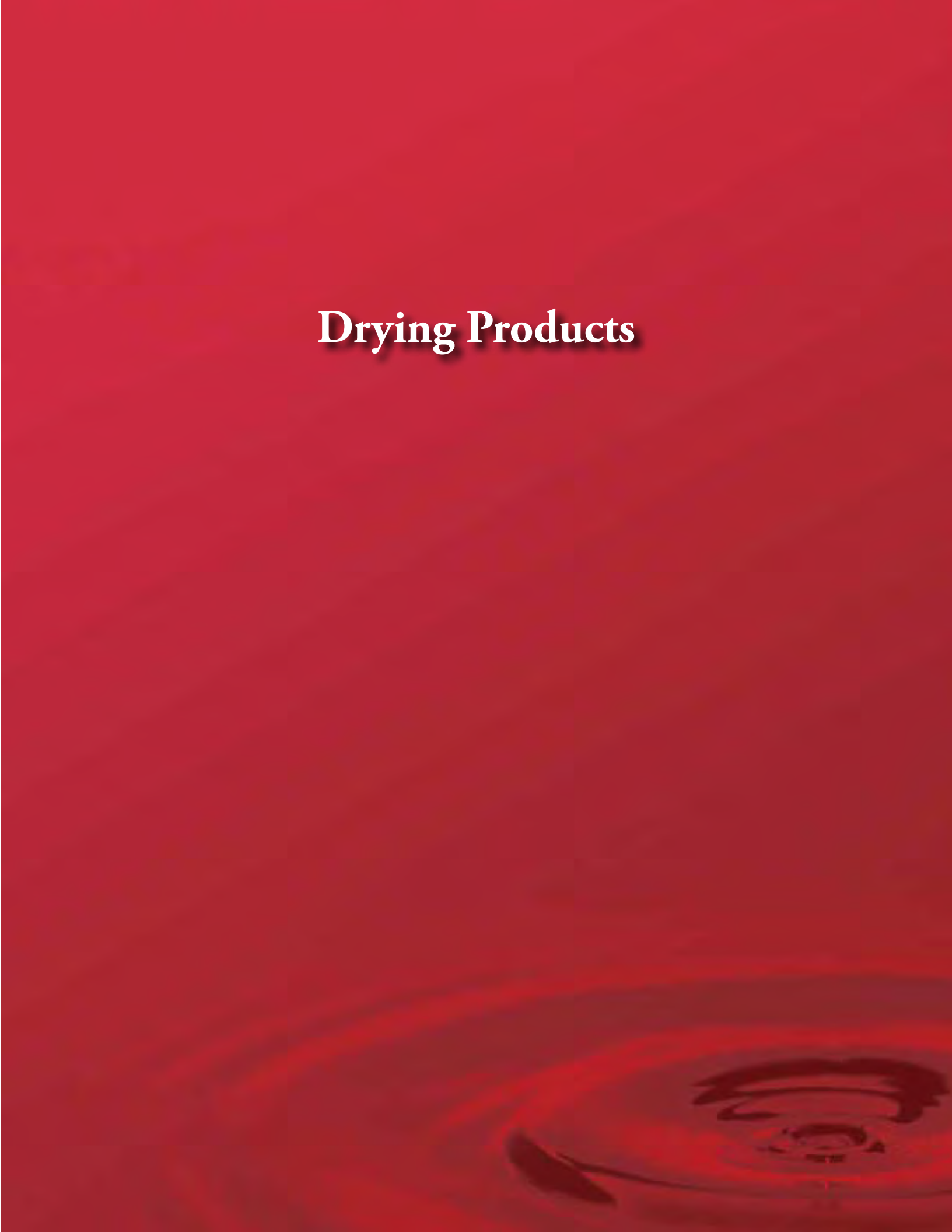


# Drying Products



# Better Drying for Bigger Profits

## *Drying performance can make or break a gin.*



Whenever there is talk about a gin, the usual questions are how many stands and what size, what kind of press and how many bales per hour do they run? The answer to the last one is typically reported based on peak speeds and good, dry, clean cotton. These things do matter. They matter a lot. But there is more to the story and overlooking it can be costly.

The fact of the matter is that gins don't have the luxury of always ginning good, dry, clean cotton. How a gin performs on the more challenging cotton can determine if a gin thrives and in some cases, even whether or not it survives.

A strong drying strategy is your best weapon in ginning challenging cotton. Effective drying sustains higher production rates, resulting in more bales ginned per week and dramatically reducing operating expenses by reducing

the time it takes to gin each season's crop. And when conditions and cotton are good, this arsenal of powerful drying weapons pay their way by reducing operating expense for each bale by saving on fuel and electric costs.

As you look through this drying section, we hope to make you more familiar with the wide selection of products designed to deliver the benefits of good drying. Benefits like:

- Increasing your gin's production potential
- Optimizing your fuel usage
- Reducing your per bale operational costs
- Improving your turnouts
- Protecting grades through better cleaning and staple preservation

Improving your drying can help you achieve all of that and there is nobody else in the business with more passion or a better reputation for helping you do it than Samuel Jackson.

Give us a call. We would love to discuss the possibilities for your drying strategy.

# 1400 Series Gas-Fired Heaters

## *Not just a heater. It's a Sam Jackson 1400 Series Heater.*

Some gins think all heaters are about the same. If it lights, they figure it's working. Once you try a Samuel Jackson Heater and experience the following benefits, don't be surprised if you never look at another heater the same way again.

