



MEYERCORD

“M”-Type 12M Case Cutter
Installation/Service Manual (#203637, v.1)

This documentation is protected by United States copyright laws.
Copyright 2001 by The Meyercord Company. All rights reserved.
Reproduction of material is strictly prohibited without written permission.
The Meyercord Company, 365 E. North Avenue, Carol Stream, IL.
60188. Printed in the United States.

Table of Contents

1.0 - Introduction to this Manual	4
1.1 - Introduction	4
1.2 - Important Phone Numbers	4
1.3 - Machine Specifications	5
1.4 - Installation Requirements: Electrical	5
1.5 - Installation	6
1.6 - Safety First	7
2.0 - Machine Description	8
2.1 - Mechanical Components	8
2.2 - Pneumatic Components	10
2.3 - Electrical Components	10
2.4 - Pneumatic System Valves	12
3.0 - Theory of Operation	
3.1 - Pre-Automated Operation Information	14
3.2 - Automated Machine Functions	14
3.3 - Pneumatic System	18
3.4 - Electrical System	18
3.5 - Logic Valves (on Control Panel)	18
4.0 - Machine Operation	
4.1 - Description of Operation	20
4.2 - Safety Precautions	22
4.3 - Pre-Operation Procedures	24
4.4 - Operating the Case Cutter	26
5.0 - Troubleshooting	30
5.1 - Cutter Electrical Malfunctions	30
5.2 - Cutter Pneumatic Malfunctions	31
5.3 - Elevator Fails To Go Up	32
5.4 - Centering Arms Fail To Center Case	32
5.5 - Pivot Assembly Fails To Raise / Lower Top Knife Properly	32
5.6 - Carriage Fails To Advance	32
5.7 - Opening Basket Fails To Open	33
5.8 - Elevator Does Not Drop Fully or Not At All	33
5.9 - Dump Rack Fails To Function	33
5.10 - Case Cuts Are Ragged, Too Shallow, or Too Deep	33

“M” TYPE 12M CASE CUTTER

Table of Contents cont'd

6.0 - Maintenance & Repair	34
6.1 - Fuse	34
6.2 - On/Off Switch	34
6.3 - Magnetic Contactor	35
6.4 - Motors	35
6.5 - Pneumatic Actuator	35
6.6 - Air Compressor	35
6.7 - Regulating Air Compressor	36
6.8 - Valves	36
6.9 - Tubes	36
6.10 - Cylinders	36
6.11 - Cutter Blade Replacement	37
6.12 - Lubrication	38
7.0 - Offline (Type 16) Case Cutter	
7.1 - Introduction	40
7.2 - Mechanical Operation	40
7.3 - Machine Specifications	41
7.4 - Installation Requirements: Electrical	41
7.5 - Electrical Operation	42
7.6 - Pneumatic Operation	43
7.7 - Preventative Maintenance	44
7.8 - Troubleshooting	46

“M” TYPE 12M CASE CUTTER

1.0 - Introduction to this Manual

1.1 - Introduction

The Meyercord Company reserves the right to make necessary alterations in the machine specifications to meet customer requirements. Some illustrations and information in this manual may not exactly match in detail each machine.

The contents of this manual have been prepared to help you troubleshoot and understand the machine you have just received. Keep this manual available for quick reference. After reading the following manual you should be able to setup, inspect and maintain the Meyercord 12M Case Cutter. A troubleshooting section will help you identify and correct problems from the observed symptoms of the machine.

Caution: Do not remove or override any safety guarding from this machine. The guarding has been provided to protect personnel from moving machine parts which can cause serious injury.

1.2 - Important Phone Numbers

Information, Orders, & Technical Support:

1-800-639-3799

Revenue Service Fax:

1-630-682-6365

Parts Dept. Fax:

1-630-682-6353

1.3 - Machine Specifications

Electrical Requirements:

Voltage - 115 VAC, single phase, 60 Hz.

Current - 30 amps

Air Source Requirements:

Self contained / 100 PSI Max. continuous pressure

Machine Weights:

Main Frame Assembly only (approximately) - 1000 lbs.

-with Infeed Conveyor (approximately) - 1150 lbs.

-Plus Dump Rack & Table w/ Extensions - 1450 lbs.

Cycle Speed:

4 Cases per minute

Dimensions:

Length (Left to Right):

-Main frame only - 3'4"

-w/ Infeed Conveyor - 13'4"

-w/ Dump table & extensions - 14'10"

Height: 72"

Depth (Front to Back):

-Main frame only - 5'4"

-w/ Infeed Conveyor - 5'4"

-w/ Dump table & extensions - 7'4"

1.4 - Installation Requirements: Electrical

To assure a correct, safe, and timely installation, the following electrical service must be provided along with sufficient installation time. (A minimum Service Access Clearance of 18" must be maintained around all equipment.)

A 120VAC single phase, 30 amp circuit must be "hard wired" (conforming to local codes) directly to the Case Cutter control panel. Furthermore, a safety switch of the same capacity must be provided outside the equipment. This must be a dedicated circuit - do not connect any other electrical devices to this circuit.

“M” TYPE 12M CASE CUTTER

1.0 - Introduction to this Manual (cont'd)

1.5 - Installation

The Meyercord Company recommends that the customer **DOES NOT** uncrate the machine or any of its components until they are near the installation location.

Uncrating:

- a. Remove all plastic wrap.
- b. Remove the machine banding straps.
- c. Using a fork lift, remove the machine off the skid.
- d. Locate the machine in its permanent location.
- e. Level the machine by adjusting the feet.

Electrical connections:

Connect the main power wiring (115 VAC, 60 Hz., single phase) 30 amps to the main enclosure. The power cable should be a minimum of 10 gauge, two wires, plus ground. Consult local electrical codes.

Caution: Incorrect voltage will cause severe damage to the equipment. For the protection of the operation personnel, the equipment must be electrically grounded.

A Meyercord company field service representative should be present at the time of installation. The service representative will supervise the machine start-up procedure.

1.6 - Safety First

Before operating this equipment, become familiar with the controls and know how to operate the equipment properly.

1. Disconnect electrical power and air source before performing any troubleshooting and / or maintenance on the machine. Make absolutely sure all belts and moving parts have stopped.
2. Improper voltage will cause serious damage to the electrical components of the machine.
3. Regular cleaning of the machine will insure proper operation.
4. Do not scrape the machine with any sharp tools.
5. Do not remove any safety guarding or override the safety interlocks. They are required for operator safety.
6. Do not open the cutter control panel. This should only be serviced by a Meyercord company field service representative.
7. Do not allow untrained or unauthorized individuals to operate equipment.

“M” TYPE 12M CASE CUTTER

2.0 - Machine Description

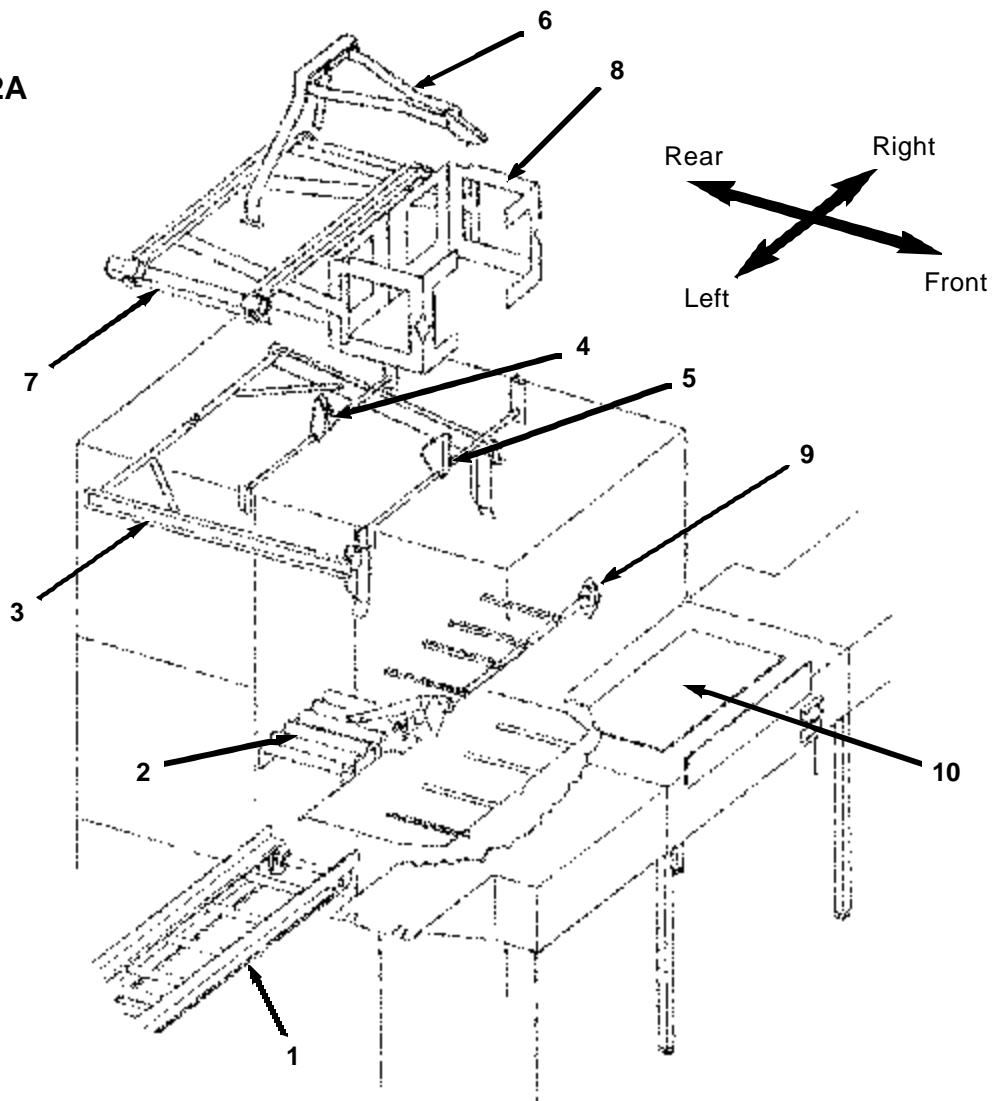
The Meyercord In-Line Case Cutter Machine consists, essentially, of a main frame supporting all elements of an electrical system, a pneumatic system, and all functioning mechanical components necessary to automatically handle the corrugated cardboard cases from its in-feed conveyor, through cutting the cases in half, to depositing the inverted case halves onto its dump table.

