PROCUT 320/265 SERVICE MANUAL

265 Serial #'s 1035 and up
320 Serial #'s 10101 to 10809, 10811

Pro-Graphics Network LLC
4030 Simon Rd.
Boardman, OH USA 44512
Phone 330-783-0083 Fax 330-783-0761
e-mail pgnoffice@aol.com

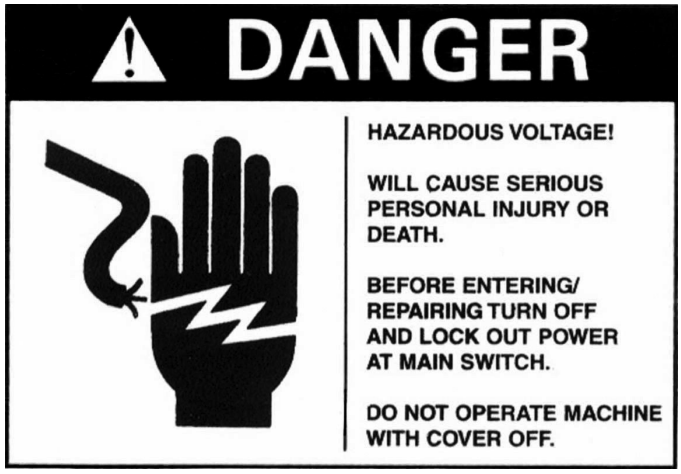
June 15, 2004

TABLE OF CONTENTS

DANGER LABELS

Please read and follow the instructions on the labels below.

Location: Upper front of main frame



Location: Upper rear access panel
Front lower access panel

Location: Rear back cover

SAFETY PRECAUTIONS

IMPORTANT: DO NOT ATTEMPT TO OPERATE THE CUTTER UNTIL THE REST OF THIS MANUAL HAS BEEN THOROUGHLY READ AND UNDERSTOOD. CALL YOUR DEALER IF YOU STILL HAVE ANY QUESTIONS.

⚠ **DANGER – PERSONAL SAFETY INSTUCTION.**

This safety alert symbol means <u>DANGER</u>. Please read the entire instructions.

- **This is a one operator machine. NEVER operate the cutter with more than one person.**
- **The operator is responsible when using the machine. Use common sense when working with or around the machine.**
- **Please read the instructions carefully. If you should have a question, please contact your local Pro-Cut dealer. Failure to understand operating instructions could result in personal injury.**
- **DO NOT ALTER SAFETY DEVICES, they are meant for your protection.**
- **When making adjustments, cleaning or services which do not require power, we recommend you unplug the machine or turn off the "Blade Adjust-Off-On" key switch to OFF and remove the key.**
- **Observe all danger labels mounted on this cutter.**
- **Keep all foreign objects off side tables and away from the cutter blade.**
- **When changing the cutter knife be EXTREMELY CAREFUL. Severe lacerations or dismemberment may result from careless handling. <u>*Always use the Blade Change Safety Guard shipped with the machine.*</u>**
- **Keep the floor around the cutter free from oil, scrap paper and debris.**
- **DO NOT REACH UNDER THE KNIFE AND CLAMP AREA! Use a jogging aid supplied with the machine to align and load stock. Also use the backgauge controls to move stock forward.**

UNCRATING

Your cutter has been carefully packaged to prevent damage during shipping. Inspect all shipments as soon as they are received. Note any damage on the freight bill and notify the claims department of the carrier immediately. All claims for damage are the responsibility of the receiver, so remember to inspect promptly. Check the contents of the crate against the following packing list:

1-New Knife
1-Empty Knife Holder
1-Cut Stick
2-Side Tables
2-Side Table Braces
1-Bag of Bolts For Side Tables and Braces
4-Leveling Pads

1-Tool Kit Consisting of:
1-T-Handle Allen Wrench
1-5/16 Combination Wrench
1-Cutting Stick Puller
1-Allen Wrench for False Clamp Plate
1-Jogging Block
1-Blade Change Safety Guard
1-Tube of Grease

1-Envelope Consisting of:
1-Operator Manual
1-Warrenty Card
1-Table Cleaning Pad

If handling or unpacking is a problem, a rigger should be hired to unpack and position the machine. These people are experienced and have the required equipment. The 320 cutter models weigh approximately 3000 lbs. (1363kg). DO NOT risk personal injury or damage by attempting to move machinery with makeshift equipment or inadequate manpower.

This machine is shipped on a wooden skid covered with a cardboard cover. The cutter is secured to the skid with hex head bolts. The accessories and optional supplies are banded in separate packaging to the rear of the skid. To prevent damage, these items should be removed before attempting to remove the cutter from the skid.

The cutter can be lifted with a standard 5000 lb. Capacity fork truck. Carefully position the forks to fit just inside the cutter legs spread to the maximum space under the cutter. Extend the forks under the base and out past the hydraulic unit lifting the cutter as close to the fork truck mast as possible, Fig. 1. Carefully lift the cutter from the skid and position it on the floor. At this point a pallet jack can now be used to move the cutter.

⚠ DANGER: Never lift a Procut paper cutter from under the clamp.

LEVELING THE CUTTER

Place the leveling pads under the cutter as shown in Fig. 1. Level the cutter left to right. For best cutting results lower the back of the cutter, 1/2 to 1/3 of a bubble out of level, to help paper position against the backgauge. Fig. 1.

INSTALLING PEDESTAL
320 SERIAL NUMBERS 10797 AND UP

Overhead backgauge machines have a Rear Table Pedestal to maintain the table flatness. Thread the pedestal Rod up to the Nut into the Pedestal Block (Fig 1A) located under the rear table before lowering the machine off of the forklift. After the machine is leveled properly using the leveling pads (see page 5 of the Service Manual), place the Floor Plate under the Rod and adjust the Rod down into the Floor Plate hole until

the two rear leveling pads become slightly loose. Turn the Rod counterclockwise 1/8 turn at a time until the rear leveling pads will not move. Tighten the pedestal rod Nut.

