

OPERATORS MANUAL FOR Encore NH



801 Burton Blvd. DeForest WI 53532
Ph: 608-846-7016 Fax: 608-846-1024
E-mail: info@aglaminators.com

Table of Contents

Chapter 1 Installation

- Selecting Area - - - - - 1-1
- Uncrating - - - - - 1-1
- Leveling - - - - - 1-1
- Electrical Connection - - - - - 1-2
- Pneumatic Connection - - - - - 1-2
- Recycling Packaging - - - - - 1-2

Chapter 2 Specifications

- Machine Dimensions - - - - - 2-1
- Electrical Requirements - - - - - 2-1
- Pneumatic Requirements - - - - - 2-1
- Material Capacity - - - - - 2-1

Chapter 3 Safety

- General Machine Safety - - - - - 3-1
- Operator Safety - - - - - 3-1

Chapter 4 Operation

- General - - - - - 4-1
- Right Front Control Panel, Figure 1 - - - - - 4-2
- Rear Control Panel, Figure 2 - - - - - 4-3
- Top Control Panel, Figure 3 - - - - - 4-4
- Web Tension Adjust, Figure 4 - - - - - 4-5
- Windup Stations, Figure 5 - - - - - 4-5
- Loading and Positioning Film - - - - - 4-6
- Web the Laminator - - - - - 4-7
- Pressure Sensitive Top Process, Figure 6 - - - - - 4-7
- Process Output Trouble Shooting - - - - - 4-9
- Process Control Chart - - - - - 4-12
- PLI Chart - - - - - 4-13

Chapter 5 Maintenance

- Nip Roll Section - - - - - 5-1
- Checking the Nip - - - - - 5-1
- Zeroing the Nip - - - - - 5-1
- Cleaning the Nip Rolls - - - - - 5-1
- Roller Open and Close Rate - - - - - 5-2
- Lubrication - - - - - 5-2
- Electrical Schematic - - - - - 5-3
- Pneumatic Schematic - - - - - 5-4

Chapter 6 Warranty

- Limited Warranty - - - - - 6-1

Selecting Area

Select an area that has a smooth, level surface for the laminator to set on, this will allow for easier maneuverability of the machine if it requires moving later on. The area should be large enough to allow an operator ample room to properly handle your largest product on the infeed and outfeed sides of the laminator. The sides of the laminator should also be easily accessible in case service or maintenance is required. AGL approximates this area should be about 7-8 feet in front and back of the machine and 3-4 feet on either end. This is only a suggestion, your plant and the products to be laminated will be the determining factor.

Uncrating

Your new laminator may come in a full crate. The crate is designed to be usable for future shipping if required, so careful disassembly of the crate is important if the crate is to be reused. The crate is held together by screws (Phillips head) a power screwdriver with a Phillips bit is recommended but not required for uncrating. First, remove the top of the crate, keep the screws for future use on the crate. Next, remove the front of the crate (it is recommended that two people disassemble the crate, so one person can hold the panels while the other removes the screws). Move around the crate and remove the remaining panels. Remove the bolts holding the laminator down to the skid. A fork truck can now lift the laminator off the skid (it is possible to get the laminator out of the crate after removing only the top and front and the hold down bolts). With the laminator on the fork truck, thread the adjusting bolts into the lower cross bar, make sure that the bolt heads are about ½" above the caster. Lower the machine down onto the casters. With 3-4 people to guide the machine, roll the machine into the final position.



CAUTION

The laminator is a large heavy piece of equipment. Do not attempt to move the machine with one person. Injury is possible as well as permanent damage to the laminator. The laminator should only be rolled on a relatively smooth and level surface. Tipping or forcing the machine over large bumps can destroy the alignment of the rolls, idlers, and unwind/windup shafts. This alignment is required for proper lamination. Advanced Grieg Laminators, Inc.'s warranty does not cover malfunction of the machine due to improper handling of the machine during installation.

Turn the leveling bolts down until they touch the floor. Remove the shrink wrap, bands, and protective coverings from the rolls.



CAUTION

Do Not use a knife or other sharp object to remove the shrink wrap from the laminator and the protective coverings from the rolls. This can cause irreparable damage to the laminator enclosures and rolls.

Leveling

The laminator has been trammed and burned in at the factory, but to insure the alignment of the machine it must be leveled in its final position. To level the machine, set a level on the upper front unwind/windup shaft. Turn the front leveling bolts until the bubble shows that the shaft is level. Repeat this procedure on the upper rear unwind/windup shaft. Next place the level across the upper unwind/windup shafts (front to rear) and adjust the leveling bolts to achieve a level reading. Repeat this procedure on the other end of the machine. Be sure to check the left to right level as it may have shifted when leveling from front to back. Repeat the previous procedures until you have a level reading at all four places. Tighten the jam nuts on the leveling bolts up tight against the lower cross bar to lock the bolts in place.



CAUTION

Do Not lift the casters more than ½" off the floor. This will cause the machine to be unstable.

Electrical Connection

Refer to the **Electrical Requirements** under Specifications for the proper requirements for your laminator. All connections to components and terminal blocks should be checked for tightness before initial startup. This will help avoid and electrical problems caused by connections that may have loosened due to vibration during shipping. A readily accessible disconnect device shall be incorporated into the fixed wiring circuit. The circuit breaker on the laminator is not considered a disconnect device. Consult a qualified, licensed electrician to ensure that the power supply for the machine is properly installed in your facility. Qualified personnel can remove the RH enclosure cover to allow access to the circuit breaker and grounding lug. Advanced Grieg Laminators, Inc. will not be responsible for damage caused by incorrect electrical installation. Before initial startup, check all switches to make sure they are in the off or open position.

Pneumatic Connection

Refer to the Pneumatic Requirements under Specifications for the proper requirements for your laminator. The air supply should be clean, dry, and regulated. Failure to properly clean and dry the air supplied to the laminator will cause damage to the cylinders, valves, and clutches. The laminator is supplied with a 1/4npt port for your final connection located in the lower right rear of the machine.



CAUTION

The air supply to the laminator must be clean and dry. Particles and moisture can damage the cylinders, brakes and clutches.

Before laminating with your new laminator, the open close rate of the nip and pull rolls must be checked. Refer to the maintenance section under **Roller Open and Close Rate**.

Recycling Packaging

If your machine came in a fully enclosed crate, the crate can be stored flat for future use or dismantled and the wood can be recycled. The screws can be kept for future use of the crates or stored for some other use. The shrink wrap is not recyclable and should be thrown away. The foam protective coverings over the rolls can be recycled to be used for other shipping purposes.

Machine Dimensions

Width: 89"
Height: 50"
Depth: 43" with tables extended, 35" with tables folded down
Weight: 2800 lbs.

Electrical Requirements

110/115 VAC, 50/60 Hz, 20 Amp service

Pneumatic Requirements

Approximately 2-3 cfm at 90 psi line pressure supplied via your cleaned/dried/regulated plant air.

Material Capacity

Upper Rear Station: 7.0" Diameter x 62 long x 3" Diameter core. Standard
Upper Front Station: 7.0" Diameter x 62 long x 3" Diameter core. Standard
Lower Front Station: 7.0" Diameter x 62 long x 3" Diameter core. Standard
Lower Rear Station: 7.0" Diameter x 62 long x 3" Diameter core. Optional

IMPORTANT READ THIS SECTION BEFORE OPERATING YOUR LAMINATOR

General Machine Safety

The following messages are written here for your safety, all operators and others around the laminator should read, understand and follow these messages.

1. Read and understand all the safety instructions.
2. Keep this manual in a place where it can be easily referenced by all operators.
3. **All connections to components and terminal blocks should be checked for tightness before initial startup. This will help avoid and electrical problems caused by connections that may have loosened due to vibration during shipping.**
4. Use only the recommended power source to run the laminator. Consult a qualified and licensed electrician if you are unsure of the power supply and the safety features of the supply.
5. If power supply cord is run across the floor, provide adequate protection to the cord to avoid damage from foot traffic, dropped items or rolling items.
6. Do not attempt to service the laminator without qualified personnel available. Damage to the machine or injury to you could be caused by moving parts or high voltage.
7. Do not operate the laminator with out all guards in place. If a guard is damaged or not working properly, replace or repair before returning the machine to operation. If the machine is run without all guards in place the safety obligation of the manufacturer is null and void.
8. Do not insert fingers, hands, or items into openings in the sideframes. Items may become entangled in moving parts or in contact with high voltage.
9. Disconnect or lockout power from machine when any service is required and when cleaning the nip rolls.
10. Disconnect or lockout power from the machine and refer to service personnel if the performance of the machine changes indicating a problem or if machine does not operate normally to correct operational procedures.
11. Adjust only items specifically covered by the operations portion of this manual. Any other adjustments may create problems in performance in your machine and may require servicing by qualified personnel to get machine back in correct working condition.

Operator Safety

Your laminator is designed to protect the operator from injury when used properly. Do not operate the machine until you have read and understand this manual and without all guards and protection devices in place, serious injury could occur.



WARNING

The nip section can pull you into laminator! Do not place fingers into the nip section when the rolls are rotating. It is recommended that operators tie long hair back and not wear neckties, loose clothing and jewelry since they can be caught in the nip section and pull the operator into the machine. Proper equipment such as gloves should be used if the material being laminated requires it. The nip rolls will lower if there is a loss of air pressure.

The nip section is protected by a photoelectric eye that shoots a light beam across the machine in front of the nip rolls. When the machine is in continuous run mode, the rolls will stop when the beam is broken by an item too close to the nip section. However, if the machine is in jog mode, an alarm will sound warning the operator that he/she is very close to the nip section, but the rolls will not stop rotating. The jog mode is useful for starting prints into the laminator and smoothing the print corners out as they enter the nip section, but this mode should be used as sparingly as possible since it puts the operator at a greater risk than the run mode.



CAUTION

When the machine is in jog mode, an alarm will sound to warn the operator but the rolls will not stop rotating when the light beam is broken. Use this mode sparingly and with respect.

There are E-stop switches on all four corners of the machine, as well as an E-stop ribbon switch in front. The machine will stop and the nip section will open if any of these switches are tripped. Striking the red mushroom heads on the switches with your palm can activate the four switches. The ribbon switch can be tripped by stepping on the yellow ribbon. The machine must be reset after and E-stop condition has occurred. Refer to the **Operation** section for further details.

General

1. Power: A switch in the lower right rear switches the main power on and off. The switch is labeled clearly so the operator can tell if the power is on or off.
2. Reset: A reset button is used to start the machine initially and restart the machine after an E-stop condition has occurred.
3. Speed: A potentiometer thumb wheel located on the top of the RH enclosure is used to control the speed that the laminator will run product through. Your laminator has the electrical and mechanical capability to run up to 15 feet per minute, but the quality of the product output is the governing factor in maximum process speed.
4. E-stops: E-stop switches are located at all four corners to allow the operator to stop the machine and open the nip rolls and pull rolls in case of emergency. The button must be pulled back out before pressing the reset button to restart the machine.
5. Nip Rolls: The nip rolls are the heart and soul of the laminator and must be cared for properly in order to give years of quality product output. Always dial the shim wheel to a shim setting greater than "0" when the machine is not in use. This will prevent the rolls from forming a flat spot from resting against each other.



CAUTION

Always set the shim wheel to a setting greater than "0" when the machine is not in use. This will prevent the roll from coming together and forming a flat spot. Permanent damage can be caused to the rolls if this warning is not heeded.

6. Fwd-Stop-Rev: There are a set of 3 buttons located on the top of the RH enclosure used to select the direction of the machine and to stop the machine. When standing in front of the machine, the green lit button that is farthest away from you is the reverse button, the red lit button is the stop button and the green lit button closest to you is the forward button.
7. Foot Switch: The foot switch will run the laminator in the direction depicted by the Fwd/Rev button and at the speed set by the potentiometer. The foot switch is always active, this allows an operator to press the foot switch to get a print started and then press the direction button to transfer to the continuous run mode without stopping.
8. Nip Roll open/close- This switch will open and close the nip rolls. When the switch selects the roll to close the switch will illuminate.
9. Regulators- The regulators are used to control the air pressure to the cylinders for the nip and pull rolls. The regulator knob is turned clockwise to increase pressure and counter clockwise to decrease pressure.
10. Guages- The guages on the front and rear panels show the air pressure supplied to the nip and pull rolls. This will be a very repeatable reading that can be documented for quicker setups on jobs.

Right Front Control Panel

The right front control panel looks like the figure below.



Figure 1 Right Front Control Panel

Main Roller Controls:

The rocker switch will open and close the main nip rollers. The switch will illuminate when the rolls are selected to close. The pressure gauge is an indicator of how much pressure is being supplied to the nip roll cylinders. This pressure is critical to your processes, therefore the pressure gauge gives an accurate repeatable reference for quality product runs on your laminator. The regulator adjusts the pressure to the nip roll cylinders, clockwise to increase the pressure, counterclockwise to decrease pressure.

Speed/Counter:

The speed display is optional on the SH model. If equipped, the speed display will show the laminator speed in feet per minute. The display can also display linear feet of material used by pressing the "Sel" button to toggle between the speed and counter display. The display will show an "R" in the left side if the rate display is selected. If the display is in counter mode, the counter can be reset by pressing the "Rst" button. The display will go to 0 and begin counting up again.

Power Indicator:

The power indicator light shows that power is supplied to the machine. If an emergency stop occurs, this light will go out.

Rear Control Panel



Figure 2. Rear Control Panel

Reset Switch:

This switch is for initial startup and resetting the machine after it has had an emergency stop.

Top Control Panel

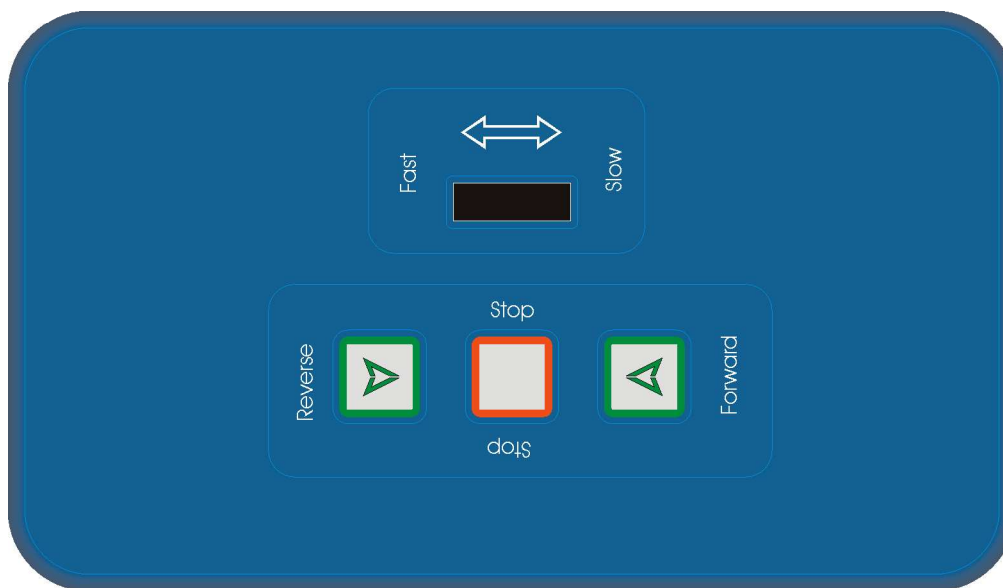


Figure 3. Top Control Panel

The top control panel is used to control the speed and direction of the machine. There are three buttons located to the left of the panel and a potentiometer wheel on the right. The potentiometer wheel controls the speed setting of the machine. As you push the wheel away from you (when standing in the front of the laminator) the speed will increase. There is a numerical display to reference for speed settings. If equipped, there may also be a digital speed readout on the front display.

Direction buttons:

The right button is for Forward, the middle button is for Stop, and the left button is for reverse. The buttons can be used in numerous ways depending on the operation required.

Continuous mode from stop

To start the machine in continuous mode from a stop, press and hold the forward button for 4 seconds. The forward button will begin to flash and the machine will move in the forward direction if the photoeye is not blocked. If an object blocks the eye, the machine will return to stop mode.

Jog mode

To start the machine in jog mode, press the forward button, it will illuminate. Press the footswitch and the machine will begin moving in the forward direction as long as the footswitch is pressed. The photoeye now only works as warning device. If the operator is holding down the footswitch and an object breaks the eye, a warning buzzer will sound but the rolls will not stop. This is useful when starting prints, but the operator must use this with extreme caution as it puts them at a high risk for injury. The reverse button can be used to jog the machine in reverse in case of jams or wraps. As long as the operator presses and holds the reverse button the machine will run in reverse. When the button is released, the machine will return to stop mode.

Jog to Continuous mode transfer

Follow the above steps in jog mode to start print, then while still holding down the footswitch, press the forward direction button again. The button will begin to flash and now the machine is in continuous run mode. The operator can step off the footswitch and the machine will continue to run.

Note: Sometimes the trailing edge of the print may curl up and trip the eye when in continuous run mode. This could stop the machine and lead to a ruined print. If the operator sees this is going to happen, simply step on the footswitch, if the eye trips the machine will go back to jog mode and can be manually run to get the print through. Press the direction button again to transfer to continuous run mode.

Web Tension adjust

The brakes on your machine are located on the unwind shafts near the left hand side of the machine. The brakes use compression of the delrin block on the shaft to create back tension on the web. For best results when laminating use the least amount of tension as possible for your application. The knob on the block will increase tension when turned clockwise and decrease tension when turned counterclockwise. An optional 10 bar LED display is available. The brake assembly is shown below.