***SimpleShed and SmartShed Technology*** - Jaw dropping fuel savings

***Moisture Mirror Compatible*** - Helps you take full advantage of Mirror features

***High Air Volume*** - The only true high air volume heater for gins

***High Turn Down Ratio*** - The highest in the industry

***Operator Friendly*** - Easy to run and easy to troubleshoot on those rare occasions when you have trouble

***Dependable*** - High reliability means very little down time

***Powerful, Yet Efficient*** - Fast and stable response gives you output when you need it and saves fuel when you don't

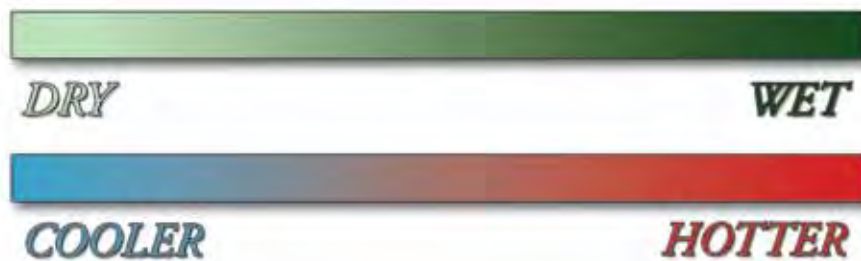


# 1400 Series Gas-Fired Heaters

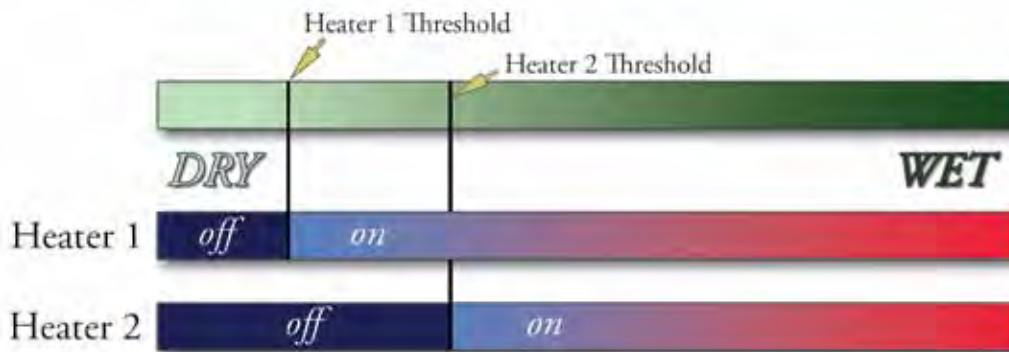
## *SimpleShed saves fuel and money.*

*SimpleShed gives you greater control of your heaters and allows you to confidently gin without using drying fuel when you don't need it.*

Cotton arrives at your gin at a wide range of moistures. Traditional automatic temperature control from Samuel Jackson allows your heaters' temperatures to automatically modulate up and down in response to changes in incoming moisture.



SimpleShed offers the ultimate in fuel efficiency by allowing your heaters to automatically turn off when you are ginning dry cotton and automatically turn back on as soon as the moisture exceeds the threshold that you set. You can even define different thresholds for each heater! Look at the following two heater example.



There are many times an operator would be comfortable ginning with a heater off, if they only had the ability to quickly turn it back on when needed. SimpleShed gives your ginner this power and reduces your fuel consumption on a heater to zero when it is being automatically shed. ZERO!

*SimpleShed requires a Moisture Mirror 2X or higher.*

*See the SimpleShed video in the on-line Sam Jackson Cinema for more details.*

## *The Electrical Control Cabinet*

If you love unleashing the power of technology, Sam Jackson Heater cabinets are loaded with features giving you options for an unprecedented level of control. More importantly, the controls are designed to be easy to use and non-intimidating. It's a perfect blend of performance, flexibility and intuitive control, allowing you to achieve incredible results from day one.



The upper portion of the control cabinet is dedicated to the electrical control components. The touch screen is integrated into the door, allowing all of its functions to be accessed, while the electronics remain protected.

A unique mounting design allows the operator easy access to both the touch screen and the control components at the same time. This combined with on-board diagnostics and testing makes troubleshooting and setup easy.

