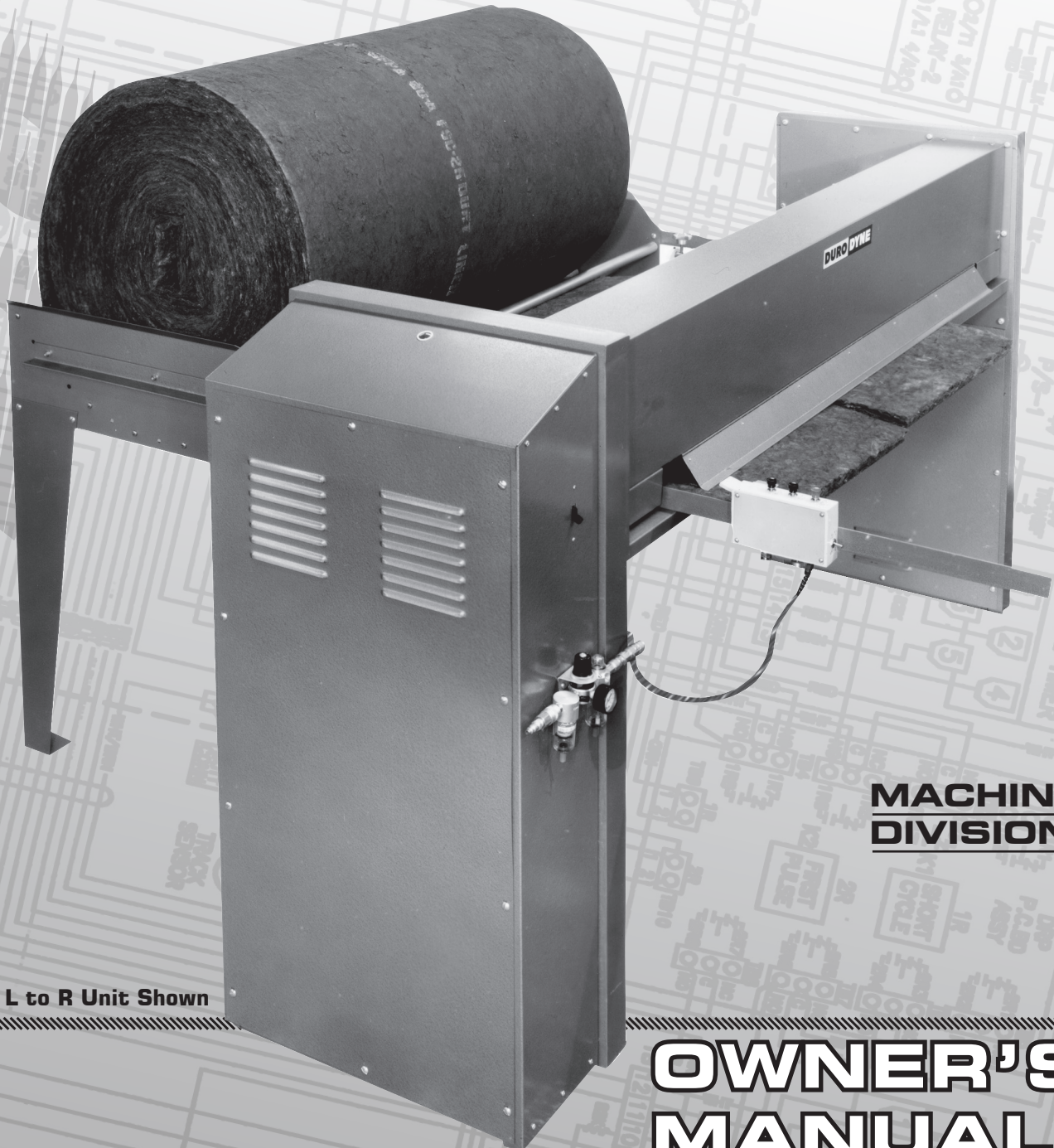


PLS ***AUTOMATIC LINER SIZER***

AUTOMATIC LINER SIZER



L to R Unit Shown

**MACHINERY
DIVISION**

OWNER'S MANUAL

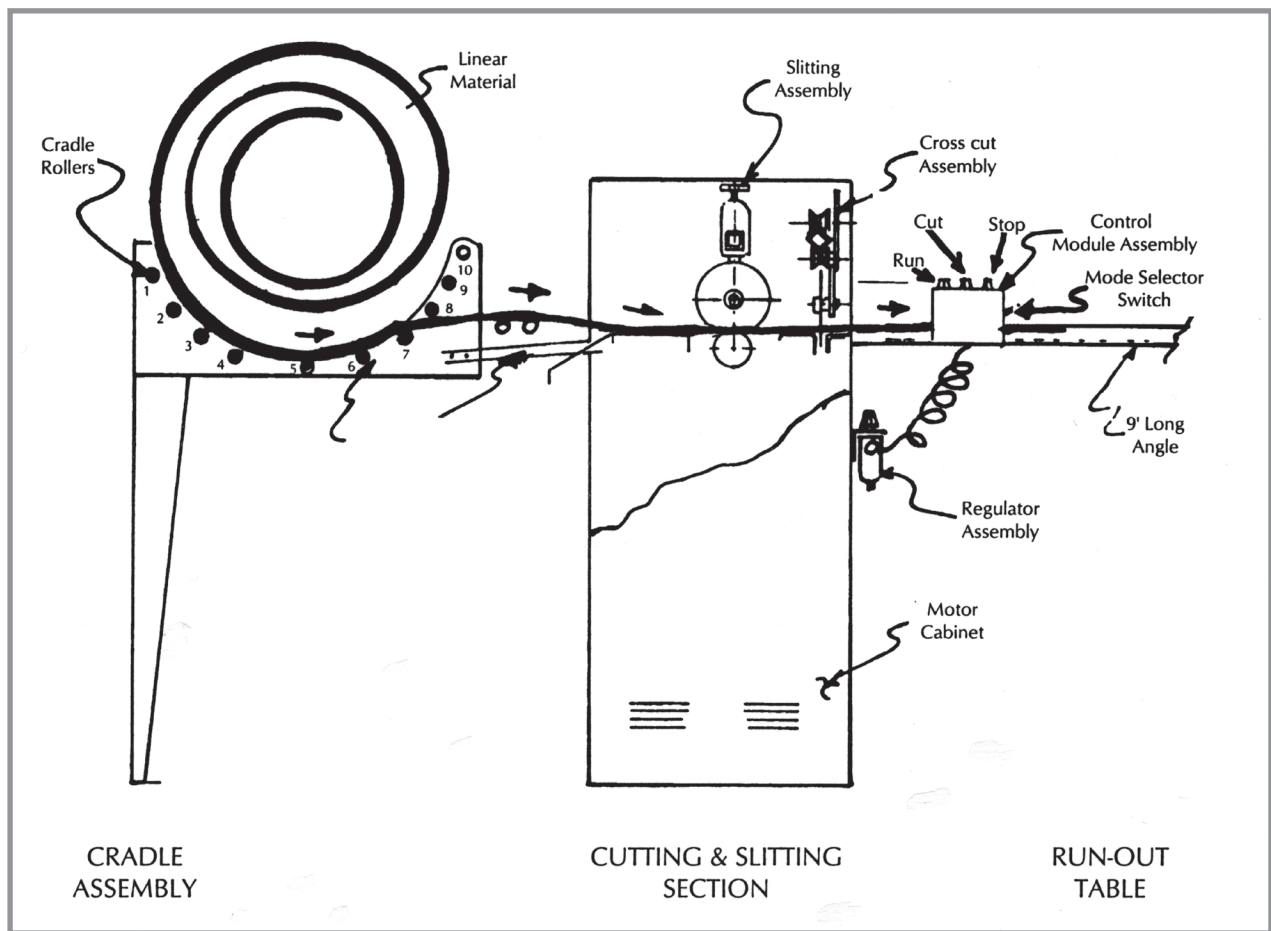
LIMITED WARRANTY

Duro Dyne Machinery is manufactured by skilled mechanics, utilizing the latest production techniques. Each unit has been rigorously tested prior to packaging and shipment in order to ensure trouble-free operation.

Your Duro Dyne machine has a one year warranty against defects in material. Any component found to be defective will be repaired or replaced (at manufacturer's discretion) at no cost if faulty component is returned freight prepaid to the nearest Duro Dyne Service Department. Warranty does not apply to expendable parts (cutting blades, etc.) or repairs or service due to improper maintenance or operation procedures.

TABLE OF CONTENTS

INTRODUCTION	3
INSTALLATION INSTRUCTIONS	4
OPERATION	5
MAINTENANCE	5
TROUBLESHOOTING	6
WIRING DIAGRAM	7
MOTOR CABINET PARTS LOCATION	8
CROSS CUT & SLITTER ASSEMBLY PARTS LOCATION	9
THEORY OF OPERATION	10
SERVICING	11
TROUBLESHOOTING	12-15
PLS PARTS LISTING	16



INTRODUCTION

The PLS Automatic Liner Sizer has primarily two Parts; one called the Cradle Assembly, the other called the Cutting and Slitting Section. It is suggested that a run out table be used in conjunction with the machine.

