Advance Your Fired Heater Performance

Controlled Reduction Of Excess Air Is The Key

Reduce formation of N0x/C02	**Ensure safe operation for plant personnel**
Prevent costly damage to fired equipment	**Improve heater efficiency**

Safe and efficient heater operation is rooted in sustaining the correct negative pressure (draft) internal to the heater during operation. Created by the stack effect or ID fan, this draft induces the combustion air to be drawn into the heater, keeping the air and fuel together, safeguarding the combustion process.

The operational challenges of fluctuating fuel heating values and ever-changing production rates dictate the combustion air need. It is the burden of the heater and specifically the existing damper system to deliver.

Birwelco USA Inc.
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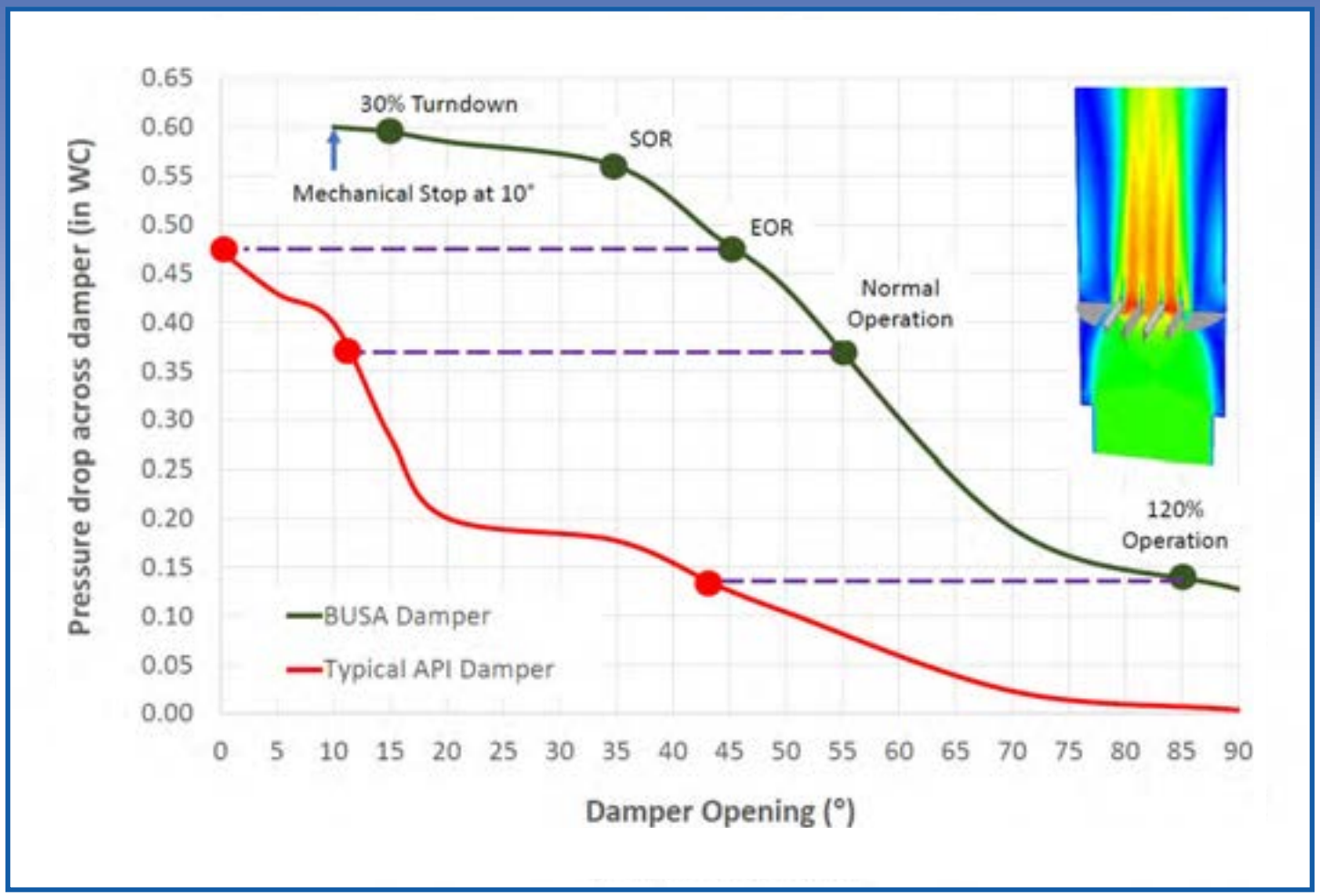
RBA