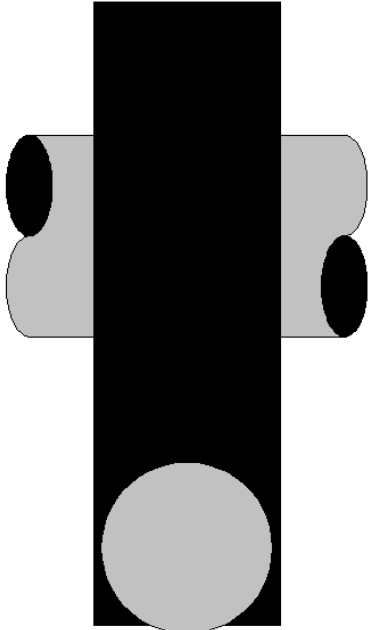


Figure 4. Brake Assembly

Windup Stations

The windup stations are used to take material up. The liner windup station which is located in front and above the nip rolls is used to windup the release liner of pressure sensitive film. There is also a product windup station available that winds up the finished product after it exits the pull rolls. This windup station is located underneath the pull rolls. The adjustment disc for these stations is located on the right hand side. The knurled disc is rotated away from the operator to increase the friction drive and toward the operator to decrease the friction drive. The adjustment disc assembly is shown below:

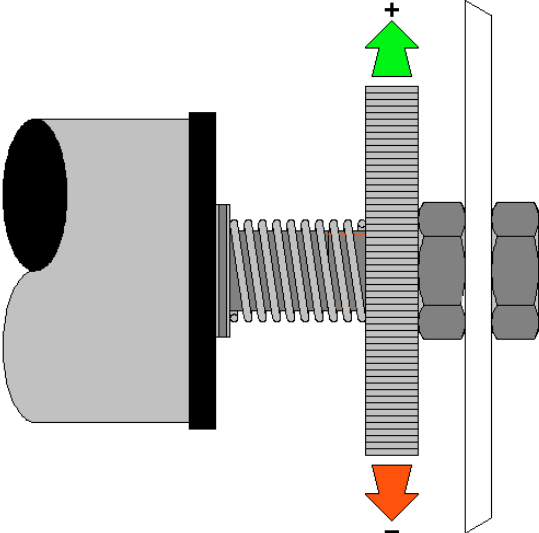


Figure 5. Windup adjustment assembly

Laminator Setup

Your laminator has been designed to make the setup and lamination process as easy and repeatable as possible, however, there will be techniques that make this phase easier that you will only learn by using the machine. Do not get frustrated if the setup process takes longer than you expected, the process will get quicker and easier the more you use your laminator.

The set up process is comprised of the following steps:

1. Loading and positioning the film.
2. Webbing the laminator.
3. Setting the process controls to initial settings.
4. Warm up time (if required by process)

Loading and Positioning the Film

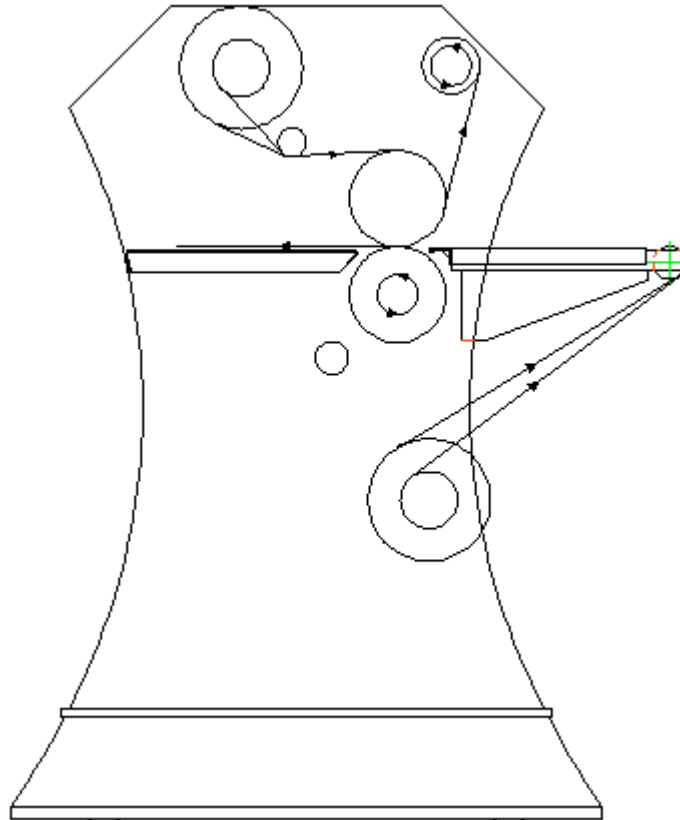
1. Determine the way the film is wound, adhesive inside or outside. This will determine the way it is placed on the unwind shaft. If the adhesive is wound to the inside, the web will be pulled from the bottom of the supply roll. The web path configuration figures show the film in this configuration.
2. Pull the plunger on the shaft support out and rotate it slightly so that it stays in the retracted position. Grasp the shaft and using your thumb lift the shaft locking arm up so that shaft can be pulled out from support.
3. Loosen the set screw in the core support collar using the allen wrench provided. Slide the core support collar off the shaft.
4. Slide the roll of film onto the shaft and up onto the locking core chuck. Slide the core support collar onto the shaft and into the end of the film core.
5. Swing the unwind/windup shaft with film back into the support and rotate the plunger so that it snaps back into position and locks the shaft locking arm into place.
6. Measuring from the sideplates, make sure the film is centered on the shaft. Once the measurements from each end of film to the sideplates are equal, tighten the locking core chuck and core idler down.
7. Repeat this process on any other unwind station.
8. If the film is a pressure sensitive with a release liner, you will need to set up a wind up station. This is done by webbing the film under an idler and separating the film and liner. Once the liner has been separated from the film, it must be routed up and taped to a windup core.
9. The wind up core is loaded by removing the windup tube. Grab the tube and press it back against the spring loaded cup until the near end clears the drive cup. Place core over tube and replace back in machine. Center core on windup tube, use a piece of tape to prevent the core from slipping if required. Keep in mind that the windup cores will rotate the exact same direction as the lower nip roll.
10. Tape the release liner to the core and windup any slack by hand. Feed the film with adhesive around and through the nip opening. **Note: You may require feeder stock to keep the film from sticking to the lower nip roll.**

Webbing the Laminator

The term webbing means routing the film through the laminators' idlers and nip rolls and thus creating a web. The easiest way to web the machine up after loading the film is by using a piece of feeder stock. The stock can be anything that is relatively stiff, but still flexible enough to route around the nip roll. A common example would be tag board.

The first step in webbing the machine is to have a planned web path configuration. Shown below is the pressure sensitive top process.

Pressure Sensitive Top Process



**Figure 6. Pressure Sensitive Top Process
Web Diagram**

Pressure Sensitive Top Process

1. Load film on the rear upper unwind station. Note that the lower front station cannot be used for a pressure sensitive film with a release liner. Turn the brake to zero.
2. Set temperatures on upper roll if required by film and allow to balance at temperature.
3. Set the shim wheels to "0" on both the nip rolls and pull rolls, place a piece of feeder stock into the nip rolls with plenty of stock hanging out the front. Close the nip rolls onto the piece of feeder stock.

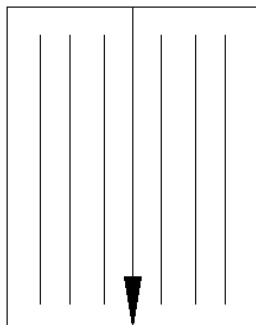


WARNING

The nip section can pull you into laminator! Do not place fingers into the nip section when the rolls are rotating. It is recommended that operators tie long hair back and not wear neckties, loose clothing and jewelry since they can be caught in the nip section and pull the operator into the machine

4. Pull the film from the upper rear station down under the idler roller directly behind the nip roll and over the top of the top nip roll. Separate the release liner from the film and stick the film to the feeder stock.
5. Route the release liner up to the front upper windup station. Tape the release liner to the wind up core.
6. Select the forward direction, set the speed adjust wheel to a low setting.
7. Using the footswitch, run web through the nip and onto the outfeed surface.
8. If your machine is equipped with optional product windup, route the web down to windup core and tape to core.
9. Using your process sheets, make all the initial settings for your process. Machine is now ready to laminate. Follow the procedures in operation to start your prints and set machine in run mode.

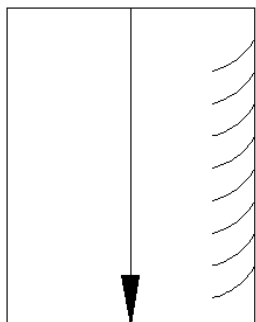
Process Output Trouble Shooting



Straight waves in output

Pull roll creating too much tension → Decrease clutch air pressure

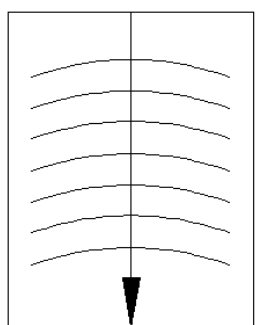
Film not cooling fast enough → Slow feed rate down and turn on cooling system.



Waves on one side of output

Nip “zero” setting may be incorrect → Check nip setting and adjust if necessary. Refer to **Zeroing the Nip** in the maintenance section.

Pull roll “zero” setting may be incorrect → Check nip setting and adjust if necessary. Refer to **Zeroing the Nip** in the maintenance section. Pay particular attention to sides opposite the waves.



D-Waves in Product

If waves are in the substrate and not film

Substrate problem → Check the substrate moisture content and the substrate tension.

If waves are in the film

Low tension between nip & pull roll → Increase air pressure to pull roll clutch.
Roll pressure settings → Adjust nip and pull roll settings as required.

Web Breaks

Web breaks caused by excess tension: If the web breaks between the unwind station and the nip, reduce the unwind brake tension. If the web breaks between the laminating opening and the rewind station, reduce the rewind clutch tension.

Web breaks will occur from faulty material. The AGL laminator will not correct this; the material must be replaced.

Curl in Product

1. Running a hot mount material in cold-mount machine sometimes creates a curl in the finished product.
2. Too much web tension: Reduce unwind brake pressure.
3. Excessive roll pressure: Reduce upper roll pressure.
4. Wrong spacers being used.

Wrinkles in Product

1. Check the adhesive stock for wrinkles while operating. If wrinkles exist, this is a manufacturing material defect, and must be cut out of the roll. A laminator will not correct material defects.
2. String the web straight and square between the unwind and the windup shafts. If it is not straight and square, the tension will not be even across the web and will cause wrinkling.
3. If the web is loose between the unwind and the drive roll, there is not enough pressure on the unwind brake. Increase the pressure on the unwind brake to correct.
4. If the web is loose between the windup and the drive roll, there is not enough pressure on the windup clutch. Increase the pressure on the windup clutch to correct.
5. If the web gets narrow between the unwind and the drive roll, there is too much pressure on the unwind brake. Decrease the pressure on the unwind brake to correct.
6. Top and bottom laminating rolls may not be parallel. Make sure spacer shims are the same size, then zero the nip. Refer to **Zeroing the Nip** in the maintenance section.

Poor Lamination

1. All substrate materials must be cleaned and free of dust, dirt, grease, and any other type film.
2. Poor lamination is usually caused by thickness variation in the substrate materials such as plywood, hard board or other such non-precisely made materials. To overcome this, cylinder spacers may have to be removed and materials laminated without the use of cylinder spacers, or the next smaller spacer may be used or special spacer utilized.
3. Material such as Plexiglas or glass sometimes carry a greasy or oily film. These materials may need to be cleaned with a solvent prior to lamination.
4. Poor lamination can be caused by defective material. To correct this, replace defective material with higher quality material.

Bubbles in Product

1. Visually inspect materials, mounting or overlays for any voids in the adhesive film. If any exist, it cannot be corrected by any laminating machine - that part of the material should be discarded.
2. Low pressure on nip rolls → Increase air pressure to nip rolls.
3. Incorrect shim setting → Adjust shim wheel to correct setting.
4. Nip “zero” setting may be incorrect → Check nip setting and adjust if necessary. Refer to **Zeroing the Nip** in the maintenance section.

Process Control Charts

In order to consistently output high quality product, the operator must have a definite starting point on the many process variables. This can be achieved by having the operators document system settings when you have achieved acceptable quality output. The process control chart will allow any operator to set the machine up for a given process. Keep in mind that the system variables may require adjusting as the process is being run, but the chart gives an excellent starting point. Factors such as temperature, humidity, changing film roll diameters all affect the process, therefore, operator technique in running the machine is inevitable. There is a blank process control chart located on page 4-10, copy this page as often as needed for new processes.

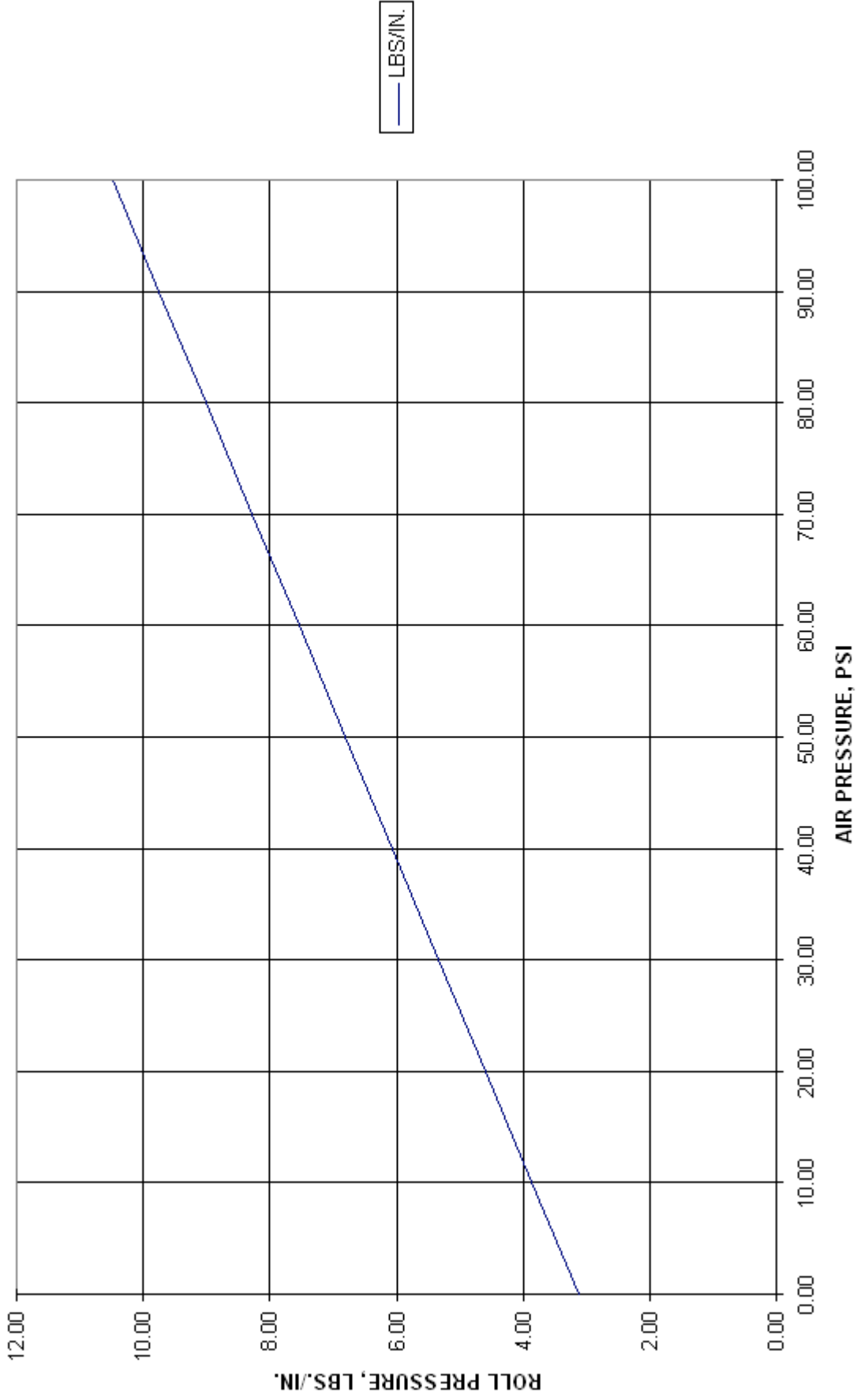
PROCESS CONTROL CHART

Process: _____
 Product: _____
 Material Top: _____
 Material Bottom: _____
 Other Material: _____
 Date Settings Documented: _____

Front Control Settings	
Speed (Ft/min):	Direction: Forward
Nip Roll: Up Down	Shim Dial Setting:
Roll Pressure: (PSI)	

Other Instructions: _____

AGL64 SERIES LAMINATOR ROLL PRESSURE



Maintenance

As a result of years of experience, refined engineering and construction techniques, very little time need be lost to maintenance. However, regular maintenance will keep your laminator operating at its optimum level.



WARNING

Removing the enclosure covers to work on machine exposes person to electrocution and moving parts hazard. Only trained service personnel should perform maintenance with any guards or covers removed.

Nip Roll Section

The most critical adjustment of the nip and pull rolls is the “zero” position. This adjustment makes the top roll parallel to the bottom roll which creates even pressure and pull distribution across the face of the roll. If the rolls are out of adjustment, the machine will not laminate properly. Zeroing the nip is done at the factory before shipment, but should be checked at startup and if laminator is not creating quality output.

Checking the Nip

1. Place two pieces of thin paper (approximately 1.0” wide by 12.0” long) between the upper pressure roll and the lower roll (about 3.0” from each end).
2. Set the shim dial to the “0” setting and put the upper pressure roll in the down position by activating pressure roll valve.
3. Pull gently on both pieces of paper, if both pieces of paper have the same drag, the nip is fine, if the drag is different, follow the procedure below to correct the setting. The pull rolls are adjusted the same as the nip rolls.

Zeroing the Nip

1. Loosen the set screws in the cylinder stop.
2. Adjust the cylinder stop clockwise to raise the roll and counter clockwise to lower the roll. (The direction is based on you looking down on the cylinder from above)
3. Check the nip using the 3 steps shown in the **Checking the Nip** section.
4. Once the drag on the pieces of paper has been equalized, tighten the setscrews to secure the cylinder stop.

Cleaning the Nip Rolls



WARNING

Cleaning the nip rolls may require the nip rolls to be rotating. Rotate the rolls at a very slow rate to avoid being pulled into the nip section. Do not wear neck ties, loose clothing or hanging jewelry that could be pulled into the nip section.

The nip rolls should be cleaned as often as necessary, the frequency will vary on the products used and the processes being run. AGL recommends a mild detergent solution or denatured alcohol with a 100% lint free cloth to clean the rolls. Your film manufacturer can recommend solvents that will remove the adhesive from silicone and neoprene rolls without causing damage to the coverings. To facilitate the cleanup process, adhesives should be cleaned from the rolls as soon as possible and while the roll is still warm. A rubber "eraser" has been included in your accessory kit that can be used to clean the adhesive from the warm rolls. Rub the eraser over the adhesive with the rolls turning very slowly. The cloth and alcohol can be used to remove the residue.



