

TOTAL COTTON GIN SOLUTIONS



BRANDON AND CLARK, INC.



FROM FIELD TO FIBER.

**From the Ground Up,
Brandon and Clark, Inc. is there to
construct, automate and maintain
the most efficient cotton gin.**

**With safety, speed and quality
we help you achieve maximum value
for your cotton and seed.**





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Visit www.brandonclark.com to learn more about Brandon and Clark's products and solutions.

ELECTRICAL CONSTRUCTION SERVICES

Brandon and Clark, Inc. offers Gin Construction Services that range from brand new construction to retrofitting existing gins. We work closely with gin management, the general contractor and equipment manufactures to design a gin that maximizes the space given and achieve efficient work flow and maximum production.

New Construction

During the preliminary stages of design comes an opportunity to engage with our Engineering Services team. Brandon and Clark is staffed with Professional Engineers who will identify the proper safety devices to reduce the risk of arc flash and its potential which is one way to prevent a gin fire. Though it's ideal to have a coordination study performed at the gin construction stage, it is never too late to perform one on an existing gin, especially if one has never been done or when new equipment is being added.

Once a construction design and plan has been determined, construction can begin. Brandon and Clark's craftsmen, our Licensed Electricians, work to lay underground pipe and wire to where the transformer and gin equipment will go. Once all the underground work is complete, concrete poured, building erected and equipment set into place, additional pipe and wire terminations can be completed bringing power from the grid to the equipment. Our gin start up services will ensure all electrical systems, mechanical and control systems are working in a unified manner.

Retrofitting Services

Brandon and Clark is here to provide solutions. We listen to the objectives you have for your gin operations and we work to find a solution. If it's an increase in total speed, producing more quality bales, or upgrading older equipment, our solutions match your desired results.

Engineering services should always be utilized when retrofitting an existing gin. This service will identify all equipment subject to arc flash and coordinate the proper protective devices to minimize the arc flash potential. Through this study, proper fuse sizing, breakers, proper equipment settings, and relays can be recommended along with their proper placement within the system.

Having Brandon and Clark custom gin controls will unify your process so you are in full command of safety, speed, moisture levels, maintenance awareness, quality and profitability.

Gin start up services after a retrofit is complete will ensure you are ready for ginning within your new and upgraded system.

New Gin Construction Services:

- Coordination with the General Contractor
- Underground pipe and wire work
- Termination from utility power service to transformer and gin equipment
- Engineering Services and coordination studies for risk mitigation
- Gin start up services to ensure all electrical systems, mechanical and control systems are working in a unified manner.
- Continuous after construction services is always available to ensure uptime.

Retrofitting Services:

- Retrofitting can range from a simple manufacture swap out to a complete gin control conversion.
- We listen to your gin objectives and match the solution to achieve goals.
- Engineering services should always be utilized when retrofitting an existing gin. This service will identify all equipment subject to arc flash and coordinate the proper protective devices to minimize the arc flash potential. Through this study, proper fuse sizing, breakers, proper equipment settings, and relays can be recommended along with their proper placement within the system.
- Gin start up services will ensure your newly upgraded system is ready for production.
- Continuous service is always available, such as troubleshooting, preventative maintenance and production analysis.

ELECTRICAL SERVICES

Brandon and Clark, Inc. is a Licensed Electrical Contractor. We offer electrical installation services by our staff of Master and Journeyman Electricians, all with multiple years of experience in all aspects of industry.

Out of our Electrical Field Services group come services that include, but not limited to:

- Electrical conduit and wiring installation
- New construction installations
- Retrofits and electrical upgrades
 - Providing all electrical apparatus including; switchgear, panel boards, motor control centers, power distribution buildings and motor control systems.
- Power/service installation
- Communication networks
- Low and medium voltage power systems
- Electric motor installation & service

Brandon and Clark, Inc. provides in field and plant services for:

- Automation & control troubleshooting
- Programmable controllers/HMI control system troubleshooting
- Variable Speed Drives installation, troubleshooting, repair, & commissioning
- Air compressor service, start-up and repair
- System design support



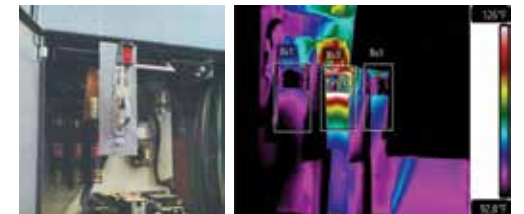


ENGINEERING SERVICES

Engineering Services is not just for the factory; it absolutely has a place within the cotton gin industry. In fact, if electricity is coming into your facility, there is potential for an arc flash condition. Our staff of electrical engineers will identify all pieces of equipment subject to arc flash and its hazard category. It's hard to know what danger is lurking behind that piece of switchgear or panel if not clearly stated. Having an awareness of the environment is the first step in taking preventative and protective steps to creating a safer work environment.

