

OPERATORS MANUAL FOR AGL8000C



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

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Preface

Your Advanced Greig Laminators, Inc. (AGL) laminator is a finely engineered and designed piece of equipment.

Standard equipment includes a 1 HP DC drive (variable and reversible), air operated brake and clutch, plus an air-operated laminating section with easily adjustable spacer system for controlled laminating nip opening.

The nip rolls are the heart and soul of the laminator. To insure a quality end product, the rolls are rigid enough to carry their weight, plus the working pressures against them without deflecting. The covering is ground straight and concentric to the bearing journals to insure a constant uniform opening at the laminating nip between the top and bottom roll. The power transmission from the drive motor to the bottom laminating roll and the release liner windup clutch is with chain. The laminating nip section is protected with an electric photo-cell and safety cable system.

The AGL design has a rigidly constructed steel frame. All parts are machined to prints, ensuring complete interchangeability of all parts, manufactured or purchased. Adjustable air pressure to the laminating nip section and brake and clutch tension is supplied via your regulated plant air supply

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 switch 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 terminal strip and grounding lug. Advanced Grieg Laminators, Inc. will not be responsible for damage caused by incorrect electrical installation.

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, brakes, and clutches. The laminator is supplied with a 1/4npt port for your final connection.



CAUTION

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

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

Length: 105"
Height: 60"
Depth: 57"
Weight: 2800 lbs.

Electrical Requirements

220/230 VAC single phase, 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 Front Station: 10" Diameter x 72 long x 3" Diameter core. (Pressure Sensitive)

Lower Front Station: 10" Diameter x 72 long x 3" Diameter core. (Pressure Sensitive)

Upper Rear Station: 10" Diameter x 72 long x 3" Diameter core. (Pressure Sensitive)

Lower Rear Station: 10" Diameter x 72 long x 3" Diameter core. (Pressure Sensitive)

Middle Front Station: 8" Diameter x 72 long x 3" Diameter core. (Pressure Sensitive)

Warning: The diameters shown above are the physical dimensional limitations. The cantilevered shafts should not be loaded with a roll of film weighing more than 70 lbs. Any more than this can cause damage to the cantilever system.

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.

Operator Safety

Your laminator is designed to protect the operator from injury when used properly. Do not operate the machine 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 and rear. 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 using your foot and 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 circuit breaker switch is located on the lower right rear of the machine to turn power on and off to the machine.
2. Reset: A reset button is used to start the machine initially and restart the machine after an E-stop condition has occurred. After the power is turned on, the reset button is held for 15 seconds to allow the machines electrical controls to reset to initial settings.
3. Speed: A potentiometer 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 20 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. This also applies to the pull rolls.



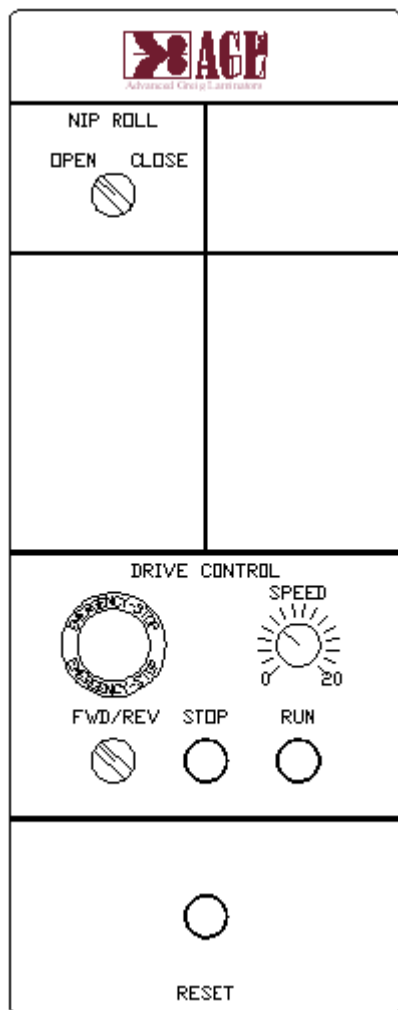
CAUTION

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. Rev/Fwd: This switch will determine which direction the machine will run. If the switch is pointing to FWD, the machine will run from front to back. If the switch is pointing to REV, the machine will run from back to front.
7. Run and Stop: These switches will start the machine in continuous run mode or stop the machine.
8. 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 Run button to transfer to the continuous run mode without stopping.

Right Hand Control Panel

The right hand control panel looks like the figure below.



Nip Roll Switch:

This switch will open and close the nip rolls.

Drive Control:

E-Stop switch will stop the laminator and open the rolls.

Speed Pot sets the laminators speed. 0-20 FPM

FWD/REV switch selects the direction of the machine.

STOP button will stop machine.

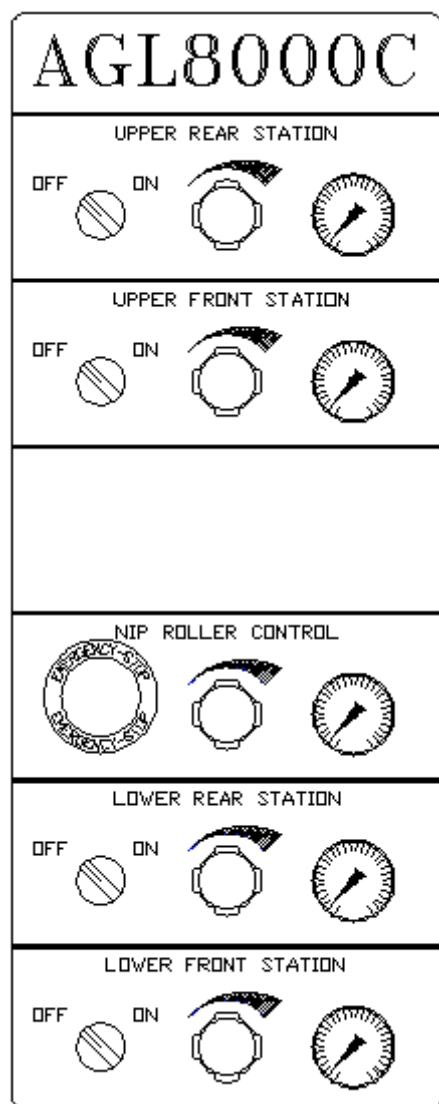
RUN button will put machine into continuous run mode.

Reset button resets the machine after an E-stop condition or at initial startup. Hold button for 15 seconds after turning main power switch on.

Figure 1 Right Hand Control Panel

Left Hand Control Panel

The left hand control panel looks like the figure below.



Upper Rear Station:

The 2 position switch turns the brake on or off. The regulator adjusts the air pressure to the brake changing the web tension. The gauge indicates air pressure which allows for repeatable results.

Upper Front Station:

The 2 position switch turns the clutch on or off. The regulator adjusts the air pressure to the clutch changing the web tension. The gauge indicates air pressure which allows for repeatable results.

Nip Roller Control:

The open/close switch is found on the RH panel, but the regulator adjusts the air pressure to the cylinders and the gauge indicates air pressure. An E-stop switch is located here for easy access to the operator.

Lower Rear Station:

The 2 position switch turns the brake on or off. The regulator adjusts the air pressure to the brake changing the web tension. The gauge indicates air pressure which allows for repeatable results.

Lower Front Station:

The 2 position turns the clutch on or off. The regulator adjusts the air pressure to the clutch changing the web tension. The gauge indicates air pressure which allows for repeatable results.

Figure 2. Left Hand Control Panel

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. Press and hold the "Press to Retract" button to pull the retaining sleeve back. Rotate the shaft out of the sleeve.
3. Remove the locking core chuck and the core idler. The locking core chuck has rollers that rotate out to hold the core as it turns. Slide the locking core chuck, film roll, and core idler onto the shaft.
4. Press and hold the "Press to Retract" button to pull the retaining sleeve back. Rotate the shaft back into position and release the button.
5. 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.
6. Repeat this process on any other unwind station or rewind using an empty core.
7. 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 over the second idler and taped to a windup core.
8. 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. There are two web path configurations shown for two different processes in this manual. The encapsulation process uses pressure sensitive film from top and bottom to "encapsulate" the substrate being fed into the laminator. This process seals the edges and protects the substrate. Refer to figure 4 as the webbing process is described below.

Pressure Sensitive Process

1. Load film on the rear upper unwind station. Turn the selector switch on this station to "Off".
2. Set the shim wheels to "0", 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.



CAUTION

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

3. 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 and pull back. Stick film to feeder stock.
4. Route release liner up behind top roller and then tape to underside of windup core.
5. Set the speed potentiometer to a low setting and move to the rear of the machine.
6. Set the machine to run in the FWD direction and press the foot switch. Do not run film through nip rolls without substrate of some kind, the adhesive will stick to nip rolls.
7. If you are doing top and bottom pressure sensitive, load the lower stations the same as the upper stations. See web diagram below.

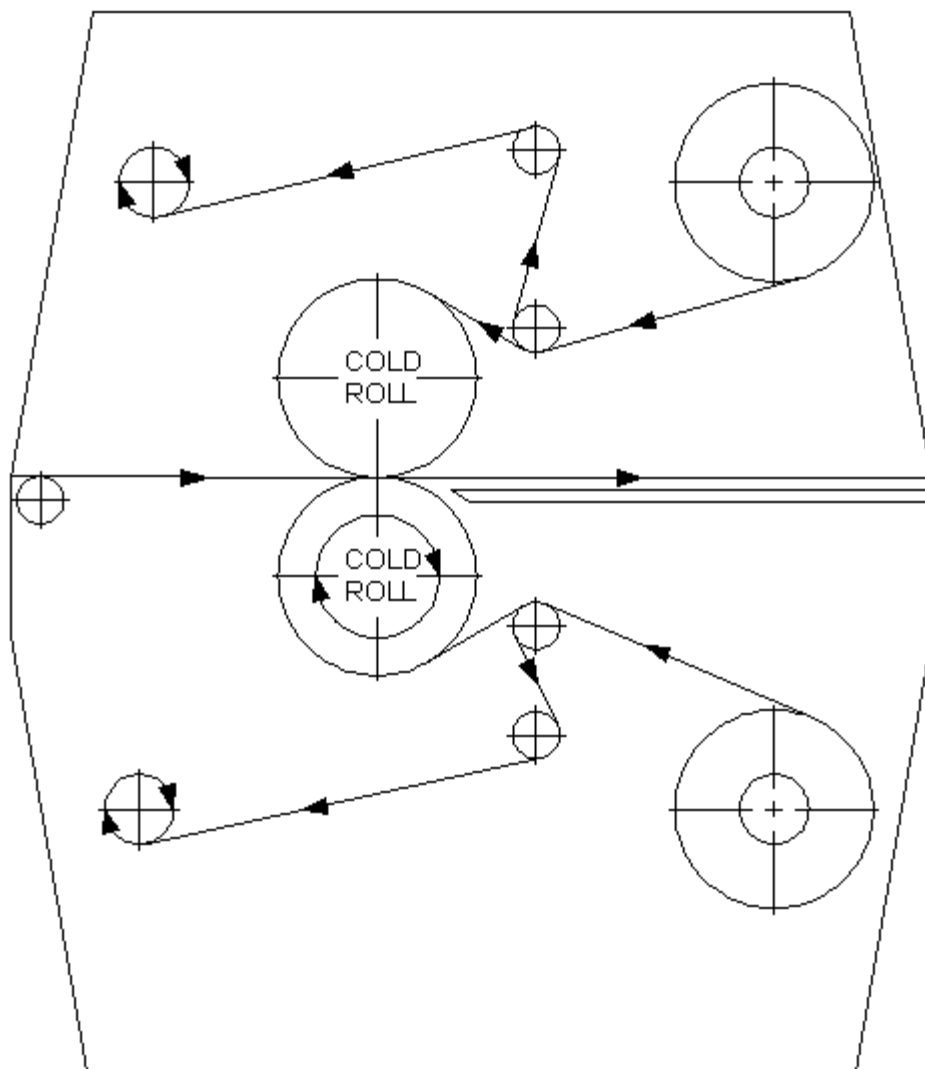
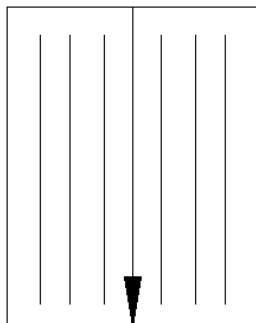


Figure 4. Pressure Sensitive Process

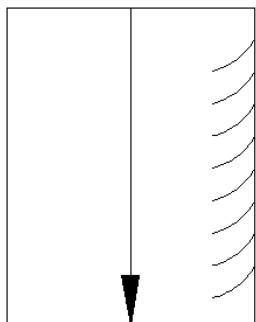
Process Output Trouble Shooting



Straight waves in output

Pull roll creating too much tension → Decrease clutch air pressure

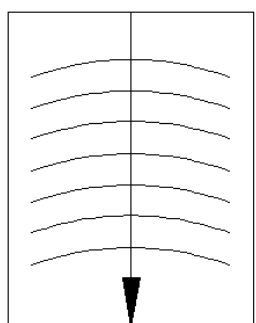
Film not cooling fast enough → Slow feed rate down and turn on cooling system.



