AutoClipper

Model #_____

Serial #_____

VERTEX FASTENERS

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REV. D
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Table of Contents

AUTOCLIPPER SPECIFICATIONS

DIMENSIONS: Operating – 16' long x 8' wide x 9' high

Shipping – 16' long x 8' wide x 6.5' high

WEIGHT: 1,200 lbs.

ELECTRIC SUPPLY: 120Vac 50/60 Hz Single Phase 10 Amps – Internal to Control Box – External Power to Control Box may vary

MAIN AIR SUPPLY: 7.0 CFM Free air at 90 psi

TOOLS' RETURN STROKE SUPPLY: no consumption – set at 10psi

PUSHER CARRIAGE SPEED: Forward – 7' / sec. (Adjustable, see Fig. 4)
Reverse – 30" / sec.

MATTRESS CAPACITY: Border Wire – 9 GA (.148") (3.7mm)
thru
5 GA. (.207") (5.3mm)

Coil Wire - 17 GA. (.054") (3.8mm)
thru
12.5 GA. (.098") (2.5mm)

COIL TYPES: LFK, Bonnell, Offset, Knot-less Offset, Leggett & Platt Continuous Coil

DESCRIPTION OF EQUIPMENT

The Vertex Fasteners' AutoClipper is an automatic machine which attaches border wires to the perimeter coils of innersprings using Vertex Fasteners' clips.

The AutoClipper is made up of six main components:

1. Tool Assembly (Clipping Head)
    a. Two tools mounted in an opposed relationship on an easel style sheet metal structure.
2. Motor & Pusher
    a. Drives the innerspring through the tools.
3. Coil Sensor
    a. Detects location of coils requiring clips.
4. Rotating Paddle
    a. Automatically turns the innerspring.
5. Sensors
    a. Detects height of the innersprings.

6. Programmable Logic Controller (PLC)
    a. Coordinates the pneumatic valves, switches, sensors, drive motor and entire clipping procedure.

With the AutoClipper, an operator with minimal training and effort is capable of assembling 225 – 275 innersprings in a typical 8 hour shift.

The process involves:

1. Retrieving 2 border wires and an innerspring unit.
2. Placing these components on a rotating table.
3. Pre-attach the border wires to the innerspring unit with Vertex Clips at the perimeter corner coils.
4. Placing the assembly on the AutoClipper.
5. Starting the automatic clipping cycle.

During the automatic cycle, the operator can prepare another innerspring for placement on the machine once the previous unit has finished. The entire process can be broken down into 2 separate components: Pre-Clipping time and AutoClipper cycle time.

The Pre-Clipping component is dependent upon the material handling and the proficiency of the operator. The following are times that can be expected with a trained operator:

Innerspring and Border Wire retrieval, applying 16 clips (2 clips per corner) with the hand tool, placing the pre-clipped unit on the machine, and unloading the finished unit: 30 – 60 seconds.

Same as above, except applying 32 clips (4 clips per corner) with the hand tool: 45 – 75 seconds.

The following are AutoClipper cycle times:

	16 clips pre-clipped unit	32 clips pre-clipped unit
TWIN	68 sec.	60 sec.
FULL	71 sec.	63 sec.
QUEEN	74 sec.	66 sec.
King	78 sec.	70 sec.

The above figures are representative of what is obtainable using existing methods and equipment.

NOTE: With the AutoClipper Machine it is very important to maintain accurate location of the border wire weld, as this will create numerous problems if it lands in a location common to a coil. The ideal location for the weld is close to the corner of the innerspring, this allows for better control and reliability.

Fig 1

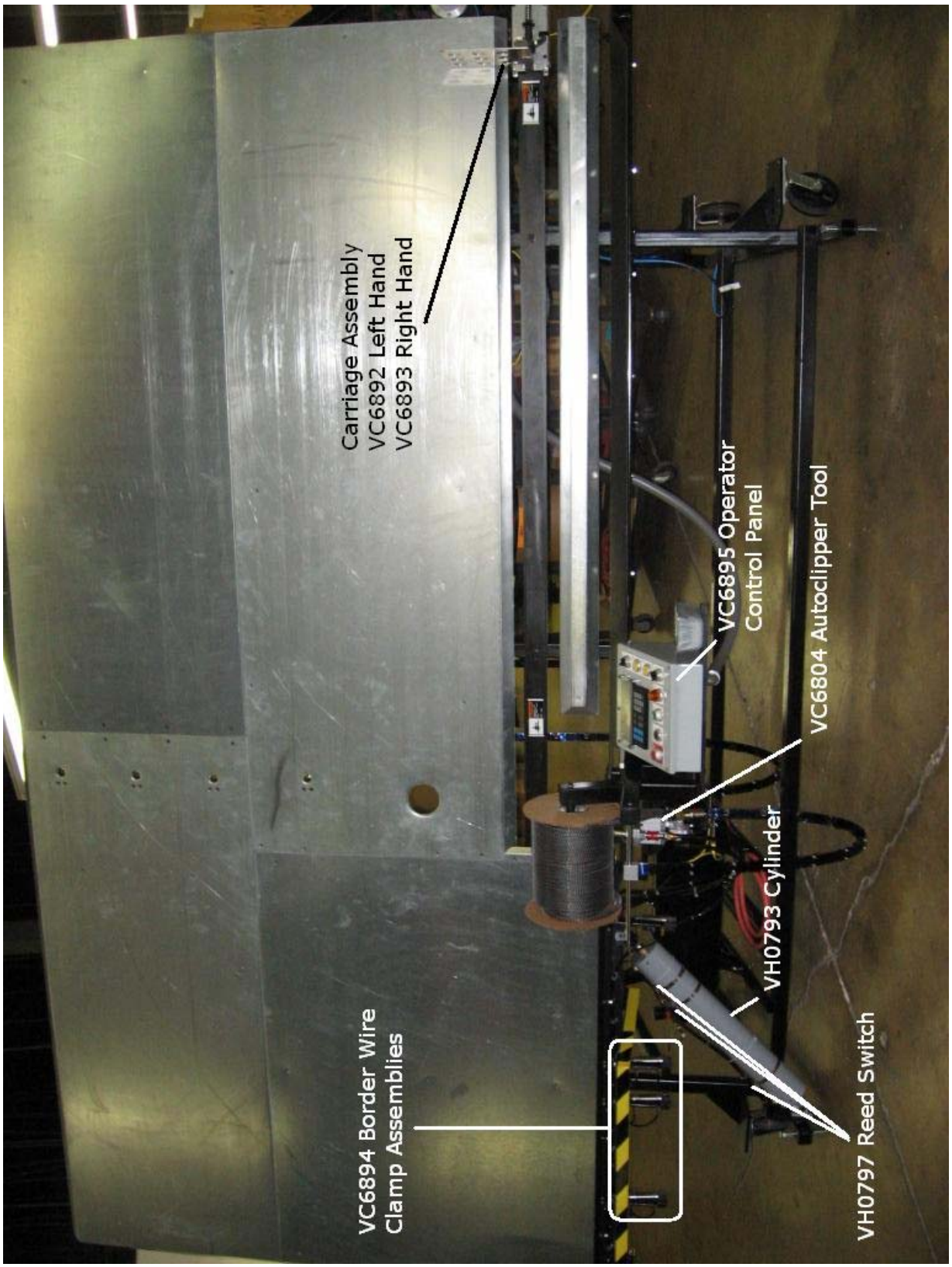
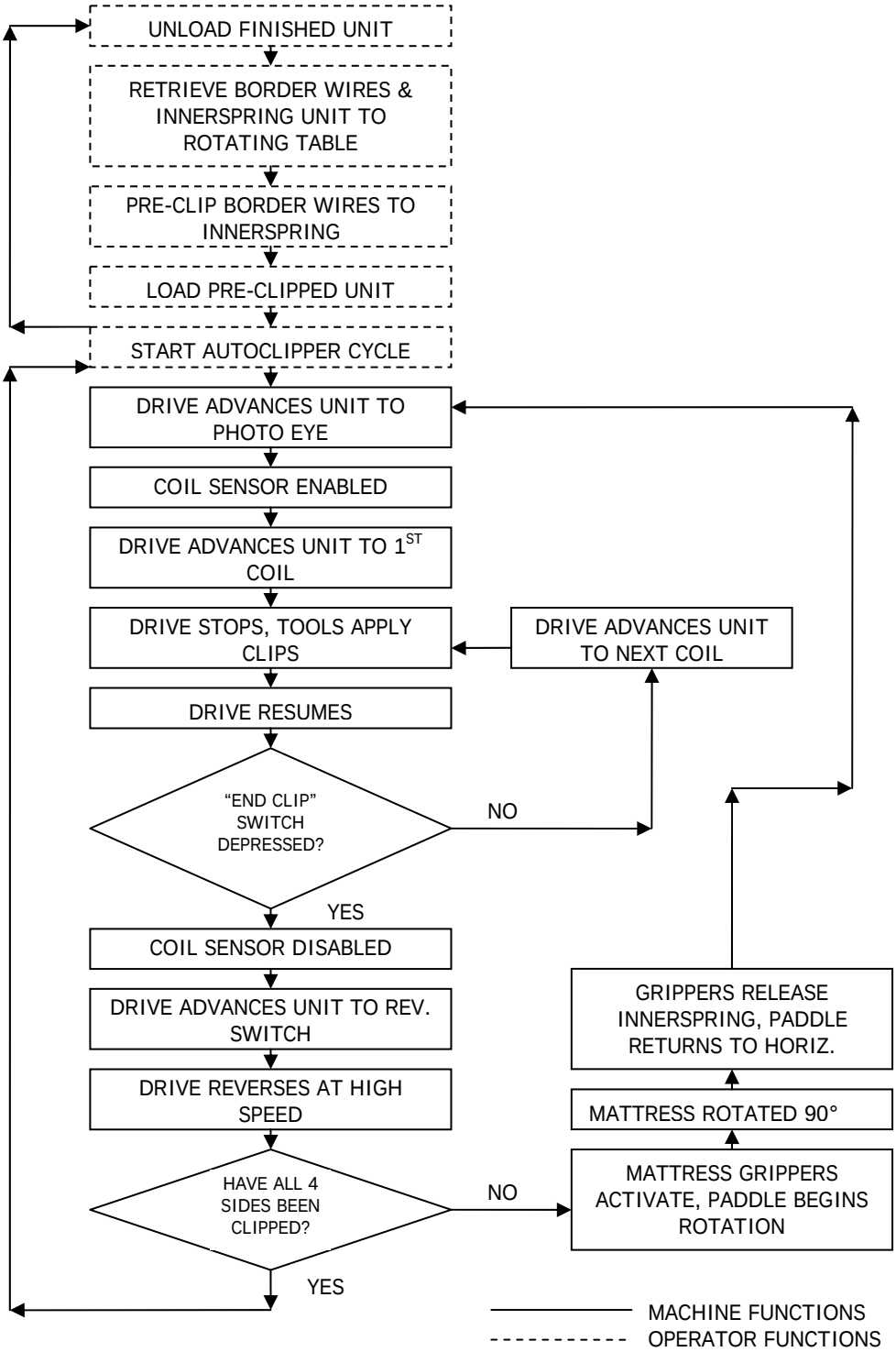

