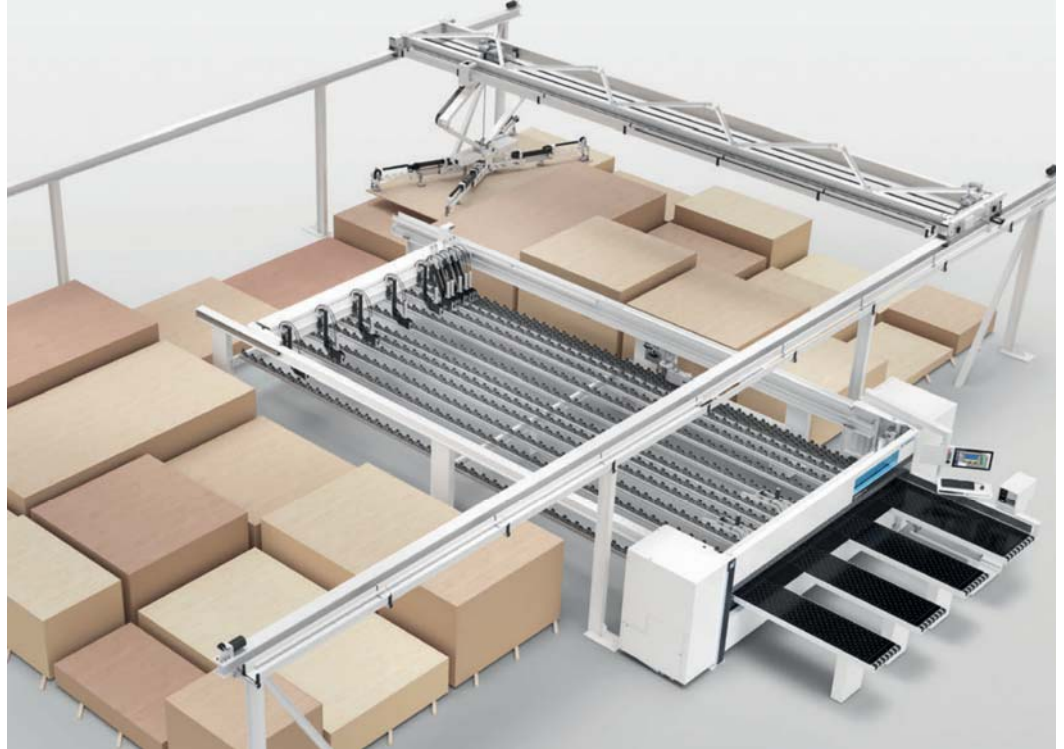


HOMAG Panel Management System STORETEQ S-200-50-10



Note: non-contractual photo for illustrative purposes only.

Machinery from HOMAG Automation is extremely rigid and low maintenance. HOMAG Automation manufactures heavy-duty machines specifically built for continuous operation, three shifts a day, seven days a week, and 365 days a year with a minimal amount of down time. HOMAG Automation machinery will continue to function, as intended, year after year, withstanding heavy-duty industrial usage.

Our IntelliStore Offers

- Increased productivity
- Decreased dependency on manpower
- More consistent production – meaning fewer production mistakes, resulting in less waste and more profit
- Less damage to parts during processing
- Fewer job-related injuries, worker compensation claims, and OSHA issues

No lost time searching for panels: location of every board is always known

Increased machine capacity: the system always gives top priority to feeding the machines, so no time is lost while the operator is searching for the correct material

Reduced inventory: 100% inventory knowledge enables just-in-time purchasing

Reduced storage space: purchase and inventory only the quantities of material needed for production. Additionally, a large reduction in space due to lower forklift traffic

No more damaged boards: elimination of damage to boards that often occurs during relocation by hand or fork truck

Automatic separation parameters: stored for each individual board or type

Intelligent learning: parameters can be set to continually optimize storage strategies

External storage management: panels stored outside the system can be managed, such as porous materials or high-volume boards of the same color or type

Board verification: the system automatically verifies the size and weight of each board, each time it is handled, to avoid errors in panel entry

Sheet data library: the supplier and date of receipt is known for every panel

Lights-Out: the system can run during an off shift to replenish incoming boards or pre-sort for the next day's production

Prioritization change / hot orders: HOMAG Automation determines sequence of panels within the system, based on picking location but hot order insertion can be done at will by the operator

Optimization Software (not included in this proposal)

Cut Rite

** Woodstore board library is priced as “metric” measurement. If it is determined at the time of install that imperial is needed, then Stiles reserves the right to charge for additional time onsite to reset the board library.