2.1 - Mechanical Components

1. **Infeed Conveyor-** Carries the corrugated case into the machine and onto the elevator.
2. **Elevator-** Lifts the case through the centering arms, between the front and rear knife blades and into the opening basket. Also lowers the cut case onto the dump rack.
3. **Centering Arms-** Aligns the case to ensure exact center-of-case cutting.
4. **Single Blade Holder-** Under spring tension, presses the rear knife blade into the case as it is lifted by the elevator.
5. **Double Blade Holder-** Under spring tension, presses the front knife blade into the case as it is lifted by the elevator; and then, when cammed by the elevator table, pivots to press the bottom knife blade into the bottom of the case as it is thrust forward by the carriage.
6. **Top Knife Assy.-** Lowers the top knife to cut the top of the case as it is thrust forward by the carriage; lifts the top knife while the carriage pulls the opened basket to the rear.
7. **Carriage-** Carries the opening basket, with case, forward between the top and bottom knife blades; returns opening basket, after it's deposited the opened case onto the elevator table, to its position over the elevator.

8. **Opening Basket-** Opens the case and deposits both halves onto the elevator table.
9. **Dump Rack-** As the elevator table descends, case halves are held and tipped over onto the dump table.
10. **Dump Table-** Receives the case halves and permits the operator to manually remove case halves and feed cigarette cartons onto the line conveyor. It also triggers the pneumatic system to automatically cycle another case into and through the cutter once case halves are removed from the table.

Fig. 2A



“M” TYPE 12M CASE CUTTER

2.0 - Machine Description (cont'd)

2.2 - Pneumatic Components

Air Compressor- Introduces air under pressure into receiver tank.

Receiver Tank- Supplies pneumatic control and operating systems with air.

Manually Actuated On/Off Control Valves (4) -
Permit operator control of air from receiver tank into pneumatic control and operating systems.

Logic Valves (5) - Receive input signals (pneumatic pressure) from control valves located throughout the system, then logically directs receiver tank output air to function mechanical component operating valves and cylinders.

Automatically Actuated Control Valves (9)-

Receive physical contact from mechanical component movement, then transmit pneumatic pressure as signals to cause a mechanical action to be stopped, or, to be started.

Air Cylinders (6)- Drive mechanical components.

Operating Valves (5)- Transmit pneumatic pressure to actuate air cylinders, or, in one instance, an electric switch, which causes mechanical components to function, or, to stop functioning.

Miscellaneous- Manifolds, fittings, connectors, tubing, etc., interconnects pneumatic components.

2.3 - Electrical Components

Manually Actuated On/Off Switch - Turn on compressor and conveyor motors.

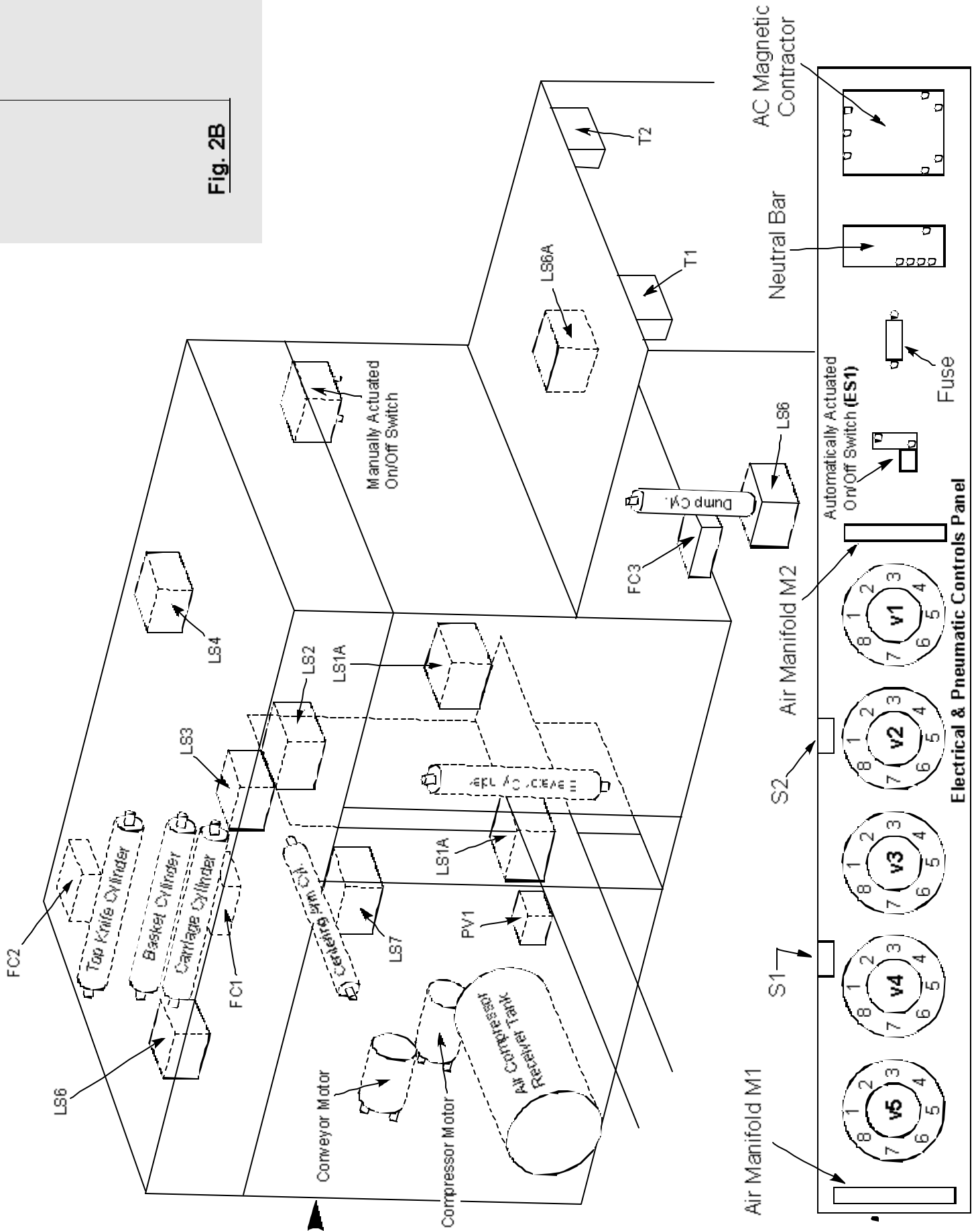
Compressor Motor- Drives the machine's air compressor.

Conveyor Motor- Drives the machine's in-feed conveyor.

Automatically Actuated On/Off Switch-
Interrupts conveyor electrical motor operation to control case infeed during pneumatic system activity.

Miscellaneous- Fuse, Neutral bar, Magnetic contractor, etc., interconnects electrical components.

