



# Get Comfortable

with a New Idea in Boiler Efficiency



**Mestek CAS:**  
Combustion Air System  
for Hydronic Applications



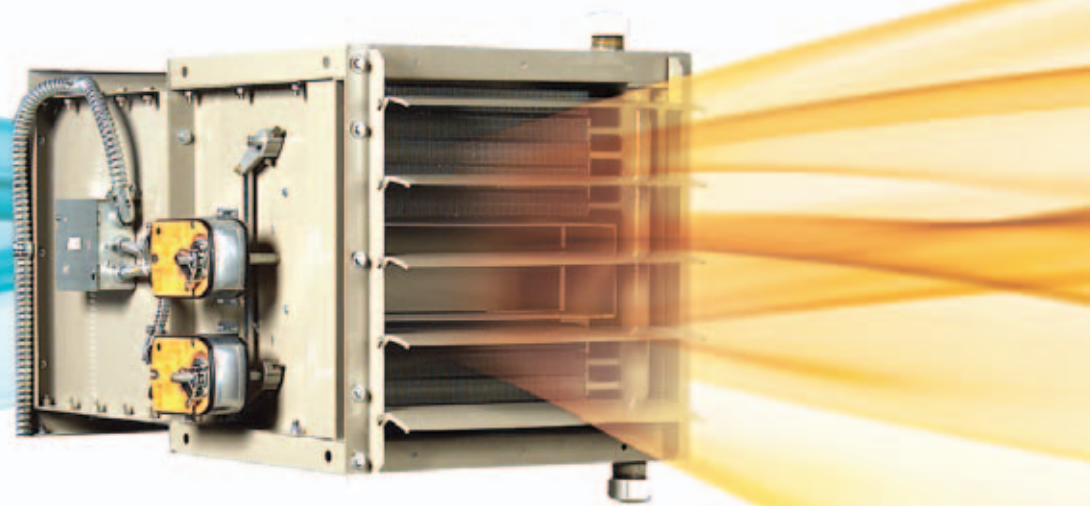
*Experience Based Innovation*

# CAS

## Combustion Air System

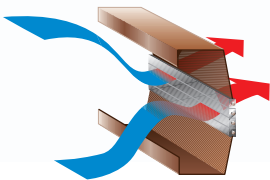
### Introducing a Smarter Way to Boost Boiler Efficiency

Sometimes getting the bump you need is just a matter of applying a proven technology in a new way. The Mestek CAS (Combustion Air System) is a combustion air preheater that preheats outside air for the mechanical room. The CAS unit allows technicians to control the temperature of the combustion air, while maintaining the discharge air regardless of outside air-temperature fluctuations. And with the Department of Energy reporting that for every 40° increase in combustion room air temperature, boilers see a 1% increase in efficiency, it's not hard to see how a small thing like CAS can have a huge impact on operations.

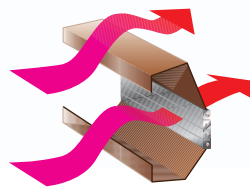


### Smart System

Easy to install and maintain, CAS's integral face and bypass coils modulate to keep the mechanical room temperature constant and provide maximum freeze protection with constant coil steam pressure.



In colder temperatures, the dampers are fully open, exposing the coils to outside air so the air can be heated as it's drawn in.



As the outside air temperature rises, the damper position modulates to allow some bypass air, while the rest of the air is heated to achieve the appropriate temperature.

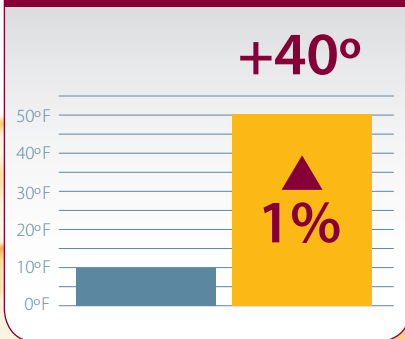


If the outside air doesn't need any additional heating, the dampers seal off the coils completely, and the bypass sections open fully.