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 Reverse	
Nip Roll: Up Down		Shim Dial Setting:	
Roll Pressure: (PSI)		Top Temp. Setting: Deg. F	
Top Roll Heater: On Off		Bottom Temp. Setting: Deg. F	
Bottom Roll Heater On Off			
Rear Control Settings			
Pull Roll Clutch: On Off		Pull Roll: Up Down	
Pull Roll Clutch Setting:(PSI)		Pull Roll Pressure:(PSI)	
Shim Dial Setting:			
Film Station Settings			
Upper Rear Station: Unwind Off Windup			Pressure Setting:(PSI)
Upper Front Station: Unwind Off Windup			Pressure Setting:(PSI)
Center Front Station: Unwind Off Windup			Pressure Setting:(PSI)
Lower Rear Station: Unwind Off Windup			Pressure Setting:(PSI)
Lower Front Station: Unwind Off Windup			Pressure Setting:(PSI)

Other Instructions: _____

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 screw in the cylinder stop.
2. Adjust the cylinder stop clockwise to raise the roll and counter clockwise to lower the roll.
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 setscrew in 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

Inspect the nip roll bearings at least weekly for grease outside the seals, regrease as necessary. The bearings on the lower pull roll should be checked for grease leakage after 3 months of use and then every 6 months from there on. 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-80-K2207-2

Appl #:

Assy #:

BOM Rev: -

Model #:

Rev:

Rev:

Date: 5/23/2003

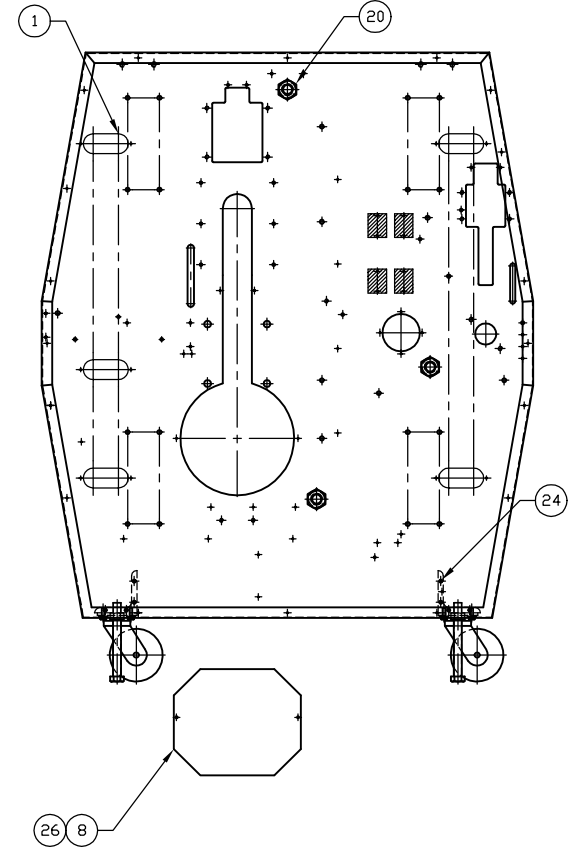
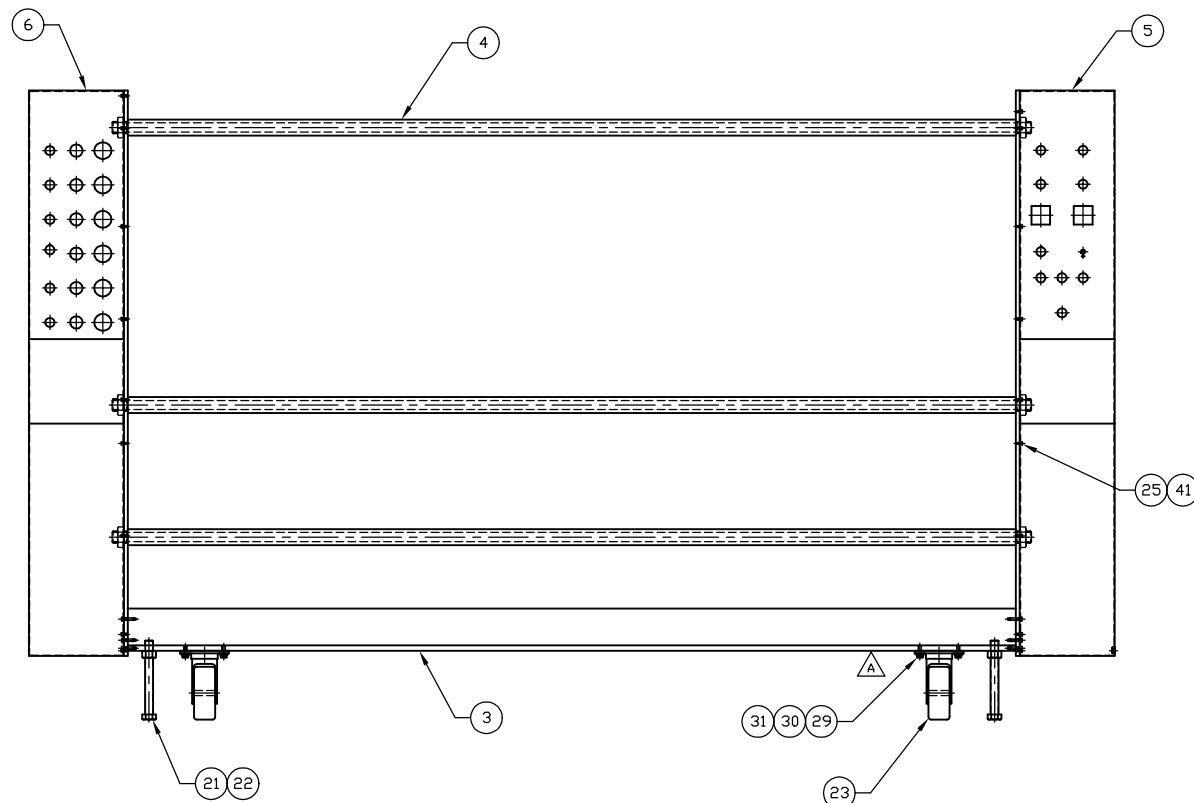
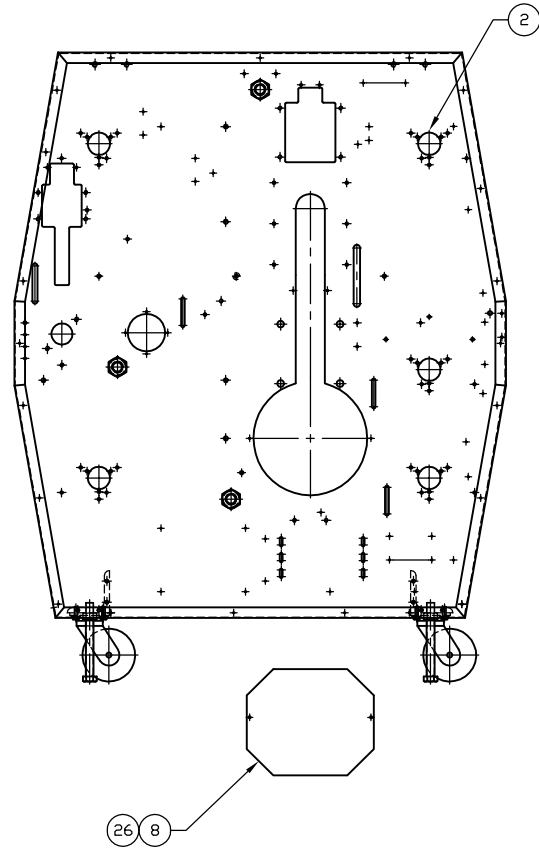
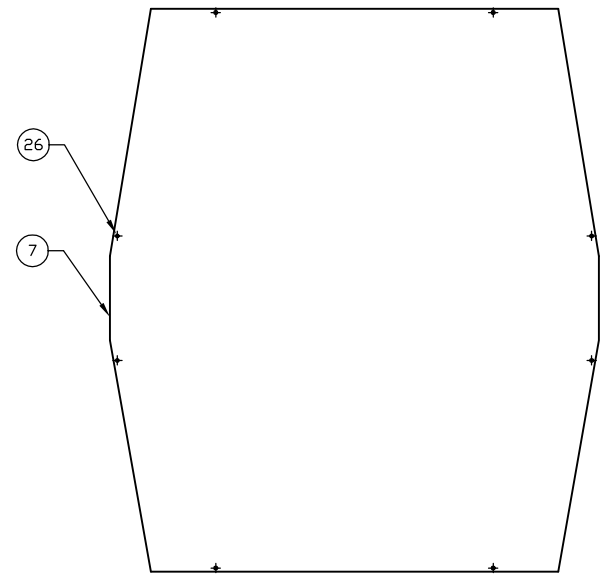
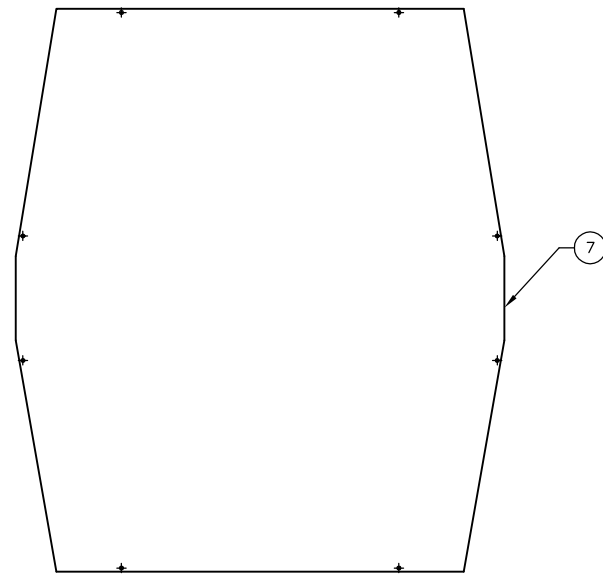
Description: MASTER BILL OF MATERIALS, AGL8000C

Item:	Part #:	Description:	Qty:
1	AGL-80-K1916-1	MAIN MACHINE FRAME, AGL8000	1
2	AGL-80-K2122-1	NIP ROLL ASSEMBLY, AGL8000C (BAUMER)	1
3	AGL-80-K3520-1	DRIVE ASSEMBLY, AGL8000C (PNEUMATIC COUPLER)	1
4	AGL-80-K3567-1	UNWIND/WINDUP ASSEMBLY, AGL8000S/C (PNEUMATIC COUPLER)	1
5	AGL-80-K2728	INFEED TABLE ASSEMBLY, AGL8000T & C	1
6	AGL-80-K5159	OUTFEED TABLE ASSEMBLY, AGL8000C	1
7	AGL-80-K1851	IDLER ASSY, AGL8000	1
8	AGL-80-K2909	INFEED HOLD DOWN ASSEMBLY, 8000 SERIES	1
9	AGL-80-K3518-2	ELECTRICAL ASSEMBLY, AGL8000C	1
10	AGL-80-K2210-1	PNEUMATIC ASSEMBLY, AGL8000C (PNEUMATIC COUPLER)	1
11	AGL-XX-K2914	ACCESSORIES KIT, 8000 SERIES	1

Bill Of Material

Part #: AGL-80-K1916-1 **Appl #:** **Assy #:** AGLD1915-1 **BOM Rev:** C
Model #: **Rev:** **Rev:** A **Date:** 1/8/2002
Description: MAIN MACHINE FRAME, AGL8000

Item:	Part #:	Description:	Qty:
1	AGL-80-D1912-1	RH. SIDEPLATE, AGL8000 SERIES	1
2	AGL-80-D1913-1	LH. SIDEPLATE, AGL8000 SERIES	1
3	AGL-80-B1918	LOWER TIE BAR, AGL8000	2
4	AGL-80-B1917	CROSS TUBE, AGL8000	3
5	AGL-80-D1910-1	RH. WRAP, AGL8000	1
6	AGL-80-D1911-1	LH. WRAP, AGL8000	1
7	AGL-80-C2094	ENCLOSURE COVER, AGL8000	2
8	AGL-80-B1799	COVER, AGL8000	2
20	000198-15	NUT, HEX, JAM, 1-1/8-12UNF, ZINC	6
21	000358-36	HHCS, 3/4-10UNC, 7 LG, ZINC	4
22	000195-12	NUT, HEX, JAM, 3/4-10UNC, ZINC	4
23	001451	CASTER, SWIVEL, 5 DIA 900 LBS.	4
24	000011-08	SHCS, 5/16-18UNC, 1 LG, BLACK	16
25	000007-03	SHCS, #10-24UNC, 3/8 LG, BLACK	41
26	000055-03	BHSCS, #8-32UNC, 3/8 LG, BLACK	20
27	000207-04	WASHER, FLAT, SAE, #10 DIA, 1/2 OD, 7/32 ID, ZINC	41
29	000340-07	HHCS, 5/16-18UNC, 7/8 LG, ZINC	14
30	000493-07	WASHER, LOCK, 5/16 DIA, SPLIT, ZINC	16
31	000207-07	WASHER, FLAT, SAE, 5/16 DIA, 11/16 OD, 11/32 ID, ZINC	16
36	000340-12	HHCS, 5/16-18UNC, 1-1/2 LG, ZINC	2
41	000207-04	WASHER, FLAT, SAE, #10 DIA, 1/2 OD, 7/32 ID, ZINC	41



A	#29 WAS 100 LG.	4-20-04	GFT	
REV NO.	DESCRIPTION	DATE	INT.	ECN

BREAK ALL SHARP EDGES				AGL Advanced Greig Laminators, Inc. 801 Burton Blvd. DeForest, WI 53532			
DO NOT SCALE DWG.				MAIN MACHINE FRAME ASSEMBLY AGL 8000			
UNLESS OTHERWISE SPECIFIED		MATERIAL: AGLK1916-1		SCALE: 1/8" = 1"		DWG. NO. AGL-80-D1915-1	
FINISH:		DATE: 6-18-02		REV. A			
JDB NO. QTY. DWG. BY. CHK. BY.		GFT					
ANGLES +/- 5°							