Fig. 2B

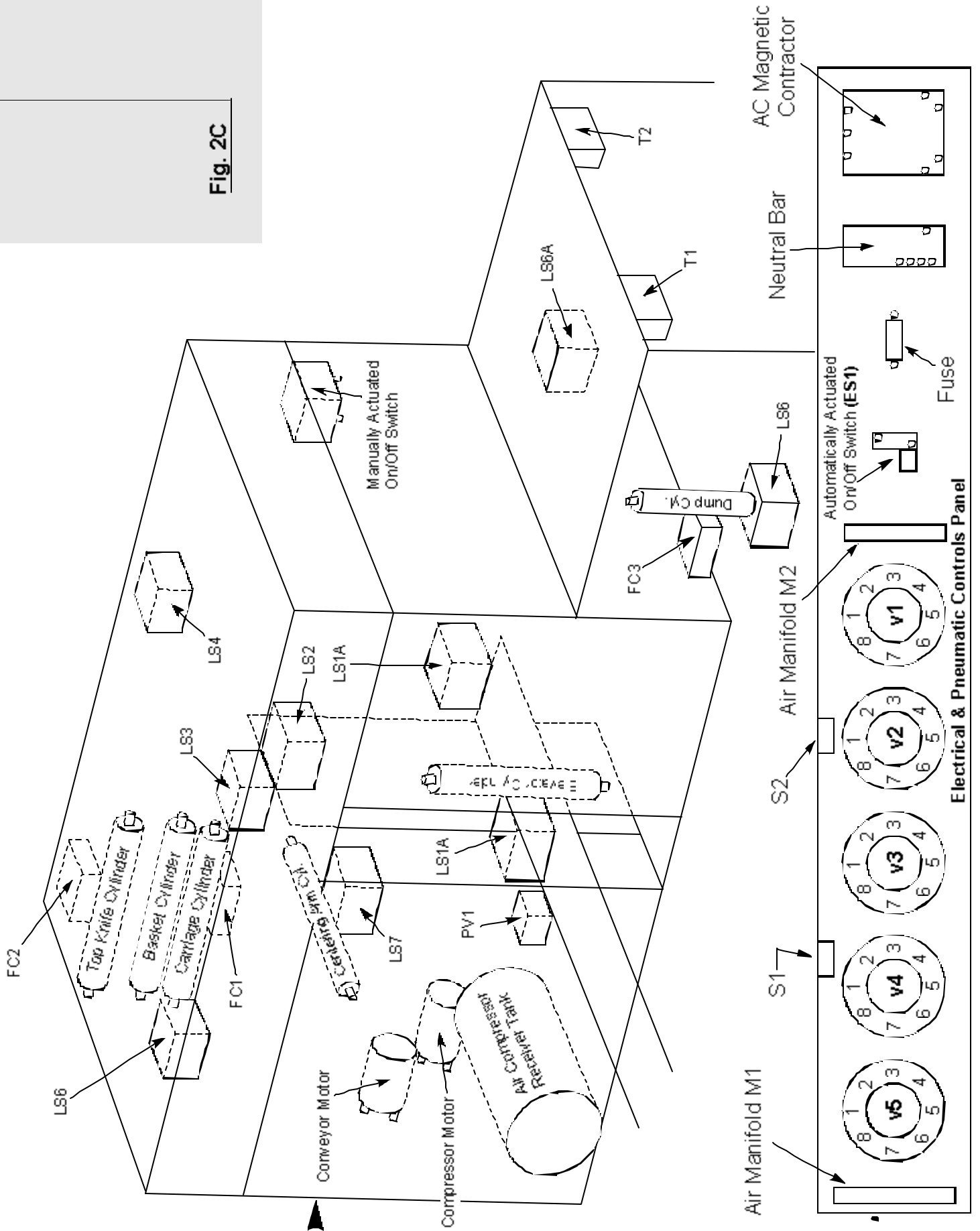


“M” TYPE 12M CASE CUTTER

2.4 - Pneumatic System Valves

Compressor / Air Receiver Tank	Provides air to valves T1, T2, & P.V1.	FC1	Operating (Flow Control) Valve (Actuated by valve V3 air)	Regulates rate of flow to carriage cylinder.
T1 & S1 On/Off Manual Control Valves (Operator Actuated)	Introduces operating air to valves V1, V3, V4, V5, LS7.	LS3	Automatic Control Valve (Actuated by physical contact w/ carriage)	Stops carriage cylinder thru valves V4 & V3 - also actuates basket cylinder to thrust forward opening basket, thru valve V4 - also actuates top knife cylinder to thrust forward, raising knife thru valve V4.
T2 & S2 On/Off Manual Control Valve (Operator Actuated)	Introduces operating air to valves V2, LS2, LS3, LS4, LS5, LS6.	FC2	Operating (Flow Control) Valve (Actuated by valve V4 air)	Regulates rate of flow to top knife cylinder.
M1 Air Manifold #1	Provides external pneumatic tubing access into controls panel at rear of cutter.	LS4	Automatic Control Valve (Actuated by physical contact w/ basket)	Actuates elevator cylinder to lower out case thru valves V3, V1 & P.V1.
M2 Air Manifold #2	Provides external pneumatic tubing access into Controls Panel at rear of cutter.	LS5	Automatic Control Valve (Actuated by physical contact w/ carriage)	Actuates opening basket cylinder, to retract and close basket, thru valve V4 - actuates carriage cylinder, to retract carriage, thru valves V4 & V3 - also allows top knife cylinder to lower knife, thru valve V4.
LS1A Automatic Control Valve (Actuated by physical contact w/ elevator)	Signals that elevator is in down position to valve V2 & V1 so cutter infeed conveyor motor is turned on thru valve V1 & ES1 electrical switch pneumatic actuator.	LS6	Automatic Control Valve (Actuated by physical contact w/ case halves)	Actuates dump rack cylinder, causing rack to rotate out case over onto dump table.
LS6A Automatic Control Valve (Actuated by physical contact w/ case)	Signals that dump table is cleared of case halves to valves V2 & V1 so cutter infeed conveyor motor is turned on thru valve V1 & ES1 electrical switch pneumatic actuator.	V1	Logic Valve	Responds to valves LS1, LS1A, V5 & V3 - actuates valves ES1 & P.V1.
LS1 Automatic Control Valve (Actuated by physical contact w/ case)	Turns conveyor motor off thru valve V1 & ES1 switch - also causes elevator cylinder, rack cylinder, thru valves V1, V5 & FC3, to go down.	V2	Logic Valve	Responds to valves LS1A & LS6A - actuates valve V1. (Prevents elevator & infeed conveyor from operating when dump rack and dump table are loaded)
ES1 Operating Valve (Actuated by valve V1 air)	Stops / starts conveyor motor so only one case processes thru the cutter at a time.	V3	Logic Valve	Responds to valves LS2, V1 & LS4 - actuates carriage cylinder.
P.V1 Operating Valve (Actuated by valve V1 air)	Actuates elevator cylinder.	V4	Logic Valve	Responds to valves LS3 & LS5 - actuates basket cylinder.
FC3 Operating (Flow Control) Valve (Actuated by valve V5 air)	Regulates flow to dump rack cylinder.	V5	Logic Valve	Responds to valves V1 & LS6 - actuates dump rack cylinder.
LS7 Automatic Control Valve (Actuated by physical contact w/ case)	Actuates centering arms cylinder to open arms.			
LS2 Automatic Control Valve (Actuated by physical contact w/ elevator)	Stops elevator cylinder lift thru valves V3, V1 & P.V1 - also actuates carriage cylinder thru valves V3 & FC1 to drive carriage forward.			

Fig. 2C



“M” TYPE 12M CASE CUTTER

3.0 - Theory of Operation

3.1 - Pre-Automated Operation Information

All valves and cylinders referred to in the following procedures are to be assumed to be pneumatic. Electrical components will be identified as such. See **Fig. 3B, pg 19** for visual support.

With the case cutter free of cases, other than any on the infeed conveyor, and the manual ON/OFF electrical switch and pneumatic ON/OFF valves turned on, the case cutter's fully automated operation cycles as follows.

3.2 - Automated Machine Functions

A. Case feeds into the cutter

The electric-motor-driven infeed conveyor carries a cigarette case onto the elevator. The case physically contacts control valve LS1, causing it to open.

B. Infeed conveyor stops / Elevator starts case upward / Dump Rack lowers into case receiving position

Air pressure introduced from logic valve v1, and passing through LS1, flows back through v1 to a pneumatic actuator on electrical switch ES1, automatically turning off the infeed conveyor motor, stopping input of cigarette cases. Also, the air pressure, relayed back through v1, functions operating valve PV1, activating the elevator cylinder. This lifts the elevator carrying the cigarette case up. Logic valve v5 also received an air pressure input signal from v1 and relayed air thru flow control valve FC3, activating the dump rack cylinder. It rotated the dump rack into position to accept the two halves of an open case.

C. Case is centered for cutting

The case, while being lifted by the elevator, physically engages control valve LS7. This releases the centering arms cylinder, allowing spring tension to draw the arms together, aligning the case so that it can be cut precisely in half.

D. Case is cut on front and rear sides

Continuing up, the case completely passes between front and rear knife blades. These are mounted in holders on spring tensioned shafts, assuring that the blades are firmly pulled into the case for a full-depth cut, top to bottom, on both front and rear sides. With the elevator up and the case no longer in contact with control valve LS7, the cylinder activates, opening the centering arms.

E. Elevator stops & Bottom knife is positioned

Control valve LS2, having been physically engaged by the elevator, signals that the elevator is in its full “up” position, through logic valve v3, to logic valve v1. v1 actuates operating valve PV1, stopping the elevator cylinder from extending further.

The bottom knife blade, secured in a double blade holder with the front knife blade, is also brought into its cutting position after the front blade has completed its cut. As the elevator is reaching its full “up” position, an actuating roller, secured to the elevator table, cams the double blade holder rearward. Incidentally, the top knife cylinder is in its retracted position, holding the top knife down in its cutting position.

F. Carriage drives case, in opening basket, to front of cutter

The carriage cylinder, also activated by the signal from control valve LS2 and relayed through logic valve v3, drives the carriage forward. It, of course, thrusts the case, now held securely centered by the opening basket halves, between the top and bottom knife blades.

G. Case is cut on top and bottom / Carriage travel is stopped

Being passed between knife blades, with the case firmly held down by spring pressure from the top knife pivot cylinder, causes the case to be cut full depth, front to back, on both the top and bottom sides.

The carriage forward travel causes it to physically contact control valve LS3.

“M” TYPE 12M CASE CUTTER

3.0 - Theory of Operation (cont'd)

H. Case is opened and left on elevator table / Top knife is raised / Elevator starts down

Logic valve v4 activates the opening basket cylinder. The cylinder, having travelled forward with the carriage, thrusts against the basket center hinge, which joins the opening basket halves. Since the basket halves are anchored, at their outer rear corners to the now stopped carriage, the cylinder's center thrust causes the basket halves to swing open. This fully separates the cigarette case into two halves, leaving them on the elevator table with the cigarette carton ends fully exposed and facing the front of the machine.

Logic valve v4 also supplies pressure to top knife cylinder through flow control valve FC2, causing the top knife cylinder to extend lifting the blade from its cutting position.

The basket, fully opened, also struck control valve LS4, signaling logic valves v3 and v1, causing operating valve PV1 to lower the elevator.

I. Carriage retracts & basket closes / Top knife returns to cutting position

As the elevator starts down, control valve LS2 relays a signal through logic valve v3 to the carriage cylinder flow control valve FC1, and the carriage retracts, striking control valve LS5. LS5 stops the carriage and relays a signal to logic valve v4.

Logic valve v4 activates the opening basket cylinder, closing the basket. v4 also signals operating valve FC2, actuating the top knife cylinder, bringing the knife down into cutting position.

J. Elevator down travel returns front knife to cutting position & lowers case halves onto dump rack

Elevator down travel released the double blade holder from its bottom cutting position. This allowed the spring tensioned double blade holder shaft to rotate the front knife into cutting position.

As slots in the elevator table allow it to lower through the dump rack, the cigarette case halves are automatically transferred to the dump rack.

The weight of the case causes the dump rack to depress control valve LS6, actuating the dump cylinder through flow control valve FC3. LS6 also signals, through logic valve v2, to control valve LS1A that the elevator is down. LS1A also signals to logic valve v1 that the elevator is ready to accept conveyor input of another case, providing the dump table has no load.

K. Dump rack inverts case halves onto dump table / Operator manually clears table / Case cutter automatically cycles another case

Activating the dump cylinder causes it to lift. This rotates the dump rack up, depositing the case halves, open side down, onto the dump table. The weight depresses control valve LS6A

At this point, the operator removes the case halves and cigarette cartons from the dump table.

Control valve LS6A signals, through logic valve v5 to dump rack cylinder flow control valve FC3, to return the dump rack to its case receiving position. This also frees control valve LS6 and, through logic valve v2 and control valve LS1A, signals to logic valve v1 that the dump rack is ready to accept another case from the conveyor.

“M” TYPE 12M CASE CUTTER

3.0 - Theory of Operation

3.3 - Pneumatic System

The arrows show the direction of the air flow, in or out, of each pneumatic component. **Words** (i.e., Basket Cyl.) and **System components** (i.e., LS1) at the end of each arrow indicate where the air flow is coming from, or going to.

3.4 - Electrical System

Words at the unconnected end of each electrical lead indicate where that end should be connected.