Carriage Assembly
VC6892 Left Hand
VC6893 Right Hand
VC6895 Operator
Control Panel
VC6804 Autoclipper Tool
VH0793 Cylinder
VC6894 Border Wire
Clamp Assemblies
VH0797 Reed Switch

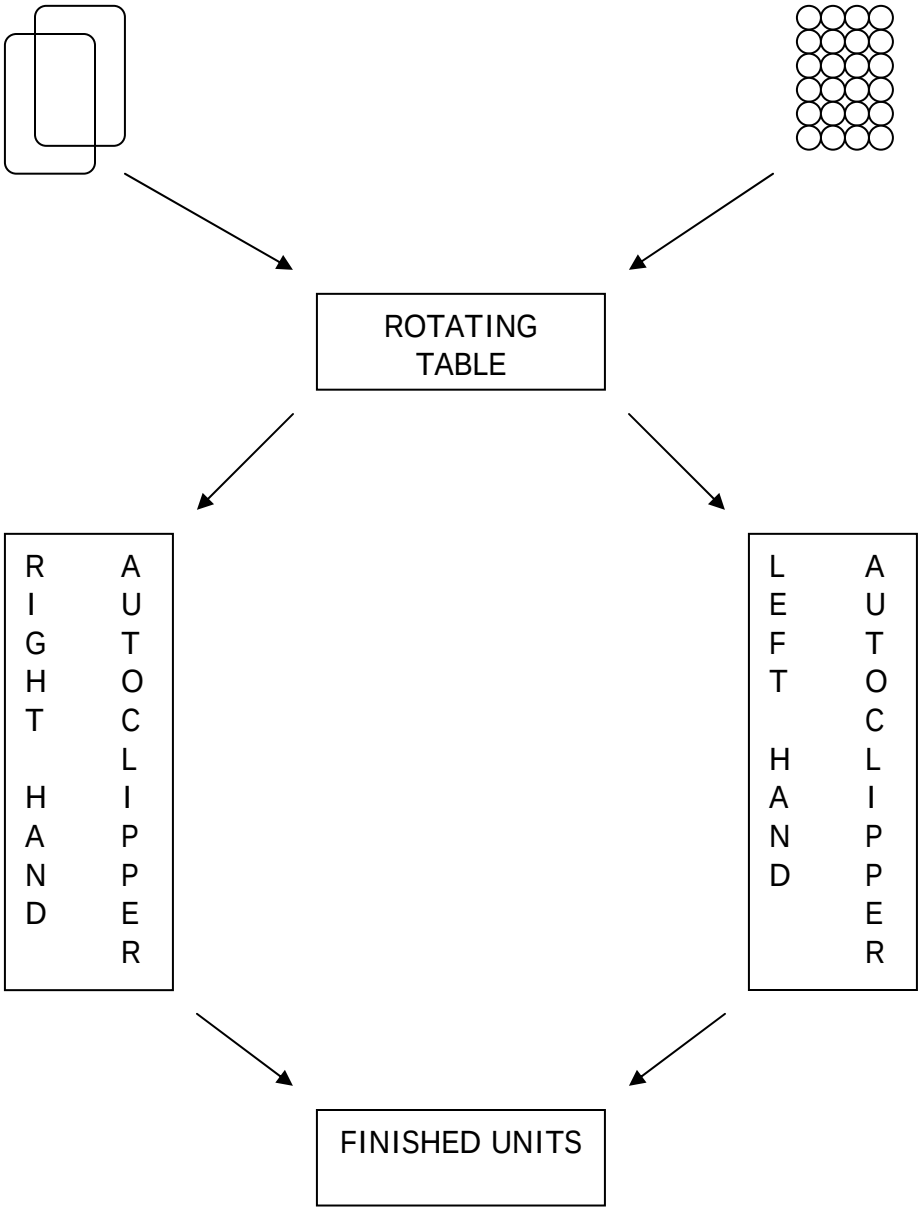
Fig. 2


VH0384 Photoeyes
VC6889 Motor Drive Assembly
VC6887 Electrical Panel
Step-down transformer. If so equipped contact Vertex Fasteners for replacement part number. Please have the serial number from the machine when calling.
VC3058 Tank

AUTOCLIPPER FLOW CHART



MATERIAL FLOW FOR SINGLE OPERATOR & 2 AUTOCLIPPER MACHINES



THIS MACHINE LAYOUT ALLOWS FOR ONE OPERATOR TO HANDLE TWO AUTOCLIPPER MACHINES. WHILE THE AUTOCLIPPER MACHINES ARE CLIPPING, THE OPERATOR CAN PRE-CLIP OTHER UNITS IN PREPARATION FOR LOADING THE NEXT AVAILABLE AUTOCLIPPER MACHINE. THIS ARRANGEMENT RESULTS IN EFFICIENT EMPLOYEE UTILIZATION.

OPERATOR CONTROL PANEL DETAIL

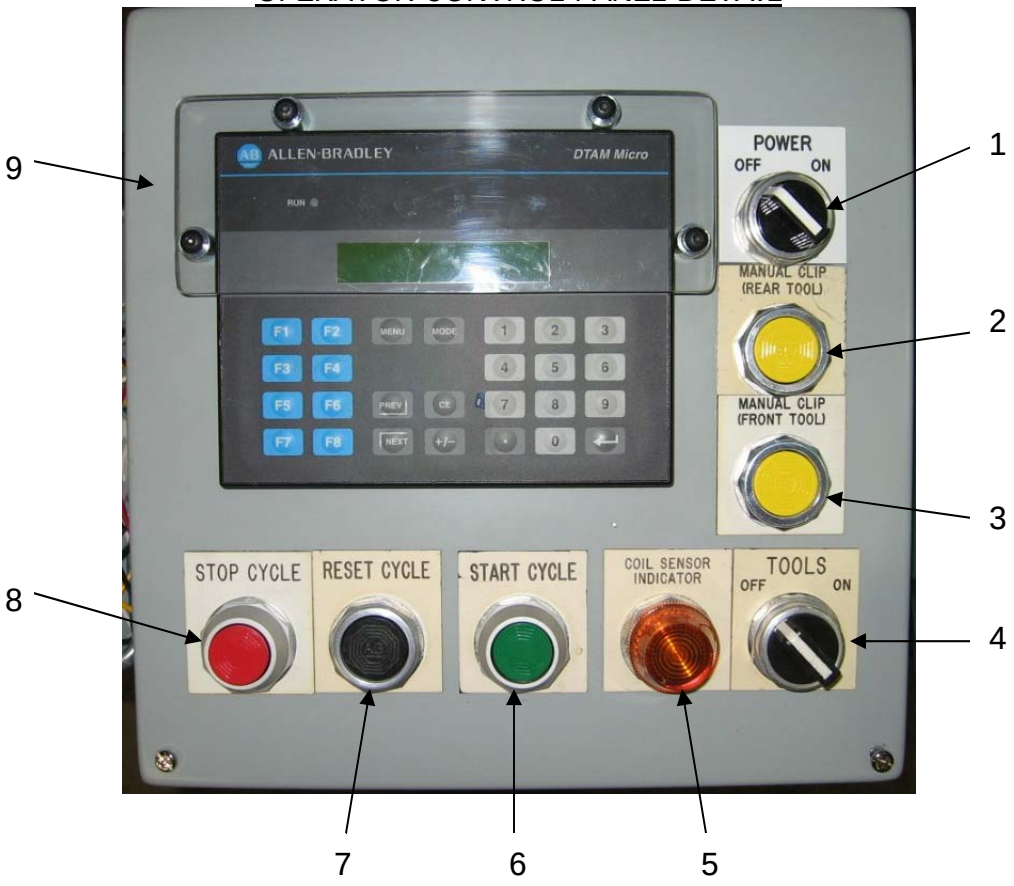


Fig. 3

KEY #	INPUT #	DESCRIPTION
1		DISCONNECTS POWER TO MACHINE
2	114	MANUALLY FIRES REAR CLIP TOOL - MUST HOLD STOP CYCLE
3	113	MANUALLY FIRES FRONT CLIP TOOL- MUST HOLD STOP CYCLE
4	112	DISCONNECTS POWER TO CLIPPING STATIONS
5	107	INDICATES WHEN SENSOR CONTACTS COIL
6	100	STARTS CLIPPING CYCLE
7	109	RESETS MACHINE CLIPPING CYCLE
8	101	STOPS CLIPPING CYCLE
9		MESSAGE CENTER & KEYPAD