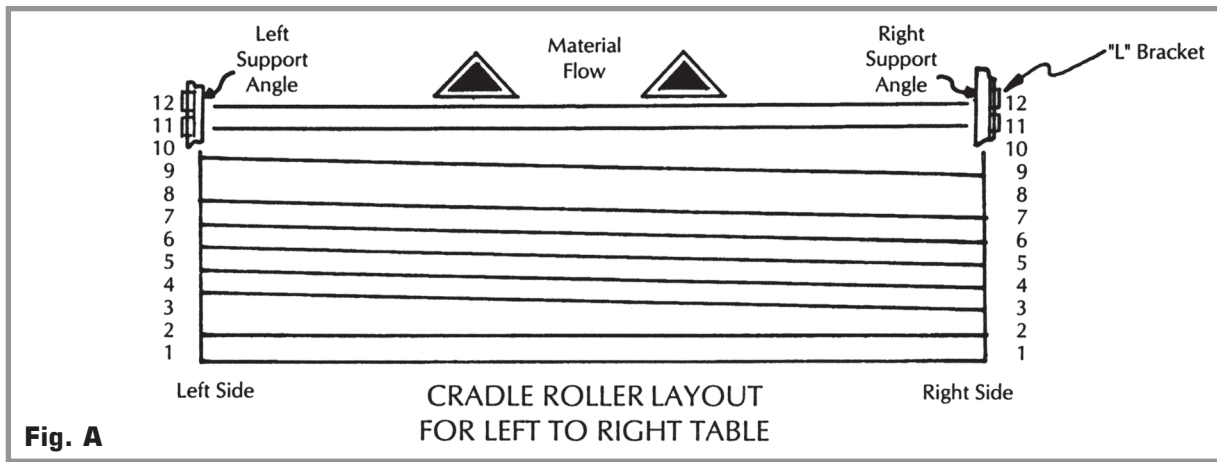
The cradle assembly consists of: The cradle, with eight installed rollers, and two additional rollers. The eight rollers installed in the cradle are pitched and should not be altered for any reason. (The rollers are designed to force the duct liner against one side of the cradle.) The two other rollers are to be attached to the support angles. This is described in Step 2 of the Installation Instructions section. **See Pg. 4; figure A.**

The cradle rollers are aluminum and should be handled carefully.

When building the run out table it is important that a two inch clearance gap be left between the angle iron and the table frame from the cutting head to the far leg so that the light beam of the length sizer (located in the control module assembly) is unobstructed. Safety interlocks under the guards, (see the cradle and crosscut view) will not allow the machine to operate if the guards are removed. **Do not** remove the safety guards and render the safety micro-switches inoperative. **The PLS has moving blades which can cause serious injury should the safety features be over ridden. Disconnect the air and the electric supply before servicing the PLS.**

