 480 mm (18.9 in.) and rods 80 mm (3.1 in.); micro USB to USB charging cable; measuring tape 2 m (6.6 ft); printed certificate of calibration and conformance; printed quick start guide (EN); SKF carrying case	2 measuring units (M&S); display unit; 2 shaft brackets with chains 400 mm (15.8 in.) and threaded rods 150 mm (5.9 in.); chain tightening rod; power supply with country adapters; 2 USB cables; measuring tape; printed certificate of calibration and conformance; printed quick start guide (EN); SKF carrying case	2 measuring units (M&S); display unit; 2 shaft brackets with chains 400 mm (15.8 in.) and threaded rods 150 mm (5.9 in.); chain tightening rod; 4 threaded extension rods 90 mm (3.5 in.); power supply with country adapters; 2 USB cables; measuring tape; printed certificate of calibration and conformance; printed quick start guide (EN); SKF carrying case; 2 × A5 sheets with 6 × QR code stickers per sheet

¹⁾ Depending on the coupling, the brackets can be mounted on the coupling, reducing the coupling height limitation.

TKSA 51

20 mm (0.8 in.) PSD with line laser Class 2
Inclinometer $\pm 0.1^\circ$; Bluetooth 4.0 LE

0,07 to 5 m (0.23 to 16.4 ft)

<1% $\pm 10 \mu\text{m}$

Anodized Aluminum front and PC/ABS plastic back cover

Up to 8 hours, rechargeable Li-ion battery
fast charging: 10 min. charging for 1h usage

52 x 64 x 50 mm (2.1 x 2.5 x 2 in.)

190 g (0.4 lb)

iPad Mini recommended
iPad, iPod Touch, iPhone SE, Galaxy devices
(not included)

Apple AppStore or on Google Play Store

Apple iOS 9 or Android 9 (and above)

N/A

N/A

N/A

Alignment of horizontal and vertical shafts,
3 position measurement 9 -12 -3, automatic measurement,
measurement (with min. 40° rotation), soft foot

Vertical and horizontal

Machine library, QR code reading, target values, disturbance compensation,
3D machine free view, screen rotation on tablets, automatic .pdf report

2 x V-brackets with chains,
width 15 mm (0.6 in.)

20 to 150 mm (0.8 to 5.9 in.)

450 mm (17.7 in.) with extension chains (included)

45 mm (1.8 in.) with standard rods
plus 170 mm (6.7 in.) per set of extension rods

Charging via micro USB port (5V)
Micro USB to USB split charging cable supplied
Compatible with 5V USB chargers (not included)

0 to 45 °C (32 to 113 °F)

IP 54

355 x 250 x 110 mm (14 x 9.8 x 4.3 in.)

2,9 kg (6.4 lb)

Supplied with 2 years validity

2 measuring units (M&S); 2 shaft brackets with chains 480 mm (18.9 in.),
threaded rods 80 mm (3.2 in.) and magnets; 4 threaded extension rods
120 mm (4.7 in.); 2 extension chains 980 mm (38.6 in.); micro USB to USB
split charging cable; measuring tape; printed certificate of calibration and
conformance; quick start guide (EN); SKF carrying case; 2x A5 sheets with
6x QR code stickers per sheet

TKSA 71, TKSA 71/PRO

20 mm (0.8 in) 2nd gen. PSD with line laser Class 2
inclinometer $\pm 0.1^\circ$; Bluetooth 4.0 LE

0,04 to 10 m (0.13 to 32.8 ft)

<1% $\pm 10 \mu\text{m}$

Anodized aluminum front and PC/ABS plastic back cover

Up to 8 hours, rechargeable Li-ion battery, wireless fast charging
10 min. charging for 1h usage

52 x 64 x 33 mm (2.1 x 2.5 x 1.3 in.)

130 g (0.3 lbs)

iPad Mini recommended
iPad, iPod Touch, iPhone SE, Galaxy devices
(not included)

Apple AppStore or on Google Play store

Apple iOS 9 or Android 9 (and above)

N/A

N/A

N/A

Alignment of horizontal and vertical shafts,
3 position measurement 9 -12 -3, automatic measurement,
measurement (with min. 40° rotation), soft foot,
machine trains, valves, spacer shafts

Vertical and horizontal

Machine library, QR code reading, target values, disturbance compensation,
3D machine free view, screen rotation on tablets, automatic .pdf report

2 x V-brackets with chains,
width 15 mm (0.6 in.)