Fire is a risk that all gins face and it is possible to minimize that risk through a coordination study. A coordination study is preventative maintenance on a systems level that produces an action plan. The best way to protect equipment damage is by arranging the proper protective devices in front of the equipment as your front line defense against harm.

As a means of a safer work environment, an arc flash and coordination studies are now a requirement of OSHA as stated under NFPA 70E. If your gin has never had a study conducted or if new equipment has been added since your last study, it's time to get one planned so that fires can be prevented, lives saved and governing bodies are satisfied.



TRANSFORMER SERVICES

A smooth operating gin starts at the very beginning, the source of power. You can have all the other equipment geared up ready for ginning but without reliable power coming in work cannot commence.

Brandon and Clark brings power from the utility into the gin with our pole and padmount transformer services. Our electricians and transformer technicians will ensure power is NEVER a source of downtime.

Our preventative maintenance services ensures uptime and includes: oil sampling, and preliminary tests, remote sampler relocation kits for future oil sampling that eliminates de-energizing the padmount, and leak repairs.

Gin Transformer Services:

- Polemount and padmount sales, service and repair
- Custom padmount manufacturing
- Transformer preventative maintenance services
- Remote sampler relocation kit manufacturing and installation
- Transformer design and engineering services
- Electrical and industrial wiring



REMOTE SAMPLER RELOCATION KIT.
Safely pull oil samples without
de-energizing the transformer.



GIN CONTROLS

At it's most basic, the *economics of gin operation* tells us that the cotton industry must continuously advance as gin owners look for ways to overcome fixed and variable costs associated with owning and operating a gin while improving upon efficiency and meeting the increased quality demands from growers, spinners and consumers. The key is gin controls.

MODULE FEEDER CONTROLS

The first entry of cotton into the gin is at the module feeder. The pace at which the rest of the ginning process runs, is at times, dictated at this point. A smooth and steady flow of modules feeding the gin is ideal. It's the "Goldilocks principle," not too fast and not too slow, control at the module feeder allows for synchronization of the whole system.

Brandon and Clark's module feeder controls allows the ginner to be in control at all times. With control over up to five beds at a time, efficiency can be realized.

Operations:

- Controls up to 5 beds
- Controls the disperser operations: forward and reverse
- Feed speed is determined by the ginner
- Easily integrates with existing gin equipment
- Retrofit existing module feeder controls
- Remote unload bed operations
- Hand to auto operations
- Easy to operate
- Monitor bed speed to improve ginning efficiency

Stay in Control at All Times:

- Web browsing capabilities
- 2 Control panels: 1 local and 1 remote display
- Built-in redundancy features ensures that you have control at all times
- Online troubleshooting capabilities
- Monitor switch status remotely

Safety Features:

- Local and remote emergency stops
- Audible and visual alarm system





GIN STAND CONTROL

Once the cotton has undergone the cleaning process via the stick machine and separators it enters the gin stand, the heart of the ginning process. The capacity and potential quality of the produced cotton rests on the proper operation of the gin stand.

An attentive ginner at the gin stand will ensure that the saw cylinder is free to rotate properly and that no foreign objects are within. Once verified, the ginner may distance himself to the integrated ginn stand controller, and full operation may commence.

If a need arises and the ginner must come close to the gin stand, Brandon and Clark's remote swing arm can fully operate the gin stand while still being positioned at a safe distance.

Fire detection is a feature of the Brandon and Clark Gin Stand Controls. If for some reason, too much cotton has entered the gin stand, choking may occur. Choking then causes heating within the equipment, which can quickly become a potential for fire. Because of the seriousness of the matter, fire detection is at the forefront on the gin stand panel as well as at the ginner's console.

Leveling and loading conditions are also of great importance. Any unbalance of either is a system running inefficiently. Our controls solution will detect any these undesired conditions alerting the ginner to make adjustments.

Features:

- NEMA 4 enclosure
- Optional swing arm display
- Siemens integration
- VFD
- Touchscreen
- Works with any gin stand
- Fully integrated into ginner console

Touchscreen Operator Display:

- Breasted in/out
- Feed enable
- Set point amperage
- Actual amperage
- Loaded
- Feeder output
- Fire detection
- Low hopper level

- Low discharge flow
- Saw overloaded detection
- Saw unload detection
- Breast in alarm
- Fire reset

GIN STAND CONTROL >>

Touchscreen operator for main panel and optional swing arm controllers







GINNER'S CONSOLE

Faster doesn't always mean better. However fine tuned, clean, constant, and moisture control does equal better. Too much and too fast of a cotton load running through the gin stand drastically effects the finished product. Overloaded gin stands can result in a reduced quality with shorter fiber content and potential seed damage.