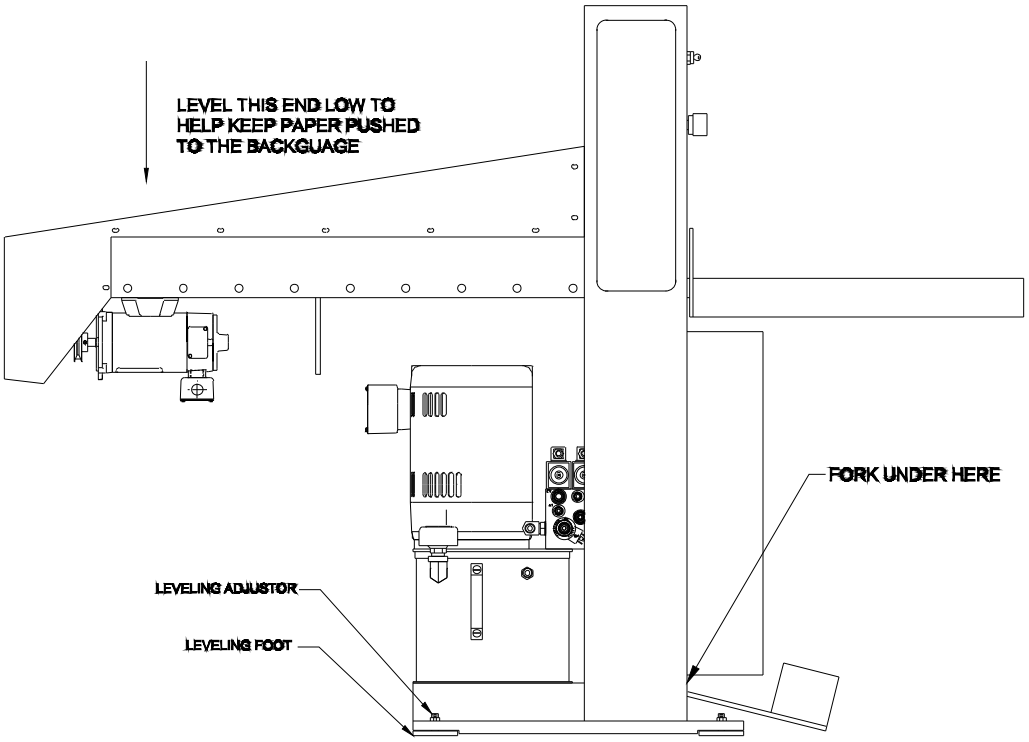


Fig. 1

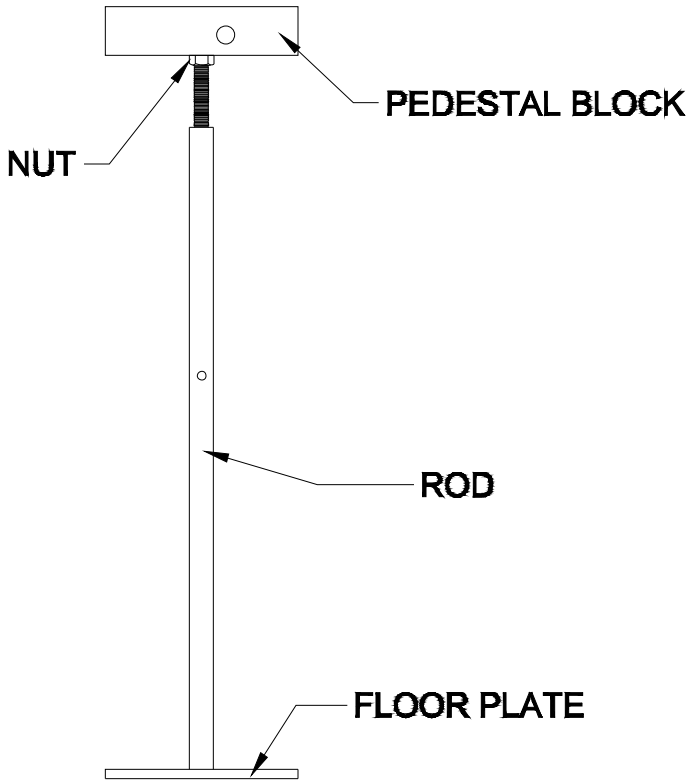


Fig 1A

CLEANING

The bare metal surfaces have been coated with a rust preventative before shipping. This is a lubricant and should be removed. After cleaning the table surface, treat the surface with a silicone/rust preventative material such as Varn "Slip Agent 6" or Johnson's Paste Wax. Never use a product that contains water.

REMOVING THE TABLE

1. After removing the cutter from the skid place it on a level surface with plenty of room on all sides.

2. Locate and disconnect the wiring listed below. Fig. 2. Not all the wiring listed will be on each cutter.
   A. MPS Motor. Remove the wire from inside the motor box.
   B. MPS Encoder. At the plug close to the unit.
   C. MPS Position Sensor. At the plug on the bottom of the table.
   D. Cut Button Boxes. On the front of the table bottom. Remove boxes but don't disconnect the wires from the switches or panel.
   E. Digital Encoder. Follow the wiring from the encoder to the back of the Digital Display Head. Mark the wires and remove them from the head and pull them out of the frame.
   F. Digital Reset Sensor. Follow the wiring from the sensor to the back of the Digital Display Head. Mark the wires and remove them from the head and pull the cable out of the frame.
   G. Digital Molex Plugs. Two (2) plugs are located under the table close to the main frame.
   H. Rear Table Cover Switch.

3. The air table hose must be removed from the fitting on the manifold on the table bottom.

4. Remove the left and right angle cut side plates, bolted to the side of the table using a 9/16" open-end wrench. The plates are slotted for easy removal.

5. Remove the four (4) non-tamperproof button head Allen screws holding the rear table cover side extension plates to the frame. Use a 5/32" Allen wrench.

6. Remove the two (2) table locator pins from the table support pads on the rear of the cutter. Use a ½" wrench and tighten the nuts to draw the pin from the hole. It will be necessary to use washers under the nut to completely remove the pins.

7. Remove the two (2) large button head screws on the rear table side plates using a 3/8" Allen wrench. Install two (2) 5/8-11 x 4" long grade 8 bolts 2" into each hole. This is the lifting point of the table.

   ⚠ DANGER: The table weighs approximately 1000 lbs. (454 kg). Be sure the lifting unit is rated for lifting this type of load.

8. From the rear, position the lifting unit over the two (2) lifting bolts. Attach wide straps or chain to the lifting bolts from the lifting unit. A heavy steel bar (spreader bar) will aid in keeping the straps or chain away from the side plates and cover. Tighten the slack up but don't lift the cutter off the floor.

9. Position a pallet jack under the frame from the front side.

10. Remove the eight (8) 3/8 bolts that hold the table to the main frame with a 9/16 wrench.

11. Raise the table from the frame. Raise it high enough to clear air table parts.

12. Jack the frame up with the pallet jack and pull it away from the table. Watch wiring and clearances.

13. Move the table and frame to the installation site and reverse the removal instructions to reinstall the table.

14. Check all Paper Squaring tests and Display calibration steps.

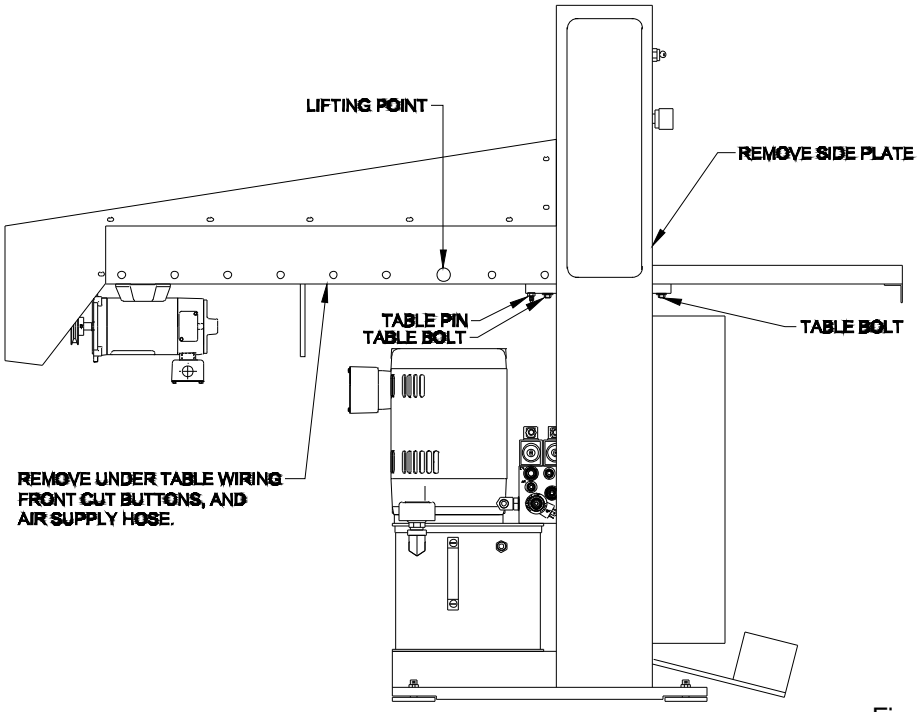


Fig. 2

POWER HOOKUP

⚠ DANGER: SHOCK HAZARD! Always disconnect power at the main power panel before working on the cutter. Lock it out to prevent accidental power up.

Your cutter has been equipped according to the specifications on your order. However, to prevent component damage, check and recheck to make sure the voltage on your cutter matches that of your supply line. Incorrect voltage and inadequate power are the major sources of cutter problems. Test your line voltage when the shop is at full operating levels. Decreased voltage during this time could lead to power loss, overheating or even failure to operate. A "dedicated" line must be used for efficient operation.

