



Xcut

Technical User Manual

Version 1.0

Contents

SECTION 1 - SAFETY INSTRUCTIONS	4
1.1 Foreword	5
1.2 Basic Rules	7
1.3 Responsibilities of the owner.....	8
1.4 Responsibilities of the Operator and Maintenance Personnel	9
1.5 Hazard Labels	11
SECTION 2 - INSTALLATION	14
2.1 Upon delivery.....	14
2.2 Safety precautions	14
2.3 Foundation, Levelling and Anchoring	15
2.4 Wiring connections:.....	15
SECTION 3 – HMI.....	16
3.1 HMI Home Screen.....	16
3.2 HMI Xcut Head Rig Status	18
3.3 HMI Saw Pivot Servo Status.....	19
3.4 HMI Infeed Servo Status	21
3.5 HMI Outfeed Status.....	23
3.6 HMI Outfeed Belt.....	24
3.7 HMI Infeed Status.....	25
3.8 HMI Pinch Roller Motor 1	26
3.9 HMI Pinch Roller Motor 2	27
3.10 HMI Pinch Roller Motor 3	28
3.11 HMI Debug Screen.....	29
3.12 HMI Machine Configuration	30
3.13 HMI Thickness/Width Sensor.....	31
3.14 HMI Digital Input Timer Configuration.....	32
3.15 HMI Hardware Configuration	33
3.16 HMI Saw Pivot Speed Setting	34
3.17 HMI Operator Configuration	35
3.18 HMI Alarm Screen.....	36
SECTION 4 – OPERATION GUIDE.....	37
4.1 BASIC OPERATION GUIDE	37

4.2 OPERATION MODES	38
4.2.1 CHALK LINE MODE	40
4.2.2 OPTIMIZATION MODE.....	40
4.2.3 CHALK LINE OPTIMIZATION MODE	40
SECTION 5 – TROUBLE SHOOTING.....	41
SECTION 6 – WARRANTY.....	43

SECTION 1 - SAFETY INSTRUCTIONS

SUMMARY

All persons operating this machine must have read and understood all of the following sections of this Manual:

- Section 1: SAFETY INSTRUCTIONS
- Section 3: OPERATING INSTRUCTIONS

However, as a memory aid, the following is a summary of the Safety Section.

Put Safety First

Mandatory Information – What operators and maintenance people must have read and understood.

Signatures – Everyone involved with this machine must sign to confirm they have read and understood mandatory information.

Basic Rules – only use this machine when

- It is in good working order.
- All safety equipment is in place and functional.
- Operations are in compliance with this manual.
- Materials are within designed specifications and are non-hazardous.

Owner is responsible for:

- Keeping Manual accessible at the machine.
- Ensuring only reliable, fully trained personnel work with the machine.
- Clearly defining responsibilities of all personnel working with the machine.
- Keeping the machine in good working order.

Operator and Maintenance Personnel are responsible for:

- Keeping all safety equipment in order, checking its function at the beginning of each shift, and reporting any shortcomings.
- Shutting down machine and reporting any faults or malfunctions that could impair safety.
- Understanding and obeying safety hazard labels.
- Replacing any damaged or missing safety hazard labels.
- Not wearing un-restrained long hair, loose clothing or jewellery.
- Wearing all required personal protective equipment.
- Not wearing gloves within 24 inches of moving blade.
- Maintaining a clean working area and machine.
- Always using Lock-out when performing maintenance or repairs.

1.1 Foreword

Put Safety First!

This Safety Section contains important information to help you work safely with your machine and describes the dangers inherent in our machines. Some of these dangers are obvious, while others are less evident.

It really is important to PUT SAFETY FIRST. Make it a habit to consider the hazards associated with any action BEFORE you do it. If you feel any uncertainty, stop and find a safer approach to the action. If you're still uncertain, ask for advice from your supervisor.

The SAFETY FIRST approach is particularly necessary when you do something new, or different, and most people instinctively recognize this, although impatience may still cause them to take unnecessary risks.

Danger also lurks in the routine task that we have done over and over. Here, familiarity, boredom, or tiredness may lull us into unthinking, automatic repetition. Be alert for this, and when you feel it happening, stop and take stock of your situation. Review the safety hazards associated with what you are doing. That should get your brain working again.

Certainly production is important, but if you think you're too busy to put safety first, think how much production you'll lose if you get hurt.

You owe it to yourself, your family, and your co-workers to PUT SAFETY FIRST.

Mandatory Information

All persons operating this machine must have read and understood all of the following sections of this Manual:

- Section 1 SAFETY INSTRUCTIONS
- Section 3 OPERATING INSTRUCTIONS

Personnel involved in installation and maintenance of the machine must have read and understood all sections of the manual

Persons who have difficulty reading, or for whom English is not their first language, must receive particularly thorough instruction.

Signatures

Everyone involved in operation of this machine must sign below to confirm that:

I have read and understood all parts of Section 1 – Safety Instructions, and Section 3 – Operating Instructions.

Name	Date	Signature

Everyone involved in the installation, inspection, maintenance, and repair of this machine must sign below to confirm that:

I have read and understood all parts of this Operation and Maintenance Manual.

Name	Date	Signature

1.2 Basic Rules

Intended Use

Our machines are designed and built in line with the state of the art methodology.

However, all machines may endanger the safety of their users and/or third parties, and be damaged, or damage other property, if they are operated incorrectly used, beyond their specified capacity, or for purposes other than those specified in this Manual.

Exclusion of Misuse

Misuse includes, for example:

- Sawing hazardous materials.
- Sawing work pieces which exceed the minimum or maximum workload or capacity.
- Operating the machine without all original safety equipment and guards.

Operability

The machine may only be operated:

- When it is in good working order, and
- When the operator has read and understood the Safety and Operating Instructions Sections of the Manual, and
- When all operations and procedures are in compliance with this Manual.

Due to the nature of the industry QED Multisaw cannot accept any liability for personal injury or property damage due to operation of this machinery.

1.3 Responsibilities of the owner

Organization of work

This Operation and Maintenance Manual must always be kept near the machine so that it is accessible to all concerned.

The general, statutory and other legal regulations on accident prevention and environmental protection must also be observed, in addition to the Manual material. The operators and maintenance personnel must be instructed accordingly. This obligation also includes the handling of dangerous substances and the provision and use of personal protective equipment.

Choice and qualification of personnel

Ensure that work on the machine is only carried out by reliable persons who have been appropriately trained for such work.

Training

Everyone working on or with the machine must be duly trained with regard to the correct use of the machine, the correct use of safety equipment, the foreseeable dangers that may arise during operation of the machine, and the safety precautions to be taken.

In addition, the personnel must be instructed to check all safety devices at regular intervals.

Define responsibilities

Clearly define exactly who is responsible for operating, setting-up, servicing and repairing the machine. Define the responsibilities of the machine operator and authorize him to refuse any instructions by third parties if they run contrary to the machine's safety.

Persons being trained on the machine may only work on or with the machine under the constant supervision of an experienced operator. Observe the minimum age limits required by law.

Condition of Machine and Workplace

Ensure that the machine and its safety equipment are kept in good working order.

Ensure that the work area is well lit, and protected from the elements, such as rain, snow, abrasive dust, and extremes of temperature.

Ensure that the machine is installed with sufficient clearance around it for the safe loading and unloading of work pieces.

1.4 Responsibilities of the Operator and Maintenance Personnel

Safety equipment

All machines are delivered with safety equipment that must not be removed or bypassed during operation.

The correct functioning of safety equipment on the machine must be checked:

- At the start of every shift.
- After maintenance and repair work
- When starting for the first time, and after prolonged shutdowns

Emergency Stop Button (E-Stops)

Always be aware of the location of the Emergency Stop Button(s). Do not allow material or objects to block your access to an Emergency Stop.

Damage

If any changes capable of impairing safety are observed in the machine or its operation, such as damage, malfunctions, or irregularities, then appropriate steps must be taken immediately, the machine switched off, locked-out, and the fault reported to the responsible person.

Safe operation

The machine may only be operated when in good working order and when all protective equipment and guards are in place and operational.

Keep a safe distance from all moving parts – especially the blades, feeds, chains, belts and pulleys. Long and heavy stock should always be properly supported in front of and behind the saw.

Faults

The machine must be switched off and locked-out before starting to remedy any faults.

Safety hazard labels

Safety hazard labels and other instructional labels on the machine must be observed. They must be clearly visible and legible at all times. If they become damaged they must be replaced.

Clothing, jewellery, protective equipment

Personnel operating or working on the machine must not wear un-restrained long hair, loose-fitting clothes and dangling jewellery.

When operating or working on the machine, always wear suitable, officially tested personal protective equipment such as safety glasses and safety boots and any other equipment required by plant regulations.

Gloves

Experience has shown that careless use of gloves around machinery is a major factor in serious hand injuries.

Gloves should not be worn when operating or adjusting the machine, except:

- Wear protective gloves when handling bandsaw blades at blade changes.
- Gloves may be worn when handling work pieces.

Hearing protection

Ear protection must be worn whenever necessary.

- The level and duration of noise emission requiring hearing protection depends upon the national regulations in the country in which the machine is being used.
- The actual level of noise emission by band sawing machines depends upon work piece size, shape and material, blade type, blade speed and feed rate.
- The only practical course of action is to measure the actual noise emission levels for the type of work that is typically done. With reference to national standards, decide upon the necessary hearing protection required.
- In the absence of such measurements, it is advisable for anyone exposed to long periods of moderate to loud noise to wear hearing protection. It is important to understand that hearing loss is gradual and easily goes un-noticed until it is serious and irreversible.

Workplace

A clear working area without any obstructions is essential for safe operation of the machine. The floor must be level and clean, without any build-up of chips, off-cuts, coolant, lubricant or hydraulic oil.

The workplace must be well lit, and protected from the elements, such as rain, snow, abrasive dust, and extremes of temperature

Nothing may ever be placed on, or leaned against the machine, with the obvious exception of the work piece on the table and conveyor of the machine.

Master Disconnect

Lock-out the machine before undertaking any maintenance or repair work on it. 'Lock-out' refers switching off the master electrical disconnect switch, and locking it out so that it cannot be switched on again without authorization.

On Multisaw machines the Master Disconnect Switch will be of one of three types:

- Rotary switch mounted in electrical control cabinet door and inter-locked with door.
- Lever switch mounted in separate box mounted on the machine.
- Supply disconnect switch supplied by user at installation and usually wall-mounted within sight of the machine, depending upon local regulations.

In almost all jurisdictions, it is required that owners of industrial equipment establish and post lock-out procedures. Know and use the lock-out procedures of your company or organization.

Residual Risks

- The machine is still not completely de-energized if an electrical cabinet door type switch is locked-out.
- The line side of the disconnect switch itself remains energized.
- Variable speed blade drives store dangerous voltage in their capacitors, and this requires time to dissipate. After locking out power, wait 3 minutes before beginning to work on machine electrical circuits.
- If compressed air is supplied to the machine to power a mist lubrication system or other devices, it should be disconnected, and any stored air pressure released before working on the machine.
- The weight of individual machine components represents stored potential energy that can be released if they fall when disconnected. Secure these components with adequate hoisting gear before dis-assembly.

1.5 Hazard Labels

As organisation's safety requirements differ, Multisaw leaves the application of safety labels up to the organisation's discretion.

Below is a guideline to suggested safety labels.

The safety hazard labels attached to your machine represent important safety information to help you avoid personal injury or death.

All supervisors, operators, and maintenance personnel must locate and understand the safety information associated with each hazard label prior to operating or servicing the machine.

Many of the safety hazard labels shown below are located at various positions on the machine to indicate possible safety hazards. It is important to replace any safety hazard label that becomes damaged or illegible.