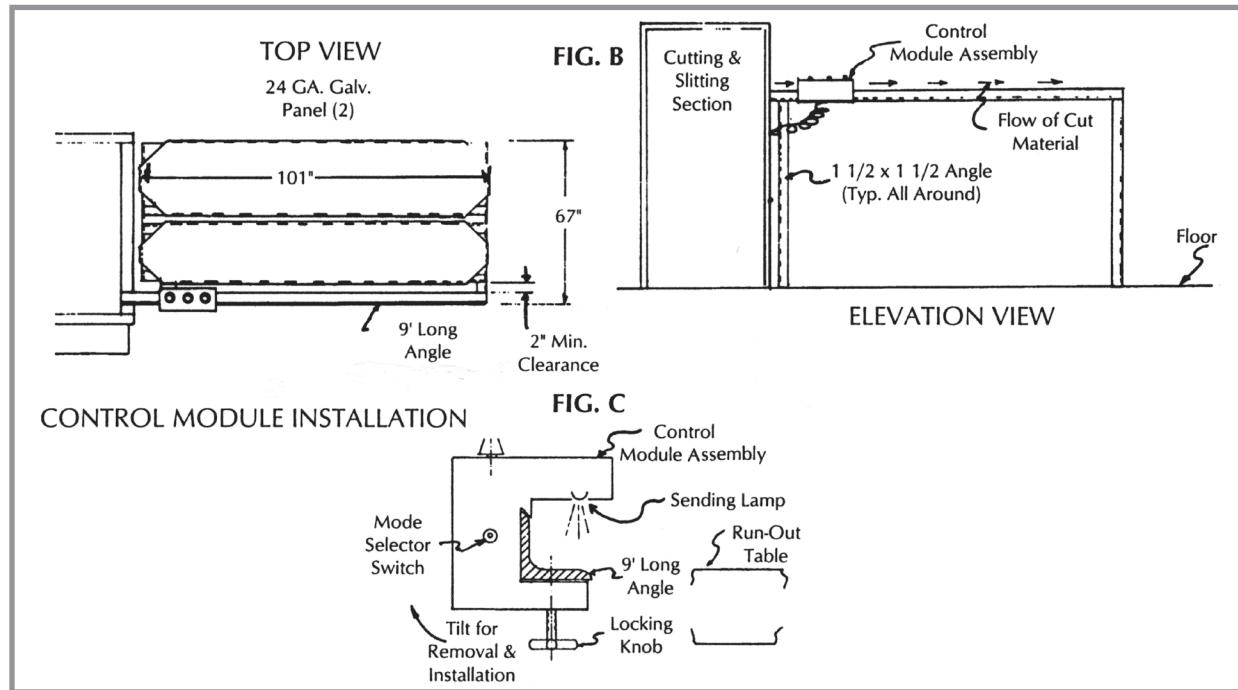
To insure square and accurate sizing, the cradle support angles and the nine foot angle guides should be mounted at 90° degree angles to the cutting head.

Important: Always follow the manufacturer's recommendations for proper safety and handling procedures for all materials used in conjunction with this machine as outlined in Manufacturer's Safety Data Sheet (MSDS) for each product.



INSTALLATION INSTRUCTIONS

NOTE: Do not tighten bolts and nuts until unit is completely assembled. When assembling the PLS be sure all components are square to each other.



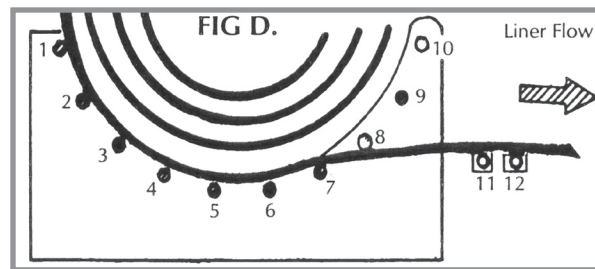
- 1) In the carton that was placed in the PLS crate, locate the leveling feet. Tilt the motor cabinet and locate the threaded holes at both ends of the frame. Turn the leveling feet clockwise into the holes. Repeat this procedure at the opposite end of the PLS (the end cabinet). After inserting all leveling feet, level the cutting head by turning the leveling feet clockwise or counter clockwise.
- 2) Refer to **Fig. A** which depicts the cradle roller layout. Follow the roller number sequence as shown. The pitch of all the rollers has been determined at the factory. The rollers for positions 11 and 12 must be installed on the support angles with the correct pitch. Attach the right support angle to the cradle and the cutting and slitting section. Then slip rollers into holes 11 and 12 in the "L" brackets of the right support angle. Next slide the rollers into holes 11 and 12 in the "L" brackets on the left support angle and attach the left support angle to the cradle assembly and the cutting and slitting section.
- 3) Attach the 9 foot angle iron guide (Fig. B) square to the cutting and slitting section using two 1/4 x 20 truss head bolts. (Be sure the angle iron is at a right angle with the frame.)
- 4) Build a run out table similar in design to the table shown in **Fig. B**.
- 5) Locate the control module assembly in the carton packed in the PLS crate. Loosen the locking wheel on the module. Tilt the module so that the switches are angled toward the run out table. Slip the groove in the control module assembly over the edge of the nine foot angle iron guide and straighten the module. **See Fig. C.**
- 6) Plug the control module assembly into the socket located on the motor cabinet. Twist the lock ring on the plug to secure the connection.

INSTALLATION INSTRUCTIONS *CONT.*

- 7) Locate the air regulator in the carton packed in the PLS crate. Connect the air hose from the motor cabinet to the air regulator. Slide the regulator adjustment knob through the mounting bracket that is located beneath the power switch on the motor cabinet. Lock the regulator into position by placing the threaded ring that is provided over the adjustment knob and hand tightening the ring in a clockwise direction. Connect the air supply.
- 8) Turn on the air and adjust the air regulator for 80 p.s.i. by turning the regulator knob counter clockwise to decrease the air pressure and clockwise to increase the air pressure. Note: the regulator located inside the motor cabinet is factory preset.

OPERATION

- 1) Plug the PLS into a 110 volt power supply with a grounded socket.
- 2) Refer to the **Pg. 3** pictorial representation of the machine. Set the slitting width - Loosen the knob on the slitter assembly; slide the ridge in the center of the assembly until the casting is lined up with the desired width on the measuring tape; retighten the knob on the slitter assembly.
- 3) Place a roll of liner material in the cradle. **Fig. D.** Feed the leading edge of the liner through the rollers on the cradle carriage as shown in **Fig. D.** Lift the pinch roller by raising the pinch roller switch on the PLS motor cabinet and place the leading edge of the liner between the pinch roller and the feed roller. Lower the pinch roller with the pinch roller switch.
- 4) Set the cut length of the liner by loosening the knob on the control module assembly, **Pg. 4; Fig. B & C**, and slide it along the 9' angle iron guide until the edge of the control module assembly is lined up with the proper length setting on the measuring tape; retighten the knob.
- 5a) **Automatic Operation - Pg. 4; Fig. C**, and pictorial representation, **Pg 3.** To cut multiple pieces of the same dimensions, set the mode selector switch to automatic. Depress the run button: **See Pg. 3.** The insulation will advance through the rotary knife slitter until it reaches the preset length. Liner is then automatically stopped and crosscut to length. As the liner is removed from the machine, it automatically restarts. The next piece of liner is slit as it advances through the machine toward the length sensor where it will stop and be cut to length. The machine continues in this mode until the stop button is depressed.
- 5b) **Manual Operation - refer to Pg. 3.** For individual pieces of varying lengths set the mode selector switch to manual. Depress the run button and the material will feed through the slitter into the length sensor and stop. Depress the cut button and the material is cut to length and can be removed. If cutting is to be done by visual observation of length requirements, loosen the control module assembly locking knob, tilt the module and remove it from the 9' angle guide; the control module assembly may be hand held. Depress the run button and feed liner through the machine until the electric eye on control module assembly is broken or the stop button is depressed. Depress the cut button and remove the sized liner material.



