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HydraFiber®
ADVANCED SUBSTRATE

HydraFiber® Expander User's Manual

AGRINOMIX®

MACHINE TOOLS FOR GROWERS

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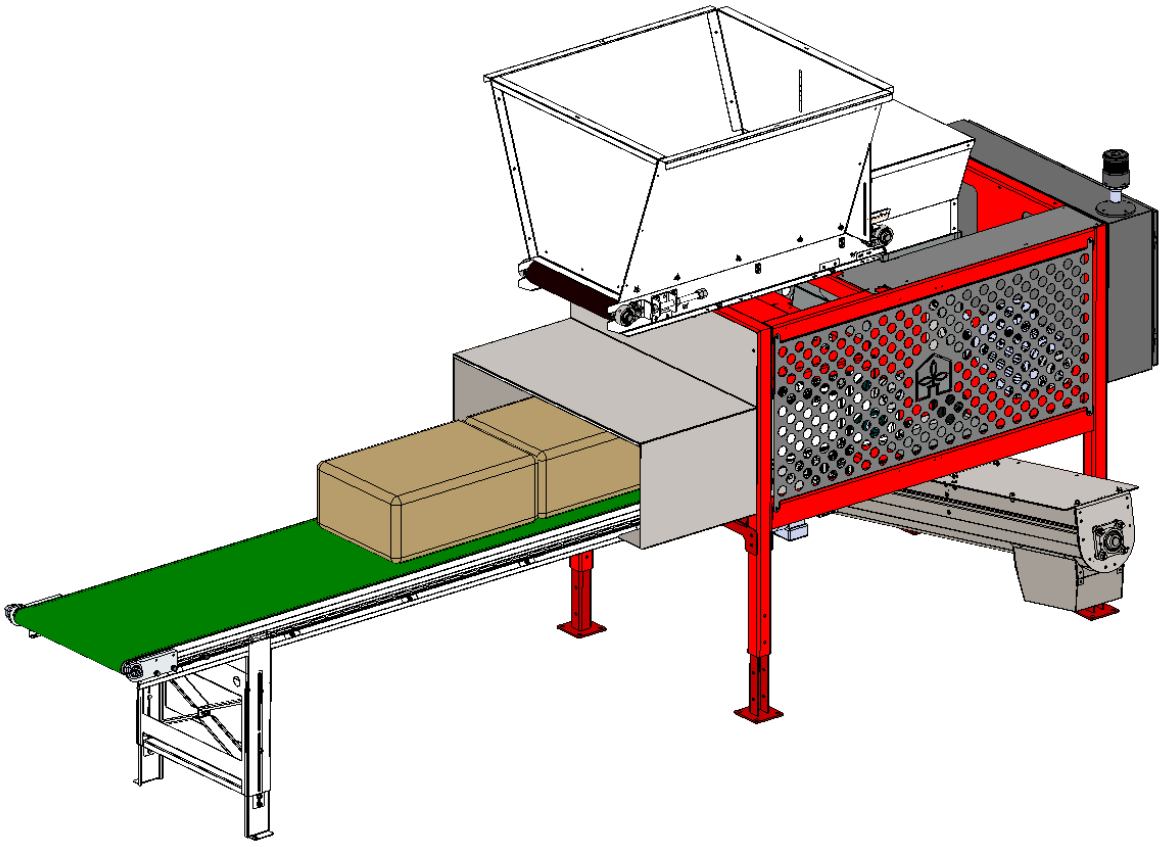
HydraFiber™ Expander



User's Manual

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customer: ..... date of order: / /

order no.: ..... delivery date: / /

model number: **A53040-620-000-xxx** serial number: ……..

Rev. 12-2019

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AGRINOMIX®
MACHINE TOOLS FOR GROWERS

MACHINE SPECIFICATIONS

Type: Milling / Shredding- HydraFiber™ Expander

Machine no. : ..... Year: .....

Machine weight:	2200 pounds (typical)		
Power supply:	208/230 VAC 3 Phase 60 Hz		50.1 Amp
Control circuit voltage:	24 DC		
Fiber bale pinch roller motor:	0.5HP	208-230V	1.85/1.84 Amp
Fiber bale conveyor motor:	0.12HP	230V	0.76 Amp
Peat hopper motor:	0.5HP	208-230V	1.85/1.84 Amp
Fiber shredder motor, upper:	5.0HP	208/230V	13.2/12.6 Amp
Fiber shredder motor, lower:	7.5HP	208-230V	19.2/17.7 Amp
Soil mixer/auger motor:	2.0HP	208-230V	5.95/5.58 Amp

A. CONDITIONS OF USE

1. This machine must only be operated by trained personnel, who have familiarized themselves with the information in this user's manual.
2. The operator must be positioned as indicated in chapter E. Work Positions of this manual, with the processor set up to operate properly and safely as described in chapter F. Instructions - 3.Settings.
3. The operator needs to be aware that some moving parts cannot be covered for technical reasons and that they are a potential danger during operation (see Chapter E. Work Positions).
4. Never wear loose clothing or jewelry when operating and/or setting up the machine and any attached optional equipment.
5. The machine is intended for the shredding of compressed HydraFiber™ bales and processing/blending with soil of typical components that are free of foreign objects. Attempting to process a bale or soil which is not approved by the manufacturer may damage the machine, and be unsafe, and as such, no responsibility will be borne by the manufacturer.
6. Moving of the machine may only take place as described in (see Chapter C. Moving The Machine).
7. The machine may only be connected to the electrical power supply as indicated, conforming to local electrical code.
8. Turn off the machine and observe proper electrical lockout/tagout procedures before initiating maintenance or repair work.
9. Setting or making mechanical adjustments must only take place when the machine is stopped.
10. All protective covers must be left in place and no safety devices/switches whatsoever may be switched off or removed during operation.
11. Never try to remove bale jams or foreign objects while the machine is still running. When removing such objects ensure that the machine CANNOT be re-started.
12. Install the machine in a well illuminated workspace in order to enable safe operation and prevent accidents.
13. The machine must not be set up in a dangerous area, such as near explosive or poisonous chemicals or sprays, or in the pathway of heavy machinery traffic, so that the health and safety of the operator is not endangered.
14. The noise of the machine (at the appropriate work position) can exceed 85 dB (A). In this case ear protection is required for the operator.
15. Only replacement parts supplied or approved by the manufacturer may be used. All responsibility of the manufacturer is discharged and all risks to the user are borne by the user if non-approved parts are installed.

B. WARNINGS AND SAFETY GUIDELINES

WARNING:
THIS MACHINE UTILIZES SHARP ROTATING ROLLERS WHICH OPERATE AT HIGH SPEEDS. ROLLER FUNCTION IS TO SHRED, SEPARATE, AND BLEND SOIL.

WARNING:
IT IS POSSIBLE TO RUN MACHINE WITH DOORS AND GUARDS OPENED OR LOOSE. THERE ARE NO SAFETY STOPS ON ANY DOORS OR GUARDS.

WARNING:
PRIOR TO OPERATION OF THIS MACHINE, ENSURE ALL PERSONS ARE LOCATED CLEAR OF ALL MOVING PARTS.

WARNING:
THIS MACHINE UTILIZES CHAIN AND BELT DRIVEN ASSEMBLIES.

WARNING:
THIS MACHINE MAY START AT ANY TIME WHEN IN AUTO MODE.

WARNING:
THIS MACHINE OPERATES ON HIGH VOLTAGE, 3 PHASE POWER.

WARNING:
BOTH THE RAW MATERIAL AND FINISHED PRODUCT ARE HIGHLY FLAMMABLE.

WARNING:
THIS PROCESS MAY PRODUCE DUST AND FINISHED GOODS WHICH ARE A POTENTIAL SLIP HAZARD.

WARNING:
THIS MACHINE MAY PRODUCE DUST AND AIRBORNE MATERIALS.

WARNING:
THE NOISE LEVEL OF THIS MACHINE CAN EXCEED 85 dB.

ENSURE ALL OPERATORS ARE FAMILIAR WITH LOCATION AND PROPER OPERATION OF E-STOP.

E-STOP IS LOCATED ON THE PROCESSOR MAIN CONTROL PANEL.

DEPRESSING THE EMERGENCY STOP WILL IMMEDIATELY REMOVE POWER FROM THE MACHINE. ASSOCIATED CONVEYORS WILL STOP IMMEDIATELY. SHREDDER AND MIXER/AUGER ROTATING ASSEMBLIES WILL BEGIN TO DECELERATE AND STOP SOON THEREAFTER.

DURING OPERATION, ALL DOORS AND GUARDS SHOULD REMAIN SECURELY FASTENED. REMOVE POWER BEFORE ALL MAINTENANCE AND REPAIRS (LOCKOUT/TAGOUT). AFTER MAINTENANCE IS COMPLETE, INSTALL GUARDS AND FASTEN DOORS COMPLETELY. **AGRINOMIX** IS NOT RESPONSIBLE FOR DAMAGE AND/OR PERSONAL INJURY ATTRIBUTED TO NEGLIGENCE REGARDING MACHINE SAFETY.

C. MOVING THE MACHINE

1. Loading and unloading

The HydraFiber™ Expander is delivered uncrated.

Unloading the machine must be done as follows:

- At a loading dock, the processor and components can be removed from the semi-trailer bed using an appropriately sized forklift. Make sure that the forks of the forklift are properly positioned, that they support the bearing area, that no wires or hoses are being crimped by the forks, and that the machine is adequately balanced.

- Machine may be lifted on the side which accommodates the drive-end of the mixer/auger. Utilizing a forklift, lift only from the lower-frame structure, as lift pockets have been provided. While positioning forks, closely observe to ensure clearing the auger and its drive components.

ATTENTION:

- Loading and/or unloading the machine must only be done by personnel qualified to operate the above mentioned equipment.

- The machine has a high center of gravity – as such, it poses a tipping hazard.

- During loading and/or unloading, ensure ample clearance to move the machine without contacting obstructions (wires, door jambs, pipes). These types of obstructions can cause damage to the machine or can cause the machine to become unbalanced and tip over.

2. Moving to / from the work area

The HydraFiber™ Expander is designed to be installed in a fixed work position.

If the machine needs to be moved, it must be done as follows:

- Moving by means of a forklift truck: the machine may be lifted on the side which accommodates the drive-end of the mixer/auger. Utilizing a forklift, lift only from the lower-frame structure, as lift pockets have been provided. While positioning forks, closely observe to ensure clearing the auger and its drive components. Make certain that the forks support the bearing area, that no wires or hoses are being crimped by the forks, and that the machine is adequately balanced.