ELECTRICAL CONTROL BOX

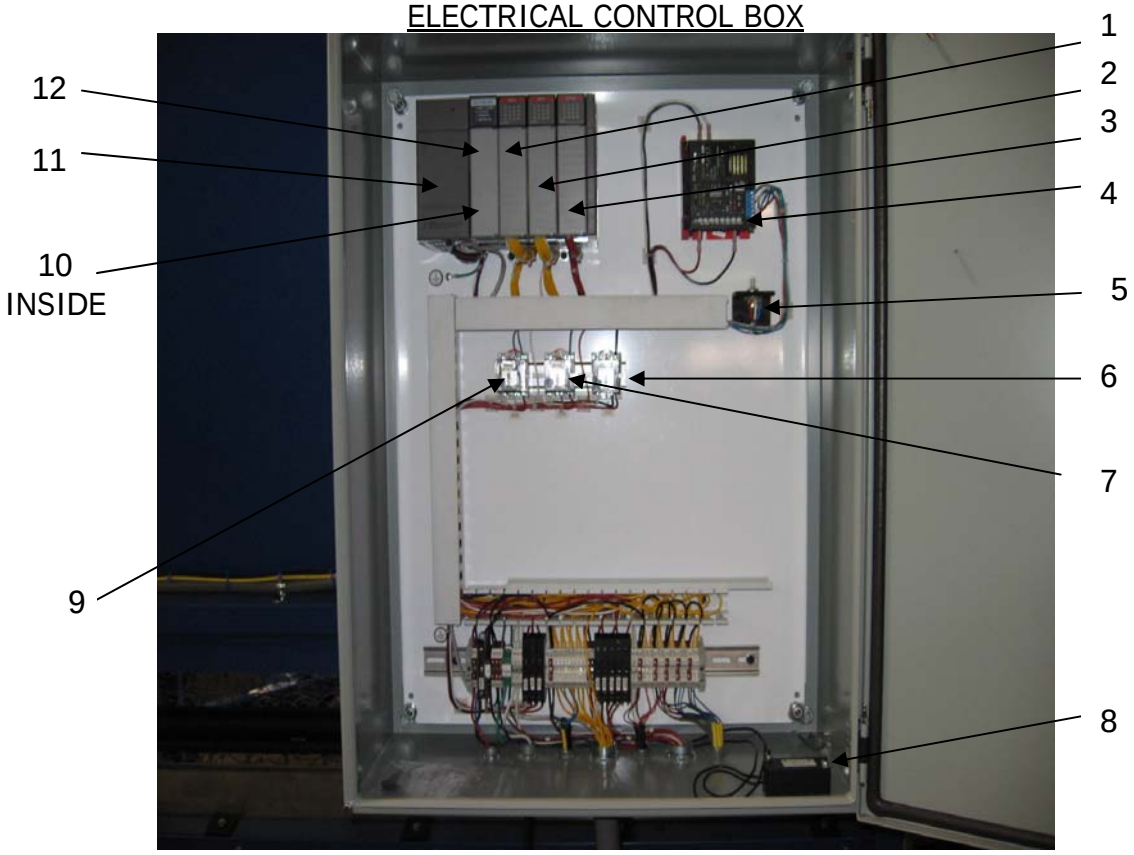


Fig. 4

KEY #	DESCRIPTION
1	INPUT 1
2	INPUT 2
3	OUTPUT
4	DC MOTOR CONTROLLER
5	ADJUSTMENT – FORWARD SPEED
6	RELAY – DRIVE CONTROL – ON / OFF
7	RELAY – DIRECTION & SPEED
8	LINE FILTER
9	RELAY – “DRAGLESS” – MOTOR LINE BRK.
10	EEPROM MEMORY MODULE LOADING PORT (LOAD PROGRAM) Fig. 5
11	POWER SUPPLY
12	PROCESSOR

EEPROM MEMORY MODULE LOADING PORT

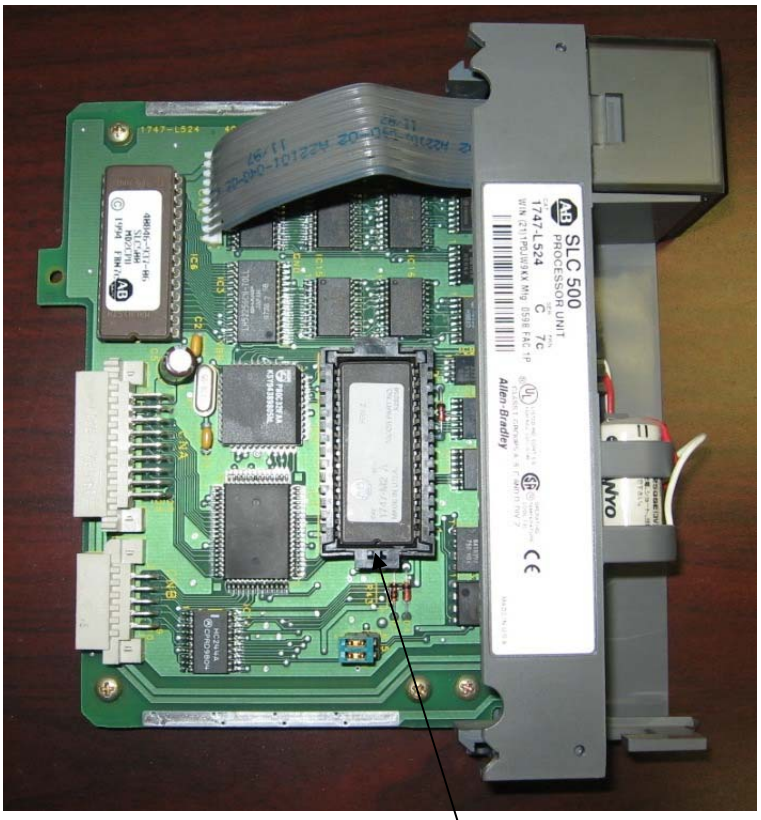


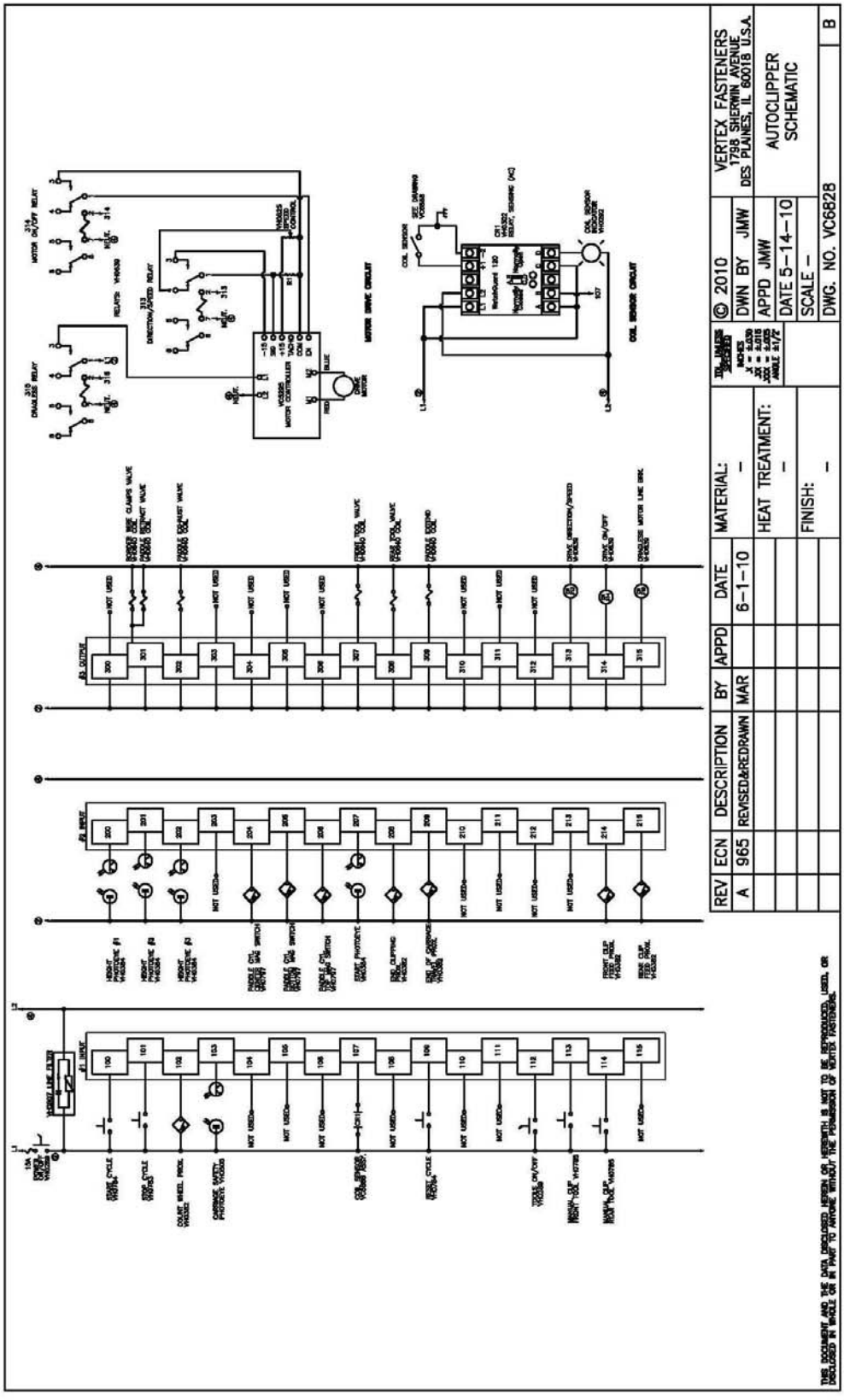
Fig. 5

TROUBLE SHOOTING

Inputs and Outputs

One important advantage of using a Programmable Logic Controller (PLC) is the ease of which troubleshooting is accomplished. Each switch or sensor used in the operation of the AutoClipper has a corresponding number associated to it – an input, and each valve or relay has a corresponding number to it – an output. With these input & output #no.'s we are able to pinpoint and solve problems. Whenever these inputs and outputs are "active", the corresponding LED on the PLC will illuminate. Refer to drawing VC6828 for a list of all the inputs and outputs used in operation of the AutoClipper Machine:

VC6828



INPUTS AND OUTPUTS

FEED PROBLEMS

The clips do not move into tool or move only partially into tool.