### *Integrated Temperature Control*

*Alarm & Error Display*

*Alarm & Error History*

*Temperature History Graphing*

*Digital Air Flow Indicator*

### *Color Touch Screen*

*Easy Field Software Updates*

*Ethernet Communication*

*Diagnostic Testing*

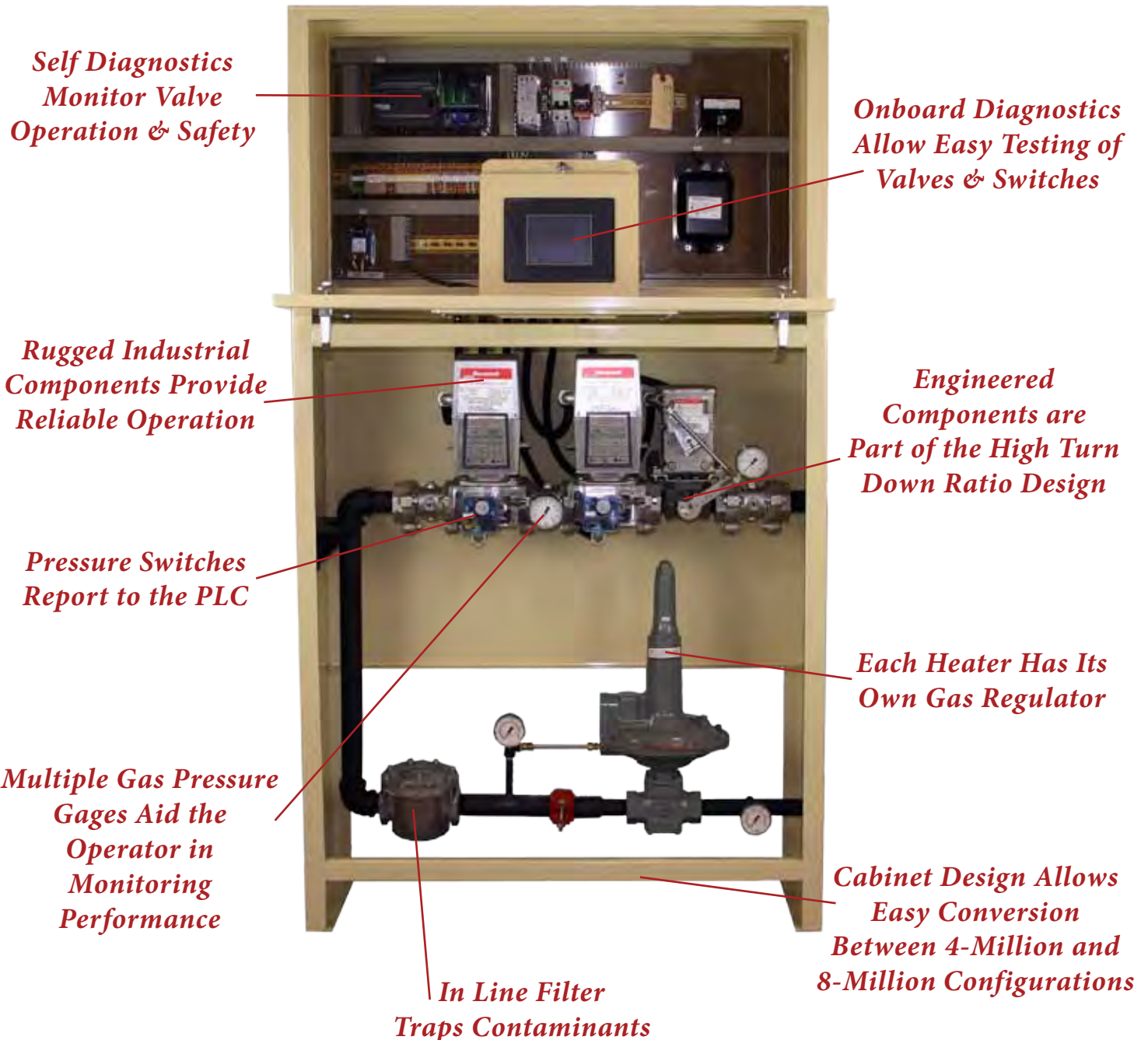
*Easily Connects to Moisture Mirrors*

*Sophisticated, yet simple.*

# 1400 Series Gas-Fired Heaters

## The Gas Train

*A rugged design means its ready for a long life.  
Refined operation means you'll want it around a long time, too.*



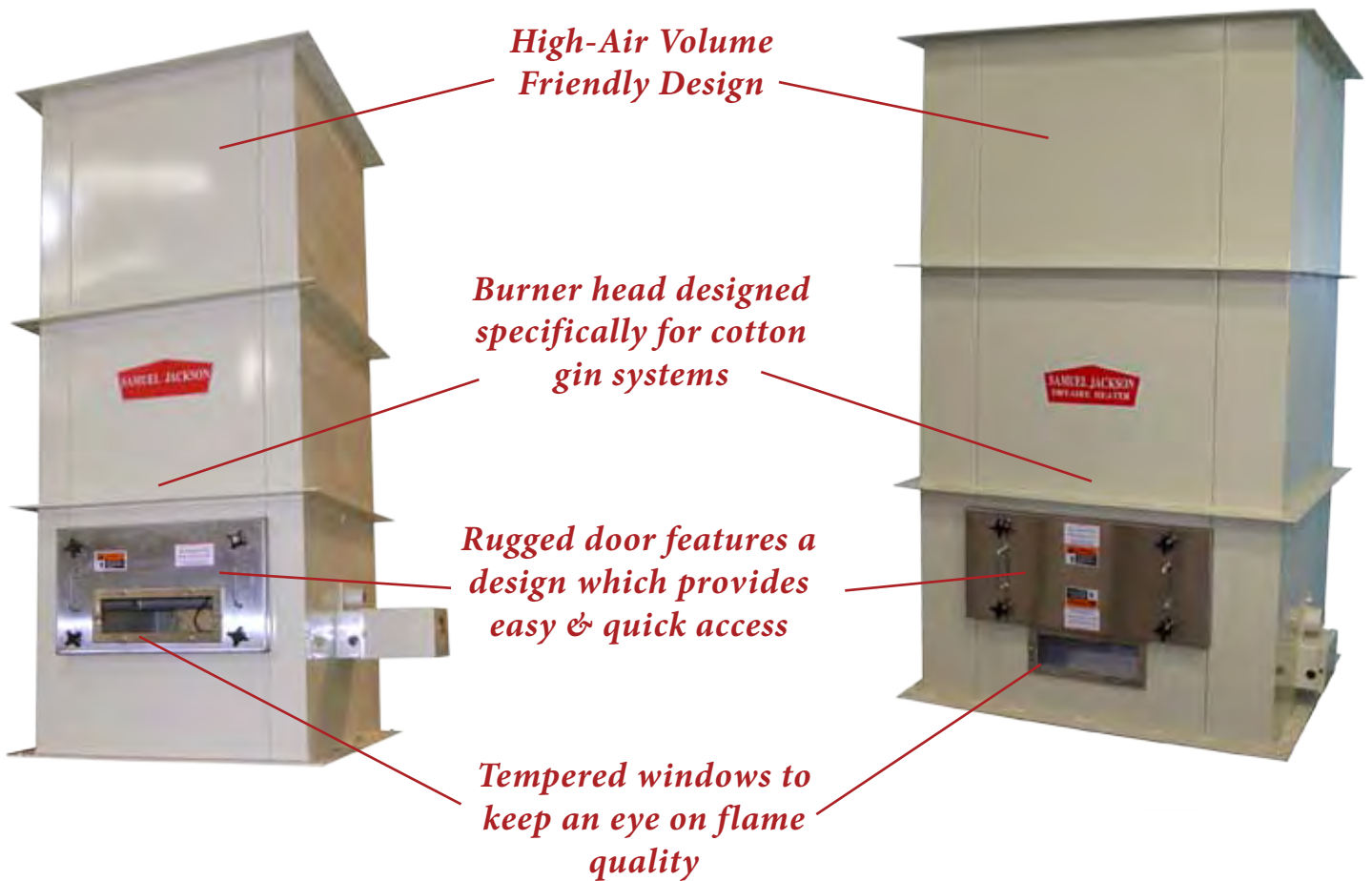
DRY

## *The Heater Bodies*

*Generous cross-sectional area reduces pressure drop and turbo charges your high-air volume drying system.*

*4-Million Btu/hr  
Heater Body*

*8-Million Btu/hr  
Heater Body*



You probably haven't given a lot of thought to your heater body. Don't worry... we have! The design insures they are simple to install, easy to maintain, and deliver superior results in operation. Don't let your heater be a weak point in your air handling system. Insist on genuine Samuel Jackson Heaters!

# 1400 Series Gas-Fired Heaters

## *Pull-Through Installations*

*Our heaters are great for pull-through applications and you'll appreciate all of the thoughtful touches on our screen support design.*



Samuel Jackson Heaters can be equipped with Screen Support Stands for applications requiring pull-through operation. These sturdy stands are made of stainless steel and have a generous screen surface area, increasing the minimum time in between cleaning. Screens also remove easily, without bolts or latches, for fast access to the burner heads.

