



**INTEGRATED, INTELLIGENT**

# **HAWK**

**CONTROL SYSTEM**

**Hawk 1000-5000 Series**



**FOR MAXIMUM**

**INTEGRATION**

**EFFICIENCY**

**SAFETY**

**RELIABILITY**

**COMMUNICATIONS**

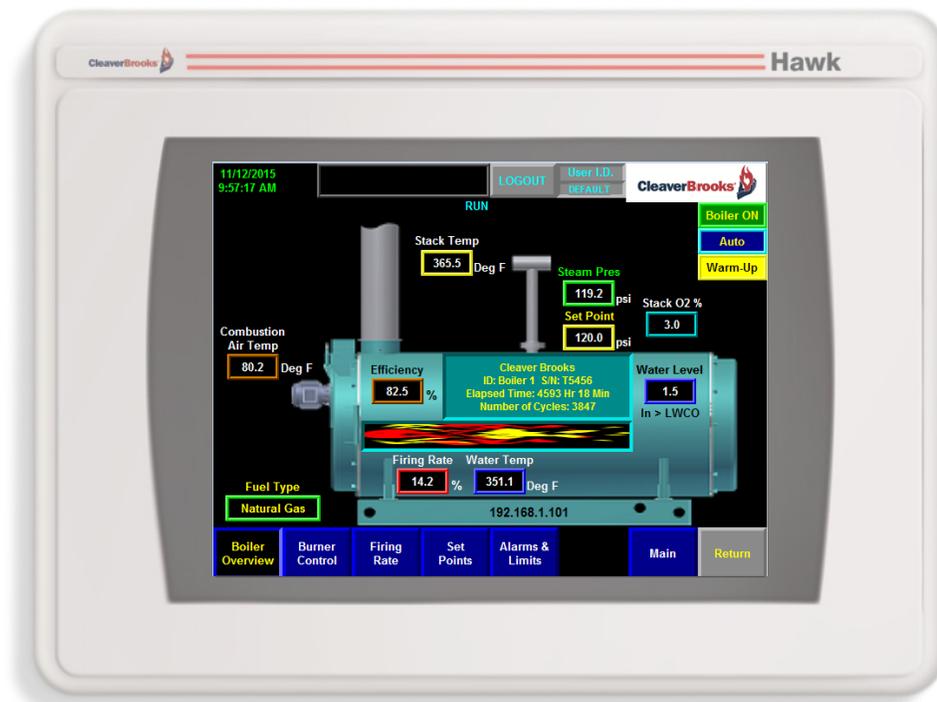


# Hawk

## INTELLIGENT, INTEGRATED BOILER ROOM CONTROL SOLUTION

For over 80 years, Cleaver-Brooks has been packaging boiler room equipment. Today, we integrate the boiler/burner/controls and heat recovery for the most efficient heating or process solution possible.