1. Worn magazine – check for wear that would obstruct clip movement. Replace worn magazine.
2. Anti-backup wheel not down on clips. Rotate anti-backup wheel knob to engage wheel with clips.
3. Wrong tooling for clip. Ensure that the proper blade & anvil are being used for the clip in use.
4. Feed cylinder mounting screws loose. Use loctite on threads and tighten screws.
5. Broken cylinder torsion spring. Replace broken spring.
6. Feed cylinder does not travel freely through it's stroke, binding and or sticking. Make sure o-rings are in good condition, replace if necessary. Piston feed spring is damaged, replace.
7. Damaged clip spool. Spool disks bent severely the clips catch as they pay off the spool. Straighten disk or replace spool. Disk bent outward sufficiently to allow upper layers of clips to fall off and get caught between disk and lower layers of clips. Straighten disk or replace damaged spool. Make sure spool turns freely.

LOOSE CLIPS

1. Worn anvil. Replace anvil.
2. Worn blade. Replace blade.
3. Wrong blade or anvil in tool. Replace wrong component with correct part for clip being used.
4. Air pressure set too low. Raise pressure until clipping is correct.
5. A large amount of air is heard when tool fires. Quick exhaust diaphragm damaged. Replace quick exhaust valve.
6. Piston o-ring damaged. Replace o-ring.
7. Piston, piston rod or both are damaged or loose. Retighten loose parts use loctite on threads. Replace damaged parts, reassemble with loctite on threads.

BLADE DOES NOT RETURN

1. Wrong tooling in clipping head. Replace wrong component with correct part for clip being used.
2. Loose piston. Retighten using loctite on threads.
3. Broken blade or yoke pin. Replace broken parts.
4. Broken yoke or links. Replace broken parts.
5. Defective solenoid valve. Replace valve.
6. Piston o-ring damaged. Replace and lubricate.
7. Dry o-rings due to lack of lubrication. Check oiler to insure oil is present and properly adjusted. In severe cases tool may require disassembly and lubrication of o-rings with grease and then reassembly. Readjust oiler.

TOOLS DO NOT FIRE

1. Tools ON/OFF switch in “OFF” or contact block defective. Turn switch “ON” or replace defective block.
2. Defective solenoid valve. Replace valve.
3. Tool gets air but does not fire. Tool dry disassemble and replace piston o-ring reassemble with o-ring grease. Fill oiler with oil and adjust.

CLIP APPLIED TO BORDER BUT MISSED COIL

1. Coils running behind anvil. Adjust tool front to back.
2. Coil sensor too high. Readjust coil sensor.
3. Coil sensor spring pressure too high. Adjust spring plunger on coil sensor arm assembly.
4. Coils not stopping in center of the anvil. Adjust coil sensor so coils stop centered in anvil.

NO CLIP APPLIED OR COILS MISSED

1. Coil sensor too low. Adjust height of sensor.
2. Coil sensor housing or sensor bar worn. Replace housing and/or bar.
3. High or damaged coil in unit. Manually clip coil.

ERRATIC TARGETING OF COILS

1. Check coil sensor for loose wires, loose sensor bar or mounting screws.
2. Check coil sensor bar for dirt, chips.
3. Check for restrictions to movement. Sensor must move smooth and freely.
4. Check for loose or missing shock and spring plunger.

CARRIAGE STOPPING BEFORE END OF TRAVEL

1. Safety photo eye dirty. Clean face of photo eye and the reflector with a soft cloth. **DO NOT USE ANY SOLVENTS**, the plastic will craze and the parts will need to be replaced.
2. Safety photoeye out of adjustment. Readjust photo eye.

CARRIAGE STOPS AT END OF TRAVEL AND WONT RETURN

1. Safety photo eye is on and paddle does not rotate. Defective end of travel sensor or cable. Replace defective component.

CARRIAGE NOT MOVING WHEN START BUTTON IS PUSHED

1. Defective relay. Replace relay.
2. Defective dragless relay. Replace relay.

3. Blown fuse on motor control. Replace fuse with proper type and size. If fuse continues to blow replace DC motor controller.
4. Motor controller "Min" speed pot turned to zero speed (counter clock wise).
5. Bad start push button contact block. Replace defective contact block.
6. Carriage photo eye not adjusted properly. Readjust photo eye.

PADDLE DOES NOT ROTATE TO FULL VERTICAL POSITION

1. Move upper cylinder sensor towards top of cylinder. Move sensor a small amount at a time.

SOLENOID VALVES

1. Manual override is on. Return valve to automatic.
2. Check pilot exhaust valve. If a constant flow of air is escaping through the pilot exhaust, replace valve.
3. Check PLC output indicator light and the solenoid indicator light on valve. If PLC output light is "ON" then the valve and valve indicator light should also be on. Replace valve if required.

MACHINE ADJUSTMENTS

PHOTO EYE

The purpose of the Photo Eye (Fig. 6) is to give the Programmable Logic Controller (PLC) a reference point as to where the edge of the innerspring unit is. This directly effects where the Coil Sensor (Fig. 7) is turned "on" to begin sensing for coils. The Start Pin should be located so that when contact with the edge of the innerspring occurs, the Pre-Clipped Coils are past the Coil Sensor, by approximately ½" (12mm). As the innerspring moves along, the first coil contacted by the Coil Sensor after the Photo Eye has been hit, will be clipped by the machine.

NOTE: Set the Photo Eye location using the side coils of the unit. The end coils of the unit have a larger spacing and the ideal point between coils will be further from the corner of the unit. A timer in the program makes up for this difference automatically.

ADJUSTMENT: The Photo Eye is adjustable left and right by loosening the 5/16 – 24 SHCS located immediately to the right of the Photo Eye, on the drive rail.

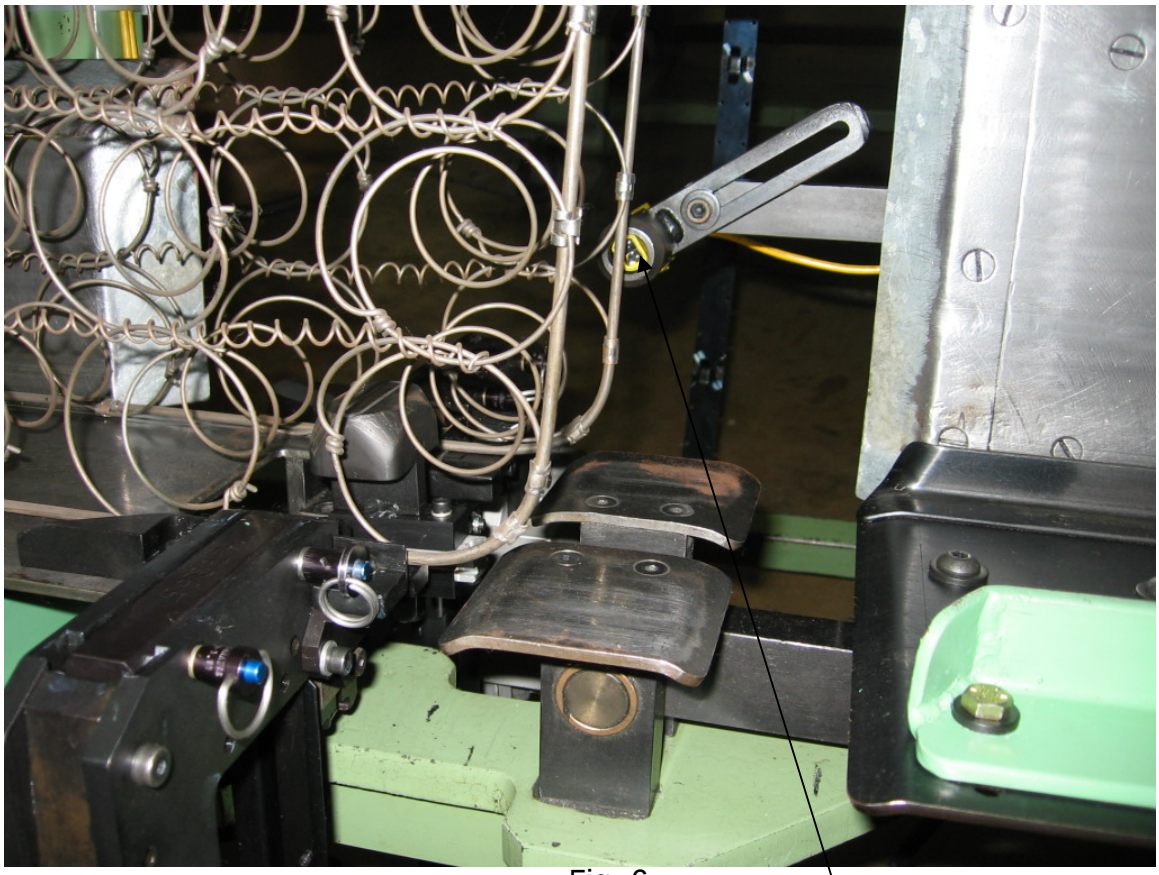


Fig. 6

COIL SENSOR

The purpose of the Coil Sensor is to signal the Programmable Logic Controller (PLC) when a coil is in position for clipping.