1. Proper Grounding.
   When installing all of our models a ground wire must be hooked from the cutter to a ground rod in the earth. This is the No. 1 cause of electronic glitches.

   To check to see if you have a proper ground, you must physically follow the ground wire hooked to the #4 terminal in the cutter electrical box to the disconnect, breaker panel or panels, and then finally to the ground rod. Fig. 3.

   The ground wire in the breaker panels must never be connected to the "neutral bar". This will cause electrical noise from other devices to back feed into the cutter electrical system and cause glitches.

   The ground rod is a solid copper rod approved for electrical service. It is driven into the ground outside the building where moisture from the elements can allow it to work. A wire must run from the rod into the grounding lug inside the breaker panel where the ground wire from the cutter is attached.

   Any other location of the ground wire, such as a water pipe, structural steel, steel ground rod or pipe are not acceptable. They can corrode and rust causing a complete loss of ground protection.

2. Dedicated Conduit, Wire, Breaker, and Disconnect

   The main power wires used to operate the cutter must be in a separate dedicated conduit. Other power lines in this conduit such as fluorescent lights, receptacles or other machinery will cause a condition known as Electrical Noise.

Electrical noise changes the normal wavelength of the power flow. This noise affects the ability of electronic devices to process information correctly.

The power wire going to the cutter must have a dedicated breaker. Other machinery connected to the paper cutter breaker will most likely cause a momentary drop in voltage to the cutter.

The cutter in accordance with federal, state, and local codes must have a Lock Out power disconnect. This prevents unauthorized people from turning the cutter on while being serviced or if a supervisor does not want the cutter used.

3. Service Specifications.

Three Phase 208-245 Volt 30 Amp Service:
Use #10 copper wire up to 100 feet from the main breaker. Drop one wire size for every 100 additional feet of length.

0-100 feet	#10 wire
100-200 feet	#8 wire
200-300 feet	#6 wire

Single Phase 220 – 245 Volt Service:

(320 only)
220-245 Volt 60 Amp Single Phase

(265 only)
220-245 Volt 50 Amp Single Phase
Use #6 copper wire up to 100 feet from the main breaker. Drop one wire size for every 100 additional feet of length.

0-100 feet	#6 wire
100-200 feet	#4 wire
200-300 feet	#2 wire

All wire specifications are for copper wire. Use only copper wire for best performance.

All Voltage ranges listed above for Single and Three Phase are actual voltage readings. These are the Minimum and Maximum voltages the cutter was designed to use. Any voltage out of these ranges must be brought into the range with buck-boost transformer(s).

All power requirements are to be measured using a voltage meter from L1 to L2, L2 to L3, and L1 to L3. This must be done BEFORE the cutter is turned on. Fig. 3.

MULTI TAP LOW VOLTAGE TRANSFORMER

The Multi tap transformer in the cutter is used to convert the high 230 volt power into 115 volt and 24 volt power for the control systems in the cutter. After a voltage reading has been taken across L1 to L2, match the voltage to the Transformer Tap Label inside the electrical box to tap the transformer to the proper setting.

The cutter is shipped with the wires on the H2 and H4 taps. This is sufficient for voltage from 220 volt to 240 volt. If the voltage is below 220 volt and higher that 200 volt then move the wire at H2 to H3. Fig. 3.

THREE PHASE HIGH LEG

Some three phase power systems have a “leg” that may be much higher than the other two (2). That leg must be installed in the L3 terminal.

Use a voltage meter and check the line to ground on all three (3) lines. Fig. 3. If all lines are within five (5) volts of each other then do not switch any wires. If one leg is much higher than the others then Lock Out the disconnect and place that line at L3. Turn the power on and recheck.

INITIAL POWER-UP AND ROTATION

⚠ DANGER: On initial power-up, if the knife and clamp have worked down during shipment, both will raise up when the motor is started.

Turn the Power Selector to On and allow the MPS to reset. Push the two (2) black cut buttons to start the hydraulic motor. Press the Soft Clamp Pedal and the clamp should drop to the table, then release and the clamp should rise up. If it does not then the motor rotation may be wrong (Three Phase Only. Single Phase is factory set for rotation.). Lock Out the disconnect and switch the wires at L1 and L2. Fig. 3. Turn the power on and recheck.

To physically check motor rotation some motors have an end cover that can be removed to expose the shaft. The shaft when viewed from the top down should turn clockwise. Lock Out the disconnect and switch the wires at L1 and L2. Fig. 3. Turn the power on and recheck.

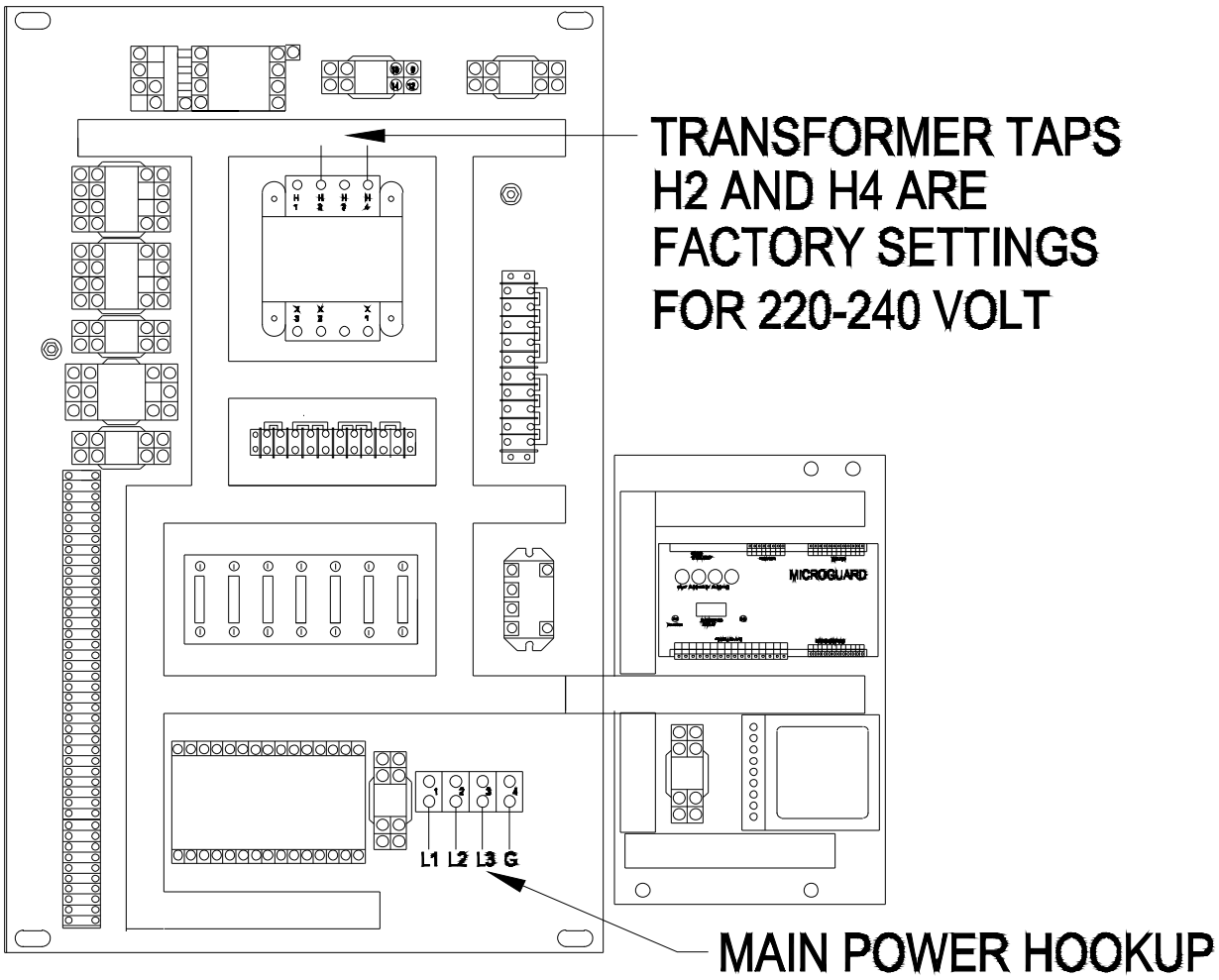


Fig. 3

HYDRAULIC CHECK

The hydraulic reservoir is filled with 4 gallons of ISO VG 46 hydraulic fluid when it leaves the factory. The level should be checked before operation. The fluid level should be checked at least once a week during normal operation. Overfilling will cause excessive leakage when it is hot. The reservoir is located at the rear of the cutter under the table. The fluid level can be checked at the viewing window on the side of the tank. The fluid should be kept at least ½ way up the sight glass but not over ¾ full. Fig. 4.