3.5 - Logic Valves (on Control Panel)

Each logic valve has 8 ports. A reference to a logic valve will also indicate one of its ports (i.e., valve v1 port 6 is indicated as v1/6). The chart below details where the arrows are coming from, or going to, in the diagram on the facing page.

v1	v3	v5
v1/1 - S1	v3/1 - S1	v5/3 - S1
v1/2 - PV1	v3/2 - Carriage Cyl.	v5/4 - v1/4
v1/4 - v5/4 & LS1	v3/4 - LS2	v5/6 - LS6A
v1/5 - LS1 & LS1A	v3/6 - LS4	v5/8 - Dump Rack Cyl. & FC3
v1/6 - LS4	v3/8 - Carriage Cyl. & FC1	
v1/8 - ES1		
v2	v4	S1
v2/3 - S2	v4/1 - S1	In: T1
v2/4 - LS6	v4/2 - FC2, Top Knife Cyl. & Basket Cyl.	Out: v1/1, v3/1, v4/1, v5/3, LS7
v2/8 - LS1A	v4/4 - LS2	
	v4/6 - LS5	S2
	v4/8 - Basket Cylinder	In: T2
		Out: v2/3, LS2, LS3, LS4, LS5, LS6

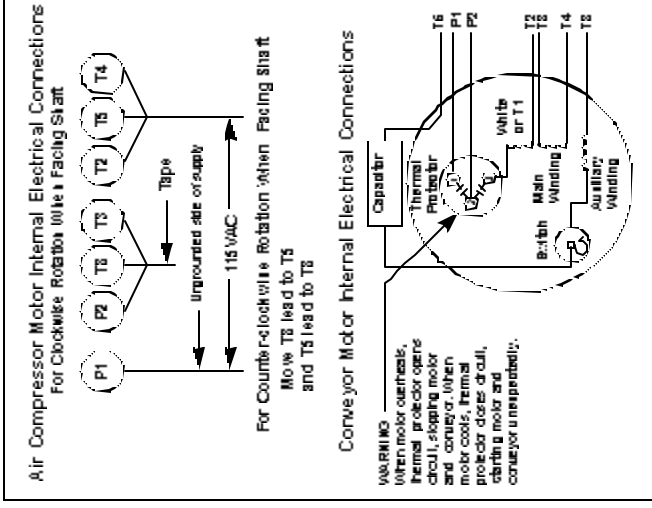


Fig. 3A

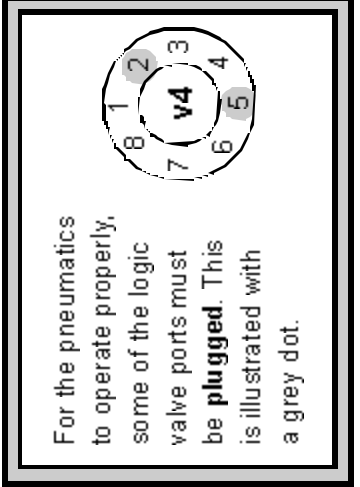
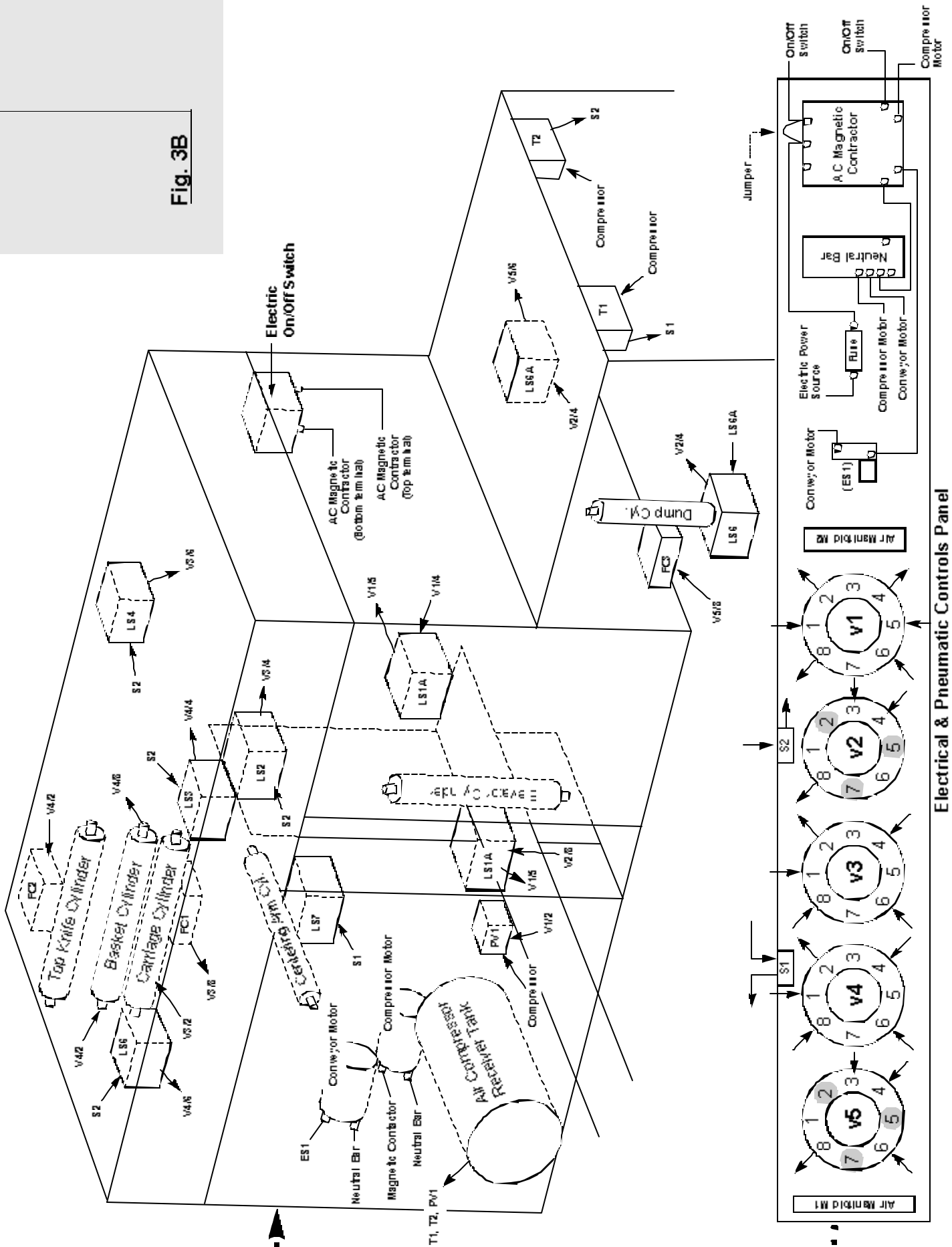


Fig. 3B



Electrical & Pneumatic Controls Panel

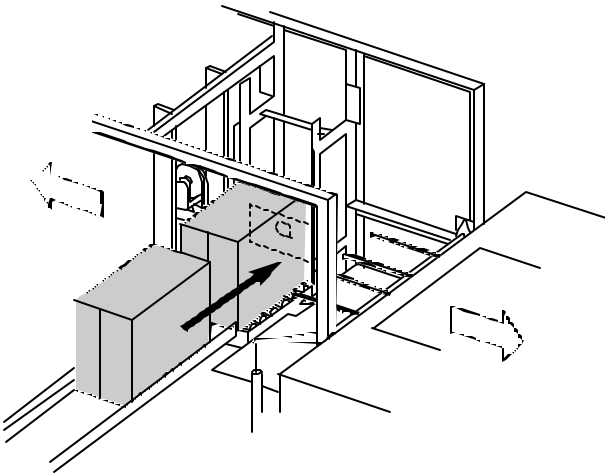
“M” TYPE 12M CASE CUTTER

4.0 - Machine Operation

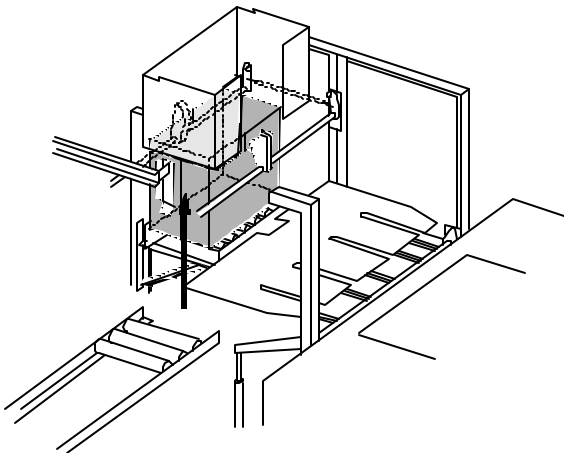
4.1 - Description of Operation

This machine is designed to automatically in-feed (from either the right or left side, depending on conveyor setup selection) 12M sized corrugated cardboard cases, each containing 60 cartons of cigarettes. It will then precisely center each case and cut all four sides and deposit each case, now separated into two halves and inverted, onto the machine's dump table.

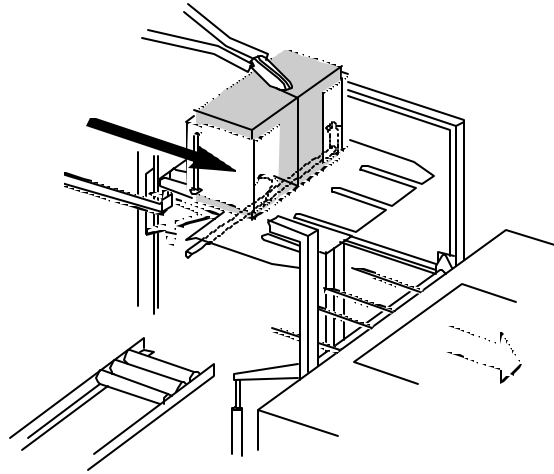
At this point, the operator must lift the case halves off the cigarette cartons and manually disperse them onto the stamp line's infeed conveyor (either to the left, to the right, or both, depending on the stamp line configuration).