### Key Benefits of Mestek CAS

- ◆ Improves boiler performance 1% for every 40° temperature increase
- ◆ Provides variable air volume for demand control combustion air
- ◆ Creates more comfortable boiler room working conditions
- ◆ Delivers reliable operation through maximum coil freeze protection
- ◆ Installs easily with minimal piping, controls, and an integrated bypass section
- ◆ Reduces exterior louver size needs by 70-80%
- ◆ Includes variable frequency drive and room sensor, standard
- ◆ Offers horizontal or vertical configurations

### Run Smarter



According to the Department of Energy, for every 40° increase in temperature of combustion room air, boilers improve efficiency by 1%. The Mestek CAS unit makes capitalizing on this performance gain easy, pre-warming outside air and maintaining air volume so boilers run at their optimum efficiencies.

### Work Smarter



The Mestek CAS unit creates a better environment not only for boilers, but for personnel. Delivering heated air into the space and reducing the number of louvers open to the elements, CAS creates a more comfortable working environment for the mechanical room team.

### Manage Smarter



With the HeatNet integrated boiler management system at the controls, technicians can easily ensure that boilers have the right volume and temperature of air they need, 24/7. Through digital communication, HeatNet monitors system demands, starting and operating the CAS unit in response to boiler demand.

### Design Smarter



With Mestek CAS, architects and mechanical room engineers can enjoy greater design flexibility. That's because the unit's powerful intake fan allows for a 70-80% reduction in square footage of louvers required, providing more useable space within the mechanical room, as well as improving exterior aesthetics.

This new approach to boiler room efficiency is one that everyone can get comfortable with. To learn more, contact your Mestek sales representative directly.



### General Information and Specifications

Manufactured by Mestek in Dallas, TX, CAS is a factory-assembled combustion air preheater that is capable of heating outside air—and maintaining discharge air temperature regardless of fluctuations in inlet air temperature—to create the ideal boiler room conditions for operation. Each unit consists of a heater section containing an integral face and bypass coil with built-in multiple alternate finned heating elements and bypasses. Separate dampers control the airflow through these face and bypass sections, with each set of dampers interlocked and controlled by a separate electric or pneumatic damper motor.

	Mestek CAS Horizontal	Mestek CAS Vertical
<b>Number of Unit Sizes</b>	15	15
<b>Airflow Range</b>	855-26,000 cfm	855-26,000 cfm
<b>Heating Element</b>	Return Bend Type 3/8" O.D. Copper Tubes with 0.010" -Thick Aluminum Fins	Return Bend Type 3/8" O.D. Copper Tubes with 0.010" -Thick Aluminum Fins
<b>Pressure Tested</b>	Steam: 200 psig Hydrostatic: 500 psig	Steam: 200 psig Hydrostatic: 500 psig
<b>Motor Type</b>	TEFC	TEFC
<b>Fan Blade Type</b>	Propeller	Propeller
<b>Casing / Discharge Construction</b>	Galvanized Sheet Metal	Galvanized Sheet Metal
<b>Casing / Discharge Finish</b>	Air-Dried Alkyd Enamel	Air-Dried Alkyd Enamel
<b>Temperature Controls</b>	Airstream OR Room with Low Limit	Airstream OR Room with Low Limit
<b>Discharge</b>	Available with Horizontal Vanes, Vertical Vanes, OR Horizontal & Vertical Vanes	Available with Horizontal Vanes, Vertical Vanes, OR Horizontal & Vertical Vanes
<b>Variable Frequency Drive</b>	Standard	Standard
<b>Optional Airflow Controls</b>	Mixing Box Multiple Heaters Intake Hood Filter Box	Mixing Box Multiple Heaters Intake Hood Filter Box



Mestek, Inc.  
4830 Transport Drive, Dallas, TX 75247  
214-905-0806

[www.mestek.com](http://www.mestek.com)