Sensor operation is as follows:

When a perimeter coil comes in contact with the sensor bar it energizes a sensor relay module. This results in a signal to the PLC by way of internal contacts in the relay module. No harmful current is present on the sensor bar and operates on sensing ground with a safe sensing circuit.

SENSOR ADJUSTMENTS

Three adjustments are present on the coil sensor: horizontal, vertical and sensor pressure.

Horizontal - Used to centrally locate clips on coil. If clips favor left of center, move sensor left. If clips favor right of center, move sensor right. Adjustment is made by loosening horizontal adjustment screw (Fig. 7), relocating the sensor and tightening screw.

Vertical - Used to adjust the vertical “reach” of the sensor. Adjustment is made by loosening “stop nut” (Fig. 7), repositioning stop, tightening nut.

Sensor Pressure - Used to adjust upward pressure exerted by sensor. Adjustment is made by loosening spring plunger nut (Fig. 7), adjusting spring plunger, tightening nut.

Fig. 7

DRIVE RAIL SWITCHES

All rail switches consist of a proximity switch wired to the PLC, (Fig. 8). The switches are activated by an actuator mounted to the pusher carriage (Fig. 8, 13). The Drive Rail Switches are adjusted from the backside of the machine by loosening the ¼ - 20 HHCS of the switch mount and sliding the switch to the appropriate position, tightening. The switches are numbered for reference off of the rear enclosure door input / output sheet.

END CLIP SWITCH (INPUT #208)

This switch, as the name implies, is used to signal the PLC when to stop clipping. This is accomplished by the PLC “Turning Off’ the Coil Sensor (Fig. 7). The ideal location for this switch is in a position so that activation by the pusher carriage occurs as the last coil to clip is finished and moved approximately ½” (12mm) out of the tooling area.

END OF CARRIAGE TRAVEL SWITCH (INPUT #209)

The purpose of this switch is to signal the PLC that the innerspring is ready for rotation and the pusher carriage should reverse direction, and at high speed move along the drive rail to the determined distance. The distance is determined by the Height Sensors.

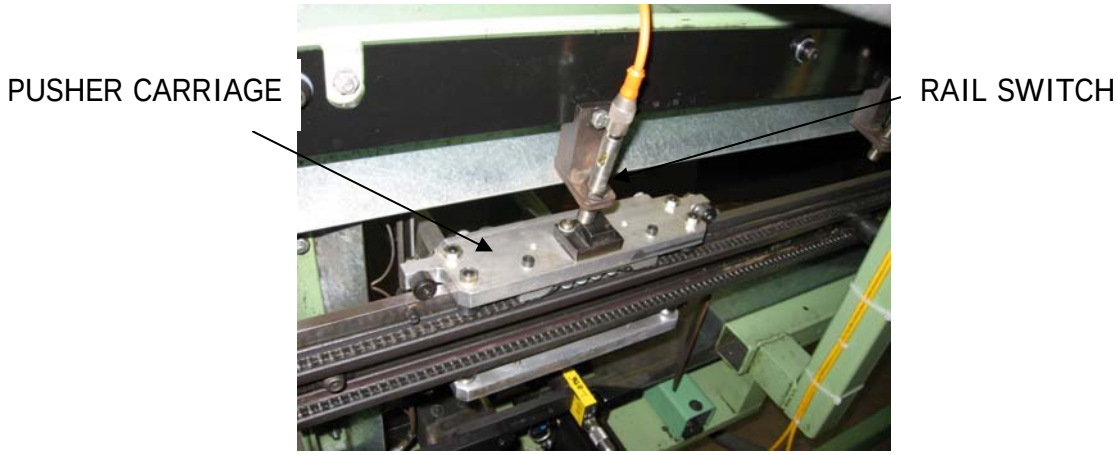


Fig. 8

HEIGHT SENSORS

The three innerspring Height Sensors (Fig. 2), are used to signal the PLC how far the Pusher Carriage should travel in the reverse direction. The height of the unit is sensed while the machine is clipping. There are five distances programmed into the machine to handle the various dimensions for the most common innerspring sizes.

PROGRAMMED DISTANCES:	INPUT #	DISTANCE
	(*)	41” (1041mm)
	(105)	55” (1400mm)
	(106)	66” (1676mm)
	(107)	77” (2006mm)

INDICATORS: A red LED indicator is located on the backside of the sensor which illuminates when the sensor is on. The corresponding LED should also be illuminated on the PLC (Page 12 – AutoClipper Input / Output Address Sheet).

ADJUSTMENTS: The sensor’s range is the only adjustment available. This is adjustable with a 15-turn slotted brass screw located under the clear acrylic cover on the backside of the sensor. This screw is factory set to the maximum range so no further adjustment should be required.

CARRIAGE TRAVEL DISTANCE

Before the innerspring unit can rotate 90 degrees, the Pusher Carriage must be clear of the innerspring’s path. The proper distance that the Pusher Carriage must travel is determined by the Height Sensors, this in turn is relayed to the PLC which counts the pulses received from the Count Proximity Switch (Fig. 9). After the appropriate number of count pulses is received from the Count Wheel, the PLC stops the Pusher Carriage travel. The Count Wheel is attached to the drive shaft, which drives the Pusher Carriage.

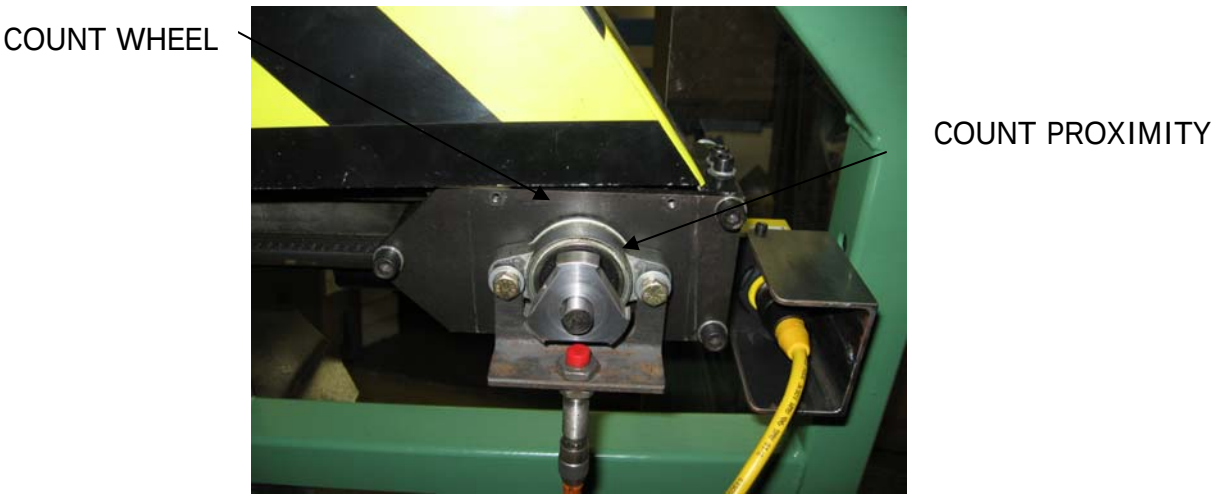


Fig. 9

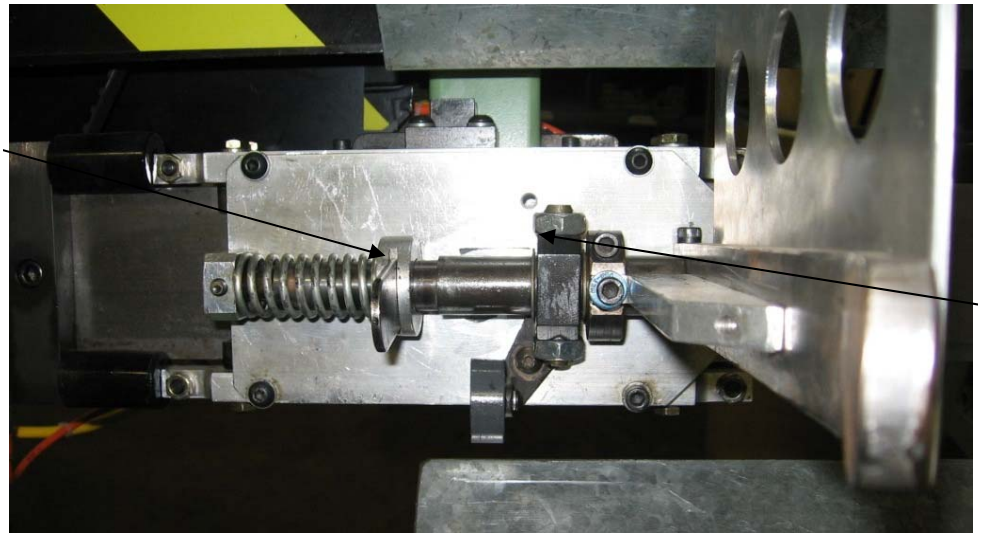
PUSHER CARRIAGE

The purpose of the Pusher Carriage is to safely drive the innerspring unit through the clip tools. The Pusher Carriage has two safety features incorporated in it to prevent operator or machine damage. The first feature is the spring loaded pusher arm (Fig. 10), which is directly linked to the safety reflector. In the event the innerspring jams in the tools or faces an obstruction, the reflector will pivot out of the way of the Drive Safety Beam Switch. The "breaking" of this beam will shut down the machine. The other feature incorporated in the carriage, is the pivoting pusher arm (Fig. 11), which will pivot and block the beam of the Safety Beam Switch if the carriage has not traveled back far enough while the innerspring is rotating.