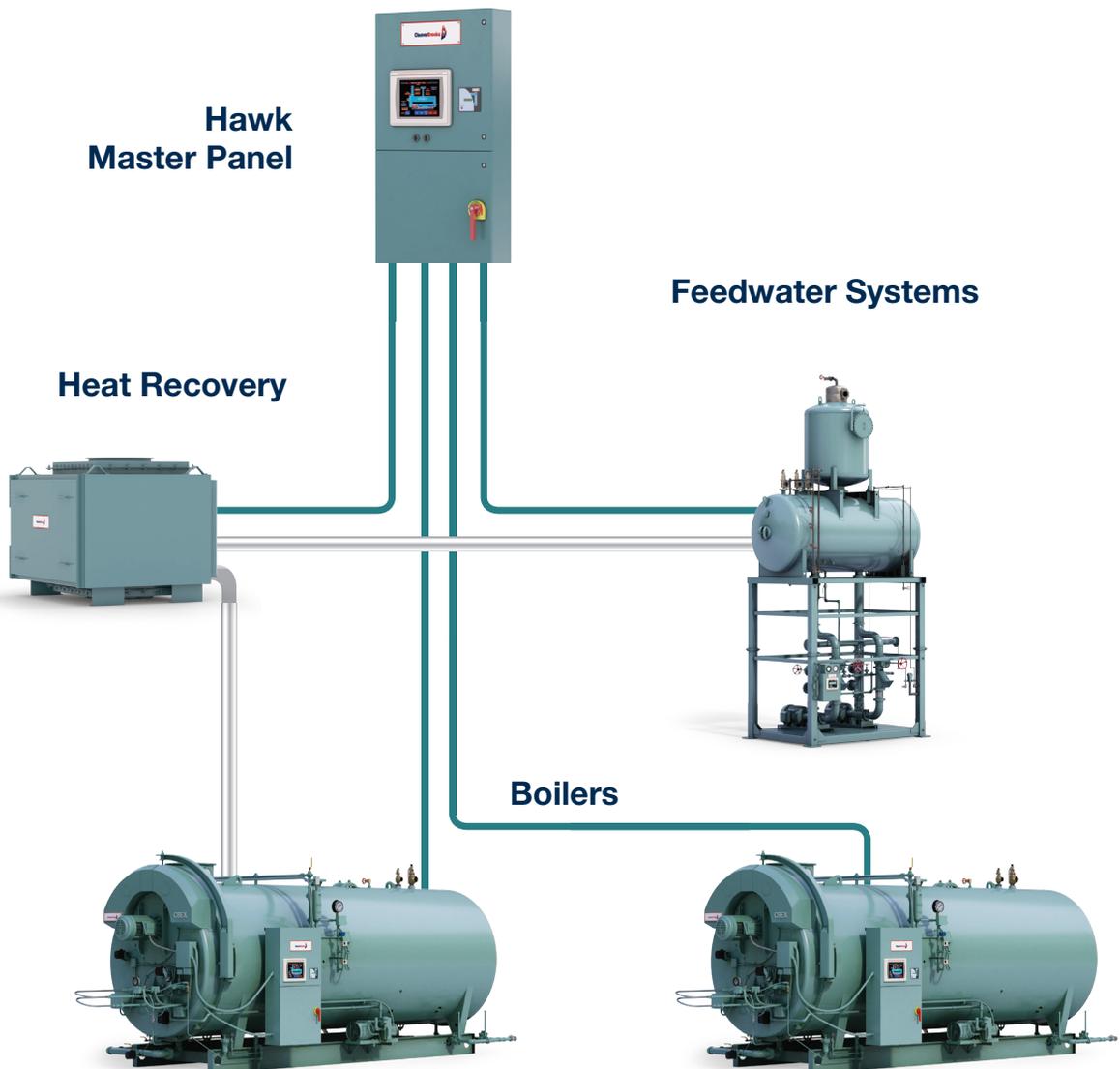
Since we engineer the core components of our equipment, we can ensure everything is made to work together for maximum efficiency, safety and reliability with a seamless, easy-to-use, human-to-machine interface.



# SINGLE SOURCE INTEGRATED BOILER ROOM CONTROL FOR MAXIMUM EFFICIENCY

The Hawk is a complete boiler room solution. It not only integrates the boiler/burner, heat recovery and feedwater systems, but provides complete boiler room data to remote communication systems such as building automation systems, SCADA packages and other remote monitoring systems. While integrated, the combustion and burner management are maintained as separate devices to meet NFPA85 and other safety codes.

Because the Hawk comes preprogrammed for boiler/burner applications, commissioning your boiler system can save you time to get your customer on line.



# NEW OR RETROFIT APPLICATIONS



Upgrade options give your old boiler state-of-the-art performance. Employing industrially hardened PLC technology, user-friendly touch-screen operation and advanced operating and diagnostic messaging, the Hawk offers unmatched functionality.