MAINTENANCE

Air Supply Unit

- 1) To provide uninterrupted service, the air regulator assembly must be kept clean. Drain off any filter bowl accumulation before it becomes full. A visible coating of dirt or condensate on the filter element or erratic operation indicates cleaning is necessary. Wash the filter element in denatured alcohol and blow it out with compressed air.
- 2) Clean the bowl with household soap only.
- 3) Check for leaks in the air hoses
- 4) Check and adjust the air pressure to 80 p.s.i. minimum. When reducing the regulator pressure turn the knob counter clockwise. Cycle the machine before reading the pressure gauge. To increase the air pressure repeat the procedure turning the knob clockwise.

Electrical Unit

- 1) The control module assembly should remain fastened securely to the 9' long angle iron; **Pg. 4; Fig C.** The sending lamp together with the photo receiver must be kept clean and free of obstruction in order to insure proper response and correct functioning of cutting, timing and other operations of the control module assembly.

TROUBLESHOOTING

The PLS is comprised of four distinct circuitry segments:

- 1) The motor
- 2) The clutch drive
- 3) The crosscut
- 4) The pinch roller

When troubleshooting, it is important to observe how each circuit segment is operating in the manual mode as well as the automatic mode so that the symptoms displayed by your machine can be matched exactly to those shown below.

See the Motor Cabinet view on the opposite page.

IMPORTANT:

- 1) The PLS will not operate with the guards up. To assure accurate test results and maximize operator safety, perform all troubleshooting procedures with the guards in position. **Caution: Keep hands and clothing away from the machine. The blades and rollers can cause serious injury.**
- 2) When servicing the machine perform all test procedures in the manual mode unless otherwise specified.
- 3) Many test procedures refer to the numbered terminals of the terminal strip. When performing tests, double check that you are performing tests on the correctly numbered terminals.
- 4) Before performing any test procedures in the following sections, check that: all wire connections are tight, wires attached to one terminal do not touch wires on other terminals, wires are not cut or broken.

SYMPTOM I

The motor does not operate with the power in the "ON" position.

SYMPTOM II

The motor is operating but nothing else works.

SYMPTOM III

Everything operates properly in manual mode except the clutch drive.

SYMPTOM IV

The unit will not repeat its cycle in automatic mode. Everything operates properly in manual mode.

SYMPTOM V

Everything operates properly except the crosscut. It does not work in manual and/or automatic mode.

SYMPTOM VI

Only the pinch rollers do not work.

SYMPTOM VII

Material runs through the electric eye without stopping (the clutch remains engaged after the "RUN" switch is depressed.)

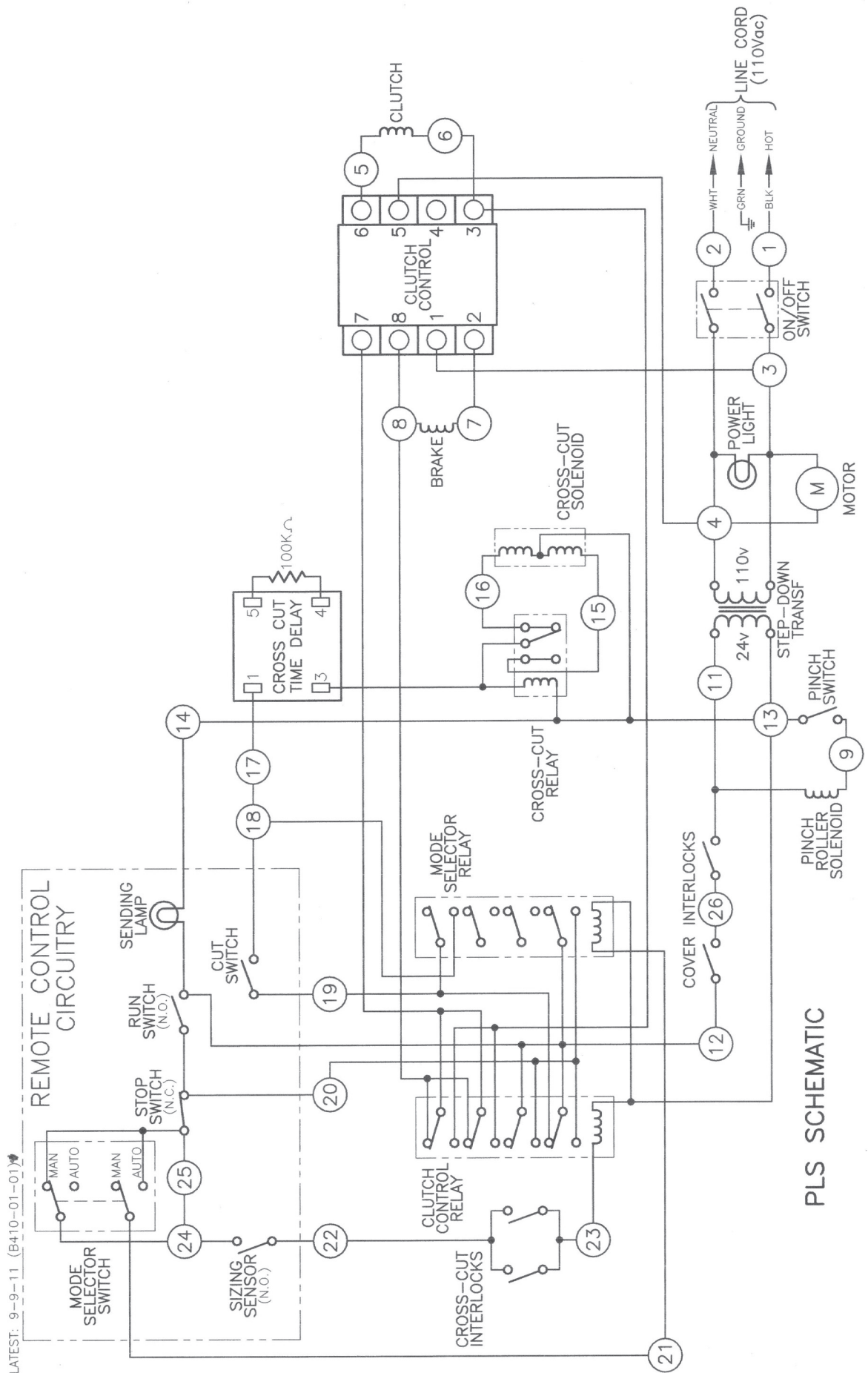
SYMPTOM VII

The clutch is engaged as soon as the power switch is in the "ON" position.