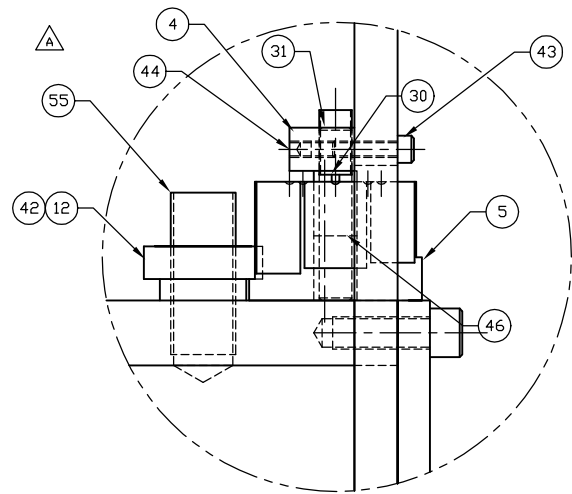
Bill Of Material

Part #: AGL-80-K2122-1	Appl #:	Assy #: AGLD2123-1	BOM Rev: B
Model #:	Rev:	Rev: A	Date: 6/18/2002
Description: NIP ROLL ASSEMBLY, AGL8000C (BAUMER)			

Item:	Part #:	Description:	Qty:
1	AGL-80-C1886	NIP ROLL SUB ASSEMBLY, AGL8000	2
2	AGL-80-B1797	BEARING GIB, AGL8000	4
3	AGL-80-B2092	CENTERING COLLAR, AGL8000	2
4	AGL-80-B2103	SHIM SHAFT SUPPORT, AGL8000	2
5	AGL-64-B0015	SHIM WHEEL	2
6	AGL-80-B1890	SPACER, EYE BRACKET, AGL8000	1
7	AGL-80-B4303-1	RH. EYE BRACKET, AGL8000	1
8	AGL-80-B2124	TAKE UP BEARING MOD. (ALTER MB#TC-25-2-7/16)	2
10	AGL-64-B1118-1	BEARING SPACER MODIFICATION (ALTER AGL-64-B1118)	2
11	AGL-80-B4303-2	LH. EYE BRACKET, AGL8000	1
12	AGL-80-B2102-1	CYLINDER STOP, TAPPED, 8000/6450	2
13	AGL-80-B2104	CYLINDER MOUNTING PLATE, AGL8000	2
30	001392-15	PLUNGER, SPRING, LEP, 3/8-16UNC, 5/8 LG	2
31	000289-16	PIN, DOWEL, 3/8 DIA, 2 LG	2
32	000007-04	SHCS, #10-24UNC, 1/2 LG, BLACK	1
33	000013-08	SHCS, 3/8-16UNC, 1 LG, BLACK	8
34	000041-08	SHCS, 3/8-24UNF, 1 LG, BLACK	8
36	000771-39	BEARING, FLANGE, 4-BOLT, 2-7/16 DIA BORE	2
37	000355-17	HHCS, 5/8-11UNC, 2-1/4 LG, ZINC	8
38	000493-12	WASHER, LOCK, 5/8 DIA, SPLIT, ZINC	8
39	000207-12	WASHER, FLAT, SAE, 5/8 DIA, 1-5/16 OD, 21/32 ID, ZINC	8
40	000201-11	NUT, HEX, 5/8-11UNC, ZINC	8
41	000005-04	SHCS, #8-32UNC, 1/2 LG, BLACK	2
42	012378-04	SSS, BRASS TIP, 1/4-20UNC, 1/4" LG.	4
43	000035-06	SHCS, #10-32UNF, 3/4 LG, BLACK	4
44	000155-06	SSS, CUP PT, #10-32UNF, 3/8 LG, BLACK	2
45	000037-06	SHCS, 1/4-28UNF, 3/4 LG, BLACK	4
46	000732-06	BUSHING, BRONZE, 3/8 ID, 1/2 OD, 3/4 LG	4

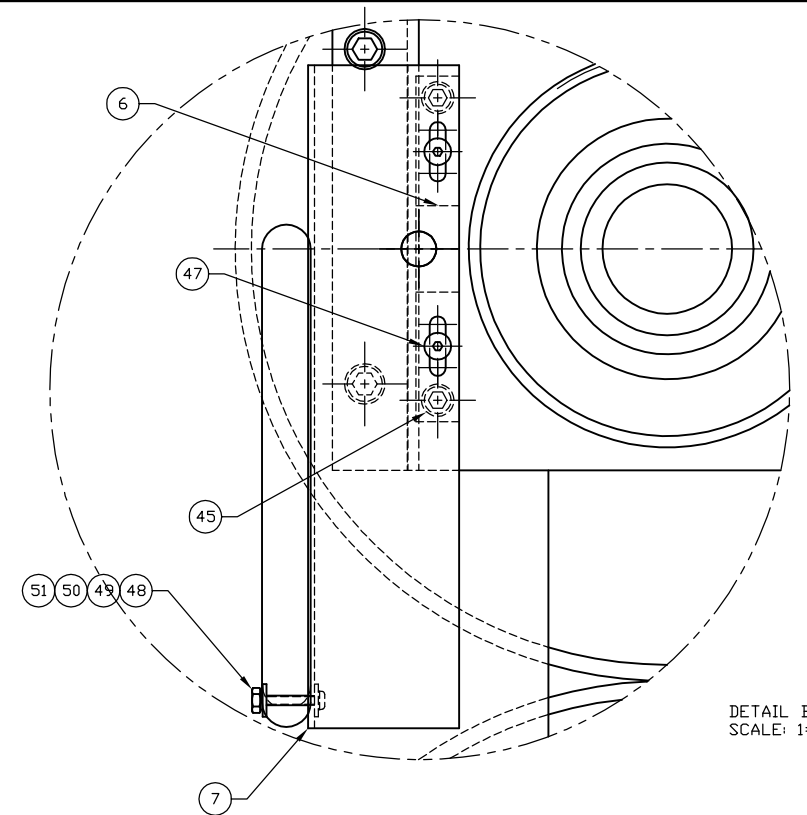
Part #: AGL-80-K2122-1**Appl #:****Assy #:** AGLD2123-1**BOM Rev:** B**Model #:****Rev:****Rev:** A**Date:** 6/18/2002**Description:** NIP ROLL ASSEMBLY, AGL8000C (BAUMER)

Item:	Part #:	Description:	Qty:
47	000055-03	BHSCS, #8-32UNC, 3/8 LG, BLACK	4
48	000553-08	PHMS, SLOTTED, #4-40UNC, 1 LG, ZINC	2
49	000207-01	WASHER, FLAT, SAE, #4 DIA, 5/16 OD, 1/8 ID, ZINC	4
50	000493-01	WASHER, LOCK, #4 DIA, SPLIT, ZINC	2
51	000201-01	NUT, HEX, #4-40UNC, ZINC	2
52	000011-17	SHCS, 5/16-18UNC, 2-1/4 LG, BLACK	12
54	000127-08	SSS, CUP PT, #8-32UNC, 1/2 LG, BLACK	2
55	012112-32	SSS, CUP PT, 3/4-16UNF, 2 LG, BLACK	4

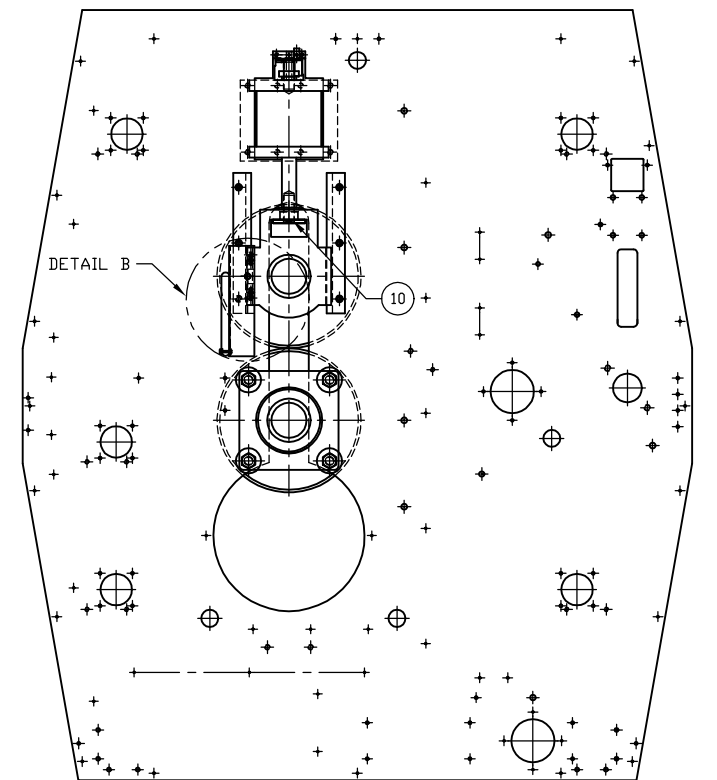
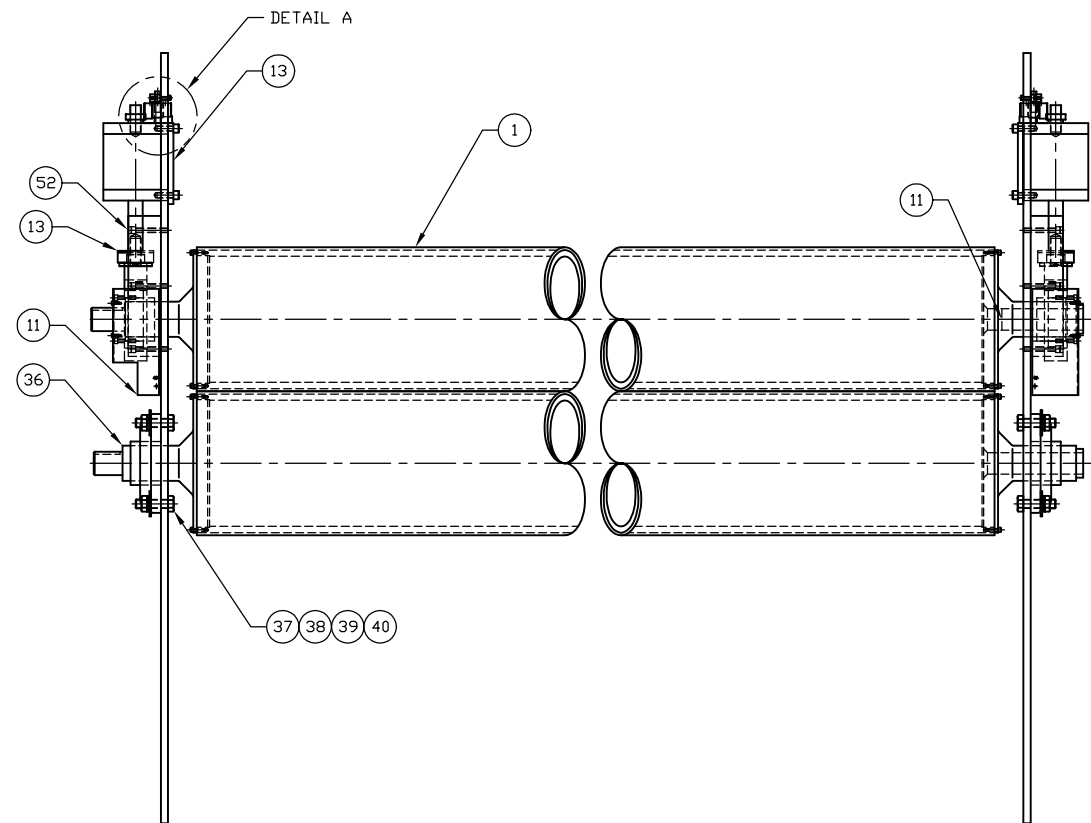
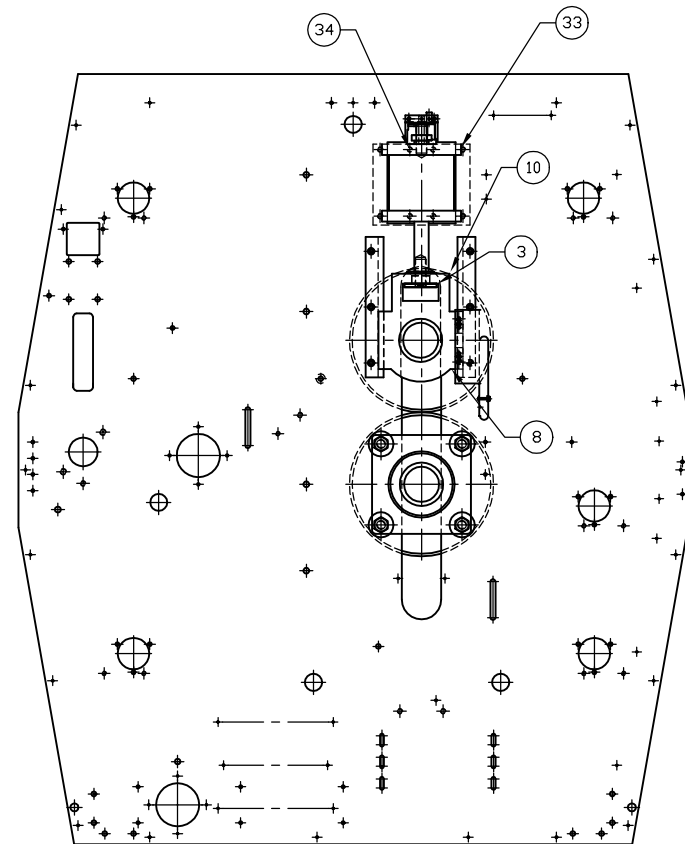


DETAIL A
SCALE: 1=1

***NOTE:
STUDS IN AIR CYLINDER TO BE 1.0 LG.



DETAIL B
SCALE: 1=1



A	ADDED #55	4-19-04	GFT		0.00 +/-0.015 0.000 +/-0.005	FINISH:				AGL8000C			
REV NO.	DESCRIPTION	DATE	INT.	ECN	ANGLES +/-5°	JOB NO.	QTY.	DWG. BY	CHK BY	SCALE: 1/6 = 1	DWG. NO.	REV.	
								GFT		DATE: 6-18-02	AGL-80-D2123-1	A	