*(Left: an HG-4-1404 Heater,  
below: two HG-8-1408 Heaters)*



## *Push-Pull Installations*

*Versatile mounting options easily accommodate push-pull applications.*



Samuel Jackson Heaters can be equipped with a push fan kit, allowing them to be mounted on the outlet of a push fan. Push fan kits include an air diffuser sheet to reduce turbulent air flow across the burner head for more reliable lighting and operation.

*(Left: HG-4-1404 Heater in a basic push-pull installation, below: HG-8-1408 Heater push-pull installation with a plenum)*

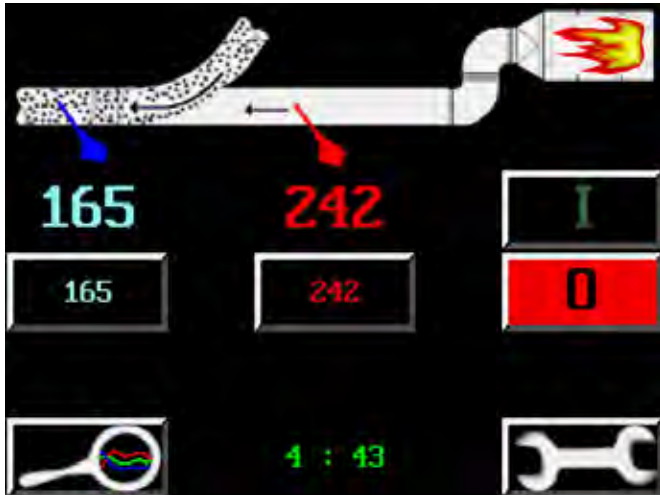
The Push Plenum provides a more advanced installation option for push-pull systems, yielding many benefits. The Push Plenum reduces turbulence through the heater, improving turn-down and saving fuel. Plenum users also experience less trouble with flame rod and spark plug fouling and have easier internal access for those rare times when maintenance is required.



# 1400 Series Gas-Fired Heaters

## Premium Touch Screen Interface

The touch screen interface lets the operator and the heater communicate and the conversation can be as simple or as deep as needed to get the job done!



The home screen displays all of the heater's priority functions.



When needed, heater setup functions are easily accessed and clearly laid-out.



Helpful instructions are easily accessed by pressing the question mark on most screens.



A full battery of test functions are available for troubleshooting.

# 1100 Series Gas-Fired Heaters

## *Solid Heater performance at a savings.*

The 1100 Series gas-fired heater models were originally introduced in the 1980s. They quickly developed a reputation for dependability and flexibility in the ginning industry. You will still find hundreds of these in service around the world.

As a complementary product to the 1400 Series Heaters, we are offering the 1100 Series with a few 21st century touches. You will find the original numerical counter replaced with a much friendlier multiline LCD text display that changes color based on the severity of the warning message.



Other features include:

- Guaranteed Moisture Mirror compatibility for automatic temperature control via analog signals
- Simple test program for easy setup and troubleshooting
- A wider operating range than most other heaters, offering fuel savings when lower temperatures are called for
- Flexible control package allows the unit to be controlled from the cabinet or via an optional remote at the console
- Available in two models. The 1104 Model is rated at 4-million Btu/hr and the 1108 Model is rated at 8-million Btu/hr

***Budget friendly, but still loaded with features.***



# 1100 Series Gas-Fired Heaters

## *1100 Series Gas Heater Specifications*

*What do you get when you cross your favorite features from our old school heaters with the friendlier interfaces possible with today's control options?  
A solid heater at a remarkable price.*

Air volume capacity (max)	14,000 CFM (1104 Model) 28,000 CFM (1108 Model)
Temperature control method	PID, 4-20 mA, Honeywell UDC-2500
Combustion sequencing	PLC
Diagnostic display	Backlit LCD multi color text display
Temperature control points	One included. Cascaded control optional
Operator type	Single oil-tight selector switch
Remote control	Not included. May be easily wired to most existing console controls/PLCs
Electrical	115 VAC, single phase
Fuel	Natural gas or propane
Maximum burner rating	4-million Btu/hr (1104 Model) 8-million Btu/hr (1108 Model)
Air flow sensing	Diaphragm switch, velocity pressure
Flame sensing	Flame rod
Temperature sensor	Type J thermocouple, no transmitter
Test program	Basic functions
Auto control options	Moisture Mirror compatible (4-20 mA)
Diagnostics	Basic diagnostic messages on LCD
SimpleShed compatibility	No
Programmable low fire	No
Error/alarm history	15 event, time stamped, FIFO stack

## *Oil-Fired Drying System Heaters*

The original HO-4-1112 oil-fired heater was first introduced in the mid-1980s. It had several sophisticated features as well as easy-to-use controls. It eventually made way for the 1200 Series heaters with a more sophisticated control system and a different design layout. In light of recent market trends, we have reintroduced the 1112 heater as an option for gins looking for a reliable oil-fired heater at an economical price. Don't let the term 'economical' fool you, this heater has more features than any other brand of oil-fired heater on the market.



Some features include:

- Industrial Grade Burner Package with a 20:1 turndown ratio for a wide operating range
- Can be used in a pull-through or push-pull drying system layout
- Flexible control package allows the unit to be controlled from the cabinet or via an optional remote at the console
- Guaranteed Moisture Mirror compatibility for automatic temperature control via analog signals
- Simple test program for easy setup and troubleshooting