Therein comes the Brandon and Clark Ginners Console as a solution for orchestrating the perfect blend of speed and moisture.

At the ginner's console, moisture levels are being monitored before acceptance of cotton into the gin stand. Based upon each stands load, ramping up or slowing down can be determined. If more time is required in the drying stage, it's important not to circumvent that process doing so only causes problems down the line.

Features:

- Ginner's Console gives command beginning at the Motor Control Centers (MCCs) to all the controls overhead
- Signals to the Module Feeder
- Signals to the Press Console
- Gives command to the gin stand when to breast in or turn on main saw motor
- Signals to the Drying System
- Customizable
- Push button, touchscreen or a combination of both for customized operation

BALE PRESS CONSOLE

Under the watchful care of the ginner and the unified controls of Brandon and Clark, we have arrived to this final stage of ginning, bale pressing, and it all happened in approximately 3 minutes!

This final stage of cotton processing is bale packaging. This stage consists of the battery condenser, lint slide, lint feeder, tramper, bale press and bale tying.

LINT CLEANER CONTROL

Uniform and well dispersed cotton leaving the gin stand is key for this next stage, lint cleaning. During the lint cleaning stage, cotton is formed into a batt, this batt is then fed into the saw-type lint cleaner, further removing immature seeds or trash. Controlling a steady pace is important to allow for efficient cleaning and to maintain good fiber.

The lint cleaner has a direct impact on the grade and color of the finished cotton by removing any foreign matter. All ginners have in mind of producing the best quality cotton, but there needs to be mindful decisions about not allowing the cotton to remain in the lint cleaner too long, as this will damage the fiber length. Brandon and Clark's lint cleaning controls helps the ginner to determine what the ideal length of time should be.

Bale Press Console Controls:

- Speed
- Hydraulic control
- Bale weight
- Implements compression procedure by controlling the turn speed of the boxes

Lint Cleaner Controls:

- Controls condenser screen
- Speed of the lint cleaner screen
- Enables for a better, cleaner process with removal of fine leaves, sticks and other trash material

Battery Condenser:

- Controls the speed of the screen drum

BATTERY CONDENSER CONTROL

The speed in which the battery condenser is operated is again finding the “Goldilocks” sweet spot. Not too slow and not too fast. Matching speed to capacity is key for a smooth and solid batt to be formed. If the speed is too fast, breaks will occur, if too slow the batt will become too thick and can potentially choke the machine.

If the ginner sees an uneven formation of lint batt, also known as “big-ended bales”, he knows that more lint is being deposited at one point of the press box than at the other. Brandon and Clark's controls will help to prevent this condition by controlling the release of a steady and consistent deposit of batt into the condenser as well as airflow regulation.



BALE PRESS MANUFACTURING THAT IS CUSTOM TO EACH
The custom controls fabrication team constructs a product that exceeds the standard. Our Bale Press Console is tailored fit to your gin application.





BRANDON & CLARK, INC.
 Keeping Industry Humming Since 1950
 800-289-2224 www.brandonclark.com
 Sales • Service • Repair • Installation

BALE PRESS CONSOLE





COMPRESSED AIR SOLUTIONS

Air, primarily, is the means by which cotton travels throughout the entire ginning process. Balancing the right moisture levels within that air directly effects the quality of the end product. Air must be at times heated, humidified, dried or moisture added all within one system and at any given time while in production. Air also enables pneumatic equipment to run. To understate the importance of air in a gin operations is a grave mistake. Not only is air a critical element within the system it can also be a huge consumer of power. *Profitability is influenced by how a gin manages its compressed air system.*

Air Pipe Installation Services

Getting air in and throughout the gin to facilitate the entire process is a task Brandon and Clark is accustomed to doing. We understand that a poorly designed air system results in inefficiency, loss of productivity and profitability. Therefore, before a single pipe is installed our staff works side by side with gin managers to identify exactly what velocity and pressure requirements are needed to work with the equipment in place and to maximize the system's efficiency.



Installation Services Include:

- Air audit will be performed
- The results of the audit will aide in the determination of properly sizing the pipe to be installed
- Piping will be simple and as direct as possible to avoid unnecessary elbows and valves
- Once installation is complete, analysis of the system will be performed to insure efficiency gains are realized

Quality Pipe = Quality Air

Just as the great are the advances made in the controls of a gin, so is the pipe technology available today.