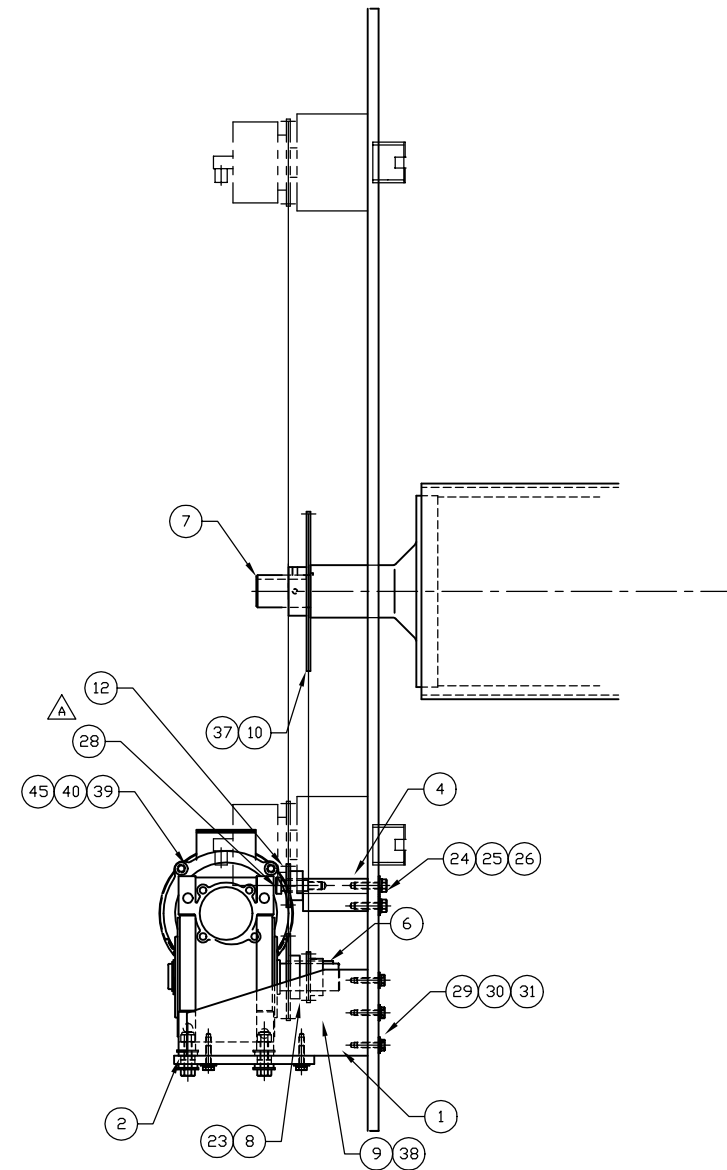
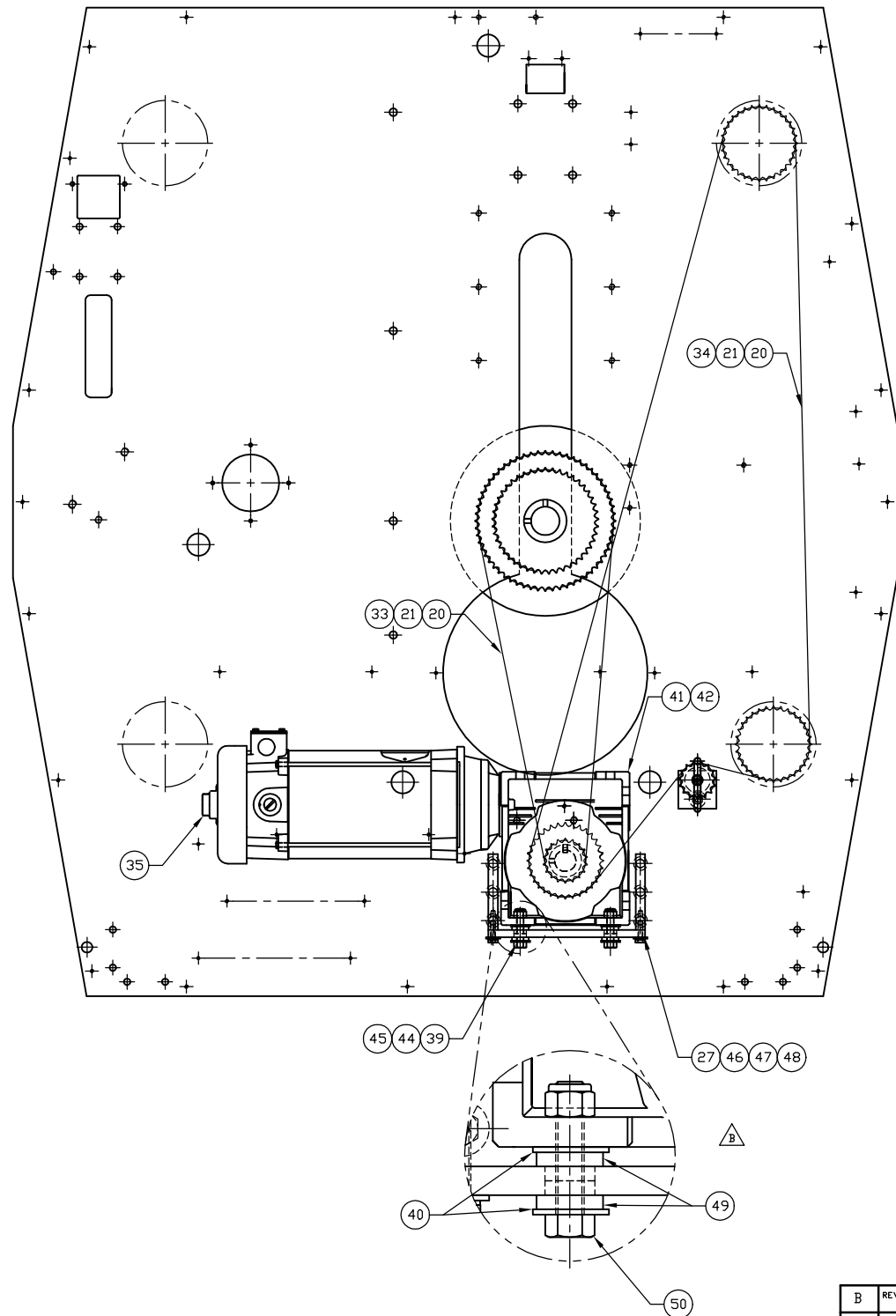
Bill Of Material

Part #: AGL-80-K3520-1	Appl #:	Assy #: AGLD3521-1	BOM Rev: C
Model #:	Rev:	Rev: B	Date: 5/23/2003
Description: DRIVE ASSEMBLY, AGL8000C (PNEUMATIC COUPLER)			

Item:	Part #:	Description:	Qty:
1	AGL-80-B1804	MOTOR SUPPORT, AGL8000	2
2	AGL-80-B1803	MOTOR MOUNTING PLATE, AGL8000	1
4	AGL-80-B2097	IDLER TENSIONER, 3.00 LG.	1
6	AGL-80-B1811	SHALLOW KEY, .188 x .250 x 2.50 LG. AGL8000	1
7	AGL-80-B1814	SHALLOW KEY, .313 x .375 x 1.63 LG. AGL8000	1
8	AGL-80-B1809	SPROCKET MOD. (ALTER MARTIN #35B18)	1
9	AGL-80-B1810-1	SPROCKET MODIFICATION, (ALTER MARTIN #35B32)	1
10	AGL-80-B1812	SPROCKET MOD. (ALTER MARTIN #35B60)	1
12	AGL-80-B2098	SPROCKET/BUSHING ASSEMBLY, AGL8000	1
20	001275-01	CHAIN, #35, HALF LINK	2
21	001275	CHAIN, #35, CONNECTING LINK	2
23	000157-04	SSS, CUP PT, 1/4-28UNF, 1/4 LG, BLACK	2
24	000340-10	HHCS, 5/16-18UNC, 1-1/4 LG, ZINC	2
25	000207-07	WASHER, FLAT, SAE, 5/16 DIA, 11/16 OD, 11/32 ID, ZINC	2
26	000493-07	WASHER, LOCK, 5/16 DIA, SPLIT, ZINC	2
27	000337-08	HHCS, 1/4-20UNC, 1 LG, ZINC	4
28	000637-10	SHOULDER SCREW, 1/2 DIA, 1-1/4 LG (3/8-16UNC)	1
29	000337-08	HHCS, 1/4-20UNC, 1 LG, ZINC	6
30	000207-06	WASHER, FLAT, SAE, 1/4 DIA, 5/8 OD, 9/32 ID, ZINC	6
31	000493-06	WASHER, LOCK, 1/4 DIA, SPLIT, ZINC	6
33	012076	CHAIN, #35, 140 PITCHES	1
34	012141-260	CHAIN, #35, 260 PITCHES	1
35	002002-01	MOTOR, PERM MAGNET, 180VDC, 1 HP, 1725 RPM	1
37	000135-06	SSS, CUP PT, 3/8-16UNC, 3/8 LG, BLACK	3
38	000131-06	SSS, CUP PT, 1/4-20UNC, 3/8 LG, BLACK	2
39	000343-10	HHCS, 3/8-16UNC, 1-1/4 LG, ZINC	8
40	000493-08	WASHER, LOCK, 3/8 DIA, SPLIT, ZINC	8
41	012022-05	GEAR BOX, 60:1	1

Part #: AGL-80-K3520-1**Appl #:****Assy #:** AGLD3521-1**BOM Rev:** C**Model #:****Rev:****Rev:** B**Date:** 5/23/2003**Description:** DRIVE ASSEMBLY, AGL8000C (PNEUMATIC COUPLER)

Item:	Part #:	Description:	Qty:
42	012022-06	OUTPUT SHAFT, 1.25 DIA.	1
44	000195-07	NUT, HEX, JAM, 3/8-16UNC, ZINC	4
45	000207-08	WASHER, FLAT, SAE, 3/8 DIA, 13/16 OD, 13/32 ID, ZINC	8
46	012495-03	WASHER, RUBBER, 2.25 OD. X .38 ID. X .13 THICK	4
47	000493-06	WASHER, LOCK, 1/4 DIA, SPLIT, ZINC	4
48	000207-06	WASHER, FLAT, SAE, 1/4 DIA, 5/8 OD, 9/32 ID, ZINC	4
49	012426-02	BUSHING, FLANGED, RUBBER, 21/32 OD. X 3/8 ID.	8
50	000343-14	HHCS, 3/8-16UNC, 1-3/4 LG, ZINC	4



B		REVISED TO SHOW RUBBER BUSHINGS AND HARDWARE	4-20-04	GFT	
A		REVISED CALLOUTS ON TENSIONER SPROCKET	10-27-03	GFT	
REV. NO.	DESCRIPTION		DATE	INT.	ECN

UNLESS OTHERWISE SPECIFIED		MATERIAL: AGLK3520-1		FINISH:	
0.00	+/-0.015	JOB NO.		DATE: 5-23-03	SCALE: 1/4" = 1"
0.000	+/-0.005	DWG. BY: GFT		DWG. NO. AGL-80-D3521-1	REV. B
ANGLES +/-5°					

BREAK ALL SHARP EDGES
DO NOT SCALE DWG.

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

DRIVE ASSEMBLY
AGL8000C (PNEU. COUPLER)

Bill Of Material

Part #: AGL-80-K3567-1 **Appl #:** **Assy #:** AGLC3568-1 **BOM Rev:** D
Model #: **Rev:** **Rev:** A **Date:** 5/23/2003
Description: UNWIND/WINDUP ASSEMBLY, AGL8000S/C (PNEUMATIC COUPLER)

Item:	Part #:	Description:	Qty:
1	AGL-64-B0003	VERTICAL SHAFT, CANTILEVERED UNWIND	2
2	AGL-64-B0004	SHAFT BRACE, CANTILEVERED UNWIND	6
3	AGL-64-B0005	SHAFT SUPPORT, CANTILEVERED UNWIND	2
4	AGL-64-B0940	MAIN PIVOT BLOCK	4
5	AGL-80-B3569	UNWIND/WINDUP SHAFT, 8000 SERIES	4
6	AGL-64-B0044	CORE COLLAR	4
7	AGL-XX-B3592	RAMP, UNWIND/WINDUP	4
8	AGL-XX-B2917-1	CORE HOLDER, 1-5/8 BORE (ENCORE)	4
9	AGL-XX-B3570	CORE SUPPORT, 1-5/8 BORE	4
10	AGL-XX-B3571	HOLE COVER	1
11	AGL-XX-B5158	COVER, BRAKE/CLUTCH	1
20	012115-05	BRAKE / CLUTCH COMBO, PNEUMATIC COUPLER	2
21	000059-07	BHSCS, 1/4-20UNC, 7/8 LG, BLACK	12
22	001356-12	BUSHING, FLANGED, BRONZE, 1 1/4 ID., 1 1/2 OD. 1 1/2 LG	8
23	000411-20	COLLAR, SHAFT, 1.25 DIA BORE, 1/2 WIDE	8
24	001355-26	BEARING, TAPPED BASE, 1 5/8 BORE	8
25	000013-10	SHCS, 3/8-16UNC, 1-1/4 LG, BLACK	16
28	000135-08	SSS, CUP PT, 3/8-16UNC, 1/2 LG, BLACK	6
30	012265-06	SSS, NYLON TIPPED, 1/2-13UNC, 3/4 LG. BLACK	4
32	000011-10	SHCS, 5/16-18UNC, 1-1/4 LG, BLACK	8
33	000349-17	HHCS, 1/2-13UNC, 2-1/4 LG, ZINC	16
34	000207-10	WASHER, FLAT, SAE, 1/2 DIA, 1-1/16 OD, 17/32 ID, ZINC	16
35	000493-10	WASHER, LOCK, 1/2 DIA, SPLIT, ZINC	16
36	012447-04	SSS, NYLON, 1/2-13UNC, 1/2 LG.	4
37	001379-1	BRAKE, PNEUMATIC COUPLING	2
38	000055-03	BHSCS, #8-32UNC, 3/8 LG, BLACK	2
39	000059-07	BHSCS, 1/4-20UNC, 7/8 LG, BLACK	3
40	001211-06	NUT, K-LOCK, 1/4-20UNC, ZINC	3

