

**OMEGA VANZETTI®**  
The Leader in Infrared  
Temperature Measurement  
and Control

Sales and Service  
**1-800-342-3747<sup>SM</sup>**  
**1-800-FIBER-IR**  
vanzetti.com  
e-mail: info@vanzetti.com

## FLAME HARDENING OF STEEL WHEEL MONITORING

Hardening the surfaces of steel wheels used on heavy construction equipment such as drive and idler wheels for bulldozers, back hoes, and other track type equipment is presently being accomplished by flame hardening.

A flame head is positioned on either side of the wheel (fig. 1). As the wheel is rotated, the flame impinges on the surface elevating the temperature to approximately 1700°F. Within close proximity to the flame, the surface is rapidly quenched with cooling water (fig. 2).

The flame head must be moveable to allow uniform hardening as the wheels exhibit variations in both roundness and lateral distortions.

By optically looking through the "clean" natural gas flame at the optimum point on the wheel (fig. 3), the variations in temperature determined by the **OMEGA VANZETTI®** Thermal Monitor provide a proportional signal which is fed to a pneumatic transducer which mechanically moves the flame head to the correct position.

Substantial savings are realized by eliminating a previous costly process of destructive testing.

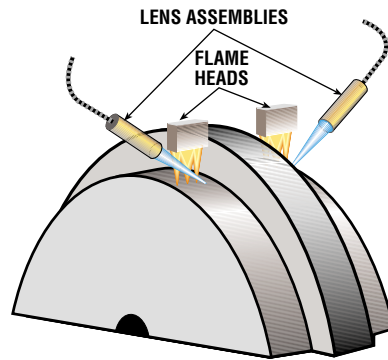


FIGURE 1.

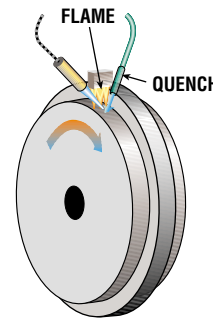


FIGURE 2.

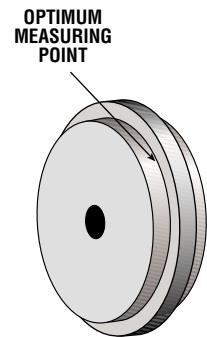


FIGURE 3.

**\$2,800.00**  
**BASIC SYSTEM**

### Advantages of the fiber optic infrared approach as illustrated are:

- Fast response time to 10 mSec (0 to 63%)
- Non-contact temperature monitoring allows measurements while in operation
- Wide temperature range of operation (in sub ranges)
- Variations in temperature determined by the monitor provides a proportional sign for controlling purposes
- Ability to control temperatures with hi-low logic
- Ability to increase product quality and quantity
- Adjustable emissivity control



**OMEGA VANZETTI, INC.** Six Merchant Street, Sharon, MA 02067  
Tel: (781) 784-4733 • Fax: (781) 784-2447

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