20 to 150 mm diameter (0.8 to 5.9 in.),

450 mm (17.7 in.) with extension chains (included)

45 mm (1.8 in.) with standard rods
plus 120 mm (4.7 in.) per set of extension rods

Wireless charging via supplied charging pods
micro USB to USB split charging cable supplied

0 to 45 °C (32 to 113 °F)

IP67 for measuring units and carrying case

TKSA 71 carrying case: 365 x 295 x 170 mm (14.4 x 11.6 x 6.7 in.)

TKSA 71/PRO trolley case: 610 x 430 x 265 mm (24 x 16.9 x 10.4 in.)

TKSA 71: 3,9 kg (8.6 lb)

TKSA 71/PRO: 12,5 kg (27.6 lb)

Supplied with 2 years validity

2 measuring units (M&S); 2 shaft brackets with chains 480 mm (18.9 in.),
threaded rods 80 mm (3.1 in.) and magnets; 4 threaded extension rods 120 mm
(4.7 in.); 2 extension chains 980 mm (38.6 in.); micro USB to USB split charging
cable; 2 wireless charging pods; measuring tape; printed certificate of calibration
and conformance; quick start guide (EN); industrial rugged case (IP 67); 2x A5
sheets with 6x QR code stickers per sheet
Additionally with TKSA 71/PRO: 4 threaded extension rods 120 mm (4.7 in.); 2
offset brackets 50 mm (2 in.); 2 sliding brackets; 2 magnetic bases

For accurate vertical machinery alignment

Machinery shims TMAS series

Accurate machine adjustment is an essential element of any alignment process.

- Made of high quality stainless steel, allowing re-use
- Easy to fit and to remove
- Close tolerances for accurate alignment
- Thickness clearly marked on each shim
- Fully de-burred
- Pre-cut shims are supplied in packs of 10 and complete kits are also available



TMAS 340



TMAS 380



TMAS 100/KIT

A 50 mm B 50 mm C 13 mm

Pack designation	Thickness (mm)
TMAS 50-005	0,05
TMAS 50-010	0,10
TMAS 50-020	0,20
TMAS 50-025	0,25
TMAS 50-040	0,40
TMAS 50-050	0,50
TMAS 50-070	0,70
TMAS 50-100	1,00
TMAS 50-200	2,00
TMAS 50-300	3,00

A 75 mm B 75 mm C 21 mm

Pack designation	Thickness (mm)
TMAS 75-005	0,05
TMAS 75-010	0,10
TMAS 75-020	0,20
TMAS 75-025	0,25
TMAS 75-040	0,40
TMAS 75-050	0,50
TMAS 75-070	0,70
TMAS 75-100	1,00
TMAS 75-200	2,00
TMAS 75-300	3,00

A 100 mm B 100 mm C 32 mm

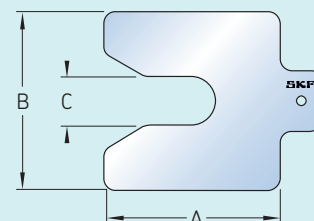
Pack designation	Thickness (mm)
TMAS 100-005	0,05
TMAS 100-010	0,10
TMAS 100-020	0,20
TMAS 100-025	0,25
TMAS 100-040	0,40
TMAS 100-050	0,50
TMAS 100-070	0,70
TMAS 100-100	1,00
TMAS 100-200	2,00
TMAS 100-300	3,00

A 125 mm B 125 mm C 45 mm

Pack designation	Thickness (mm)
TMAS 125-005	0,05
TMAS 125-010	0,10
TMAS 125-020	0,20
TMAS 125-025	0,25
TMAS 125-040	0,40
TMAS 125-050	0,50
TMAS 125-070	0,70
TMAS 125-100	1,00
TMAS 125-200	2,00
TMAS 125-300	3,00

A 200 mm B 200 mm C 55 mm

Pack designation	Thickness (mm)
TMAS 200-005	0,05
TMAS 200-010	0,10
TMAS 200-020	0,20
TMAS 200-025	0,25
TMAS 200-040	0,40
TMAS 200-050	0,50
TMAS 200-070	0,70
TMAS 200-100	1,00
TMAS 200-200	2,00
TMAS 200-300	3,00



Each pack designation consists of 10 shims.