⚠ DANGER: NEVER use automatic transmission oil, brake fluid, motor oil as a substitute! Oils other than the recommended type will cause seals, cups, and o-

rings to deteriorate. Use of these substitute products will void the warranty. Unsafe operating conditions will result.

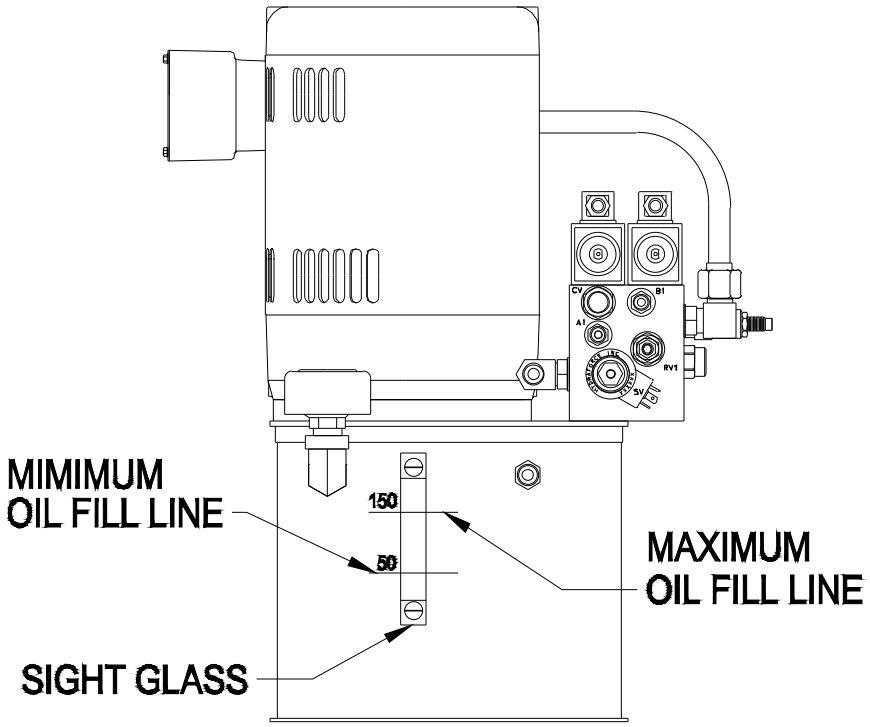


Fig. 4

SIDE TABLE INSTALLATION

Unpack the side tables, side table braces, and bolts from the shipping containers. The side tables are a pair one (1) left side and one (1) right side. The braces fit either side. Two (2) people may be necessary for installation. Fig. 5.

1. Install the 2 side table support braces with the four (4) 3/8-24 hex head bolts and washers. They bolt to the table bottom and are at a 45-degree angle. Finger snug the bolts.

2. Remove the four (4) 3/8-24 x 1" hex head bolts from the side of the main table.

3. Position the left side table over the left side table support brace and up to the main table. The brace will fit inside the c-channel on the under side if the table. Install two (2) 3/8-24 x 1" hex head bolts and washers to hold the side table.

4. Level the side table flush with the main table and tighten the mounting bolts.

5. Tighten the two (2) hex head bolts on the side table support brace. Turn the hex head bolt at the end of the support brace to level the table and remove any spring the table may have.

6. Repeat steps 3 through 5 to install the right side table.

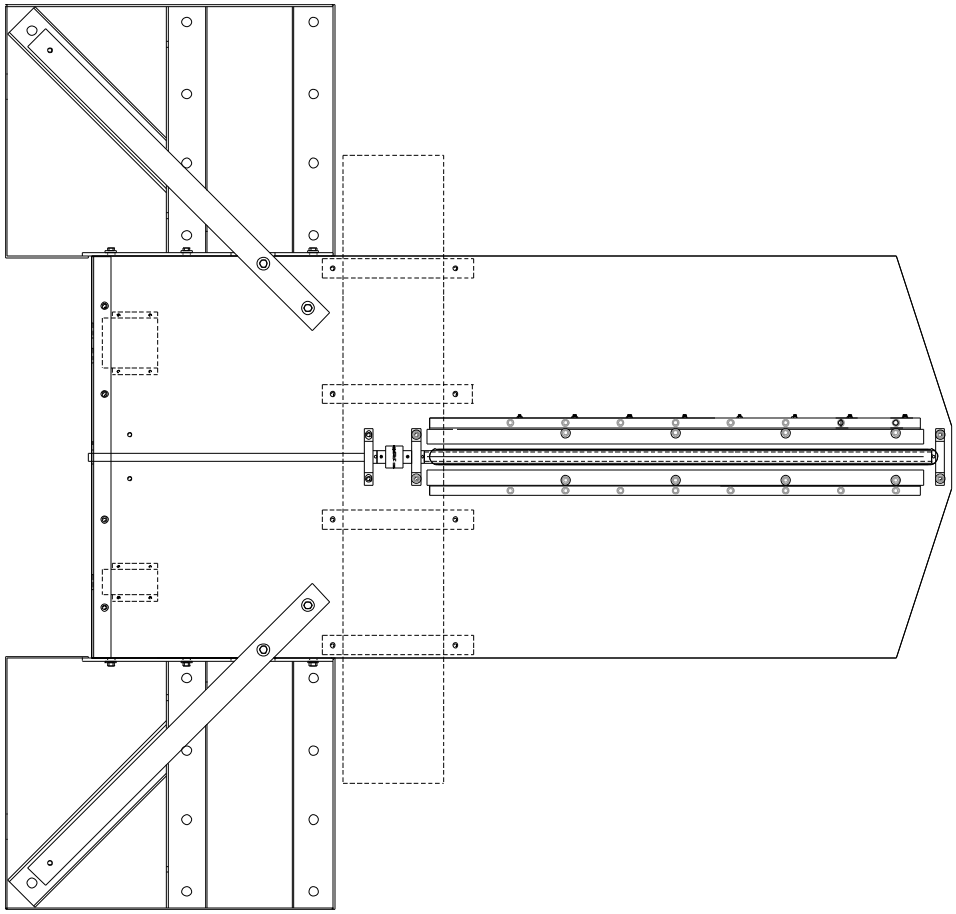


Fig. 5

AST INSTALATION INSTRUCTIONS

Before starting to install the AST's onto the cutter look over all of the layout sheets with your customer for the best installation configuration. Unpack all parts and check the packing list before assembly. This will aid you in easy and proper instillation of the AST's. Fig. 6.

1. Lay the table surface and frame assembly on a flat surface. Note the letter written on the assembly and locate the panel leg with the same letter written on it. Match the letters up and install the panel leg onto the frame with 3/ 3/8-16 Button Head Bolts and nuts. Also install 6/ 1/4-20 Hex Head Bolts and nuts, 3 per side as shown in the diagrams. Tighten all of the fasteners now.