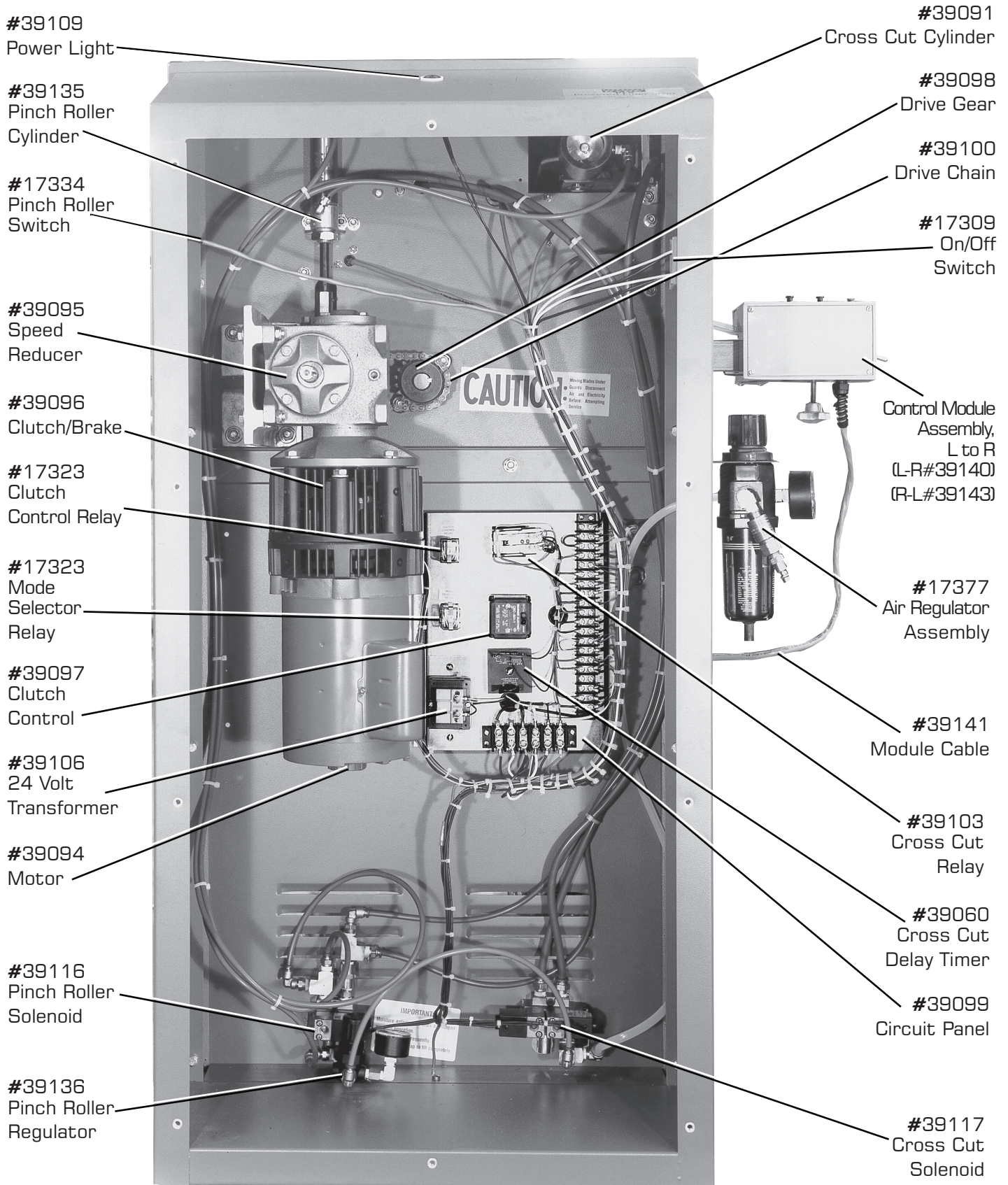
SYMPTOM IX

The material length is extremely erratic (clutch disengagement is erratic).

PLS WIRING DIAGRAM



MOTOR CABINET PARTS LOCATION



CROSS CUT & SLITTER ASSEMBLY PARTS LOCATION

#28066
Adjustment
Knob

#28025
Support
Casting

#28026
Blade Hub

#39093
PLS Blade

#28013
Blade with Hub

#28027
Spring Hold Down

#28030
Blade Roller

#28059
Nylon Roller Bolt

#39085
Nylon Rollers

#39084
Roller Plate

#39173
Cross Cut
Magnet

#28060
Blade Hub Bolt

THEORY OF OPERATION

The PLS Cutting and Slitting Section consists of four distinct operating segments:

- a) The motor
 - b) The clutch
 - c) The pinch roller
 - d) The drive roller
-
- 1) The motor is turned on or off by movement of the power switch. While in the "ON" position, the motor is constantly turning.
 - 2) The clutch is actuated by depressing the "RUN" switch. This signal travels through the "STOP" switch, the receiving board and the crosscut interlocks to activate the clutch control relay. This relay, in turn, sends a 90 volt D.C. signal generated by the clutch control module to the electromagnetic clutch causing the clutch to engage the motor. Pushing the stop switch or breaking the electric eye (deactivating the receiving board) will cause the clutch relay to de-energize the clutch from the motor. With the mode selector switch in the automatic position the mode selector relay is activated. This relay parallels the run switch and allows the machine to automatically restart once the electric eye is clear of material.
 - 3) The crosscut is actuated by depressing the "CUT" switch. This signals the crosscut relay to deactivate one coil of the double solenoid valve and activate the other. This solenoid valve controls the movement of the crosscut cylinder which draws the crosscut blade through the insulation. With the mode selector switch in the automatic mode, the mode selector relay is energized. This relay parallels the cut switch allowing the machine to crosscut automatically. While the machine is in the automatic mode, each time the electric eye is interrupted, deactivating the clutch control relay, a signal is sent to the crosscut relay via the mode selector relay.
 - 4) The pinch roller is moved up or down by movement of the pinch switch. The pinch switch activates or de-activates a solenoid valve, controlling the air pressure to a pair of air cylinders. These cylinders move the pinch roller up or down.

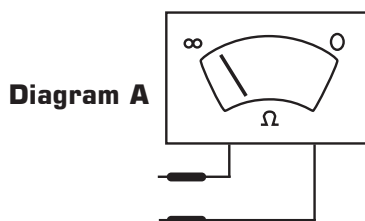
NOTE: The pinch roller circuitry is 24 volts and is not affected by the guard positions. The clutch and crosscut circuits are 24 volts with the exception of the clutch control module and the electromagnetic clutch. In series with the clutch and the crosscut circuit are the guard interlock switches. When the guards are out of position, the 24 volt supply to the clutch and crosscut circuitry is interrupted de-energizing these circuits.

