

GAS TURBINE ASSEMBLY

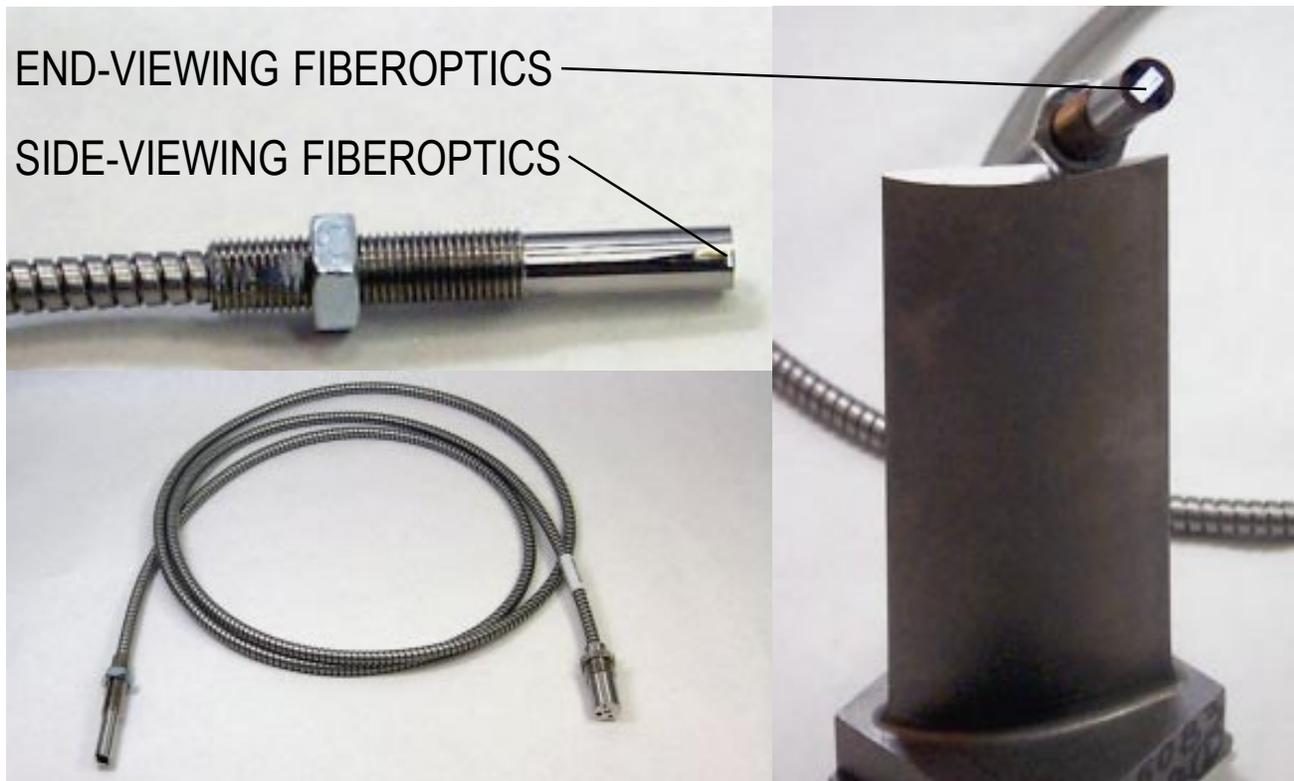
THE PROBLEM: To center a rotor in its casing

OLD METHOD: Feeler gages measure turbine blade-to-casing clearance

NEW SOLUTION: Fiberoptic probe measures blade-to-casing clearance

ADVANTAGES:

- Assembly time and costs are reduced
- Measurements are made from the outside of the casing
- Dynamic measurements can be recorded with rotor rotation



PHILTEC has combined two sensing functions into one compact fiberoptic probe assembly:

- Depth of Turbine Casing Probe Hole via Side-Viewing Fiberoptics
- Distance To Turbine Blade Tip via Reflectance Compensated End-Viewing Fiberoptics

SIDE-VIEWING. A bundle of fibers 0.004" (0.1 mm) thick is located near the probe tip and directed radially outward. This fiberoptic generates a positive voltage signal when it reflects light off the I.D. of the casing probe hole. When the probe advances past the inside edge of the casing, the output signal drops to zero. The location of the inside edge of the casing probe hole can be accurately located ± 0.001 ".

END-VIEWING. Philtec's RC sensing fiberoptics provide the measure of distance between the blade tip and the probe tip. Operating gaps of 0.200" (5 mm) or more can be measured.

TURBINE BLADE/CASING CLEARANCE. The side-viewing fiberoptic precisely positions the probe in the turbine casing while the end-viewing fiberoptic provides the remaining gap information.