Shim kits		Thickness (mm)								
Designation	Size (mm)	0,05	0,10	0,20	0,25	0,40	0,50	0,70	1,00	2,00
		Quantities								
TMAS 50/KIT	50 × 50	20	20	20	20	20	20	20	20	10
TMAS 75/KIT	75 × 75	20	20	20	20	20	20	20	20	10
TMAS 100/KIT	100 × 100	20	20	20	20	20	20	20	20	10
TMAS 340	100 × 100	20	20	20	20	20	20	20	20	10
	125 × 125	20	20	20	20	20	20	20	20	10
TMAS 360	50 × 50	20	20	–	20	–	20	–	20	20
	75 × 75	20	20	–	20	–	20	–	20	20
	100 × 100	20	20	–	20	–	20	–	20	20
TMAS 380	50 × 50	20	20	20	20	20	20	20	20	20
	75 × 75	20	20	20	20	20	20	20	20	20
TMAS 510	50 × 50	20	20	20	20	20	20	20	20	10
	75 × 75	20	20	20	20	20	20	20	20	10
	100 × 100	20	20	20	20	20	20	20	20	10
TMAS 720 ¹⁾	50 × 50	20	20	20	20	20	20	20	20	20
	75 × 75	20	20	20	20	20	20	20	20	20
	100 × 100	20	20	20	20	20	20	20	20	10
¹⁾ Consists of TMAS 340 + TMAS 380	125 × 125	20	20	20	20	20	20	20	20	10



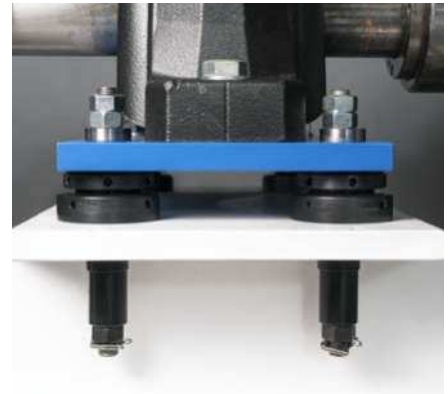
The chocking solution for rotating equipment

SKF Vibracon

SKF Vibracon chocks are self-leveling and provide the option to reduce profile height. They allow easy, accurate mounting of all types of rotating equipment to base frames and either steel or concrete foundations. They accommodate the angular difference (up to 4°) between machine and mounting base without the need to machine the base or install epoxy resin chocks. The chocks eliminate soft foot- and can lower the cost of equipment foundations – whether they are designed-in or retrofitted.

SKF Vibracon chocking solutions offer you the advantages of:

- A high load capacity
- A broad adjustment range
- An optimized load path through the product
- An optimized bolt/Vibracon combination
- Reduced chock height across the entire range



Carbon steel chocks (E-CS)

SKF Vibracon adjustable chocks can satisfy a range of technical concerns, as they are available in a number of configurations and materials. Chocks made of carbon steel are recommended for indoor use. They provide a cost-effective solution for standard applications, while offering reliable performance in environments such as on the factory floor. Applying additives at the mating surfaces provides initial protection – both before and during installation – and prevents parts from seizing when they are adjusted

Surface treated chocks (E-CSTR)

Chocks are often installed in demanding environments, including humid and salty climates – where enhanced corrosion protection is recommended. (SKF Vibracon chocks were originally developed for marine applications.) To satisfy this need, SKF has tested a range of protective solutions, resulting in its surface-treated chocks. Each part is individually surface treated, which helps to give the chocks a consistent quality and extended performance against corrosion.

Stainless-steel chocks (E-SS)

For the most demanding environments where carbon steel surface-treated chocks will not suffice, SKF has developed a range of stainless-steel chocks. Mating surfaces are treated with additives to prevent parts from seizing when adjusted. Coupled with recent performance improvements, such as increased load capacity, they are suitable but not limited to be used in industries such as oil & gas or offshore.

Low profile chocks (ELP-ASTR)

These surface treated alloy steel low profile chocks are aimed at applications with limited available chocking heights. Low profile chocks offer an economic alternative to the expensive milled chocks, shims or epoxy resins typically used for re-chocking projects or previously designed solutions. Each part is individually surface treated, which helps to give the chocks a consistent quality and extended performance against corrosion. They can be fitted easily and cost-effectively, which helps machine owners who are on a tight installation schedule.