HAZARDOUS VOLTAGE INSIDE



- Contact with high voltage may cause death or serious injury.
- Never perform maintenance on, or near, electrical components until the machine's electrical power source has been disconnected.
- Lock-out power in accordance with your company's lock-out procedures before any such maintenance.
- The "Stop" or "Emergency Stop" push button does not disconnect the machine's power supply. Hazardous voltage is still present in the machines electrical circuits.
- The machine's Electrical Disconnect Switch does disconnect voltage from the machine's circuits; however hazardous voltage is still present inside the main electrical cabinet, on the infeed (line) side of the main fuses. Therefore keep hands and tools away from the infeed side of the control panel main fuses. If these fuses need to be replaced, use a fuse puller.
- Allow three minutes after locking-out power before opening any electrical enclosures. Your machine may be equipped with a variable frequency drive that stores high voltage within its capacitors. Three minutes will allow sufficient time for this voltage to safely discharge.
- Never spray coolant directly at electrical components or cabinets.

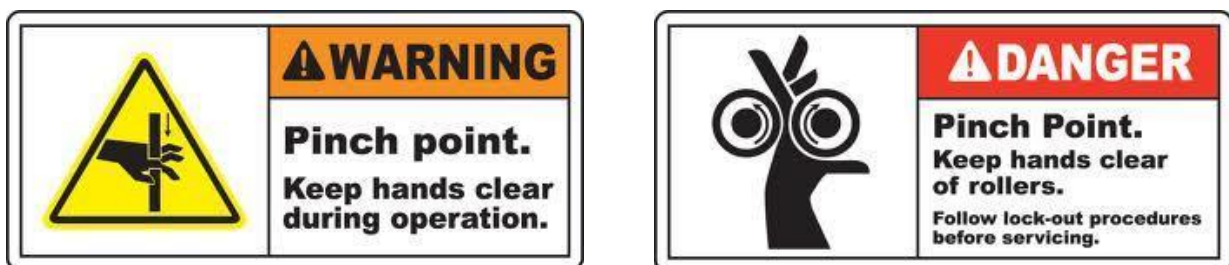
MOVING PARTS CAN CRUSH AND CUT



TAKE NOTE:

- Keep hands clear of moving chains, sprockets, feeds, belts, pulleys and blades.
- Lock-out power in accordance with your company's lock-out procedures before attempting to clear a jam in the machine.
- Be aware that feeds and other moving parts may start unexpectedly, either because the machine is operating automatically, or because another person initiates the motion.
- If the machine is stalled because of a jam, it may start without warning when the jam is cleared, unless the machine power is locked out.

PINCH POINT



- Machine parts may move without warning, either because the machine is operating automatically, or because another person initiates the motion.

- Keep hands clear of all pinch points, whenever the machine is running.

MOVING BANDSAW OR CIRCULAR SAW BLADE WILL CUT



- Do NOT operate machine with guards removed.
- Do NOT place hands or fingers near moving bandsaw or circular saw blade.
- For blade changing, always follow the proper Blade Changing Procedure.

FLYING DEBRIS AND LOUD NOISE



- Debris such as a piece of wood or wood chips may fly off the machine. Such debris may damage eyes. Wear safety goggles when operating machinery.
- It is important to understand that hearing loss is gradual and easily goes un-noticed until it is serious and irreversible.
- Wear ear protection to prevent hearing loss or damage while operating machinery.

SECTION 2 - INSTALLATION

2.1 Upon delivery

Upon delivery of your new Pinnacle Xcut Saw, it is imperative that a thorough inspection be undertaken to check for any damage that could have been sustained during shipping. Special attention should be paid to the Electrical and Pneumatic systems to check for damaged cords, hoses, and fluid leaks. In the event of damage caused during shipping, contact your carrier to file a damage claim.

2.2 Safety precautions

The machine has been designed to give years of reliable service. It is essential that operators be alerted to the safe operation of this saw and the practices to avoid that could lead to injury. Be sure to read Section 1 - Safety Instructions. The following safety rules are at the minimum necessary for the safe installation of the Machine. Take every precaution for the protection of operators and maintenance personnel.

- Power hook-ups and repairs should only be attempted by qualified tradesmen.
- The saw should be located in an area with sufficient room to safely load stock into the saw. Secure the saw to the floor.
- The area around the saw should be maintained in a clean and tidy condition to avoid obstacles operators could trip over.
- The machine should only be operated according to its specifications. Avoid unsafe usage practices.
- If at any time the machine does not appear to be operating properly it should be stopped immediately and repaired.

THE OPERATOR MUST:

- Never operate the machine unless all guards and doors are in place and closed.
- Keep a safe distance from all moving parts - especially chains, sprockets, feeds, belts, pulleys and blades.
- Never wear loose clothing and gloves while operating the Machine.
- Cover long hair.
- Properly support long and heavy stock in front of and behind the saw.
- Never attempt to dislodge or move stock/material while the blade is moving. Take the time to stop the saw blade, remove obstructions, and start the blade.
- Wear eye and ear protection.
- Maintain proper adjustment of blade tension, blade guides, and bearings.
- Not remove jammed cut off pieces until blade has stopped.
- Not make modifications to the machine without prior approval from QED Multisaw. Any approved modifications should only be undertaken by trained, qualified personnel.

2.3 Foundation, Levelling and Anchoring

The machine location should be carefully selected. A flat concrete floor area or foundation should be chosen. It should have enough free space surrounding the machine to enable free access for safe operation and maintenance.

Machine should be levelled in both directions i.e. along and across especially when machine is to be inserted into a larger conveyor system.

Machine must be properly aligned with other machinery or material handling systems prior to fastening.

Machine must be fastened securely to the floor or machine foundation. Failure to do so will be in contradiction to these instructions and can result in excessive vibration.

Excessive vibration can result in the loosening of fasteners which could cause severe injury.

Excessive vibration can result in miss alignment of the machine or surrounding machinery.

2.4 Wiring connections:

After the machine is levelled and anchored the necessary power hook-up needs to be performed. In order to provide safe operation as well as to prevent potential damage to the machine, only qualified personnel should make the connections.

BEFORE START-UP THE FOLLOWING TWO POINTS SHOULD BE CHECKED:

- 1 Signs of damage that may have occurred during shipping to the electrical cables and hydraulic/pneumatic hoses.
- 2 The hydraulic oil level is between the upper and lower lines on the level gauge.

As supplied, the machine is set to run on three phase voltage as indicated on the serial plate and voltage label.

Power connection to the machine is made to L1, L2, L3 and Ground terminals in the main electrical box. For machines equipped with a variable frequency drive unit, an earth ground is also recommended.

During the initial hook-up it is very important to check that the phase order is correct. This is achieved by connecting the power input and checking saw and feed direction.

EARTH GROUNDING PROCEDURE

- 1 Customer to provide a sufficient ground connection for the machine.
- 2 It is desirable that the overall resistance to ground measured at the ground rod does not exceed 3 ohms. Customer is advised to consult local power company for further information on grounding.

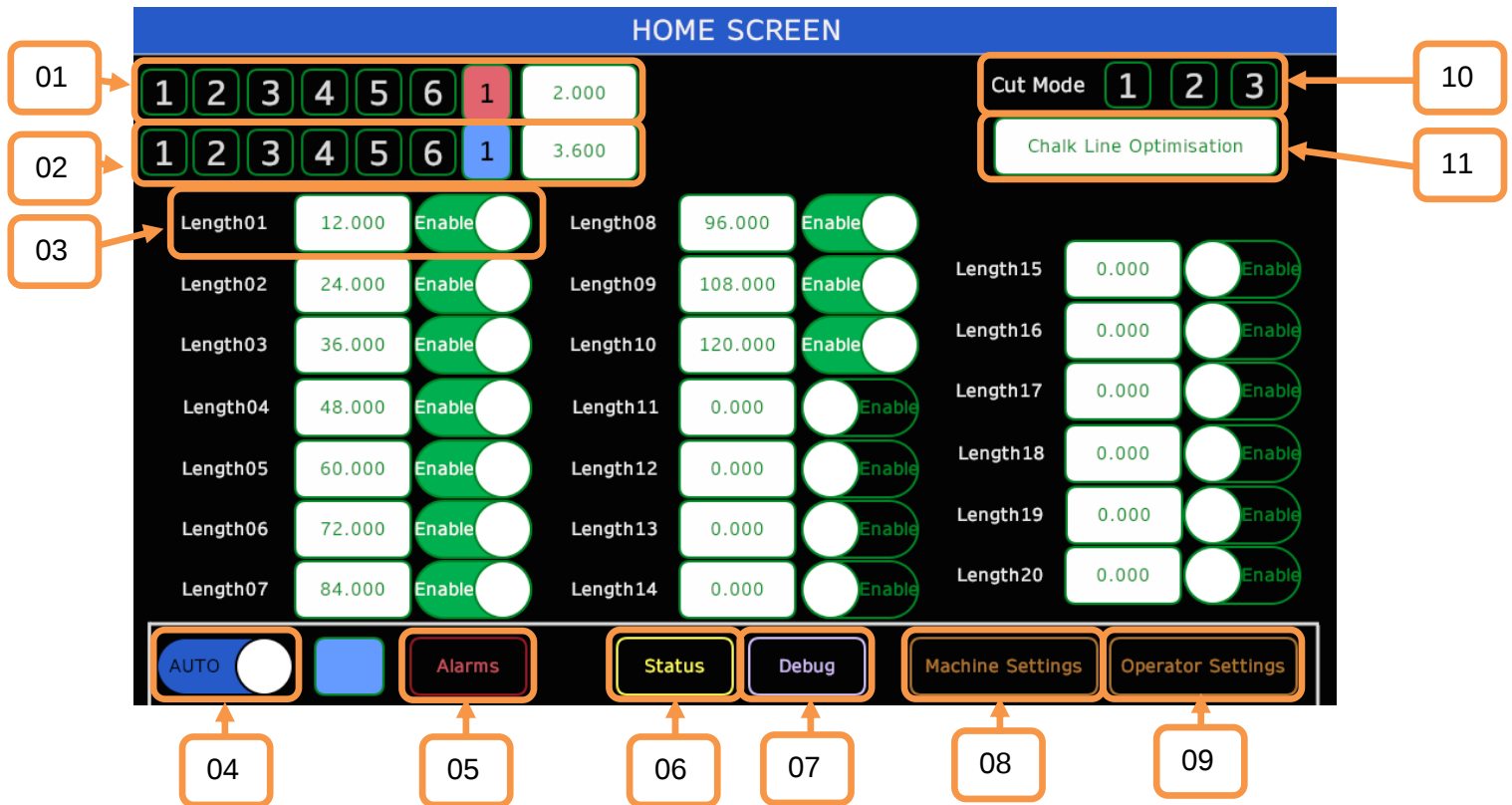
An additional point to check is ensuring continuity of ground within control enclosure. Start with main power entrance ground terminal where internal ground conductors should originate and connect to, DIN terminal strip, control transformer and the lid of control enclosure.

Properly functioning ground system will;

- Provide safety for personnel.
- Ensure correct operation of electrical/electronic devices.
- Prevent damage to electrical/electronic apparatus.
- Help dissipate lightning strokes.
- Divert stray radio frequency (RF) energy from electronic/control equipment.