Operating Machines Within the System

One (1) - HOM SAWTEQ B-300 flexTec

One (1) - HOMAG SAWTEQ B-400 HPP (MS#49449 serial no. 0-240-73-5355)

Two (2) - HOM CENTATEQ N-500/510 CON3R

Project Specifications

None

Concept Drawing

Revised drawing to follow

System Features – Included in this Proposal

Touch Screen Controls

The HOMAG powerTouch controller arrives preprogrammed, reducing installation and setup time. With its intuitive feel, the powerTouch immediately alleviates operator confusion which can be common with typical mechanical controller setups.

With tablet-like icons on a direct touch screen, the HOMAG powerTouch allows a single operator to run multiple machines due to controller and interface consistency – including integrated help functions for added operator support.

- Simple navigation with tablet-like icons on touch screen controller.
- A single operator can easily and confidently run multiple machines — even an entire line — as all controllers incorporate the same look and feel, with many identical icons and navigation buttons.
- No programming is required; all programs are installed, ready to run.
- Touch screens are very large and feature low-glare surfaces for improved operator comfort and use.

Software

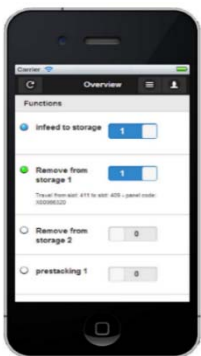
With woodStore, HOMAG provides its storage systems with an intelligent control. It is the brain of each storage system and optimizes all processes in storage. woodStore can link with the purchasing system, to order processing, manage offcuts, and optimize material movements. With its modules, the storage control calculates a storage organization that best fits customer's demands.



Mobile Command through woodStore 8

Using any smart mobile device, you now have access to do some basic functions in woodStore. Different functions can be controlled via mobile devices in the wireless Lan of the machine:

- Storage functions start + stop (e.g., storing, removal, pre-removal)
- Generate storing orders
- Rebooking at the manual storage
- Display material availability
- Display the remaining cutting time of the saw
- Display of statistics about current storage movements



System Features – Included in this Proposal (continued)

woodStore Analyzer Expert

This software package analyzes your material usage and offers suggestions for increasing the efficiency of the storage system. The following analyses, among others, are conducted if you have the option in your system:

- Offcut movement and automatic storage
- Pre-planning for rainbow stack construction
- Operator requested material
- Inventory turnover and panel age
- Inventory levels versus usage
- Locations of pre-built stacks

E-mail - Error Notification

This allows the capability to send an e-mail message to a pre-determined email address. In the event of an after-hour system error, a message will be generated and sent. The receiver of the message can choose the correct course of action so there are no surprises the next day.

Installation Complying with UL-Regulations

UL LLC is an American worldwide safety consulting and certification company headquartered in Northbrook, Illinois. It since has been known throughout the 20th century as Underwriters Laboratories and participated in the safety analysis of many of that century's new technologies – most notably, the public adoption of electricity and the drafting of safety standards for electrical devices and components.

UL provides safety-related certification, validation, testing, inspection, auditing, advising and training services to a wide range of clients – including manufacturers, retailers, policymakers, regulators, service companies, and consumers.

UL is one of several companies approved to perform safety testing by the US federal agency, Occupational Safety and Health Administration (OSHA). OSHA maintains a list of approved testing laboratories, which are known as Nationally Recognized Testing Laboratories.

English Control / Documentation

All literature in the controls and documentation will come standard in the English language.