Part #: AGL-80-K3567-1

Appl #:

Assy #: AGLC3568-1

BOM Rev: D

Model #:

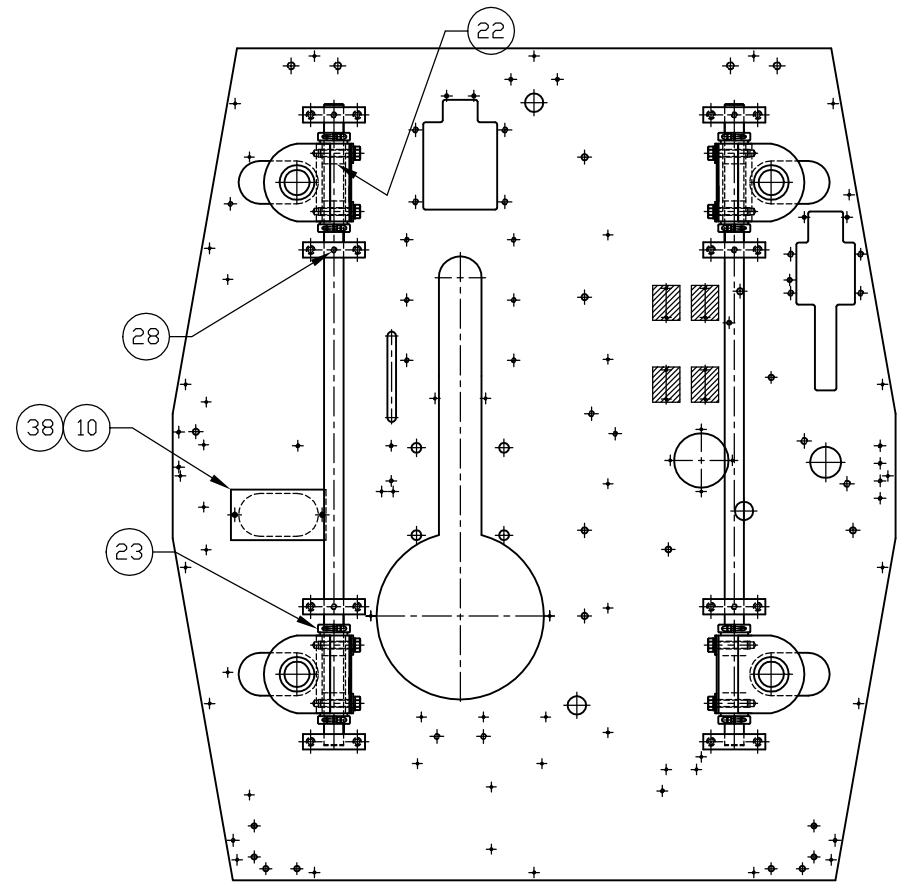
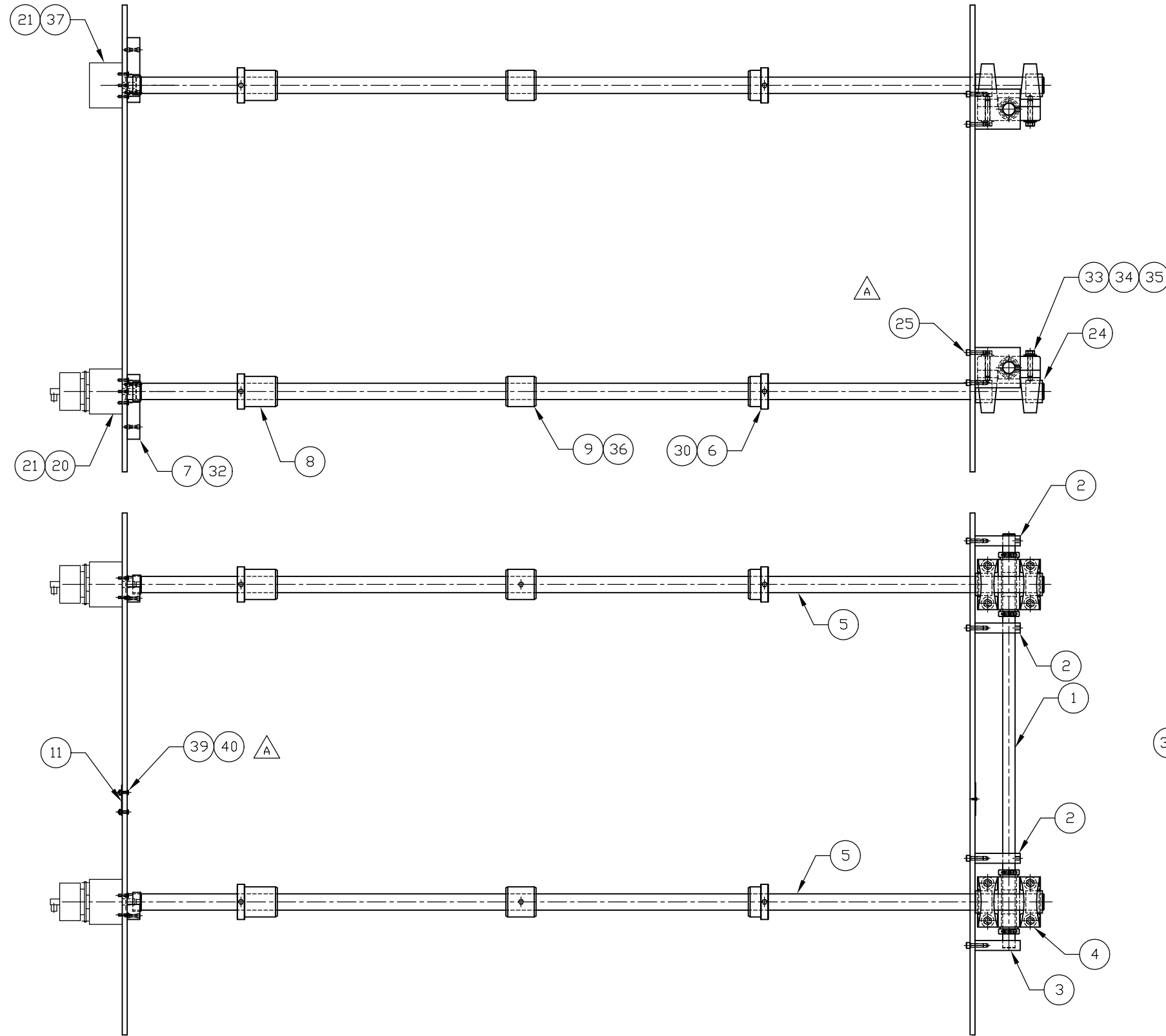
Rev:

Rev: A

Date: 5/23/2003


Description: UNWIND/WINDUP ASSEMBLY, AGL8000S/C (PNEUMATIC COUPLER)

Item:	Part #:	Description:	Qty:
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A	#25 WAS HHCS, REMOVED 26 & 27, ADDED #11,39,40	4-20-04	GFT	
REV NO.	DESCRIPTION	DATE	INT.	ECN

BREAK ALL SHARP EDGES				
DO NOT SCALE DWG.				
UNLESS OTHERWISE SPECIFIED	MAT'L: AGLLK3567-1			
	FINISH:			
	0.00 +/-0.015	JOB NO.	QTY.	DWG. BY.
	0.000 +/-0.005			CHK BY
	ANGLES +/- .5°			GFT

 Advanced Greig Laminators, Inc. 801 Burton Blvd. DeForest, WI 53532			UNWIND/WIND-UP STATION	
			8000C/8000S	
SCALE: 1/8" = 1"		DWG. NO.		REV.
DATE: 5-23-03		AGL-80-C3568-1		A

Bill Of Material

Part #: AGL-80-K2728

Appl #:

Assy #: AGLD2729

BOM Rev: A

Model #:

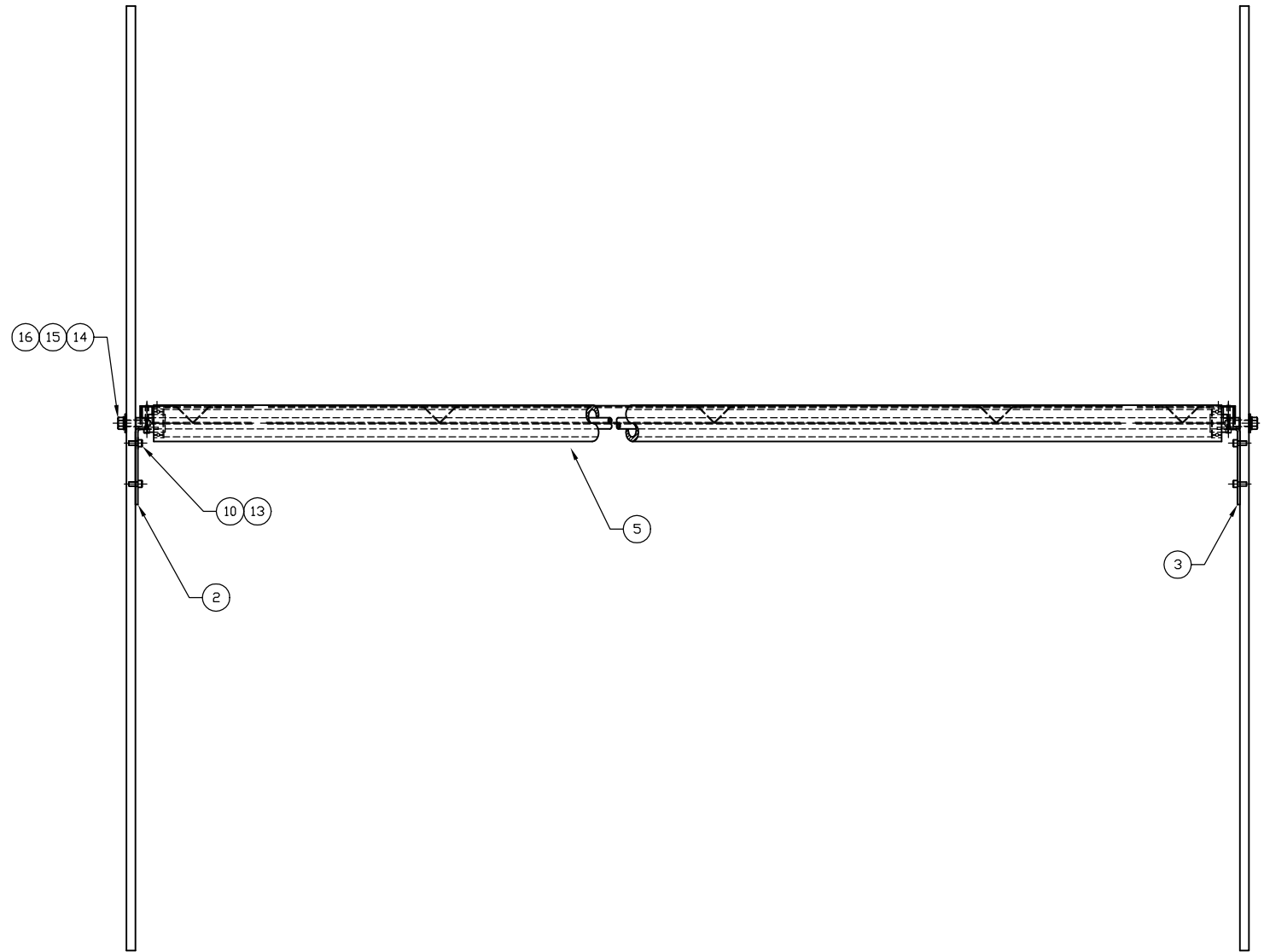
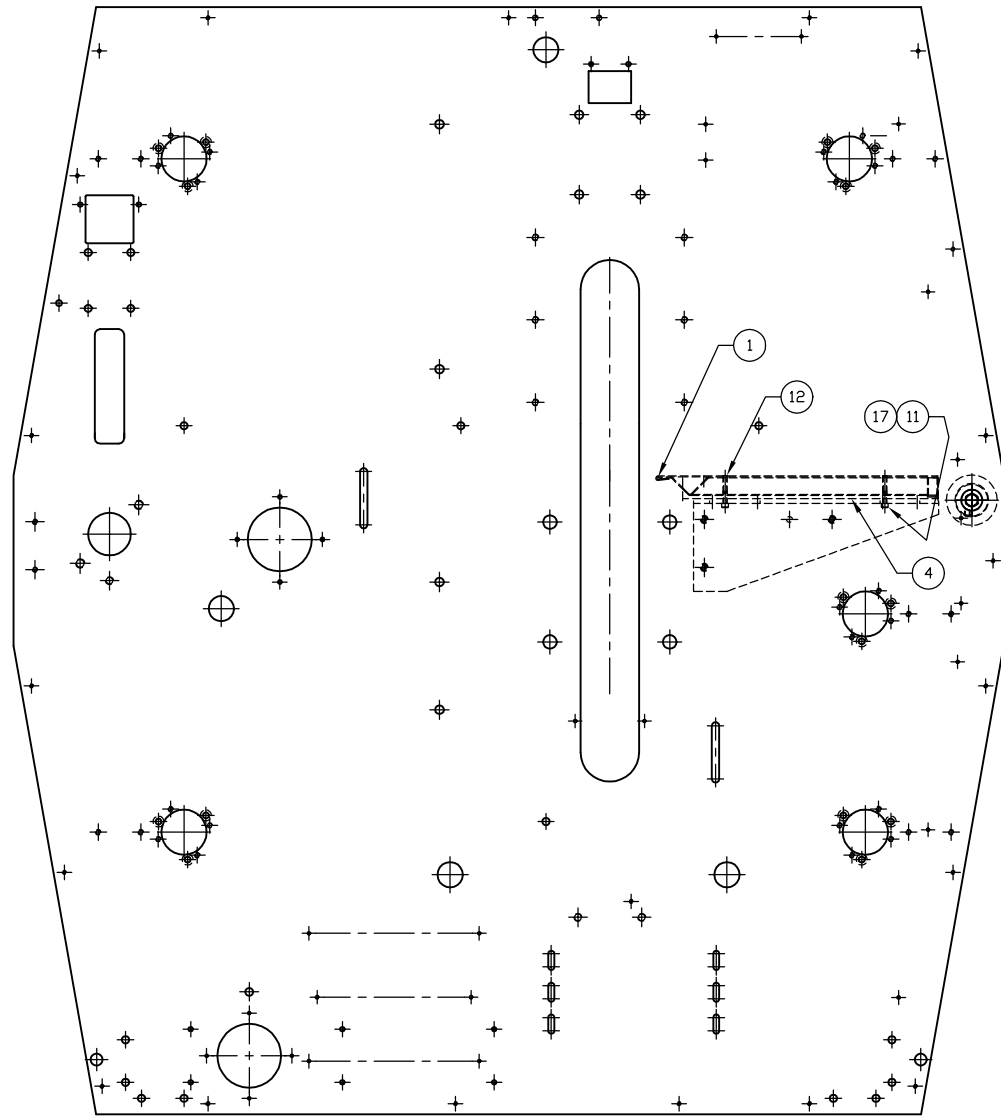
Rev:

Rev: -


Date: 4/6/2000

Description: INFEEED TABLE ASSEMBLY, AGL8000T & C

Item:	Part #:	Description:	Qty:
1	AGL-80-C1864	REMOVABLE TABLE, AGL8000	1
2	AGL-64-B0082-01	TABLE SUPPORT, RIGHT HAND (LIGHT GREY)	1
3	AGL-64-B0083-01	TABLE SUPPORT, LEFT HAND (LIGHT GREY)	1
4	AGL-64-B0923	MOUNTING ENDS, OUTFEED TABLE	2
5	AGL-80-B1806	IDLER SUB ASSY, AGL8000	1
10	000009-04	SHCS, 1/4-20UNC, 1/2 LG, BLACK	6
11	000007-04	SHCS, #10-24UNC, 1/2 LG, BLACK	4
12	000129-10	SSS, CUP PT, #10-24UNC, 3/4 LG, BLACK	4
13	000207-06	WASHER, FLAT, SAE, 1/4 DIA, 5/8 OD, 9/32 ID, ZINC	6
14	000343-10	HHCS, 3/8-16UNC, 1-1/4 LG, ZINC	2
15	000207-08	WASHER, FLAT, SAE, 3/8 DIA, 13/16 OD, 13/32 ID, ZINC	2
16	000493-08	WASHER, LOCK, 3/8 DIA, SPLIT, ZINC	2
17	000207-04	WASHER, FLAT, SAE, #10 DIA, 1/2 OD, 7/32 ID, ZINC	4



REV. NO.	DESCRIPTION	DATE	INT.	ECN

BREAK ALL SHARP EDGES				 Advanced Greig Laminators, Inc. 801 Burton Blvd. DeForest, WI 53532			
DO NOT SCALE DWG.				INFEED TABLE ASSY AGL8000T			
UNLESS OTHERWISE SPECIFIED		MAT'L: AGLK2728					
0.00 +/-0.015 0.000 +/-0.005		FINISH:					
JOB NO.	QTY.	DWG. BY:	CHK BY	SCALE: 1/4" = 1"		DWG. NO.	REV.
		GFT		DATE: 4-6-00		AGL-80-D2729	
ANGLES +/- .5°							

Bill Of Material

Part #: AGL-80-K5159

Appl #:

Assy #: AGLD5160

BOM Rev: A

Model #:

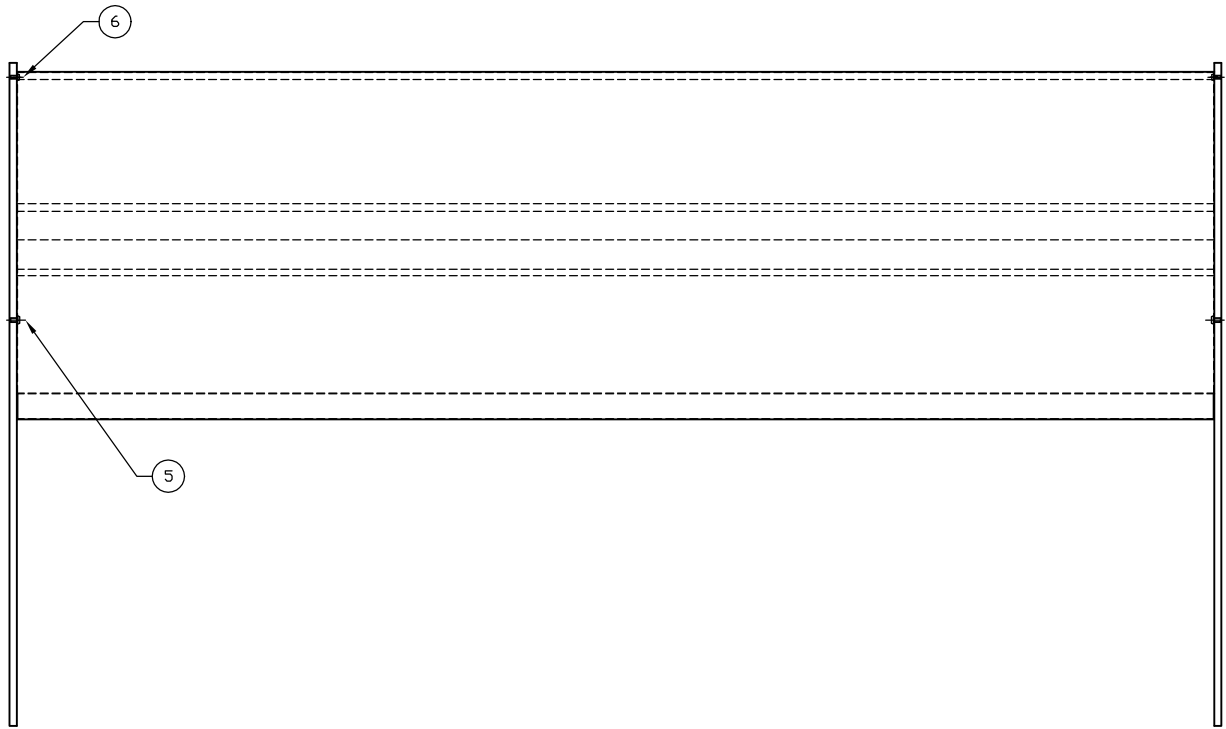
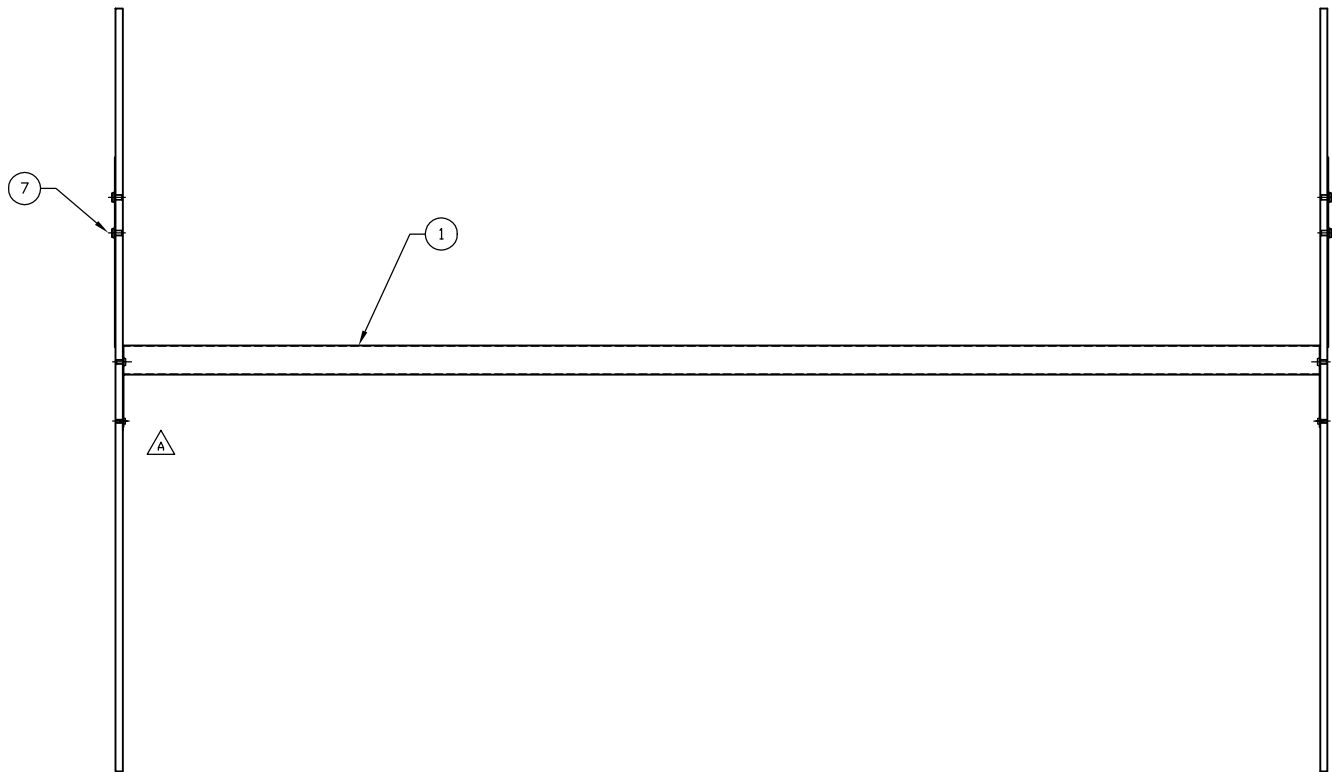
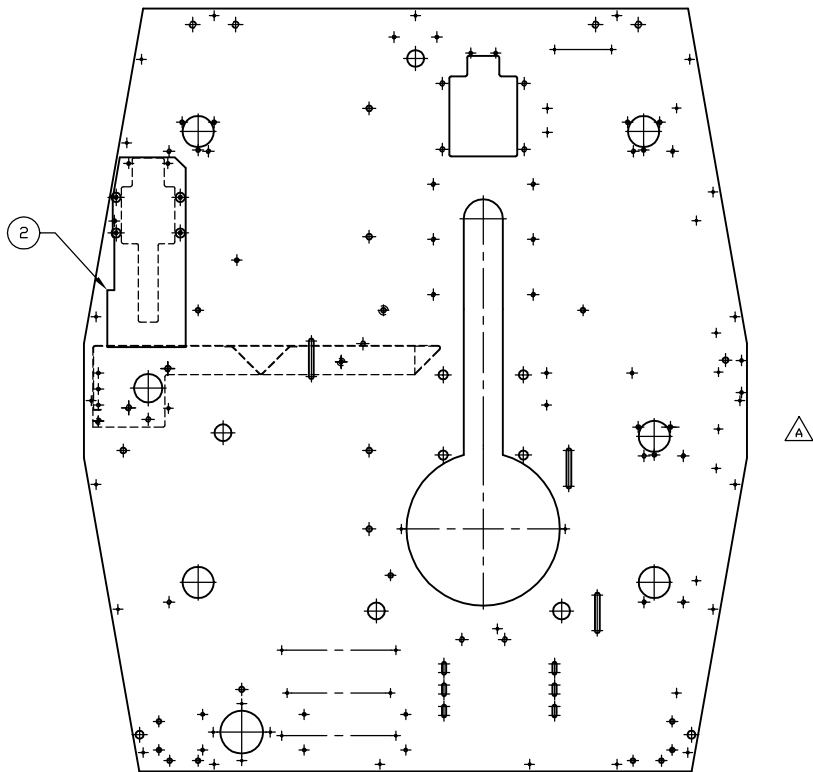
Rev:

Rev: A

Date: 9/2/2003

Description: OUTFEED TABLE ASSEMBLY, AGL8000C

Item:	Part #:	Description:	Qty:
1	AGL-80-D5201	OUTFEED SURFACE, 8000T & C	1
2	AGL-80-B2204	COVER, CYLINDER HOLE	2
5	000061-04	BHSCS, 5/16-18UNC, 1/2 LG, BLACK	2
6	000059-04	BHSCS, 1/4-20UNC, 1/2 LG, BLACK	2
7	000063-04	BHSCS, 3/8-16UNC, 1/2 LG, BLACK	8



A	REMOVED #9.8,9.10	4-27-04	GFT	
REV NO.	DESCRIPTION	DATE	INT.	ECN

BREAK ALL SHARP EDGES					AGL Advanced Greig Laminators, Inc. 801 Burton Blvd. DeForest, WI 53532				
DO NOT SCALE DWG.					OUTFEED TABLE ASSY AGL8000C				
UNLESS OTHERWISE SPECIFIED		MATERIAL AGLK5159		FINISH:		SCALE: 1/6" = 1"		DWG. NO. AGL-80-D5160	
0.00 +/-0.015 0.000 +/-0.005		JOB NO.		QTY.	DWG. BY	CHK BY	DATE: 10-7-03	REV. A	
ANGLES +/-5°		GFT							