SECTION 3 – HMI

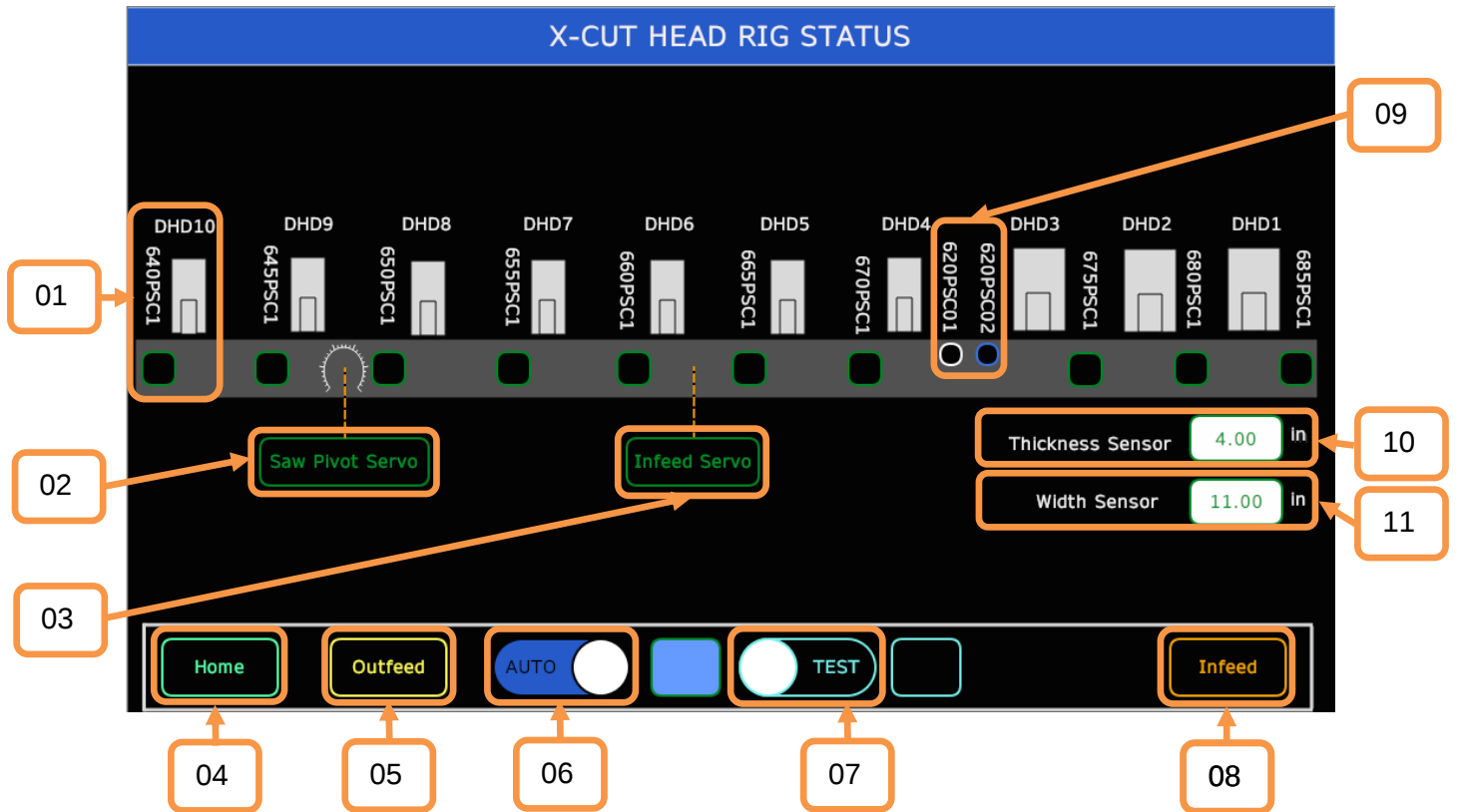
3.1 HMI Home Screen



1. Press to select the thickness category.
 - a. There are currently 6 thickness categories available, with in each category is 6 widths that can be setup and a corresponding 20 lengths.
 - b. Once the category has been selected, (in the above image category 1 is selected) the thickness can be changed by touching the numeric value. (the above thickness is currently 2")
2. Press to select the width category.
 - a. As per the thickness this can also be customized, there are 6 width categories per thickness.
3. Press to input the required length.
 - a. Each thickness and width category has 20 programmable lengths.
 - b. Each length can be toggle on and off using the ENABLE BUTTON.
4. Press to enable Auto Mode.
 - a. This enable the Xcut and allows the operator to start the system, The Xcut will sequentially start up and home the saw blade.
5. Press to access the Alarms Page
6. Press to access the Status Page
7. Press to Enable or Disable debug mode, (Used for Diagnostics)
8. Press to access the Machine Settings

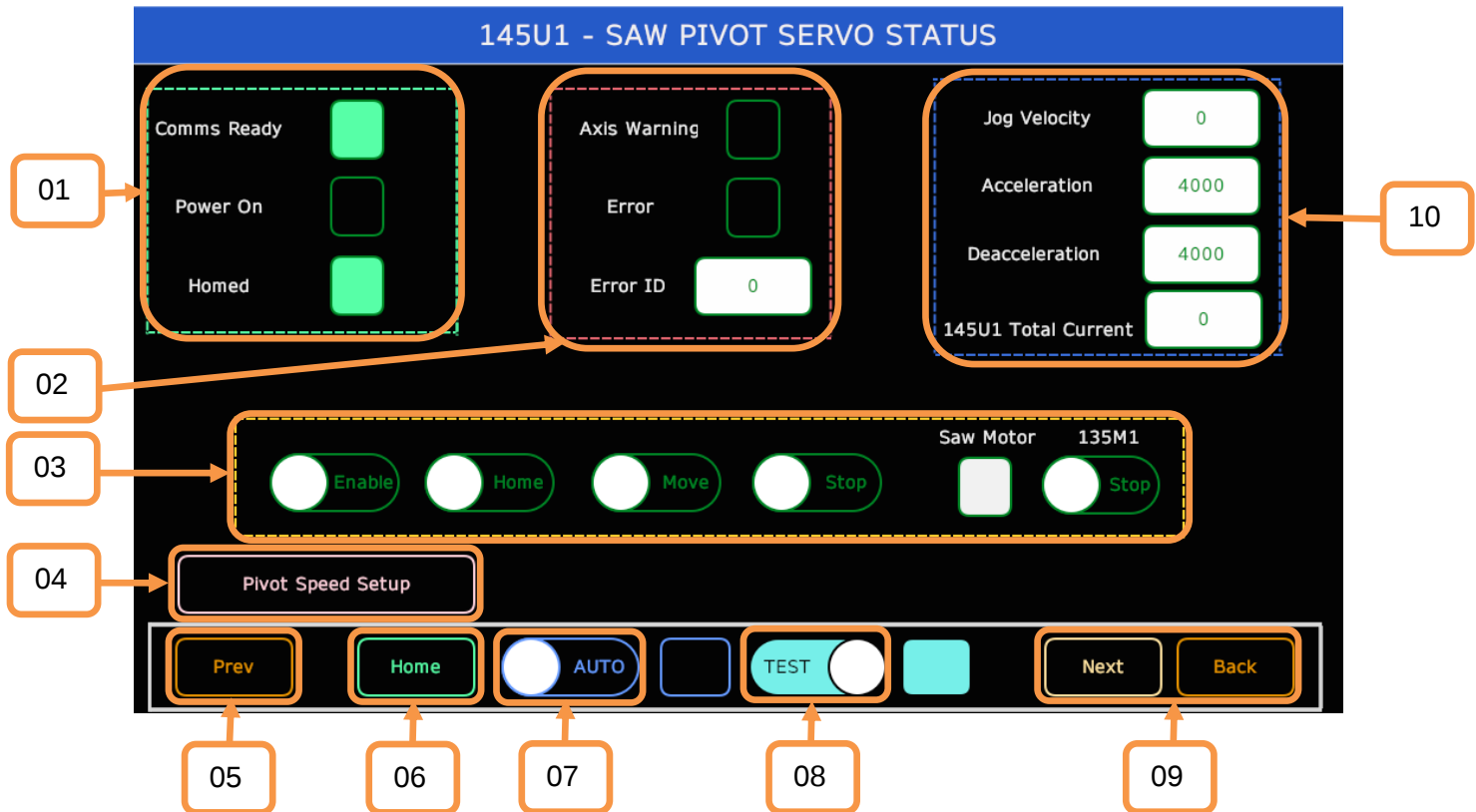
9. Press to access the Operator Settings
10. Press to access select the OPERATION MODE of the Xcut
 - a. 1. Chalk Line
 - b. 2. Optimization
 - c. 3. Chalk Line Optimization
11. Displays the Operation Mode

3.2 HMI Xcut Head Rig Status



1. Displays the status of cylinder DHD10 and sensor 640PSC1.
 - a. The indicator will highlight if the sensor is active.
 - b. When in TESTING mode and not AUTO each pneumatic cylinder can be tested.
2. Press to access the Saw Pivot Servo Settings.
3. Press to access the Infeed Servo Settings.
4. Press to access the Home Screen.
5. Press to access the Outfeed Screen.
6. Press to enable Auto – The blue indicator highlights when active.
7. Press to enable Test Mode – The blue indicator highlights when active.
8. Press to access the Infeed Screen.
9. Displays the status of the 2 Infeed Sensors.
 - a. 620PSC01 – Chalk Mark Detection Sensor.
 - b. 620PSC02 – Board Edge Detection Sensor.
10. Displays the current value of the thickness sensor.
11. Displays the current value of the width sensor.