  - Machine weight: see page 4

CAUTION:

Moving the machine by means of a forklift truck must only be carried out by personnel qualified to operate this equipment.

When moving the machine, ensure ample clearance to move the machine without contacting obstructions (wires, door jambs, pipes). These types of obstructions can cause damage to the machine!

3. Stationing (for storage or installation at the work place)

The HydraFiber™ Expander is equipped with anchoring flanges on the feet of each leg of the machine. Make sure that all legs are securely tightened. The feet should retain obvious contact with the floor while being used or while sitting idle. Ensure that the machine is positioned so that the overall weight is properly balanced on a horizontal and level surface. The machine should be anchored to the floor before initiating duty.

D. ASSEMBLY

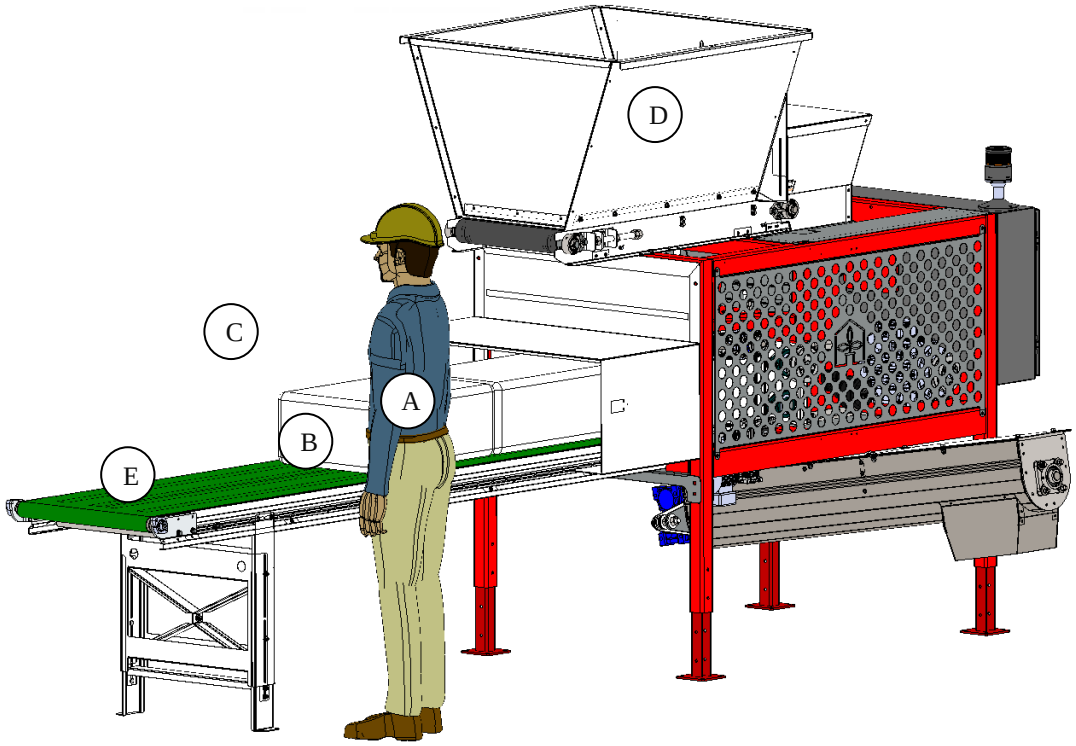
⇨ The HydraFiber™ Expander is fully assembled and tested in our facility. After testing, it is partially disassembled, packed, and shipped. Some assembly and set-up is required prior to operation.

Assembling the machine must be done as follows:

1. Evaluate location and ensure adequate space for the machine and ancillary components. Ensure installation location is a flat and level (if possible).
2. Position and assemble the outfeed conveyor.
3. Utilizing a forklift, lift the HydraFiber™ Expander main body.
4. Position the HydraFiber™ Expander over the outfeed conveyor, per engineering drawing. Lower machine onto legs. Level machine if necessary.
5. Install fiber bale conveyor and components.
6. Install soil supply components per engineering drawing.
7. Wire all components per engineering drawing.
8. If utilizing water mister, connect to proper water supply.
9. Review the installation- inspect the main assembly, wiring, ancillary component installation, and placement. Make any necessary adjustments. Anchor feet to floor. Fully tighten legs to main frame.

E. WORK POSITONS

The processor machine should only be operated by trained personnel located at the appropriate work position as indicated below.



Loading Fiber Bale Position

The conveyor (E) is the infeed supply for the HydraFiber™ bales, while the upper hopper (D) is the infeed supply for the peat. The peat to be blended is typically provided by an incline conveyor or bale shaver. In most cases, each individual HydraFiber™ bale will be supplied by hand-loading the conveyor. The operator should be in position (A) or (C) while loading bales onto the conveyor at position (B).

! Only HydraFiber™ bales and typical growing soil components can be processed by the machine. Other components such as sand, rocks, concrete and etc. can cause serious damage to the processor components and potential bodily harm. The manufacturer cannot accept any responsibility in this case, and any machine warranty will be nullified.

! The operator loading the fiber conveyor must not put his hands, feet, tools, or work aids in the bale infeed gate while the machine is in operation.

F. INSTRUCTIONS

1. Installation and checks before use

A. Work place inspection

The installer must confirm that the machine is positioned in a flat and safe area. The work place must have sufficient lighting to help prevent accidents and to make operation relatively easy.

B. Installation of the machine

The machine must be moved in the manner described in chapter C. The machine must be installed on a surface which is stable, flat, and level. If this is not the case, the result may lower performance and/or the risk of the machine malfunction. The bale infeed conveyor should be elevated to maintain a level installation.

C. Inspection of peat supply

The operator must ensure that the peat supply is free of foreign bodies (stones, pieces of iron, plastic items, etc.) and that it does not contain non-standard components such as sand, flint, concrete, and etc., as they can cause damage to the machine.

D. Inspection of fiber bales

The HydraFiber™ Expander is designed to shred/separate compressed fiber bales and blend the separated fiber with typical peat. Only genuine HydraFiber™ bales (or manufacturer approved bales) can be processed by the machine. The use of any other bale can cause serious damage to the processor components and potential bodily harm. The manufacturer cannot accept any responsibility in this case and any machine warranty will be nullified.

E. Electrical inspection

The installer may only connect the machine to main power after confirming the correct power requirements and that the appropriate power supply drop is available.

F. Checks before use

1. General inspection of the machine

Before using the machine, check to make sure that it is in good working condition. If this is not the case, faulty parts should first be replaced and all foreign bodies removed. Ensure that all doors and guards are in place and securely fastened. See also chapter F. Instructions - 4. Maintenance and repair.

2. Inspect motor rotation

The motor rotation is tested and fixed during assembly by the manufacturer. When preparing to run the machine at initial start-up or after any repair, the motor rotation must be retested and confirmed.

- Motor rotation direction and belt routing drawings are located inside the guarded area of the machine, near the belts and pulleys. See also chapter F. Instructions - 4. Maintenance and repair.

The motor rotation can be tested by powering the machine and briefly jogging the motor. If the shredder belts run in the correct direction, the motor rotation is correct. Jogging the motor is achieved by manually engaging the proper contactor. Refer to the electrical drawing to locate each contactor.

- Immediately, at initial start-up or after any soil call during automatic operation, the bale infeed pinch rollers will run in reverse direction. After the pre-programmed interval, they will change direction and begin to feed the bale into the machine.

If the motor rotation is incorrect, the phases of the incoming power supply must be changed. This must be done by one of the manufacturer's technicians or an authorized professional only.

Caution!!! **If the motor rotation is not correct, this may cause severe damage to the machine!!!!**

3. Inspect fiber bales and peat supply

Fiber bales should be compressed and hold shape. Swollen bales may not feed into the machine properly and may cause incorrect mix.

Peat hopper should contain standard peat mix, with minimal moisture. It should be filled to a level which will encourage even flow, regulated by the gate.

2. Machine usage

CAUTION: ***Before using the machine, read chapters "A. Conditions of use" and "E. Work Positions" carefully.***

Ensure the blend of the output soil is properly set, as described under F. Instructions - 3. Settings. Machine is ready for initial start-up procedure.

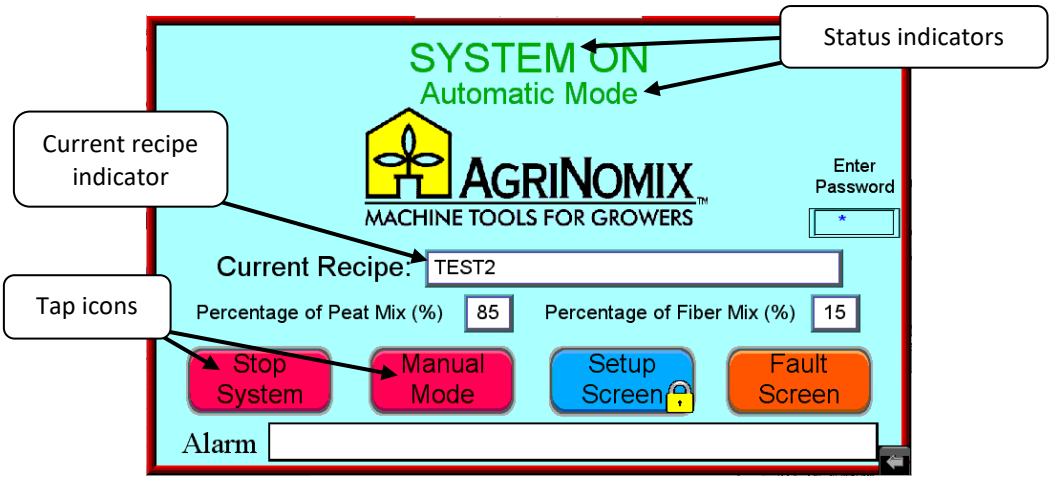
A. Start the machine as follows:

1. Turn on the main power switch.
2. After machine has booted, tap HMI screen anywhere, to access main menu.
3. Ensure that bales are loaded at position (B), on the infeed conveyor. See page 10.
4. On the HMI screen, ensure that the desired recipe is displayed as the "Current Recipe". **Note:** if the machine is integrated into a recipe soil system, this will be disabled.
5. Check that all emergency stop switches are released.
6. Depress the green "RESET" button on the electrical panel.
7. Tap the green "Start System" icon. Icon will toggle to red "Stop System". Status indicator will toggle to green "SYSTEM ON".
8. Ensure the machine is running in the proper mode. Tap the "Auto Mode" (or "Manual Mode") icon to toggle machine function. Icon and display will toggle accordingly.
9. System is now initialized and will start and stop with each soil call.