*Retrofit your boiler's dated control system with virtually any boiler or system*

## Why upgrade?

- ▶ Update your boiler's controls to the Best Acceptable Control Technology (BACT)
- ▶ Increase efficiency
- ▶ Fuel savings
- ▶ Allow variances to reduce resource utilization with data reporting and communications
- ▶ Reduce emissions with burner update and Hawk control
- ▶ Monitoring, communication and optional reporting capabilities

## POWERFUL COMMUNICATIONS

The Hawk is one of the most flexible control systems available in the industry. Control options provide easy access to information to the end users Building Automation System, C-B SCADA and other remote monitoring systems. The Hawk has the ability to monitor and control multiple aspects of boiler control such as fuel usage and hours of use, O<sub>2</sub> levels, stack temperature, lead/lag sequencing, boiler efficiency, water level, temperature/pressure, hot standby, combustion control and more.

The Hawk's user friendly interface has robust local HMI trending and data trending, up to 300,000 points, allowing the operator to continually tune the system for optimum performance.

You can be alerted by e-mail, text messaging, internal network or Internet of boiler status and alarms, and this same data can be shared with smartphones or the latest mobile device.

# HAWK CONTROL SYSTEM PACKAGES



## Hawk 1000 Control

The Hawk 1000 is a complete package that comes standard for precise fuel-to-air ratio O<sub>2</sub> trim & VSD control, in one integrated system. Optional single-point and Lo-Hi-Lo control allows flexibility for commercial-type boilers requirement.

### Hawk 1000 Features

- ▶ Standard Honeywell (CB780E) integrated burner management system or Fireeye (CB120E) as an option
- ▶ Allen-Bradley Panelview Plus 4" color touch screen HMI for setup, monitoring, and data acquisition
- ▶ Optional upgrade to a 6" screen
- ▶ UL Listed



## Hawk 4000 Control

The Hawk 4000 includes complete boiler room control integration including fuel-to-air ratio controls (parallel positioning), O<sub>2</sub> trim, variable speed drive control on the combustion blower, economizer monitoring, draft control, 1, 2 and 3 element control, user defined analog inputs, 3 independent fuels supported, advanced troubleshooting and help screens, and more.

### Hawk 4000 Features

- ▶ Standard Honeywell (CB780E) integrated burner management system or Fireeye CB120E as an option
- ▶ Allen-Bradley Panelview Plus 7" color touch screen HMI for setup, monitoring, and data acquisition
- ▶ Optional upgrade to a 10" screen
- ▶ UL Listed



## Hawk 5000 Control

The Hawk 5000 package includes the same features and flexibility as the Hawk 4000, but is ideal for smaller capacity Industrial Watertube applications requiring single-point positioning or parallel positioning.

### Hawk 5000 Features

- ▶ Fireeye (CB120E)-based integrated burner management system or Honeywell (CB780E) an option
- ▶ Allen-Bradley PanelView Plus™ 10" color touch screen HMI for setup, monitoring, and data acquisition

