

# ABM INTERNATIONAL, INC.

**MODEL: BC2000**  
BATT/FIBER  
CUTTING MACHINE

SERVICE MANUAL



[www.abminternational.com](http://www.abminternational.com)



**ABM INTERNATIONAL, INC.**

**BC-2000 BATT PANEL CUTTER**

**Manual ver: 1.0**

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**Introduction**

ABM International would like to thank you for the purchase of a BC-2000 Batt Panel cutter. ABM is confident that this machine will meet or exceed your expectations for cost, speed and durability.

If at anytime you experience problems with any of your ABM machines we ask that you contact us - 24 hours a day by calling our service department at (281) 443-4440. We can help you solve the problem quickly, and correctly. Your calls, questions, and comments will in turn help us to perfect the quality of our products and services in the future.

Once again, we thank you for your purchase.

ABM International, Inc.

Joe Podolski  
Vice President  
Engineering Department

## **Section 1.0 - Safety**

### **1.0 Safety Introduction**

As with the operation of all machinery, safe operation of the BC-2000 is a major concern of ABM International, Inc. The purpose of this section is to inform personnel of the safe and prudent operation of a BC-2000.

We have attempted to recommend the most effective methods and calculations to warn against actions that could result in personal injury, or make equipment unsafe. It is important to understand that ABM cannot anticipate, or list all conceivable safety methods and warn of all the possible hazards. In the interest of promoting safety, ABM advises that the operating personnel should always make sure that personal safety and the safe operation of the machine will not be adversely affected by their actions.

It is imperative that the operating personnel of the BC-2000 read and understand the information in this manual before operating the machine.

### **1.1 Safety Policy Statement**

The conservation of the assets of any company, which include the buildings, equipment, supplies and inventories as well as personnel, must be and is the responsibility of all levels of management. The purpose of a personnel and property conservation program is to insure that all phases of management recognize that personnel and property conservation are both inseparable parts of a company's objective...to produce quality products at the lowest possible cost.

Safety of personnel in every aspect must be of first consideration. The implementation of a conservation program will eliminate human suffering and effectively lower the direct and indirect costs resulting from employee injury. It will substantially reduce the exposure and probability of damage and / or loss of company's physical assets.

### **1.2 Safety Practices**

The safety factors must be observed to ensure safe operation of the BC-2000.

1. Read and understand the operating instructions of the BC-2000 before operating.
2. Use extreme caution when working around the BC-2000 electrical controls.
3. Keep hands or other body parts away from the moving parts of the BC-2000.
4. Wear appropriate personal safety protection.
5. Stop the BC-2000 immediately at any sign of malfunction or danger.
6. Do not crawl under or into the BC-2000 for any reason during the operation of the machine.
7. Do not reach into the BC-2000 at any time during the operation of the machine.
8. Do not climb, walk, or stand on the BC-2000 at any time.
9. Do not tamper with factory installed guards and or safety devices.
10. Never operate machinery without all ABM installed guards and safety devices intact, and in working order.

11. Before starting the BC-2000, ensure that no loose tools, bars or parts are lying in or on any part of the machine.
12. Proper fire fighting equipment should be kept in good operating condition and kept near in the event of fire.
13. Never attempt to service any of the pneumatic components until the unit is relieved of all air pressure.
14. Do not wear loose clothing or jewelry when operating the BC-2000.
15. Always keep hair from coming in contact with moving parts.

## **Section 2.0 – Machine Setup**

### **2.0 Setup Instructions**

The BC-2000 is fully tested prior to breakdown and delivery to the customer. As a result, this manual provides a section on machine setup so that you can install the machine. Please read this manual in its' entirety and follow all ABM instructions, especially the inspections. Total setup time, less power and air hook-up, should take approximately 3-4 hours.

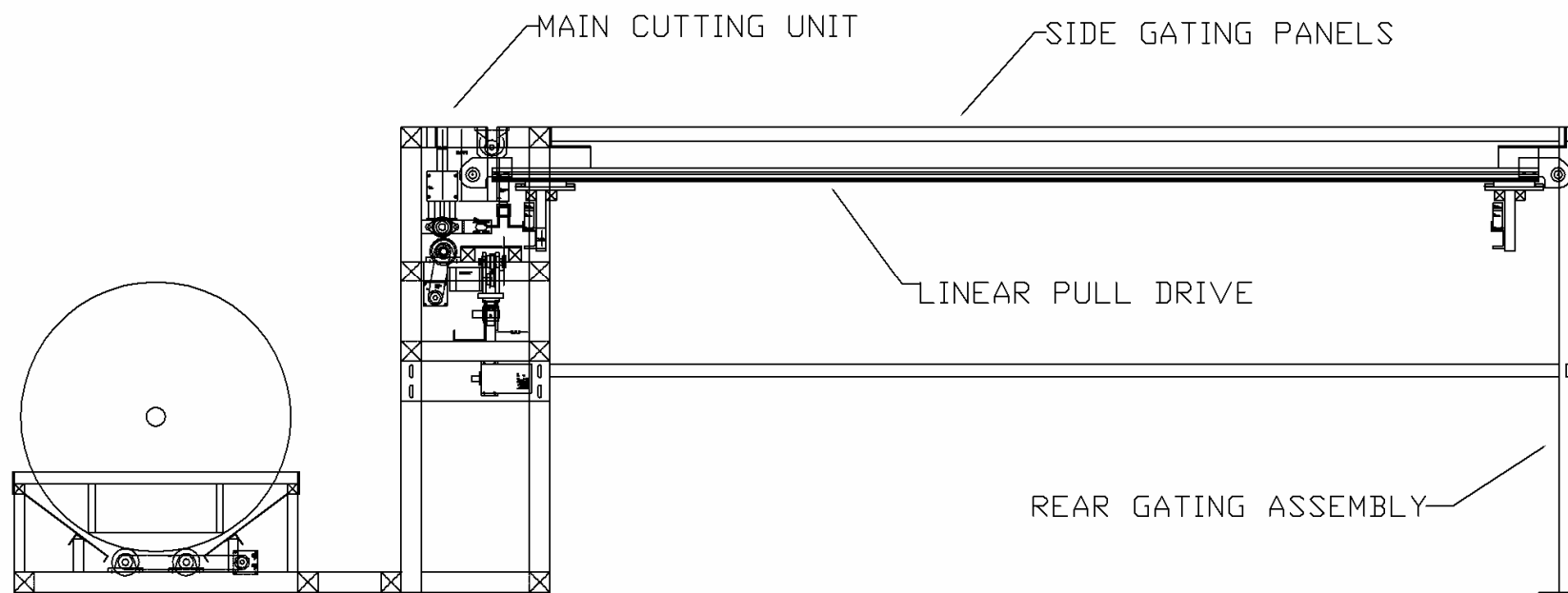
Upon receipt of the machine, check to ensure that there is no visible damage **Note: Some components may be in different locations depending on the version of the machine.**

### **2.1 Machinery Positioning**

Determine the location in your facility for the panel cutter. Attach the four (4) machine legs supplied with the machine to the main cutting unit plates that were used to bolt the machine to its skid. Level and position the machine in the desired location. Though not required, ABM recommends that the machine be bolted to the floor.