Note: Both fiber feed and peat hopper will remain inactive. When a soil call is received, both will be activated. They will remain active until soil call is satisfied or manually stopped.

B. Stop the machine as follows:

1. Tap the "Stop System" icon to stop machine function.
2. After machine has stopped, turn off main power switch.
3. Depressing any EMERGENCY-STOP button during operation will stop the machine.

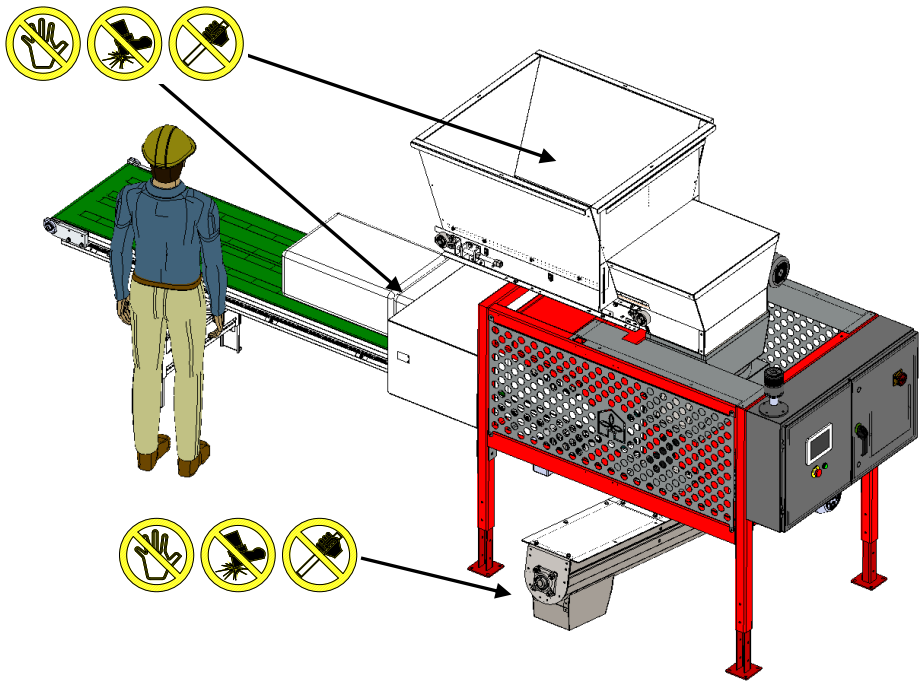


C. Restart the machine after EMERGENCY-STOP:

1. Release “EMERGENCY-STOP” button.
2. Press the “RESET” button.
3. Start the machine by following normal procedure.

If power has been interrupted, follow standard start-up procedures.

When the machine is in use, observe the conditions of use and maintain the proper work position. NEVER enter the danger areas, as displayed below.



3. Settings

These settings cannot be adjusted or changed when the machine is enabled, in auto mode!

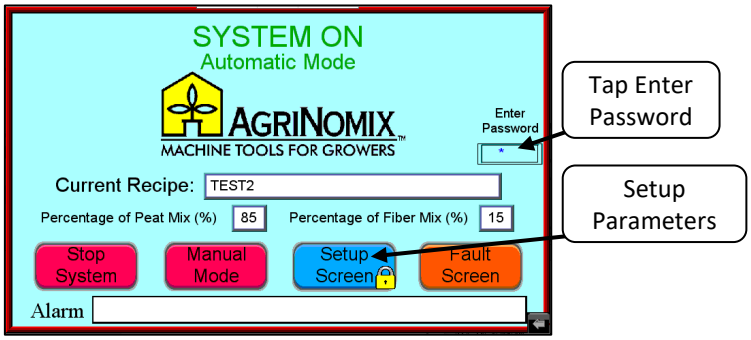
- When unsure, depressing a proper EMERGENCY-STOP will disable and interrupt normal machine function.

A. Setting the machine to process soil

These settings can be adjusted while the machine is in either auto or manual mode. The machine should NOT be enabled or running.

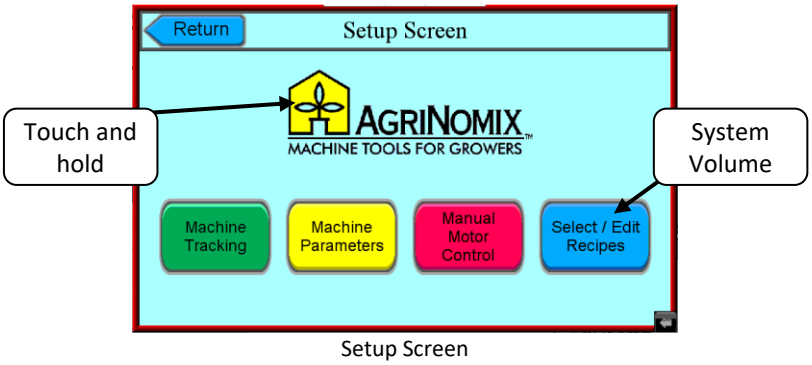
The blended soil output of the machine is set to “Percentage of Peat Mix” plus “Percent of Fiber Mix”. The percent of peat and the percent of HydraFiber™ should combine to equal 100%. The System Size value should be set to a number between 0 and 25 Yds/Hr, equal to the requirements of the soil line.

Setting soil mix and associated machine parameters:



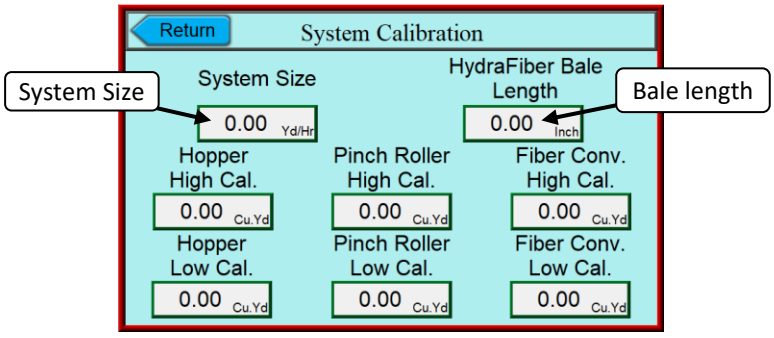
Main Menu Screen

1. Locate the HMI on the electrical panel
2. On the Main Menu screen, enter password to log in. Default password is “2981”.
3. Tap “Setup Parameters” icon to gain access to soil mix/recipe controls.



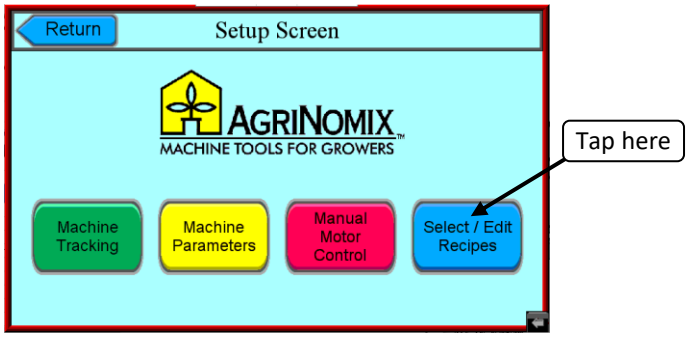
Setup Screen

4. Touch and hold the AgriNomix logo for 5 seconds.
5. Display will change.



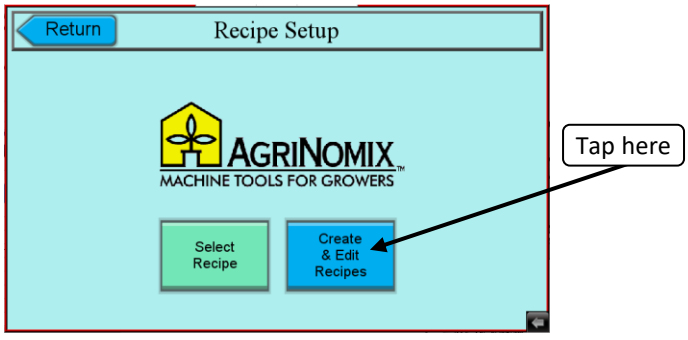
System Size Screen

6. Enter line volume into “System Size” field. **Note:** this machine is rated up to 25 Yds/Hr.
7. Ensure “Fiber Bale Length” is set to 26.
8. The remaining parameters are factory set. They should NOT be changed.
9. Tap “Return” icon to go back “Setup Screen”.



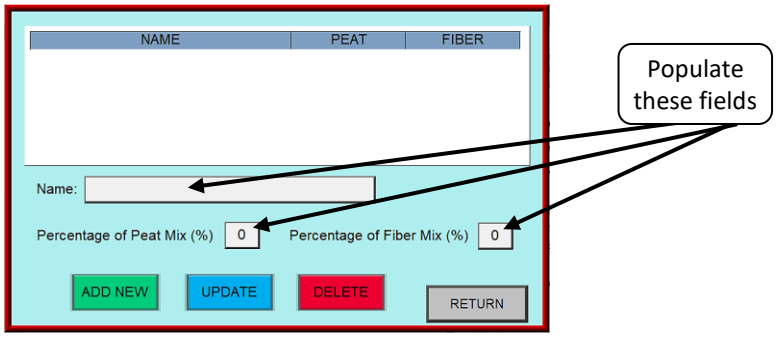
Setup Screen

10. Tap “Select/Edit Recipes” to access “Recipe Setup” screen. **Note:** if the machine is integrated into a recipe soil system, this will be disabled. Skip to 14. and continue with remaining settings.



Recipe Setup Screen

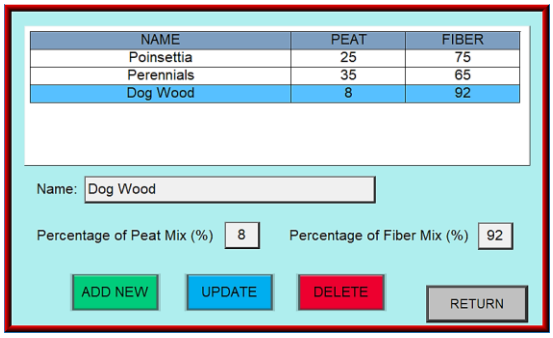
11. Tap “Create & Edit Recipes” icon to access recipe input screen.