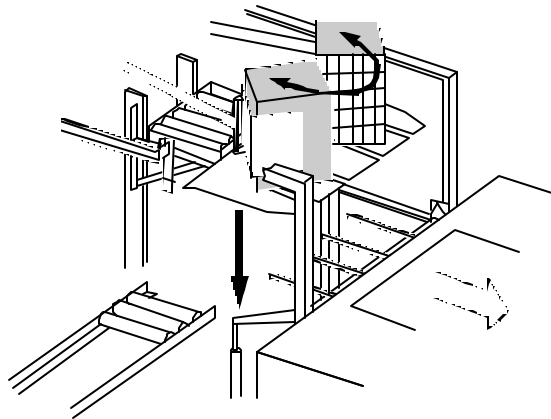
The case is automatically conveyed onto the elevator.



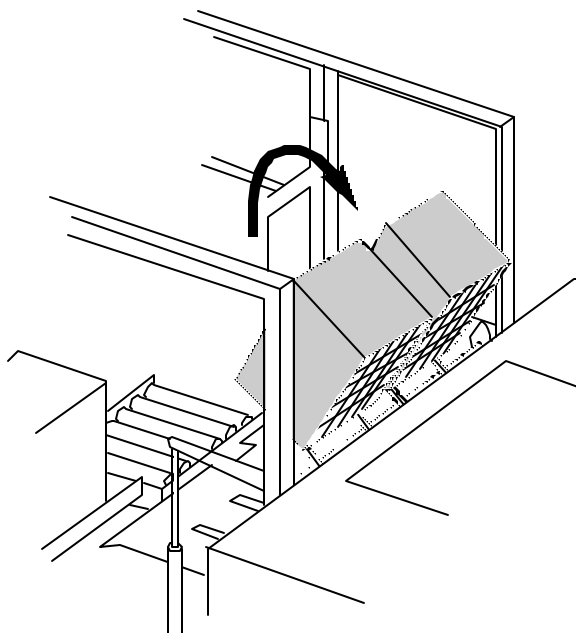
The case is then centered and cut, front and back, while being elevated.



While still in the opening basket, the case is cut, top and bottom, as it is pushed onto the elevator table.



The case, now on the elevator table, is being split open. It will then be lowered onto the dump rack.



The case, now on the dump rack, is being inverted onto the dump table, ready for the operator to remove it and begin the next cycle.

“M” TYPE 12M CASE CUTTER

4.0 - Machine Operation

4.2 - Safety Precautions

Warning: Observe all common safety precautions normally practiced while working on, or around, any operating machinery. In addition, the following specific safety procedures must be followed.

A. Before start-up

1. **Work area-** Clear of all clutter; floor dry
2. **Cutter-** Clear of all cases; any and all miscellaneous items
3. **Panels, Guards & Covers-** All properly secured in proper position
4. **Conveyor-** Free of any and all items, including cases. All personnel standing clear of conveyor
5. **Dump Table-** Free of any and all miscellaneous items, including cases, cartons, or packs of cigarettes

B. During start-up

1. **Personnel-** not engaged in cutter operation stays clear of cutter; particularly conveyor
2. **Pneumatic Pressure-** Stabilized between 85psi and 100psi for continuous cutter operation

C. During Operation

1. **Conveyor-** Can stop or start operating **UNEXPECTEDLY** during normal operation. **NEVER** stand on, lean on, or place miscellaneous items on conveyor while manually actuated ON/OFF electric switch and manually actuated ON/OFF pneumatic control valves are turned **ON**, even though conveyor is **NOT** infeeding just then.

2. **Case Jammed In Cutter- DO NOT** attempt to remove a jammed case from **any** area of the cutter until the manually actuated ON/OFF pneumatic control valves and the manually actuated ON/OFF electric switch have been turned **OFF** and air pressure (**See Sec. 4.4F, pg 27**) is bled from machine's pneumatic system.

Note: Before restart of cutter, all mechanical components have to be in the position they would have been in (**See Sec. 4.4F, pg 27**) had the case carried through a complete machine cycle.

D. During Maintenance, Adjustments, & Repairs

1. **Electrical System-** Turned off at manually actuated ON/OFF switch
2. **Pneumatics System-** Turned off at manually actuated ON/OFF, pneumatic control valves and air bled (**See Sec. 4.4F, pg 27**) from system
3. **Panels, Guards, & Covers-** Removed from machine for access to cutter operating components, must be placed well away from cutter, preferably against a wall, and well supported

Should any maintenance, adjustment, or repair procedures require that panels, guards, or covers be off during an operating cycle, all personnel **MUST** stay well away from the machine while components are in motion. All cutter functions can then be observed from a safe distance.

Determine what work needs to be done, shut down the cutter using steps **1** and **2** above, and continue. Always securely reinstall all panels, guards, and covers when maintenance, adjustment and repair procedures are completed and before the machine is placed back into operation.

“M” TYPE 12M CASE CUTTER

4.0 - Machine Operation (cont'd)

4.3 - Pre-Operation Procedures

A. Lubrication

1. Observe all safety precautions (See Sec. 4.2, pg 22)
2. Check daily lubrication requirements (See Sec. 6.13, pg 38)
3. Lubricate

B. Inspection

1. Observe all safety precautions (See Sec. 4.2, pg 22)
2. Inspect all belts. Check tension and wear. Adjust and replace if necessary.
3. Check all attaching hardware (bolts, nuts, etc). Tighten and replace if necessary.
4. Check all pneumatic cylinder clevis connections. Resecure.
5. Check all pneumatic tubing connections. Resecure.
6. Check centering arm pivots. Replace if necessary.
7. Check opening basket lever pivots. Replace if necessary.
8. Check basket opening lever and carriage rollers. Replace if necessary.
9. Inspect all knife blades. Adjust and replace if necessary.

Note: Dispose of old blades in a closeable metal container (empty tin can with removable top) or by taping the sharp edge of the blades.

10. Inspect elevator roller chain. Adjust and replace if necessary.
11. Check that the 20 ft “Blow-off” air hose and blow off gun are installed.

C. Adjustments

1. Observe all safety precautions (**See Sec. 4.2, pg 22**).
2. Check all pneumatic control valves for vent hole clearance.
3. Adjust or replace pneumatic control valve roller levers.
4. Adjust pneumatic actuating cylinder air flow (**See Sec. 5.6, pg 32**).

D. Cleaning

Note: Cut paper (corrugated cardboard cases) dusts extensively.

1. Clean entire machine frequently with a soft-bristled brush to keep electric motors clean and joints of all moving components from packing up. Careful use of the compressor's air blow gun can expedite cleaning. Eye protection should always be used.
2. Remove any excess, spilled, or dripped oil or grease from cutter and adjacent area.

E. Mechanical Component Locations Check

1. Elevator should be down, in line with conveyor.
2. Centering arms should be open. (In the closed position, the distance between arms should measure 21 1/8".)
3. Blade holder shafts, under spring tension, should have front and rear knife blades tipped into elevator area, in cutting positions.
4. Carriage should be to the rear of the machine.
5. Opening basket should be closed, surrounding area above elevator.
6. Top knife pivot should have top knife blade down, in cutting position.
7. Dump rack should be in raised position, as when inverting case halves onto the dump table.
8. Dump table top should be hinged up slightly to clear the pneumatic control valve under it.

“M” TYPE 12M CASE CUTTER

4.0 - Machine Operation (cont'd)

4.4 - Operating the Case Cutter (See Fig. 4A, pg 28)

A. Operating Safety Procedures (See Sec. 4.2, pg 22)

B. Electrical System Operation

1. Turn manually operated ON/OFF electrical switch “on”.
2. Close air tank petcock. Compressor will fill air receiver tank until a maximum operating pressure of 100 psi is reached, then vent the air until the tank pressure drops below 85 psi.

Note: Compressor operation is automatic; an unloader and check valve causes the tank to fill and / or vent air.

3. During initial startup and then periodically, check pressure gauge on air receiver tank to be sure operating psi (60 psi) is being maintained, but particularly so it is not being exceeded.

Note: If readings are above or below specified psi, immediately turn electrical switch “off” and correct any problems. (See Sec. 5.2, pg 31)

C. Pneumatic System Operation

1. Close air receiver tank drain petcock.
2. With air pressure in operating psi range, open the guard door to the control panel at the rear of the cutter. Turn both manually operated ON/OFF pneumatic control valves “on” (S1 & S2). Close door.
3. At the front of the dump table, turn “on” manually operated ON/OFF pneumatic control valve (T1).

Note: This permits all actuating cylinders, necessary to be initially charged for operation, to pressurize.

D. Loading Conveyor

Note: At this point, conveyor is not, and should never be, operating when cases are being loaded.

Place no more than four cases, at one time, on conveyor. Space the cases along length of conveyor. It is critical that cases are placed with the “SEAM” of case DOWN on, and paralleling the back edge of the conveyor. (See Fig. 2A, pg 9)

E. Starting and Maintaining Automatic Operation

At front of dump table, turn “on” manually operated ON/OFF pneumatic control valve (T2).

Note: Cutter operation, from in-feeding of cases through depositing case halves on dump table, is continuous so long as:

1. Operator, while infeed conveyor is stopped during each cutter cycle, correctly loads cases (**See 4.4D, pg 26**) on conveyor and;
2. Immediately clears dump table of case halves and cigarette cartons after each cutter cycle.

Periodically, during cutter operation, air pressure gauge should be observed, ascertaining that automatic compressor operation is maintaining correct pressure in air receiver tank.

F. Normal Stop Procedures

1. At front of dump table, turn “off” manually operated ON/OFF pneumatic control valve (T2). This stops cases from infeeding.
2. After the cutter completes its final cycle, turn “off” manually operated ON/OFF pneumatic control valve (T1) at the front of the dump table. This stops air pressure input to the rest of the pneumatic components.
3. Turn manually operated ON/OFF electrical switch “off”.
4. Turn both manually operated ON/OFF pneumatic control valves “off” (S1 & S2) on the control panel at the rear of the cutter.
5. After shutdown, open the air receiver tank drain petcock.

G. Emergency Stop Procedures

Turn “off” manually operated ON/OFF electrical switch and pneumatic control valves T1 and T2.

