TECHNICAL DATA

Fluke 831 Laser Shaft Alignment tool

Get more out of your shaft driven systems through precision alignment

QUICK, EASY, POWERFUL

- Guided, step-by-step for the novice —no training required
- Yet powerful for the skilled technician which means you can cover more of your machines

PRECISE

- Single laser, reflected measurement technology doubles the distance and reduces errors, enhancing accuracy

ADAPTIVE ALIGNMENT

- A combination of software and hardware evolutions, enabling maintenance and reliability teams to address the full variety of horizontal, angular, and vertical alignment challenges.
- Work is completed faster, results are superior, and team capabilities are better utilized compared to other market solutions
- Features to exceed the capabilities of conventional tools and deliver greater speed, accuracy, and elimination of human errors.

It's a known fact—all rotating machinery is susceptible to misalignment. Machines that are well aligned at the commissioning stage and regularly maintained will have reduced wear in couplings, bearings, and seals, all of which means reduced plant operating and maintenance costs.

Precision shaft alignment contributes to energy savings and a cleaner environment. It protects assets, extends machine availability, and increases product quality, reducing vibration to a minimal level.

Are you still using dial indicators and straightedges to ensure your shaft-driven machines are correctly aligned? If so, you could be losing thousands of dollars per year in replacement bearing and coupling costs, hours of unnecessary repair time, and crippling unplanned downtime, not to mention taking years off your machine's useful life.

Due to its rugged sensALIGN® 3 sensor and reflector, the Fluke 831 Laser Shaft Alignment tool can handle almost any mainstream machine alignment challenge. With its problem-solving Adaptive Alignment features, the 831 offers you an unbeatable price-performance ratio.

Key benefits at a glance

- **High performance and precise results**

  The Fluke 831 leverages powerful tools like unique extend mode to handle gross misalignment and integrated Thermal Growth Calculator that automatically factors the dynamic machine changes into the result.

- **Quick setup and intuitive user interface**

  Its quickly mounted setup and tablet-like, intuitive guided user interface make the 831 more user-friendly than any other conventional measurement methods. Align coupled shafts in four quick, easy steps.

- **Share data via the cloud**

  You can leverage its integrated Wi-Fi cloud solution to easily transfer data from the 831 handheld device to the ARC 4.0 PC software.
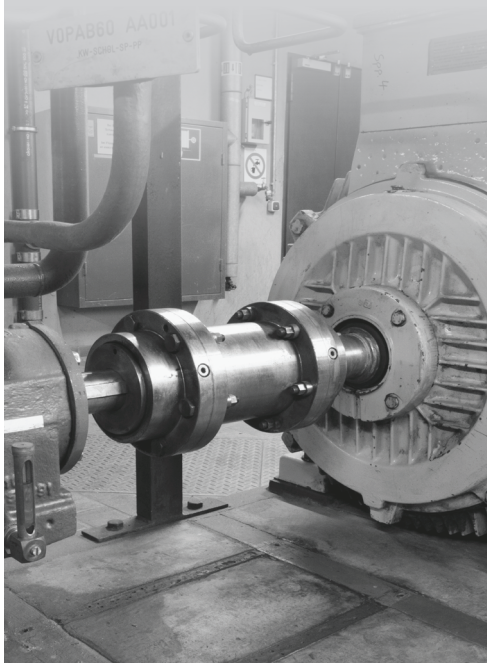
831 is user-friendly and easy to transport.

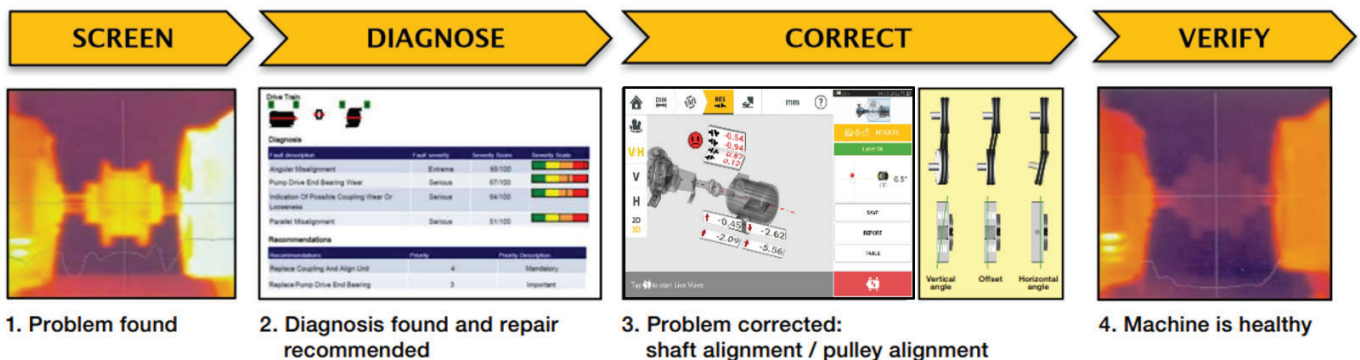## Precision shaft alignment in four simple steps with the Fluke 831