Recipe Input Screen

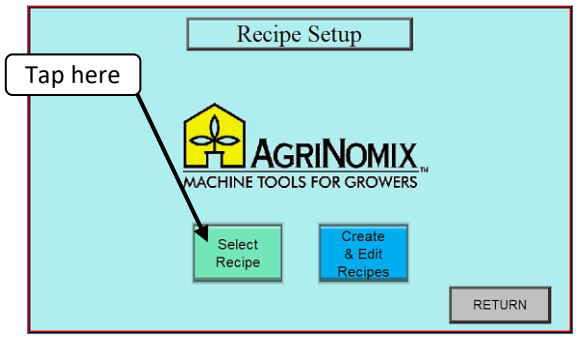
12. Create soil recipe options. **Note:** recipes do not include any chemicals. They are comprised of peat mix and HydraFiber only.

    a. Enter recipe name into “Name” field.
    b. Enter desired percent peat and percent fiber corresponding to that recipe in associating fields.
    c. Tap “ADD NEW” icon and follow by tapping “OK” to confirm.
    d. Repeat steps until all recipes are saved.
    e. If any errors occurred while populating the fields, the recipe may be highlighted and corrected. After correction is made, tap “UPDATE” icon.

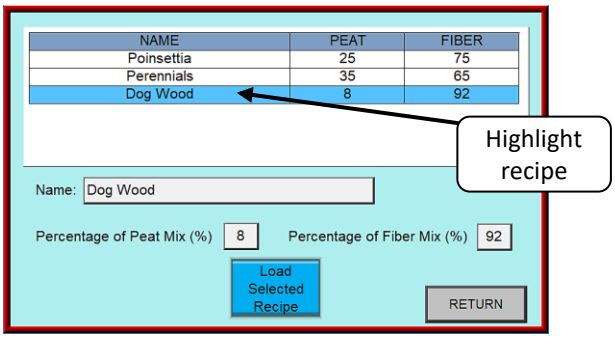


Populated Recipe Screen

    f. Tap “RETURN” icon to go back to the recipe setup screen.

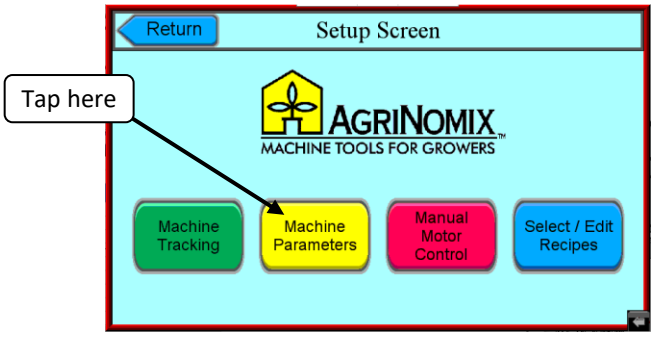


Recipe Setup Screen



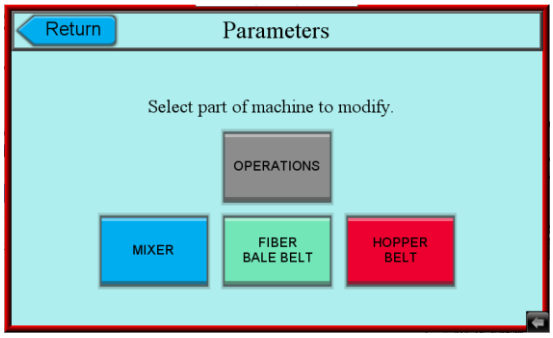
Recipe Select Screen

13. Select recipe of soil to be produced.
    a. From the recipe setup screen, tap the “Select Recipe” icon.
    b. On subsequent screen, select recipe by tapping the name. It will be highlighted when properly selected.
    c. Tap “Load Selected Recipe” icon when satisfied with choice.
    d. Follow by tapping “OK” to confirm selection.
    e. Tap “RETURN” icon twice to return to the Setup Screen.



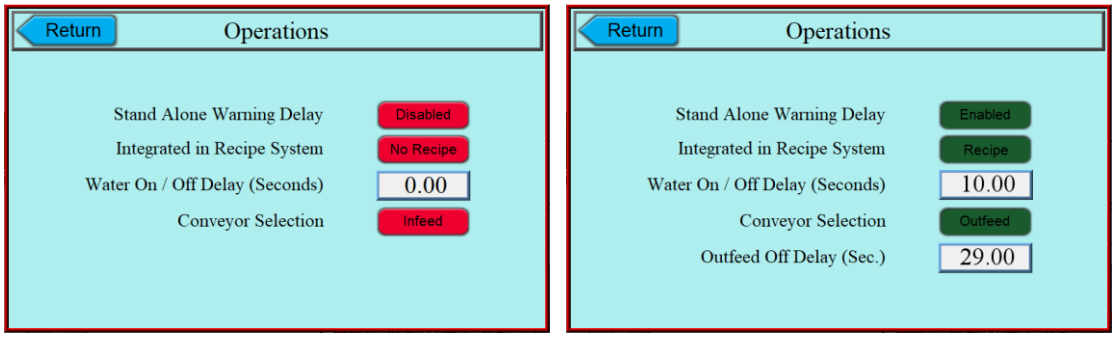
Setup Screen

14. Tap the “Machine Parameters” icon.



Parameters Screen

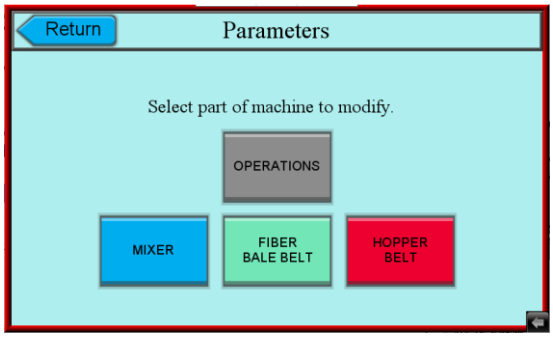
15. Tap the “OPERATIONS” icon.



Operations Screens

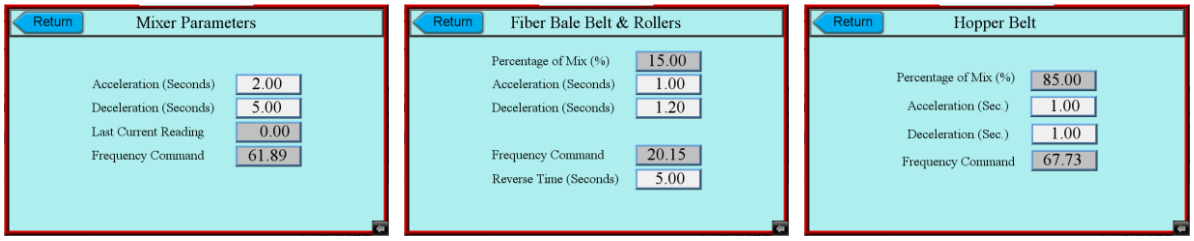
16. The parameters in these fields are factory set.
    a. The “Stand Alone Warning Delay” enables the audible alarm which sounds before a soil call is initiated.
    b. The “Integrated in Recipe System” sets machine control to either controlled by the soil system (green) or controlled by HE panel (red).
    c. The other parameters should not be changed without consulting first, an AgriNomix technician.

17. Tap “Return” icon to go back to the parameters screen.



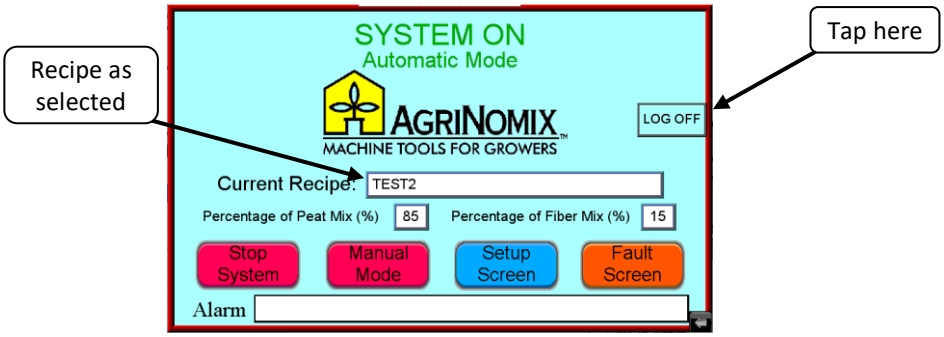
Parameters Screen

18. Tapping any of the other three icons will open their coordinating screen.



Coordinating Parameter Screens

19. The parameters on these screens will be factory set and should not be adjusted. Change these parameters only when consulting first, an AgriNomix technician.
20. Tap the “Return” icon multiple times to return to the Main Menu screen.



Main Menu Screen

21. If running as a stand-alone machine, the recipe which was selected will populate the “Current Recipe” field. The mix percentages will be displayed below the recipe.
22. Tap the “LOG OFF” icon.
23. If the desire is to now run the soil line, see chapter F. Instructions - 2. Machine usage.

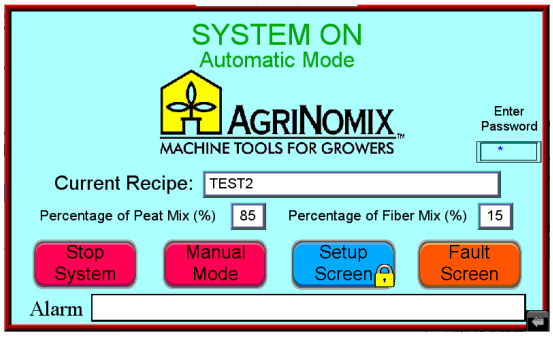
B. Other displays, indicators, and features

The HydraFiber™ Expander offers features to help monitor and troubleshoot function and operation of the machine. They will greatly increase both reliability and ease of troubleshooting any issues which may arise.

