FLUKE ®

Find hot bearings fast with a high resolution infrared camera

Overheated bearings can cause machinery to fail resulting in a sudden interruption of the production line. Replacing those bearings can be costly both in terms of materials and downtime.

FLUKE   21.2°C   Auto 1
24.9

D=0.69 m   10/8/14   01:58:31 PM

19.9
e=0.91
BG=22.0
т=100%

To extend bearing life, they should be regularly inspected for wear and overall health. But before you shut down the production line or motor to perform that maintenance, you can quickly scan bearings with an infrared camera to prioritize those that need service first.

Because bearings have to be inspected while in use, an infrared camera is an ideal non–contact inspection tool. It enables you to detect the running temperature of bearings quickly, from a safe distance. That way you can find overheated bearings before they cause failures, or excess strain on motors.

Top 4 Bearing inspection applications

1 General preventive maintenance

2 Troubleshooting

3 Working in tight spaces

4 Reducing motor strain
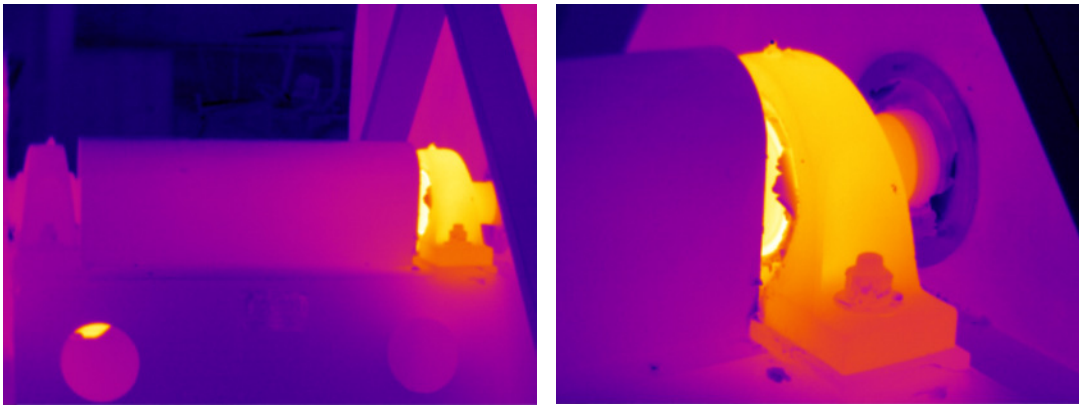
With the TiX560 you can clearly see that the right side of the bearing has an issue.

Expediting bearing inspections from every angle

High resolution, thermal sensitivity, and an ergonomic articulating lens make the Fluke TiX580, TiX560, TiX520 and TiX500 cameras a great choice for bearing inspection applications, including:

1. General preventive maintenance

The high resolution and thermal sensitivity of the Fluke TiX580, TiX560, TiX520 and TiX500 cameras make it possible to scan bearings from a safe distance, making it practical to scan all of your equipment to establish a baseline that you can compare to future scans. Large on-camera memory stores thousands of thermal images and hours of radiometric video so you can compare new images to baseline images right on the camera. The Fluke Connect® system allows you to access stored images from a central database, to help technicians identify issues in the field and expedite maintenance.

2. Troubleshooting

Overheated bearings are typically found by comparing the surface temperature of a suspect bearing to an adjacent bearing of the same type under the same load. Overheating can be caused by too much or too little lubricant, incorrect mounting or incorrect replacement bearings. With a TiX580, TiX560, TiX520 or TiX500 camera, you can stand at a safe distance from the target and get a high resolution thermal image of the device as it runs. The rotating lens adjusts up to 240° to provide a good

view of the target, from above, below, or around other objects, while you view the results on the large 5.7 inch touchscreen. As you store the images and video you can note anomalies or points of concern in voice and/or text annotations. And you can analyze the images right there on the camera to potentially resolve the problem while on site.
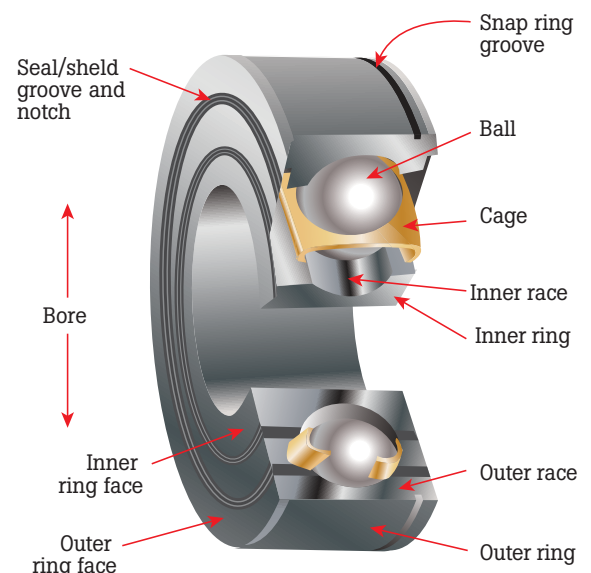
3. Working in tight spaces

A lot of bearings are located in hard to reach locations underneath conveyors and obstructed by other equipment. With some infrared cameras you would have to shoot blind, aiming the camera at a target that you can't see and hope it is in focus. With a TiX580, TiX560, TiX520 or TiX500 camera, you can turn the rotating lens 240° to a position where it gets the clearest shot of the bearings, and then view the image on the touchscreen before you save it. This helps ensure that you get accurate images to easily find problem bearings.