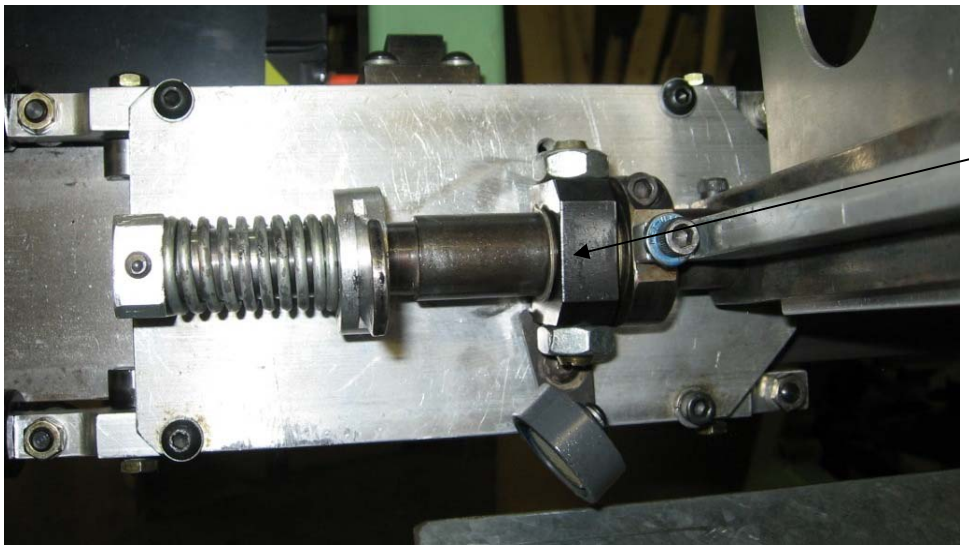
ADJUSTMENT: The only adjustment available is the tension on the pusher arm. This is adjusted with the adjustment collar located on the carriage (Fig. 10).

NOTE: If the pusher arm tension is too high, the reflector will not pivot enough to shut the machine down, if the tension is too low, the machine will shut down excessively. Check adjustment.

ADJUSTMENT COLLAR (USED TO ADJUST TENSION AND BLOCK BEAM IF PIVOTED)