Fiber Bale Consumption

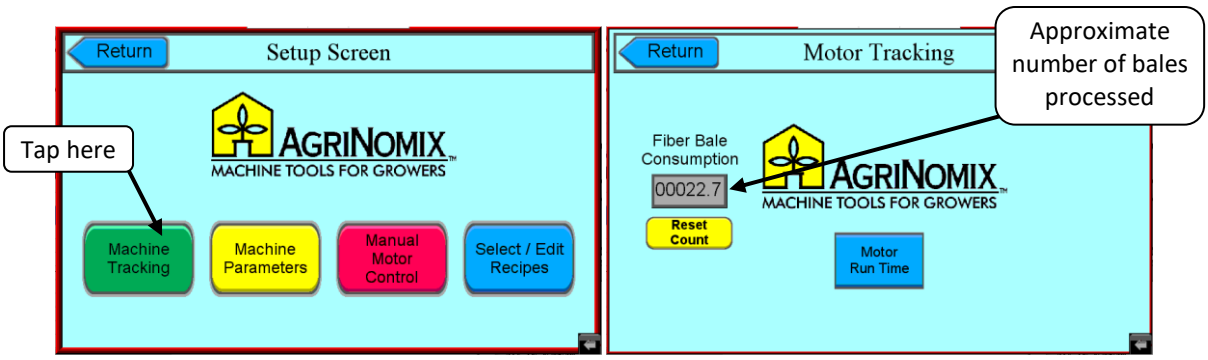
Bale consumption monitoring is a function of measuring the bale infeed conveyor forward movement, when feeding fiber bales. It estimates the number of bales processed utilizing that measured data. Consumption count is useful to estimate where the rollers stand, in terms of their lifecycle. It is also useful with tracking numbers of bales processed during any given time period. Bale monitoring data is also greatly useful when performing regular preventative maintenance and troubleshooting machine performance.

1. To access the bale counter, login and tap “Setup Screen” icon.



Main Menu Screen

2. On setup screen, tap “Machine Tracking” icon.
3. Screen will change and fiber bale consumption will be displayed.



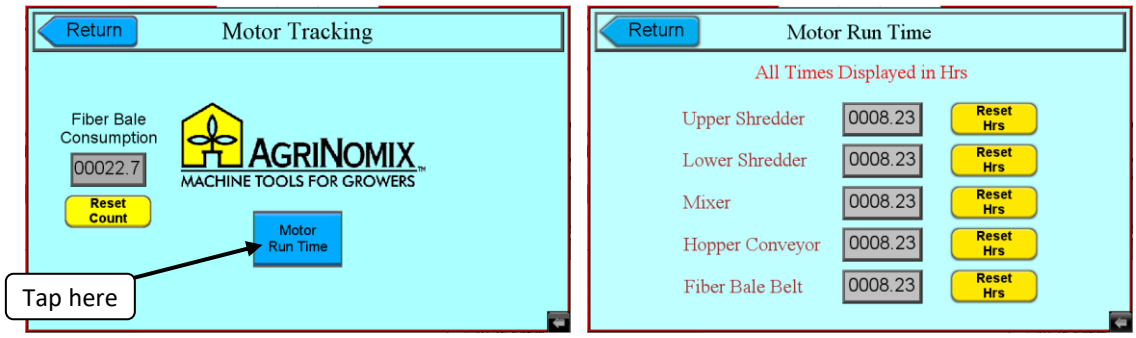
Setup and Tracking Screens

4. The counter may be reset by tapping the coordinating icon. **Note:** this should only be done when replacing shredder rollers or when directed to do so by an AgriNomix technician.

Motor Run Time

Motor run time is a running “stopwatch” which records working time of each individual motor. The time will accumulate only when the machine is processing fiber. Capturing motor run time is useful to estimate where the motors stand, in terms of their lifecycle. Monitoring motor run time is also greatly useful when performing regular preventative maintenance and troubleshooting machine performance.

5. From the machine tracking screen, tap “Motor Run Time” icon to display run time of all motors.



Motor Tracking and Run Time Screens

6. The timers may be reset by tapping the coordinating icon. **Note:** this should only be done when replacing motors or when directed to do so by an AgriNomix technician.
7. When viewing these values is complete, tap the “Return” icon multiple times to return to the Main Menu screen.
8. Tap the “LOG OFF” icon.

4. Maintenance and repair

Machine maintenance must only be carried out by qualified personnel and only when the machine is switched off.

Repair work must only be carried out by authorized, trained personnel employed by the manufacturer or the customer. Faulty maintenance or repair work by third parties can be dangerous and can cause serious injury. The manufacturer cannot accept any responsibility whatsoever for faulty work carried out by third parties.

A regular, periodic inspection and preventative maintenance program is recommended to avoid major issues and downtime. Refer to supplemental document, “HydraFiber™ Expander Preventative Maintenance Schedule and Quick Guide”.

Attention: Inspection, repair, and cleaning may only be done with machine completely switched off and locked. Observe proper electrical lockout/tagout procedures.

A. General maintenance

- The machine may need to be cleaned after use (access the cleaning openings only after disconnecting power).
- The machine requires scheduled preventative maintenance. Refer to supplemental document for details.
- The machine should be stored in a dry place when it is not in use.
- The machine should be lubricated after use.

B. Cleaning the machine

Cleaning the machine must only be done with the machine completely switched off and locked. Observe proper electrical lockout/tagout procedures.

Utilizing hands and/or a brush and an air gun, clean material and dust from:

- The infeed and outfeed conveyor systems.
- All motor cooling fans.
- Shredder roller teeth and side panels which capture the rollers.

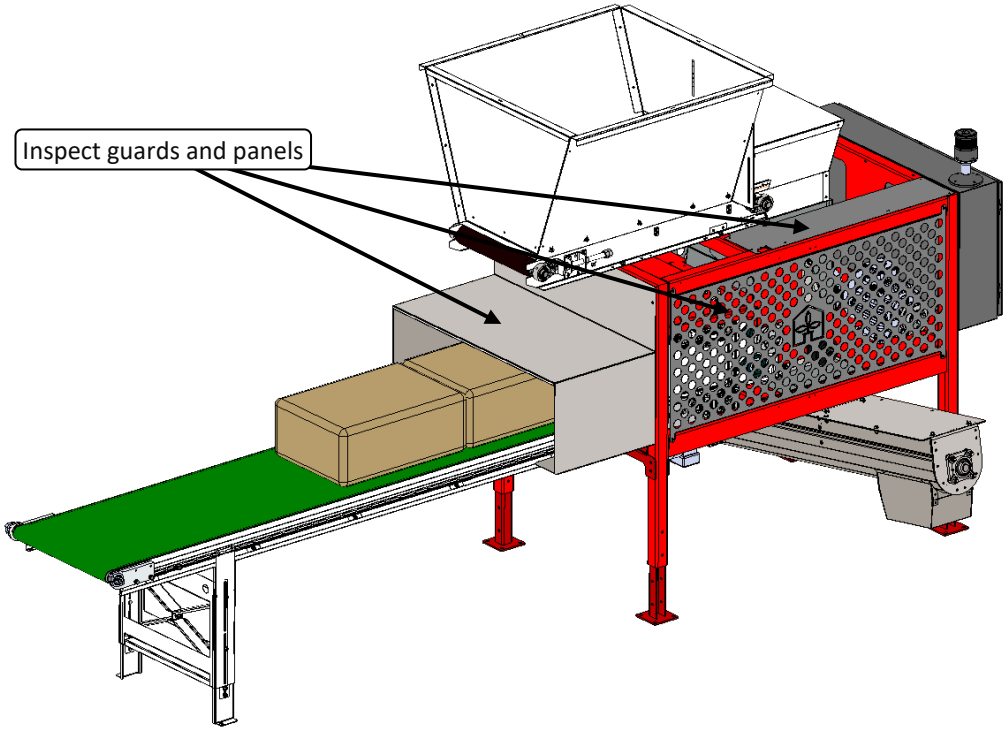
If the machine is cleaned with water:

- Make sure that no water remains in the machine.
- Lubricate the machine immediately after cleaning; shredder rollers are likely to rust immediately.
- Make sure that the control panel is completely free of liquid.

C. Inspection of guards and protective panels around belts and infeed

Attention: Inspection, repair, and cleaning may only be done with machine completely switched off and locked. Observe proper electrical lockout/tagout procedures.

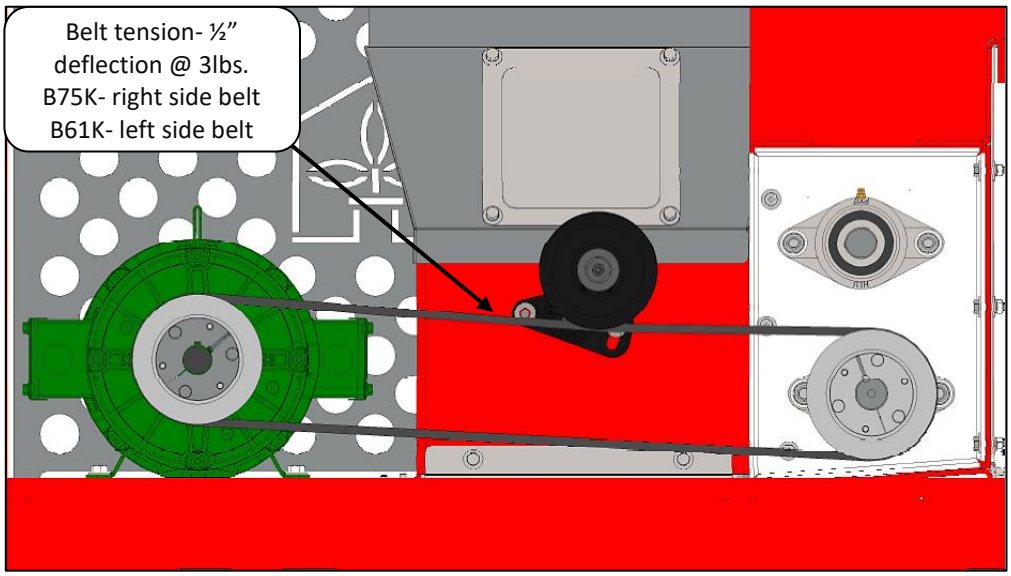
- Regularly inspect the overall structural condition and proper mounting of ALL guards, including doors, hinges, hardware, and fasteners.
- Look for damage including holes, punctures, openings, or cracks.
- Ensure that ALL of the guards are safe and will prohibit injury.
- If damaged, contact the manufacturer or distributor as soon as possible and have them repaired or replaced.



Right side of machine shown. Left side similar.