- Operator's manual
- Spare / recommended parts list
- Maintenance schedule and instructions
- Paper manual and CD-ROM



System Features – Included in this Proposal (continued)

Offcut Management

The system is capable of inventorying offcuts to be used in future optimized jobs. The software, when optimizing, will look at the offcuts to be used first, which will increase the yield of your material and keep the offcuts to a minimum.

- Offcuts are “*manually-populated” into the storage library by the operator, through the controls of the storage system.
 - “*Manually-populated” defined – once the offcut is created, the operator will enter the dimensions of the offcut at the control panel of the storage system. This will create a new board code for that offcut (size, color, thickness), and the operator will tell the system where the offcut was placed in the external rack. Once future optimizations are created that utilize offcuts in the external rack, the machine operators will have to find those offcuts in the rack and bring to the respective machine. The operator’s respective machine will not notify them where the specific offcut is in the rack, based on the optimized cut/production list.
 - Additional options can be purchased to allow for more automatic communication; however, these options must be identified somewhere in the final proposal or sales agreement in order to be included in the project scope of supply. Otherwise, a change order will be issued post-sale, at the customer’s expense to achieve alternative options, from the “manually-populated” standard option listed above.
- Management of manually stored offcuts in realistic display.
- Display and management of offcuts with name, number and location in 3D view over several shelves.

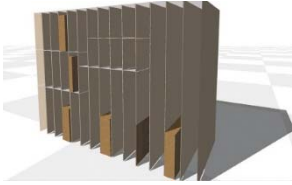
External Storage Management

The system is capable to manage inventory in an external location. Using an external racking system or bay, the operator can name these external locations and the system will manage the inventory in each named location. This can also be used for material that is often produced in high quantities, which lowers the movements of the gantry and allows for more production capacity. When the needed material is placed at the infeed station – the gantry can then pick up from the infeed and deliver direct to an integrated machine.

- Display and management of the external storage in realistic 3D view.
- Timely production information is provided at the saw and storage computer about panels to be prepared.

Air Conditioning for Switch Cabinet

Air conditioner manufactured by Rittal is installed in the control cabinets to help keep the drives at a safe and consistent temperature. Keeping the drives at a consistent temperature helps them run at full force.



System Features – Included in this Proposal (continued)

Thin Board Handling

Fully automatic panel separation, for which only two adjustments are necessary for panel handling:

- Panel = suction (yes/no)
- Panel = flexible (yes/no)
- The result is stored in the system and loaded as handling parameters based on demand.
- Parameters are constantly adjusted in the current process to achieve an optimal panel separation.

Note: For any deviations (e.g. peg board, bead board) regarding material, workpiece thickness, and material density, the customer must provide test material according to our requirements for tests prior to placing order. If we do not receive any test material, we do not assume any liability for possible failures in production.

Uninterruptible Power Supply (UPS)

An uninterruptible power supply, also uninterruptible power source, UPS or battery/flywheel backup, is an electrical apparatus that provides emergency power to a load when the input power source, typically mains power, fails. A UPS differs from an auxiliary or emergency power system or standby generator in that it will provide near-instantaneous protection from input power interruptions, by supplying energy stored in batteries, supercapacitors, or flywheels. The on-battery runtime of most uninterruptible power sources is relatively short but sufficient to start a standby power source or properly shut down the protected equipment.

- Approximately ten (10) minutes of battery power.
- Serves as a voltage stabilizer for the electronics during voltage fluctuations, up or down.
- 1,000 VA capacity.

Back-up Portable Drive USB 2.0

HOMAG has partnered with Samsung to offer a Hard Drive stored in the electrical cabinet, in the case you need to backup any files as Ex-Factory settings.

- M3 portable external hard drive
- USB cable
- Quick install guide 500 GB



System Features – Included in this Proposal (continued)

TeleServiceNet

Internet router including hardware and software installed at the factory. Once you have concluded an appropriate service agreement, our service experts have direct access to your machine via these high-tech tools. They can diagnose all processes and influence all functions – even during ongoing production.