1. Mount the brackets on either side of the coupling. The reflector should be mounted onto the machine to be moved (motor) while the sensor unit is mounted on the stationary (driven) component.

    • Turn on the 831, select Horizontal Alignment, the guided screen will walk the user through entering the dimensions.

2. Take the 1st measurement, rotate the shaft, and receive instant measurement verification, then the 2nd, then the 3rd.

3. Make corrections while observing the 831 screens:

    • Correct vertical misalignment by shimming moveable machine based on numbers on screen.

    • Correct horizontal misalignment by moving moveable machine horizontally with jacking bolts while observing live mode.

4. Re-measure to confirm the alignment results. Then print a report, As Found & As Left, to document the job.

Fluke tools help keep your plant up and running

Fluke offers a complete line of predictive maintenance tools designed to help maximize plant uptime. Whether you're using a Fluke vibration tester to diagnose fault and severity, or a Fluke thermal imager to evaluate machine health, our tools help you reduce production gaps and lower maintenance repair costs.

Here's how Fluke tools work together to solve problems: A vibration meter or thermal imager will find a malfunctioning machine, and a vibration tester diagnoses the issue. Fluke shaft alignment tools like the Fluke 831 correct shaft misalignment, and the Fluke 835 addresses belt misalignment. Finally, the vibration meter or thermal imager will determine for you if the machine gets a clean bill of health.

1. Problem found

2. Diagnosis found and repair recommended

3. Problem corrected: shaft alignment / pulley alignment

4. Machine is healthy

Adaptive Alignment: Adapt to the situation

Measure over different types of couplings

The Fluke 831 provides a wide range of coupling types, making it easier for the user to receive an optimal measuring result without deviating from the specific tolerances. Choose the right coupling adapted to your onsite situation:

- short flex coupling
- spacer shaft
- single plane coupling
- uncoupled shafts
- further various default coupling formats

Adaptive Alignment: Adapt to the team

Intuitive user interface to benefits all types of users

PRUFTECHNIK, the inventor and pioneer of laser shaft alignment who are now part of the Fluke Corporation, offers years of experience in designing systems to serve technicians in the field. The Fluke 831 offers a colored 3D user interface that is the key to executing alignment tasks quickly and easily without sacrificing accuracy.

Cloud-based transfer enables data sharing and trending

The Fluke 831 offers Wi-Fi connectivity to remotely transfer data from and to the ARC 4.0 PC software, where one can store, share, evaluate, and trend all alignment data. Cloud-transfer capabilities enable entire maintenance teams to stay informed and alerted to potential issues that might interrupt production.

Adaptive Alignment: Adapt to the asset

The best results for use on maintstream machines

How the Fluke 831 improves on the performance of traditional alignment tools:

- Faster setup than any dial indicator
- Higher precision than any feeler gauge
- No sagging, even over large distances, due to having laser technology
- Quicker and easier to read results than through a manual matrix calculation
- Ability to operate the device independent from what may be occurring on the coupling/shaft surface