D. Inspection of drive belts and pulleys

Attention: Inspection, repair, and cleaning may only be done with machine completely switched off and locked. Observe proper electrical lockout/tagout procedures.



Left side shown. Right side similar.

1. Inspect all drive belts for proper alignment, tensioning, and wear.
2. Inspect condition of tensioner pulleys and shaft pulleys.
3. Ensure that all pulley bushing bolts are in place and tight.

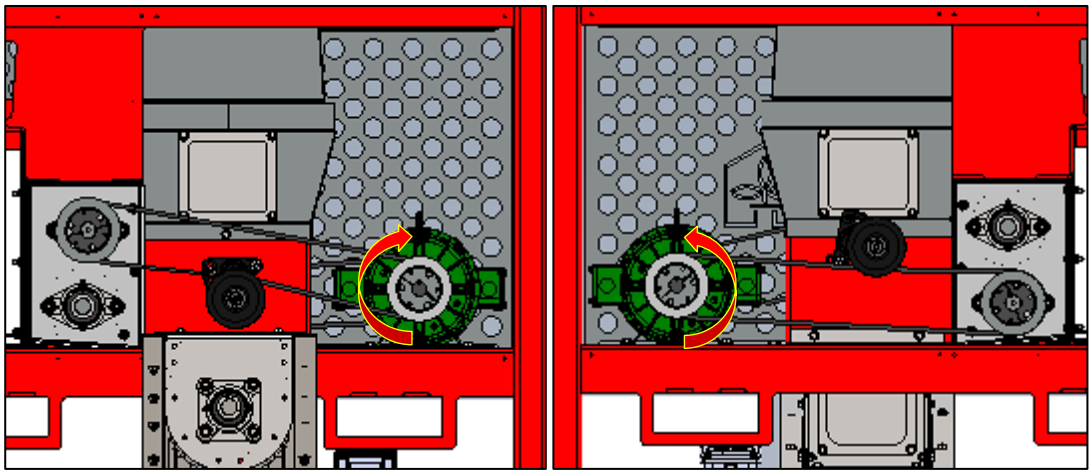
    - If any adjustments are made to bushings, tighten accordingly.
    - In an alternating pattern, tighten bushing hardware in two steps.
    - For 7/16" head: First step- 54 in./lbs. and the second step- 108 in./lbs.

4. Ensure that all collar set-screws are tight.

    - If collars are found loose or need adjustment, ensure they are seated firmly against pulley hub.
    - Apply threadlock compound to threads.
    - Tighten to 90 in./lbs.

E. Inspection of drive belt rotation

Ensure the belts are rotating in the proper direction.



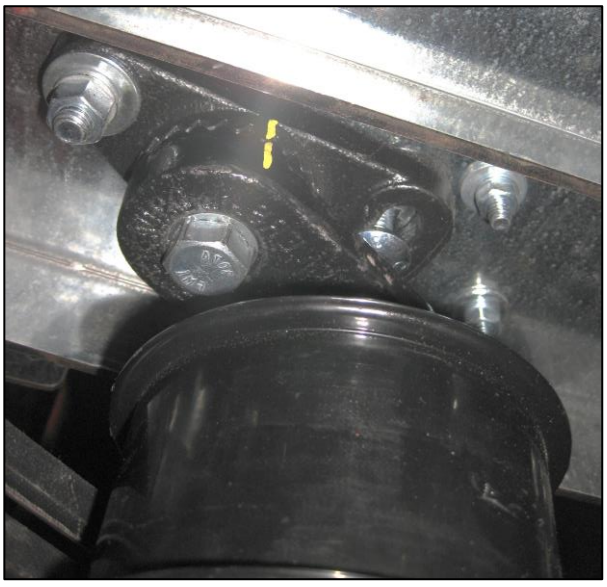
Right side (clockwise) Left side (counter-clockwise)

F. Replacing drive belts

To replace the fiber shredder belts:

i. Mark all tensioner positions before removing belts.

Note: In some cases, no adjustment of tensioner is necessary to replace belts.



ii. Remove worn/old belts.

1. Walk the outboard belt off the tensioner pulley.
2. Next, walk it off the motor drive pulley.
3. Remove belt from driven (shredder) pulley.
4. Walk the inboard belt out of the inner groove and into the outer, spinning assembly as necessary, to move belt to outward.
5. Remove belt in the same manner as first.

iii. Install new belts.

1. Install belt into outer groove on each pulley, working in reverse order to that of removal, spinning assembly as necessary, to install belt into groove.
2. Walk belt to inner groove position.
3. Install outboard belt in the same manner.
4. Spin rotating assembly a few full turns.

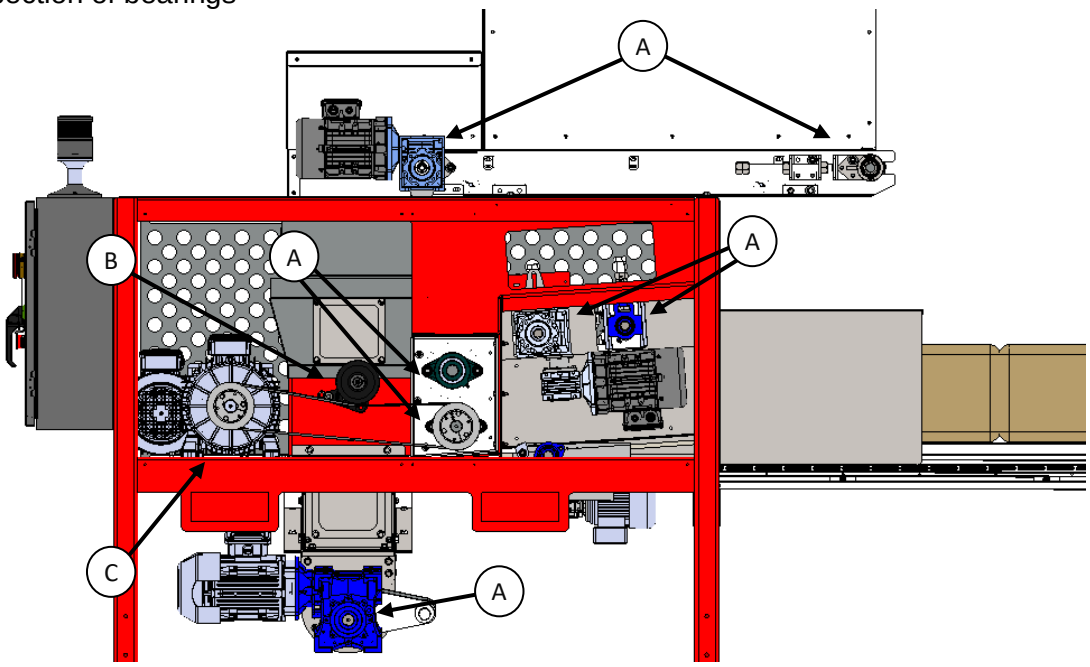
iv. Check belt tension and adjust if necessary. A64 belt tension- ½" deflection @ 3lbs.

v. If tension adjustment was made, tighten hardware.

vi. Install and securely fasten guard(s).

vii. After 8-12 hours of service, check and retension belts if necessary.

G. Inspection of bearings



Left side shown. Right side similar.

1. Shaft bearings

- Regularly check the shaft bearings (A) for damage. If damaged, contact the manufacturer as soon as possible. Removing the belts to free-wheel the shaft should assist in examination.
- Take notice of noise when rotating shaft.
- Inspect shaft for both radial play and end play.
- For grease type and specifications, refer to supplemental document “HydraFiber™ Expander Preventative Maintenance Schedule and Quick Guide”.

1. Belt tensioner bearings

- Regularly check the belt tensioner bearings (B) for damage. If damaged, contact the manufacturer as soon as possible. **Note:** removing the belts to free-wheel the tensioner should assist in examination.
- Take notice of noise when rotating tensioner.
- Inspect tensioner pulley for both radial play and thrust play.
- For grease type and specifications, refer to supplemental document “HydraFiber™ Expander Preventative Maintenance Schedule and Quick Guide”.

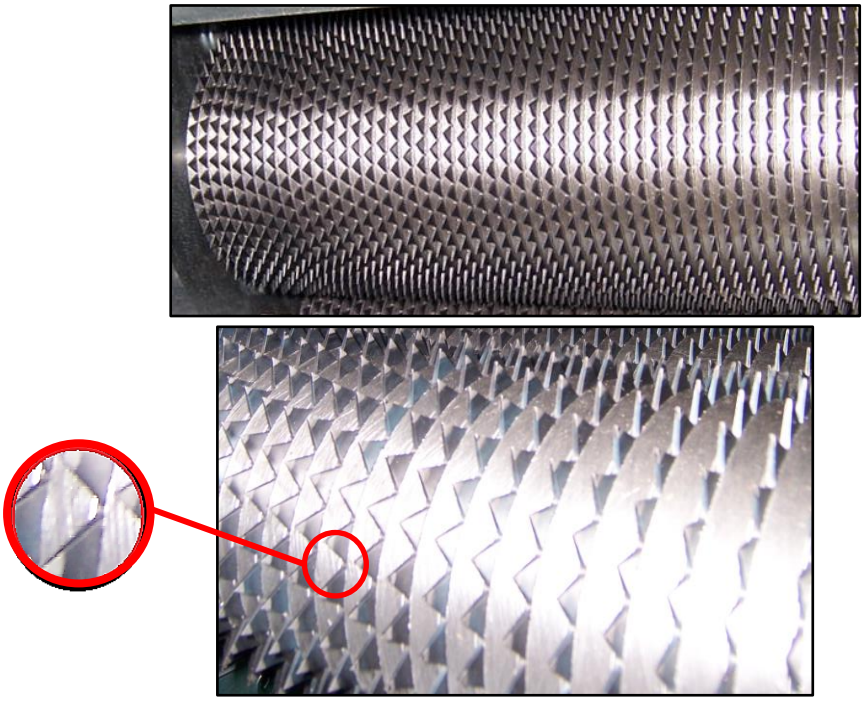
2. Motor bearings

- Regularly check the motor bearings (C) for damage. If damaged, contact the manufacturer as soon as possible. **Note:** removing the belts to free-wheel the motor should assist in examination.
- Take notice of noise when rotating motor shaft.
- Inspect motor shaft for both radial play and end play.
- For grease type and specifications, refer to supplemental document “HydraFiber™ Expander Preventative Maintenance Schedule and Quick Guide”.