Attach two (2) machine legs to rear gating assemblies and loosely fasten the side gating panels to the rear gating and main cutting unit (See Figure 2.0). Tighten all of the mounting hardware and install the linear pull drive to the main cutting unit and the rear gating assembly.

Install the pneumatic gripper onto the linear rail assembly. Manually jog the gripper as close to the main unit as possible. Adjust the height of the gripper so the gripper edge is approximately 1/8" below the main cutting unit table (see figure 2.1)



**Figure 2.0: Machine layout**



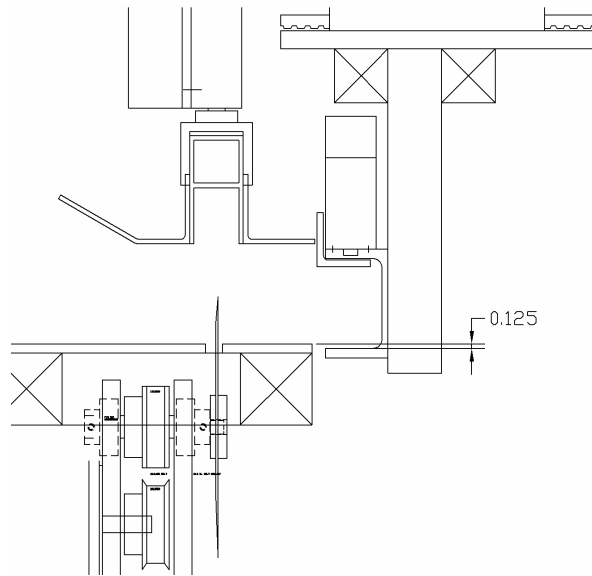


Figure 2.1 Gripper gap adjustment

Install the #40 chains from the pull motor to the linear drive shaft and tighten the linear drive to main unit . If the chains are too loose or too tight the pull motor can slide along the welded rail assembly by loosening the bolts. Adjust the chain tension if necessary and retighten the bolts.

If equipped, position the filling machine (see figure 2.2) so that is centered between the main unit and rear gating. Connect the electrical control cables as illustrated in the electrical diagrams provided.

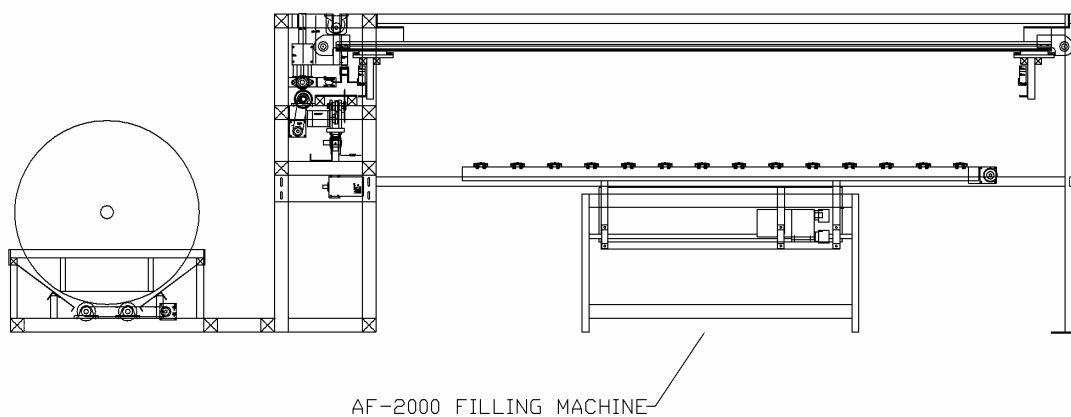


Figure 2.2 : Conveyor and Lift Table

## 2.2 Electrical Inspection – How the Control System Works

This section will confirm that the electronics of the panel cutter are functioning properly.

**WARNING: ELECTRICAL SHOCK HAZARD. IF A PROBLEM IS FOUND, YOU SHOULD NOT ATTEMPT TO REPAIR IT WITH THE POWER ON. DISCONNECT THE MACHINE PRIOR TO ADJUSTING ANY COMPONENTS WITHIN THE ELECTRICAL CABINET.**

Before testing the electronics of the batt panel cutter, the user must understand how the control system works. The main cutter controls speed of material feed and length of cut. The filler controls speed of filling cycle, distance filling slats traverse per cycle, size of filling mouth and size of filling slats assembly.

If the table or filler encounters an error, the information is relayed to the main controller. The main controller stops production and informs the operator of the error condition. The communication is open loop, meaning one way. The main cutter knows the status of the other modules, but the table and filler are only aware of their own status. If a problem is encountered with a module, that specific module must be corrected to return the machine to proper functioning.

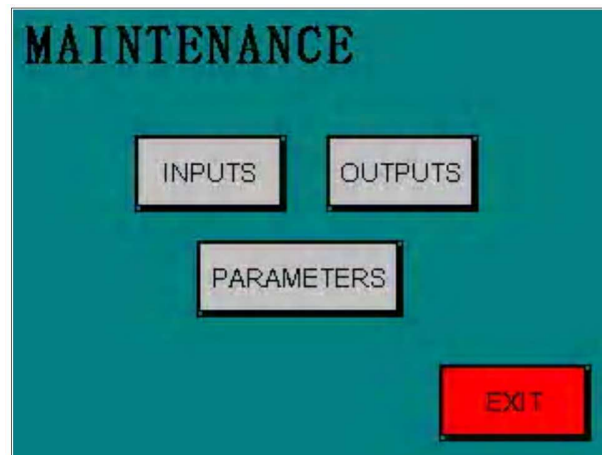
## 2.3 Main Cutter Inspection

When the batt cutter is powered ON, the control system flashes the ABM International logo and then proceeds to the initialization screen. Pressing the maintenance button will bring up the password screen.