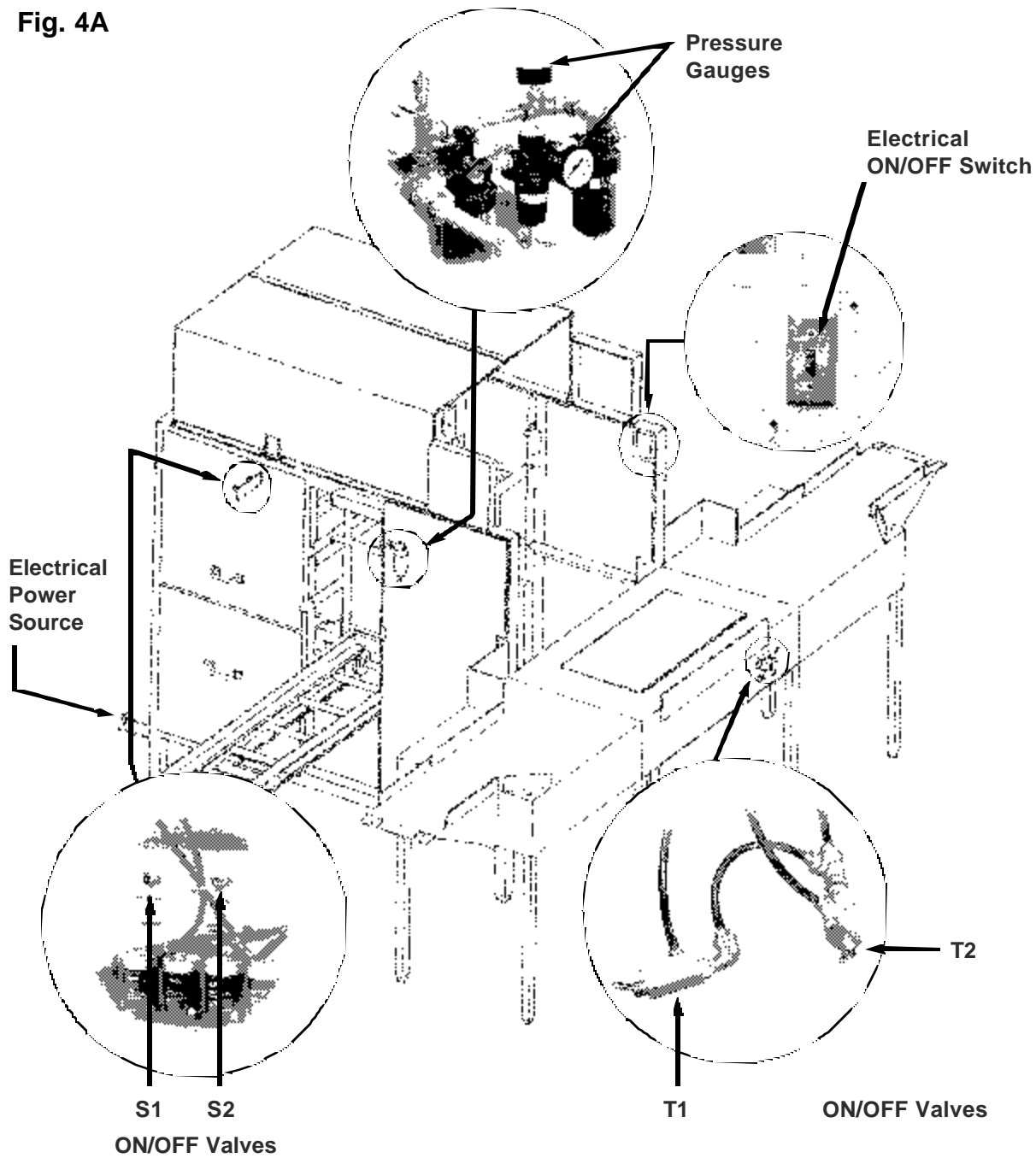
H. Clean Up

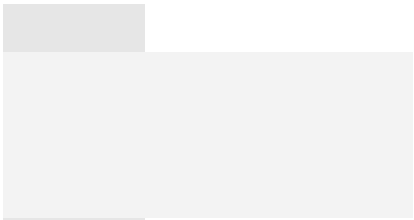
Never leave the cutter area and cutter machine dirty, cluttered, surrounded with debris, etc. (**See Sec. 4.3D, pg 24**)

“M” TYPE 12M CASE CUTTER

4.0 - Machine Operation (cont'd)

Fig. 4A





“M” TYPE 12M CASE CUTTER

5.0 - Troubleshooting

Warning: Observe all Operating Safety Procedures while troubleshooting the machine (See Sec. 4.2, pg 22).

The following table has been prepared to assist the cutter operator in understanding why it is not functioning properly, what various causes of a special malfunction could be, and how to cure those specific malfunctions.

Note: A number of purely mechanical functions are cited in the Troubleshooting Section. Specific maintenance or repair instructions are not included in **Sec. 6.0, pg 34** for those functions. Competent, trained, industrial equipment mechanics should be able to carry out those functions from the remedies cited in this section without further instructions.

5.1 - Cutter Electrical Malfunctions

A. Neither compressor or conveyor motor starts when manually operated ON/OFF electrical switch is turned “on”

- Power source is not supplying main disconnect. Contact building maintenance to ascertain power availability.
- Fuse in control panel is blown. Visually examine fuse, replace if necessary. **(See Sec. 6.1, pg 34)**
- Manually operated ON/OFF electrical switch malfunctioning. Test switch and replace if necessary. **(See Sec. 6.2, pg 34)**
- Magnetic contactor in control panel is malfunctioning. Visually examine fuse, replace if necessary. **(See Sec. 6.3, pg 34)**
- Loose wiring connections at the switch, in the control panel, or at the motors. Tighten all connections.
- Motors may be defective and need to be replaced. **(See Sec. 6.4, pg 35)**

B. Conveyor motor fails to start when manually operated ON/OFF electrical switch is turned on, but compressor motor runs.

- If elevator is not fully down, contacting valve LS1A, and dump table is not cleared, relieving valve LS6A, motor cannot run. Clear cases from the dump table and make sure the elevator is contacting LS1A. Adjust the valve actuator as necessary.
- Pneumatic actuator and/or electrical switch ES1 is malfunctioning. Check actuator and automatically operated electrical switch LS1 and replace if necessary. **(See Sec. 6.5, pg 35)**
- Electrical system is malfunctioning. **(See Sec. 5.1A, above)**
- Pneumatic system is malfunctioning. **(See Sec. 5.2, pg 31)**

5.2 - Cutter Pneumatic Malfunctions

A. No pressure in system or pressure too low.

- Compressor belt loose. Check and tighten if necessary.
- Compressor motor not operating. **(See Sec. 5.1A, pg 30)**
- Compressor malfunctioning. Check, repair or replace as necessary. **(See Sec. 6.6, pg 35)**
- Compressor output controls out of adjustment or malfunctioning. Adjust and replace if necessary. **(See Sec. 6.7, pg 35)**
- Valves FC1, FC2, or FC3 improperly adjusted. Turn valve's flow control knob clockwise to decrease air flow, counter-clockwise to increase air flow.

B. Water seepage at tubing / valve connections.

- Moisture in pneumatic system. Drain at petcock located under the receiver tank. Close the petcock after draining.

C. Pneumatic components are not functioning properly or not at all.

- Operator actuated ON/OFF valves are turned "off". **(See Sec. 4.4, pg 26)**
- One or more valves, pertinent to faulty mechanism or improperly mounted. Check mounting and secure as necessary.
- Mechanical actuators for valves, pertinent to faulty mechanism, loose, bent, or broken. Check each actuator and adjust, secure, repair, or replace as necessary. **(See Sec. 6.8, pg 35)**
- One or more operating, control, and/or logic valves, pertinent to faulty mechanism, leaking or malfunctioning. Check suspect valves and repair or replace as necessary. **(See Sec. 6.9, pg 35)**
- One or more tubes pertinent to faulty mechanism, leaking. Check tubes from pertinent operating and/or control valves to logic valves in the control panel. Tighten or replace tubes as necessary. **(See Sec. 6.10, pg 36)**

“M” TYPE 12M CASE CUTTER

5.0 - Troubleshooting (cont'd)

5.3 - Case Enters Elevator - Elevator Fails To Go Up

- Pneumatic system, pertinent to the elevator, may be malfunctioning. (See Sec. 5.2, pg 31)
- Elevator cylinder malfunctions. Check for air leaking out around shaft and for bent or binding shaft. Replace. (See Sec. 6.11, pg 36)
- Broken elevator chain links and / or points of attachment. Check the chain links and attachments at the anchor plate and on the elevator. Repair or replace as necessary.
- Chain and sprocket misaligned. Check and adjust if necessary.
- Elevator bearings binding. Check bearings and guide rail. Align, repair or replace as necessary.

5.4 - Elevator Goes Up - Centering Arms Fail To Center Case

- Pneumatic system, pertinent to centering arms, may be malfunctioning. (See Sec. 5.2, pg 31)
- Mechanical trigger fails to activate cylinder. Adjust Trigger
- Cylinder mounting faulty. Reattach cylinder.
- Cylinder malfunctions. Check for air leaking out around shaft and for bent or binding shaft. Replace if necessary. (See Sec. 6.11, pg 36)
- Centering arms binding on pivots. Free and lube arms.
- Chain and spring broken or detached. Reattach or replace chain and spring.

5.5 - Pivot Assembly Fails To Raise And / Or Lower Top Knife Properly

- Pneumatic system, pertinent to the top knife pivot, may be malfunctioning. (See Sec. 5.2, pg 31)
- Bridge, pivot, cylinder, or blade holder loose or detached. Reattach.
- Cylinder is malfunctioning. Check for air leaking out around shaft and for bent or binding shaft. Replace if necessary. (See Sec. 6.11, pg 36)
- There is binding at the pivot points. Free and lube the pivot.

5.6 - Elevator Goes Up - Carriage Fails To Advance

- Pneumatic system, pertinent to the carriage, may be malfunctioning. (See Sec. 5.2, pg 31)
- Cylinder is malfunctioning. Check for air leaking out around shaft and for bent or binding shaft. Replace if necessary. (See Sec. 6.11, pg 36)
- Cylinder mounting bracket or frame bent or loose, attachment to carriage loose. Reattach cylinder and/or mountings.
- Carriage rollers have seized and need replacement.
- Carriage rails out of position, bent, or twisted. Adjust and/or replace.
- Carriage is bent or twisted and needs to be replaced.
- Carriage or opening basket is jammed against the frame or other obstruction. Clear obstruction and resume operation.