4. Reducing motor strain

The average production line can have conveyors with thousands of bearings. If there's a problem, the sooner you can find it, the less strain it will put on the conveyor motor. Fluke TiX580, TiX560, TiX520 and

TiX500 infrared cameras have LaserSharp® Auto Focus that uses a built in laser distance meter to calculate the distance to the target and then precisely focus on that target. For longer distances you can add a telephoto lens or use the zoom feature. For more context, combine the infrared image with a visible light image in AutoBlend™ on the camera to quickly identify where the overheated bearing is located on the conveyor. By pinpointing a problem bearing quickly, you can avoid having to replace the motor or gear box, not to mention potential downtime costs.

Snap ring groove

Ball

Cage

Inner race

Inner ring

Outer race

Outer ring

Seal/shield groove and notch

Bore

Inner ring face

Outer ring face

Fluke TiX580, TiX560, TiX520 and TiX500
infrared cameras provide the first line of defense

The Fluke TiX580, TiX560, TiX520 and TiX500 Expert Series Infrared Cameras provide a unique set of capabilities to help you quickly identify potential issues and keep you up and running.

1 **Ergonomic 240° rotating lens** gives you maximum flexibility and makes it easy to navigate over, under, and around objects so you can see the image before you capture it. It allows you to verify that the image is in focus before you record it, unlike a pistol-grip camera that can be very difficult to focus when you're in an awkward position. This allows technicians to work in more ergonomically agreeable positions for all day use.

2 **The 5.7 inch responsive touchscreen** Delivers 150 %[1] more viewing area to make it easy to see even subtle changes and details right on the camera. Quickly finger scroll through saved thumbnail images on the screen, zoom in and out, and access shortcuts to save time and increase productivity.

3 **Enhanced image quality** and temperature measurement accuracy allow you to double image resolution with SuperResolution mode to find subtle anomalies faster. On 320 x 240 resolution cameras, this moves up to 640 x 480, and on 640 x 480 resolution cameras, this moves an image up to 1280 x 960.

4 **Advanced focus systems** enhance image quality and the make it easier to capture the best possible infrared shot. *LaserSharp*® Auto Focus at the touch of a button takes the guesswork out of precision focus. The built-in laser distance meter calculates the distance to your designated target and then automatically focuses to

produce the optimum image. *MultiSharp*™ Focus[2] takes multiple images from different focal distances and combines them into one clear image. The system reduces the need to take multiple images of individual targets that are in the same field of view. With the press of a button, all objects within the field of view come into focus.

5 **Filter mode** achieves Noise Equivalent Temperature Difference (NETD) as low as 30 mK to detect very slight temperature differences.

6 **Hot and cold spot markers** highlight the hottest and coldest pixels on the image and displays their temperature values at the top of the screen for quick identification of anomalies.

7 **On-camera storage, editing, and analysis** allow you to store thousands of images in memory and bring them up in the field to edit, add digital images, text or voice annotations, and analyze right on the camera.

8 **Fluke Connect**® system allows you to wirelessly sync images directly from your camera to a mobile app. You can edit, analyze and email images to colleagues from the field to collaborate in real time, as well as generate reports on the go. Just push the shortcut button to connect.

[1] Compared to a 3.5 inch screen
[2] Not available on all models

See and share more results at one time with Fluke Connect®

The Fluke TiX580, TiX560, TiX520 and TiX500 cameras are Fluke Connect-enabled, so you can easily edit and analyze your images. transmit images and measurements from the cameras to smart phones or tablets that have the Fluke Connect* mobile app. In so doing you can share results with authorized team members and thus enhance collaboration and help resolve problems faster.

Fluke Connect Mobile App

Wirelessly sync images directly from your camera to the Fluke Connect system. Email images to colleagues from the field to collaborate in real time. Edit and analyze images and generate reports on the go.
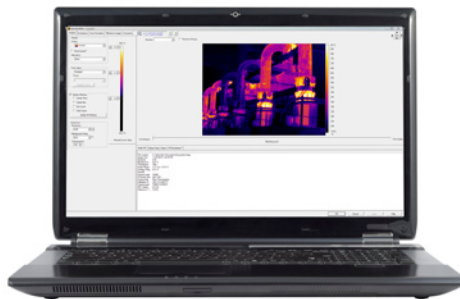
Fluke Connect Smartview® Software for your Desktop

Powerful, new Fluke Connect Smartview software for your Windows desktop computer makes it easy to optimize images, perform advanced analytics, generate quick, customizable reports and export images to the format of your choice. A comprehensive and connected software platform that represents the future of integrated equipment maintenance.

Work faster and easier

Unexplained hot spots could mean trouble for your operation. A high resolution infrared camera is the fastest way to get a clear, accurate view of those problems. Fluke TiX580, TiX560, TiX520 and TiX500 Expert Series cameras deliver the image resolution, thermal sensitivity and accuracy, and ergonomic design to help you find those hot spots before they cause major damage.

To find out more, consult your Fluke sales representative or visit **www.fluke.com/infrared** for more information.

Fluke. *Keeping your world up and running.*®

*Fluke Connect SmartView analysis and reporting software is available in all countries but Fluke Connect system is not. Please check availability with your authorized Fluke distributor.