CAUTION

Use of incorrect solvents on your nip and pull rolls can cause irreparable damage to the coverings. Advanced Grieg Laminators, Inc. is not responsible for damage to roll coverings caused by these solvents.

Roller open and close rate

The rollers must open and close evenly to prevent excessive wear on the cylinders and bearings. This rate is set at the factory, but can be adjusted in the field. Follow the procedure below to adjust either the pull rolls or nip rolls.



WARNING

Maintenance that requires working on the machine while power and air are connected poses and imminent danger of electrocution or extremities being caught in rotating parts. Only qualified personnel should work on a machine in this state

1. There are flow control fittings on both cylinders, but the fittings on the left hand cylinders will require most of the adjusting.
2. To increase the rate, turn the adjustment screw counter clockwise, to decrease the rate turn the adjustment screw clockwise. The upper fitting controls the "Open" rate, and the lower fitting controls the "Close" rate. Do not rotate the screw more than ½ turn at a time.
3. Adjust the open rate until the rolls open correctly, then proceed with the close rate.
4. Lock the adjustment screw in place with the jam nut. Be careful not to turn the adjustment screw as you tighten the nut.
5. Replace enclosure covers.

Lubrication

The bearings should be checked for grease leakage after 3 months of use and then every 6 months from there on. The grease is a standard lithium based grease. The grease should be added slowly with the shaft turning until a slight bead forms at the seal.

Manufacturer lubrication recommendations:
Std. Temp Bearings: Shell Alvania Grease No. 3

When the bearings are being greased, the bearing gibs should also receive a coating of lithium grease.

The chain should be lubricated as needed with a Lubriplate spray chain lubricant. The tension in the chain should be checked at 6 months and tightened to take up any stretching that may have occurred, and then inspected yearly from that point on.

Warranty and Conditions

AGL warrants all models of the laminator's product line manufactured to be free from defects in workmanship and materials for a period of one year with the exception of operator caused damage, or surface abrasions to the laminating rolls or other obvious caused damage. Compression set in silicone covered nip rolls can occur when a thicker material combination is run in the same lateral position through the nip roll on a consistent basis. This will permanently damage the silicone cover. Randomizing the lateral position of the process through the nip rolls for continuous production runs will maximize the life of the silicone covering. It is the sole responsibility of the end user to periodically shift the process from one side to the other to prevent compression set from happening. Compression set in the silicone coverings is not covered under the factory warranty. The warranty period will commence on the date it ships from AGL.

This warranty does not apply to any equipment which after delivery has been subject to abuse, accident or alterations by anyone other than persons authorized by AGL.

Component parts such as controls, motors, heating elements, air cylinders, rubber coverings, etc. which are incorporated into the design and manufacture of our laminators are purchased from reputable manufacturers and suppliers and, as such carry their respective warranties. Failure of any components purchased by AGL and incorporated in the laminators carry supplier warranty and to insure proper credit all parts that should fail must be returned freight prepaid for evaluation **LABOR AND ALL RELATED COSTS TO REPLACE THE DEFECTIVE PART WILL BE BORNE ENTIRELY BY THE END USER.** AGL assumes the responsibility of incorporating these various component parts into the fabrication of the laminator and warrants that this will be done in a suitable and workable manner.

AGL offers no warranty for the laminated product and/or process that the machine produces and as such will not be liable for any special, indirect or consequential damages.

NO OTHER WARRANTY IS EXPRESSED OR IMPLIED INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS FOR ANY PARTICULAR PURPOSE. AGL is not liable for incidental or consequential damage such as, but not limited to, lost profits, loss of use of other equipment or increases in operating costs or expenses.

Bill Of Material

Part #: AGL-64-K4968

Appl #:

Assy #:

BOM Rev: B

Model #:

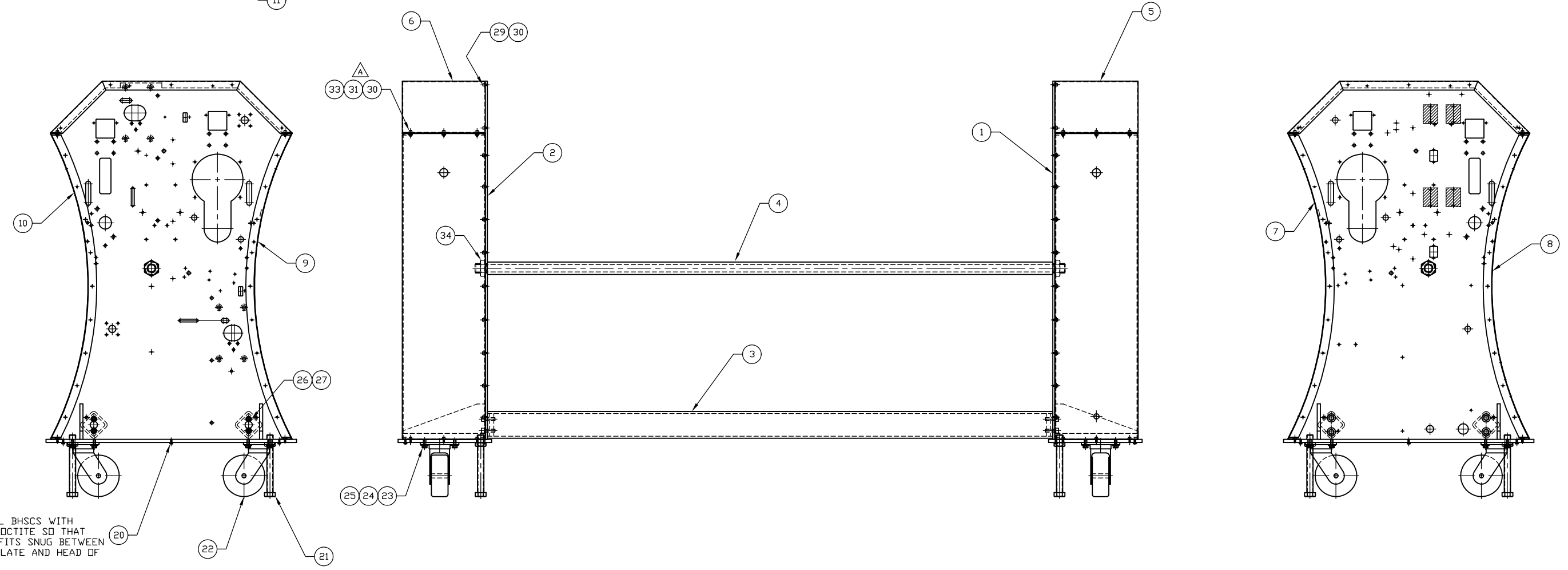
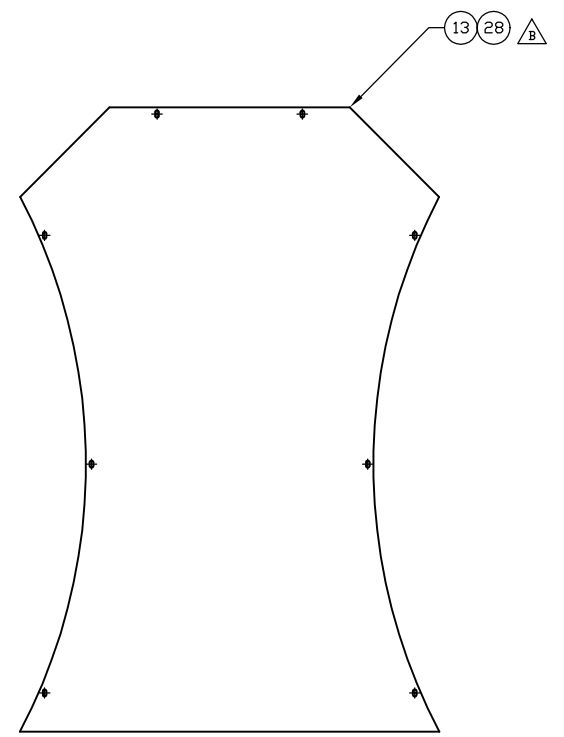
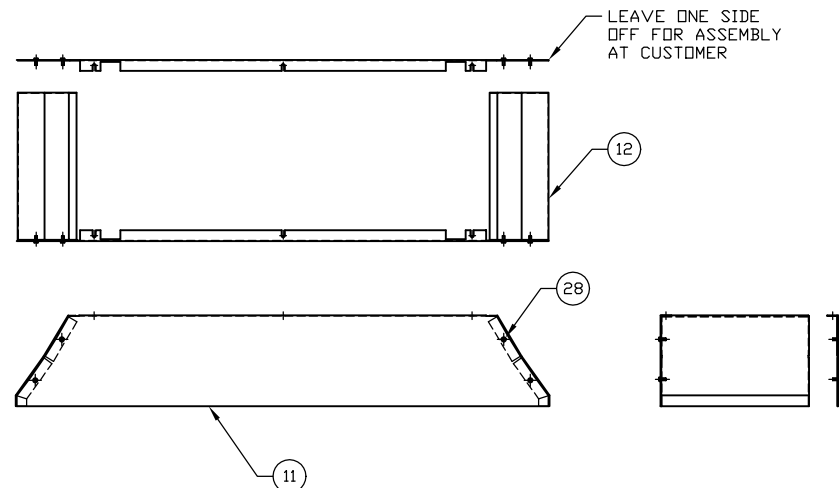
Rev:

Rev:


Date: 4/24/2003

Description: MASTER BILL OF MATERIALS, ENCORE NH (STD)

Item:	Part #:	Description:	Qty:
1	AGL-64-K4803-1	MAIN MACHINE FRAME, ENCORE SERIES	1
2	AGL-64-K5015	NIP ROLL ASSEMBLY, ENCORE NH	1
3	AGL-64-K5006	DRIVE ASSEMBLY, ENCORE NH	1
4	AGL-64-K4760-2	UNWIND ASSEMBLY, NO DISPLAY, ENCORE	1
5	AGL-64-K4731-1	LINER WINDUP ASSEMBLY, ENCORE	1
6	AGL-64-K4748	IDLER ASSEMBLY	1
7	AGL-64-K4972-1	INFEED TABLE, REMOVABLE, ENCORE SH & NH	1
8	AGL-64-K4976	OUTFEED SURFACE ASSY, ENCORE SERIES	1
9	AGL-64-K5004	PNEUMATIC ASSEMBLY, ENCORE SH & NH	1
10	AGL-64-K4988	BASE ELECTRICAL ASSY, ENCORE NH	1
11	AGL-64-K5001	DECAL PACKAGE, BASE ENCORE NH (BLUE)	1
12	AGL-XX-K2660	ACCESSORIES KIT, 44/4400/64 SERIES/6400/6450	1
13	AGL-64-K5033	INFEED HOLD DOWN ASSEMBLY, ENCORE SERIES	1



INSTALL BHSCS WITH BLUE LOCTITE SO THAT SKIRT FITS SNUG BETWEEN BASE PLATE AND HEAD OF SCREW

BREAK ALL SHARP EDGES				 Advanced Greig Laminators, Inc. 801 Burton Blvd. DeForest, WI 53532	
DO NOT SCALE DWG.				MATERIAL: AGLK4803-1	
UNLESS OTHERWISE SPECIFIED				FINISH:	
0.00 +/-0.015				SCALE: 1/6" = 1"	
0.000 +/-0.005				DATE: 4-7-03	
ANGLES +/- .5°				DWG. NO. AGL-64-D4802-1	
JOB NO. QTY. DWG. BY. CHK. BY.		GFT		REV. B	

B	REMOVED 8 FASTENERS (28)	11-7-07	GFT	
A	REMOVED #32	11-29-04	GFT	
REV. NO.	DESCRIPTION	DATE	INT.	ECN

Bill Of Material

Part #: AGL-64-K4803-1

Appl #:

Assy #: AGLD4802-1

BOM Rev: D

Model #:

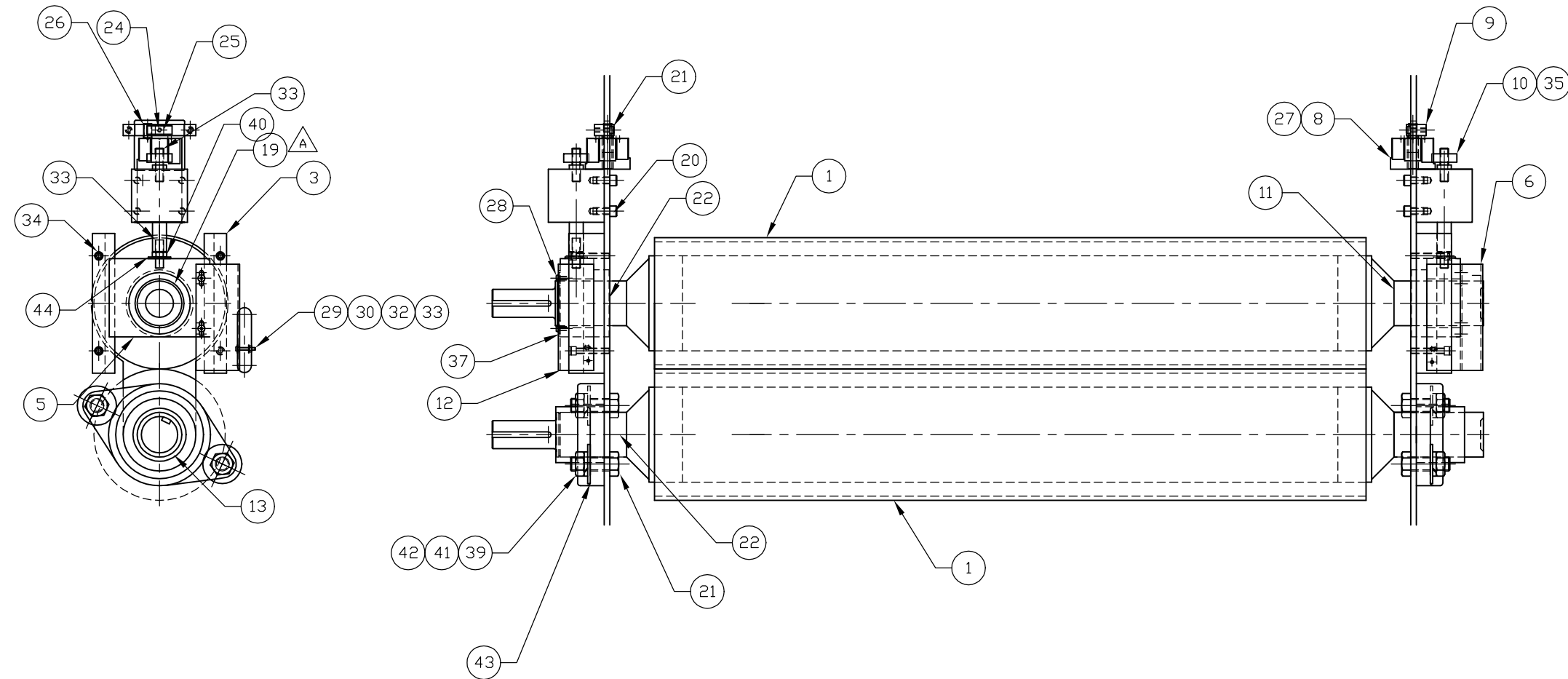
Rev:


Rev: B

Date: 4/7/2003

Description: MAIN MACHINE FRAME, ENCORE SERIES

Item:	Part #:	Description:	Qty:
1	AGL-XX-D4798-1	RH. SIDEPLATE WELDMENT, ENCORE SERIES	1
2	AGL-XX-D4797-1	LH. SIDEPLATE WELDMENT, ENCORE SERIES	1
3	AGL-64-B4801	LOWER TIE BAR	2
4	AGL-64-B0010-03	CROSS TUBE, WHITE	1
5	AGL-XX-D4799	RH. TOP WRAP	1
6	AGL-XX-D4800	LH. TOP WRAP	1
7	AGL-XX-C4937	WRAP WLD, RIGHT FRONT	1
8	AGL-XX-C4938	WRAP WLD, RIGHT REAR	1
9	AGL-XX-C4939	WRAP WLD, LEFT FRONT	1
10	AGL-XX-C4940	WRAP WLD, LEFT REAR	1
11	AGL-XX-C4789	SKIRT, SIDE	4
12	AGL-XX-B4790	SKIRT, END	4
13	AGL-XX-C4788-1	COVER, ENCORE SERIES	2
20	000071-03	BHSCS, #10-32UNF, 3/8 LG, BLACK	12
21	000358-36	HHCS, 3/4-10UNC, 7 LG, ZINC	4
22	001451	CASTER, SWIVEL, 5 DIA 900 LBS.	4
23	000340-06	HHCS, 5/16-18UNC, 3/4 LG, ZINC	16
24	000207-07	WASHER, FLAT, SAE, 5/16 DIA, 11/16 OD, 11/32 ID, ZINC	16
25	000493-07	WASHER, LOCK, 5/16 DIA, SPLIT, ZINC	16
26	000343-12	HHCS, 3/8-16UNC, 1-1/2 LG, ZINC	8
27	000493-08	WASHER, LOCK, 3/8 DIA, SPLIT, ZINC	8
28	000055-03	BHSCS, #8-32UNC, 3/8 LG, BLACK	40
29	000035-03	SHCS, #10-32UNF, 3/8 LG, BLACK	34
30	000207-04	WASHER, FLAT, SAE, #10 DIA, 1/2 OD, 7/32 ID, ZINC	58
31	000334-04	HHCS, #10-24UNC, 1/2 LG, ZINC	12
33	001211-04	NUT, K-LOCK, #10-24UNC, ZINC	12
34	000198-15	NUT, HEX, JAM, 1-1/8-12UNF, ZINC	4



					BREAK ALL SHARP EDGES		 Advanced Greig Laminators, Inc. 801 Burton Blvd. DeForest, WI 53532	
					DO NOT SCALE DWG.			
C	CHANGED TO COLD ROLLS	3-30-04	GFT		UNLESS OTHERWISE SPECIFIED 0.00 +/-0.015 0.000 +/-0.005 ANGLES +/- .5°	MAT'L: AGLK5015		NIP ROLL ASSEMBLY ENCORE NH
B	#20 WAS BHSCS, #21 WAS SHCS	1-12-04	GFT			FINISH:		
A	REMOVED #13 ADDED #19	7-11-03	GFT			JOB NO.	QTY.	
REV NO.	DESCRIPTION	DATE	INT.	ECN	SCALE: 1/4" = 1"		DWG. NO. AGL-64-C5016	REV. C
					DATE: 4-28-03			