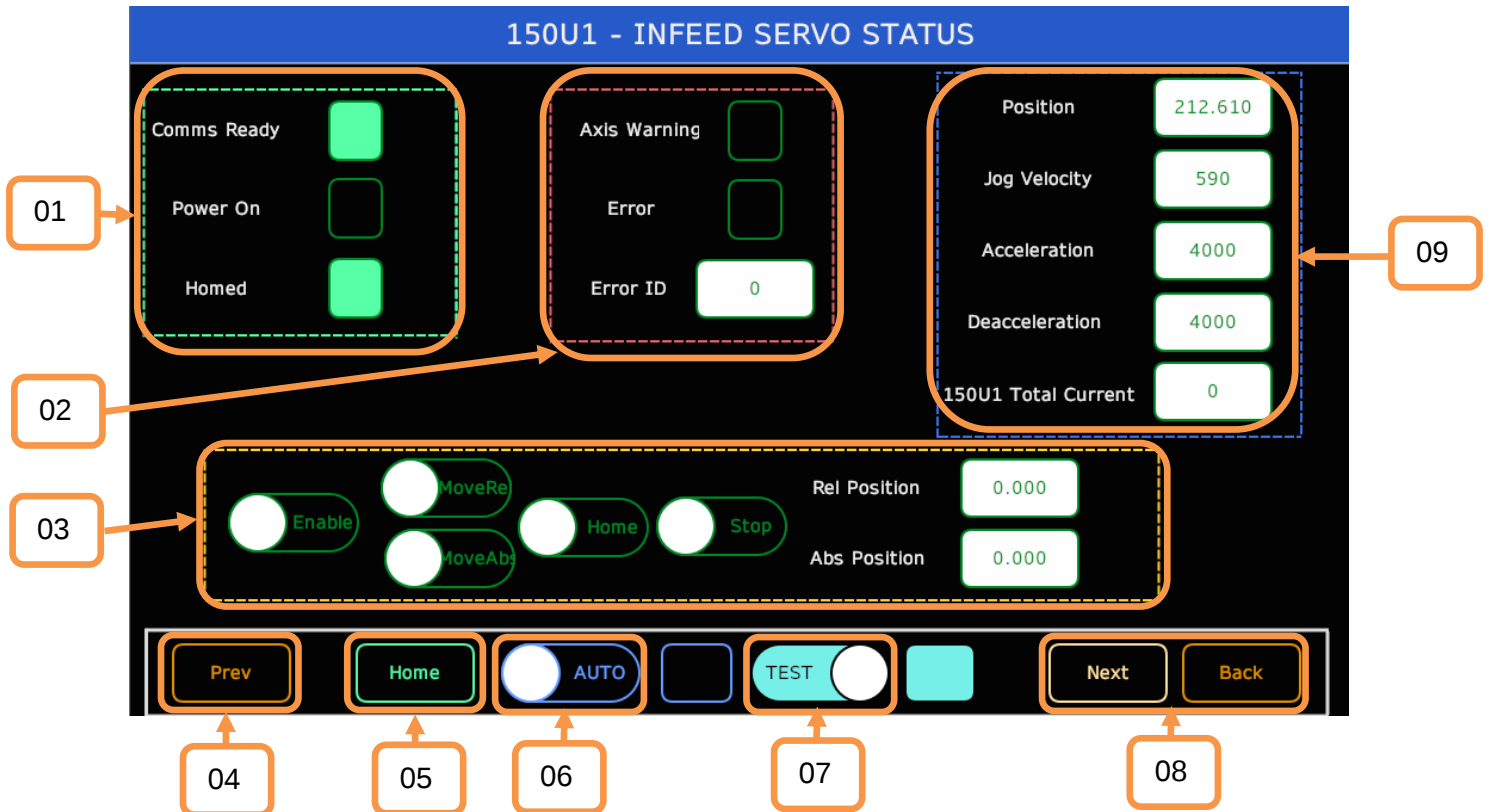
3.3 HMI Saw Pivot Servo Status



1. Displays the Status of the Saw Pivot
 - a. Comms ready will always be indicated when there are no errors.
 - b. Power On will be indicated during the movement of the drive, or when Auto is enabled, and the system has been started.
 - c. Indicates the homing status of the servo drive, after starting up the servo will home and ensure the drive is in the correct reference location.
2. Displays the Servo Warning and indicates the error ID of the fault.
3. Used for manually testing the Servo Drive.
 - a. Enable the Servo, (Test mode must be enabled).
 - b. Home – Homes the Servo.
 - c. Move – Activates the movement and completes one revolution of the pivot.
 - d. Stops – Stops the Servo Drive.
 - e. Indicates the status of the Saw Motor (135M1).
 - f. Turns the Saw Motor on and off.
4. Press to access the Saw Pivot Speeds.
5. Press to go to the Previous Page.
6. Press to go to the Home Page.
7. Press to enable Auto Mode.
8. Press to enables Test Mode.
9. Press to go to Back or to the Next Page.

10. Used to set the parameters of the Pivot Servo Drive
 - a. Velocity
 - b. Acceleration
 - c. Deceleration
 - d. Total Current – Max current load before tripping

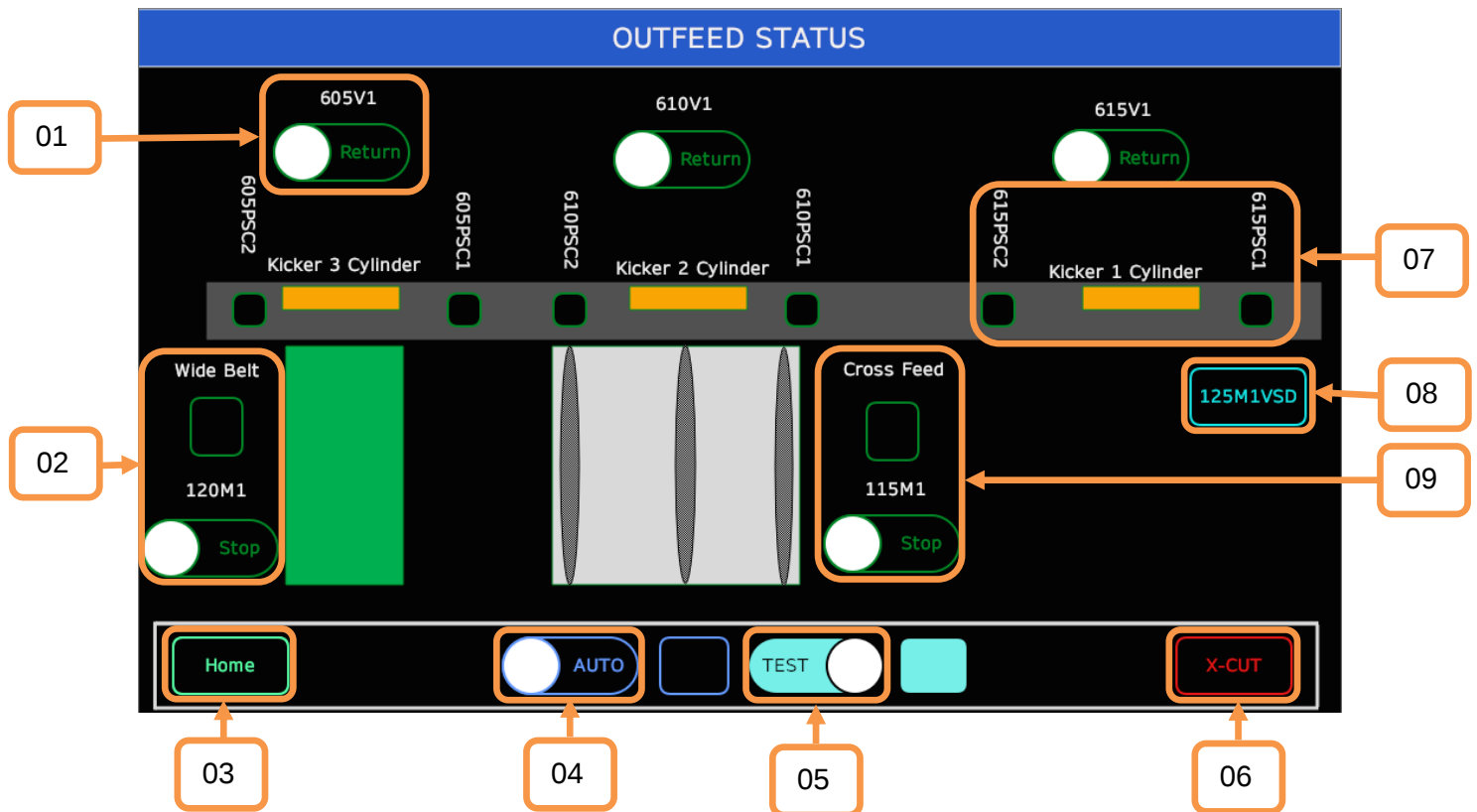
3.4 HMI Infeed Servo Status



1. Displays the Status of the Infeed Servo
 - a. Comms ready will always be indicated when there are no errors.
 - b. Power On will be indicated during the movement of the drive, or when Auto is enabled, and the system has been started.
 - c. Indicates the homing status of the servo drive, after starting up the servo will home and ensure the drive is in the correct reference location.
2. Displays the Servo Warning and indicates the error ID of the fault.
3. Used for manually testing the Servo Drive.
 - a. Enable the Servo, (Test mode must be enabled).
 - b. Move Relative – Moves to a relative position which can be set on the right.
 - c. Move Absolute – Moves to an absolute position which can be set on the right.
 - d. Home – Homes the Servo.
 - e. Stops – Stops the Servo Drive.
4. Press to go to the Previous Page.
5. Press to go to the Home Page.
6. Press to enable Auto Mode.
7. Press to enables Test Mode.
8. Press to go to Back or to the Next Page.

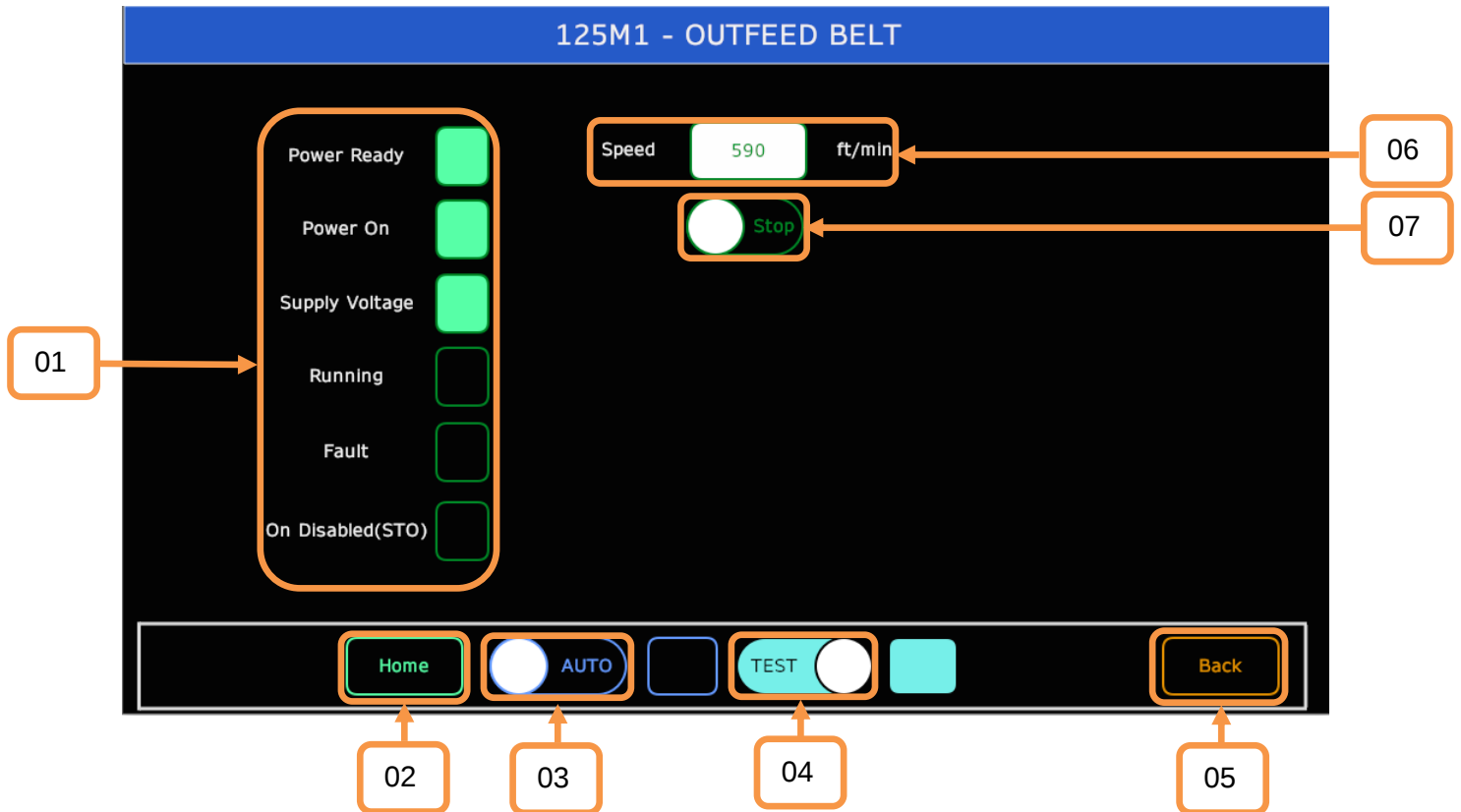
9. Used to set the parameters of the Pivot Servo Drive
 - a. Position – Indicates the current position of the Servo Drive
 - b. Velocity
 - c. Acceleration
 - d. Deceleration
 - e. Total Current – Max current load before tripping