2. Install the table leg onto the frame assembly according to the configuration that has been selected. Use 4/ 1/4-20 Hex Head Bolts and nuts. Tighten all of the fasteners now.

3. Turn the table over onto its legs.

4. Install the side plates according to the configuration that has been selected. Use the 3/8-16 Button Head Bolts and nuts. The plates are shorter than the table surface. Position them in from each end and tighten all the fasteners.

5. Install the angle brackets onto the Procut table bottom using 2/ 3/8-24 Button Head Bolts. Do not tighten these brackets yet.

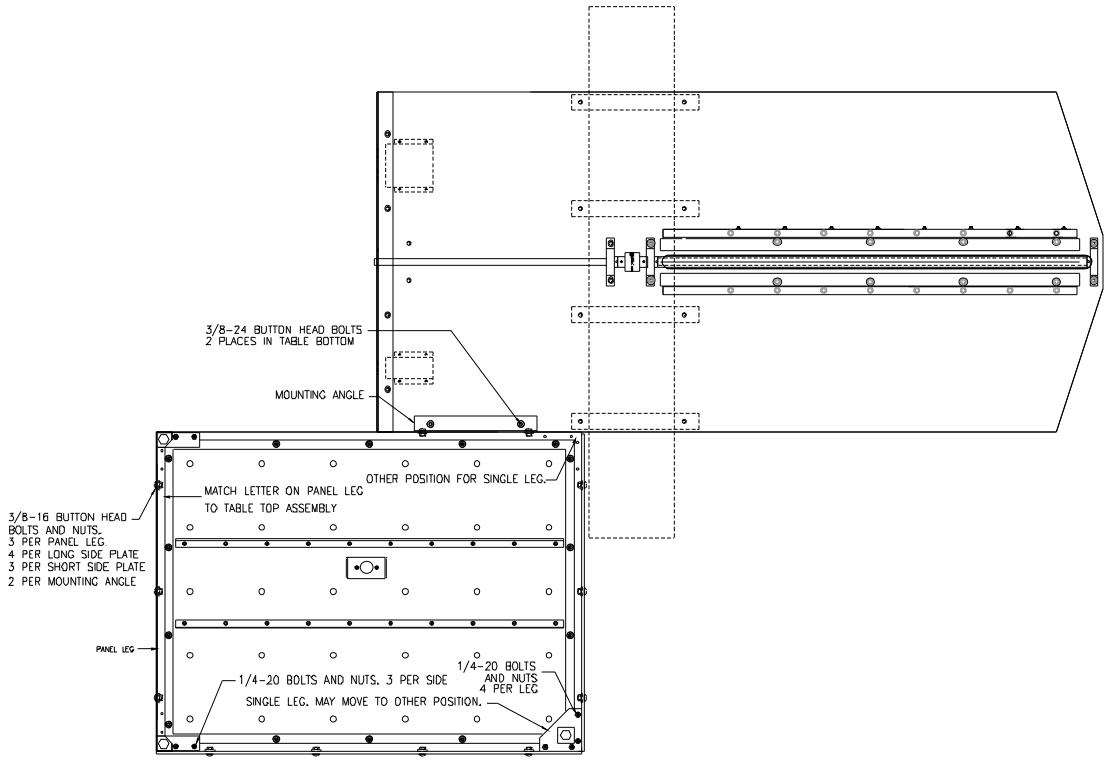


Fig 6

6. Position the AST up to the Procut table. Use 2/ 3/8-16 Button Head Bolts and nuts. The AST will bolt to the angle bracket. The leveling feet may need adjusted to help position the AST. Adjust the AST to the Procut table and tighten all of the fasteners.

7. Level the AST with the leveling feet. The AST should be flat with the main table.

8. Assemble the other AST as per your configuration.

9. Install the long air hose onto the left AST. Install the short hose onto the right AST. Both hoses will connect to the plastic "T" fitting at the right front corner of the Procut. In necessary trim the hoses to fit. The left hose will lie on top of the electrical box on the front.

10. Turn on the Procut. The Green Air Switch will turn on the main table air and the AST air.

KNIFE INSTALLATION/CHANGING

⚠DANGER: Changing knives can be very dangerous unless safety pre-cautions are observed and extreme care is taken when handling knives.

- Make sure knife lifters are properly installed.
- Keep handling of unprotected knives to an absolute minimum.
- Clear off cutter table and side tables before removing knife.
- Have scabbard on cutter table and insert knife immediately.
- Warn people of any unprotected knife.
- Knife changing is a <u>One-Person Operation.</u> Having more than one person trying to change knives invites accidents.

The knife changing equipment is included in the cutter tool kit. The following instructions show how to remove and install a new or sharpened knife. Read through these instructions completely AT LEAST ONCE before attempting to actually change or install any knives.

1. Clear the cutter table and side tables.
2. First, turn the "MAIN POWER SELECTOR" switch to "ON" and allow the MPS to reset, and then turn the "MAIN POWER SELECTOR" switch to "BLADE ADJUST."

3. Depress the black cut buttons to start the main motor.

4. Jog the blade down to the cutting stick with the black cut buttons. Turn the “MAIN POWER SELECTOR” switch to “OFF”.

5. Unscrew the blade adjusting bolts six (6) full turns.

6. Remove the right side blade bolt and washer on 320 models only. Fig. 7.

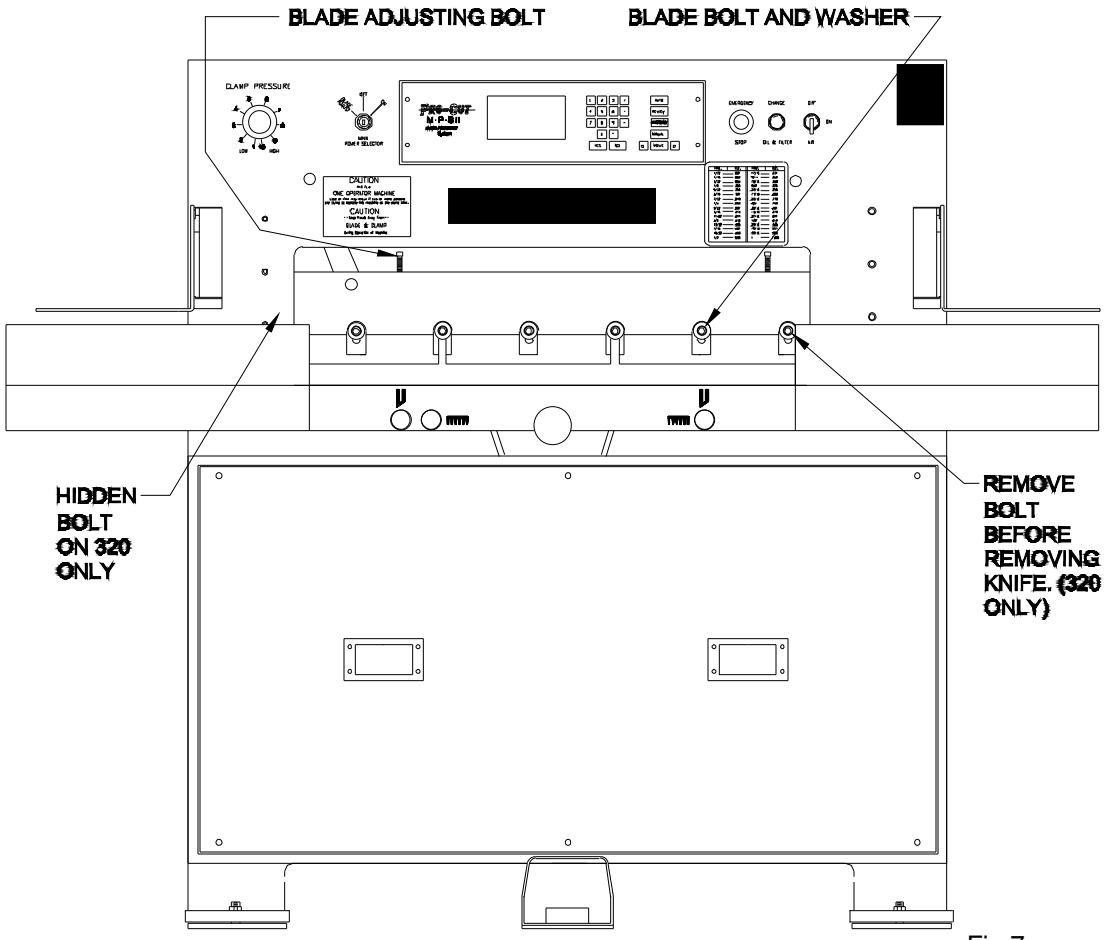


Fig 7

7. Turn the “MAIN POWER SELECTOR” switch to the “ON” position and depress the black cut buttons to start the main motor. The blade beam will return to the UP position.