SERVICING

It may be necessary to use a voltmeter and or ohmmeter to perform the simple servicing procedures. Follow the instructions below for reading resistance and voltage.

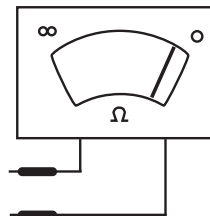
MEASURING RESISTANCE (OHMMETER)

- 1) Disconnect the power supply.
- 2) Set the ohmmeter at the R X 1000 scale.
- 3) Touch the two probes together and "ZERO" the ohmmeter.
- 4) If the meter reads as shown in Diagram A, there is infinite resistance across the terminals.



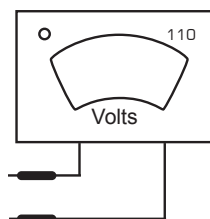
- 5) If the meter reads as shown in Diagram B, there is no resistance across the terminals.

Diagram B



MEASURING AC VOLTAGES (VOLTMETER)

- 1) Set the voltmeter at the nearest scale above (never below) the voltage you wish to read.



For all servicing, refer to the parts callout enclosed in this manual.

CIRCUIT PANEL ASSEMBLY AND CONTROL MODULE ASSEMBLY PARTS LOCATION

#17323
Clutch Control
Relay

#17323
Mode Selector
Relay

#39060
Cross Cut
Delay Timer

#39106
24 Volt
transformer

#39099
Circuit Panel

#39103
Cross Cut Relay

#39097
Clutch Control

#39110
Run Switch

#39110
Cut Switch

#39112
Stop Switch

#39068
Receiving
Board

#39114
Mode
Selector
Switch

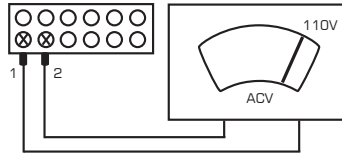
TROUBLESHOOTING

SYMPTOM I

The motor does not operate with the power switch in the "ON" position.

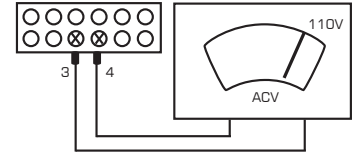
- 1) Check the power source with a 110 volt tester or voltmeter.
- 2) Visually inspect the line cord for wear or cuts.
- 3) Remove the motor cabinet side panel to expose the PLS terminal strip. With electricity on, read the voltage across 1 and 2 on the terminal strip.

If the voltage is present (110 V), proceed to step 4. If the voltage is "0" volts, the power source is off or the line cord has a break-in it.



- 4) With the electricity on, read the voltage across 3 and 4 of the terminal strip.

If voltage is present (110 V), replace the motor. **(Always check the wires to the motor before replacing the motor).**

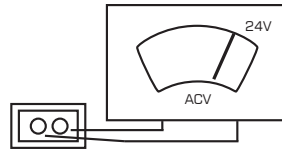


If the voltage is "0" volts replace the on/off switch.

SYMPTOM II:

The motor is operating but nothing else works.
Important: The guards must be in place.

- 1) Remove the side panel from the motor cabinet. Locate the 24 volt transformer on the circuit panel. With the power "ON", read across the terminals on the transformer with a voltmeter.



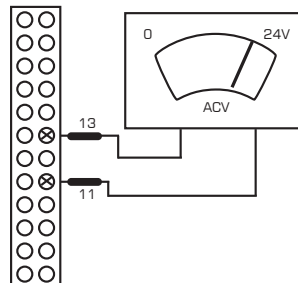
If the meter reads approximately 24 volts, proceed to step 2.

If the meter reads "0" volts, replace the 24 volt transformer.

- 2) With the power "ON", read across terminals 11 and 13 with a voltmeter.

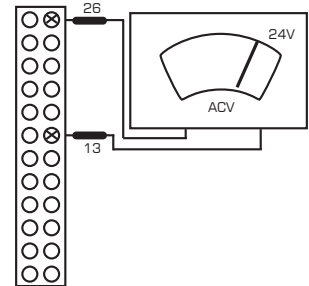
If the meter reads 24 volts, proceed to step 3.

If the meter reads "0" volts turn off the power and check for a broken wire from the transformer



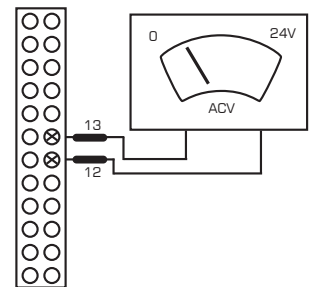
to terminals 11 and 13.

- 3) With the power "ON", place a voltmeter across terminals 13 and 26. If the meter reads 24 volts, proceed to step 4. If the meter reads "0" volts, trace the switch wire on terminal 11 to the inoperative guard interlock switch and replace it.



- 4) With the power "ON", place a voltmeter across terminals 12 and 13.

If the meter reads "0" volts, trace the switch wire on terminal 12 to the inoperative guard interlock switch and replace it. If the meter reads "24" volts, you may be in the wrong section of the manual, recheck the symptoms.

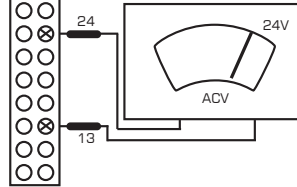


SYMPTOM III:

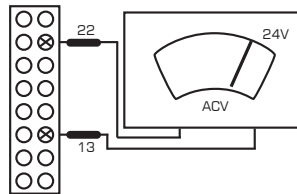
Everything operates properly in manual mode except the clutch drive.

- 1) Place the unit in manual mode. Remove the PLS side panel exposing the wiring terminal strips. Place a voltmeter across 20 and 13 of the terminal strip. With electricity on, depress the "RUN" button.

If the meter reads "24" volts, proceed to step 2. If the meter reads "0" volts, the run switch needs replacement.

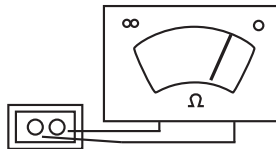


- 2) With the electricity on, place a voltmeter across terminals 13 and 22. Depress the run switch. If the meter reads "24" volts proceed to step 5. If the meter reads "0" volts proceed to step 3.

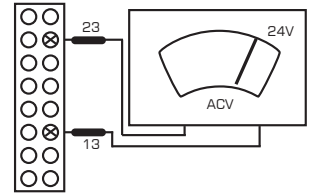


- 3) Power the unit. Visually inspect the sending lamp located on the control module assembly. If the lamp is lit, proceed to step 4. If the lamp is not lit, replace the sending lamp.

- 4) Disconnect the 110 volt power supply and remove the cover from the control module assembly. Using an ohmmeter, read for resistance across the stop switch (do not depress the switch). If the meter reads " ∞ " resistance, replace the stop switch. If the meter reads "0" resistance, replace the receiving board and the photo receiver.