3.5 HMI Outfeed Status



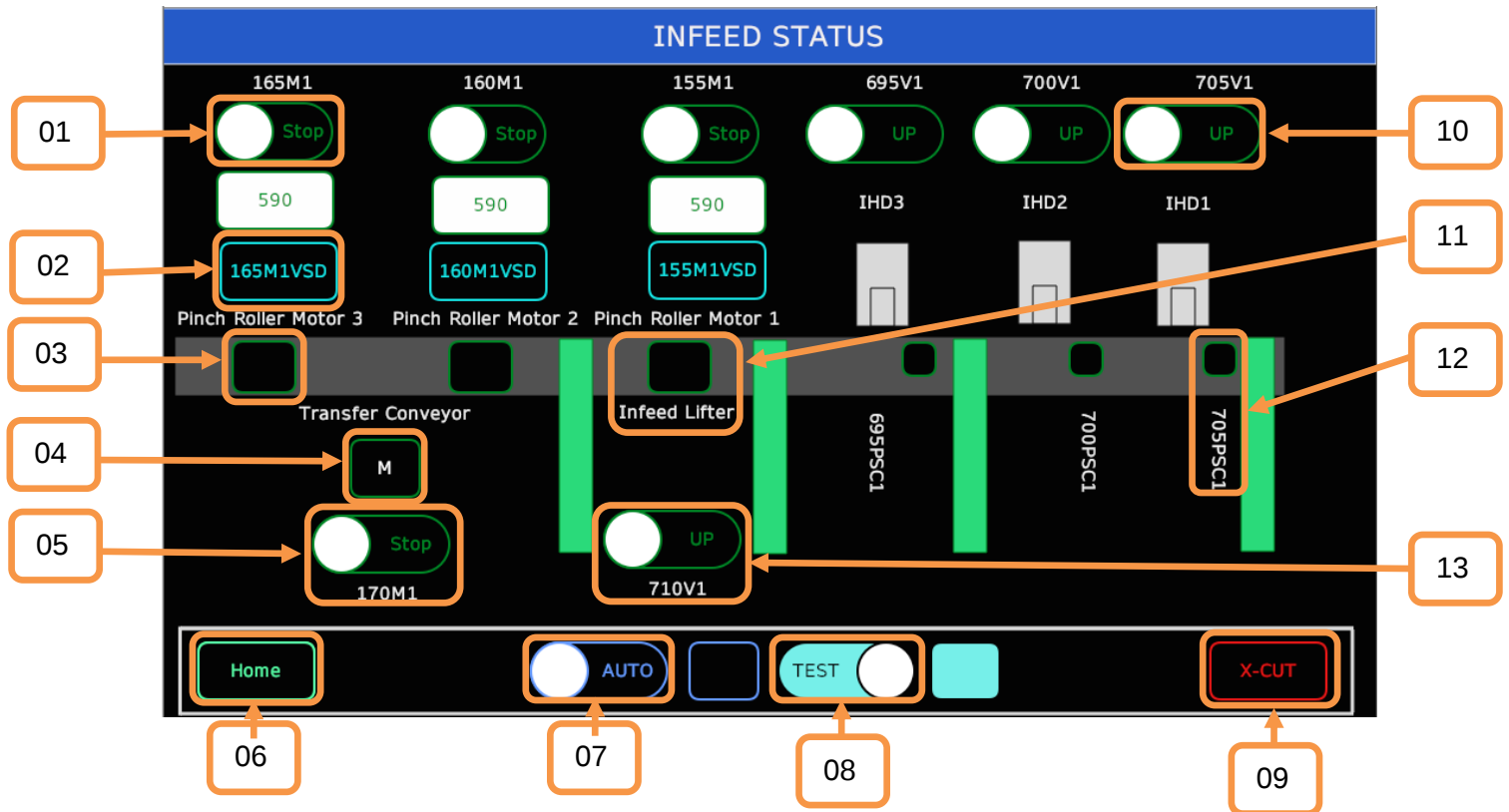
1. Used to manually activate the kickers on the outfeed belt.
 - a. Ensure Testing Mode is enabled
2. Used to stop and start the Wide Belt when testing mode is enabled.
3. Press to go to the Home Page.
4. Press to enable Auto Mode.
5. Press to enable Test Mode.
6. Press to go to the Xcut Page.
7. Indicated the status of the sensors on the outfeed belt.
8. Press to go to the VSD 125M1 Setup Page.
9. Used to stop and start the Cross Feed when testing mode is enabled.

3.6 HMI Outfeed Belt



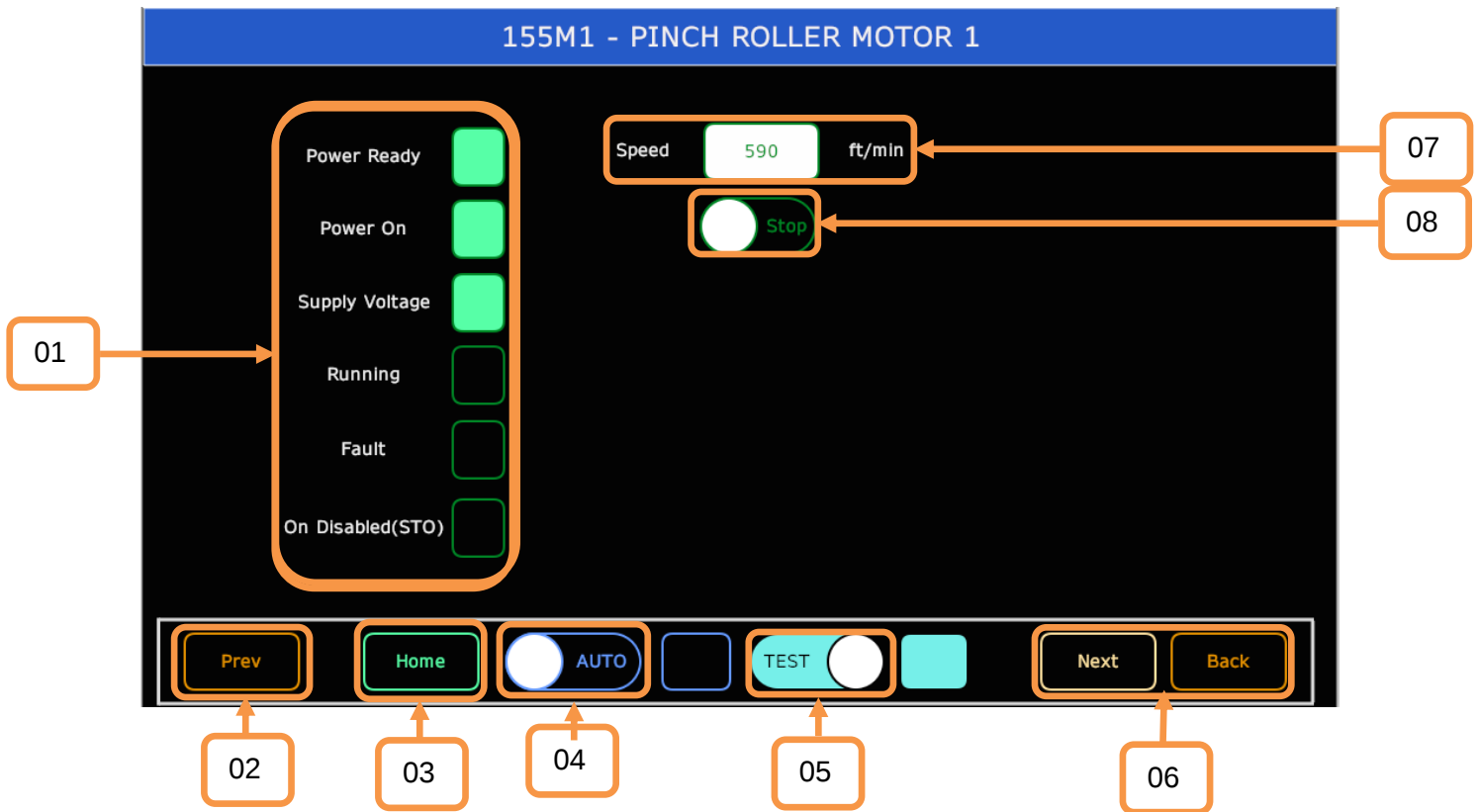
1. Indicates the Status of the outfeed VSD 125M1
2. Press to go to the Home Page.
3. Press to enable Auto Mode.
4. Press to enable Test Mode.
5. Press to go Back to the previous page.
6. Used to input the feed speed of the Outfeed Conveyor Belt.
7. Stop and Start the Belt when testing mode is enabled.

3.7 HMI Infeed Status



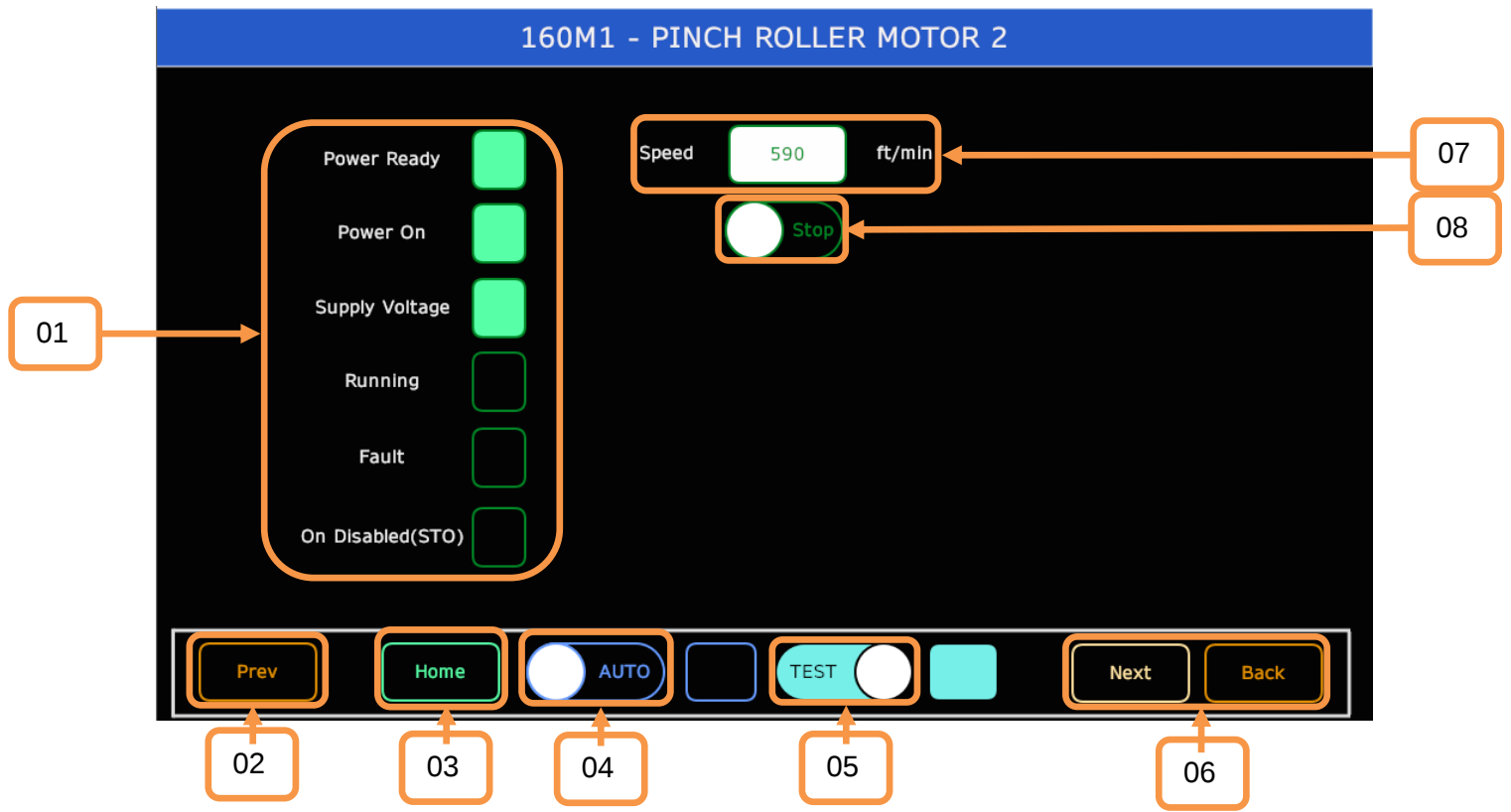
1. Press to manually start the infeed motors (165M1, 160M1 and 155M1).
2. Press to go to the VSD setup page for each motor.
3. Indicates is the motor is running.
4. Indicates if the Transfer Cross Feed in running.
5. Toggles the Transfer Cross Feed on and off.
6. Press to go to the Home Page.
7. Press to enable Auto Mode.
8. Press to enable Test Mode.
9. Press to go to the Xcut Page.
10. Toggle the Infeed Up and Down.
11. Indicates if the Infeed Lifter is Up or Down.
12. Indicator for the Cylinder Sensor (Auto Switch).
13. Toggles the infeed Lifter Up or Down.