H. Inspection of shredder rollers

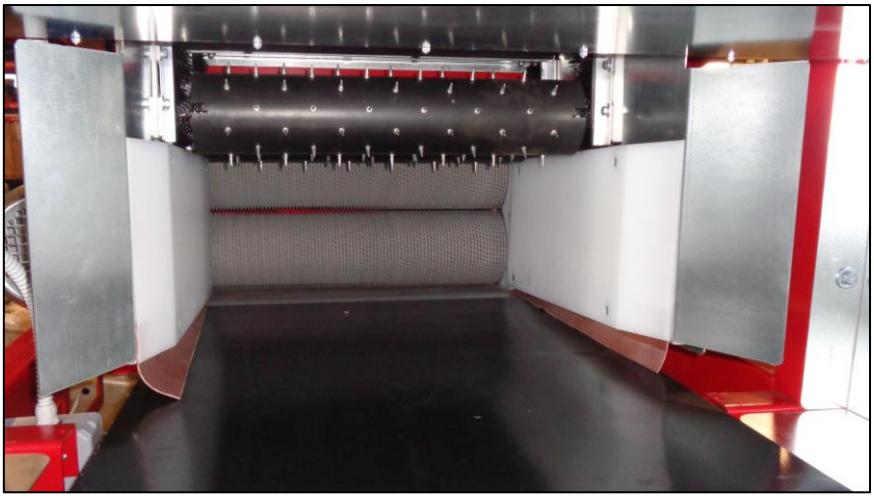
1. Ensure shredder rollers are free of lodged foreign materials.
2. Inspect shafts and bearing collars.
   a. Bearing should be a snug fit, free of play, and without wear.
3. Inspect shredder teeth.
   a. All teeth should be present.
   b. Teeth should be sharp.
   c. Teeth should be straight and undamaged.
   d. Teeth should be FULLY seated into roller, with valley tangent to roller outside diameter. *Refer to circled area.*

Should there be any damage to shredder rollers, contact the manufacturer as soon as possible.



I. Inspection of fiber bale infeed assembly

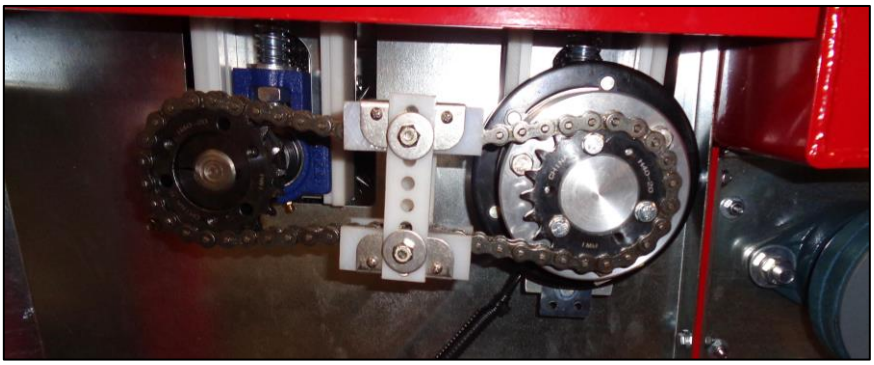
1. inspection of pinch rollers



Regularly inspect the fiber bale infeed assembly for damage. There are two spiked pinch rollers utilized in this assembly. A damaged pinch roller can cause an improper soil mix. If the spikes are damaged or missing, repair or replace the roller(s) immediately. Contact the manufacturer for all replacement parts.

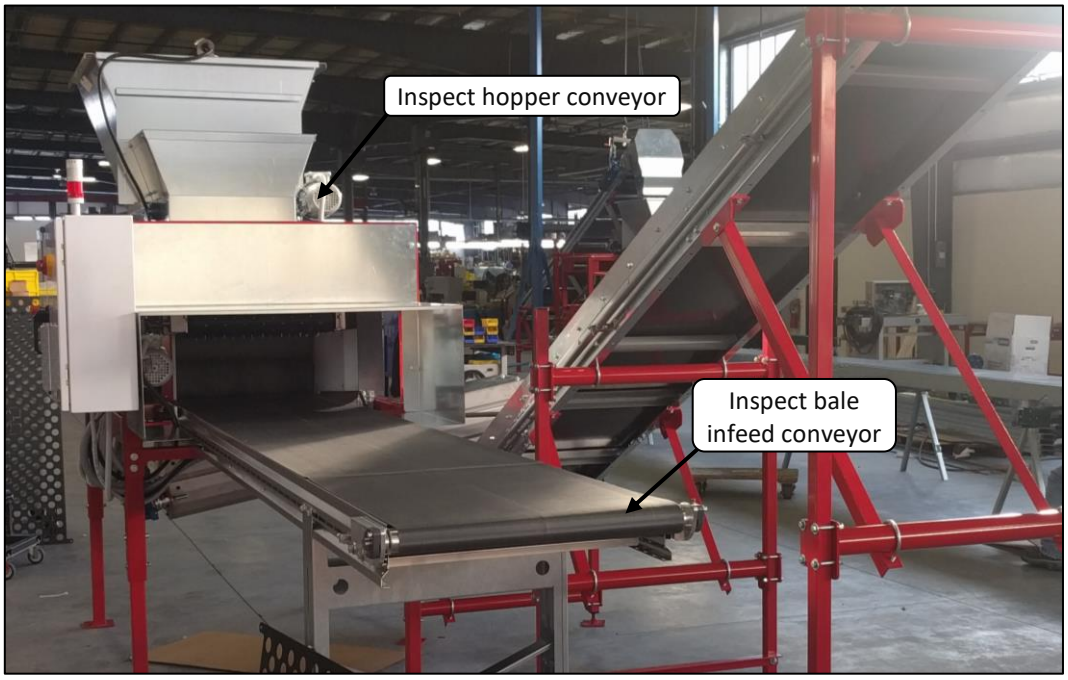
⚠ **CAUTION: pinch rollers have VERY SHARP SPIKES! Observe great care when inspecting and handling!**

2. inspection of infeed drive chain



Regularly inspect the infeed drive chain. A damaged or loose drive chain can cause an improper soil mix. If the chain is found to be damaged, loose, or malfunctioning, repair immediately. Contact the manufacturer for the replacement parts.

3. inspection of inspection of conveyor belts



- Regularly inspect the conveyor belts for damage. If damaged, contact the manufacturer as soon as possible.

- Regularly check the tension and the tracking of the belt. If tension is insufficient, the belt will slip or veer to a side. In this case the belt needs tightened and adjusted.

- Regularly check the shaft alignment side to side and the set screws that hold the shaft in the bearings.

Note: check both the bale infeed conveyor and the peat hopper conveyor.

J. Lubricating the machine

CAUTION: **Service and repair may only be done with machine completely switched off and locked. Observe proper electrical lockout/tagout procedures. Carelessness during lubrication can cause serious injuries!**

1. lubrication

The HydraFiber™ Expander is delivered pre-lubricated. No lubrication is necessary before use. After initial use, it is advised that specified lubrication intervals be closely observed. Schedule and procedure can be found in supplemental document “HydraFiber™ Expander Preventative Maintenance Schedule and Quick Guide”.

2. post-use lubrication

Remove the grease which has been pressed out by post-use lubrication. Do this when the machine is at rest. Make sure that the machine is correctly turned off after use and that the machine cannot be switched on unexpectedly. Observe proper electrical lockout/tagout procedures.

The bearings which need to be lubricated are provided with a Zerk fitting.

Guidelines:

- ⇨ Use a grease gun to lubricate bearings. Occasionally when post-lubricating, you will see the old and dirty grease emerge from the bearing seal. This should not cause alarm.
- ⇨ Pump the grease slowly into the bearing; about ½ to 2 pumps is usually sufficient.
- ⇨ If during lubrication carbonized grease emerges from the seal, continue pumping until new grease emerges.
- ⇨ The machine must be lubricated after cleaning or after assembly of new parts.

Lubricants: Refer to chapter H. TECHNICAL DATA - 2. Lubricants and supplemental document “HydraFiber™ Expander Preventative Maintenance Schedule and Quick Guide”.

K. Inspection of drive motors

- Inspection of motors

It is necessary to make sure that the motor cooling fins are free of dust and soil remains so that the motor is sufficiently ventilated. Also, inspect motor bearings. Refer to section G. Inspection of bearings.

- Inspection of gearboxes

The gearboxes are lubricated for life. Do not remove or add any lubricant to these gearboxes.

If grease or oil is low in the gearboxes, it is recommended to remove and replace the gearbox. No service ports are provided on the gearboxes.

L. Inspection of electrical components

- Regularly check that the electrical panel is free of dust and soil, so to ensure sufficient cooling is provided.

- Regularly check all control switches on the machine for damage. Damaged or badly working parts need to be replaced immediately by an authorized person.

M. Maintenance frequency

- Refer to supplemental document, “HydraFiber™ Expander Preventative Maintenance Schedule and Quick Guide”.

- Major service: an annual inspection and service by the manufacturer is recommended.

G. TROUBLESHOOTING GUIDE

SYSTEM STATUS BEACON FLASHING = NO FIBER or HOPPER LOW	
PROBLEM - ERROR	**SOLUTION**
machine does not start	• check fault alarm for diagnostic guidance • check emergency stop(s) • check voltage supply • check overload protection devices
machine stops during use	• machine is waiting for soil call • gap in supply of fiber bales • machine jammed • check overload(s)
fiber bale is skewed at machine entry	• check operation of pinch roller assembly • check infeed conveyor • check bale placement
fiber bale is jammed in machine	• check operation of pinch roller assembly • check shredder rollers for proper rotation • check shredder roller teeth wear • check v-belts- tension and wear
machine jammed or plugged-up	• check settings- fiber/peat supply; volume • check v-belts- tension and wear • check shredder rollers for proper rotation • verify that shredder & mixer/auger rotate • check motors and overloads • check discharge & receiver for clogging • check soil for foreign objects • check soil for excessive moisture content
exaggerated machine noise level and / or vibration	• check drive motors • check shaft bearings • check pulleys and bushings • check rollers and shafts • sheet metal panels • check guards and doors
exaggerated dust	• check seals and wipers • check soil moisture content
drive belts slipping or burning	• check drive belts for wear and tension • check discharge & receiver for clogging • check soil moisture content

H. TECHNICAL DATA

1. Dimensions

Shipping height:	90” (typ.)
Overall width:	86”
Assembled length:	175” (typ.) – subject to assembled layout
Assembled height:	96” (typ.) – subject to assembled layout
Weight:	2200 pounds (typ.)