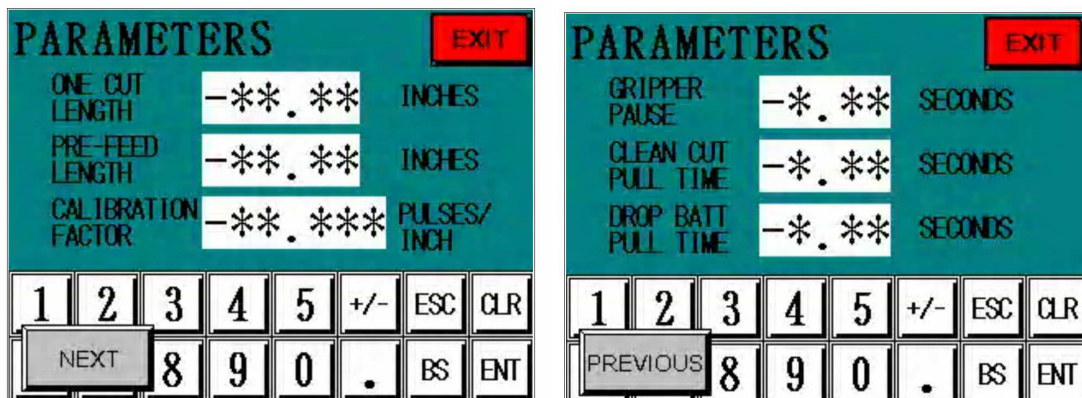
**Figure 2.3: Initialization Screen**

Touch the number display area and enter the 4 digit password (1221) and press enter. The maintenance menu will now be visible (see figure 2.4)



**Figure 2.4: Maintenance menu**

For the initial inspection, press the parameters button. The parameter screen (figure 2.5) allows maintenance to adjust the operation of the main cutting unit. The parameter screen



**Figure 2.5: Parameter Menus**

Consists of two separate windows that are accessible by pressing the NEXT and PREVIOUS button. One cut length is the amount of material fed out and cut to perform a clean cut. The pre-feed length adjusts the amount of material fed into the gripper before the gripper begins to move. The calibration factor informs the controller of the number of pulses per inch that the pinch roller and encoder system will feed back to the controller. Gripper pause sets a delay in seconds for any gripper activation throughout the cycle. Clean cut pull time tells the controller how long to pull the clean cut after it has been cut before releasing it. Drop batt pull time adjusts how long the gripper pauses after dropping the batt before returning home for the next pull.

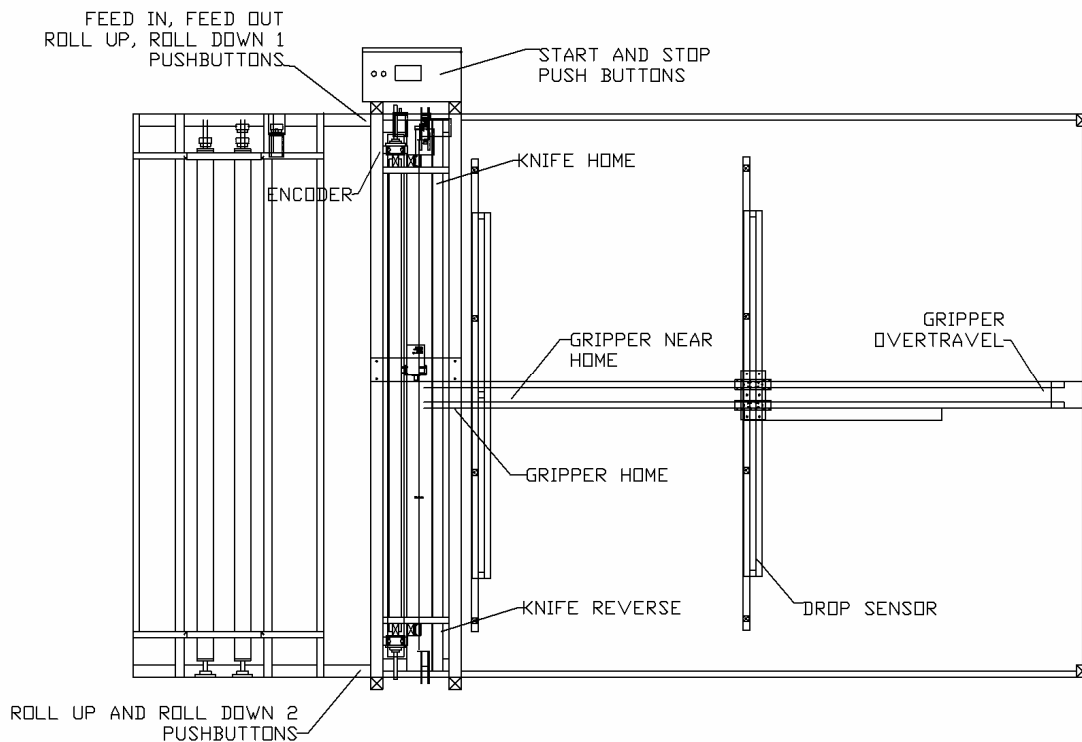
For initial setup, set one cut length to 24", pre-feed length to 3.5", and the calibration factor to 7.95. On the second screen set gripper pause to 0.1, set the clean cut pull time to 1.00, and set the drop batt pull time 0.3. Press EXIT and return to the maintenance menu.

From the maintenance menu, access the INPUT screen (figure 2.6). From this screen, verify the correct functioning of the sensors and pushbuttons on the machine.



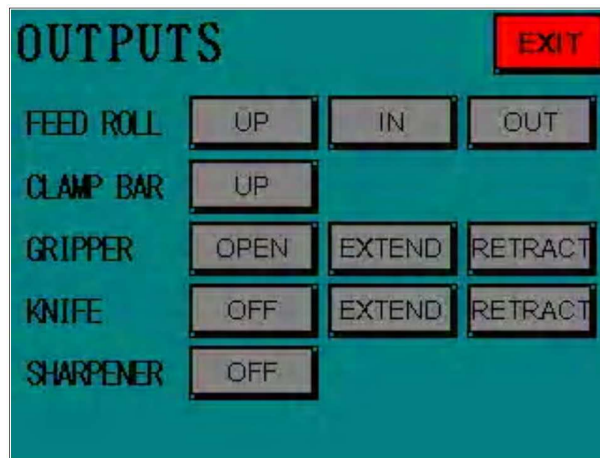
**Figure 2.6: Input Screen**

See figure 2.7 for locations of pushbuttons and sensors. Manually activate the buttons and sensors while watching the screen. A yellow light signifies input ON and a gray light signifies input OFF.



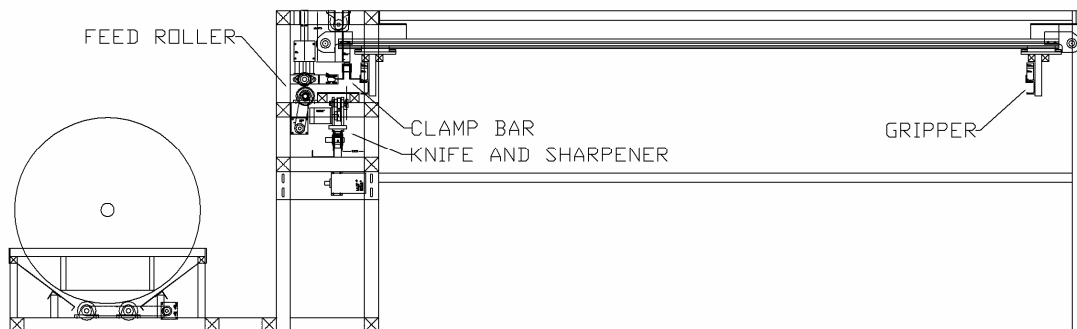
**Figure 2.7: Sensor Locations**

Once proper operation is confirmed, continue on to the output screen (see figure 2.8)



**Figure 2.8: Output Screen**

Apply air pressure to the main regulator of the machine and set the pressure to 90 psi. Press the buttons on the screen and confirm that all of the outputs function properly. See figure 2.9 for locations of the outputs.