3.8 HMI Pinch Roller Motor 1



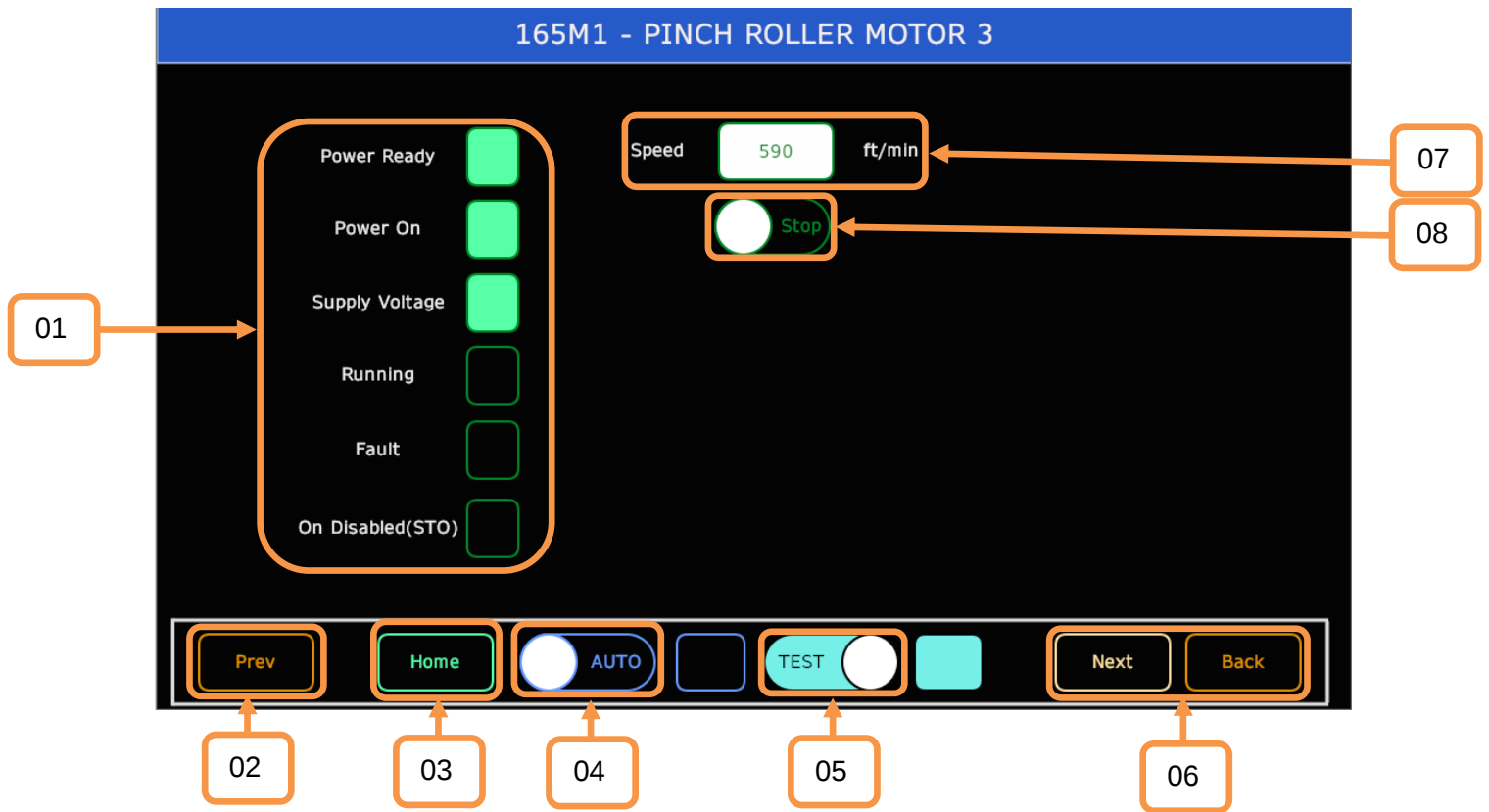
1. Indicates the Status of the Infeed VSD 155M1.
2. Press to go to the Previous Page.
3. Press to go to the Home Page.
4. Press to enable Auto Mode.
5. Press to enables Test Mode.
6. Press to go to Back or to the Next Page.
7. Used to input the feed speed of the Pinch Infeed Roller.
8. Stop and Start the Pinch Infeed Roller when testing mode is enabled.

3.9 HMI Pinch Roller Motor 2



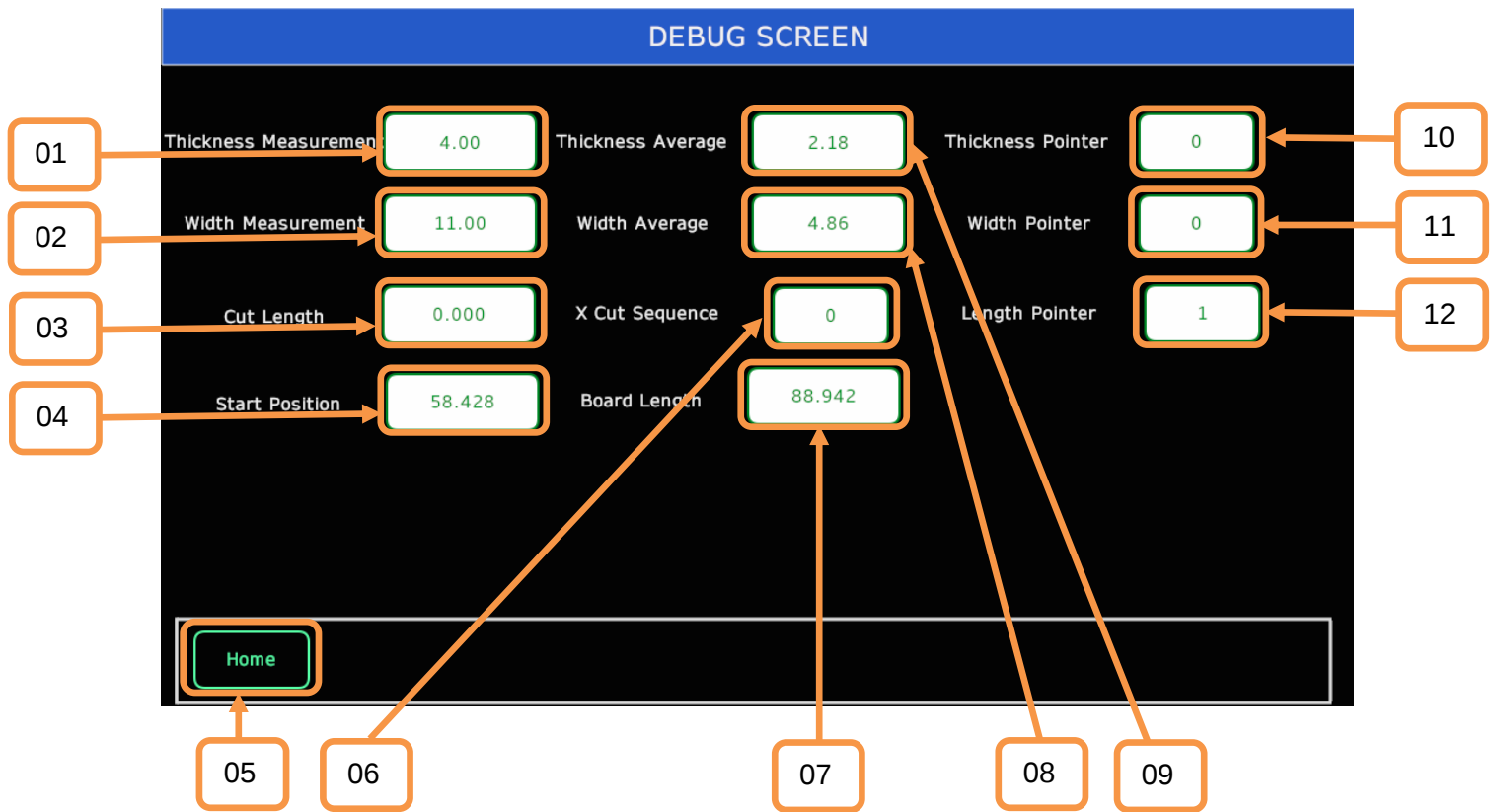
1. Indicates the Status of the Infeed VSD 160M1.
2. Press to go to the Previous Page.
3. Press to go to the Home Page.
4. Press to enable Auto Mode.
5. Press to enable Test Mode.
6. Press to go to Back or to the Next Page.
7. Used to input the feed speed of the Pinch Infeed Roller.
8. Stop and Start the Pinch Infeed Roller when testing mode is enabled.

3.10 HMI Pinch Roller Motor 3



1. Indicates the Status of the Infeed VSD 165M1.
2. Press to go to the Previous Page.
3. Press to go to the Home Page.
4. Press to enable Auto Mode.
5. Press to enable Test Mode.
6. Press to go to Back or to the Next Page.
7. Used to input the feed speed of the Pinch Infeed Roller.
8. Stop and Start the Pinch Infeed Roller when testing mode is enabled.

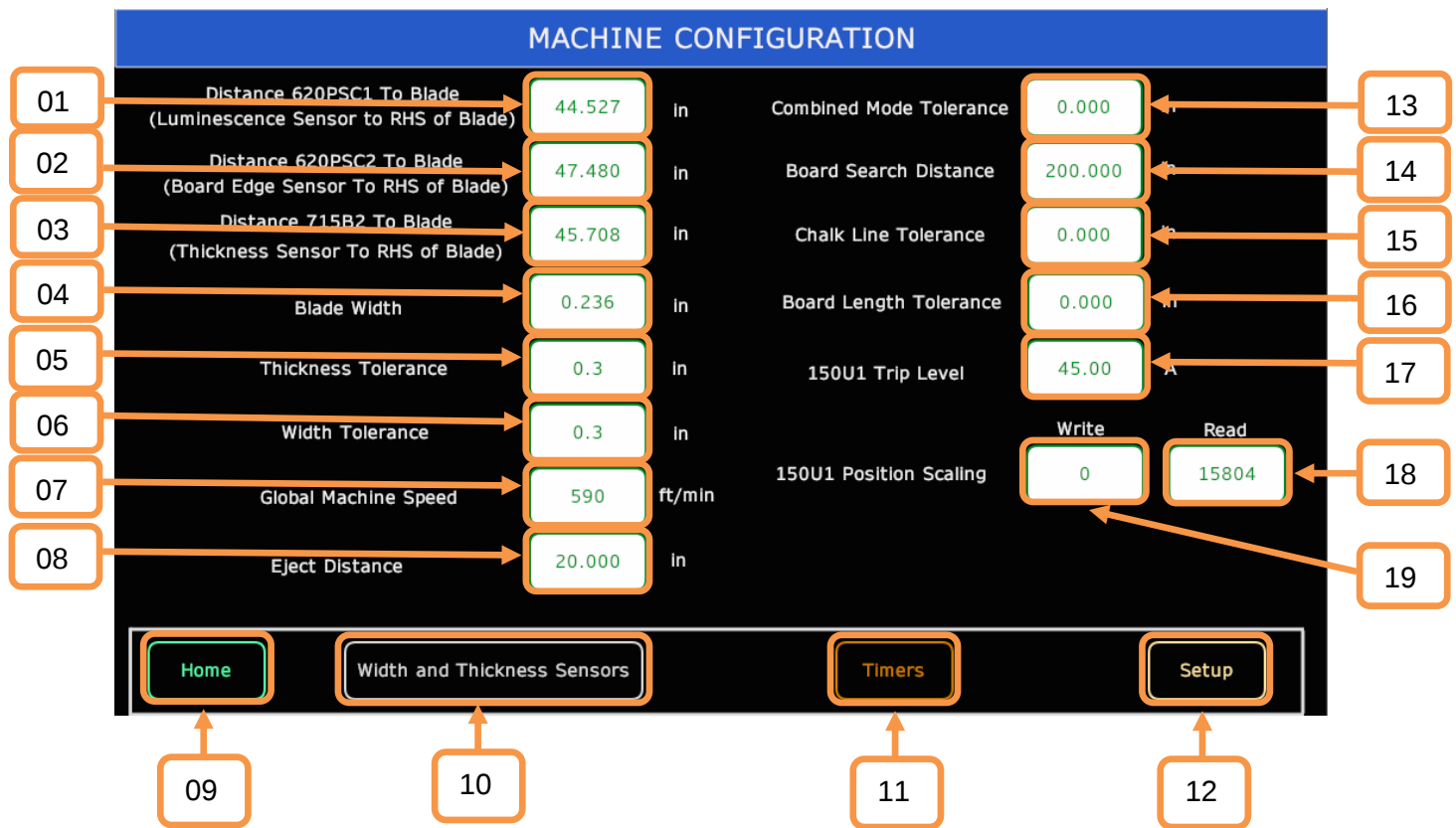
3.11 HMI Debug Screen



The Debug Screen indicates the current status of the machine and or the decision that has been made according to the criteria.

