



**R.L. DEPPMANN**  
Serving the industry since 1927

20929 Bridge Street, Southfield, MI 48033  
4121 Brockton Drive SE, Grand Rapids, MI 49512  
6200 Baron Drive, Bridgeport, MI 48722  
6910 Treeline Drive, Suite A, Brecksville, OH 44141

Phone: (800) 589-6120 - Fax: (248) 354-3710  
www.deppmann.com

May 2<sup>nd</sup> ~ Monday Morning Minutes:

## The V-Series Rotary Air Dampener

- By Joe Smolinski

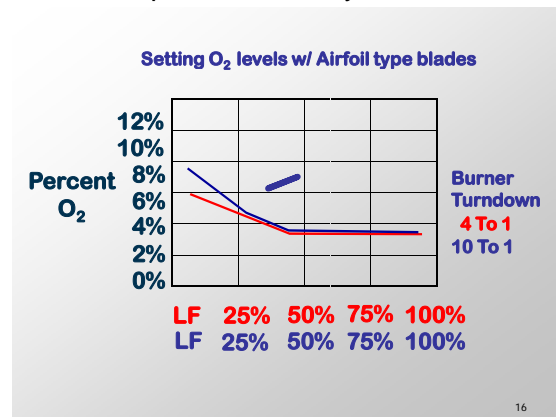
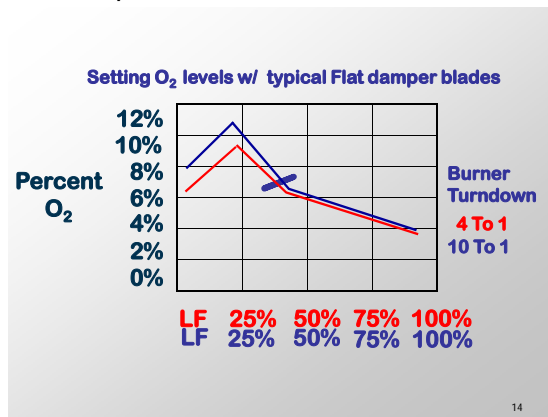
We all know the importance of maintaining proper O<sup>2</sup> levels with burners. Newer controls and linkageless controls definitely have improved your ability to control O<sup>2</sup>. Advances have also been made with O<sup>2</sup> trim, and the O<sup>2</sup> sensors have become more reliable and a little less costly. Therefore, the burner manufacturer has the ability to make improvements in the basic design of the air dampers to make a huge improvement in operation.



Being hydronics people, we all remember seeing a V-port ball valve for the first time. We will not explore the more linear nature of this design over the standard ball valve, but air foil air damper technology is similar.

Consider a typical flat damper O<sup>2</sup> curve. When the dampers first open, there is a big inrush of air, causing percent O<sup>2</sup> to increase. By simply changing these dampers to a rotary drum damper, or even more cost effectively, by utilizing an airfoil design damper, this inrush of air is minimized.

Remember, few boilers operate at 100% load – and often run at 25%-50%, so the goal should be to optimize O<sup>2</sup> at those operating points. You can see on the Airfoil blade curve, O<sup>2</sup> levels immediately start to decrease as the damper opens, while the flat blade damper immediately starts to increase.



**Disclaimer:** R. L. Deppmann and it's affiliates can not be held liable for issues caused by use of the information on this page. While the information comes from many years of experience and can be a valuable tool, it may not take into account special circumstances in your system and we therefore can not take responsibility for actions that result from this information. Please feel free to contact us if you do have any questions.