Fluke 831 Laser Shaft Alignment tool

General specifications		
CPU	Processor:	Exynos 9810, 2.7GHz,1.7GHz Octa-Core
	Memory:	4 GB RAM, 64 GB Flash memory
Display	Technology:	TFT Integrated light sensor for automated adjustment of the brightness to the display according to the lighting conditions hence extending battery life
	Resolution:	1920 x 1200 Pixel
	Size:	203.1 mm (8")
Connectivity	Wi-Fi:	802.11 a/b/g/n/ac/ax 2.4G+5GHz, HE80, MIMO, 1024–QAM
	Wireless:	5.0
	RFID:	NFC
Camera	Main Camera – Resolution:	13.0 MP, Auto Focus
	Front Camera – Resolution:	5.0 MP
Environmental protection	IP 68:	dustproof, submersible 1.5 m
Temperature range	Operation:	-20°C to 50°C (-4°F to 122°F)
Battery	Type:	Li-Ion rechargeable battery 3.8 V / 5050 mAh / 19.2 Wh
	Operating time:	Up to 11 hours
Dimensions (without hand straps)		Approx. 256 x 149 x 35 mm (10 5/64" x 5 55/64" x 1 3/8")
Weight (without hand straps)		Approx. 710 g (1.6 lbs)

Reflector (prism)

General specifications		
Type		90° roof prism
Accuracy (avg)		> 99%
Environmental protection		IP 67 (submersible, dustproof)
Temperature range	Operation:	-20°C to 60°C (-4°F to 140°F)
	Storage:	-20°C to 80°C (-4°F to 176°F)
Dimensions		Approx. 100 x 41 x 35 mm (4" x 1 5/8" x 1 3/8")
Weight		Approx. 65 g (2.3 oz)

LASER RADIATION
DO NOT STARE INTO BEAM
CLASS 2 LASER PRODUCT
P < 1mW, λ =630-680 nm
IEC 60825-1:2014

Complies with 21 CFR 1040.10 and 1040.11 except for deviations pursuant to Laser Notice No. 50, dated June 24, 2007

sensALIGN® 3 sensor

General specifications		
Measurement principle		Coaxial, reflected laser beam
LED indicators		1 LED for laser beam status and battery status 1 LED for Wireless communication
Power supply	Battery:	Lithium-Ion rechargeable battery 3.7 V / 5 Wh
	Operating time:	10 hours (continuous use)
	Charging time:	Using charger – 2.5 h for up to 90% 3.5 h for up to 100% Using USB port – 3 h for up to 90% 4 h for up to 100%
Environmental protection	IP 65:	Dustproof and water jets resistant, shockproof
	Relative humidity:	10% to 90% (non-condensing)
Ambient light protection		Yes
Temperature range	Operation:	-10°C to 50°C (14°F to 122°F)
	Charging:	0°C to 40°C (32°F to 104°F)
	Storage:	-20°C to 60°C (-4°F to 140°F)
Dimensions		Approx. 105 x 69 x 55 mm (4 9/64" x 2 23/32" x 2 11/64")
Weight		Approx. 210 g (7.4 oz) with dust cap
Detector	Measurement range:	Unlimited, dynamically extendible
	Resolution:	1 µm (0.04 mil) and angular 10 µRad
	Error (avg):	< 2%
Inclinometer	Measurement range:	0° to 360°
	Resolution:	0.1°
	Inclinometer error:	0.3% full scale
Laser	Type:	Semiconductor laser diode
	Wavelength:	630 – 680 nm (red, visible)
	Safety class:	Class 2 according to IEC 60825-1:2014 The laser complies with 21 CFR 1040.10 and 1040.11 except for deviations pursuant to Laser Notice No. 50, dated June 24, 2007.
	Beam power:	< 1 mW
	Beam divergence:	< 0.3 mrad
	Safety precautions:	Do not look into laser beam
External interface		Wireless communication
Transmission distance		Up to 30 m (98 ft) direct line of sight
CE conformity		Hereby, Fluke declares that the radio equipment contained in this product is in compliance with Directive 2014/53/EU. The full text of the EU declaration is available at the following internet address: https://www.fluke.com/en-us/support/declaration-of-conformity
Country radio certifications		Visit fluke.com for more information

Ordering Information
Fluke 831, Laser Shaft Alignment Tool

Includes:
Fluke 831 rugged device, sensALIGN 3 sensor with cover, reflector prism with cover, ballistic carrying case, chain-type mounting bracket with 150 mm support posts (2X), 300 mm support posts (4X), tape measure, lens cleaning cloth, device power cable and adapter, PC cable, sensor micro power cable and adapter, USB drive, USB drive cable, safety information sheet and Quick Reference Guide