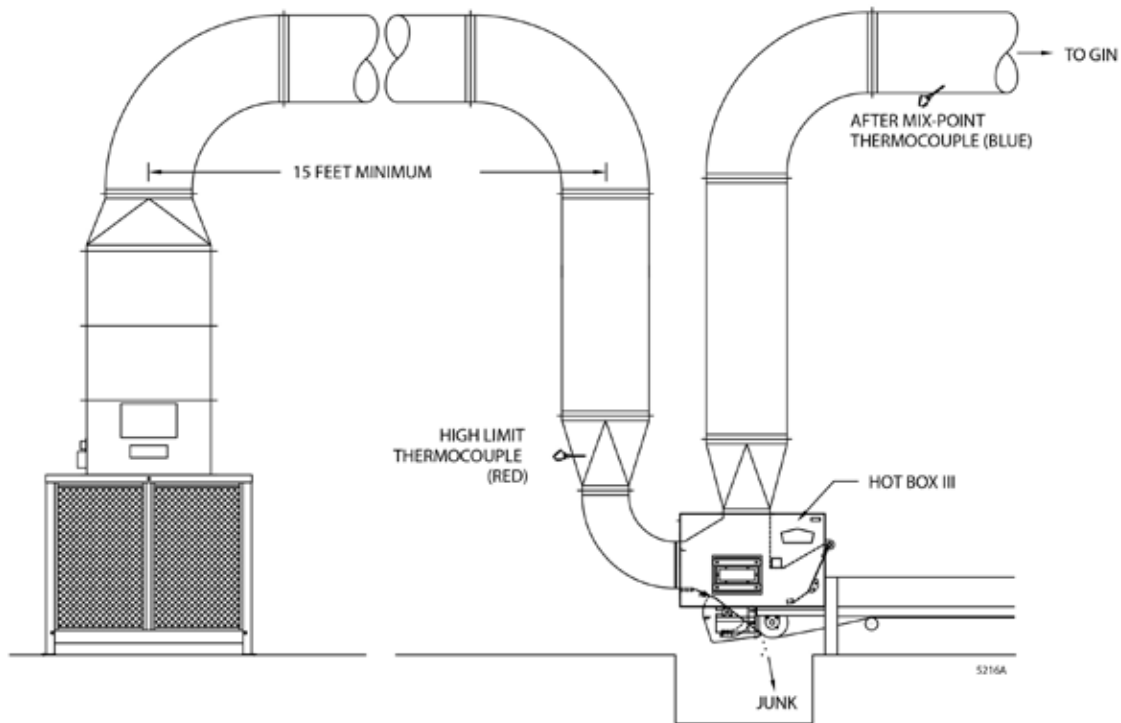
*(HO-4-1112A Heater shown)*

***The 1100 Series Oil-Fired Heaters are also available in a 7-Million Btu/hr model called the HO-7-1137.***



# Hot Box III

*The multi-function machine for your front end.*



There is so much more to a Hot Box than meets the eye. Not only does it perform several key functions and perform them well, it can be used to define a strategy for your entire front-end. The Hot Box eliminates the expensive costs and problems associated with a feed control. Or if you do use a feed control, why not fill it with cotton that has been passed through the advantages of a Hot Box first?

***It's a pick-up point.***

***It's a junk separator.***

***It's a dryer.***

***It's a moisture sensor.\****

***It's a wad buster.\****

***It's a money saver!***

\* With optional equipment installed.

## What's new on the Hot Box III?

*What's the difference between the Hot Box II and the III?*

*I liked my Hot Box II.*

*Dewayne Couch*

*I love my Hot Box III.*

*Kiech-Shauver-Miller Gin, Monette, AR*

*Specially designed to be tag-free, inlet door-stops keep the heavy door from resting on your belt, protecting it when fans are off.*

*Improved trash gate seal and scroll to minimize jams from small rocks. The new seal is reversible when one edge becomes damaged.*



*A kit is available to easily upgrade your existing Hot Box II to a Hot Box III in the field.\**

*100% heavier trash gate structural components made of plate steel instead of sheet metal used on earlier Hot Boxes.*

*Adjustable panels to reduce air leakage where the Hot Box III meets the belt conveyor.*

*The trash gate has a 25% larger opening and a more aggressive angle to remove green bolls, trash, rocks and junk.*

*\* The Hot Box III Upgrade Kit fits most Hot Box IIs. Consult the factory for details.*

DRY

# Hot Box III Options

*Get even more from your Hot Box III.*

## Incoming Moisture Sensor Option

The Hot Box cotton inlet gate can be equipped with an incoming moisture sensor. This rugged, stainless steel sensor measures the moisture of the cotton as it enters the Hot Box. Its mounting and design makes it self-cleaning. Since it eliminates the need for a Sled, it requires less belt space and allows a more compact installation.



## The Flail Option

Single-locked cotton dries and cleans better. Unfortunately, transforming a densely packed module into individual locks of cotton is no easy task. Cotton normally leaves the module feeder in clumps. Adding a flail to your Hot Box can help break up those clumps and improve your drying and pre-cleaning efficiency.

The flail sits on the Hot Box outlet, where a series of heavy chains rotate at a high speed to break-up cotton as it flows through.

*(High speed photo of chains in action at left).*



DRY

## *This dryer packs a huge punch.*

Based upon the design principles of the Collider Dryer, the Universal Collider is a powerful and flexible solution for gins trying to improve any existing drying system. Unlike the Collider, the Universal Collider doesn't have specific piping and fan requirements, which can save a significant amount of up-front costs on a new installation.



Keep in mind that properly sized pipes, cyclones and fans will improve any system, but the Universal Collider lets your gin make these changes at your own pace.

Designed to provide gins with an affordable and effective pull-through dryer, its flexible design allows it to perform well in a wide variety of system configurations.

In fact, its versatility and performance have helped it find a home in industries drying material other than seed cotton.

DRY

*Versatility and solid performance make the Universal Collider a great option.*



# Universal Collider Dryer

## *How the Universal Collider works.*

The Universal Collider uses several key elements to open and dry seed cotton. Seed cotton enters the Dryer through the splatter back transition. The transition spreads the cotton and breaks open wads. The cotton then splits and passes through the internal collider pieces. As the cotton exits the internal pieces, a high-speed collision occurs creating a single-locking effect on the fiber. There is one last point of slippage as the seed cotton exits the dryer through the bottom transition.

The low-pressure drop design is conducive to high-air volume, high-speed collision drying and it can handle capacities of up to 30 bales per hour.