The Optimal Damper System

Controllability

The margins included in stack and ID fan sizing often result in the typical heater damper needing to be positioned as little as 15% open to generate the draft necessary to fire the heater at the normal operating case. This forces the existing damper system to operate in its non-linear range, making draft adjustments to the heater impractical, manually or by actuator control.



Linear controllability through an expanded range is of critical importance when automation of the heater combustion is the goal, especially when the targeted excess O2 is at levels of 3% or less.

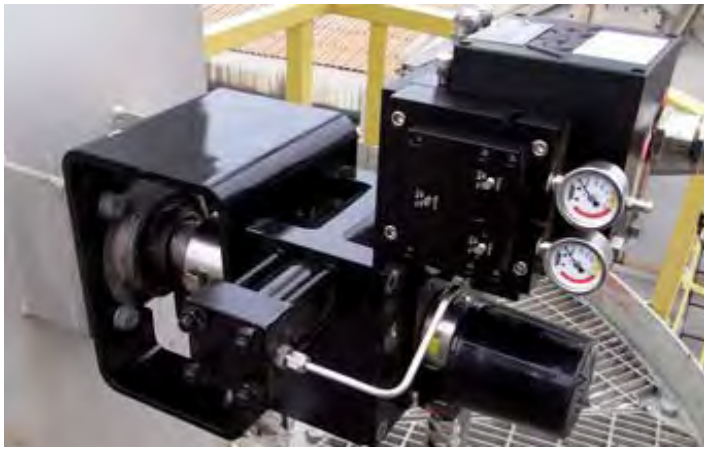
Precise and prompt control can be achieved for superior performance, leading to a significant efficiency gain, with a Birwelco USA (BUSA) Damper & REXA Electraulic™ Actuator

The Optimal Damper System

Performance

Not just a replacement in kind, each damper is matched to the heater's operational needs. Controllability is tuned through CFD Modelling, robust component design providing the accuracy and repeatability necessary for optimal heater operation.

State of the art actuator technology delivers industry-leading position accuracy, 100% full modulating duty cycle, and immediate response to signal input with <70 mS deadtime.
Long Term Reliability



Long Term Reliability

Reinforced blades and solid machined shafts are integral to the overall robust design allowing BUSA to offer a 5-year Mechanical Warranty on every damper design.

Designed and tested for millions of full-stroke cycles and tens of millions of dither cycles(<1% stroke). The inherent design of REXA Electraulic™ Actuation prevents fluid cleanliness related failures commonly associated with hydraulics.
Minimal Lifecycle Cost

Minimal Lifecycle Cost

Supplied as flanged assemblies ready to bolt on or as field installed damper kits, installation is straight forward, typically taking 3 to 4 days for an in-situ installation or repair. 100% of components are easily replaced, Shaft bearing design eliminates routine maintenance.

Self-contained closed-loop hydraulics eliminate the need for large hydraulic pumping units and running complicated external hydraulic lines. Routine fluid maintenance intervals are not required. Discrete motor operation only during position changes minimizes power consumption.

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Birwelco USA is a fired heater/ furnace manufacturer providing custom damper solutions to meet the operational needs of existing heaters regardless of age, condition or origin of manufacture. BUSA's damper design directly addresses performance issues typically experienced by existing fired heater dampers.

Birwelco USA Inc.

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REXA designs and manufactures high performance damper actuators aimed at maximizing damper controllability coupled with long-term reliability. All REXA actuators are tested to the highest standards and are proudly made in the USA.

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