BEAM REFLECTOR IN NORMAL POSITION



BEAM REFLECTOR IN PIVOT POSITION

Fig. 10

PIVOTING PUSHER ARM TRIPPED

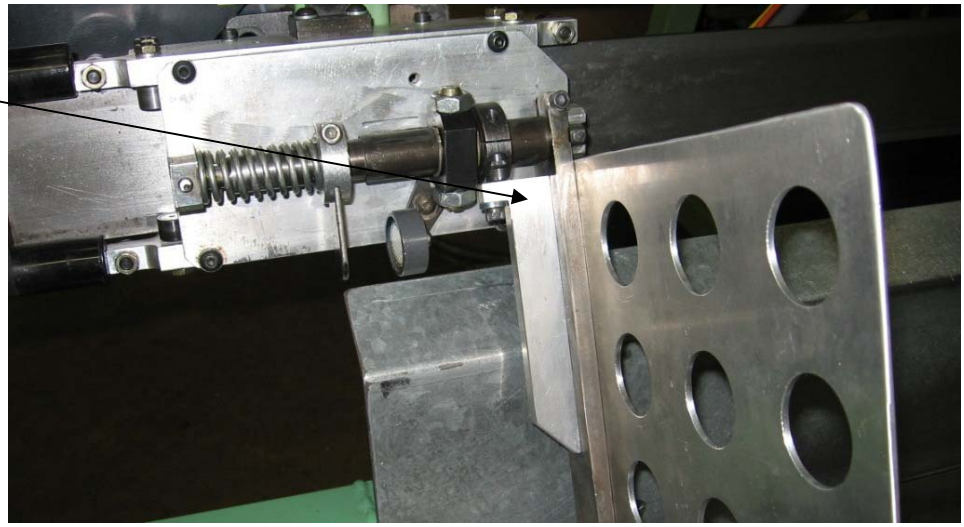


Fig. 11

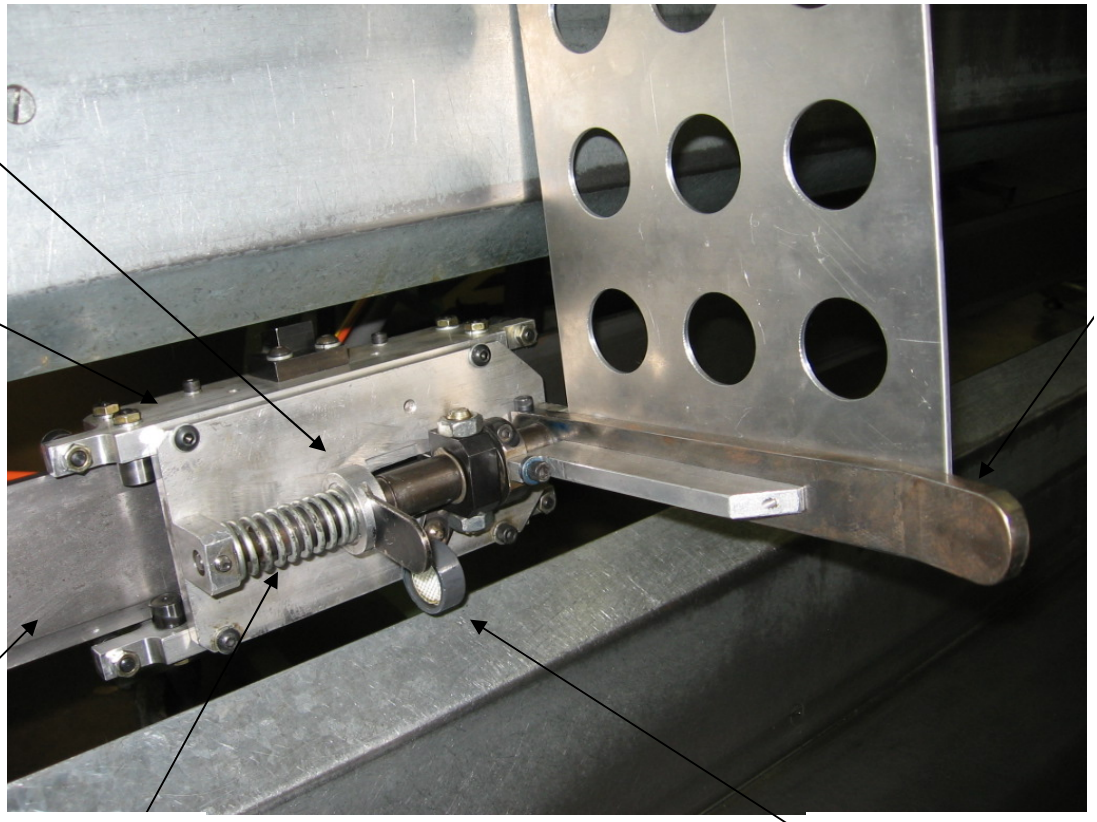

ADJUSTMENT COLLAR
PUSHER CARRIAGE
PUSHER ARM
DRIVE RAIL
PUSHER SPRING
DRIVE SAFETY SWITCH

Fig. 12

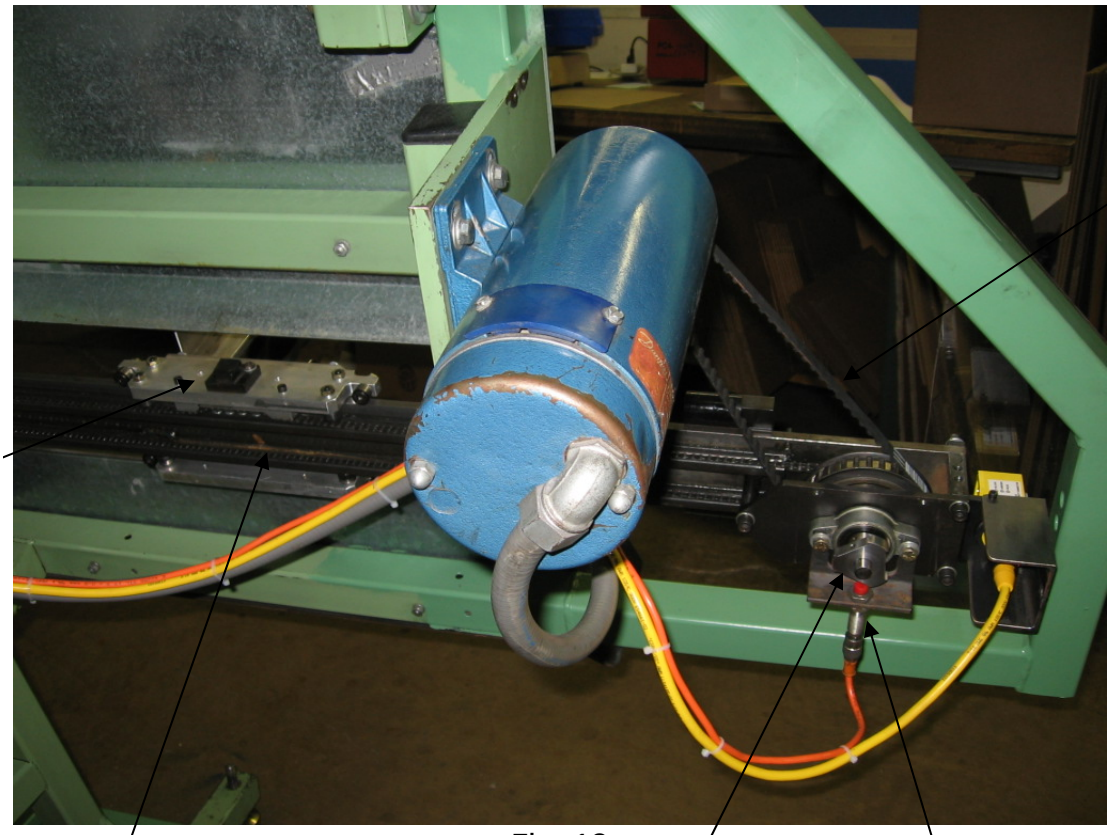

DRIVE BELT
SWITCH ACTUATOR
DRIVE CHAIN
COUNT WHEEL
COUNT PROXIMITY

Fig. 13

ROTATING PADDLE

The purpose of the rotating paddle is to turn the innerspring 90 degrees presenting a new side to the clip tools for clipping. The cylinder used for rotating has 3 reed switches located on its perimeter (Fig. 14). The purpose of these switches is as follows:

END STROKE SWITCH: Signals the PLC when the cylinder has reached the end of its stroke. This in turn results in releasing the innerspring and the paddle returns back to the horizontal position.

FORWARD EXHAUST SWITCH: Signals the PLC when to restrict the exhaust flow from the paddle cylinder resulting in a cushioning action. (This switch is active only when the paddle is moving toward the vertical position.)

RETURN EXHAUST SWITCH Signals the PLC when to restrict the exhaust flow from the paddle cylinder resulting in a cushioning action. (This switch is active only when the paddle is returning to the horizontal position.)

Figure 15 shows a primary and secondary speed control. The primary speed control is in effect initially and switches over to the secondary speed control for the cushioning action. Adjustments can be made to change the speed of rotation. By loosening the nuts and turning the screw clockwise, speed will be reduced; turning the screw counter-clockwise will increase the speed. Adjust ¼ turn at a time only, check paddle speed after each adjustment.

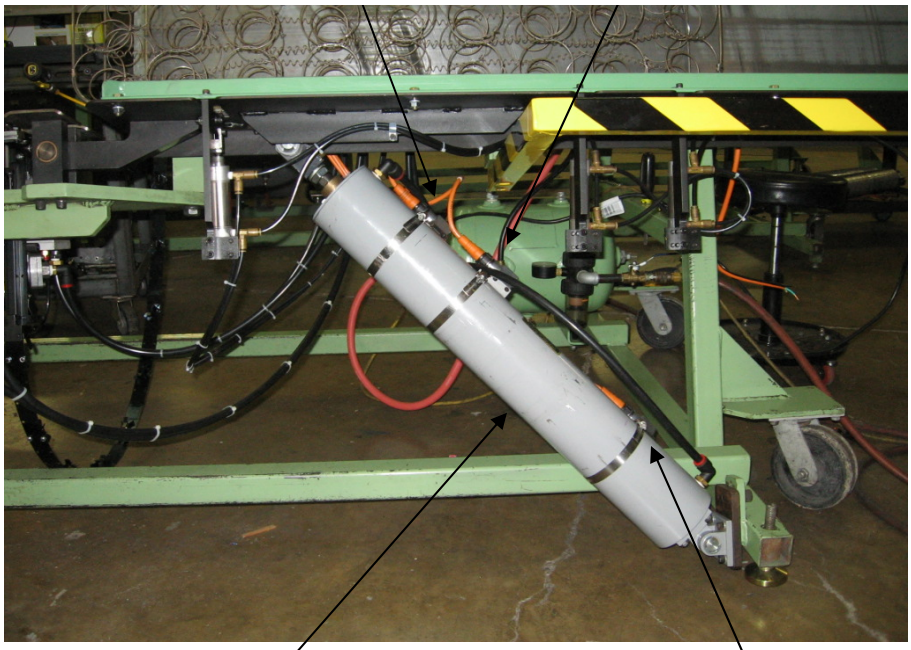


Fig. 14

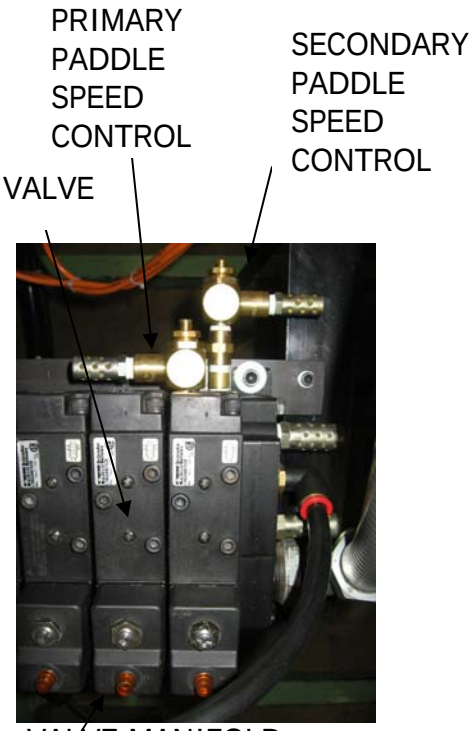


Fig. 15

CLIP FEED SENSOR

The Clip Feed Sensor is used to monitor the clip "flow" into the clip tools. The clip "flow" can be interrupted by the end of a roll of clips or a jam at either of the clip tools.

The Clip Feed Sensor is a proximity switch mounted to the clip feed mechanism, which advances clips along a magazine to the clip tool which it is mounted to. The clip sensing proximity switch is located in a position that causes a proximity actuator to come in range of the switch at each firing of the clip tool (see tool drawing for component name/part #).

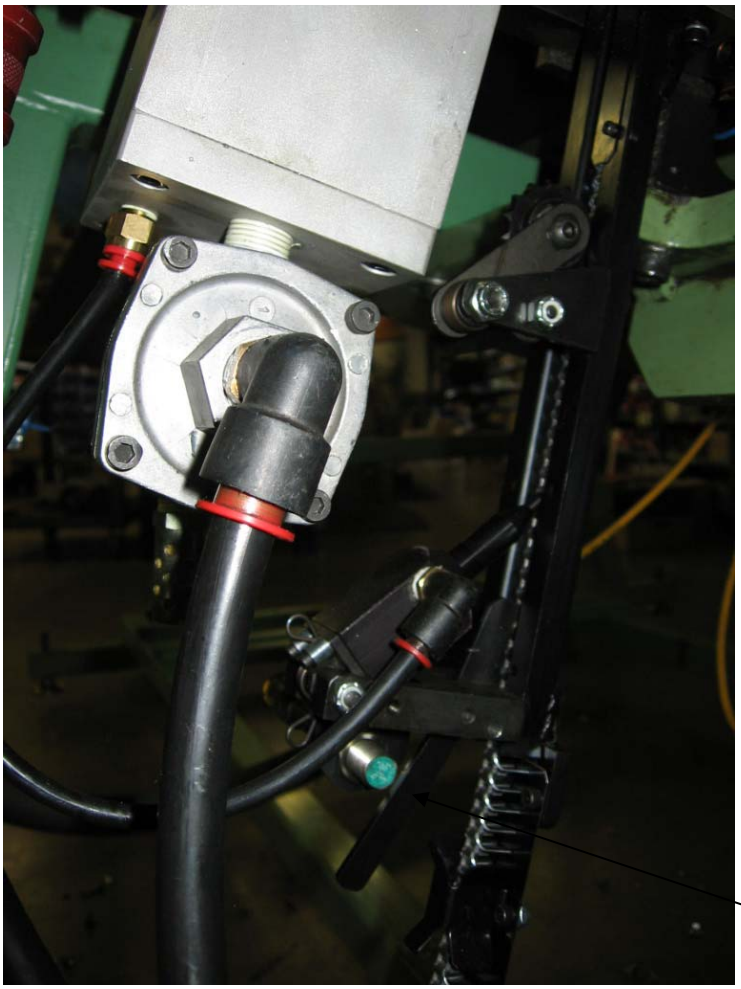


Fig. 16

When either of the tools completes a roll of clips the clip sensor actuator will pivot away from the sensor and not send a signal to the PLC when the tool fires. This "loss of signal" tells the PLC a tool is out of clips (Fig. 16). The machine will then stop clipping.

OPERATING INSTRUCTIONS

Loading a Spool of ProClips

1. Load clips so they run off the top of spool (Fig. 17).
2. Thread clips thru track guides along track.
3. Verify the feed cylinder is down.
4. While depressing “MANUAL CLIP” pushbutton (Fig. 3), push clips into back of tool until clips contact driver blade. Release pushbutton.

Fig. 17

Loading a Spool of ProClips while Clips are Running

1. Remove empty spool while last of the clips are running.
2. Follow steps 1 & 2 above.
3. With constant pressure, feed clips in behind the last clip of the previous roll.
    a. Apply constant pressure until feed cylinder has engaged new strand of clips.

Removing ProClips from Tool Assembly

1. Lift Feed Cylinder (VC0278).
2. Raise Anti-Backup Wheel by turning ABW Flag Knob (VC0378).
3. Press back of pawl (VC0327) down while removing clips from rear.