1. Current Thickness Measurement, of the incoming piece of timber.
2. Current Width Measurement, of the incoming piece of timber.
3. Current Cut Length selected; this will be decided by the criteria of the home screen.
4. Start Position of the board in reference to the board detection sensor.
5. Press to go to the Home Page.
6. Current board in the Sequence.
7. Total Board Length.
8. Width Average of the scanned board.
9. Thickness Average of the scanned board.
10. Thickness Pointer – Indicates which thickness category has been selected.
11. Width Pointer – Indicates which width category has been selected.
12. Length Pointer – Indicates which length category has been selected.

3.12 HMI Machine Configuration



1. Distance from the Luminescence sensor to the blade.
2. Distance from the board detection sensor to the blade.
3. Distance from thickness sensor to the blade.
4. Blade width.
5. Thickness tolerance, the variance allowed in the material.
6. Width tolerance, the variance allowed in the material.
7. Global machine speed in ft/min.
8. Eject Distance – the distance after the last cut the timber will be driven out.
9. Press to go to the Home Page.
10. Press to go to the Width and Thickness Sensor setup.
11. Press to go to the Timers Page.
12. Press to go to the Setup Page.
13. Combined mode tolerance – (leave as 0, no tolerance allowed).
14. Board search distance – the distance the timber will be moved while searching for a length or chalk line.
15. Chalk line tolerance – (leave as 0, no tolerance allowed).
16. Board length tolerance – (leave as 0, no tolerance allowed).
17. Trip Level – max amp draw before tripping the feed servo.
18. Length calibration of the infeed servo drive.

3.13 HMI Thickness/Width Sensor



1. Calibration for the thickness sensor.
2. Maximum output for the thickness sensor.
3. Calibration for the width sensor.
4. Maximum output for the width sensor.
5. Press to go to the Home Page.
6. Press to go to the Back.
7. Current mA reading for the thickness sensor.
8. Current scaled value for the thickness sensor.
9. Current mA reading for the width sensor.
10. Current scaled value for the width sensor.

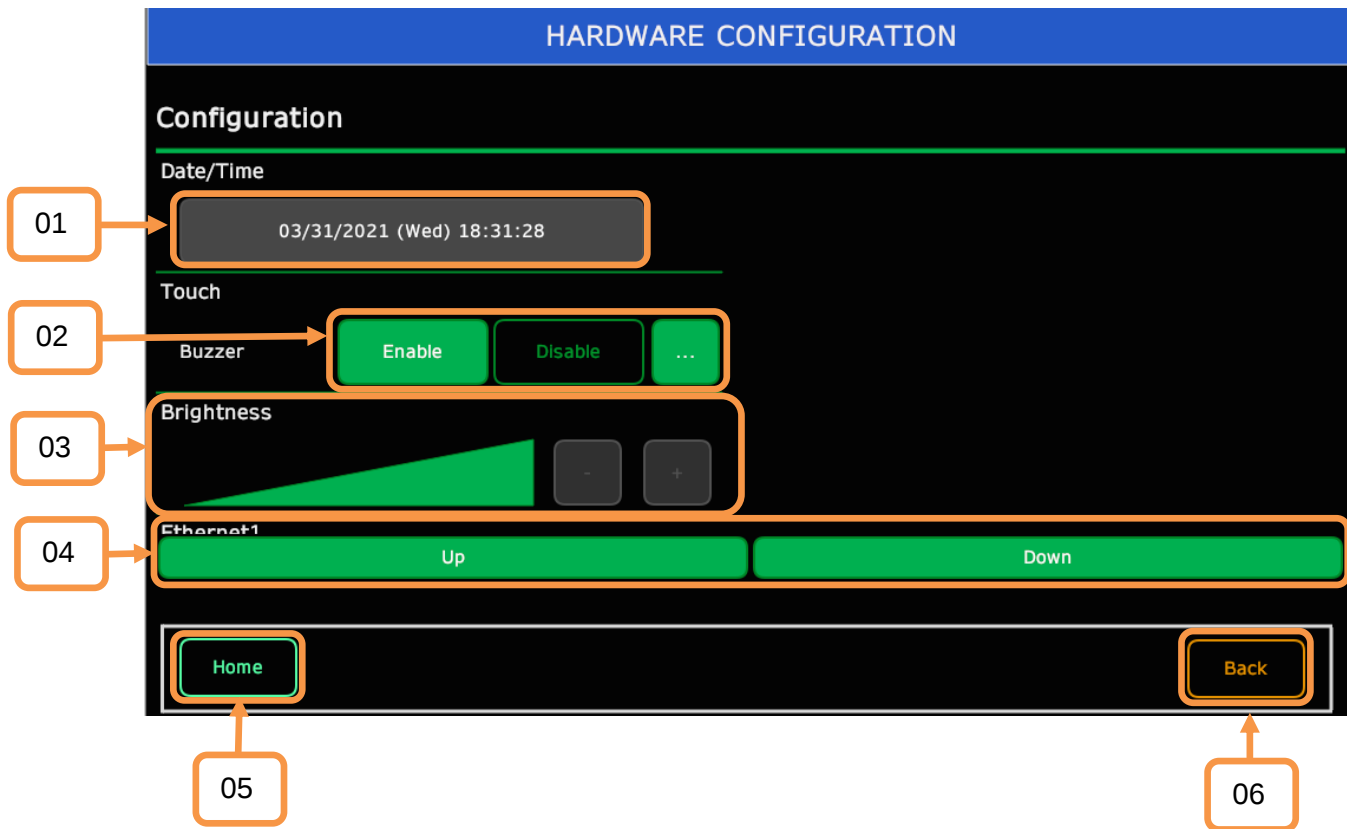
3.14 HMI Digital Input Timer Configuration

On Delay		Off Delay		On Delay		Off Delay		On Delay		Off Delay	
600S1	0	0	640PSC1	0	0	695PSC1	0	0	630U1	0	0
605PSC1	0	0	645PSC1	0	0	700PSC1	0	0	630U2	0	0
605PSC2	0	0	650PSC1	0	0	705PSC1	0	0			
610PSC1	0	0	655PSC1	0	0	710KR1	0	0			
610PSC2	0	0	660PSC1	0	0	905S1	0	0			
615PSC1	0	0	665PSC1	0	0	905S2	0	0			
625TW1	0	0	670PSC1	0	0	905S3	0	0			
625TW2	0	0	675PSC1	0	0	905S4	0	0			
625TW3	0	0	680PSC1	0	0	905S5	0	0			
625TW4	0	0	685PSC1	0	0	685V1	0				

Home Back

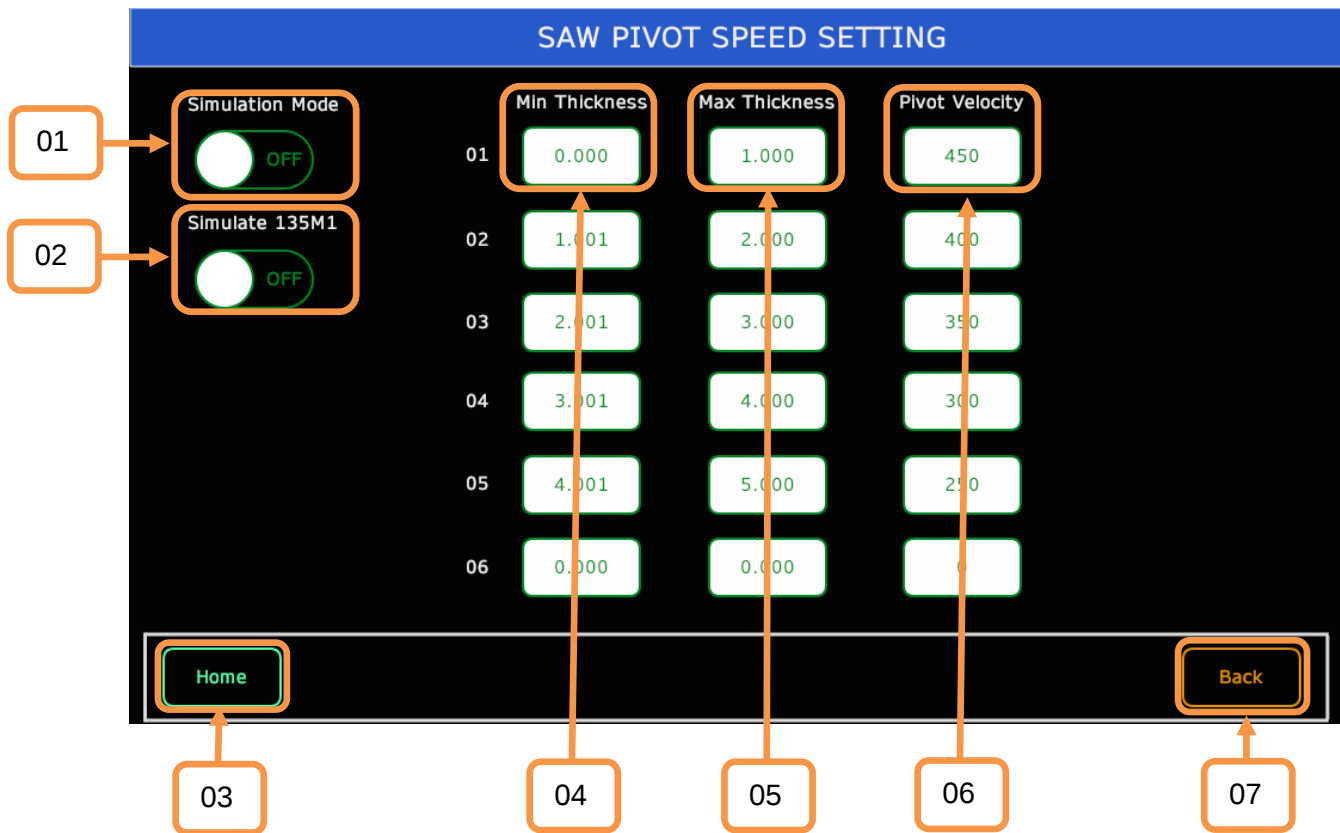
1. Used to set the Delay ON, of all the sensors present on the Xcut.
2. Press to go to the Home Page.
3. Press to go to Back.
4. Used to set the Delay OFF, of all the sensors present on the Xcut.