Bill Of Material

Part #: AGL-80-K1851

Appl #:

Assy #: AGL-80-D1850

BOM Rev: -

Model #:

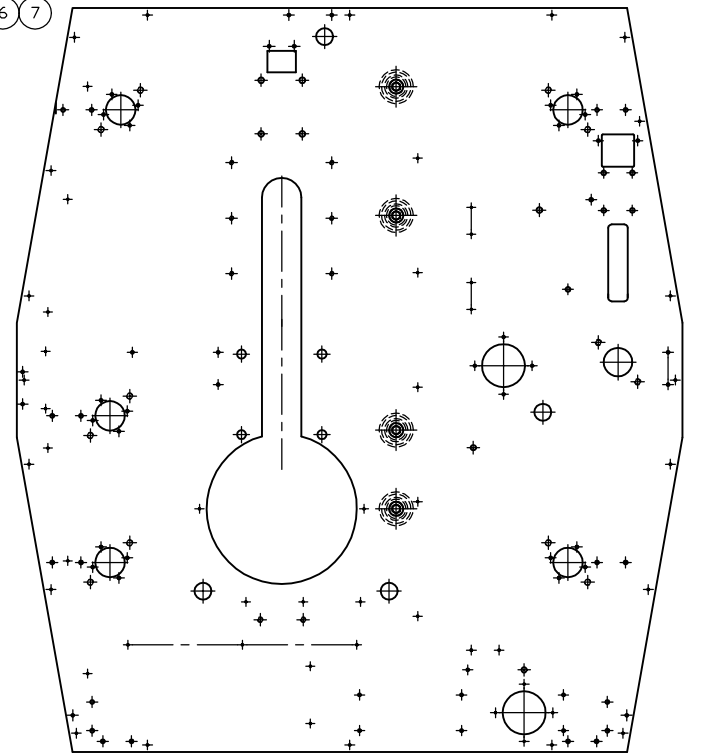
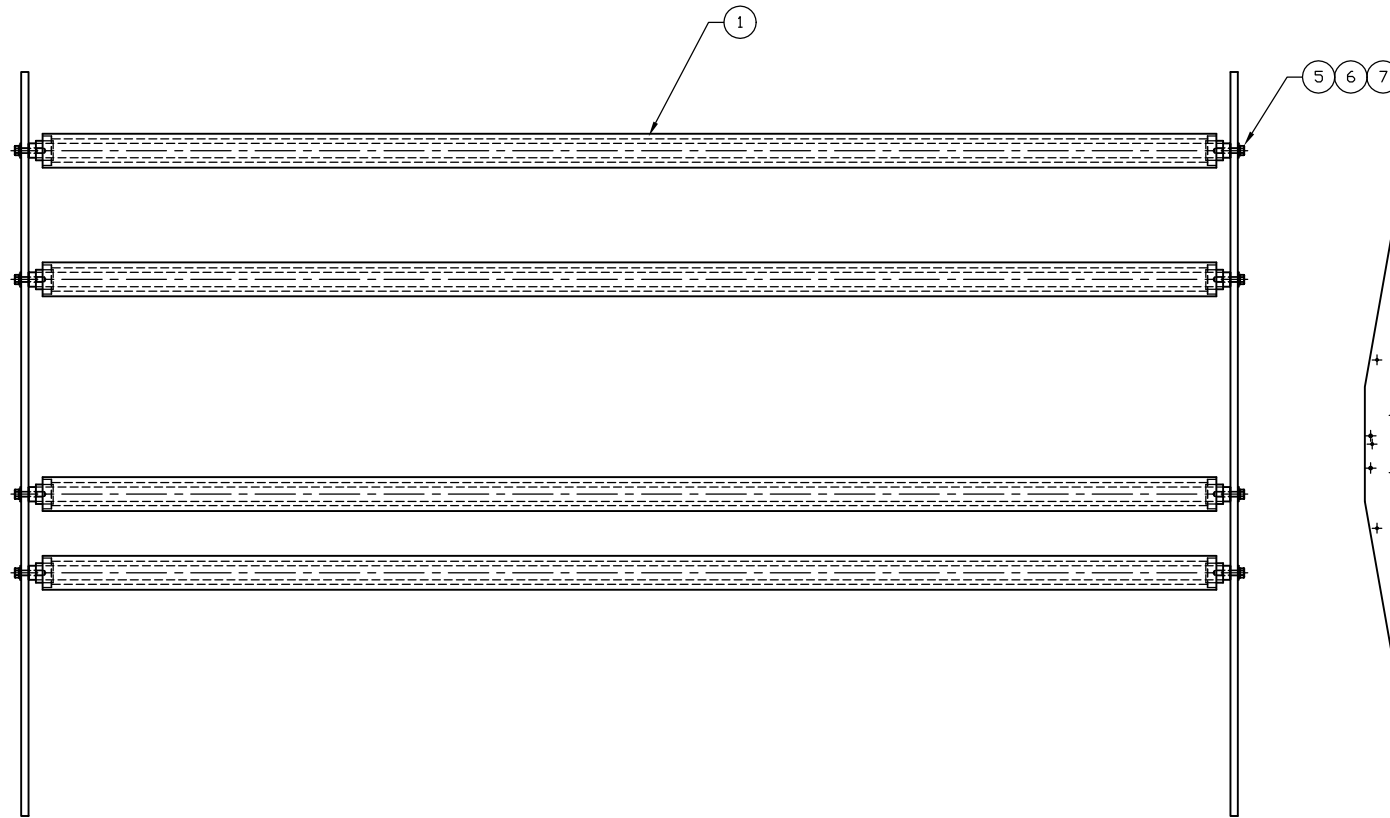
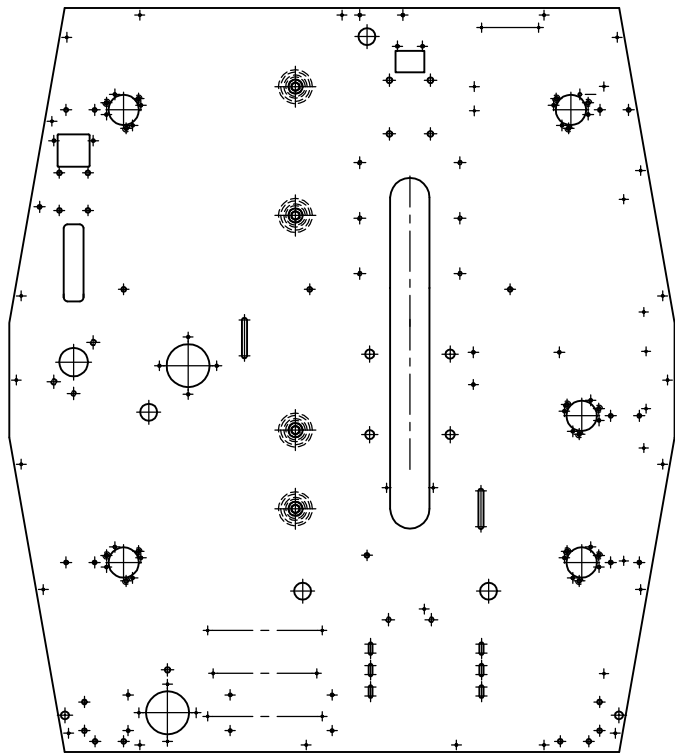
Rev:

Rev: -


Date: 1/5/1999

Description: IDLER ASSY, AGL8000

Item:	Part #:	Description:	Qty:
1	AGL-80-B1806	IDLER SUB ASSY, AGL8000	4
5	000343-10	HHCS, 3/8-16UNC, 1-1/4 LG, ZINC	8
6	000207-08	WASHER, FLAT, SAE, 3/8 DIA, 13/16 OD, 13/32 ID, ZINC	8
7	000493-08	WASHER, LOCK, 3/8 DIA, SPLIT, ZINC	8



REV NO.	DESCRIPTION	DATE	INT.	ECN

BREAK ALL SHARP EDGES				 Advanced Greig Laminators, Inc. 801 Burton Blvd. DeForest, WI 53532			
DO NOT SCALE DWG.				IDLER ASSEMBLY AGL8000			
UNLESS OTHERWISE SPECIFIED		MAT'L: AGLK1851					
0.00 +/-0.015 0.000 +/-0.005		FINISH:		SCALE: 1/6 = 1 DATE: 1-5-99			
ANGLES +/-5°		JOB NO.	QTY.				
				GFT		AGL-80-D1850	REV.

Bill Of Material

Part #: AGL-80-K2909

Appl #:

Assy #: AGLC2910

BOM Rev: -

Model #:

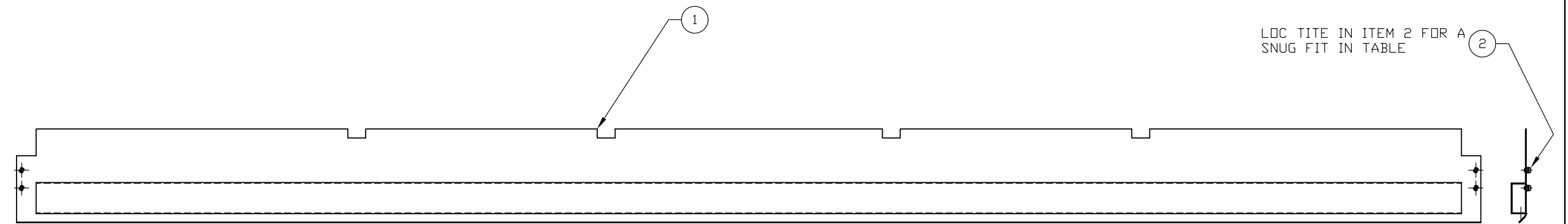
Rev:

Rev: -


Date: 6/20/2000

Description: INFEEED HOLD DOWN ASSEMBLY, 8000 SERIES

Item:	Part #:	Description:	Qty:
1	AGL-80-D2905	INFEEED HOLD DOWN, 8000 SERIES	1
2	000055-02	BHSCS, #8-32UNC, 1/4 LG, BLACK	4



REV NO.	DESCRIPTION	DATE	INT.	ECN

BREAK ALL SHARP EDGES					 Advanced Greig Laminators, Inc. 801 Burton Blvd. DeForest, WI 53532				
DO NOT SCALE DWG.									
UNLESS OTHERWISE SPECIFIED		MAT'L: AGLD2909			INFEEED HOLD DOWN ASSEMBLY 8000 SERIES				
		FINISH:							
0.00 +/-0.015 0.000 +/-0.005		JOB NO.	QTY.	DWG. BY.	CHK BY.	SCALE: 1/4 = 1		DWG. NO.	REV.
ANGLES +/-5°				GFT		DATE: 6-20-00		AGL-80-C2910	

Bill Of Material

Part #: AGL-80-K3518-2	Appl #:	Assy #:	BOM Rev: A
Model #:	Rev:	Rev:	Date: 12/12/2002
Description: ELECTRICAL ASSEMBLY, AGL8000C			

Item:	Part #:	Description:	Qty:
0	AGL-80-D3519-2	CONTROL SCHEMATIC, AGL8000C (LATEST BUILD)	1
1	AGL-80-B5116	DECAL PACKAGE, AGL 8000 SERIES	1
4	AGL-64-A0941	LABEL, TERMINAL BLOCK, AGL 6400/64/64i	1
5	AGL-64-C1107	SUBPANEL	1
6	002506	SWITCH ASSY, PUSHBUTTON, E-STOP	4
7	002326-02	SWITCH, KNOB, 2 POS, 2NO, 2NC	1
8	002318-02	SWITCH, PUSHBUTTON, FLUSH, 1NO, BLACK	2
9	001998-03	CONTROLLER, MOTOR, 240V INPUT, 90 or 180VDC OUTPUT	1
10	002728-01	EMITTER, SERIES 10	1
11	002427-04	SWITCH, FOOT, SPDT, MTD. IN GUARD, 16' CABLE	1
12	002337-01	SOCKET, RELAY, 11-PIN, DIN RAIL MTG, FINGER SAFE	2
13	002332-02	RELAY, MIDGET, 3PDT, 240V	1
14	002339-02	CLIP, HOLD-DOWN, RELAY SOCKET	2
15	006006-20	CIRCUIT BREAKER, 2 POLE, 20 AMP, PANEL MNT.	1
16	002099-08	LABEL, .50 x .75, POLYAMIDE COATED NYLON CLOTH	200
17	001883-05	TERMINAL BLOCK, 35MM, 10-26 AWG, GRAY, UK5N 02M0381	45
18	001879-01	DIN RAIL, 35MM WIDE, 7.5MM HIGH, 2 MT LG, NS35/7.5	36.0
19	000716-00	WIRE, STRANDED, 16 AWG, BLACK	60.00
20	000719-00	WIRE, STRANDED, 10 AWG, BLACK	50
22	001153-05	CORD GRIP, BELL-MOUTH, BLACK, 5/8" MTG HOLE	1
23	002318-06	SWITCH, PUSHBUTTON, FLUSH, 1NC, RED	1
24	001089-01	CABLE TIE, NYLON, WHITE, 4" LG	75
25	001090-01	CABLE TIE, MOUNT, ADHESIVE-BACKED, 3/4" SQ	25
26	001876-10	TERMINAL BLOCK, GND, 35MM, 8-20 AWG, USLKG10 29C3451	7
27	002728-02	RECEIVER, SERIES 10	1
28	001886-01	BAR, JUMPER, 10-POS, #FB10-6 (10 pcs.per bag)	2
29	000720-00	WIRE, STRANDED, MTW, 6 AWG, BLACK	14
30	002529-03	CABLE, 3 x 16 AWG, TYPE SJO	16.00