5.7 - Carriage Runs Forward - Opening Basket Fails To Open

- Pneumatic system, pertinent to opening basket, may be malfunctioning. **(See Sec. 5.2, pg 31)**
- Cylinder malfunctions. Check for air leaking out around shaft and for bent or binding shaft. Replace if necessary. **(See Sec. 6.11, pg 36)**
- Cylinder mounting bracket on carriage damaged; cylinder disconnected from basket hinge pin connector. Replace the cylinder bracket; thread cylinder rod into connector.
- Basket movement is obstructed.
- Basket actuating levers are bent, broken, or obstructed. Straighten or replace as necessary.
- Basket hinge, pins, bushings or bearings have seized and need to be replaced.

5.8 - Elevator Does Not Drop Fully Or Not At All

- Pneumatic system, pertinent to the elevator, may be malfunctioning. **(See Sec. 5.2, pg 31)**
- Elevator or table is obstructed. Remove obstructions.

5.9 - Dump Rack Fails To Function

- Pneumatic system, pertinent to dump rack, may be malfunctioning. **(See Sec. 5.2, pg 31)**
- Dump table is loaded. Clear dump table hinged top.
- Cylinder malfunctions. Check for air leaking out around shaft and for bent or binding shaft. Replace if necessary. **(See Sec. 6.11, pg 36)**
- Bearings are binding. Adjust and/or replace bearings and mounts.
- Dump rack forks, arm are bent or broken. Replace the dump rack.
- Dump rack arm disconnected from cylinder. Reconnect.

5.10 - Case Cuts Are Ragged, Too Shallow, Or Too Deep

- **Ragged:**
 - Blade is dull. Reverse or replace.
- **Too Shallow:**
 - Blades need to be adjusted.
- **Too Deep:**
 - Blades need to be adjusted.
 - Dull the point of the blade with a whet stone or emery cloth.

“M” TYPE 12M CASE CUTTER

6.0 - Maintenance & Repair

A number of purely mechanical functions are cited in the **Troubleshooting Section (Sec. 5.0, pg 30)**. Specific maintenance or repair instructions for those functions are not included below. Competent, trained, industrial equipment mechanics should be able to carry out those functions without further instruction. However, if in doubt, contact Meyercord before attempting any maintenance or repair procedure.

Warning: NEVER attempt any maintenance or repair with electrical motors or compressor operating. All systems, electrical and pneumatic, must be turned off. Always purge air from the pneumatic system before attempting to clear a jam or perform any maintenance or repair procedure. Never attempt to clear a jam suppressing convey or, elevator, centering arms, top knife, carriage, opening basket, or dump rack movement while those components are under pneumatic pressure. Releasing the jam with components under pressure could cause dangerous, uncontrolled movement of the components.

6.1 - Electrical System Fuse

Warning: Be sure power source supplying current to the cutter is OFF before attempting any electrical repair or replacement.

- Any competent electrical technician can inspect, remove, and replace the electrical system's fuse.

6.2 - Electrical System On/Off Switch

- Testing, removal, and replacement of the electrical ON/OFF switch may be accomplished by a competent electrician familiar with ordinary commercial wiring.

6.3 - Electrical System Magnetic Contactor

Warning: Never work on the magnetic contactor unless the building's power source is OFF or the cutter's fuse is removed.

- The magnetic contactor receives electrical power from the building power source, and serves to distribute that power, as needed, to the compressor and conveyor motors. Any competent industrial equipment electrician can perform any necessary repair or maintenance.

6.4 - Electrical System Motors

- Removal and replacement of either the conveyor or compressor drive motor is a relatively simple operation for an electrician competent in machine shop maintenance. Belt pulley alignment and belt tension must be considered during reinstallation.

6.5 - Electrical Switch / Pneumatic Actuator

- This ON/OFF switch is pneumatically actuated, and its removal and replacement should be done by an industrial competent electrician familiar with pneumatic / electrical equipment.

6.6 - Pneumatic System Air Compressor

- Removal of the air compressor and its replacement may be accomplished by a competent mechanic using the reference illustration as a guide. Belt pulley alignment and belt tension must be considered during reinstallation. Disassembly and assembly of the compressor should not be attempted by any one not trained for the repair of the compressors. Contact Meyercord, if necessary, for assistance in compressor repair.

“M” TYPE 12M CASE CUTTER

6.0 - Maintenance & Repair (cont'd)

6.7 - Regulating Air Compressor

- With compressor operating, adjust unloader to obtain a reading of 85 - 100 psi on the air pressure gauge. Adjust regulator for 60 psi. Replacement of regulators, if necessary, should only be done by a technician thoroughly familiar with industrial pneumatic equipment pipe fitting.

6.8 - Pneumatic System Valves

- Removal of the valves should only be attempted by a technician thoroughly familiar with pneumatically actuated industrial equipment. Valve repair is best left to the manufacturer. Contact Meyercord, if in doubt, before attempting any replacement or repair.

6.9 - Pneumatic System Tubes

- Tube replacement requires that the tube be identified throughout it's length, from valve to valve, before disconnecting. **Fig. 3B** identifies connection points for tubes and includes instructions as how to read the pneumatic system. If in doubt, contact Meyercord before attempting removal.

6.10 - Pneumatic System Cylinders

- Replacement of air actuated cylinders is a mechanical function that competent industrial equipment mechanics should be able to accomplish. However, if in doubt, contact Meyercord before attempting removal and replacement. Cylinder repair is best left to the manufacturer.

6.11 - Cutter Blade Replacement

Warning: Blades are very sharp at both ends. Handle with care.

The blades are designed so that both ends may be used before needing replacement. Whether reversing ends or installing new blades, each blade must be adjusted for correct depth of cut.

Even after correct blade adjustment, be sure to check cartons from the first few cut cases for damage. Tape over carton slice before passing the carton through the Stamp Machine. This will avoid jamming.

Two individual blade holders and one double blade holder are serviced similarly, with each blade requiring adjustment.

1. Each holder is held in position on it's mounting shaft with a key and set screw. Be sure the set screw is tight.
2. Remove both socket head screws from the blade holder and separate by sliding off the unsecured half.
3. Lift the blade out and reverse (or install new blade). The blade must be between roll pins with tip of adjusting screw in blade's center slot.
4. Slide holder half on, being sure blade remains in position. Install two socket head screws finger tight.
5. Loosen adjusting screw jam nut.
6. Use a piece of case cardboard with it's thickness held against side of blade and it's length tight against holder edge, Turn adjusting screw until blade tip protrudes from cutter just enough to cut through cardboard thickness.
7. Hold adjusting crew firmly and tighten jam nut.
8. Tighten two socket head screws.
9. Recheck blade cutting depth with piece of cardboard.
10. Replace blade if necessary.
11. Cycle a case through the cutter and check for proper cut depth in case. Readjust blade if necessary.

“M” TYPE 12M CASE CUTTER

6.0 - Maintenance & Repair (cont'd)

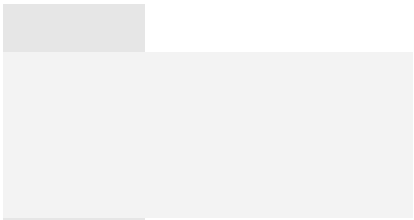
6.12 - Lubrication

The Meyercord Case Cutter requires lubrication on a continuing basis. The following lubrication chart indicates the number of points requiring lubrication, their location, the scheduled time between applications, and the type of lubricant required.

	# of Points	Locations	Intervals	Type
A.	2	Top Knife pivot screws	12 mo.	* Grease
B.	4	Basket actuating levers rear pivot screws	12 mo.	* Grease
C.	4	Centering Arms pivot screws	12 mo.	* Grease
D.	2	Front and Bottom Knife shaft pivots	12 mo.	* Grease
E.	2	Rear Knife shaft pivots	12 mo.	* Grease
F.	1	Elevator chain sprocket grease fitting	1 mo.	* Grease
G.	2	Dump Rack bearings grease fittings	1 mo.	* Grease
H.	1	Elevator chain and sprocket	1 mo.	** Chain molly
I.	6	Opening Basket assembly pivots	1 wk.	3-In-One Oil (or equivalent)
J.	1	Compressor crankcase (Re-filled to 50% of oil level eye)	1 wk.	Reciprocating Compressor Oil
K.	1	Dump Table top hinge	1 wk.	WD-40

*** Mobil 1 Synthetic Universal or equivalent**

**** White grease (lithium) may be substituted for chain molly. DO NOT use the red grease!**



“M” TYPE 12M CASE CUTTER

7.0 - Offline (Type 16) Case Cutter

7.1 - Introduction

All operational functions are identical to the In-Line Case Cutter, except that the half cases of cigarettes are discharged on to a conveyor (instead of the Dump Table) to be brought to the stamp line in a different location.

7.2 - Mechanical Operation

During the discharge, the following functions occur under normal operation of the Type 16 Case Cutter:

1. Elevator Plate & Roller Bracket Assembly

As the elevator descends, the Elevator Plate (now hinged) catches the Roller Bracket Assembly on the internal left and right sides of the machine. The angle created by the above action increases as the Elevator Plate continues to descend. The angle will be at its maximum when the end of the Elevator Plate rolls off the plastic roller on the Roller Bracket Assembly.

2. Restrainer Plate & Shaft

As the angle increases, the half case will begin to tip forward on the Elevator Plate. The top of the half case will catch on the Restrainer Plate and Shaft. The Plate will ensure that the product will remain in the half case, while the Shaft provides a smooth transition from the release at this point. As the angle increases, the product will start to slide off the Elevator Plate and on to the Discharge Rack.

3. Discharge Rack

When the Elevator Plate is released from the plastic rollers, the half case will freely slide down the Discharge Rack and on to the existing conveyor system. The Shock Absorber dampens the free-fall of the Elevator Plate and reduces associated noise.

4. Cycle is complete

The system resets when the elevator reaches it's lowest travel point and is ready for the next case of cigarettes to enter the Elevator Chamber.

7.3 - Machine Specifications

Electrical Requirements:

Voltage - 115 VAC, single phase, 60 Hz.

Current - 30 amps

Air Source Requirements:

Self contained / 100 PSI Max. continuous pressure

Machine Weights:

Type 16 Case Cutter - 1200 lbs.