3.15 HMI Hardware Configuration



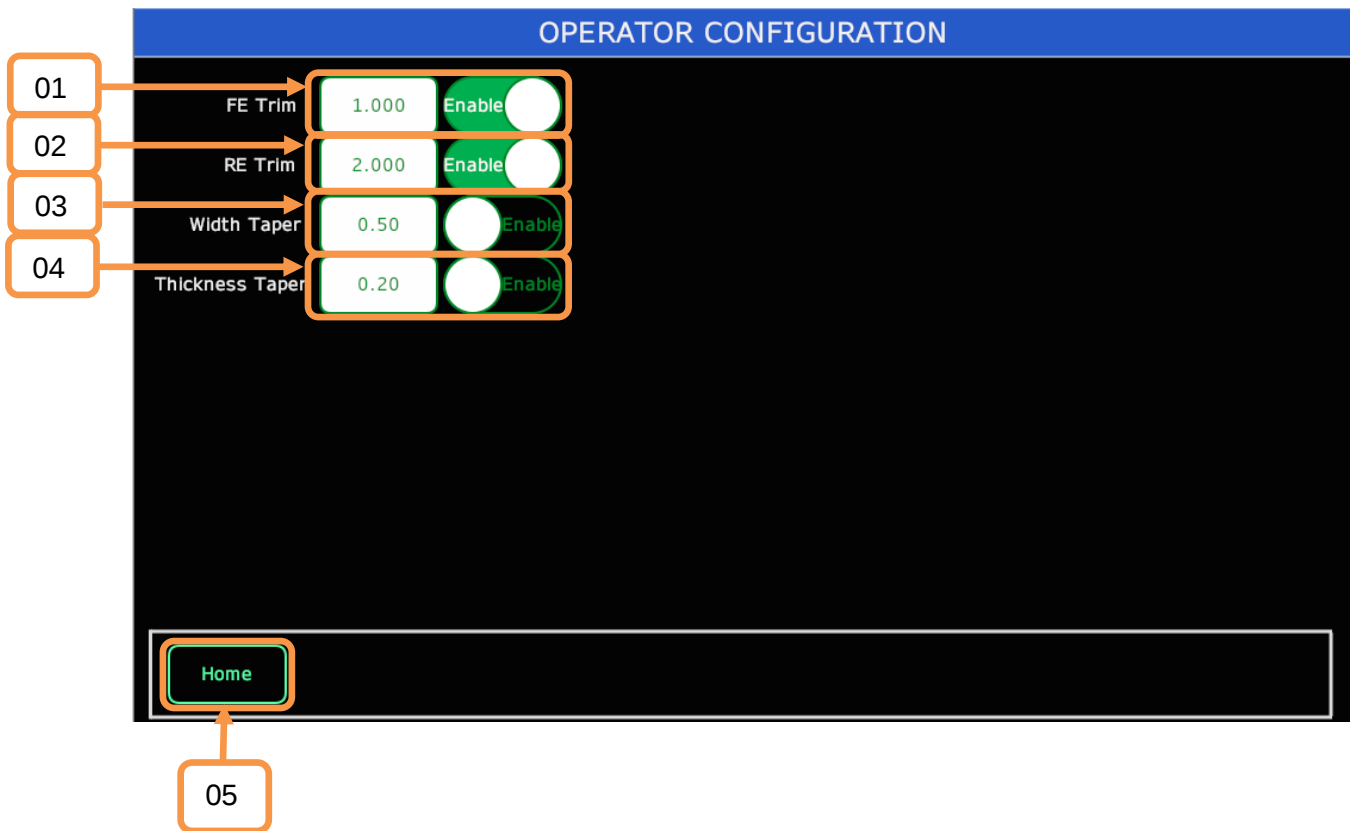
1. Set the Date and Time on the HMI
2. Set the touch buzzer or feedback of the HMI
3. Set the Brightness of the HMI
4. Set the TCP/IP of the HMI
5. Press to go to the Home Page.
6. Press to go to Back.

3.16 HMI Saw Pivot Speed Setting



1. Enable Simulation Mode
2. Simulate the Pivot Speed of the Saw Pivot
3. Press to go to the Home Page.
4. Set the Minimum Thickness for the Speed thresholds.
5. Set the Maximum Thickness for the Speed thresholds.
6. Set the Velocity for the Speed thresholds.
7. Press to go to Back.

3.17 HMI Operator Configuration



1. Turn the front-end trim on and off and set the length of the front-end trim (currently 1")
2. Turn the rear-end trim on and off and set the length of the rear-end trim (currently 2")
3. Turn the width taper detection on and off, set the amount taper deviation (currently 0.5" per reading variance).
4. Turn the thickness taper detection on and off, set the amount taper deviation (currently 0.2" per reading variance).
5. Press to go to the Home Page.

3.18 HMI Alarm Screen

The screenshot displays the 'ALARM SCREEN' interface. At the top, a blue header bar contains the title 'ALARM SCREEN'. Below this is a green table with three columns: 'Active Date', 'AlarmStatus', and 'AlarmMessage'. The table contains four rows of data, all with 'Active' status. Below the table is a large green rectangular area. At the bottom of the screen is a black bar containing a green 'Home' button. An orange arrow points from a box labeled '02' at the bottom left to the 'Home' button.

Active Date	AlarmStatus	AlarmMessage
03/31/2021	Active	905S5-EStop Pressed
03/31/2021	Active	110C1-Safety Contactor OFF
03/31/2021	Active	660V1-Driven Hold Down 6-Up Fault
03/31/2021	Active	670V1-Driven Hold Down 4-Up Fault

Home

02

1. Displays the Active alarm and Status.
2. Press to go to the Home Page.

SECTION 4 – OPERATION GUIDE

4.1 BASIC OPERATION GUIDE

START UP GUIDE

1. Ensure all persons are clear of moving parts.
2. Ensure that the machine is free of timber and any other hazardous material.
3. Disable the EMERGENCY STOPS and TRIP WIRES if installed.
4. Ensure that air is connected to the Xcut.
5. Press the RESET BUTTON and hold the reset button until the air is activated.
6. Check that you are in the correct operation mode for your application.
7. Press the GREEN START BUTTON.
 - a. The Xcut will start sequentially.
 - b. The Saw Pivot will home.
 - c. Once all is started and homing is complete, The Xcut is ready to run.
8. Press the ESTOP in the case of an emergency.
9. Press the STOP BUTTON to stop the system.
 - a. Avoid stopping before the last piece of timber has been fully processed and kicked off the narrow belt.

4.2 OPERATION GUIDE

4.2.1 Safety

1. Ensure all persons are clear of moving parts.
 - a. Once the start button has been engaged the infeed and Xcut rollers and the outfeed belt will start running.
2. Ensure that the machine is free of timber and any other hazardous material.
 - a. Small Pieces of timber left behind in the machine could potentially hinder the infeed of timber.
3. Disable the EMERGENCY STOPS and TRIP WIRES if installed.
4. Ensure that air is connected to the Xcut.

4.3.2 Operation of the Saw

1. The following needs to be check as this could affect the start location of the first cut. The measurements are all in inches and accurate to 3 decimal places.
 - a. Distance from the Luminescence sensor to the blade.
 - b. Distance from the board detection sensor to the blade.
 - c. Distance from thickness sensor to the blade.
 - d. Blade width.
2. Ensure the correct mode has been selected for the operation of the Xcut.
 - a. Chalk line (1)
 - i. This mode will only cut on chalk lines.
 - b. Optimization (2)
 - i. Cuts as per the categories, if no category can be found the piece will be cut according to category 6/6, If the criteria is still not meet the timber will be ejected.
 - c. Chalk line with optimization (3)
 - i. Cuts the optimal length between chalk lines.
 - ii. This mode also looks at the same categories as per optimization.
3. Ensure that the Speeds are setup correctly, (the settings in the HMI images can be used as Defaults)
 - a. The Global speed function is used to set the optimal running speed currently 590 ft/min.
 - b. Ensure the ejected distance is set to minimum 20" as this will prevent the timber being left behind in the machine and hindering the next piece of timber.

4.3.2 Operation of the Saw

4. Press the RESET BUTTON and hold the reset button until the air is activated.
5. Check that you are in the correct operation mode for your application.
6. Press the GREEN START BUTTON.
 - a. The Xcut will start sequentially.
 - b. The Saw Pivot will home.
 - c. Once all is started and homing is complete, The Xcut is ready to run.
7. Once the Xcut receives the signal from the infeed that a piece of timber is present, and the Xcut is in a ready state.
 - a. The Loading arms will lift, transferring the timber to the infeed.
 - b. Once the sensors on the infeed are made the Loading deck will drop and rollers will engage, feeding the timber into the Xcut.
 - c. Once the timber has been processed and the next board is ready the loop will continually load and process timber.
8. Press the ESTOP in the case of an emergency.
9. Press the STOP BUTTON to stop the system.
 - a. Avoid stopping before the last piece of timber has been fully processed and kicked off the narrow belt.

4.3 OPERATION MODES

4.3.1 CHALK LINE MODE

1. The mode is selected on the HOME screen.
2. The Xcut will cut on chalk lines only.
3. The operator can select to have a FRONT TRIM or REAR TRIM enabled.
 - a. This can be found under the OPERATOR SETTINGS on the HOME screen

4.3.2 OPTIMIZATION MODE

1. The mode is selected on the HOME screen.
2. The Xcut will cut optimized lengths.
 - a. The lengths are set in the categories using the 6 width and 6 thickness available.
 - b. Each category has 20 programable lengths these can also be enabled and disabled using the TOGGLE SWITCHS as per 3.1 HOME SCREEN.
 - c. If no WIDTH or THICKNESS class can be found, category 6/6 is selected as the default group.
3. The operator can select to have a FRONT TRIM or REAR TRIM enabled.
 - a. This can be found under the OPERATOR SETTINGS on the HOME screen
4. The Xcut will Ignore chalk lines during this operation.

4.3.3 CHALK LINE OPTIMIZATION MODE

1. The mode is selected on the HOME screen.
2. The Xcut will cut optimized lengths between chalk lines.
 - a. Using the same categories as for the optimization mode.
 - b. The Xcut will cut on chalk lines and then cut the remainder to the nearest optimized length.
3. The operator can select to have a FRONT TRIM or REAR TRIM enabled.
 - a. This can be found under the OPERATOR SETTINGS on the HOME screen

SECTION 5 – Parts Lists

SECTION 6 – TROUBLE SHOOTING

SECTION 7 – WARRANTY

Warranty

Pinnacle-SA (PTY) Limited warrants parts/components on each new machine to be free from failure resulting from defective material and workmanship under proper use and service for a period of six months on following the date of shipment from the factory.

Pinnacle-SA (PTY) Limited sole obligation under this warranty is limited to the repair or replacement without charge, at Pinnacle factory, warehouse, or approved repair shop any part or parts which Pinnacles inspection shall disclose to be defective. Return freight must be prepaid by the user.

This warranty, in its entirety, does not cover maintenance items, including but not limited to lubricating grease and oils, filters, V-belts, saw blades, etc., nor any items therein which show signs of neglect, overloading, abuse, accident, inadequate maintenance, or unauthorized altering.

MOTOR, GEARBOX, PUMP, ELECTRIC COMPONENTS, VALVES, HOSES, FITTINGS, and any other items used in the manufacture of Multisaw machinery, but not originally manufactured by Multisaw are subject to the original manufacturer's warranty. Multisaw will provide such assistance and information as is necessary and available to facilitate the user's claim to such other manufacturer.

Liability or obligation on the part of Multisaw for damages, whether general, special or for negligence and expressly including any incidental and consequential damages is hereby disclaimed. Pinnacle obligation to repair or replace shall be the limit of its liability under this warranty and the sole and exclusive right and remedy of the user.

THIS WARRANTY IS EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, WRITTEN OR ORAL, INCLUDING WITHOUT LIMITATION ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

This warranty may not be changed, altered, or modified in any way except in writing by Pinnacle-SA (PTY) Limited

For parts or on-line technical support, please contact the Pinnacle Team