2. Lubricants

-To maintain the machine, commercially available “HI-TEMP” (500° F min.) grease may be used for all shaft bearings.

-The greasable shredder motors require specialized lubrication. Both lubrication type and service intervals are defined in the supplemental document “HydraFiber™ Expander Preventative Maintenance Schedule and Quick Guide”.

3. Electrical details

- Electrical details: see page 4.

4. Spare parts

Only spare parts supplied or approved by the manufacturer may be assembled.

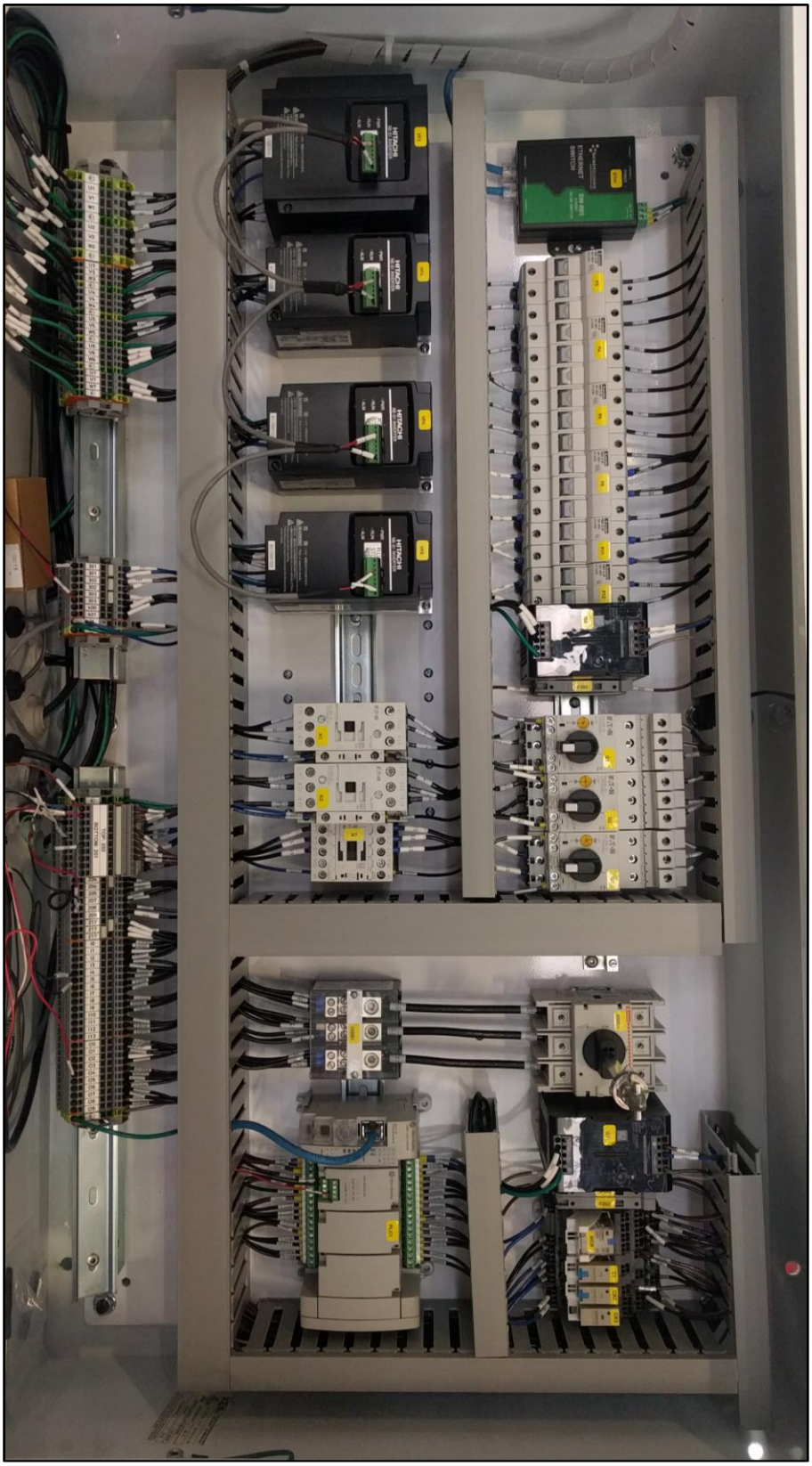
If alternative spare parts are fitted, this is done entirely at the user's own risk and the manufacturer can accept no responsibility.

Parts list and accompanying drawings: see pg. 38.

I. IMAGES, DRAWINGS, PARTS

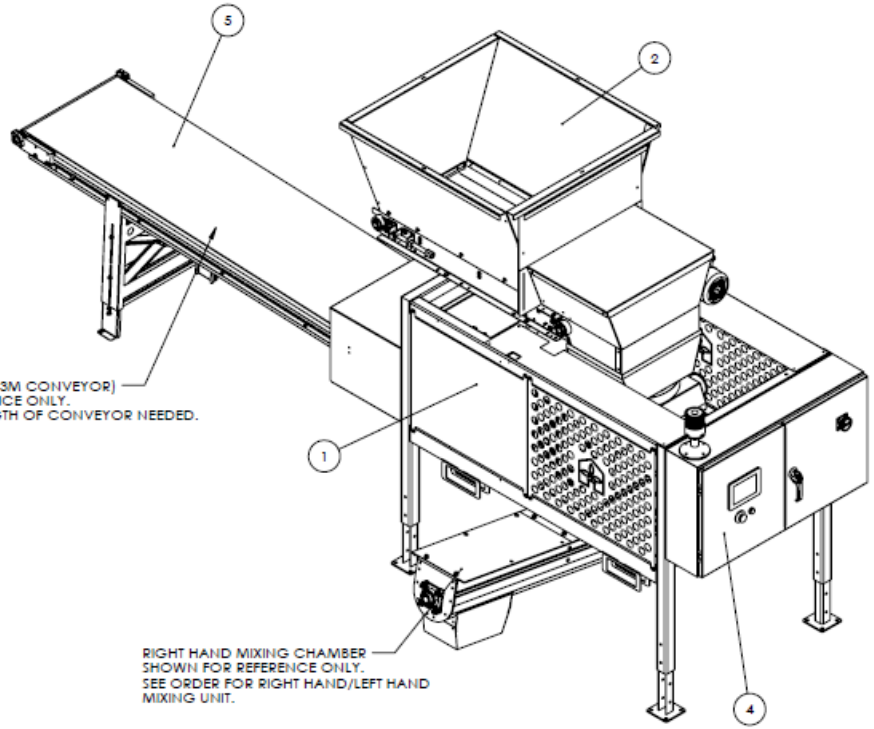
Electrical panel doors, exterior

Electrical panel door, interior



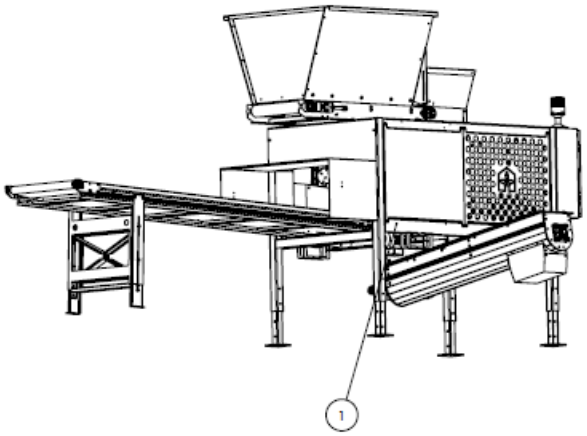
Electrical panel interior (typical)

A53040-620-000-002 REVISIONS					
REV.	PROJECT NO.	ZONE	DESCRIPTION	DATE	CHANGED BY
A	167-11R		RELEASED FOR PRODUCTION	11/7/2019	NMM



A53040-620-000-003 (3M CONVEYOR)
SHOWN FOR REFERENCE ONLY.
SEE ORDER FOR LENGTH OF CONVEYOR NEEDED.

RIGHT HAND MIXING CHAMBER
SHOWN FOR REFERENCE ONLY.
SEE ORDER FOR RIGHT HAND/LEFT HAND
MIXING UNIT.



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	A53040-620-012	ASSEMBLY, SHREDDER BASE UNIT MKII	1
2	A53040-620-008	ASSEMBLY, 1/2 YD HOPPER H.E.	1
3	A50600-020-011	PLATE, MOUNTING - 250mm CONVEYOR	2
4	A53040-820-000-XXX	CONTROLS, ELECTRICAL H.E.	1
5	A53040-620-001-XXX	ASSEMBLY, H.E. FIBER CONVEYOR	1
6	-	FLAT WASHER .25 ID	9
7	-	LOCK WASHER .250 ZINC	8
8	-	HEX HEAD CAP SCREW - 1/4"-20 UNC X 1/2"L ZINC	8
9	-	WASHER - FLAT .375" ID ZINC	8
10	-	WASHER - LOCK 3/8" ID ZINC	4
11	-	NUT - HEX 3/8-16 UNC ZINC	4
12	-	HEX HEAD SCREW .375-16 UNC X 1.25L ZINC	4

NOTES:

1. SEE SALES ORDER FOR "LEFT/RIGHT" HAND MACHINE. DOORS AND GUARDS ARE DEPENDENT OF CUSTOMER LAYOUT HOPPER ORIENTATION IS ALSO DEPENDENT ON CUSTOMER REQUIREMENTS
2. SEE SALES ORDER FOR CONVEYOR LENGTH

UNCONTROLLED

AGRINOMIX
MACHINE TOOLS FOR GROWERS
300 CREEKSIDE DR. OBERLIN, OHIO 44074

	NAME	DATE
DRAWN	NMM	
CHECKED		

MACHINED SURFACE TEXTURE UNLESS OTHERWISE SPECIFIED 125

EQUIPMENT TYPE: HYDRAFIBER EXPANDER
CUSTOMER:
PROJECT: A53040
MATERIAL:
WEIGHT: 0.00 lbs.
NEXT ASSY | USED ON | APPLICATION | DO NOT SCALE DRAWING

TITLE: ASSEMBLY, HYDRAFIBER EXPANDER MKII

SIZE C | DWG. NO. A53040-620-000-002 | REV A
SCALE: 1:16 | SHEET 1 OF 1

Mechanical drawing (typical)