*Seed cotton traveling in a hot air line enters here.*

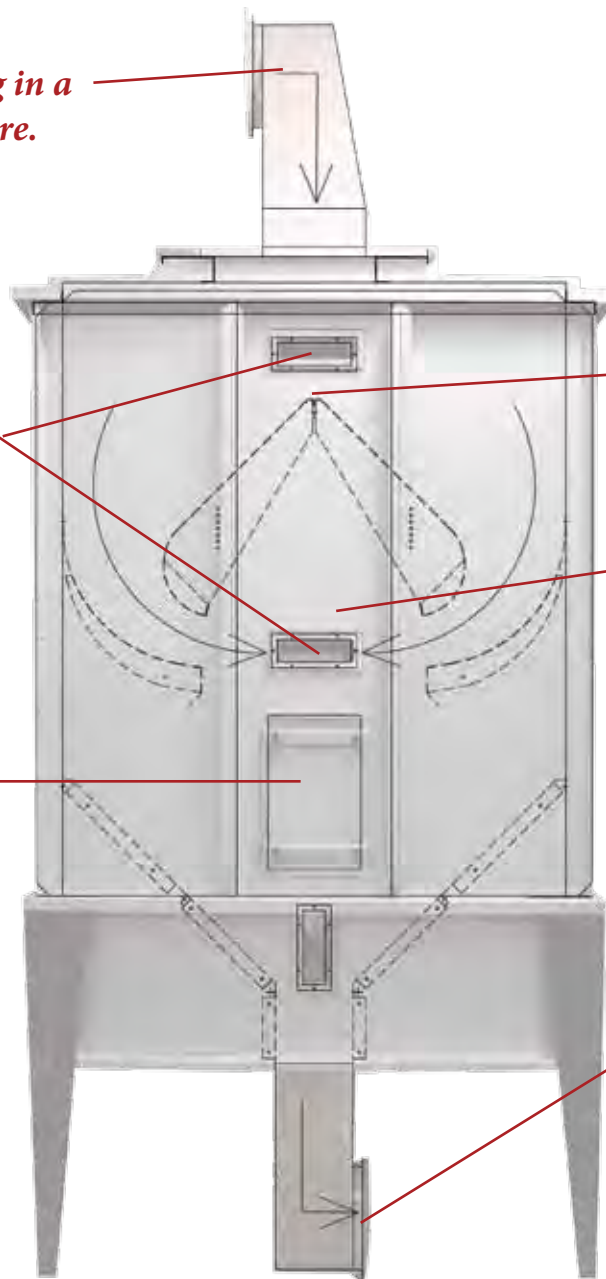
*Windows allow you to observe split and collision.*

*A generous access door, allows easy access to the interior of the dryer for baffle adjustments and setup.*

*Cotton and air are split here...*

*and Collide here, which dries and fluffs the cotton.*

*Dried and fluffed seed cotton exit here.*



## *Construction and Upgradability*

The Universal Collider is constructed from mild-steel and powder-coated silver, giving it a durable and attractive finish. It ships knocked down, but is easily assembled. Because the entrance and exit transition requirements can vary, these items are not included with the price of the dryer. Drawings for these transitions will be supplied, so that you can have them made by your sheet metal provider.



For many users, the Universal Collider offers an intermediate step to a full Collider System. While none of the Universal Collider parts convert into a Collider, we offer two great upgrade options. The first option provides a generous trade-in allowance toward the purchase of a new Collider. The second option allows you to keep the Universal Collider and use it for an additional drying boost in your full Collider System, helping you better dry very challenging cotton. Either option you choose, you'll be pleased to know you preserved much of your initial investment, helping you meet the needs and capacity of your gin as it grows.

But don't think you'll be suffering from mediocre drying in the mean time! In fact, don't be surprised if you fall in love with it and keep it around a long time.

# Air Control 8

*Get more air and more drying when you need it!*

**Did You Know?** *Centrifugal fans work hardest when your gin is idle and move the least amount of air when you need it the most...while you are ginning your fastest!*

A cotton gin's performance is heavily dependent on its air systems. Fans are the engines that drive air and cotton through your gin, but the amount of air a fan moves is inversely proportional to your ginning rate. It moves more air when you are idle

than when you are ginning! The faster you gin, the less air your fan moves, depriving your drying and conveying systems of valuable air volume when you need it the most.

Air Control 8 offers an easy way to get more out of your fans and increase your gin's production.

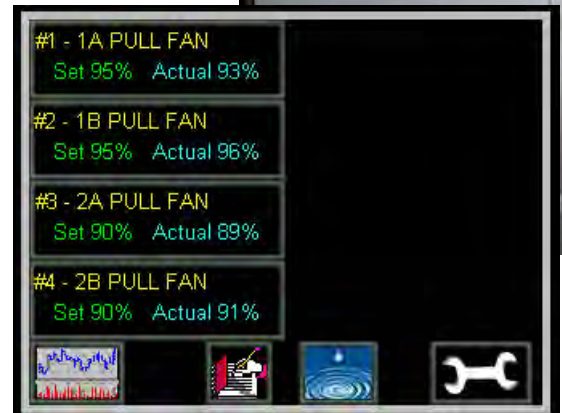
*Air Control 8 can boost your air by 30%!*

When it comes to drying, there is no disputing the advantages of maintaining a high air-to-cotton ratio - your cotton moves better, dries better and cleans better!

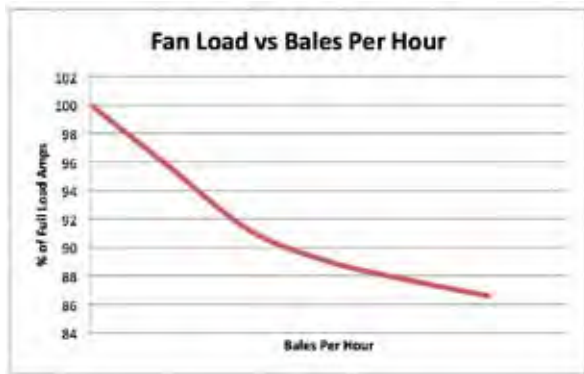
The Air Control 8 monitors the loads on your drying system and other key centrifugal fans. Whenever the load drops, the control either opens the Banjo or speeds up the variable frequency drive (VFD) on the fan, giving you more air. On drying systems, this can boost your hot air volume by 30%, giving you the benefits of a higher air to cotton ratio.

Whenever there is a reduction or pause in your ginning rate, the Air Control 8 senses the increased load and adjusts the Banjo or VFD on the fan to reduce the airflow to a safe level to keep your fan motors from overloading.

All of this happens automatically and continuously, keeping your airflow optimized and helping you gin faster and more efficiently.