# Hawk Standard and Optional Features

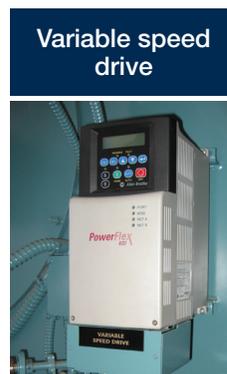


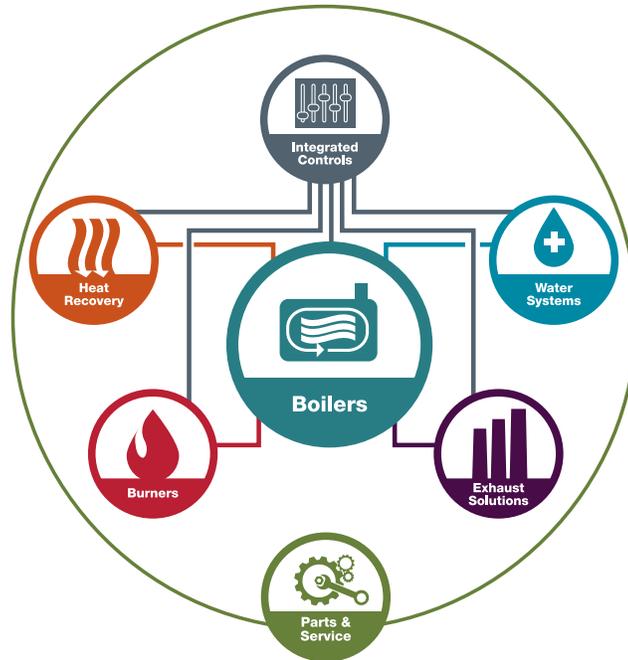
All Hawk packages come standard with parallel positioning, stack temperature with high cutoff set point, thermal shock protection, dual set points, Ethernet, touch screen HMI, hot standby, remote stop/start, PLC-based combustion control, flash card reader and alarm monitoring and historical monitoring.

OPTIONAL FEATURES FOR HAWK PACKAGES			
	Hawk 1000	Hawk 4000	Hawk 5000
Processor	L24ER	L33ER	L33ER
4" color touch screen	Standard	N/A	N/A
6" color touch screen	Optional	N/A	N/A
7" Panel View Plus color touch screen	N/A	Standard	N/A
10" Panel View Plus color touch screen	N/A	Optional	Standard
UL Listed	Yes	Yes	N/A
Honeywell CB780	Standard	Standard	Optional
Fireye CB120E	Optional	Optional	Standard
O <sub>2</sub> trim	Standard*	Standard*	Standard*
Parallel positioning	Standard*	Standard*	Standard*
3rd Fuel Parallel Positioning	N/A	Standard*	Custom
Variable speed drive	Standard*	Standard*	Standard*
Draft Control	N/A	Standard*	Standard*
Single point positioning/jackshaft	Optional	Optional	Optional
Hi-Low-Off control	Optional	N/A	N/A
Revert to pilot (Using Fireye CB120 only)	Optional	Optional	Custom
Full metering capabilities	N/A	Custom	Custom
Stack Temp with High Cutoff Set Point	Standard	Standard	Standard
Thermal Shock Protection	Standard	Standard	Standard
Economizer flue gas outlet temperature input	N/A	Optional	Optional
Economizer feedwater inlet temperature input	N/A	Optional	Optional
Economizer feedwater outlet temperature input	N/A	Optional	Optional
Additional user analog inputs	N/A	Optional	Standard*
Expanded annunciation	Optional	Optional	Standard*
Combustion air/ambient temperature monitoring	Optional	Optional	Optional
Dual Set Points	Standard	Standard	Standard
Stack loss boiler efficiency reading	Standard	Standard	N/A
Hot Stand By	Standard	Standard	Standard
E-mail, text messaging via internet	N/A	Standard	Standard
Building Automation Interface	Optional	Optional	Optional
Remote monitoring SCADA system	Optional	Optional	Optional
Water Level Display Capabilities	Optional	Standard*	Standard*
2 boiler lead/lag	Local set point	Standard*	N/A
MasterPanel lead/lag (See system specs for specific use)	Optional	Optional	Optional
Local on Screen Trending	N/A	Standard	Standard
Alarm History	Standard	Standard	Standard
Water Level Control 1, 2 or 3 Element	N/A	Standard*	Standard*
Two-Stage Economizer Control Single Boiler	N/A	Standard*	N/A

Note: See specific Hawk system specifications for complete details for each options allowance or use.

\*Hardware required





## Total Integration goes far beyond controls.

For more than 80 years, Cleaver-Brooks has built a reputation for innovation in the boiler solutions industry. We remain committed to introducing technology and products that enable a more energy-efficient and environmentally friendly generation of steam and hot water.

When you come to us for a fully integrated controls solution, you can know that each element is created to the highest standards and all will work together seamlessly to give you a highly efficient and reliable solution for protecting your boiler system. To learn more, please call or visit us online.



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