Bill Of Material

Part #: AGL-64-K5015

Appl #:

Assy #: AGLC5016

BOM Rev: C

Model #:

Rev:

Rev: C

Date: 4/10/2003

Description: NIP ROLL ASSEMBLY, ENCORE NH

Item:	Part #:	Description:	Qty:
1	AGL-64-D5270	NIP ROLL, COLD, AGL64	2
3	AGL-64-B1117	BEARING GIB	4
5	AGL-XX-B4674	HOUSING, BEARING, UPPER ROLL	2
6	AGL-64-B1121-1	RH. PHOTOEYE MTG. BRKT, AGL64	1
8	AGL-64-B0015	SHIM WHEEL	2
9	AGL-XX-B4707	SHIM WHEEL SUPPORT	2
10	AGL-64-B0913-1	STOP, CYLINDER, TAPPED	2
12	AGL-64-B4325	LH. PHOTOEYE MTG. BRKT, AGL64	1
19	012411-24	BEARING, 2.00 ID. x 2.188 OD. x 1.50 LG.	2
20	000011-06	SHCS, 5/16-18UNC, 3/4 LG, BLACK	8
21	012372-14	HHCS, 5/8-11UNC, 1-3/4 LG, PLAIN BLACK FINISH	4
22	000417-32	COLLAR, SHAFT, 2-PIECE, 2 DIA BORE, 11/16 WIDE	1
23	000007-06	SHCS, #10-24UNC, 3/4 LG, BLACK	4
24	000129-06	SSS, CUP PT, #10-24UNC, 3/8 LG, BLACK	2
25	000289-16	PIN, DOWEL, 3/8 DIA, 2 LG	2
26	001392-15	PLUNGER, SPRING, LEP, 3/8-16UNC, 5/8 LG	2
27	000732-06	BUSHING, BRONZE, 3/8 ID, 1/2 OD, 3/4 LG	4
28	000055-03	BHSCS, #8-32UNC, 3/8 LG, BLACK	2
29	000553-08	PHMS, SLOTTED, #4-40UNC, 1 LG, ZINC	2
30	000207-01	WASHER, FLAT, SAE, #4 DIA, 5/16 OD, 1/8 ID, ZINC	4
31	000493-01	WASHER, LOCK, #4 DIA, SPLIT, ZINC	2
32	000201-01	NUT, HEX, #4-40UNC, ZINC	2
33	000161-24	SSS, CUP PT, 3/8-24UNF, 1-1/2 LG, BLACK	4
34	000009-12	SHCS, 1/4-20UNC, 1-1/2 LG, BLACK	8
35	012378-04	SSS, BRASS TIP, 1/4-20UNC, 1/4" LG.	4
37	012396-32	BEARING, THRUST, WASHER, 2 DIA BORE, .03 THICK	2
38	000928-128	RING, RETAINING, EXT, 2 DIA	2
39	000195-11	NUT, HEX, JAM, 5/8-11UNC, ZINC	4

Part #: AGL-64-K5015

Appl #:

Assy #: AGLC5016

BOM Rev: C

Model #:

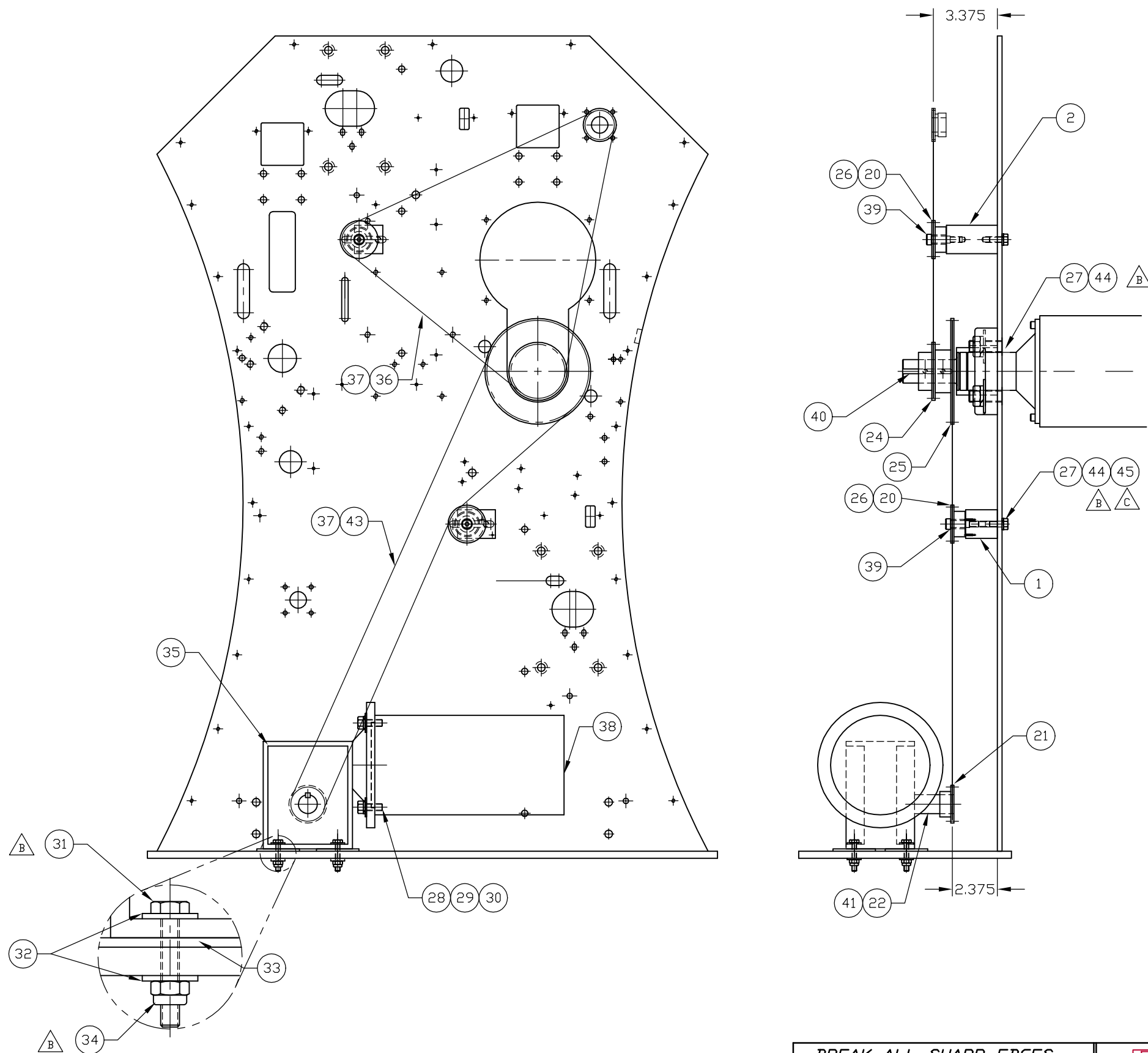
Rev:

Rev: C

Date: 4/10/2003


Description: NIP ROLL ASSEMBLY, ENCORE NH

Item:	Part #:	Description:	Qty:
40	000198-07	NUT, HEX, JAM, 3/8-24UNF, ZINC	2
41	000207-12	WASHER, FLAT, SAE, 5/8 DIA, 1-5/16 OD, 21/32 ID, ZINC	4
42	000493-12	WASHER, LOCK, 5/8 DIA, SPLIT, ZINC	4
43	000764-32	BEARING, FLANGE, 2-BOLT, 2 DIA BORE	2
44	012416-07	WASHER, FLAT, SAE, 5/16 DIA, 11/16 OD, 11/32 ID, BLACK OXIDE	2



D	REMOVED #3, ADDED #33	11-7-05	GFT	
C	ADDED #45	11-29-04	GFT	
B	31 WAS SHCS, 34 WAS STD NUT, 27 WAS BHSCS, ADDED 44	10-27-03	GFT	
A	MOVED TENSIONER UP 6"	8-21-03	GFT	
REV NO.	DESCRIPTION	DATE	INT.	ECN

BREAK ALL SHARP EDGES				
DO NOT SCALE DWG.				
UNLESS OTHERWISE SPECIFIED		MAT'L: AGLK5002 AGLK5006		
0.00 +/-0.015 0.000 +/-0.005		FINISH:		
JOB NO.	QTY.	DWG. BY:	CHK BY:	
		GFT		
ANGLES +/-5°				

 Advanced Greig Laminators, Inc. 801 Burton Blvd. DeForest, WI 53532		DRIVE ASSEMBLY ENCORE SH & NH		REV.
				D
SCALE: 1/4" = 1"	DWG. NO.	AGL-64-C5003		
DATE: 4-2-03				

Bill Of Material

Part #: AGL-64-K5006

Appl #:

Assy #: AGLC5003

BOM Rev: B

Model #:

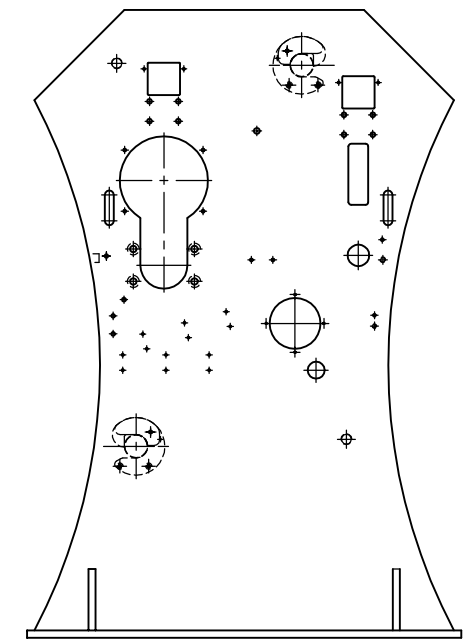
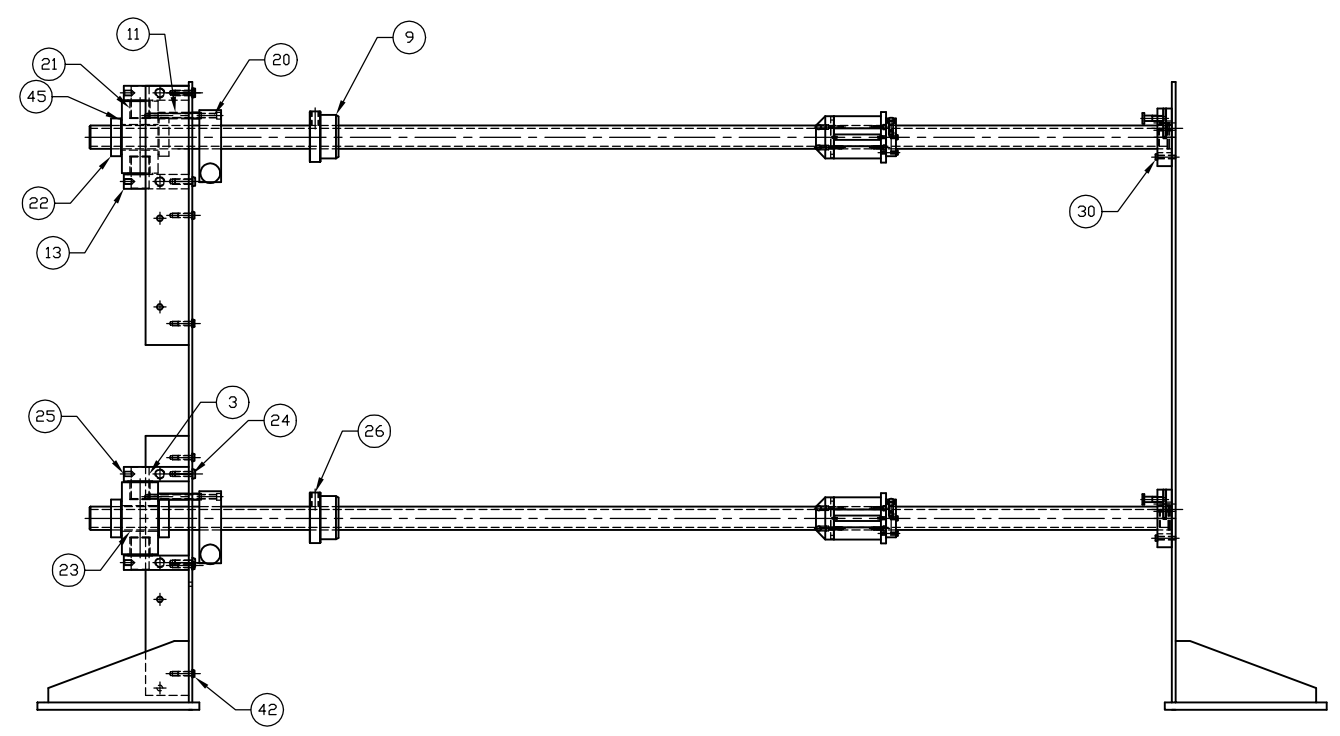
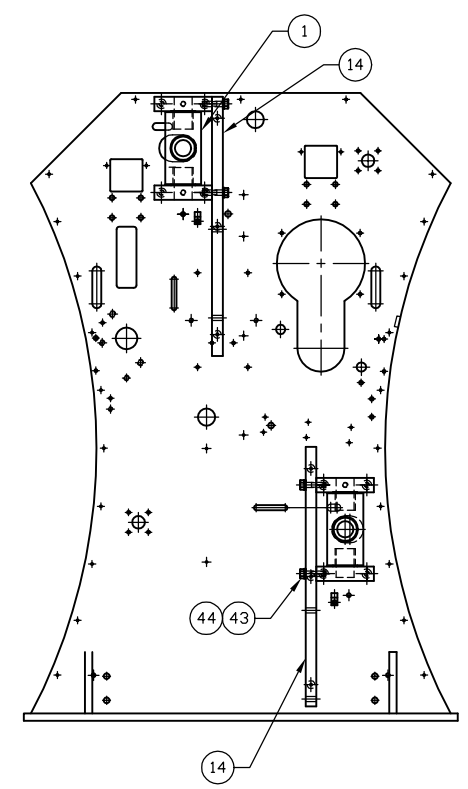
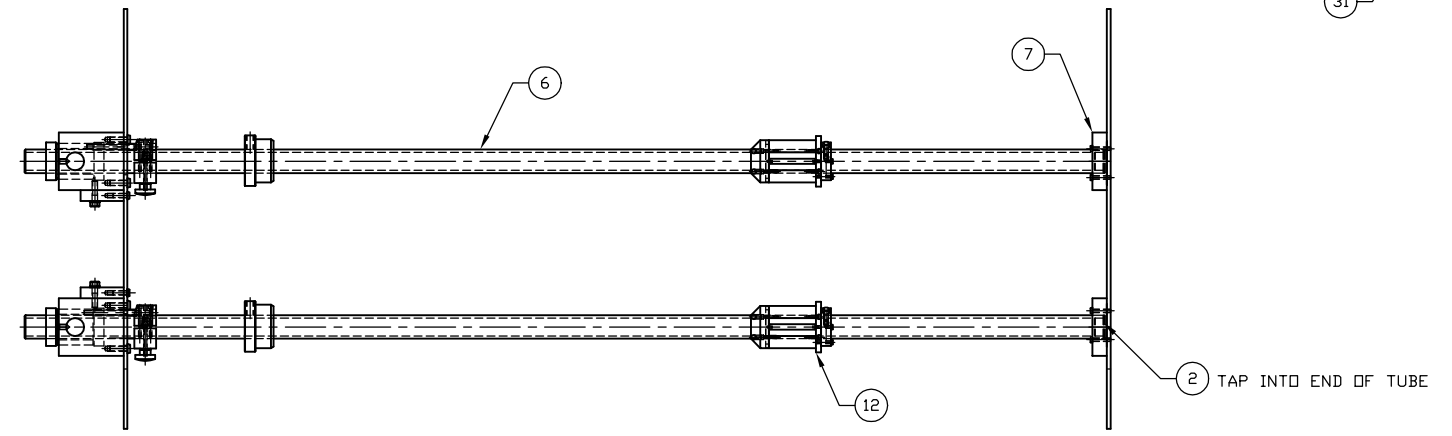
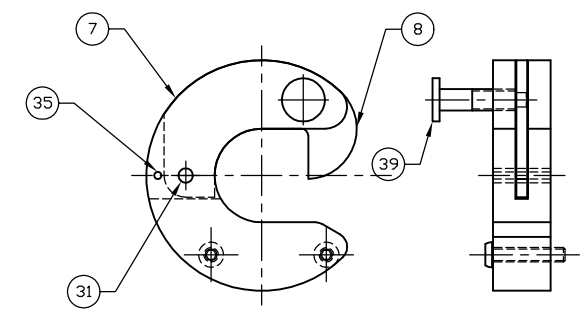
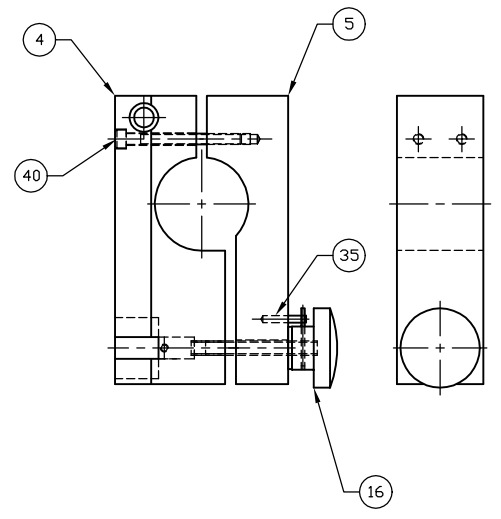
Rev:

Rev: D


Date: 4/10/2003

Description: DRIVE ASSEMBLY, ENCORE NH

Item:	Part #:	Description:	Qty:
1	AGL-XX-B4684	IDLER TENSIONER, 1.675 LG.	1
2	AGL-XX-B4685	IDLER TENSIONER, 2.69 LG.	1
20	000912-15	SPROCKET, 3/8 PITCH, 0.50 DIA BORE, 15 TOOTH	2
21	001460-15	SPROCKET, 3/8 PITCH, 1 BORE, 15 TEETH IMPORT	1
22	012022-04	NOW PURCHASED AS PART OF #012022-01	1
24	001401-24	SPROCKET, 3/8 PITCH, 1-1/4 BORE, 24 TEETH	1
25	001401-45	SPROCKET, 3/8 PITCH, 1-1/4 BORE, 45 TEETH IMPORT	1
26	000732-06	BUSHING, BRONZE, 3/8 ID, 1/2 OD, 3/4 LG	2
27	012417-10	HHCS, 5/16-18UNC, 1-1/4 LG, BLACK OXIDE	4
28	000343-08	HHCS, 3/8-16UNC, 1 LG, ZINC	4
29	000493-08	WASHER, LOCK, 3/8 DIA, SPLIT, ZINC	4
30	000207-08	WASHER, FLAT, SAE, 3/8 DIA, 13/16 OD, 13/32 ID, ZINC	4
31	000337-12	HHCS, 1/4-20UNC, 1-1/2 LG, ZINC	4
32	001350-06	WASHER, FLAT, USS, 1/4 DIA, 3/4 OD, 5/16 ID, ZINC	8
33	012495-03	WASHER, RUBBER, 2.25 OD. X .38 ID. X .13 THICK	4
34	000651-05	NUT, HEX, NYLOCK, 1/4-20UNC, ZINC	4
35	012022-01	GEAR BOX, 60:1,56C, WITH SINGLE OUTPUT SHAFT	1
36	012141-124	CHAIN, #35, 124 PITCHES	1
37	001275	CHAIN, #35, CONNECTING LINK	2
38	001781-02	MOTOR, PERM MAGNET, 90VDC, 1/2 HP, 1750 RPM	1
39	000635-08	SHOULDER SCREW, 3/8 DIA, 1 LG (5/16-18UNC)	2
40	001330-16	KEY, 0.25 SQ. 2.00 LG, CRS	1
41	001330-08	KEY, 0.25 SQ, 1.00 LG, CRS	1
43	012141-168	CHAIN, #35, 168 PITCHES	1



REV. NO.	DESCRIPTION	DATE	INT.	ECN
A	#43 WAS 5/16-18UNC, #44 WAS 5/16 DIA.	11-11-03	GFT	2105

BREAK ALL SHARP EDGES		DO NOT SCALE DWG.		 Advanced Greig Laminators, Inc. 801 Burton Blvd. DeForest, WI 53532	
UNLESS OTHERWISE SPECIFIED	MAT'L: AGLK4760-2	FINISH:		UNWIND ASSEMBLY	
0.00 +/-0.015				NO DISPLAY, ENCORE SERIES	
0.000 +/-0.005		JOB NO.	QTY.	DWG. BY	CHK BY
ANGLES +/-5°				GFT	
		SCALE: 1/6 = 1	DWG. NO.	REV.	
		DATE: 4-24-03	AGL-64-D4759-2	A	

Bill Of Material

Part #: AGL-64-K4760-2

Appl #:

Assy #: AGLD4759-2

BOM Rev: B

Model #:

Rev:

Rev: A

Date: 4/24/2003

Description: UNWIND ASSEMBLY, NO DISPLAY, ENCORE

Item:	Part #:	Description:	Qty:
1	AGL-XX-B4750	PIVOT BLOCK	2
2	AGL-XX-B5036	PLUG, TUBE	2
3	AGL-XX-B4752	PIVOT SHAFT	4
4	AGL-XX-C4753-1	BRAKE, BOTTOM	2
5	AGL-XX-C4754-1	BRAKE, TOP	2
6	AGL-64-B4863	UNWIND TUBE, ENCORE	2
7	AGL-XX-B4323-1	UNWIND SHAFT SUPPORT	2
8	AGL-XX-B4324-1	UNWIND SHAFT LATCH	2
9	AGL-64-B0044	CORE COLLAR	2
11	AGL-XX-B4756	BRAKE SPACER	2
12	AGL-XX-B2917-1	CORE HOLDER, 1-5/8 BORE (ENCORE)	2
13	AGL-64-B0004	SHAFT BRACE, CANTILEVERED UNWIND	4
14	AGL-XX-B4857	SUPPORT RIB	2
16	AGL-XX-B4668-2	KNOB ASSEMBLY, ENCORE	2
20	000011-26	SHCS, 5/16-18UNC, 4-1/2 LG, BLACK	2
21	012409-20	BEARING, FLANGED, 1.25 ID x 1.41 OD. x 1.25 LG. PAPZ2020P10	4
22	000417-26	COLLAR, SHAFT, 2-PIECE, 1.63 DIA .69 WIDE	4
23	012410-16	BEARING, 1.63 ID. x 1.78 OD. x 1.00 LG.	4
24	000063-10	BHSCS, 3/8-16UNC, 1-1/4 LG, BLACK	8
25	000135-08	SSS, CUP PT, 3/8-16UNC, 1/2 LG, BLACK	4
26	012265-06	SSS, NYLON TIPPED, 1/2-13UNC, 3/4 LG. BLACK	2
30	000059-10	BHSCS, 1/4-20UNC, 1-1/4 LG, BLACK	4
31	000285-08	PIN, DOWEL, 1/4 DIA, 1 LG	2
32	000207-06	WASHER, FLAT, SAE, 1/4 DIA, 5/8 OD, 9/32 ID, ZINC	2
35	000217-06	PIN, SPRING, 1/8 DIA, 3/4 LG	2
39	012143-07	PLUNGER, DELRIN KNOB, LOCKING, 1/4-20UNC	2
40	000035-16	SHCS, #10-32UNF, 2 LG, BLACK	4
42	000061-08	BHSCS, 5/16-18UNC, 1 LG, BLACK	6

Part #: AGL-64-K4760-2

Appl #:

Assy #: AGLD4759-2

BOM Rev: B

Model #:

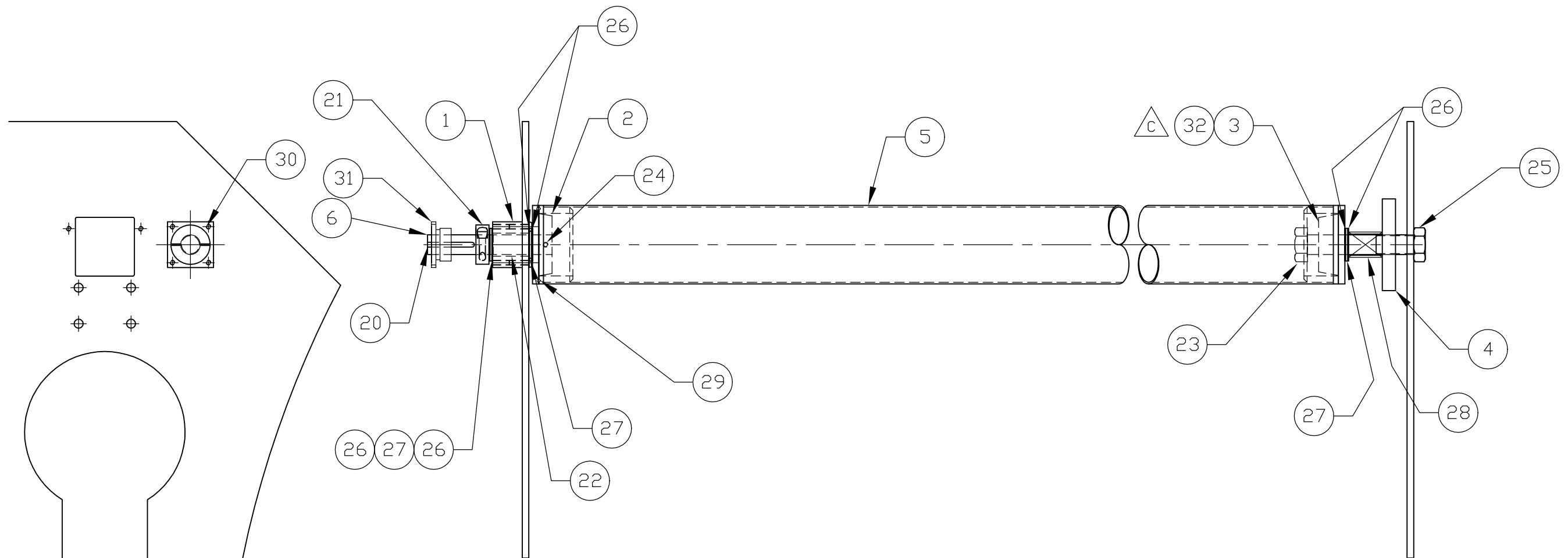
Rev:

Rev: A

Date: 4/24/2003

Description: UNWIND ASSEMBLY, NO DISPLAY, ENCORE

Item:	Part #:	Description:	Qty:
43	000343-12	HHCS, 3/8-16UNC, 1-1/2 LG, ZINC	4
44	000493-08	WASHER, LOCK, 3/8 DIA, SPLIT, ZINC	4
45	012429-26	SHIM WASHER, 1-5/8 ID. X 2-3/8 OD. X .075 THICK, STEEL	4



ASSEMBLY NOTES:

1. #1 HAS PRICK PUNCH INDICATING DATUM SURFACE. THIS SURFACE SHOULD BE MOUNTED TO SIDEPLATE. BUSHING SHOULD EXTEND OUT 1/8" ON DATUM SURFACE SIDE
2. REAM BUSHING (#22) TO .752 B

BREAK ALL SHARP EDGES
 DO NOT SCALE DWG.



Advanced Greig Laminators, Inc.
 801 Burton Blvd.
 DeForest, WI 53532

LINER WINDUP
 ASSEMBLY, ENCORE

C	ADDED #32	1-25-06	GFT	2135
B	ADDED NOTE #2	11-29-04	GFT	
A	REVISED TO SHOW BOM CORRECTIONS	10-27-03	GFT	
REV NO.	DESCRIPTION	DATE	INT.	ECN

UNLESS OTHERWISE SPECIFIED		MAT'L: AGLK4731-1	
0.00 +/-0.015		FINISH:	
0.000 +/-0.005		JOB NO.	QTY.
ANGLES +/- .5°		DWG. BY: GFT	CHK BY:

SCALE: 1/4 = 1	DWG. NO. AGL-64-B4730-1	REV. C
DATE: 4-2-03		

Bill Of Material

Part #: AGL-64-K4731-1

Appl #:

Assy #: AGLB4730-1

BOM Rev: D

Model #:

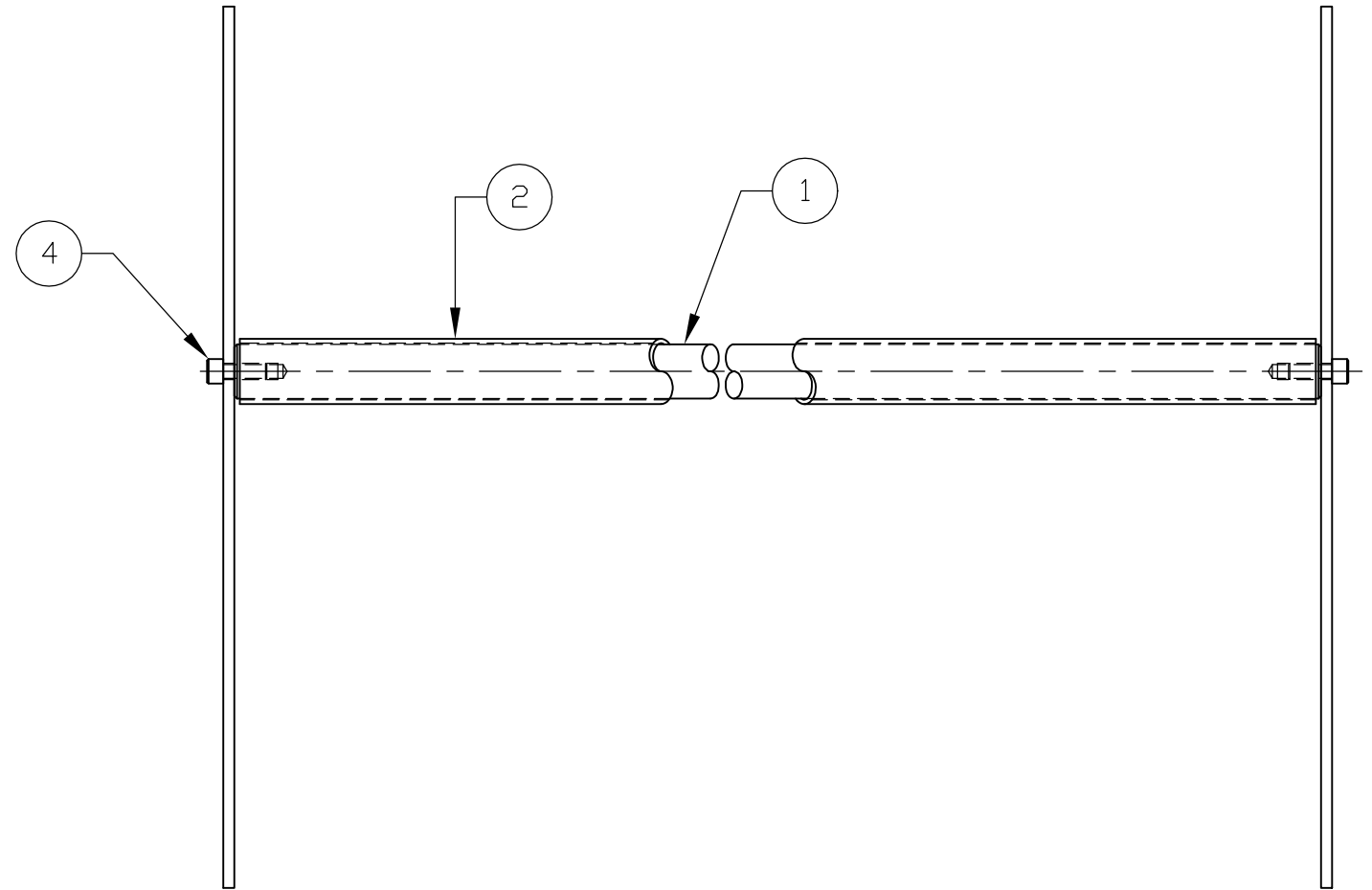
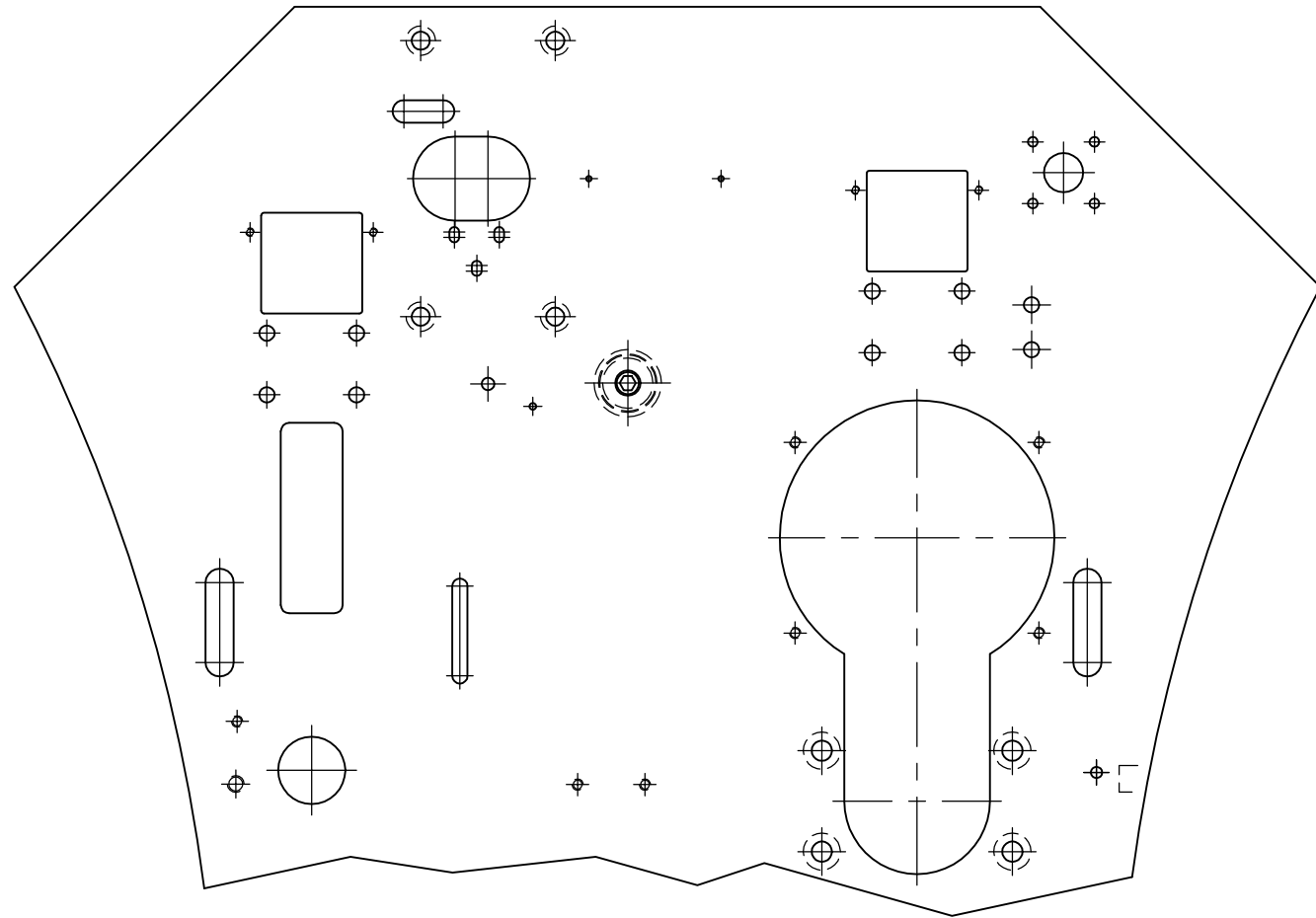
Rev:

Rev: C

Date: 3/12/2003

Description: LINER WINDUP ASSEMBLY, ENCORE

Item:	Part #:	Description:	Qty:
1	AGL-XX-B4723	BEARING BLOCK, WINDUP	1
2	AGL-XX-B4724	DRIVE HUB, WINDUP	1
3	AGL-XX-B4725	IDLER HUB, WINDUP	1
4	AGL-XX-B4726	ADJUSTMENT KNOB, WINDUP	1
5	AGL-64-B4931	WINDUP TUBE SUB ASSEMBLY	1
6	AGL-XX-B5222	SHAFT, WINDUP	1
20	001317-08	KEY, 0.188 SQ, 1.00 LG, CRS	1
21	000411-12	COLLAR, SHAFT, 0.75 DIA BORE, 1/2 WIDE	1
22	000721-10	BUSHING, BRONZE, 3/4 ID. 7/8 OD. 1-1/4 LG	1
23	000395-24	HHCS, 3/4-16UNF, 4 LG, ZINC	1
24	000129-08	SSS, CUP PT, #10-24UNC, 1/2 LG, BLACK	1
25	000198-12	NUT, HEX, JAM, 3/4-16UNF, ZINC	1
26	000777-12	BEARING, THRUST, WASHER, 3/4 DIA BORE, .03 THICK	6
27	000776-12	BEARING, THRUST, NEEDLE, 3/4 BORE	3
28	012402-5	SPRING, COMPRESSION, 0.97 OD, .072 THICK, 1.75 LG	1
29	000922-21	O-RING, BUNA, 1/8 THICK, 2-5/8 ID, 2-7/8 OD	1
30	000057-06	BHSCS, #10-24UNC, 3/4 LG, BLACK	4
31	012161-13	SPROCKET, 3/8 PITCH, 0.75 DIA BORE, 13 TOOTH	1
32	000722-06	BUSHING, BRONZE, 3/4 ID, 1 OD, 3/4 LG	1



BREAK ALL SHARP EDGES

DO NOT SCALE DWG.