Typical applications

- Food & beverage
- Pulp & paper
- Oil & gas
- Marine & offshore
- Railways
- Power generation – incl. renewable energy
- Agriculture
- Clean room applications



SKF Vibracon adjustment tools

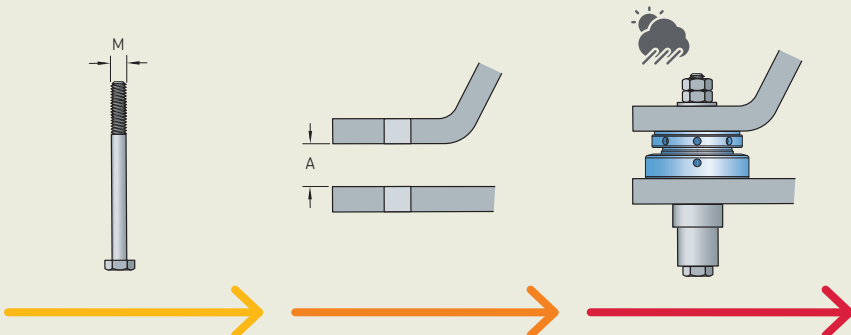
The SKF Vibracon adjustment tools are especially designed for safe height alteration of the SKF Vibracon chocks with comfort.



Technical data

Designation	SKF Vibracon Type range
SMAT 006	SM 12 E – SM 16 E
SMAT 008	SM 20 E – SM 36 E
SMAT 010	SM 42 E – SM 64 E
SMAT 006 LP-3	SM 16 ELP – SM 20 ELP
SMAT 006 LP-4	SM 24 ELP – SM 42 ELP

How to select the appropriate SKF Vibracon chock



Step 1

Diameter of the foundation bolt (M)



Step 2

Available chocking height (A)

Step 3

Check environmental conditions

Vibracon selection tool

skf.com/vibraconselector

The SKF Vibracon selection tool provides a calculation tool to determine the most suitable SKF Vibracon chock for your application.

Technical data

Bolt size range		Bolt hole diameter d ₂		Maximum height A		Minimum height A		Minimum reduced height ¹⁾		Outer diameter D ₁		Proof load ²⁾		Designation		
Metric	Imperial	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	kN	kip.		Suffixes	
M12-M16	1/2"-5/8"	18	0.71	40	1.57	30	1.18	24	0.94	65	2.56	90	20	SM 12 E	-CSTR	-SS -CS
M16-M20	5/8"-3/4"	22	0.87	48	1.89	35	1.38	26	1.02	80	3.15	140	31	SM 16 E	-CSTR	-SS -CS
M20-M24	3/4"-1"	27	1.06	54	2.13	40	1.57	30	1.18	100	3.94	200	45	SM 20 E	-CSTR	-SS -CS
M24-M30	1"-1 1/4"	33	1.30	60	2.36	45	1.77	35	1.38	120	4.72	325	73	SM 24 E	-CSTR	-SS -CS
M30-M36	1 1/4"-1 1/2"	39	1.54	65	2.56	50	1.97	40	1.57	140	5.51	475	107	SM 30 E	-CSTR	-SS -CS
M36-M42	1 1/2"-1 3/4"	45	1.77	70	2.76	55	2.17	45	1.77	160	6.30	650	146	SM 36 E	-CSTR	-SS -CS
M42-M48	1 3/4"-2"	52	2.05	75	2.95	60	2.36	50	1.97	190	7.48	850	191	SM 42 E	-CSTR	-SS -CS
M48-M56	2"-2 1/4"	60	2.36	89	3.50	70	2.76	59	2.32	210	8.27	1 150	259	SM 48 E	-CSTR	-SS -CS
M56-M64	2 1/4"-2 1/2"	68	2.68	94	3.70	75	2.95	64	2.52	230	9.06	1 500	337	SM 56 E	-CSTR	-SS -CS
M64-M68	2 1/2"-2 3/4"	76	2.99	99	3.90	80	3.15	69	2.72	260	10.24	2 000	450	SM 64 E	-CSTR	-SS -CS

SKF Vibracon low profile

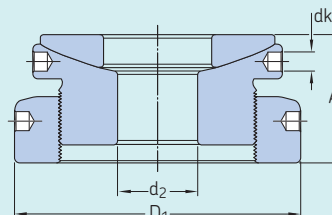
M16-M20	5/8"-3/4"	22	0.87	37	1.46	25	0.98	17	0.67	80	3.15	140	31	SM 16 ELP	-ASTR	
M20-M24	3/4"-1"	27	1.06	37	1.46	25	0.98	17	0.67	100	3.94	200	45	SM 20 ELP	-ASTR	
M24-M30	1"-1 1/4"	33	1.30	37	1.46	25	0.98	17	0.67	120	4.72	325	73	SM 24 ELP	-ASTR	
M30-M36	1 1/4"-1 1/2"	39	1.54	37	1.46	25	0.98	17	0.67	140	5.51	475	107	SM 30 ELP	-ASTR	
M36-M42	1 1/2"-1 3/4"	45	1.77	42	1.65	30	1.18	22	0.87	160	6.30	650	146	SM 36 ELP	-ASTR	
M42-M48	1 3/4"-2"	52	2.05	47	1.85	35	1.38	27	1.06	190	7.48	850	191	SM 42 ELP	-ASTR	

¹⁾ The minimum height of the product can be reduced on a lathe if required.