**Figure 2.9: Output locations**

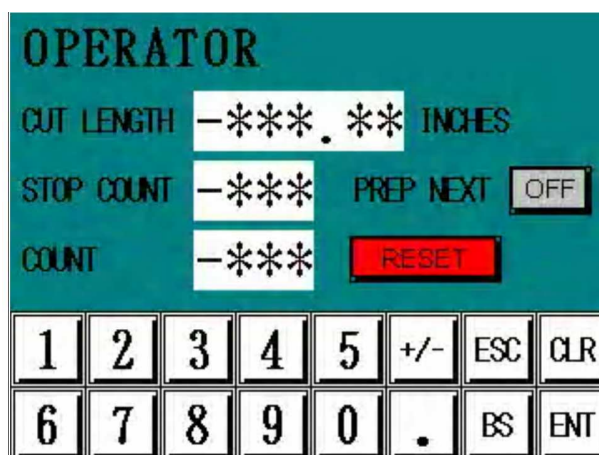
After the successful operation of the outputs, return to the initialization menu. Press the INITIALIZE button. The initialize sequence screen appears (see figure 2.10) and informs the user of its status as the machine performs the initialization procedure. If the AF-2000 filler is not present, press the FILLER BYPASS button.



**Figure 2.10: Initialization Screen**

Once the machine has initialized successfully, the main menu appears. From the main menu, either the operator or maintenance screens may be accessed. Press the OPERATOR button.

The operator screen allows the user to set the cut length, the stop count, reset the cut counter, perform a clean cut and choose between prep next ON or OFF. For testing purposes, set cut length to 50 and the stop count to 10. Lower the pinch feed roller by pressing both roll down buttons simultaneously. Press the START button on the main control panel. The machine should pull out material to length. Then the knife should cycle. The gripper should move away from the main cutter in search of the reflective plate on the filler. When the reflective plate is found, the gripper should release and return back to the home position. Press the two green START buttons on the filler and the filler should cycle as outlined in its manual. The batt cutter should cycle once for every cycle of the filler. Testing is complete.



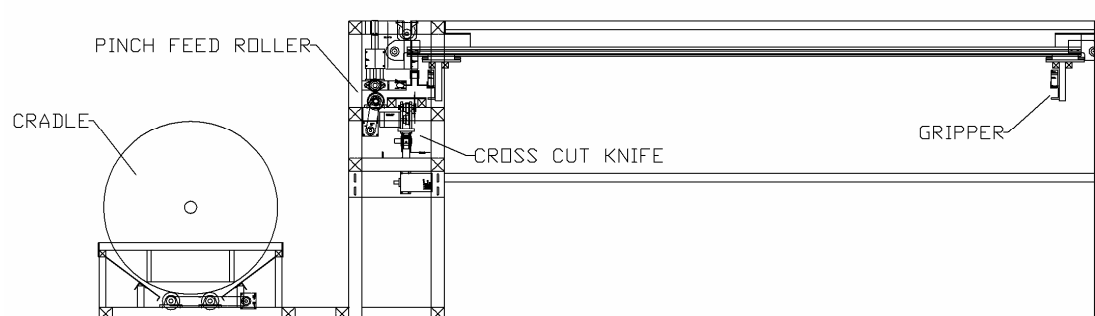
**Figure 2.11: Operator Screen**

## **Section 3.0 – Operation**

### **3.0 System Overview**

The BC-2000 batt panel cutter was designed and built to provide cut to length panels of fill material to a filling machine and its' operators.

The BC-2000 consist of four systems – cradle, pinch roller feed, cross cut knife and the gripper pull arm. Together these systems produce cut to length panels of comforter fill. The following section discusses these systems operations.



**Figure 3.0: BC-2000 Layout**

### **3.1 Cradle**

The cradle is designed to hold large diameter rolls of fill material. The cradle feeds in conjunction with the pinch roller feed mechanism. The cradle and pinch roller feed rates should match as close as possible. Feeding too slow on the cradle may cause over-stretched fill. Feeding too fast on the cradle will cause excessive build up before the pinch roller feed. The speed the cradle can be adjusted through the variable frequency drive. See the appendix for proper adjustment of speed.

### **3.2 Pinch Feed Roller**

The pinch feed roller provides both positive feed into the cutting assembly as well as digital feedback of length of material. An encoder mounted on the upper roller of the pinch feed produces pulses that are fed into the controller. The controller converts the pulses to distance allowing for precise length measurements. The upper pinch roller is an idler roller and its motion is controlled by friction between the top and bottom roller. Friction may be increased or decreased by adjusting the pinch roller cylinder pressure regulator. Too much pressure can cause warping of the rollers and a maximum setting of 20-30 psi should be observed. If slippage still occurs, athletic tape or similar cotton tape provides an excellent drive surface when wrapped around the rollers.

The pinch feed rollers are controlled by the pushbutton boxes located on either end of the machine. The pinch rollers will only feed if the upper roller is in the down position. To

lower the upper roller, press both ROLL DOWN buttons on either side of the machine simultaneously. To raise the roller, press either ROLL UP button located on the ends of the machine. Once the roller is lowered, the rollers and cradle can be made to feed in or out by pressing the FEED IN or FEED OUT buttons located by the electronics cabinet.

### 3.3 Cross Cut Knife

The cross cut knife consists of a blade assembly positioned underneath the main cutting table and a material hold down positioned above the table. When a cut operation is performed, the material hold down lowers onto the table and holds the product in position. Then the knife traverses the width of the table and returns back to the home position closest to the electronics cabinet. The correct operation of the system can be checked in the maintenance output screen.

The cross cut knife also has a built in blade sharpener. To sharpen the blade, access the maintenance output menu. Turn ON the knife blade. Once the blade is running, press and hold the sharpener button. The sharpener will only contact the blade while you hold the button. Be sure to turn off the knife blade before exiting the maintenance menu.

**NOTE: The blade motor is designed for intermittent use, leaving the blade on for extended periods of time will overheat and damage the motor.**

The knife cross cut speed can be adjusted by modifying the frequency of the variable frequency drive in the control cabinet. Traversing the table too fast can result in poor cut quality and premature blade motor failure. Traversing the table too slow will result in an unnecessary increase in machine cycle times.