- 5) With electricity on, place a voltmeter across terminals 13 and 23. Depress the run switch. If the meter reads "24" volts, proceed to step 6. If the meter reads "0" volts, one of the two crosscut interlocks is not functioning. Disconnect the air and the electricity.



NOTE: With the safety covers removed, extreme caution must be exercised by any person near the unit.

To determine which safety interlock is inoperative, remove the top cover on the exit side of the machine and locate the crosscut blade. The crosscut interlock located on the side of the machine where the crosscut blade is positioned must be adjusted or replaced.

- 6) Swap the clutch control relay with the mode selector relay. Place the mode selector switch in the "MANUAL" position. Depress the run switch. If the drive roller now turns, replace the relay now in the mode selector socket. If the drive roller does not turn, proceed to step 7.

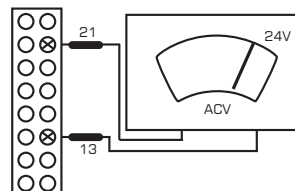
- 7a) Connect a D.C. voltmeter across terminals 7 and 8 on the terminal strip. If the meter reads 85-95 volts D.C., proceed to 7b. If the meter does not read 85-95 volts D.C., check the fuse in the clutch control module. If the fuse is good, replace the clutch control module.

- 7b) Connect a D.C. voltmeter across terminals 5 and 6 on the terminal strip. Depress the run switch. If the voltmeter reads 85- 95 volts D.C. replace the clutch/brake. If the voltmeter does not read 85-95 volts D.C. check the fuse in the clutch control module. If the fuse is all right, replace the clutch control module.

SYMPTOM IV:

The unit will not repeat its cycle in automatic mode. Everything operates properly in manual mode.

- 1) With the electricity "ON", remove the cabinet cover on the motor side of unit. Place the unit in automatic mode. Place a voltmeter across terminals 13 and 21. Depress the "RUN" switch. If the meter reads "24" volts replace the mode selector relay. If the meter reads "0" volts, replace the mode selector switch.



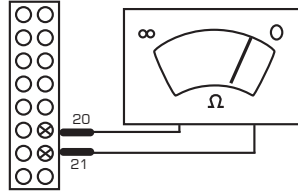
SYMPTOM V:

Everything operates properly except the crosscut. It does not work in either manual or automatic mode.

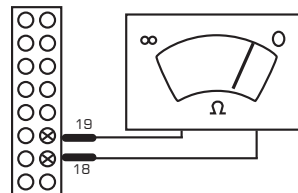
IMPORTANT: The guards must be in place.

- 1) Place the mode selector switch in the "MANUAL" position. With the air and the electricity on and the power switch in the "ON" position, depress the cut switch. If the crosscut operates, proceed to Step 2. If the crosscut does not operate, proceed to Step 4.

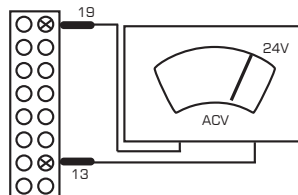
- 2) If the machine is of serial #67 or less, proceed to Step 3. Disconnect the electricity. Place an ohmmeter across terminals 20 and 21. Place the mode selector switch in the "AUTOMATIC" position. If the meter the reads "0" resistance, replace the mode selector relay. If the meter reads " ∞ " resistance, replace the mode selector switch.



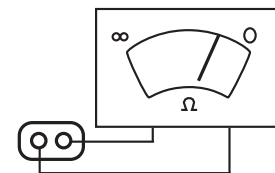
- 3) Disconnect the electricity. If the machine is Serial #68 or higher proceed to step 4. Place an ohmmeter across terminals 18 and 19. Depress the cut switch. If the meter reads "0" resistance, replace the mode selector relay. If the meter reads " ∞ " resistance, replace the mode selector switch.



- 4) Remove the side cover from the motor cabinet. Place a voltmeter across terminal 13 and terminal 19. With the electricity on, place the mode selector switch in the manual position. Place the power switch in the "ON" position. Do not depress the run button. If the meter reads "24" volts, proceed to step 5. If the meter reads "0" volts, replace clutch control relay.



- 5) Disconnect the electricity. Remove the cover from the control module assembly. Lift up one of the guard covers. Place an ohmmeter across the cut switch terminals. Depress the cut switch. If the meter reads "0" resistance. Proceed to step 6. If the meter reads " ∞ " resistance, replace the cut switch.



- 6) Place a volt meter across 13 on the terminal strip and terminal 1 of the crosscut delay timer. Place the mode selector switch in the "MANUAL" position. Press and hold down the cut switch. If the meter reads "24" volts, proceed to step 7. If the meter reads "0" volts, replace the control cable.

- 7) Place a volt meter across terminal 13 of the terminal strip and terminal 3 of the crosscut delay timer. Place the mode selector switch in the "MANUAL" position. Press and hold down the cut switch.

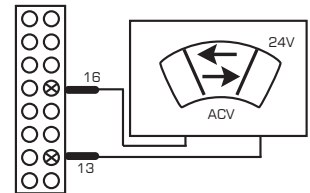
If the meter reads "24" volts, proceed to step 8.

If the meter reads "0" volts, check for a broken resistor jumper between terminals 4 and 5 on the delay timer. If the resistor jumper is good, replace the crosscut delay timer.

- 8) Turn the electricity on. Place a voltmeter across terminals 13 and 16. Place the mode selector switch in the "MANUAL" position. Press the cut switch several times. The meter should read "0" volts and "24" volts alternately. Repeat this test with the voltmeter on 13 and 15.

If the meter fails to alternate between 0 and 24 volts during either test, replace the crosscut relay.

If the meter does alternate during both tests, proceed to step 9.



Meter response is more important than the actual reading in step 8.

- 9) Disconnect the 110 volt power and the air supply from the unit. Remove the red and blue 3/8" air hose from the right and left side of the solenoid. **Caution: Do not remove the air line located in the front of the solenoid.** Place the mode selector switch in the "MANUAL" position. Connect the air and 110 volt electrical supply to the unit and depress the cut switch several times.

If the air is alternately exhausted from the ports exposed by the removal of the air hosing in the above procedure, do not reconnect the air hosing and proceed to step 10.

If the air is not alternately exhausted from the ports exposed by the removal of the air hosing in the above procedure, replace the crosscut solenoid.

