



Welcome to

EEN-E2002 Combustion Technology

Lecture on 1 Mar 2019

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## Contents

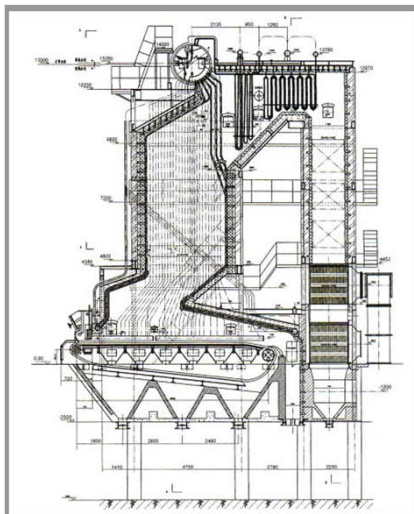
Today's topics:

- Boiler heat and mass balances (cont'd)
- Boiler fuels, fuel properties





## Energy feedback by thermal radiation



KLMCo boiler



## Energy feedback by thermal radiation and aerodynamics

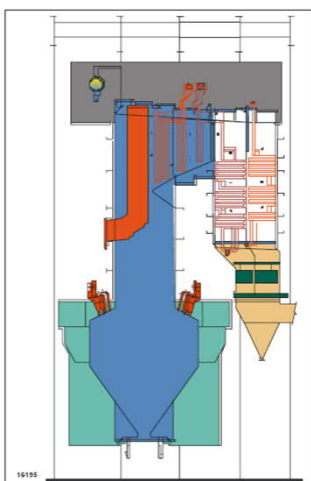


Figure 2. Arch-Fired Boiler

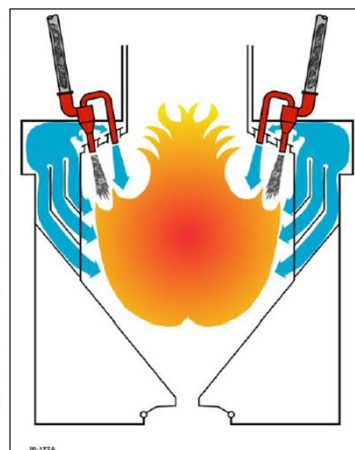


Figure 2. Arch-Fired Combustion Pattern

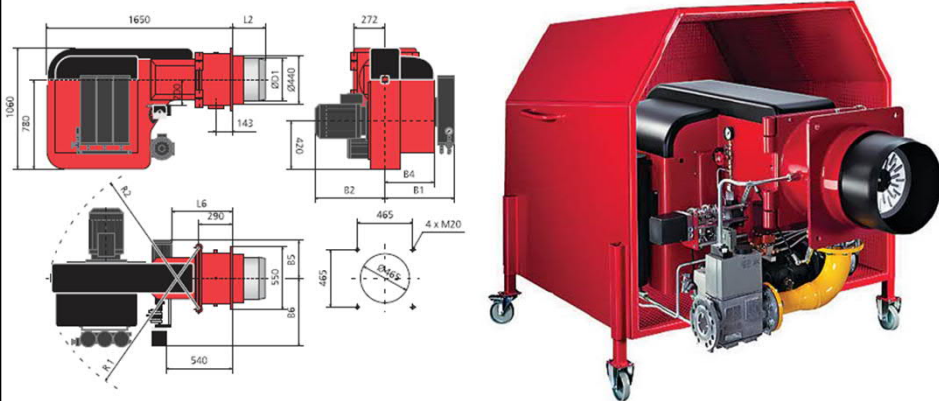
Foster Wheeler arch-fired boiler





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## Energy feedback by aerodynamics – bluff body

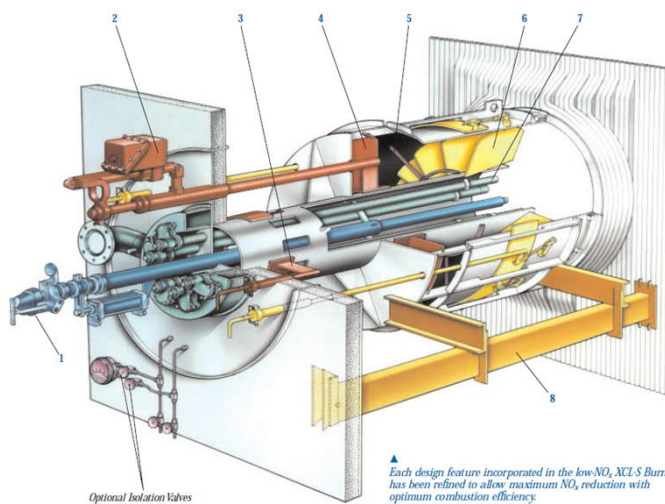


Oilon heavy fuel oil/gas dual fuel burner



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## Energy feedback by aerodynamics – swirl



Optional Isolation Valves

Babcock & Wilcox oil/gas burner





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## Energy feedback by fluidized bed

Amec Foster Wheeler boilers

<https://www.youtube.com/watch?v=SQiq3OOlg5I>

Valmet Hybex boilers

<https://www.youtube.com/watch?v=KcR62W2z8KE>



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## References

Kenneth L. Maloney, PhD, Inc. (referred to as KLMMCo)

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Accessed 11 Sep 2013

S. J. Goidich & D. E. Wagner (2006),

Supercritical boiler options for firing low-volatile Chinese coals.

[http://www.fwc.com/publications/tech\\_papers/files/TP\\_CFB\\_06\\_04.pdf](http://www.fwc.com/publications/tech_papers/files/TP_CFB_06_04.pdf)

Accessed 11 Sep 2013

Oilon Burner series 300 - 700

[http://www.oilon.com/uploadedFiles/Oilon/Materials/Oilon\\_4\\_EN.pdf](http://www.oilon.com/uploadedFiles/Oilon/Materials/Oilon_4_EN.pdf)

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Babcock & Wilcox XCL-S burner brochure