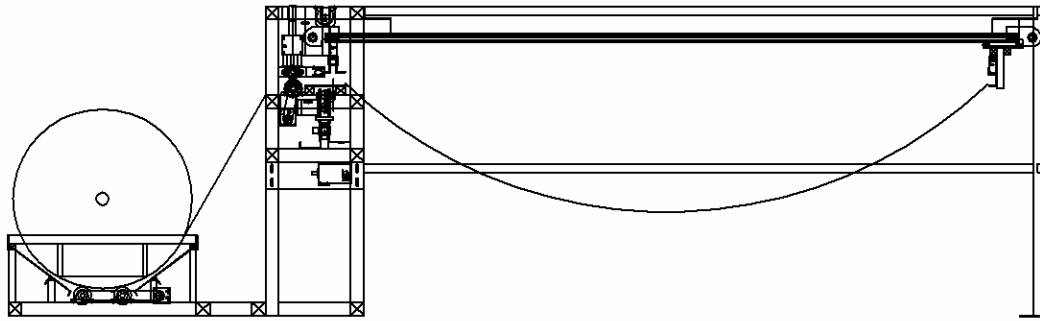
### 3.4 Gripper Pull Arm

The gripper pull arm consists of a linear drive with pneumatic gripper and material drop sensor. It is responsible for gripping and pulling the material out over the filler or a-frame stand positioned below. Proper function of the gripper can be tested in the maintenance output screen.

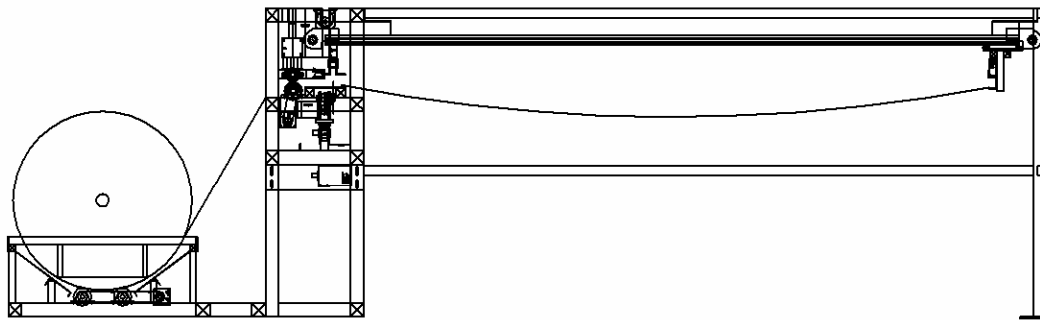
During a standard cycle, the gripper pulls the material across the machine, pauses while the machine cross cuts the material, and then drops the material in the desired location (based on the drop sensor and reflector position). On machines equipped with AF-2000 comforter fillers, the reflector is positioned so that the cut material is draped evenly over the filling machine.

The gripper speed is controlled by a variable frequency drive located in the electronics panel. The speed of the gripper should be adjusted so that a light drape of material exists during the pull. Too little of a drape can cause the material to pull out of the grippers and too much drape can cause the material to hang up on the filler or a-frame below (see figure 3.1)

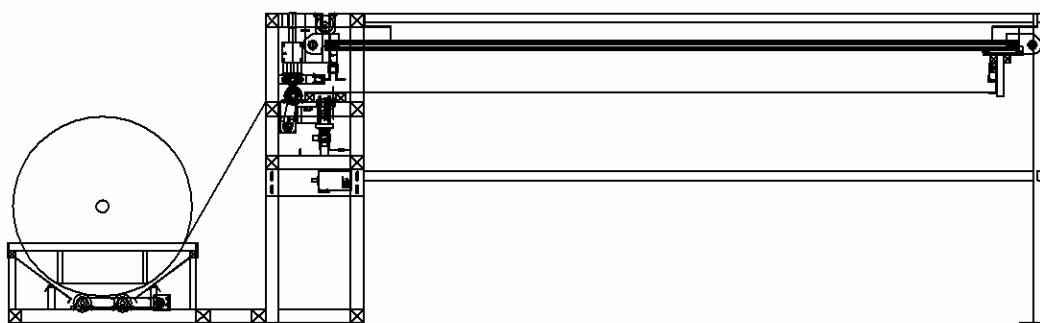




HEAVY DRAPE - POSSIBLE MACHINE JAM



LIGHT DRAPE - IDEAL SETTING



NO DRAPE - POSSIBLE MATERIAL  
TEARING OR GRIPPER FAILURE

**Figure 3.1: Gripper Speed Settings**

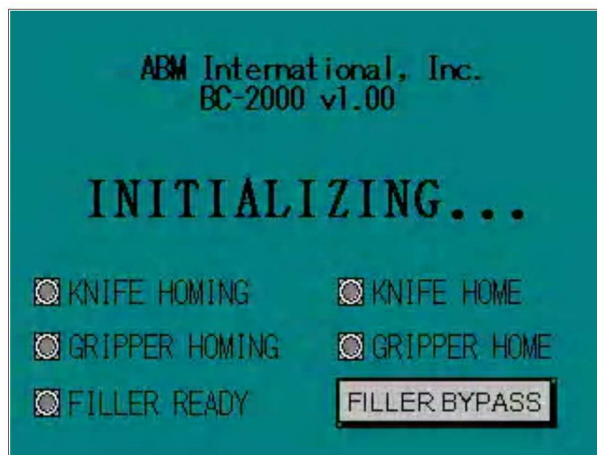
### 3.5 Touch Screen Controls

The BC-2000 is equipped with a touch screen controller that provides the operator with all of the necessary tools to run production. When the machine is powered ON, the screen flashes the ABM logo and then proceeds to the initialize screen.



**Figure 3.2: Initialization Screen**

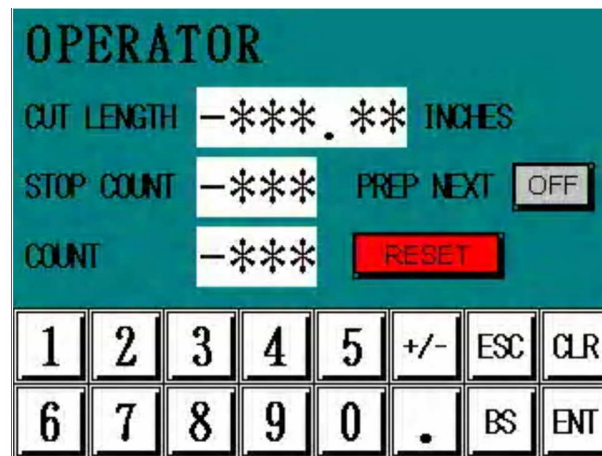
. Press the INITIALIZE button. The initialize sequence screen appears (see figure 3.3) and informs the user of its status as the machine performs the initialization procedure. If the AF-2000 filler is not present, press the FILLER BYPASS button. If a filler is present, make sure the filler is ON and is in the READY position (consult the AF-2000 manual)



**Figure 3.3: Initialization Screen**

Once the machine has initialized successfully, the main menu appears. From the main menu, either the operator or maintenance screens may be accessed. Press the OPERATOR button.