- 10) Disconnect the air and 110 volt electric supply from the unit. **Caution: For this test procedure the air must be disconnected from the machine to assure the safety of the maintenance personnel.** Remove the top cover and guard on the exit side of the machine. Locate the crosscut roller plate. This plate is moved by the large crosscut cylinder mounted across the top of the insulation cutter. Inspect the nylon encased cable in the crosscut cylinder for a nick or cut in the nylon casing. To inspect the entire cable, the crosscut roller plate must be manually moved across the machine. **After inspection is complete, replace the top cover and guard before reconnecting the air supply.**

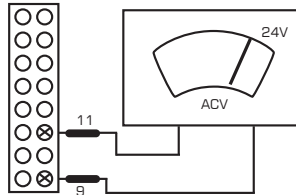
If the cable casing is damaged, reconnect the air lines previously disconnected and replace the cable.

If the nylon casing for the cable is not damaged, reconnect the air lines previously disconnected and replace the crosscut cylinder.

SYMPTOM VI:

Only the pinch rollers do not work.

- 1) With the air and the electricity on, place the pinch switch in the "Raise" position.
If the pinch roller rises on one side and remains in the lowered position on the opposite side; replace the pinch roller cylinder on the side of the machine that did not rise.
If the pinch roller did not rise on either side, proceed to step 2.
- 2) With the electricity "ON" and the pinch roller switch in the "Raise" position, connect a volt-meter across terminals 11 and 9.



- 3) Check the pinch roller regulator for air leakage.
Note: The pinch roller regulator is preset at the factory for 40 PSI.
If the pinch roller regulator is leaking, replace it.
If the pinch roller regulator is not leaking, proceed to step 4.
- 4) Disconnect the electricity and the air supply to the unit. Remove one 1/4" blue air hose and one 1/4" red air hose from the right and left side of the pinch roller solenoid respectively. Connect the air and electricity supply to the unit and raise and lower the pinch switch several times manually.
If the air alternately exhausts from each port of the solenoid, exposed by the above procedure, change the pinch roller cylinders.
If the air does not exhaust alternately from each port of the solenoid exposed by the above procedure, replace the pinch roller solenoid.

SYMPTOM VII:

Material runs through the electric eye without stopping (the clutch remains engaged after the "RUN" switch is depressed).

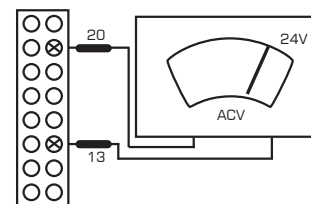
- 1) Remove any insulation from the machine. Place the unit in the "MANUAL" mode. Connect the air and the electricity. Turn the power switch on. Remove the control module assembly from the nine foot angle iron. Depress the run switch. Depress the stop switch.

If the drive roller stops turning only while the "STOP" switch is depressed but turns when the "STOP" switch is released, go to SYMPTOM VIII. If the drive roller remains stopped after depressing the stop switch, replace the receiving board and the photo receiver.

SYMPTOM VIII:

The clutch is engaged as soon as the power switch is in the "ON" position.

- 1) With the electricity on and the power switch in the "ON" position, place a voltmeter across terminals 13 and 20.
If the meter reads "24" volts, replace the run switch.
If the meter reads "0" volts, replace the clutch control relay.



SYMPTOM IX:

Material length is extremely erratic (clutch disengagement and brake engagement erratic).

- 1) Remove the side panel and observe the clutch control green and red LED's. The red LED should come on as soon as the material obstructs the sending lamp. If this is not the case, proceed to step #2. If the drive does not stop at the same time that the red LED comes on, check the voltage at terminals 7 & 8. Terminals 7 & 8 should have 90 vdc at same time that the red LED comes on. If not, replace the clutch control. If the voltage is correct, replace the clutch/brake.

- 2) Be sure the photo receiver is free from any obstructions between it and the sending lamp.
- 3) Shield the photo receiver from all other light sources except the light of the control module electric eye.
- 4) If step 1 did not correct the problem, remove the cabinet cover from the motor side and swap the clutch control relay and the mode selector relay. If the problem is corrected, replace the relay presently in the mode selector socket. If the problem persists, replace the photo receiver and the receiving board in the control module assembly.

PLS SPARE PARTS LIST

NOTE: When ordering spare parts include serial number of machine.

ITEM#	DESCRIPTION	ITEM#	DESCRIPTION
39083	CRADLE ASSEMBLY COMPLETE	17334	Pinch Roller Switch
39076	Cradle Roller with Bushing	39116	Pinch Roller Solenoid
39077	Cradle Side Plate	39117	Cross Cut Solenoid
39079	Cradle Leg	39118	Line Cord
39080	Cradle Cross Angle	39133	Drive Roller
39082	Cradle Corner Brace	39134	Pinch Roller
		39135	Pinch Roller Cylinder
39107	CROSS CUT ASSEMBLY COMPLETE	39136	Pinch Roller Regulator
39084	Cross Cut Roller Plate	17377	Air Regulator Assembly
39085	Cross Cut Nylon Rollers	39172	Guard Interlock
39173	Cross Cut Magnet		
		39099	CIRCUIT PANEL
39087	SLITTING ASSEMBLY with BLADE ROLLER	39097	Clutch Control
28030	Blade Roller	39103	Cross Cut Relay
28025	Slitter Casting	17323	Clutch Control Relay
39139	Locking Wheel	17323	Mode Selector Relay
		39106	24 Volt Transformer
28013	BLADE WITH HUB	39060	Cross Cut Delay Timer
28026	Blade Hub		
39093	Blade		
	CUTTING HEAD COMPLETE	39140	CONTROL MODULE ASSEMBLY L to R
39090	Cross Cut Interlock	39143	CONTROL MODULE ASSEMBLY R to L
39091	Cross Cut Cylinder		
39092	Cross Cut Cable Replacement Kit	39065	Photo Receiver
	Note: Need Make & Model # for cable kit	39066	Sending Lamp
39094	Motor	39067	Sending Shade
39095	Speed Reducer	39068	Receiving Board
39096	Clutch/Brake	39110	Run Switch
39098	Drive Gear	39110	Cut Switch
39100	Drive Chain	39112	Stop Switch
39101	Chain Link	39114	Mode Selector Switch
39102	Love Joy Coupling	39141	Module Cable
17309	On/Off Switch	39119	9 Foot Angle Iron
39109	Power Light	28061	Sandpaper Kit



MACHINERY DIVISION

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Duro Dyne East Division, Bay Shore, NY

Duro Dyne Midwest Division, Fairfield, OH

Duro Dyne West Division, Santa Fe Springs, CA

Duro Dyne Canada, Lachine, Quebec, Canada

631-249-9000 Fax: 631-249-8346

513-870-6000 Fax: 513-870-6005

562-926-1774 Fax: 562-926-5778

514-422-9760 Fax: 514-636-0328

www.durodyne.com E-mail: durodyne@durodyne.com