Your benefits include:

- In comparison with Hotline, teleservice via modem and/or TeleServiceNet can cut the number of actual technician visits by half.
- Any spare parts required can be ordered quicker and more specifically.
- HOMAG/Stiles experts analyze each problem and can typically remedy the issue remotely.
- Software updates, program or function enhancements can be optionally completed online.
- Machine operators can be effectively supported while they are getting to know the machine.
- Minimizes downtime and increases efficiency.

Requirements:

- Separate internet connection is to be provided by the customer.
- Bandwidth minimum of 256 k bits upstream and 256 downstream, is required.

High-Speed Servo Drives (X-, Y-, Z- Axis)

Higher positioning accuracy of ± 5 mm (3/16 in) from layer to layer.

Maximum positioning deviation over total stack of ± 10 mm (3/8 in).

X – Axis (carriage movement)	110 m / min	(360 ft / min)
Y – Axis (bridge movement)	130 m / min	(426 ft / min)
Z – Axis (lifting movement)	60 m / min	(197 ft / min)

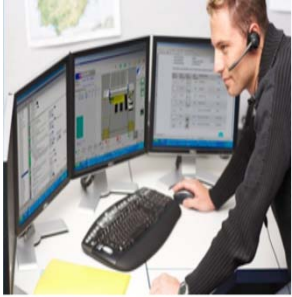
High-Speed Accelerations (X-, Y-, Z- Axis)

Faster accelerations to get to max speed quicker.

X – Axis (carriage acceleration)	1 m / sec	(3.28 ft / sec)
Y – Axis (bridge acceleration)	1 m / sec	(3.28 ft / sec)
Z – Axis (lifting acceleration)	1.5 m / sec	(4.92 ft / sec)

One (1) Safety Door & Safety Fence

One safety door is installed between the storage system's fence sections, as the one and only entrance to the system. If the door is opened, the IntelliStore will be automatically placed in "safety mode" and will not move. The STORETEQ has safety fence protecting the entire perimeter, and this ensures that no one can be under the STORETEQ gantry when it is in motion.





System Features – Included in this Proposal (continued)

Workforce Development

A well-trained workforce is essential to realizing the full capabilities of HOMAG equipment, safe and efficient machine operation, increased component and tooling life, and reduced maintenance costs. At the time of installation, basic machine programming, operation, and troubleshooting training is administered onsite by a Stiles Field Service Representative (FSR)

Additional training is available through Stiles University, the industry's only nationally accredited training program. With over twenty regularly scheduled courses, Stiles University provides comprehensive, hands-on technical and application training, as well as best practices designed to equip manufacturers with the skills and knowledge they need to thrive.

Included with your machine purchase are **two (2)** scholarships for a Stiles University course.

For this model, the following course is recommended:

STORE200: Storage System Programming and Operation

Designed to meet customer needs, sessions are offered at any of Stiles University's dedicated training centers nationwide, online, or onsite at the customer's facility (if a more specific, customized training is desired).

Explore upcoming course offerings and/or register online at **www.stilesuniversity.com** or contact classes **@stilesmachinery.com** for more details.

Requested Features – Included in this Proposal

Vacuum Head ST61

The design shown in picture to the side.

Note: Due to physical dimensions of vacuum head and "elbows" of stabilizing arms, storage position must be 2,500 mm long regardless of stack size.

Four (4) Infeed Storage Locations

The infeed station is where that material is introduced into storage. The material is placed in a safety zone on a steel structure. The storage system will replenish the inventory with the material that was just introduced. Includes light curtain to keep the storage system from crossing over top if the barrier is broken.

Note: Check the stroke height of the forklift truck with the clearance height of the support. The exact stack position in the storage area is dependent on the forklift driver.



Requested Features – Included in this Proposal (continued)

One (1) Upgrade Infeed to Outfeed

Infeed position can be used as an outfeed position. Material will be moved via production list, to the infeed/outfeed position and the inventory will be adjusted in the storage library. This allows the outfeed to store/build rainbow stacks. The stacks can feed machines not integrated with the STORETEQ or be used elsewhere in the facility.