Type 16 Conversion Kit - 200 lbs.

Cycle Speed:

4 Cases per minute

Dimensions:

Length (Left to Right):76"

Height: 78"

Depth (Front to Back): 40"

Dump Rack Length: 11" to 13.25"

Dump Rack Height: 20.5" to 25"

7.4 - Installation Requirements: Electrical

To assure a correct, safe, and timely installation, the following electrical service must be provided along with sufficient installation time. (A minimum Service Access Clearance of 18" must be maintained around all equipment.)

A 120VAC single phase, 30 amp circuit must be "hard wired" (conforming to local codes) directly to the Case Cutter control panel. Furthermore, a safety switch of the same capacity must be provided outside the equipment. This must be a dedicated circuit - do not connect any other electrical devices to this circuit.

“M” TYPE 12M CASE CUTTER

7.0 - Offline (Type 16) Case Cutter (cont'd)

7.5 - Electrical Operation

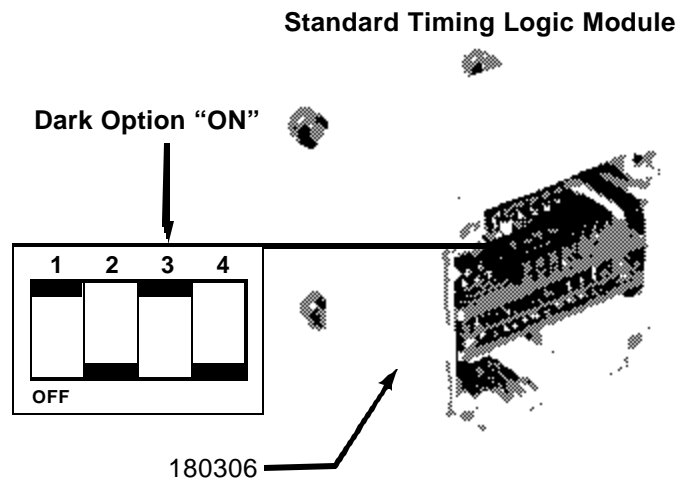
The electrical system within the Case Cutter Converter Kit is composed of three (3) parts and their operation is as follows:

a. Retroreflective Sensor

The sensor operates in the retroreflective mode in conjunction with the reflector. When a case of cigarettes is attempting to be split by the Opening Basket, there may be times when the case is not completely cut, may not split open. The sensor will wait for approximately 8 seconds (internal delay) for the Opening Basket to split the case. After 8 seconds, the sensor signal energizes the bottom coil on the air valve, shutting off the air supply to both the Carriage and Basket cylinders.

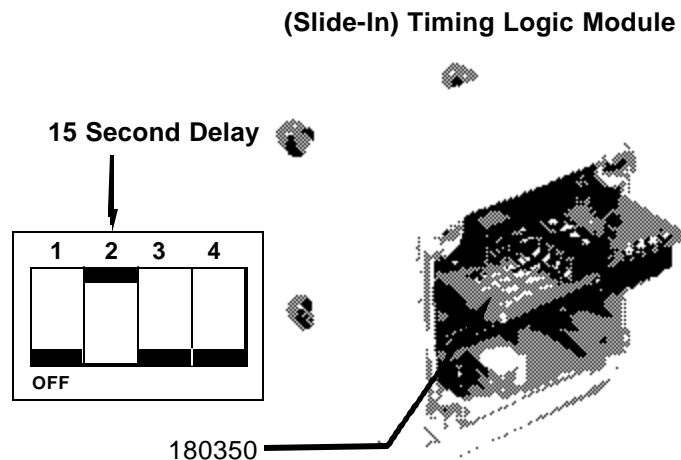
Light Sensitivity

When the sensor body is first opened, a factory installed programmable logic module is found. This must be set to the **Dark Option**. This allows the sensor to activate only when a cigarette case blocks the light.



Timing Delay

This module delays the activation of the sensor to allow the Opening Basket adequate time to split a case. It should be set at **15 seconds**. From there it can be easily inserted above the fixed module.



b. Safety Interlock Magnetic Switch

This safety interlock is a 120 VAC position switch capable of switching 3 amps of current. If the Restrainer Plate is opened, the magnetic field breaks, removing power from the upper relay coil, thus shutting off both the Compressor and In-feed Conveyor motors. The elevator remains in the up position while the resulting output signal energizes the bottom coil on the air valve, shutting off the air supply to the Carriage and Basket cylinders. *Note that the system may **not** be reset until the Retainer Plate is latched down.*

c. Manual Reset Switch

This pushbutton is a 120 VAC single-pole switch with normally open contacts. It functions as the reset for the Case Cutter after a jam has occurred and been cleared. When depressed, the air valve coil energizes and air pressure is restored to both the Carriage and Basket cylinders.

7.6 - Pneumatic Operation

The pneumatic system included in the Case Cutter Conversion Kit utilizes the existing pneumatics of the In-Line Case Cutter. Two air lines, three barbs, two plugs and one "X"-coupler are supplied with the kit.

The signal generated by the activated sensor is sent to the Air Valve and releases pressure in the air line feeding the Carriage and Basket cylinders. Due to the nature of the Air Valve, pressure remains absent in the line until it is reset by the Manual Reset Switch. When the Manual Reset Switch is depressed, it energizes the opposite coil on the Air Valve and re-applies pressure to the Carriage and Basket cylinders.

“M” TYPE 12M CASE CUTTER

7.0 - Offline (Type 16) Case Cutter (cont'd)

7.7 - Preventative Maintenance

This section will deal solely with the Type 16 components. All other maintenance can be found in (See Sec. 6.0, pg 34). **Remember to disconnect all electrical and pneumatic power to the machine before attempting any maintenance.**

a. Roller Bracket Assembly

Check the plastic rollers to ensure the mounting hardware is securely tightened down. The plastic wheels should rotate on the internal bushing and never on the screw.

b. Case Discharge Assembly

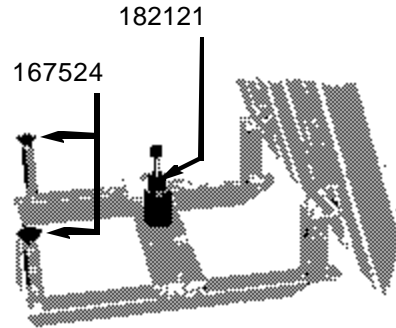
Clean the Discharge Rack with a mild alcohol-free cleaner and dry thoroughly.

c. Plate Assembly

Check all hardware associated with the Plate Assembly (including the Discharge Elevator Hinges and Discharge Elevator Studs) for tightness.

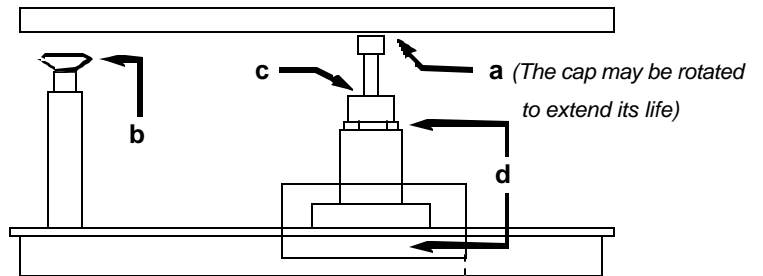
d. Elevator Plate Shock Absorber

After the Elevator is released from the Roller Bracket Assembly it returns to its original position to receive the next case. The shock absorber is meant to catch the plate, dampen its descent and set it down gently on to the rubber feet. This avoids slamming after each cycle.



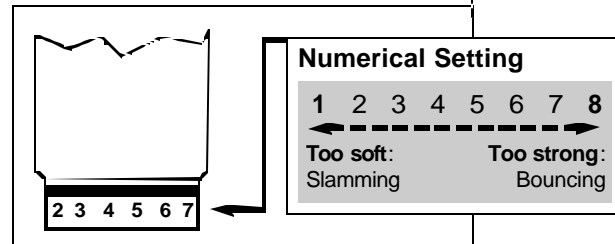
Vertical Position

1. The cap must be high enough to catch the plate (a) **before** it contacts the rubber feet (b).
2. Low enough that the plate is level on the rubber feet **before** the piston bottoms out (c).
3. Loosen the **two (2)** 1-12 X 3/16" **Hex Jam nuts (d)** to raise or lower the Shock Absorber body.



Dampening Control

Overall, this setting is meant to prevent the plate from bouncing and slamming. Begin with **seven (7)**, test the freefall for noise and adjust accordingly.



“M” TYPE 12M CASE CUTTER

7.0 - Offline (Type 16) Case Cutter (cont'd)

7.8 - Troubleshooting

A. When the Elevator rises, the Elevator Plate catches on the Roller Bracket.

1. The screw securing the Hinge Mounting Bracket to the machine frame is loose and needs to be tightened.
2. The Hinge Bracket is loose on the Hinge Mounting Bracket and needs to be tightened.

B. As the Elevator Plate descends, the motion is not smooth or quiet.

1. The plastic wheel may be cracked or broken and needs to be replaced.
2. The mounting screws or support blocks may be damaged and need to be replaced.

B. Half cases tend to fall back into the Case Cutter instead of the Discharge Rack.

1. The Hinge Bracket is not set correctly on the Hinge Mounting Bracket and needs to be re-adjusted up or down.

C. Half cases slide down the Discharge Rack slowly.

1. The angle of the Discharge Rack is not enough. Loosen the securing screws on the Discharge Tie Brace and Hinges and adjust the angle.

D. Case Cutter does not reset after the Manual Reset Switch is depressed.

1. The switch or wiring may be faulty and needs to be replaced.
2. The dump valve on the control panel may be faulty. If the neon lamps located in the DIN Connectors on both ends of the Air Valve illuminate during a manual reset and the system does not shut down, then the Air Valve needs to be replaced.
3. The DIN Connectors may be faulty. If the neon lamps do not illuminate when the Reset Switch is depressed, the DIN Connectors need to be replaced.

E. Air pressure to the Opening Basket and the Carriage does not shut off when a jam occurs.

1. The dump valve on the control panel, DIN Connectors, or wiring may be damaged and needs to be replaced. See **D** above.
2. The retroreflective sensor may need to be adjusted or replaced.