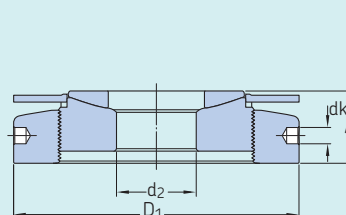
²⁾ Recommended maximum load on the SKF Vibracon corresponding with the proof load of the recommended maximum metric bolt size.

More detailed technical specifications can be found in the **Vibracon selection tool** on skf.com/vibraconselector

Technical data can be subject to changes without prior notice



SKF Vibracon



SKF Vibracon low profile



Straight bolt tensioning for longer endurance

Spherical washers

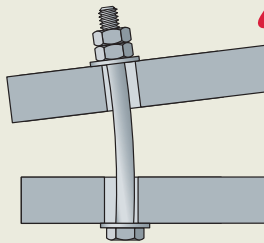
Spherical washers are designed to create an exact, parallel plane between the bolt head and the face of the nut. SKF spherical washers automatically adjust and compensate for the angular deviation between the planes and prevent the bolt from bending.

Product characteristics:

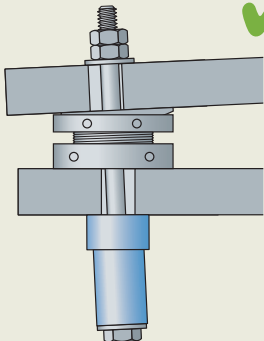
- Automatically compensates for angular errors
- Evenly distributed bolt tension
- Reduces bolt fatigue from bending bolts
- Improved bolt stretch possible due to increased clamping length
- Surface treated for protection in humid and harsh environments
- Available in standard and low-profile (LP) versions



Bent bolt



Straight bolt



Line contact

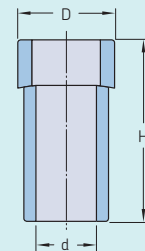


Spherical contact



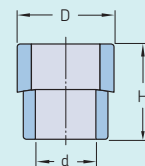
Dimensions - standard (mm)

Designation	D	d	H
SMSW 16 -ASTR	33	17	60
SMSW 20 -ASTR	42	23	60
SMSW 24 -ASTR	47	27	60
SMSW 27 -ASTR	52	30	60
SMSW 30 -ASTR	56	34	60
SMSW 36 -ASTR	67	40	60
SMSW 42 -ASTR	82	46	60
SMSW 48 -ASTR	92	52	60