The operator screen allows the user to set the cut length, the stop count, reset the cut counter, perform a clean cut and choose between prep next ON or OFF.



**Figure 3.4: Operator Screen**

The cut length sets the distance the material is fed prior to cutting. If the actual material cut length does not match the inputted value, the calibration parameter in the maintenance menu can be adjusted.

The stop count tells the machine how many cuts to make before stopping.

The prep next button may be set to ON or OFF. In the ON position, the machine pulls a piece of material and waits for the filler to cycle before releasing the product. In the OFF position, the gripper waits at home for the filler to perform a cycle and then pulls and cuts material to length. Prep next ON helps to reduce cycle times. However, some larger pull lengths and heavier materials can interfere with the filling cycle and the prep next button should be set to OFF.

The reset button resets the cut counter to zero.

The clean cut button brings up a screen (see figure 3.5) that allows the user to initiate a clean cut. The double button check has been installed to increase safe operation of the machine. Operators should be clear of the pinch rollers and knife assembly during all automatic operations of the machine.

Once the appropriate values are entered into the operator menu, the machine can be put in run mode by pressing the START button on the main control panel. Pressing the STOP button at any time will cause the machine to immediately stop and await instruction. For production purposes and ease of use it is best to press the STOP button when the gripper returns home from a complete cycle before exiting into the other menus of the machine.

If the start button is pressed before the upper pinch roller has been lowered, the screen in figure 3.6 appears.



**Figure 3.5: Clean Cut Screen**

This check has been added for safety. No automatic run cycle can be performed without all of the systems in correct running order. Pressing OK will clear the fault and return the operator to the main menu.



**Figure 3.6: Pinch Roller Fault**

### **3.6 Loading Material**

The proper method for loading material into the batt cutter is listed below.

**WARNING: LOOSE CLOTHING AND LIMBS MUST BE KEPT CLEAR OF THE PINCH ROLLERS AND CROSS CUT KNIFE ASSEMBLIES AT ALL TIMES. SEVERE INJURY OR DEATH MAY OCCUR IF THE UTMOST PRECAUTION IS NOT TAKEN WHILE LOADING MATERIAL.**

- 1) Place roll of material into cradle.
- 2) Open the pinch rollers by pressing either ROLL UP button.
- 3) Place the edge of the material in between the pinch rollers.
- 4) While supporting the material in a position away from the pinch rollers, press both ROLL DOWN buttons simultaneously.
- 5) Use the FEED IN and FEED OUT buttons to position the material just pass the cross cut knife slot of the cutting table.
- 6) Access the operator screen and perform a clean cut or, if the edge is sufficient, start the automatic run cycle.

## **Section 4.0 – Troubleshooting guide**

This section is included to help diagnose and solve any problems that may occur with the BC-2000. ABM has done its best to include as much information as possible. However, not all problems are listed, therefore ABM asks that whenever a problem occurs you contact a service technician at our home office. To reach service dial 281-443-4440 and ask for a service technician, they are on call 24 hours a day, seven days a week.

### **4.1 Electrical Power**

The BC-2000 runs on a 20 amp, 220VAC single phase supply line.

### **4.2 Verifying Inputs and Outputs**

Inputs and Outputs can be visibly verified for proper functioning. The main unit is controlled by a programmable logic controllers (PLC). As inputs and outputs are turned on and off, the lights of the PLC will turn on and off. All input and output troubleshooting should begin with a visible confirmation of proper functioning.

### **4.3 Pneumatic systems**

The pneumatic system of an ABM BC-2000 is very straightforward. The system consists of a valve block with four (4) valves, two (2) cylinders for material holding, four (4) cylinders for gripping and pulling the product, one (1) cylinder for sharpening the blade, two (2) cylinders for pinch roller compression, and three (3) filter/regulator combo units.

Valve block: a device used to distribute air to multiple valves from a common location. The valve block on the BC-2000 has four (4) valves and a 25-pin connector for communication to the controller.

Valve (individual): A valve is a device found on the valve block that is operated individually through the controller. It is possible to manually cycle an individual valve by depressing the small orange button located directly on the valve. A small screwdriver or a pen may be needed to depress the button properly. Removal of a valve for service is accomplished by loosening the small socket head cap screw located directly above the valve, and gently pulling the valve out away from the manifold. Installation is made by reversing the above procedure.

Cylinders: The cylinders are uneconomical to repair and thus any damage that may occur to a cylinder should be rectified by replacing the cylinder.

Quick exhaust valves (optional): These valve are mounted directly to the cylinder ports. They allow the cylinders to move more quickly by exhausting the air inside the cylinder faster than the main manifold can. The machine can operate normally with or without the valves installed.

Filter/regulator combo unit: The combo unit is the machines last line of defense against foreign materials (water, steel particles, etc.) found in a facilities pneumatic lines. The

machine can be run without a combo unit but serious damage can occur to the valve block and cylinders. The combo unit also performs the task of regulating the incoming air pressure. Air pressure on both the hold down and sharpening cylinders is individually adjustable. Pressures should be set according to machine demand. Too low or too high a pressure may cause the machine to function improperly.

#### **4.4 Troubleshooting notes**

A few blank pages are provided so that you and your personnel can keep records and notes of machine problems. By using this section and keeping it attached to the manual, you will always have your own personalized quick reference repair section.

TROUBLESHOOTING NOTES:

Date	Problem	Solution



TROUBLESHOOTING NOTES:

Date	Problem	Solution

TROUBLESHOOTING NOTES:

Date	Problem	Solution

TROUBLESHOOTING NOTES:

Date	Problem	Solution

## **Section 5.0 – Parts List**

This section lists the ABM part numbers needed to order any part on the BC-2000. The section is divided into two lists. Both lists show the quantity, item description and ABM part number for all the components needed to completely rebuild a machine. ABM carries all of the components below in stock at all times. Any order placed before 6:00 P.M. CST can be shipped the same day for next day delivery. The parts/service department can be reached at (281)443-4440. As with any machine, buying the correct parts from the correct manufacturer will allow your machines to operate their best. Buying parts from sources other than ABM will void your warranty.