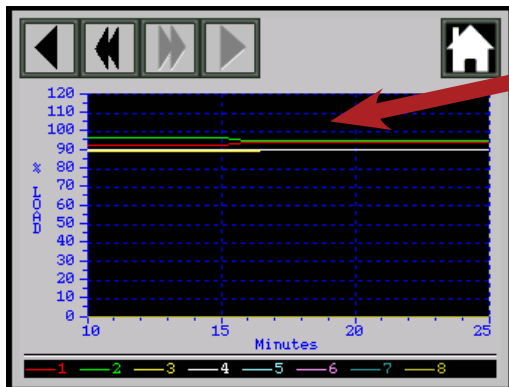


## Standard fans lose performance...



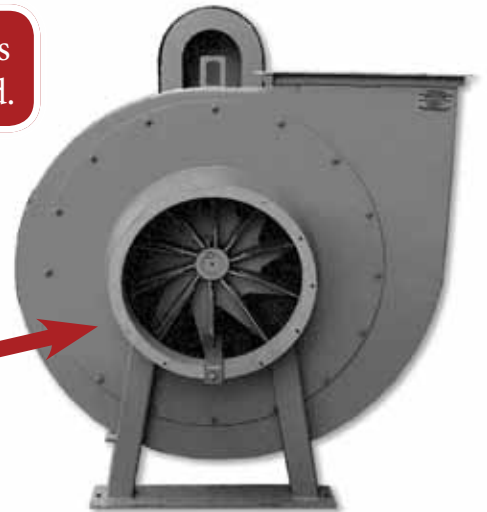
The load and air volume of a standard fan falls as you gin faster, resulting in less air when you need it the most.

## But, with an Air Control 8...



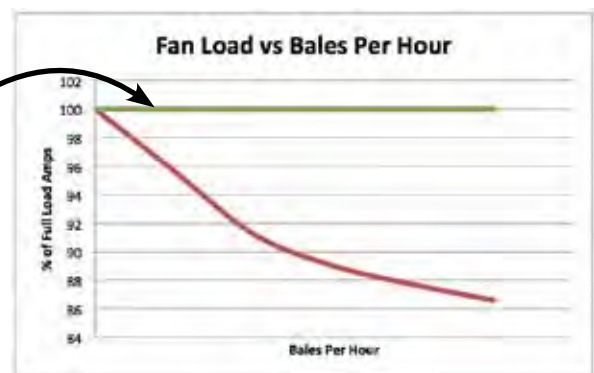
The fan motor load is constantly monitored.

The control adjusts the Banjo or VFD to maintain the set point.



DRY

Your fans stay fully loaded (green line) even as your ginning rate increases. This gives your systems more air and all of the benefits that go along with it.



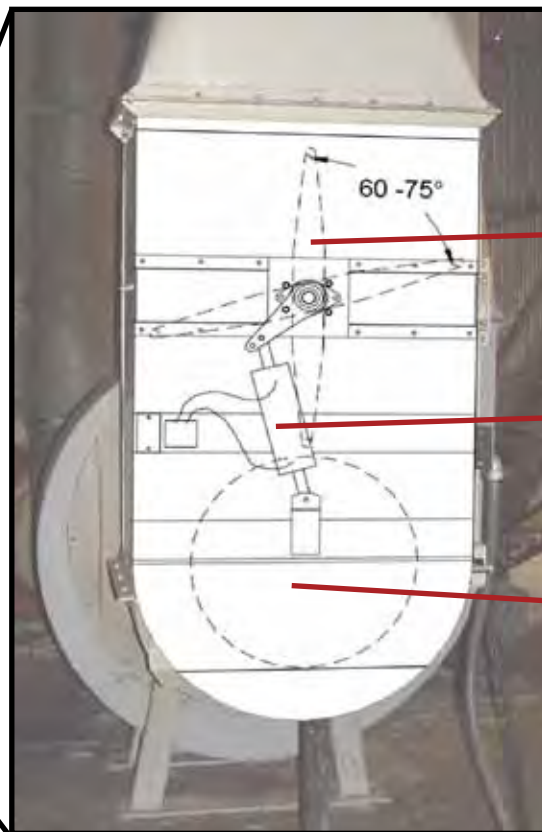
## The Banjo II Option



The Banjo II provides a mechanical method to control the load on your fan motor. Using a Banjo II, the fan speed stays constant. The specially designed Banjo outlet and internal vane work together to induce a swirling airflow into the fan. The direction of the swirl is the same as the fan's blast wheel. The more the vane tilts, the greater the swirl and the more the fan is unloaded because it is moving less air.

When the vane is in the fully open position, there is no swirling action and the fan is allowed to move the maximum amount of air. This may lead you to ask, why not leave the vane open all of the time? The answer is because when your gin is idling or ginning at less than a normal rate, the fan motor would overload and trip out.

With a Banjo II paired with an Air Control 8, your airflow can be continuously optimized to match your ginning rate.



*Internal Vane*

*Pneumatic Actuator*

*Banjo Outlet/  
Fan Inlet*

## *The Variable Frequency Drive (VFD) Option*

An alternative to using a Banjo with the Air Control 8 is controlling the speed of the fan motor with a VFD. The operating principle is straightforward. The Air Control 8 continuously compares motor load with the operator set point and adjusts the speed of the fan up and down in response to changes in the system. The result is that you get faster fan speeds when you are ginning faster. When the gin is idling, the motor is kept from overloading by slowing the fan down.

VFDs also offer the advantage of a true soft start, minimizing the demand spikes that occur when the motor is started.

VFDs can be supplied by your local electrician. Just make sure they accept a 4-20 mA speed control input and offer an auxiliary output signal for power monitoring. For more details on selecting the right VFD, contact the Sam Jackson technical support team.