Part #: AGL-80-K3518-2	Appl #:	Assy #:	BOM Rev: A
Model #:	Rev:	Rev:	Date: 12/12/2002

Description: ELECTRICAL ASSEMBLY, AGL8000C

Item:	Part #:	Description:	Qty:
31	001089-02	CABLE TIE, NYLON, WHITE, 5.5" LG	40
32	001090-02	CABLE TIE, MOUNT, ADHESIVE-BACKED, 1" SQ	40
33	001875-01	FUSE HOLDER, TERMINAL BLOCK, 35MM MTG, (NOW INCLUDES 001881-01)	6
34	001881-01	NOW PURCHASED AS PART OF 001875-01	6
35	001530-100	FUSE, SLO-BLO, 10.0A, 250V, 1/4X1-1/4"	2
36	001530-003	FUSE, SLO-BLO, 1/4A, 250V, 1/4X1-1/4"	2
37	002507-04	END COVER, TERMINAL BLOCK, D-UK4/10	8
38	001826-03	POWER SUPPLY, SINGLE, 24VDC, 1.2A	1
39	002974-01	RELAY, MIDGET, 3PDT, 24VDC	1
40	001504-03	TERMINAL, MALE, INSULATED, w/INSUL GRIP, 12-10 AWG	8
41	001503-02	TERMINAL, FEMALE, INSULATED, w/INSUL GRIP, 16-14 AWG	9
42	001509-08	TERMINAL, RING, INSULATED, BRAZED SEAM, 12-10 AWG, #10 STUD	8
43	001509-07	TERMINAL, RING, INSULATED, BRAZED SEAM, 16-14 AWG, #6 STUD	12
44	000557-03	PHMS, SLOTTED, #8-32UNC, 3/8 LG, ZINC	2
45	000559-03	PHMS, SLOTTED, #10-24UNC, 3/8 LG, ZINC	4
46	000577-02	PHMS, PHILLIPS, #8-32UNC, 1/4 LG, ZINC	32
47	002509-09	CONTACTOR, 3-POLE, 25A, 220V, 1 AUX	1
48	002512-01	LEGEND, HIGH VOLTAGE	2
49	002511-01	ALARM, PANEL MTG, 3-28VDC	1
51	002448-02	CORD GRIP, LIQUID-TIGHT, 1" NPT, 0.71-0.98 DIA, BLK	1
52	001966	LUG, GROUNDING, 1/0-14AWG	1
53	001006-08	NUT, LOCK, CONDUIT, 1"	1
54	000337-04	HHCS, 1/4-20UNC, 1/2 LG, ZINC	1
55	000493-06	WASHER, LOCK, 1/4 DIA, SPLIT, ZINC	1
56	000715-00	WIRE, STRANDED, 18 AWG, BLACK	300.00
57	012142-01	KNOB, FLUTED, 1.06 DIA., 1/4 DIA. SHAFT	1
58	002728-03	CABLE, SERIES 10, 2M LG.	2
59	001352-06	STANDOFF, HEX, M/F, #10-32UNC, 3/4 LG, AL	5
60	002523-08	FERRULE, INSULATED, 18AWG, WIDE COLLAR	206

Part #: AGL-80-K3518-2	Appl #:	Assy #:	BOM Rev: A
Model #:	Rev:	Rev:	Date: 12/12/2002

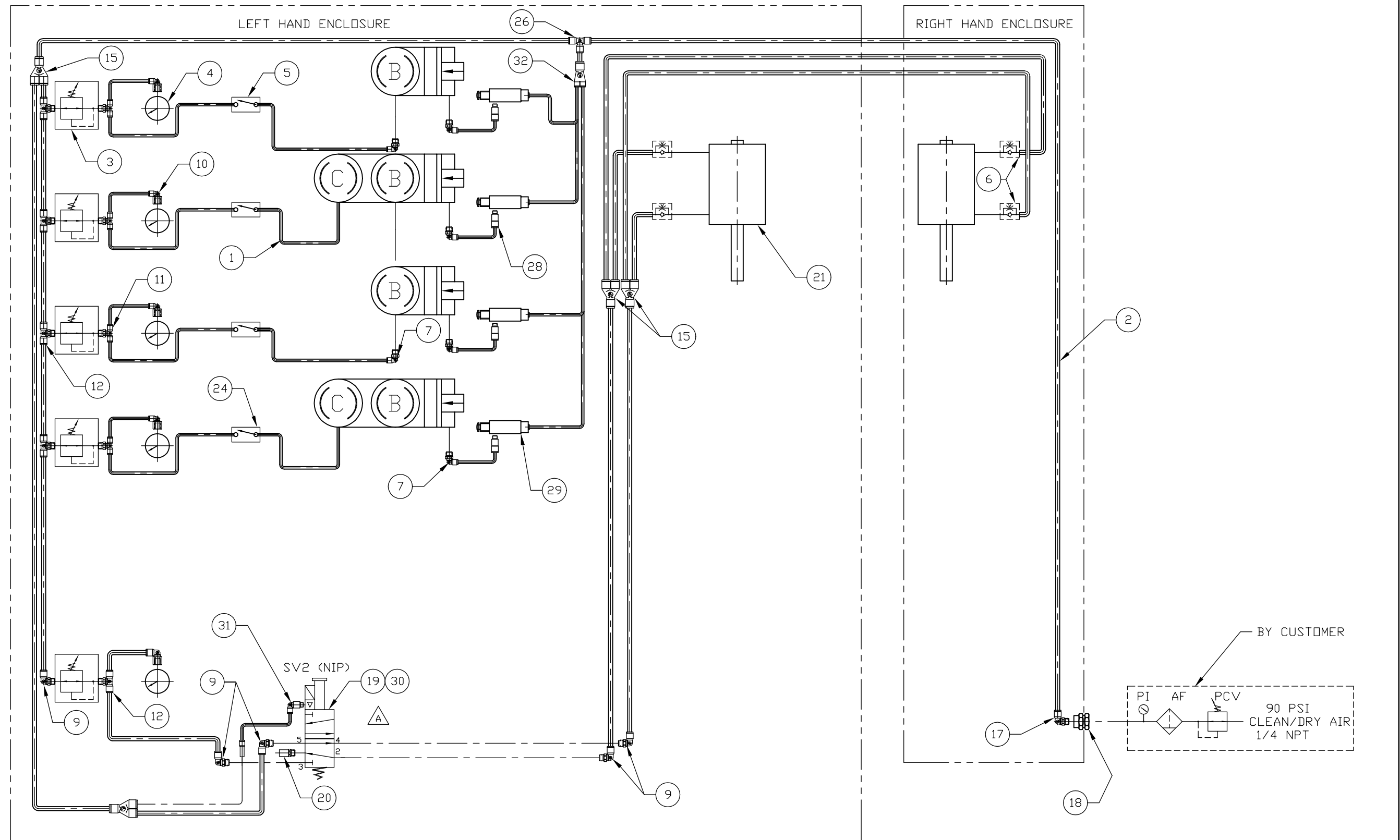
Description: ELECTRICAL ASSEMBLY, AGL8000C

Item:	Part #:	Description:	Qty:
61	002523-01	FERRULE, INSULATED, 16AWG, STD LENGTH, BLACK	12
62	002523-02	FERRULE, INSULATED, 14AWG, STD LENGTH, BLUE	6
63	000717-24	WIRE, STRANDED, 14 AWG, GREEN/YELLOW	14.00
64	002955-01	WIRE DUCT, 1 x 1-1/2, WHITE	144.0
65	002955-02	WIRE DUCT, 1 x 2-1/4, WHITE	48.0
66	002955-04	WIRE DUCT, 1-1/2 x 3, WHITE	96.0
67	000343-08	HHCS, 3/8-16UNC, 1 LG, ZINC	4
68	000493-08	WASHER, LOCK, 3/8 DIA, SPLIT, ZINC	4
69	002512-03	LEGEND, DO NOT OPERATE WITHOUT GUARDS IN PLACE	2
70	002512-05	LEGEND, DANGER PINCH POINT	2
71	001509-10	TERMINAL, RING, INSULATED, 16-14AWG, 1/4 STUD	1
72	001509-14	TERMINAL, RING, 8AWG, #10 STUD, RED	4
73	001530-070	FUSE, SLO-BLO, 7.0A, 250V, 1/4X1-1/4"	2
74	006021-20	CIRCUIT BREAKER, 2 POLE, 20 AMP, DIN RAIL MNT	1
75	002492-022	SUPPRESSOR, ARC, TYPE QC, 22 OHM	1
76	001731-03	CABLE, 3 x 20 AWG, SHIELDED	4
77	001509-16	TERMINAL, RING, INSULATED, 10AWG, 1/4 STUD	4
78	002523-05	FERRULE, INSULATED, 10AWG, STD LENGTH, BLACK	14
79	002523-10	FERRULE, INSULATED, 12AWG, STD LENGTH, GRAY	2
80	002523-02	FERRULE, INSULATED, 14AWG, STD LENGTH, BLUE	2
81	002951	SIGNAL ISOLATOR	1
82	002727-01	CONNECTOR, 90 DEG. FLAG DISCONNECT 16-14AWG	2
83	002727-02	CONNECTOR, 90 DEG. FLAG DISCONNECT 12-10AWG	2
84	006004-83	RIBBON SWITCH, 4' LEADS, 4 WIRE, YELLOW, 83" LG.	1
85	002974-02	RELAY, MIDGET, 1PDT, 24VDC	1
86	002337-06	SOCKET, RELAY, 5-PIN, DIN RAIL MTG	1
87	012393	DOUBLE SIDED TAPE	83
88	002345-221	RESISTOR, METAL-FILM, 1%, 1/4W, 221 OHM	1
89	002893-02	END BARRIER, FUSE BLOCK	1


Bill Of Material

Part #: AGL-80-K2210-1	Appl #:	Assy #: AGLC2211-1	BOM Rev: A
Model #:	Rev:	Rev: A	Date: 5/23/2003
Description: PNEUMATIC ASSEMBLY, AGL8000C (PNEUMATIC COUPLER)			

Item:	Part #:	Description:	Qty:
1	012262-05	TUBING, 5/32" OD, BLACK	25
2	012263-05	TUBING, 1/4" OD, BLACK	75
3	001294	REGULATOR, PRESSURE, 1/8NPT	5
4	012234-03	GUAGE, PRESSURE, 0-100PSI, 1/8NPT, PANEL MNT.	5
6	000861-04	FITTING, PIPE, FLOW CONTROL, ELBOW, 1/4 OD, 1/4 NPT	4
7	000847-06	FITTING, PIPE, ELBOW, MALE, 5/32 OD, 1/8 NPT	6
9	000847-10	FITTING, PIPE, ELBOW, MALE, 1/4 OD, 1/8 NPT	5
10	000851-02	FITTING, PIPE, ELBOW, FEMALE, 5/32 OD, 1/8 NPT	4
11	000849-05	FITTING, PIPE, TEE, BRANCH, 5/32 OD, 1/8 NPT	4
12	000849-08	FITTING, PIPE, TEE, BRANCH, 1/4 OD, 1/8 NPT	5
13	000851-04	FITTING, PIPE, ELBOW, FEMALE, 1/4 OD, 1/8 NPT	1
15	000855-04	FITTING, TUBE, "Y", 1/4 OD TUBE	4
17	000847-12	FITTING, PIPE, ELBOW, MALE, 1/4 OD, 1/4 NPT	1
18	000822-02	FITTING, PIPE, BULKHEAD, 1/4 NPT, 3/4-16UNC	1
19	012303-04	VALVE, SOLENOID, 2 POSITION, 24VDC, EXT. PILOT	1
20	012011-01	MUFFLER, EXHAUST, 1/8NPT	1
21	012139-28	AIR CYLINDER, 4 DIA BORE, 3-1/2" STROKE, FINE THD. MALE STUD BOTH END	2
24	001418	AIR SWITCH, NO, 1 POLE	4
25	000005-10	SHCS, #8-32UNC, 1-1/4 LG, BLACK	2
26	000854-04	FITTING, TUBE, TEE, 1/4 OD TUBE	4
27	012280-05	FITTING, REDUCER, PLUG-IN, 1/4 TUBE-5/32 TUBE	1
28	000845-02	FITTING, PIPE, MALE, 5/32 OD, 10-32UNF	4
29	012388-01	VALVE, PUSHBUTTON, 5/32 TUBE	4
30	012572-04	CONNECTOR, SOLENOID VALVE	1
31	000847-05	FITTING, PIPE, ELBOW, MALE, 5/32 OD, 10-32UNF	1
32	001456-01	FITTING, DOUBLE "Y", 1/4 TUBE - 5/32 TUBE	1



A	REVISED TO NUMATICS VALVE	8-28-07	GFT	
REV NO.	DESCRIPTION	DATE	INT.	ECN

BREAK ALL SHARP EDGES					 Advanced Greig Laminators, Inc. 801 Burton Blvd. DeForest, WI 53532					
DO NOT SCALE DWG.										
UNLESS OTHERWISE SPECIFIED		MAT'L: AGLK2210-1			PNEUMATIC ASSEMBLY AGL8000C (PNEU. COUPLER)					
		FINISH:								
0.00 +/-0.015 0.000 +/-0.005		JOB NO.			QTY.		DWG. BY.		CHK BY	
ANGLES +/- .5°		GFT			SCALE: 1/4 = 1		DWG. NO.		REV.	
					DATE: 5-23-03		AGL-80-C2211-1		A	

Bill Of Material

Part #: AGL-XX-K2914

Appl #:

Assy #:

BOM Rev: C

Model #:

Rev:

Rev:

Date: 6/23/2000

Description: ACCESSORIES KIT, 8000 SERIES

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	001530-100	FUSE, SLO-BLO, 10.0A, 250V, 1/4X1-1/4"	2
11	X6	OPERATORS MANUAL	1