UNLESS OTHERWISE SPECIFIED

MAT'L:
AGLK4748

0.00 +/-0.015
0.000 +/-0.005

FINISH:

ANGLES +/- .5°

JOB NO.	QTY.	DWG. BY.	CHK BY
		GFT	



Advanced Greig Laminators, Inc.
801 Burton Blvd.
DeForest, WI 53532

IDLER ASSEMBLY

SCALE: 1/4 = 1

DWG. NO.

DATE: 11-6-02

AGL-64-B4749

REV.

REV NO.	DESCRIPTION	DATE	INT.	ECN

Bill Of Material

Part #: AGL-64-K4748

Appl #:

Assy #: AGLB4749

BOM Rev: -

Model #:

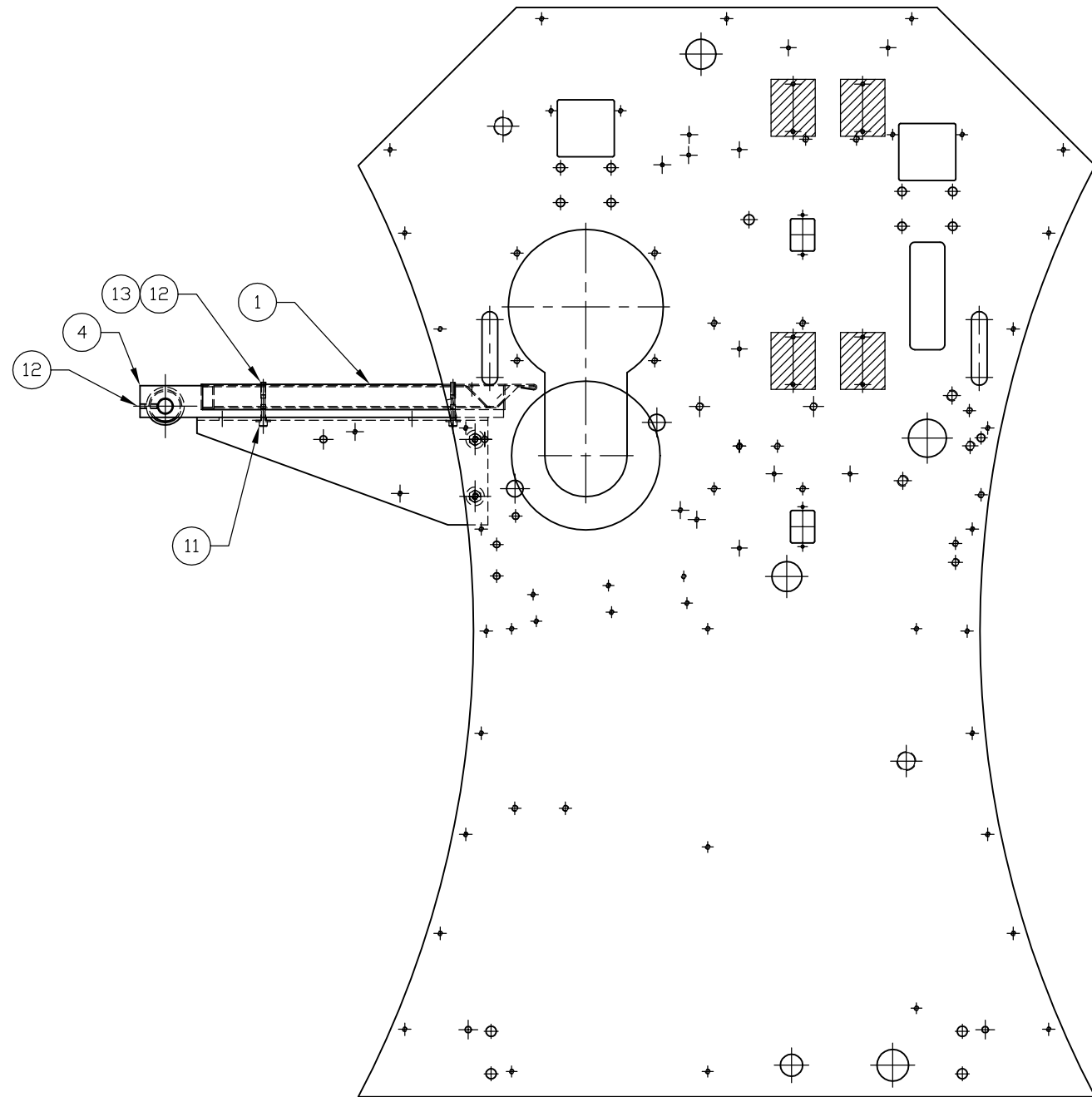
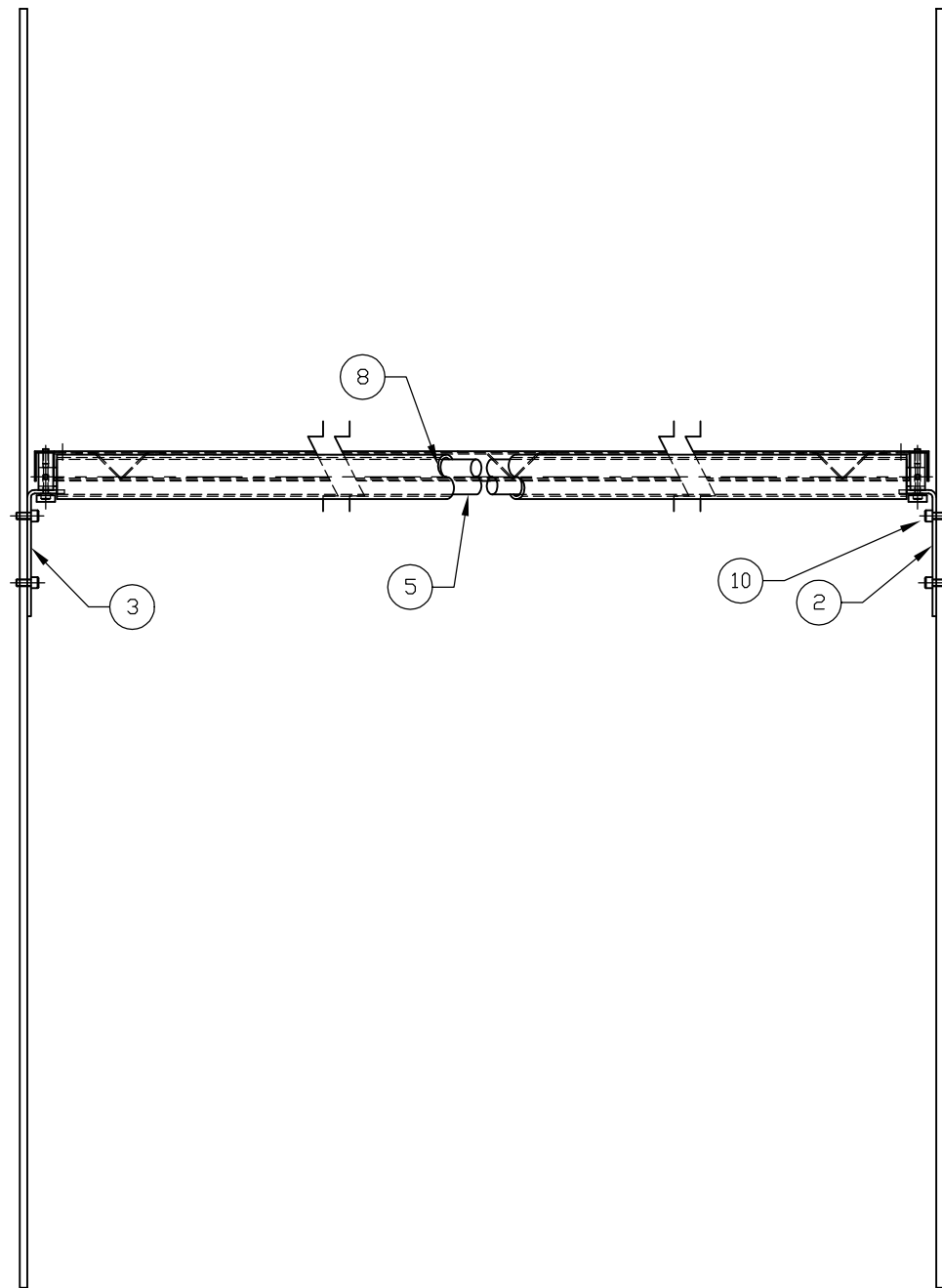
Rev:

Rev: -

Date: 10/31/2002

Description: IDLER ASSEMBLY

Item:	Part #:	Description:	Qty:
1	AGL-64-B4286	IDLER SHAFT	1
2	AGL-64-B4287	IDLER SLEEVE	1
4	000013-06	SHCS, 3/8-16UNC, 3/4 LG, BLACK	2



REV NO.	DESCRIPTION	DATE	INT.	ECN

BREAK ALL SHARP EDGES			
DO NOT SCALE DWG.			
UNLESS OTHERWISE SPECIFIED	MAT'L: AGLK4972-1	FINISH:	
0.00 +/-0.015		JOB NO.	QTY.
0.000 +/-0.005		DWG. BY:	CHK BY:
ANGLES +/- .5°		GFT	

AGL Advanced Greig Laminators, Inc.
801 Burton Blvd.
DeForest, WI 53532

INFEED TABLE, REMOVABLE ENCORE SH		SCALE: 1/4" = 1"	DWG. NO.	REV.
		DATE: 4-29-05	AGL-64-C4973-1	

Bill Of Material

Part #: AGL-64-K4972-1

Appl #:

Assy #: AGLC4973-1

BOM Rev: -

Model #:

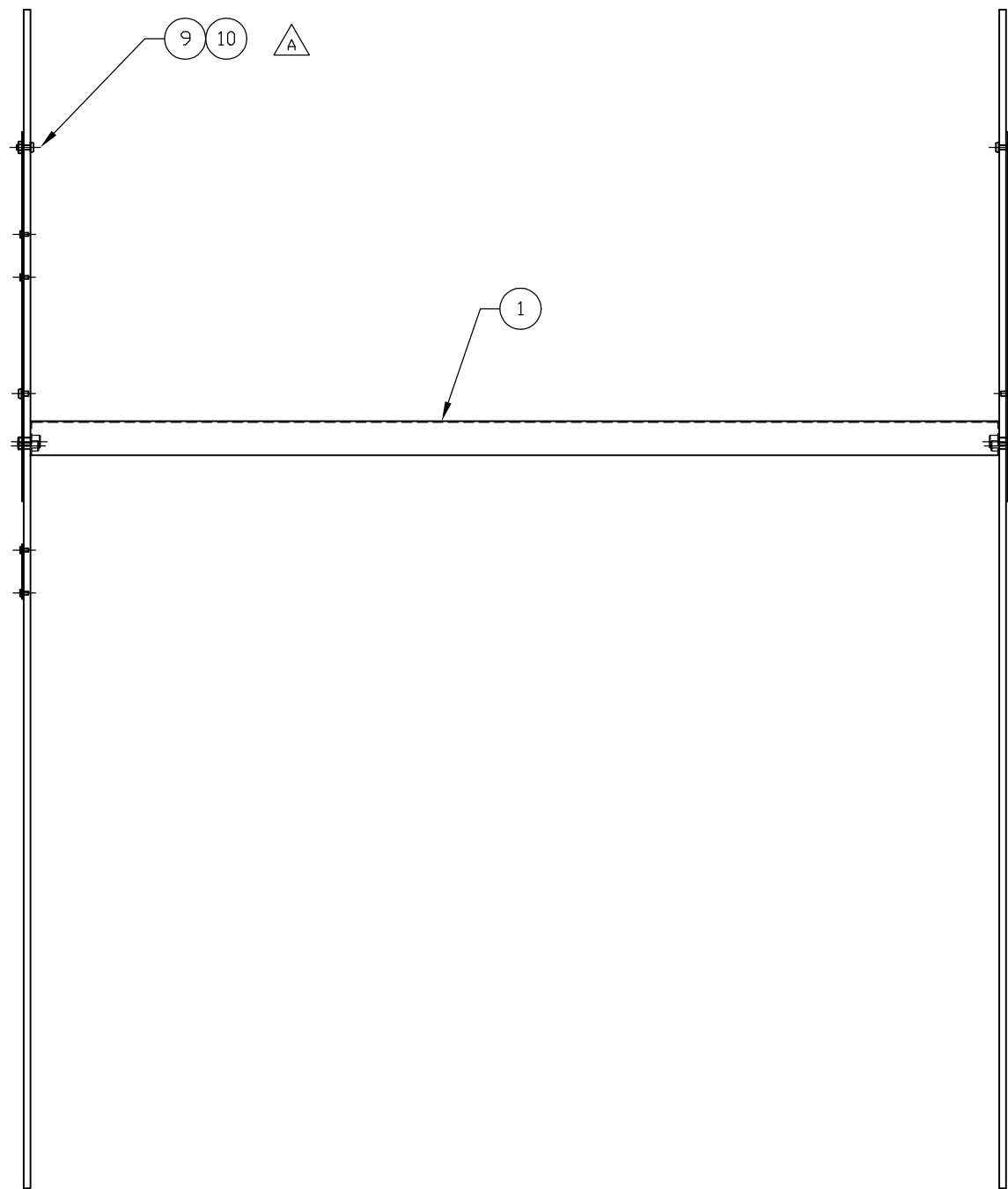
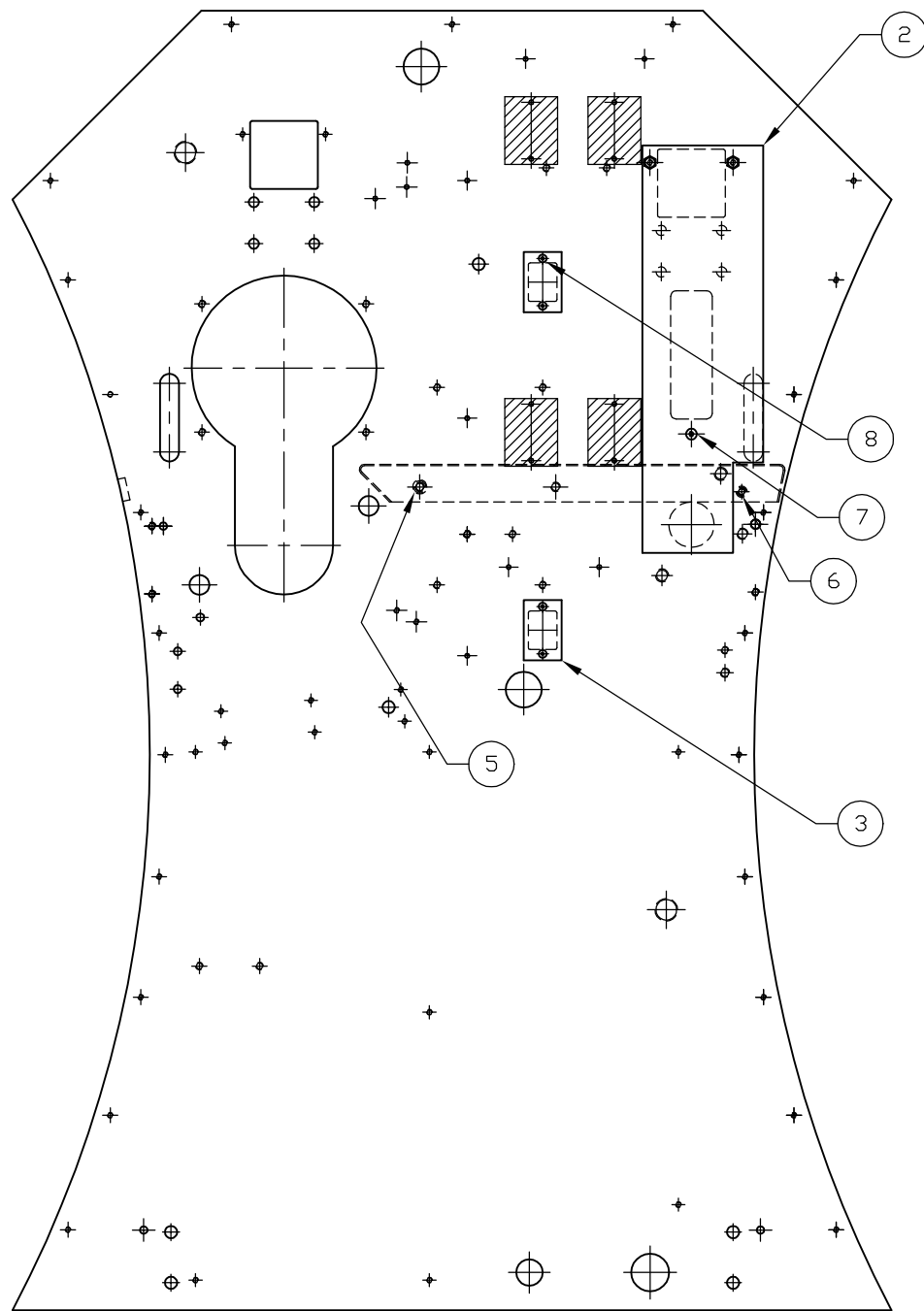
Rev:

Rev: -

Date: 4/29/2005

Description: INFEED TABLE, REMOVABLE, ENCORE SH & NH

Item:	Part #:	Description:	Qty:
1	AGL-64-C0955-02	INFEED TABLE, REMOVABLE (WHITE)	1
2	AGL-64-B0082-02	TABLE SUPPORT, RIGHT HAND (WHITE)	1
3	AGL-64-B0083-02	TABLE SUPPORT, LEFT HAND (WHITE)	1
4	AGL-64-B1129	ROLLER SUPPORT, AGL 64	2
5	AGL-64-B5039	TABLE ROLLER SHAFT, REMOVABLE TABLE	1
8	AGL-64-B4287-2	IDLER SLEEVE, REMOVABLE TABLE	1
10	000009-04	SHCS, 1/4-20UNC, 1/2 LG, BLACK	4
11	000007-04	SHCS, #10-24UNC, 1/2 LG, BLACK	4
12	000129-08	SSS, CUP PT, #10-24UNC, 1/2 LG, BLACK	6
13	000207-04	WASHER, FLAT, SAE, #10 DIA, 1/2 OD, 7/32 ID, ZINC	4



A	ADDED #9,10	11-7-05	GFT	
REV NO.	DESCRIPTION	DATE	INT.	ECN

BREAK ALL SHARP EDGES			
DO NOT SCALE DWG.			
UNLESS OTHERWISE SPECIFIED	MAT'L: AGLK4976	FINISH:	
0.00 +/-0.015		JOB NO.	QTY.
0.000 +/-0.005		DWG. BY:	CHK BY:
ANGLES +/-5°		GFT	

 Advanced Greig Laminators, Inc. 801 Burton Blvd. DeForest, WI 53532	OUTFEED SURFACE ENCORE SERIES		REV.
			A
SCALE: 1/4" = 1"	DWG. NO.	REV.	
DATE: 4-9-03	AGL-64-C4977	A	

Bill Of Material

Part #: AGL-64-K4976

Appl #:

Assy #: AGLC4977

BOM Rev: B

Model #:

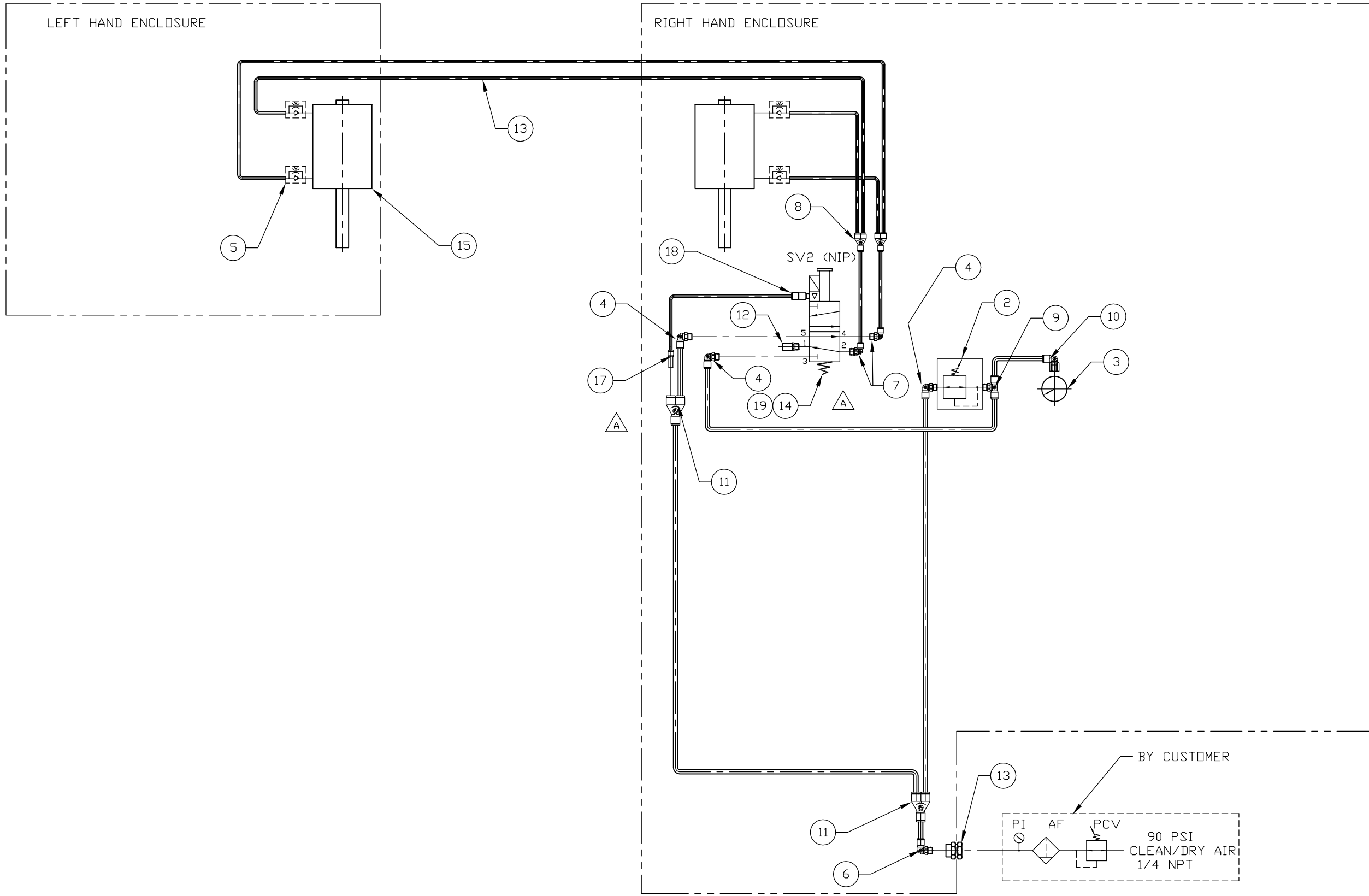
Rev:

Rev: A

Date: 4/9/2003


Description: OUTFEED SURFACE ASSY, ENCORE SERIES

Item:	Part #:	Description:	Qty:
1	AGL-64-C4979	OUTFEED SURFACE, ENCORE SERIES	1
2	AGL-XX-B4980	COVER, PULL ROLL HOLES	2
3	AGL-XX-B4981	COVER, OUTLET	2
5	000011-03	SHCS, 5/16-18UNC, 3/8 LG, BLACK	2
6	000009-03	SHCS, 1/4-20UNC, 3/8 LG, BLACK	2
7	000071-02	BHSCS, #10-32UNF, 1/4 LG, BLACK	2
8	000053-02	BHSCS, #6-32UNC, 1/4 LG, BLACK	4
9	000057-03	BHSCS, #10-24UNC, 3/8 LG, BLACK	4
10	001211-04	NUT, K-LOCK, #10-24UNC, ZINC	4



A	REVISED TO NUMATICS VALVE	1-17-07	GFT	
REV NO.	DESCRIPTION	DATE	INT.	ECN

BREAK ALL SHARP EDGES			
DO NOT SCALE DWG.			
UNLESS OTHERWISE SPECIFIED	MAT'L: AGLK5004	FINISH:	
0.00 +/-0.015		JOB NO.	QTY.
0.000 +/-0.005		DWG. BY:	CHK BY:
ANGLES +/- .5°		GFT	

 Advanced Greig Laminators, Inc. 801 Burton Blvd. DeForest, WI 53532	
PNEUMATIC ASSEMBLY ENCORE SH & NH	
SCALE: 1/4 = 1	DWG. NO.
DATE: 4-29-03	AGL-64-C5005
	REV. A

Bill Of Material

Part #: AGL-64-K5004

Appl #:

Assy #: AGLC5005

BOM Rev: B

Model #:

Rev:

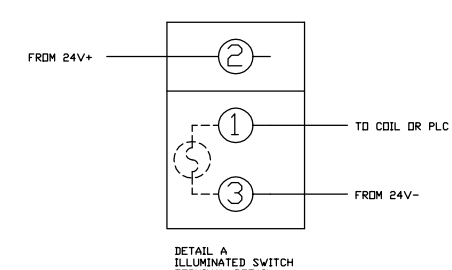
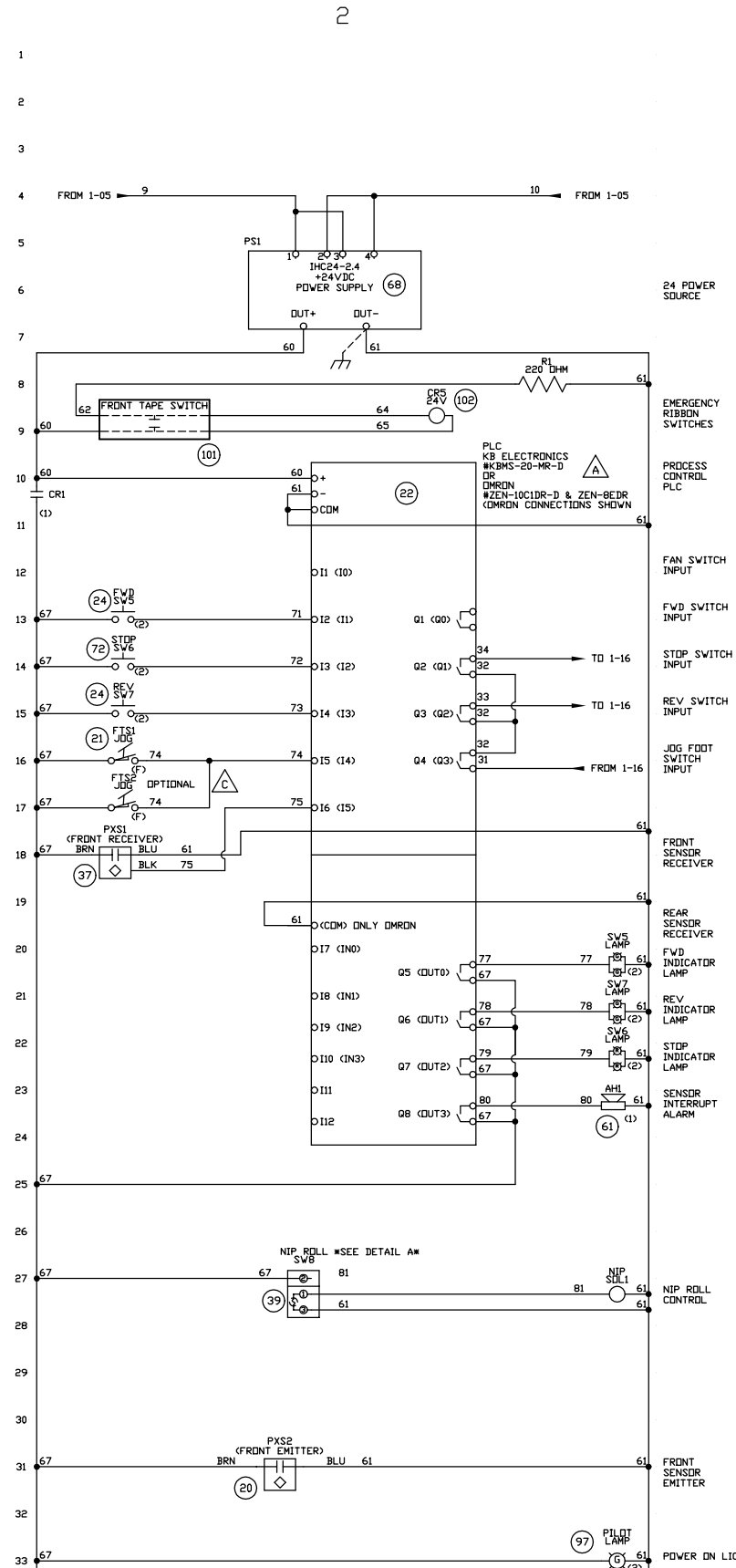
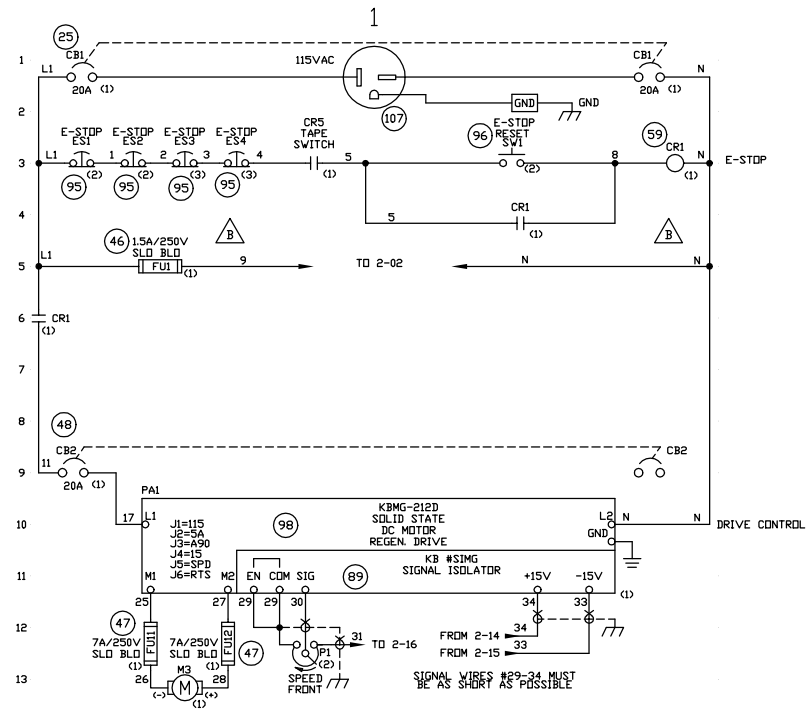
Rev: A

Date: 4/10/2003

Description: PNEUMATIC ASSEMBLY, ENCORE SH & NH

Item:	Part #:	Description:	Qty:
1	012263-05	TUBING, 1/4" OD, BLACK	15
2	001294	REGULATOR, PRESSURE, 1/8NPT	1
3	012234-01	GUAGE, PRESSURE, 0-100PSI, 1/8NPT, PANEL MNT, CHROME BEZEL	1
4	000847-10	FITTING, PIPE, ELBOW, MALE, 1/4 OD, 1/8 NPT	3
5	000861-02	FITTING, PIPE, FLOW CONTROL, ELBOW, 5/32 OD, 1/8 NPT	4
6	000847-12	FITTING, PIPE, ELBOW, MALE, 1/4 OD, 1/4 NPT	1
7	000847-06	FITTING, PIPE, ELBOW, MALE, 5/32 OD, 1/8 NPT	2
8	000855-01	FITTING, TUBE, "Y", 5/32 OD TUBE	2
9	000849-08	FITTING, PIPE, TEE, BRANCH, 1/4 OD, 1/8 NPT	1
10	000851-04	FITTING, PIPE, ELBOW, FEMALE, 1/4 OD, 1/8 NPT	1
11	000855-04	FITTING, TUBE, "Y", 1/4 OD TUBE	2
12	012011-01	MUFFLER, EXHAUST, 1/8NPT	1
13	000822-02	FITTING, PIPE, BULKHEAD, 1/4 NPT, 3/4-16UNC	1
14	012303-04	VALVE, SOLENOID, 2 POSITION, 24VDC, EXT. PILOT	1
15	001457-09	AIR CYLINDER, 2 DIA BORE, 1 1/4" STROKE, FINE THD	2
16	012262-05	TUBING, 5/32" OD, BLACK	85
17	012280-05	FITTING, REDUCER, PLUG-IN, 1/4 TUBE-5/32 TUBE	1
18	000845-02	FITTING, PIPE, MALE, 5/32 OD,10-32UNF	1
19	012572-04	CONNECTOR, SOLENOID VALVE	1

115 VAC 60 HZ
20A BRANCH
SUPPLY FROM DISCONNECT.
CONSULT LOCAL CODES FOR
APPROPRIATE WIRE SIZE.



REV. NO.	DESCRIPTION	DATE	INT.	ECN
C	ADDED OPTIONAL FOOTSWITCH	5-31-05	GFT	
B	FUSE WAS 75A, REVISED NEUTRAL SIDE	7-20-04	GFT	
A	ADDED KB PLC	10-24-03	GFT	