⚠ DANGER: Do not leave your hand on the top of the blade beam for Step 7.

8. Turn the “MAIN POWER SELECTOR” switch to “OFF”.

⚠ DANGER: Knives are heavy and very sharp. Be careful to keep the edge away from your body and keep other people out of the area while handling the blade. Severe lacerations or dismemberment could result from careless handling procedures.

9. Remove the bolts in the two (2) slotted knife bar holes and install the Blade Change Handles or the Blade Change Safety Guard. Tighten the Blade Change Handles to hold the blade in place, and remove the remaining Blade Bolts. Fig 8.

10. Clear the table and put the empty knife scabbard on the table. Remove the two (2) knife retainer screws from scabbard.

11. Grasp the Blade Change Handles firmly and at the same time, turn them counterclockwise ¼ to ½ turn to release the knife from the blade beam. Lower the knife down and to the right bringing the left end out first. Put the knife in the scabbard immediately and attach the knife retaining screws. Remove the knife handles.

12. Remove the retainer screws from the new knife.

13. Thread the Blade Change Handles into the sharp knife using the lowest set of holes toward the knife-edge. Screw the Blade Change Handles all the way into the knife then back them out 1 ½ turns. Lift the knife and insert it into the left side, under the blade beam, first then to the right. Raise the knife into the two (2) slotted holes in the blade beam as high as it will go. NOTE: If the knife will not rise easily unscrew the Blade Change Handles ¼ turn at a time until the blade slides up easily. Tighten the Blade Change Handles to secure the knife.

14. Insert the Knife Bolts and washers into the exposed holes and tighten them. (320 only leave the left bolt loose ¼" turn.)

15. After the bolts are in and tight, remove the Blade Change Handles and install the bolts in these locations and tighten.

CUTTING STICK CHANGE/KNIFE ADJUSTMENT:

⚠ DANGER: Knife and clamp must be in the UP position and the "MAIN POWER SELECTOR" switch is turned to the OFF position when changing the cutting stick

16. Use the Cutting Stick Puller to remove the cutting stick. Turn the cutting stick to a new surface and insert the stick back into the cut stick channel. After the stick is completely down level into the channel, lay three (3) sheets of 8 ½" x 11" paper one the left, one in the center, and one to the right, under the knife covering the stick.

17. Turn the "MAIN POWER SELECTOR" switch to the "ON" position and allow the MPS to reset. Turn the "MAIN POWER SELECTOR" switch to "BLADE ADJUST" and depress the black cut buttons to start the main motor. Jog the black cut buttons until the blade is down to the cut stick. NOTE: If the knife hits the stick before the knife cycle is all the way down, the knife adjusting bolts were not unscrewed enough.

18. Loosen all of the knife bolts ¼ turn. (320 only install the right side Knife Bolt and loosen ¼ turn.)

19. Turn the knife adjustor screws clockwise, Fig. 7, with the 5/16 open-end wrench evenly on both sides until the paper cuts. After the paper is cut, turn the adjustors down 1/8 turn to assure cutting through a 4" stack of paper.

20. Tighten the knife bolts.

21. This step is for 320 Models only. Turn the "MAIN POWER SELECTOR" switch to the "ON" position and depress the black cut buttons to start the main motor. The blade beam will return to the UP position. Turn the "MAIN POWER SELECTOR" switch to "OFF". Install and tighten the last knife bolt on the left side.

22. Make a test cut though a 4" lift of paper. If the bottom sheets so not cut adjust knife adjuster screws down until all sheets are cut.
23. Send the dull knife to a reputable grinding company for sharpening. A reputable grinding company should have a magnetic chuck grinder that uses flood coolant to cool the knife while sharpening. They should also hand hone the knife to remove burrs that occur when sharpening. All Procut knives should be sharpened to a 24-degree bevel angle.

NOTE: A busy shop should have a minimum of three knives. One in the machine, one as a spare, and one at the grinder being sharpened.

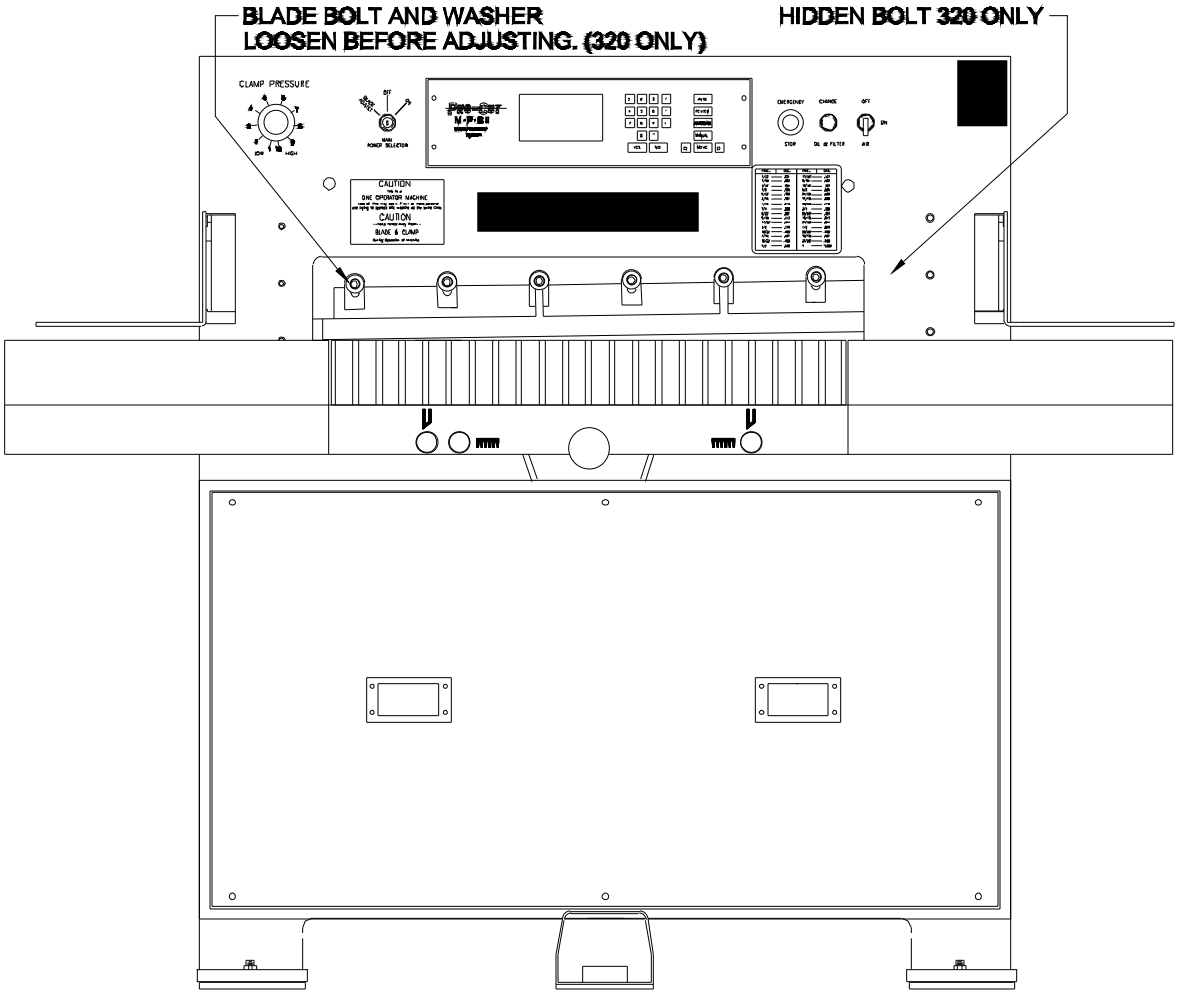


Fig. 8

CLAMP LEVELING

The clamp must contact the table exactly even from one end to the other. Otherwise, uneven cutting will occur. The clamp pressure must be at maximum when making the following test.