### BC-2000 Batt Cutter Unit

<b><u>QTY</u></b>	<b><u>Item Description</u></b>	<b><u>ABM Part #</u></b>
<b><u>MECHANICAL COMPONENTS</u></b>		
4	Material carrier guide	M-1007-110
2	Material carrier drive roller	M-1007-112
4	Material Carrier end cap	M-1007-113
2	Material carrier idler shaft	M-1007-114
1	Knife side motor mounting plate	M-1007-203A
1	Knife side mounting plate	M-1007-204B
1	Linear actuator belt plate	M-1007-205
1	Linear actuator saddle	M-1007-207
1	Drive roller	M-1007-212
2	End cap	M-1007-213
1	Drive shaft	M-1007-214
1	Idler roller	M-1007-215
2	Idler end cap	M-1007-216
1	Idler shaft	M-1007-217
1	Gripper drive shaft	M-1007-218
1	knife drive shaft	M-1007-219A
1	Knife drive shaft spacer	M-1007-220A
1	Knife drive shaft collar	M-1007-221A
2	Clamp bar cylinder mounting plate	M-1007-223A
2	Clamp bar mounting bracket	M-1007-224A
1	Top cutting plate left	M-1007-225
1	Top cutting plate right	M-1007-226
1	Encoder mounting bracket	M-1007-227
2	Idler roller mounting block	M-1007-228
2	Idler roller cylinder plate	M-1007-229
1	Drive roller motor bracket	M-1007-230A
1	Knife motor plate	M-1007-231A
1	Gripper channel	M-1007-232
1	Gripper motor mounting plate	M-1007-233
1	Linear actuator drive shaft	M-1007-235
1	Linear actuator idler shaft	M-1007-236
1	Gripper finger	M-1007-237A
2	Compression angle	M-1007-240
1	Knife housing	M-1007-241A

3	Material carrier side cover	M-1007-246
1	Material carrier motor bracket	M-1007-251
1	Knife sharpening push plate	M-1007-252
1	Knife sharpening cylinder angle	M-1007-253
2	Knife enclosure plate	M-1007-254
1	Knife enclosure top plate	M-1007-255
1	Knife sharpening extension plate	M-1007-256
1	Linear actuator track support	M-1007-258
1	Control enclosure	M-1007-264
2	Drive roller shield	M-1007-265
1	Powder Coating - Sky White - Rollers	
1	Powder Coating - Brand Blue - Frame, Fencing	
4	30LB100 Pulley (Aluminum if poss)	C-1007-027
3	BUSHING DRIVE SHAFT	C-1007-023
1	BUSHING - PULL ARM DRIVE SHAFT	
4	BUSHING - MOTOR	C-1007-025
2	BUSHING - MOTOR	
9	TIMING PULLEY	C-1007--022
1	TIMING PULLEY - PULL ARM DRIVE SHAFT	
8	ROLLER HUB	
4	SPROCKET - KNIFE MOTOR/SHAFT, ENCODER	C-1007-005
10	40 CHAIN	C-1007-017
2	25 CHAIN	
8	Bearing 1 ID RADIAL BALL BRNG	C-1007-002
2	1/6 HP 5:1, 3 Phase BRAKE MOTOR (KNIFE/CARRIAGE)	C-1007-043
2	1/15 HP 30:1, Flange Mount BRAKE MTR (FEED/PINCH ROLLERS)	C-1007-044
1	2 Button push button station	C-1007-366
1	4 Button push button station	
6	Arrow Pushbutton for boxes	
6	N.O. contact block for push button stations	C-1007-368
1	Power on pilot light	
1	Pilot light body	
2	N.O. Contact Blocks	
2	N.C. Contact Blocks	
1	E-stop	
1	Start Button	
1	Stop Button	
1	Yellow Button	
1	"ON" Legend Plate	
1	Red back, wht letters "STOP"	C-1007-380
1	Green back, wht letters "START"	C-1007-381
1	4 Norm. Open contactor 24Vdc Coil	C-1007-323
1	Circuit breaker 20 Amp	C-1007-326
1	Quick disconnect cable 10 meters	
2	Quick disconnect 4-cond plug	
2	Quick disconnect 4- cond socket	
100	15 SERIES 1/4-20 T-NUT	
100	15 SERIES 5/16-18 T-NUT	

2	Knife table support	
1	Knife linear drive rail	
2	Pull arm linear drive rail	
2	Pull arm horizontal beam	
3	Pull arm vertical beam	
4	Air cylinder vertical mounting beam	
4	batt cutter horizontal mounting beam	
6	BLACK 2 X 2 FENCING	
6	2" wide x 2" high x 6 ft white wire duct	C-1007-308
6	2" wide x 6 ft white wire duct cover	C-1007-309
1	Labels, write on, .75 wide book, 140 tabs	C-1007-314
3	Fuse block 6.3 x 32mm fuse	C-1007-344
30	2 to 1 terminal block - (12) OUT, (4) ESTOP, (5) #11, (5) #10, (2) #1, (2) #2	C-1007-349
3	2 to 1 terminal block end plate	C-1007-350
16	3 level terminal block	C-1007-351
1	3 level terminal block end plate	C-1007-352
0.5	80 piece jumper pins red	C-1007-353
0.5	80 piece jumper pins blue	C-1007-354
6	Din rail stops	C-1007-356
0.25	Blank Marking Tags - 100 per sheet	C-1007-357
2	Marker strips - 10 per strip	
1	Power Distribution Block	C-1007-321
1	Distribution block plastic cover	C-1007-321-1
1	3 Pole type FRN-R fuse block, 30 amp max	C-1007-322
1	Din rail, 2 meter, 35mm low profile	C-1007-343
1	Photo-reflective sensor	
1	Knife Motor Wire Track	C-1007-029A-1
1	Pull Arm Wire Track	C-1007-029B-1
1	1/2" Flexible Non metallic conduit (25'/spool)	C-1007-305
2	1/2" 90 degrees squeeze connector	C-1007-306
1	Ground block	
2	Pull Arm Linear Rails	C-1007-050-1
1	Knife cross cut Linear Rail - 128.5"	
3	Pull Arm Bearing Blocks	C-1007-051-1
50	Motor wire, 4 conductor wire, 16 gage (500' spool)	
75	2 conductor Hi-flex cable	
75	4 conductor Hi-flex cable	
25	7 conductor Hi-flex cable	
1	Disconnect Switch	
1	Disconnect	
1	ABM Sticker	
1	BC-2000 Sticker	
1	USA Sticker	
6	1" Base Mount Pillow Block	C-1007-011
2	1" FLANGE MOUNT 2 HOLE PILLOW BLK	C-1007-012