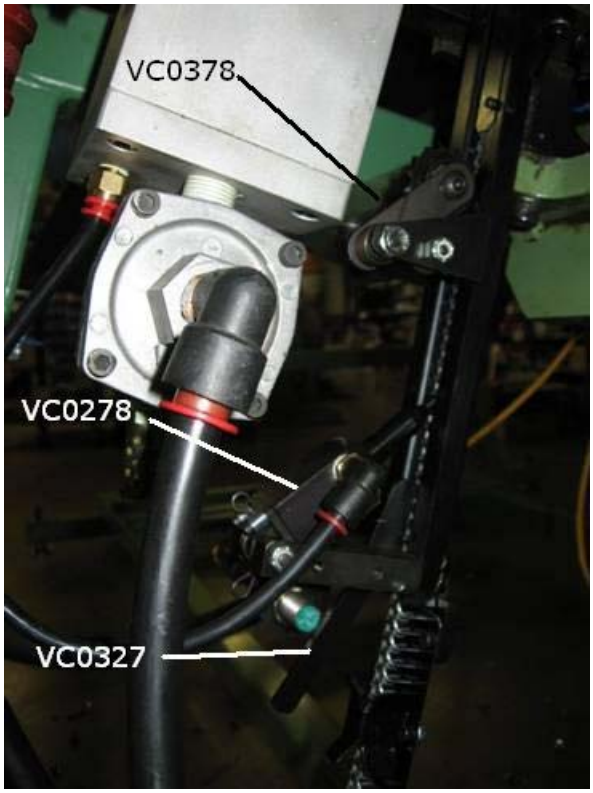


Fig. 18

Clipping Border Wires to the Perimeter Coils

Keep hands and fingers away from Clipping Head exit point!!

1. Load unit on AutoClipper.
2. Press Start Cycle.
3. Remove completed unit and repeat.

Manual Clipping

- Use to install individual clips.

Keep hands and fingers away from Clipping Head exit point!!

1. Position unit for correct placement of clip.
2. Depress Manual Clip button (Fig. 2) for tool you wish to fire.
3. Repeat as necessary.

SAFETY INSTRUCTIONS

1. Operators should ALWAYS wear safety glasses while operating, maintaining or repairing the equipment.
2. NEVER place hands or fingers near clip exit area when operating tool or when connecting air supply to machine.
3. Always shut off air supply and electrical supply when servicing. Observe Lockout Tagout procedures.

MAINTENANCE

Self-Lubricating Regulator

Use Air Tool Oil, Vertex part number VC0340.
Turn knob one full turn (counterclockwise) from closed position for correct lubrication.

Follow preventative maintenance schedules in Appendix:

"DAILY"
PREVENTATIVE MAINTENANCE

DATE:__/__/__
SHIFT: A B C D (CIRCLE ONE)

MAINTENANCE TO PERFORM	**RESPONSIBILITY**	**INITIALS**
BLOW OFF CLIP TOOL ASSY AND SURROUNDING AREA WITH AIR HOSE	OPERATOR	_____
BLOW OFF CLIP FEED ASSY AND TRACK AREA WITH AIR HOSE	OPERATOR	_____
WIPE OFF SENSOR TIPS USING NON-ABRASIVE CLOTH	OPERATOR	_____

SENSOR AND LOCATION

- CARRIAGE PHOTOEYE AT END OF DRIVE RAIL
- CARRIAGE REFLECTOR ON CARRIAGE ASSEMBLY
- PROXIMITY SENSORS ALONG RAIL ON BACK OF MACHINE
- HEIGHT PHOTOEYE SENSORS ON FRONT OF MACHINE
- COUNT WHEEL PROXIMITY SENSOR AT END OF DRIVE RAIL
- CLIP SENSOR ON FEED TRACK

OIL (1) BEHIND TOOL "FRONT PLATE" AND "BLADE" AREA	OPERATOR	_____

NOTE: (1) RECOMMENDED OIL VERTEX VC0340

COMMENTS: (REMARKS ABOUT CONDITION OF PARTS AND/OR MAINTENANCE PERFORMED).

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"WEEKLY"
PREVENTATIVE MAINTENANCE

DATE:__/__/__
SHIFT: A B C D (CIRCLE ONE)

MAINTENANCE TO PERFORM	**RESPONSIBILITY**	**INITIALS**
CHECK AIR LINE LUBRICATOR AND FILL AS NECESSARY (1)	OPERATOR	_____
CHECK FOR LOOSE OR MISSING SCREWS ON CLIPPING TOOLS ASSEMBILIES TO CHECK • CLIPPING TOOLS • FEEDER ASSEMBLIES • BORDER WIRE CLAMP ASSEMBLIES • CARRIAGE ASSEMBLY	SUPERVISOR	_____
CHECK FOR LOOSE OR MISSING SCREWS ON SAFETY COVERS	SUPERVISOR	_____

NOTE: USE ONLY SCREWS AND WASHERS OF THE SAME TYPE FOR REPLACEMENT

COMMENTS: (REMARKS ABOUT CONDITION OF PARTS AND/OR MAINTENANCE PERFORMED).

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"MONTHLY"
PREVENTATIVE MAINTENANCE

DATE:__/__/__
SHIFT: A B C D (CIRCLE ONE)

MAINTENANCE TO PERFORM	**RESPONSIBILITY**	**INITIALS**
REMOVE CLIPPING TOOL "FRONT PLATE" REMOVE "BLADE" AND "BLADE PIN" BLOW OUT INSIDE OF CLIPPING TOOL WITH AIR HOSE WIPE OF "BLADE", "BLADE PIN", AND "FRONT PLATE" CHECK FOR WEAR. REPLACE IF BADLY WORN. CHECK "ANVIL" REPLACE IF BADLY WORN LUBRICATE (2) "BLADE", "BLADE PIN", AND "FRONT PLATE" LUBRICATE (2) "ROLLER" AND "ROLLER PIN" WITHOUT REMOVING LUBRICATE (2) SLOTS INSIDE OF "SIDE PLATES" REASSEMBLE ALL COMPONENTS AND MANUALLY FIRE TOOL TO INSURE FUNCTIONALITY	SUPERVISOR	_____
DRAIN LIQUIDS THAT HAVE COLLECTED INSIDE AIR TANK BY OPENING VALVE ON BOTTOM OF AIR TANK	SUPERVISOR	_____
CHECK MOTOR DRIVE BELT FOR PROPER TENSION AND WEAR, REPLACE IF NEEDED	SUPERVISOR	_____
CHECK SET SCREW ON MOTOR DRIVE PULLEY, SHAFT RETAINING COLLAR AND COUNT WHEEL FOR TIGHTNESS. REALIGN MOTOR DRIVE PULLEY BEFORE TIGHTENING SET SCREW IF LOOSE		

NOTE: (2) USE VERTEX VH0214 GREASE

COMMENTS: (REMARKS ABOUT CONDITION OF PARTS AND/OR MAINTENANCE PERFORMED).

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"SEMI-ANNUALLY"
PREVENTATIVE MAINTENANCE

DATE:__/__/__
SHIFT: A B C D (CIRCLE ONE)

MAINTENANCE TO PERFORM	**RESPONSIBILITY**	**INITIALS**
LUBRICATE (2) DRIVE RAIL AREA AND CARRIAGE ROLLERS	SUPERVISOR	_____
CHECK TENSION ON CHAIN AND LUBRICATE (2)	SUPERVISOR	_____
CLEAN COIL SENSOR ASSEMBLY BY BLOWING OFF WITH AIR LUBRICATE PIVOT POINTS	SUPERVISOR	_____
REPLACE AIR LINE FILTERS (IF INSTALLED)	SUPERVISOR	_____
CHECK MUFFLERS ON MAIN VALVE BANKS ON REAR OF MACHINE AND ON CLIPPING TOOLS MAKE SURE THEY ARE NOT CLOGGED. AIR SHOULD FLOW FREELY	SUPERVISOR	_____

NOTE: (2) USE VERTEX GREASE VH0214

COMMENTS: (REMARKS ABOUT CONDITION OF PARTS AND/OR MAINTENANCE PERFORMED).

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"ANNUALY"
PREVENTATIVE MAINTENANCE

DATE:__/__/__
SHIFT: A B C D (CIRCLE ONE)

MAINTENANCE TO PERFORM	**RESPONSIBILITY**	**INITIALS**
CLEAN CARBON DUST FROM INSIDE MOTOR. REMOVE REAR COVER AND USE BRUSH	MAINTENANCE DEPT.	_____
REBUILD CLIPPING TOOLS DISASSEBLE TOOLS COMPLETELY CLEAN COMPONENTS AND DRY INSPECT ALL COMPONENTS FOR WEAR. REPLACE AS NEEDED REPLACE PISTON O-RING LUBRICATE (2) ALL WORKING PARTS AND REASSEMBLE	MAINTENANCE DEPT.	_____
REBUILD MAGAZINE ASSEMBLY DISASSEMBLE FEEDER CYLINDER AND ANTI BACKUP WHEEL ASSEMBLY CLEAN COMPONENTS AND DRY INSPECT ALL COMPONENTS FOR WEAR REPLACE AS NEEDED REPLACE O-RINGS IN AIR CYLINDER LUBRICATE (2) ALL WORKING PARTS AND REASSEMBLE	MAINTENANCE DEPT.	_____
DE-GREASE AND CLEAN EXTERIOR SURFACE OF MACHINE INSPECT ALL PARTS FOR WEAR AND REPAIR OR REPLACE AS NEEDED	MAINTENANCE DEPT.	_____

NOTE: (2) USE VERTEX GREASE VH0214

COMMENTS: (REMARKS ABOUT CONDITION OF PARTS AND/OR MAINTENANCE PERFORMED).

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