1. Remove the cut stick.

2. Remove the False Clamp.

3. Place two (2) pieces of 1/8" solid core solder on the table surface under the end clamp fingers on each side, flush with the rear side of the cut stick groove in the table. Fig. 9.

4. Turn the "MAIN POWER SELECTOR" switch to "ON" and allow the MPS to reset. Press the two (2) black cut buttons to start the main motor.

5. Press the two (2) black cut buttons and make a complete cycle of the clamp and blade.
6. Turn the "MAIN POWER SELECTOR" switch to "OFF".

7. Measure the front of the solder strips closest to the cut stick groove with a micrometer. If the strips do not measure the same, the clamp is not level. Maximum tolerance is –0.0005" thinner on the right side.

8. Remove the front lower access panel.

9. Inside the frame you will observe a rod with threads on both ends and lock nuts. The left side has left hand threads and the right side has right hand threads.

10. Using a 15/16" open-end wrench, loosen each lock nut. NOTE: It may be necessary to hold the shaft with channel lock style pliers, while loosening the nuts to insure it does not turn. Fig. 9.

11. Using a channel lock type pliers, turn the rod clockwise to lower the clamp on the right side. NOTE: Only the right side of the clamp moves.

12. Tighten both locknuts and repeat steps 3 through 12 until the solder is even or –0.0005" thinner on the right side.

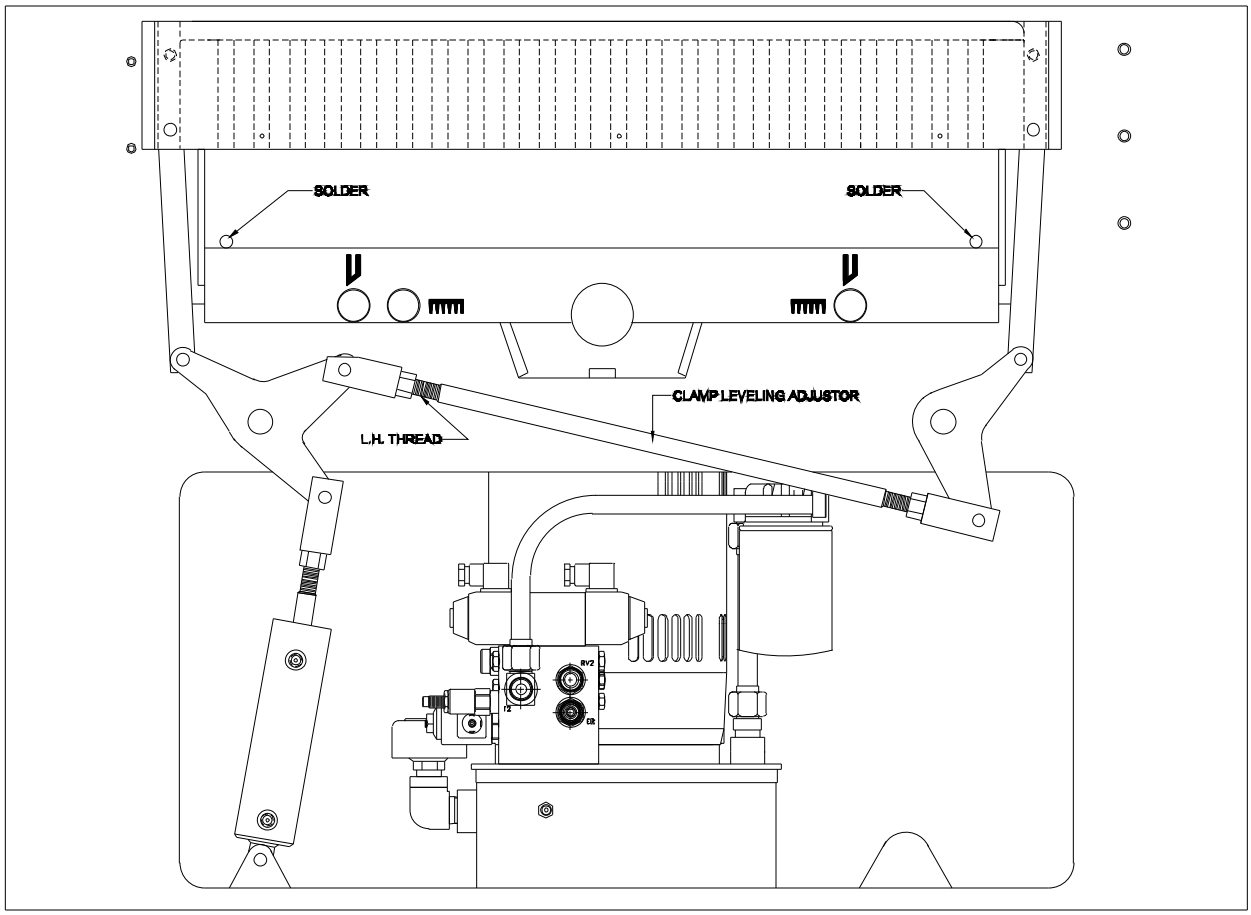


Fig 9

CLAMP MAXIMUM HEIGHT ADJUSTMENT – Use a 6" thin metal ruler.

1. Make sure the clamp is in the full up position by turning the "MAIN POWER SELECTOR" switch to "ON" and allow the MPS to reset. Press the two (2) black cut buttons to start the main motor. Press the "SOFT CLAMP" pedal to lower the clamp. Release the pedal and the clamp will rise up to the full up position. Turn the "MAIN POWER SELECTOR" switch to "OFF".

2. Measure the height of the clamp on the left side. It should be 4". Fig. 10. **NOTE:** If the clamp up limit switch is depressed to far the clamp will not rise to the 4" height. Adjust the switch until the 4" height is attained.

3. Turn the "MAIN POWER SELECTOR" switch to "OFF" and "Lock Out" the power disconnect.

4. Remove the front access panel.

5. The clamp cylinder is on the left side and the smaller of the two (2) cylinders. Fig. 10.

6. Loosen the lock nut on the cylinder shaft with a 15/16" open-end wrench.

7. To raise the clamp, turn the cylinder shaft clockwise. To lower the clamp, turn the cylinder shaft counterclockwise.

8. Turn the power disconnect "ON" and then turn the "MAIN POWER SELECTOR" switch to "ON" and allow the MPS to reset. Press the two (2) black cut buttons. The main motor will start and the clamp will rise to the full up position. Re-Measure the 4" and repeat steps 3 through 8 if needed. Replace the front access panel.