**BREAK ALL SHARP EDGES
DO NOT SCALE DWG.**

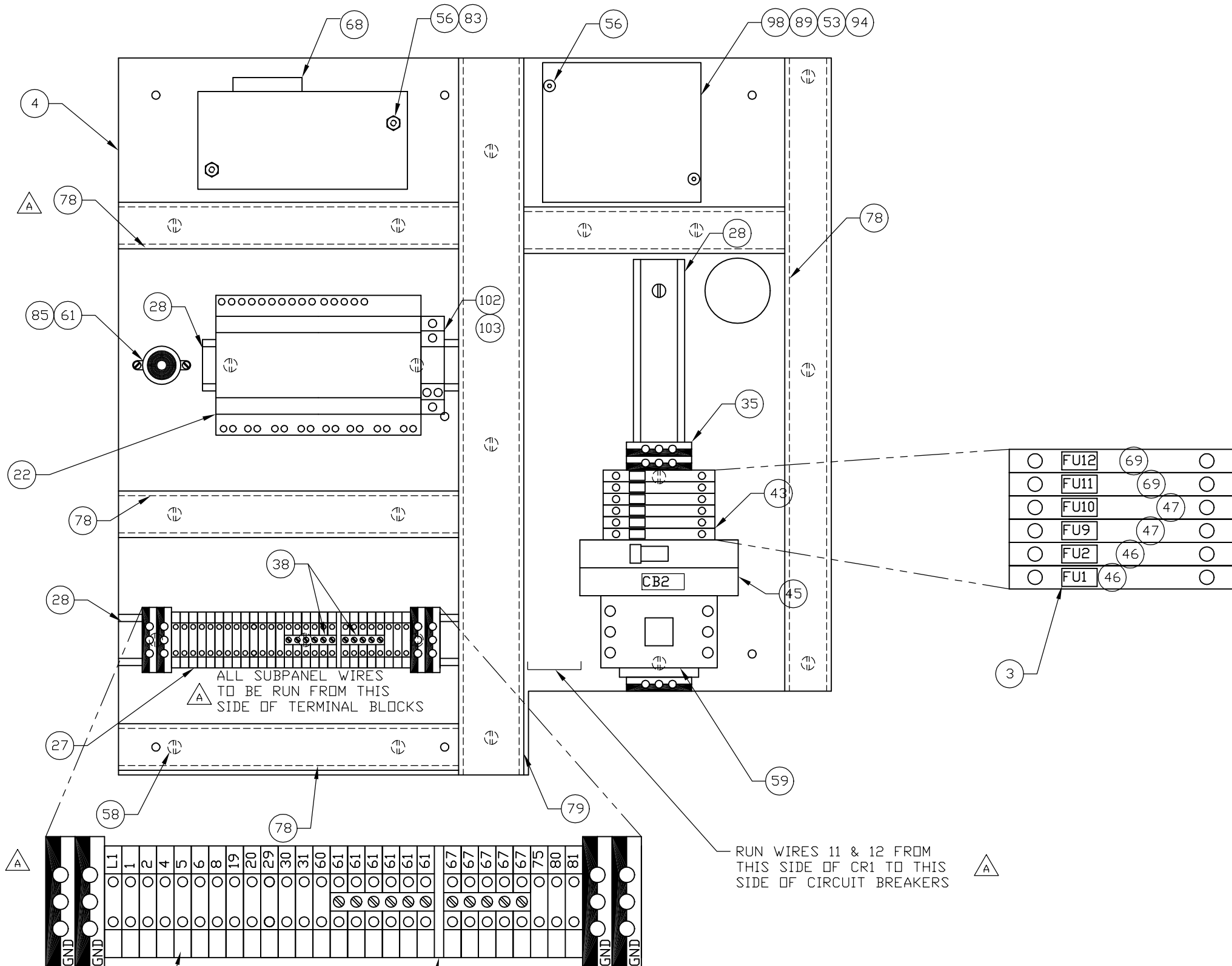
UNLESS OTHERWISE SPECIFIED
0.00 +/-0.015
0.000 +/-0.005
ANGLES +/-5°

MAT'L:
FINISH:
JOB NO. QTY. DWG. BY. CHK BY. GFT

Advanced Creig Laminators, Inc.
801 Burton Blvd.
DeForest, WI 53532

**BASE CONTROL SCHEMATIC
ENCORE NH**

SCALE: N.T.S. DATE: 4-9-03
DWG. NO. **AGL-64-D4984**
REV. **C**



A	MOVED LABELS, ADDED NOTES, 78 WAS 79	3-30-04	GFT	
REV NO.	DESCRIPTION	DATE	INT.	ECN

BREAK ALL SHARP EDGES	
DO NOT SCALE DWG.	
UNLESS OTHERWISE SPECIFIED	MAT'L:
0.00 +/-0.015	FINISH:
0.000 +/-0.005	JOB NO. QTY. DWG. BY. CHK BY.
ANGLES +/- .5°	GFT

Advanced Greig Laminators, Inc. 801 Burton Blvd. DeForest, WI 53532	
SUBPANEL ASSEMBLY ENCORE NH	
SCALE: 1/2 = 1	DWG. NO.
DATE: 1-14-04	AGL-64-C5300
	REV.

Bill Of Material

Part #: AGL-64-K4988 **Appl #:** **Assy #:** AGLC5300 **BOM Rev:** F
Model #: **Rev:** **Rev:** A **Date:** 4/9/2003
Description: BASE ELECTRICAL ASSY, ENCORE NH

Item:	Part #:	Description:	Qty:
0	AGL-64-D4984	BASE CONTROL SCHEMATIC, ENCORE NH	REF.
1	AGL-XX-B4805	POT. MTG. BRACKET	1
2	AGL-XX-B4806	SPEED ADJUST WHEEL	1
3	AGL-64-A4930	LABEL, TERMINAL BLOCK, ENCORE	1
4	AGL-XX-C4958	SUBPANEL, ENCORE	1
5	AGL-64-D5369	WIRE HARNESS, ENCORE, RH. CONTROL	1
20	002728-01	EMITTER, SERIES 10	1
21	002427-04	SWITCH, FOOT, SPDT, MTD. IN GUARD, 16' CABLE	1
22	006016-05	PLC, CPU MODULE, 12IN/8OUT, 24VDC	1
24	006017-01	SWITCH, MOMENTARY, ARROW, GREEN	2
25	006006-20	CIRCUIT BREAKER, 2 POLE, 20 AMP, PANEL MNT.	1
26	002099-10	LABEL, .50 x 1.50, VINYL, SELF LAMINATING	200
27	001883-05	TERMINAL BLOCK, 35MM, 10-26 AWG, GRAY, UK5N 02M0381	51
28	001879-01	DIN RAIL, 35MM WIDE, 7.5MM HIGH, 2 MT LG, NS35/7.5	30
29	000716-00	WIRE, STRANDED, 16 AWG, BLACK	45
30	000719-00	WIRE, STRANDED, 10 AWG, BLACK	50
32	001153-05	CORD GRIP, BELL-MOUTH, BLACK, 5/8" MTG HOLE	2
33	001089-01	CABLE TIE, NYLON, WHITE, 4" LG	50
34	001090-01	CABLE TIE, MOUNT, ADHESIVE-BACKED, 3/4" SQ	35
35	001876-10	TERMINAL BLOCK, GND, 35MM, 8-20 AWG, USLKG10 29C3451	8
37	002728-02	RECEIVER, SERIES 10	1
38	001886-01	BAR, JUMPER, 10-POS, #FB10-6 (10 pcs.per bag)	1
39	006015-02	SWITCH, ROCKER, SPST, ILLUMINATED, GREEN	1
40	000720-00	WIRE, STRANDED, MTW, 6 AWG, BLACK	20
41	001089-02	CABLE TIE, NYLON, WHITE, 5.5" LG	15
42	001090-02	CABLE TIE, MOUNT, ADHESIVE-BACKED, 1" SQ	15
43	001875-01	FUSE HOLDER, TERMINAL BLOCK, 35MM MTG, (NOW INCLUDES 001881-01)	3
44	001881-01	NOW PURCHASED AS PART OF 001875-01	3

Part #: AGL-64-K4988**Appl #:****Assy #:** AGLC5300**BOM Rev:** F**Model #:****Rev:****Rev:** A**Date:** 4/9/2003**Description:** BASE ELECTRICAL ASSY, ENCORE NH

Item:	Part #:	Description:	Qty:
46	001530-015	FUSE, SLO-BLO, 1.5A, 250V, 1/4X1-1/4"	1
47	001530-070	FUSE, SLO-BLO, 7.0A, 250V, 1/4X1-1/4"	2
48	006021-20	CIRCUIT BREAKER, 2 POLE, 20 AMP, DIN RAIL MNT	1
49	002507-04	END COVER, TERMINAL BLOCK, D-UK4/10	2
51	002728-03	CABLE, SERIES 10, 2M LG.	1
52	001504-03	TERMINAL, MALE, INSULATED, w/INSUL GRIP, 12-10 AWG	8
53	001503-02	TERMINAL, FEMALE, INSULATED, w/INSUL GRIP, 16-14 AWG	9
54	001509-08	TERMINAL, RING, INSULATED, BRAZED SEAM, 12-10 AWG, #10 STUD	12
55	001509-07	TERMINAL, RING, INSULATED, BRAZED SEAM, 16-14 AWG, #6 STUD	12
56	000557-03	PHMS, SLOTTED, #8-32UNC, 3/8 LG, ZINC	8
57	000559-03	PHMS, SLOTTED, #10-24UNC, 3/8 LG, ZINC	4
58	000577-02	PHMS, PHILLIPS, #8-32UNC, 1/4 LG, ZINC	32
59	002962-09	CONTACTOR, 3-POLE, 25A, 120V, 1 AUX	1
60	002512-01	LEGEND, HIGH VOLTAGE	2
61	002511-01	ALARM, PANEL MTG, 3-28VDC	1
62	002243-10	HOLE PLUG, ENCLOSURE, 1 1/4"	1
63	001966	LUG, GROUNDING, 1/0-14AWG	1
64	001087-01	NUT, LOCK, CONDUIT, 1/2"	1
65	000337-04	HHCS, 1/4-20UNC, 1/2 LG, ZINC	1
66	000493-06	WASHER, LOCK, 1/4 DIA, SPLIT, ZINC	1
68	001826-04	POWER SUPPLY, SINGLE, 24VDC, 2.4A	1
70	000715-00	WIRE, STRANDED, 18 AWG, BLACK	315
71	002728-05	CABLE, SERIES 10, 5M LG.	1
72	006017-02	SWITCH, MOMENTARY, BLANK, RED	1
73	001352-06	STANDOFF, HEX, M/F, #10-32UNC, 3/4 LG, AL	7
74	002523-08	FERRULE, INSULATED, 18AWG, WIDE COLLAR	206
75	002523-01	FERRULE, INSULATED, 16AWG, STD LENGTH, BLACK	12
76	002523-02	FERRULE, INSULATED, 14AWG, STD LENGTH, BLUE	6
77	000717-24	WIRE, STRANDED, 14 AWG, GREEN/YELLOW	14.00

Part #: AGL-64-K4988**Appl #:****Assy #:** AGLC5300**BOM Rev:** F**Model #:****Rev:****Rev:** A**Date:** 4/9/2003**Description:** BASE ELECTRICAL ASSY, ENCORE NH

Item:	Part #:	Description:	Qty:
78	002955-01	WIRE DUCT, 1 x 1-1/2, WHITE	144.0
79	002955-02	WIRE DUCT, 1 x 2-1/4, WHITE	48.0
80	002955-04	WIRE DUCT, 1-1/2 x 3, WHITE	96.0
81	000343-08	HHCS, 3/8-16UNC, 1 LG, ZINC	4
82	000493-08	WASHER, LOCK, 3/8 DIA, SPLIT, ZINC	4
83	001509-10	TERMINAL, RING, INSULATED, 16-14AWG, 1/4 STUD	1
85	002523-06	FERRULE, INSULATED, 6AWG, STD LENGTH, GREEN	10
86	002523-05	FERRULE, INSULATED, 10AWG, STD LENGTH, BLACK	12
87	002523-10	FERRULE, INSULATED, 12AWG, STD LENGTH, GRAY	2
88	002523-02	FERRULE, INSULATED, 14AWG, STD LENGTH, BLUE	2
89	002951	SIGNAL ISOLATOR	1
90	002512-07	LEGEND, DANGER PINCH POINT (2.5x4)	4
91	002512-03	LEGEND, DO NOT OPERATE WITHOUT GUARDS IN PLACE	2
93	002727-01	CONNECTOR, 90 DEG. FLAG DISCONNECT 16-14AWG	2
94	002727-02	CONNECTOR, 90 DEG. FLAG DISCONNECT 12-10AWG	2
95	002506	SWITCH ASSY, PUSHBUTTON, E-STOP	4
96	006018-01	SWITCH, PUSHBUTTON, BLACK, 5/8 DIA.	1
97	006019-01	LED, PILOT LIGHT, GREEN, 1/2 DIA. SNAP IN	1
98	001998-03	CONTROLLER, MOTOR, 240V INPUT, 90 or 180VDC OUTPUT	1
101	006004-67	RIBBON SWITCH, 4' LEADS, 4 WIRE, YELLOW, 67" LG.	1
102	002974-02	RELAY, MIDGET, 1PDT, 24VDC	1
103	002337-06	SOCKET, RELAY, 5-PIN, DIN RAIL MTG	1
104	012393	DOUBLE SIDED TAPE	67
105	002345-221	RESISTOR, METAL-FILM, 1%, 1/4W, 221 OHM	1
106	002987-12	CABLE, 3 x 12 AWG, TYPE SJO	10
107	002576-02	PLUG, MALE, 115V, 20A, BLACK/WHITE	1
108	006027-01	TERMINAL, FEMALE, .110 TAB, 22-18 AWG	2
109	002243-04	HOLE PLUG, ENCLOSURE, 1/2"	1
110	001155-10	HOLE PLUG, DOME, BLACK, 5/8 DIA	1

Bill Of Material

Part #: AGL-XX-K2660

Appl #:

Assy #:

BOM Rev: C

Model #:

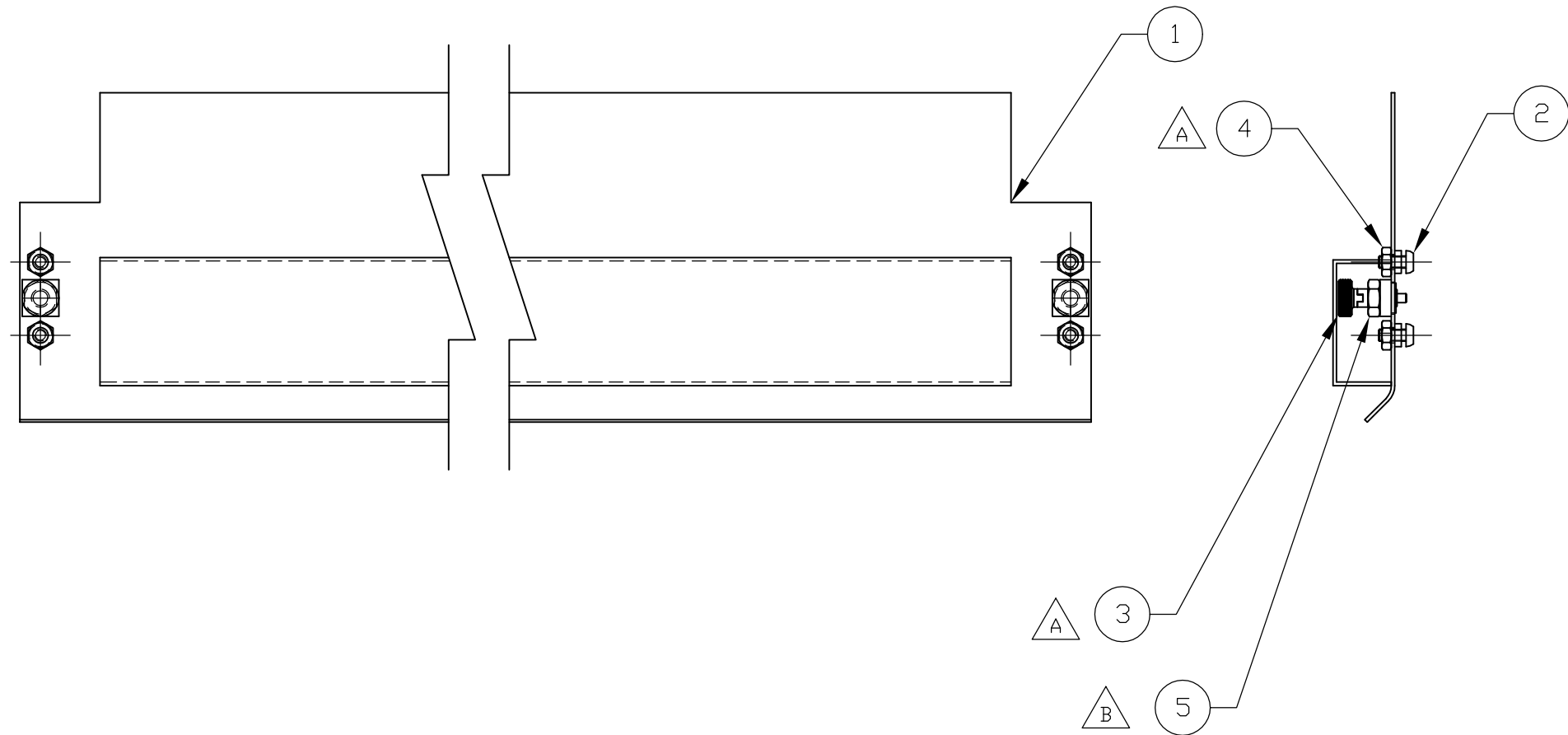
Rev:

Rev:


Date:

Description: ACCESSORIES KIT, 44/4400/64 SERIES/6400/6450

Item:	Part #:	Description:	Qty:
1	012235-01	CUTTER, ZIPPY	1
2	012236-01	ROLL ADHESIVE ERASER, PLAIN, SHRINKWRAPPED	1
3	001446-04	ALLEN WRENCH, LONG ARM, 3/32, T-HANDLE	1
5	001446-11	ALLEN WRENCH, LONG ARM, 1/4 T-HANDLE	1
7	012248	CLOTH, LOW LINT, 12x13	1
8	012249	ALCOHOL, ISOPROPYL, 1 PINT	1
10	001530-070	FUSE, SLO-BLO, 7.0A, 250V, 1/4X1-1/4"	2
11	X6	OPERATORS MANUAL	1



LOC TITE IN THE BHSCS
 WITH BLUE LOC TITE. LEAVE
 APPROX .06 GAP FOR REMOVABLE
 TABLE, AND .10 GAP FOR EASY WEB
 TABLE.

<i>BREAK ALL SHARP EDGES</i>					 Advanced Greig Laminators, Inc. 801 Burton Blvd. DeForest, WI 53532
DO NOT SCALE DWG.					
UNLESS OTHERWISE SPECIFIED	MAT'L: AGLK5033 AGLK5033-1				INFEED HOLD DOWN ASSEMBLY,
	FINISH:				
0.00 +/-0.015 0.000 +/-0.005	JOB NO.	QTY.	DWG. BY. GFT	CHK BY.	SCALE: 1/2 = 1 DATE: 4-25-03
ANGLES +/- .5°				DWG. NO. AGL-64-B5034	REV. B

REV NO.	DESCRIPTION	DATE	INT.	ECN
B	ADDED JAM NUT	9-17-07	GFT	
A	ADDED #3 & 4	9-25-06	GFT	

Bill Of Material

Part #: AGL-64-K5033

Appl #:

Assy #: AGLB5034

BOM Rev: A

Model #:

Rev:

Rev: B

Date: 4/25/2003

Description: INFEEED HOLD DOWN ASSEMBLY, ENCORE SERIES

Item:	Part #:	Description:	Qty:
1	AGL-64-C2904-02	INFEEED HOLD DOWN, ENCORE SERIES (WHITE)	1
2	000055-03	BHSCS, #8-32UNC, 3/8 LG, BLACK	4
3	012143-08	PLUNGER, KNURLED KNOB,LOCKING, 1/4-20UNC	2
4	000201-03	NUT, HEX, #8-32UNC, ZINC	4