2	EXTENDED BALL BEARING 5/8" BORE	C-1007-003
1	Sharpening Mechanism from BC-450	C-1007-001
0	Replacement Sharpening Stones	
1	42x24x10 Enclosure, Nema 12, with panel	
1	Sub-panel	
1	Idec 24VDC 50 watt power supply	C-1007-320
2	Ice cube relay (Single Pull)	C-1007-328
2	Ice cube relay socket (Single Pull)	C-1007-329
1	460/230/208 prim to 120 sec. VAC fused transformer	C-1007-330
1	Encoder	C-1007-045
1	Encoder Cable	C-1007-046
1	Fuse, Class C, 5 Amp - 110V Transformer Out	C-1007-333
2	Fuse, Class CC, 2.5 Amp - 110V Transformer In	C-1007-334
2	Fuse, Class FLNR, 20 Amp - Main power	C-1007-335
2	Fuse, 313 Series (.25" x 1.25"), 1/2 Amp slow - T. SCREEN (1), PLC (1)	C-1007-336
1	Fuse, 313 Series, (.25" x 1.25") 10 Amp slow - Knife (1)	C-1007-338
1	Solid state relay (25A)	C-1007-331
2	Handle for trough guide	C-2000-073
50	3/8" Pitch, 1" Face Width Belt	C-1007-028
1	Sensorless vector inverter drive	C-1007-317
3	1/2 HP Standard inverter drive	C-1007-319
6	Machine legs - Small	
1	Knife motor, 1/4 hp, 3200 rpm	C-1007-042
2	Diode snubber	
1	PLC 16 DIGITAL IN / 8 RELAY OUT	
1	IO EXPANSION MODULE 8 IN / 8 RELAY OUT	
1	COLOR TOUCHSCREEN 5.7	
1	OIT / PLC CABLE	
5	Mechanical roller switch	C-1007-361-1
5	Mechanical switch conduit gland	C-1007-363-1
2	COMPACT THRUST CYL 32MM BORE	C-1007-030
2	COMPACT THRUST CYL 20MM BORE	C-1007-031
4	COMPACT Cylinder - gripper	C-1007-032
1	PIN CYLINDER FOR SHARP ASS.	C-1007-033
1	REGULATOR/FILTER COMBO	C-1007-034
1	REGULATOR	C-1007-035
1	Pneumatic manifold only - 4 station	P-1003-001-V01
4	Valve	P-1003-002
1	25 Pin valve manifold cable, 1.5 meters long	C-1000-382
10	Tee - 1/4T	C-1007-038
8	Elbow - 10-32 X 1/4T	C-1007-039
2	Elbow - 10-32 x 1/8T	

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2	Reducer - 1/4T x 1/8T	C-1007-040
8	Flow control elbow type	C-1007-040A
1	Knife Clamp/Guard	
2	Gripper Beam	
1	7-1/2" OD X 2" ID SLITTER BLADE	C-1007-041





### **Appendices**

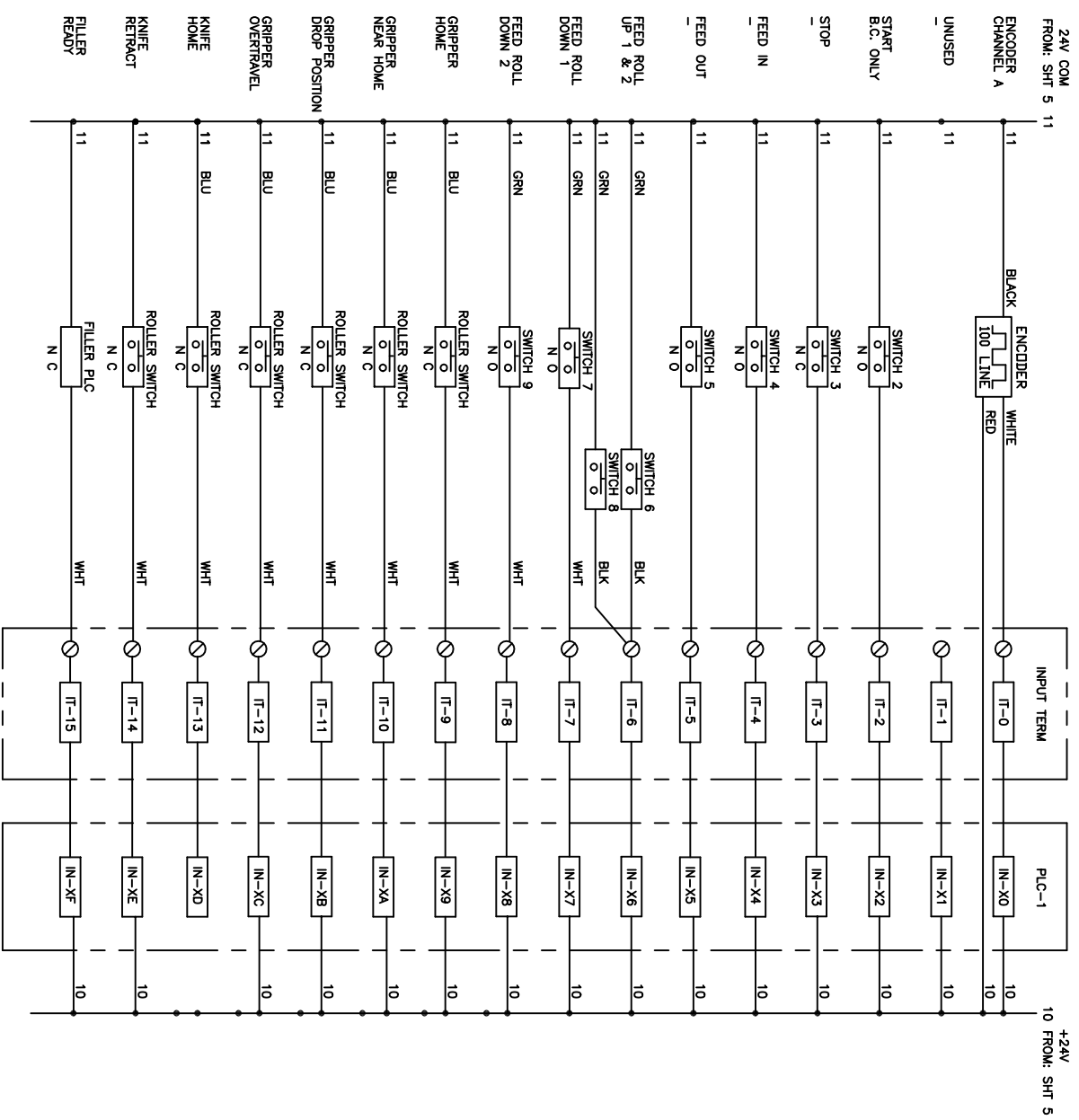
The following pages provide technical information with regards to the electronics located within the machinery.











- NOTES:
- 1) HIGH OFF-STATE VOLTAGES MUST BE SHUNTED WITH A 1K OHM 1 WATT RESISTOR.
  - 2) DIODE IS REQUIRED FOR INDUCTIVE LOADS.

**INCHES**

UNLESS OTHERWISE SPECIFIED

ABM INTERNATIONAL  
 ABAK INTERNATIONAL, Inc.  
 614 SHORE WALKER, IL 60007

BMT CUTTER  
 AND FILLER

DATE: 4/06/07

DESIGNED BY: JOE PODOLESKI

REVISION NO. 1

DATE: 4/06/07

1 1 E-1007-014A