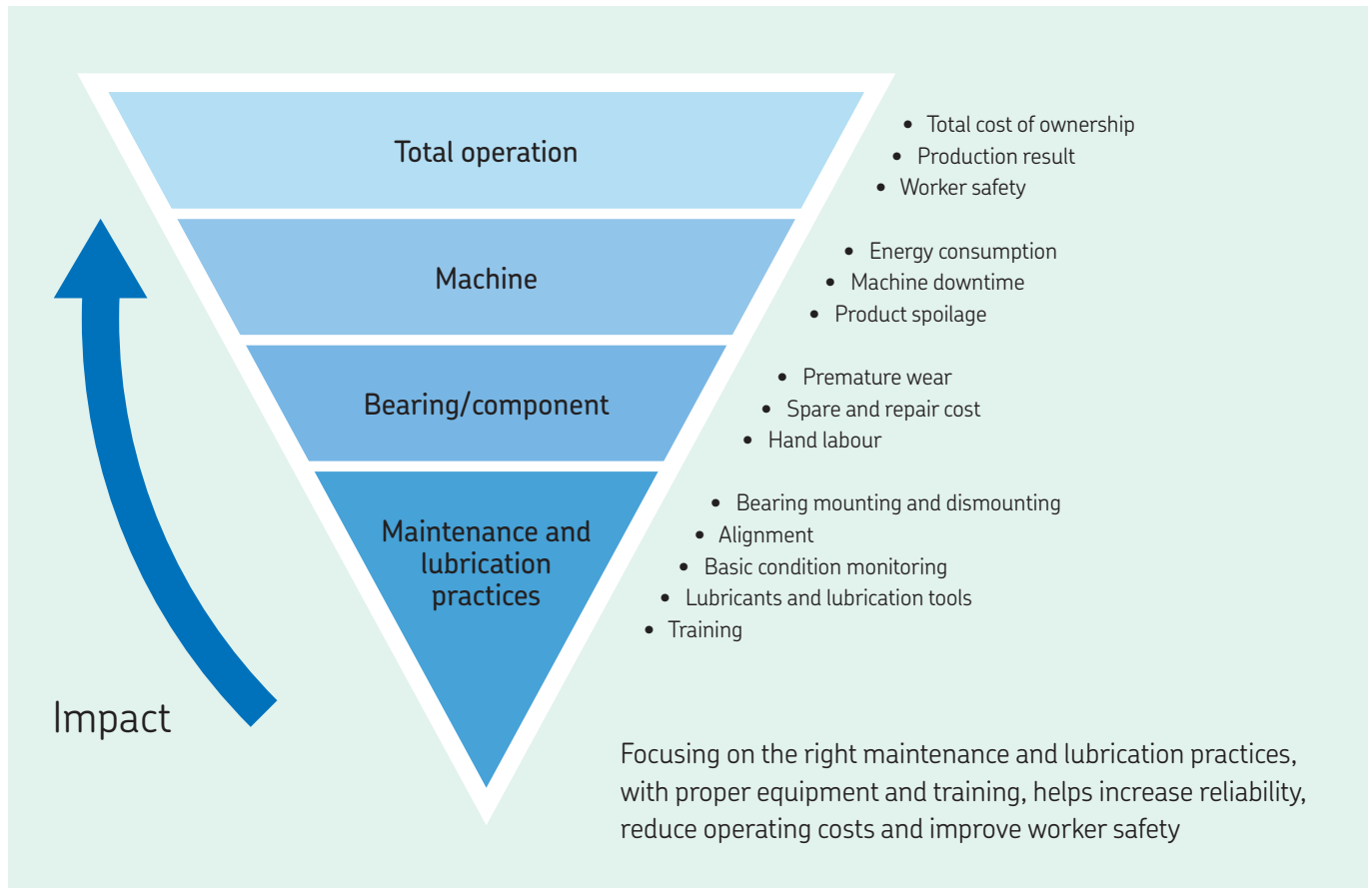


low-profile (mm)

Designation	D	d	H
SMSW 16LPAST	33	17	20
SMSW 20LPAST	42	23	22
SMSW 24LPAST	47	27	24
SMSW 27LPAST	52	30	26
SMSW 30LPAST	56	34	28
SMSW 36LPAST	67	40	30
SMSW 42LPAST	82	46	34



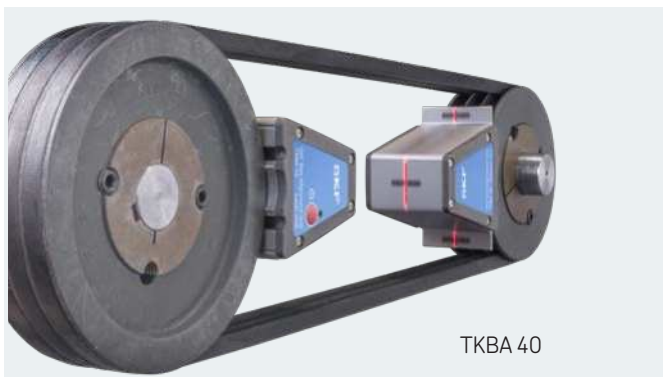
The importance of maintenance and lubrication on the total cost of ownership is often underestimated



Thanks to SKF's unique knowledge of machinery operation and maintenance, we understand the issues that operators and maintenance personnel have to deal with every day.

With a focus on the bearing life cycle and machine operations, we develop and maintain a comprehensive product range to support you. Safety, ease of use, affordability and effectiveness are key product characteristics and drivers of our daily activities.

Continuous development and improvement of our products is made in cooperation with users and naturally we take account of regulatory bodies and applicable international standards to improve reliable rotating equipment performance and safety.



Contact and support

SKF offers comprehensive support for the complete range of TKSA shaft alignment instruments. The support includes software updates, warranty, calibration services, training, repair, technical support and an online self help portal. Additional offers and services might be available from our partners.

Latest news and product information about the SKF alignment range can be found on www.skf.com/alignment

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