### *Eight More Things to Know About Air Control 8*

1. A color touch screen interface makes it easy to operate and adjust.
  2. Up to 8 fans can be controlled by a single panel. These fans can have any combination of either the Banjo or VFD option.
  3. Banjos have over a ten year history of improving gin performance.
  4. Equipped with Ethernet communications, the Air Control 8 can be monitored and adjusted on a Moisture Mirror 3X or 4X.
  5. Banjos can prolong blast wheel life by promoting even wear patterns.
  6. Banjos have replaceable outlet sections for easy repair of the most common wear point.
  7. VFD technology has become much more affordable over the last decade, making their use in this application a good investment.
  8. Not sure whether the Banjo option or the VFD option is the best for your gin? Both can be great choices. Call a Sam Jackson representative and we will be happy to discuss the pros and cons of each one. The only bad choice is not picking one!
- Call us today and let us help you boost your fans and your gin with an Air Control 8!*

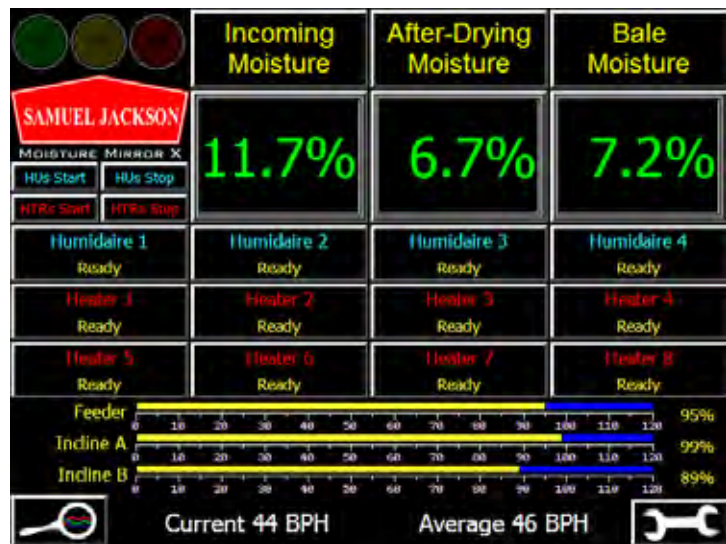
# Drying System Enhancements

*A Moisture Mirror can help you operate your drying system at peak energy and production efficiencies.*

The Moisture Mirror product line is much too large to adequately cover here, but no discussion on drying would be complete without at least mentioning it. On the most basic level, a Moisture Mirror can monitor both incoming and after-drying moistures. Once you have this information, the Mirror product line can help you use it in a number of ways, including automatic temperature control.

- Saves fuel with automatic temperature control
- Graphs drying data for training and grower feedback
- Helps avoid chokes
- Acts as a remote control \*
- SimpleShed and SmartShed control functions \*
- Provides more consistent drying for better results
- Improves production
- Remote monitoring options \*
- Several models and options to choose from, making it budget-friendly and flexible

\* Some models only



*See the Measurement Products section for more information*

DRY

## *Air volume is critical to gin performance. Monitor it continuously with Air Tools.*

When it comes to air systems, most gins are operating blind and for good reason. There hasn't been a good online airflow indicator... until now!

Disruptions to the air flow in your drying system can strike fast, resulting in a choke. Or air deficiencies can quietly and chronically eat away at your system's efficiency and performance. Either way, the Air Tools product line can help you deal with them and manage your drying air.



For example, suppose an incline begins to overload, restricting air flow. Without Air Tools, you might not catch the problem in time to prevent a costly choke. With Air Tools, you have a constant monitor on air flow, alerting you to changes and giving you time to respond. Some options even provide the ability to automatically stop the incoming feed, reducing the size of the choke or preventing it altogether.

Easy to install, Air Tools static pressure ports can be mounted in any number of key airflow points in your system. Each port can be connected to one of three monitors, offering a wide range of price and automation options.

Put one in every key point in your gin and “see” your air!



*on the Moisture Mirror and Air Tools product lines.*

## *Sam Jackson Drying Systems are used in the largest and fastest cotton gins in the world.*



Prolonged drought and raging floods can demand exceptional tactics in your ginning strategy. If you determine that a turn-key efficiency solution with detailed engineering and performance guarantees is called for, Samuel Jackson has a strong history in providing these services and continues to do so.

Sam Jackson comprehensive systems offer the largest ratios of drying air to wet cotton utilized in cotton ginning operations worldwide.

Our systems will optimize drying fuel automatically, choosing only ambient air with no added drying energy and modulate through the full range of heating capacity as conditions warrant, maintaining robust capacity throughout the process. This frequently results in drying fuel savings of up to 50% or more over conventional gins and the financial return becomes even more significant when capacity improvements in wet conditions are taken into consideration.

We provide the operator with views of mass flow through the process and regulate that mass flow automatically, ensuring that all gin stands operate to maximum efficiency.

This feature alone normally increases a gin's weekly capacity by 7% or more while offering seasoned gin operators a mental break from the tedious nature of mass flow regulation by traditional methods.

We offer automatic alerts when those unavoidable surprises arrive inside the cotton modules and stop the feed automatically to limit damage or chokes.

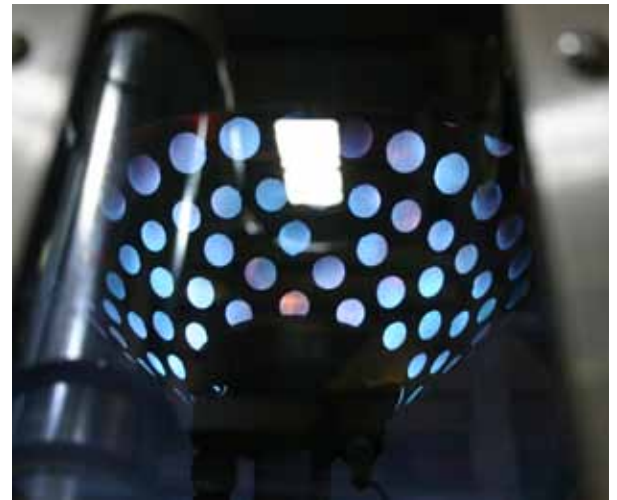


DRY

Our comprehensive systems record all system variables as well as critical operator settings. Database possibilities allow you to merge bale classing data with operations data and answer questions like, “Which bales did we gin this



week at speeds greater than our average? What was the module moisture content for those bales? What was the leaf grade for those bales?”



Even the best systems can develop fires from surprising and unexpected sources. Heat and spark sensors are utilized by our system designers to make sure that any fire that occurs is discovered and extinguished rapidly. This will get you back to the business of ginning cotton with minimal delay.

Our systems can extend from one end of the gin to the other, including moisture restoration at key points to optimize press capacity and seed cotton conditioning before the gin stands for its many documented benefits.

Of course, your complete system is only going to be as strong as the operators you have running it. Our services include generous field support and operator training for the first season.

On those occasions when we are not in your gin personally, we are there virtually through a high speed network that keeps a group of high level technical personnel at our Lubbock, Texas office aware of your system status and needs.



DRY