Offcut / Outfeed Scanner

Scanning device for the outfeed of offcuts. Material can be taken out of the offcut storage racks with guidance from the access lamp. The lamp indicates to the operator whether the offcut may be taken out or whether the offcut has already been planned for production.

Included:

- Integration software
- One (1) access lamp / hardware at offcut storage
- One (1) wireless bar-code scanner
- Two (2) charging stations

Note: label printing for these offcuts is also possible via the HOMAG saw

Infeed Scanner

Scanning device for the infeed station(s) of the storage system. The operator can bring a stack of material to the infeed station(s) and scan the vendor's SKU (barcode). The STORETEQ has the SKU programmed to recognize the type of material / qty. No manual entry is needed.

Included:

- Integration software
- One (1) wireless bar-code scanner
- One (1) charging station

Integrated Features – Included in this Proposal

Floating User License

A floating license is issued for each operating panel, which is connected with the master server. Possible to use nine (9) user-interfaces at the same time.

Two (2) Routers Integrated into the STORETEQ

HOM CENTATEQ N-500 5X10 CON3R

The license(s) and cables needed to integrate into the IntelliStore, allowing all the machines to work as one complete cell.

Integrated Features – Included in this Proposal (continued)

One (1) Saw Integrated into the STORETEQ

HOM SAWTEQ B-300 flexTec

The license(s) and cables needed to integrate into the IntelliStore, allowing all the machines to work as one complete cell.

STORETEQ Final Specifications

With the options listed in this proposal the specifications that we are quoting are as follows:

Workpiece Specification:

length:	MIN	1,830 mm	(72 in)
	MAX	3,660 mm	(144 in)
width:	MIN	800 mm	(31 1/2 in)
	MAX	2,200 mm	(86 1/2 in)
thickness (particleboard):	MIN	6 mm	(1/4 in)
	MAX	100 mm	(4 in)
thickness (MDF):	MIN	3 mm	(1/8 in)
	MAX	100 mm	(4 in)
weight:	MIN	8 kg	(17 1/2 lbs.)
	MAX	150 kg	(331 lbs.)

Stack Specification:

stack height:	MIN	50 mm	(2 in)
	MAX	2,100 mm	(82 5/8 in)
gap between stacks:	MIN	100 mm	(4 in)

Note: The total stack height is 2,100 mm. The use of floor supports to elevate the material subtracts from the overall stack height. (Example): 50 mm high floor supports means 2,050 mm of actual stored material in each position.

Storage Area Specification:

length:	50,000 mm	(164 ft)
width:	10,000 mm	(32-3/4 ft)

Plant Installation Specifications

dock door width:	MIN	3,000 mm	(9'-10")
dock door height:	MIN	3,000 mm	(9'-10")
ceiling height:	MIN	3,850 mm	(12'-7")
compressed air:	dry, oil-free, filtered, MIN 7 bar (102 psi), 550-1,200 l/min (19-42 CFM)		
building floor:	concrete floor with steel, quality C25/30 XC 1, MIN 160 mm (6 1/4 in) thick, level surface		

Electrical Specifications

working voltage:	480 volts, 3-phase, 60 Hz
KW:	12
AMPS:	35
control voltage:	115 volts, 50 Hz 24 volts DC
electric control:	Power Control IEC 61131

- Electrical components wired according to UL standards; voltage supplied must not fluctuate in excess of $\pm 5\%$ of its stated value
- Cable will be routed through a customer supplied channel or overhead cable tracks (to be installed 3,300 mm from floor) if present during installation. Otherwise, cable will rest on factory floor.

Items Not Covered by this Proposal

- Surge protected electrical services to the site with no more than $\pm 5\%$ variance in input voltage
- Electrical trays, wire, conduit, supports, etc.
- Compressed air lines to connecting points at 6 kg/cm² (90 psi)
(dry filters and pressure regulators provided)
- Building alterations
- Floor or masonry work
- Moving of existing machinery or site preparation
- Equipment to assist in installation (i.e. forklifts, cranes, scissors lifts, etc.)
- Permits to install and operate (when required)
- Connection/integration to customer existing ERP/factory management software