- Rapid Air Fast Pipe or "Blue Pipe" is an aluminum product and the preferred choice of air pipe today
- Utilization of this latest pipe technology allows us to avoid having to glue, thread, weld or solder thus eliminating leak potential
- Expansions to the system can be done easily and quickly and less costly than with older cast iron systems
- Quality pipe material ensures no corrosion in the pipe or fittings resulting in a longer life
- Smooth inner wall and sealed connections = Energy Efficiency

Air Compressors and Dryers

The air compressor supplies the necessary air needed to operate the ginning system. Proper specification of the air compressor is necessary for a gin to run efficiently. Over or under sizing the unit is either waisting energy or over working the unit causing premature failure.

The ideal air compressor is typically in the form of an oil-injected, screw type. Screw compressors can run at 100% of its duty cycle as opposed to its alternate, the reciprocating compressor, who's runtime is 80%.

Dyers play an important roll within the compressed air system. Beyond just pulling out any excessive moisture from the cotton the dryer also has direct impact on the fiber quality. Dryers condition the seed cotton by fluffing the partly opened locks and creating a smoother gin flow. However, over-drying can occur if fibers get too hot causing them to become dry and brittle.

It's important to weigh out all the features, benefits, maintenance requirements and overall cost of ownership when determining the best air compressor and dryer solution for your gin. Brandon and Clark can be that resource to walk with you through that decision process.

Air Compressor and Dryer Sales:

Brandon and Clark can offer purchasing guidance to determine the best suited air compressor and dryer for your specific gin, included in our product offering is:

- Single and two stage rotary screw
- Single and two stage reciprocating
- Variable speed rotary screw
- Variable capacity rotary screw
- Two-stage high pressure rotary screw
- Oil free rotary screw
- Rotary screw heat recovery system
- Point of use dryers
- Air dyers - refrigerant and desiccant
- Contaminate removal drains and separators
- Replacement filters

Air Compressor Service and Maintenance

Keeping the compressed air system running efficiently relies on routine service and maintenance. It is recommended that air compressors be on a scheduled maintenance program. There are some tasks that are required daily, then others on a quarterly and annual schedule. Brandon and Clark is here for support in setting and maintaining these scheduled maintenance services.

Measuring Efficiency

“Talk is Cheap,” as they say but if we are able to quantify *exactly* how much energy is being used while ginning, the results can be astounding. That method of measuring is through an Air Audit. An air audit is a service provided by Brandon and Clark that will determine a baseline of energy use, peak and off peak usage in date and time format, as well as provide suggested changes to improve the efficiency and reduce costs. Simulations within our auditing tool will tell you exactly the expected outcome if recommended changes are made and the expected payback time.



USAGE REPORT. An air audit can show you exactly the amount of air used on any given day. This data can be used to project how much energy will be used over an entire ginning season which allows for budget and planning purposes.



ANCILLARY EQUIPMENT AND CONTINUOUS IMPROVEMENT

A gin in full operation cannot afford to be down due to a failed motor or broken belt. Replacement motors, belts and pulleys are stocked and ready for deployment when the need arises, 24/7/365.

Once the ginning season is over doesn't mean the services of Brandon and Clark ends. Our post-season continuous improvement services work year round to ensure *successful outcomes year after year*.

Motors, Belts, Pulleys and Ancillary Equipment

A gin operation relies on all of its equipment running in perfect harmony. Pulleys and belts must be in alignment and properly tensioned and motor speeds set in accordance with the controls equipment so that the system can run properly. It's important that belts be checked often for signs of wear. Operating machinery that has damaged belts or belts that are not properly tensioned is potential for an unsafe condition. It is much better to be proactive in the replacement of worn belts than to experience downtime.

If a motor failure does occur, rest assured that calling Brandon and Clark, Inc. will result in a quick repair or replacement solution. Brandon and Clark maintains a stock of replacement motors and we are capable of all types of motor repair. Our motor repair facility is ISO 9001:2015 certified, is EASA Accredited and has been named a Siemens Service Delivery Partner. All these designations are an assurance to you that Brandon and Clark provides quality, timely and reliable motor repair service.

Continuous Improvement

Technology advances year after year, Brandon and Clark's commitment to the cotton industry is to provide you solutions incorporating these improvements. We work along side gin owner and managers to discuss post-gin season outcomes and work to formulate a plan for the next season. Our services also include equipment repair, electrical systems evaluation and other preventative maintenances services that ensures success in the season to come.

FROM FIELD TO FIBER.



TOTAL COTTON GIN SOLUTIONS

Electrical Construction Services
Electrical Services
Transformer Services
Custom Gin Controls
Compressed Air Services
Electric Motor Services
Continuous Improvement Services

BRANDON AND CLARK, INC.

**“KEEPING INDUSTRY
HUMMING SINCE 1950.”**

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