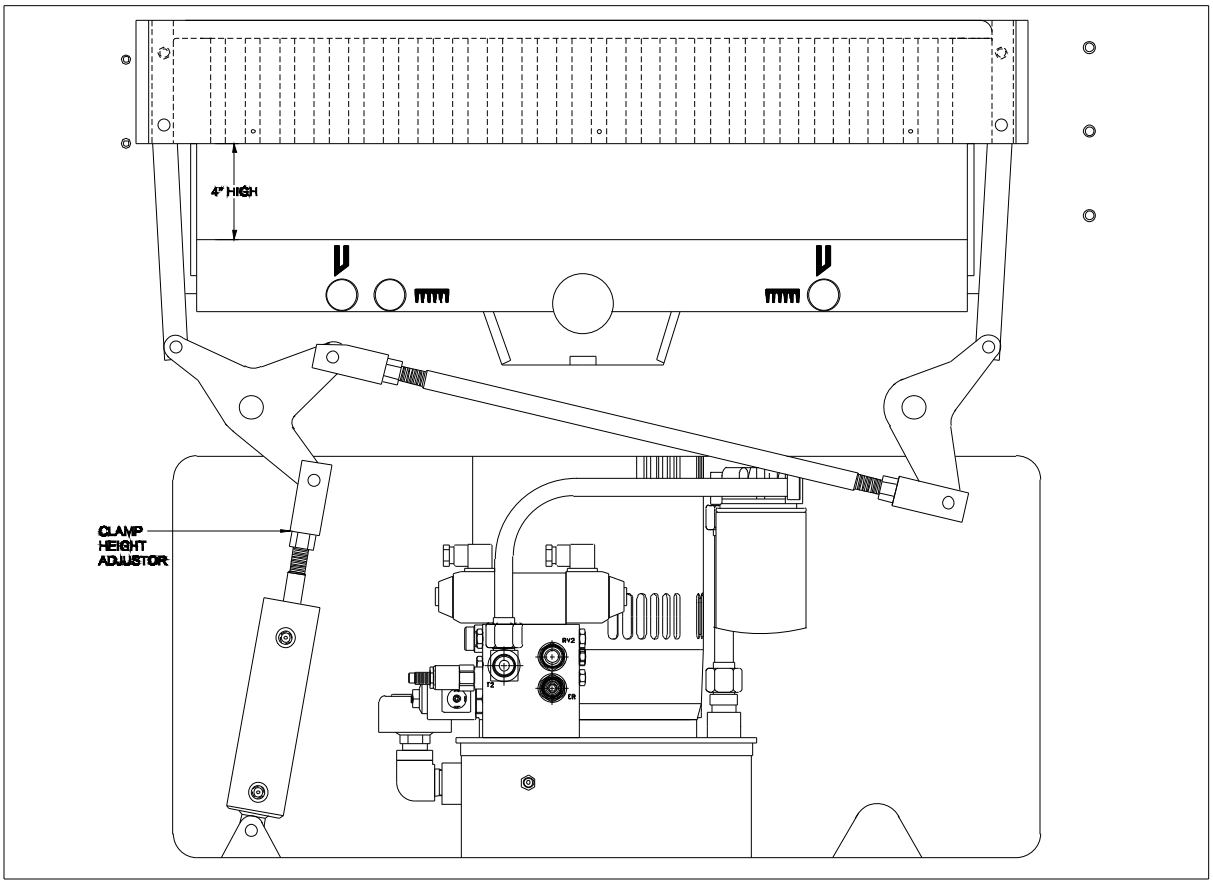


Fig 10

CLAMP UP LIMIT SWITCH

All cutters have a clamp up limit switch to signal the hydraulic unit that the clamp is in the full up position. When the knife is in the full up position and the clamp rises to the full up position, the switch is contacted and the hydraulic unit is placed in neutral.

If the hydraulic unit is showing high pressure on the clamp pressure gage when the clamp is up, and has a labored sound, the clamp up limit switch may need adjusted.

1. The clamp must be up to make this adjustment.

2. Remove the upper rear access panel.

3. Loosen the two (2) socket head cap screws with a 5/32” Allen wrench and a 3/8” open end wrench on the hex nuts. Fig. 11.

4. Move the switch bracket down until the switches activate with a click. Then move the bracket another 1/32” to 1/16” down.

5. Lock the screws and nuts

6. Replace the access panel.

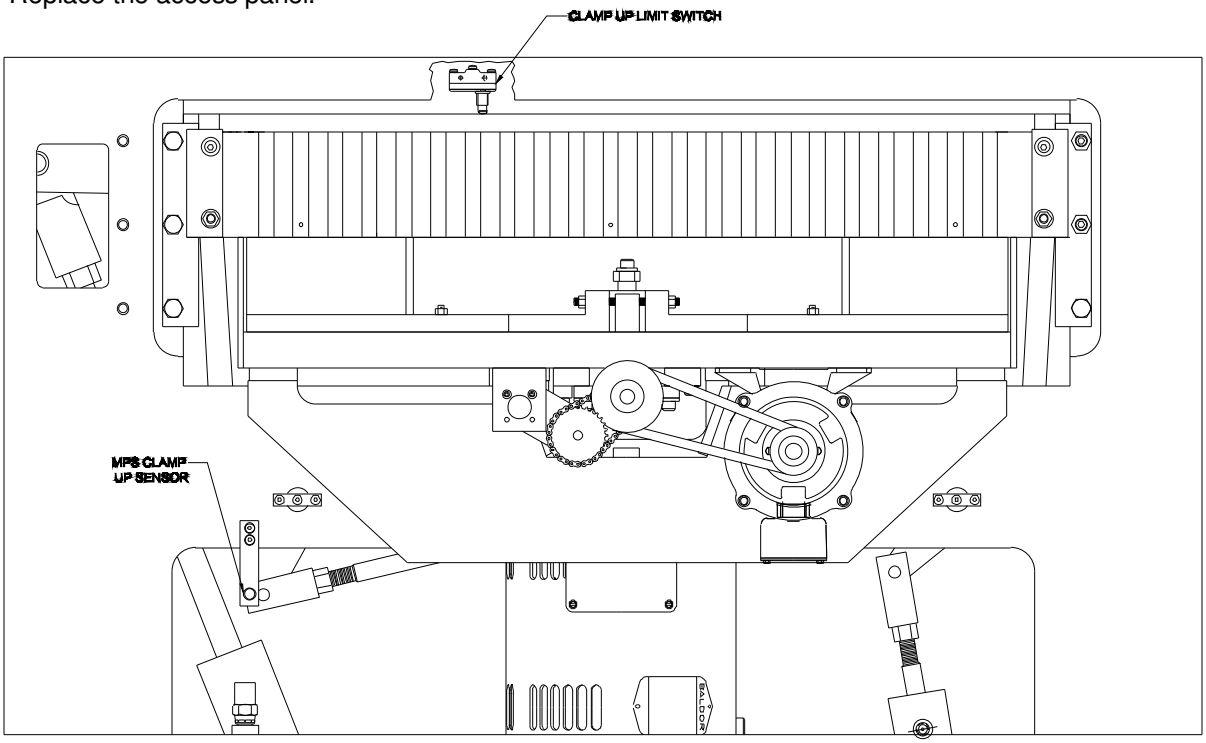


Fig 11

CLAMP UP MPS SENSOR ADJUSTMENT

The clamp up MPS sensor signals the MPS computer that the clamp is in the up position and backgauge movement may now be enabled.

If a series of dashed lines **(- - - - -)** appears on the lower right side of the MPS screen when the backgauge is told to move, the clamp up sensor is out of adjustment.

1. The clamp must be in the full up position to make this adjustment.

2. The sensor is located on the right side rear of the frame, under the table. It is attached to a black bracket that is screwed to the frame with button head screws. Fig. 11.

3. Move the sensor until it is 1/16” away from the clamp linkage block.

4. Move the bracket so that at least 1/2 to 3/4 of the sensor disk covers the block or pin. Observe the red light in the sensor. It must turn off when the clamp lowers 1/8” to 1/4”.

5. After adjusting, test by cutting paper while using a program in Automatic Mode.

GIB ADJUSTMENT. Front only w/ UHMW Polyethylene.
320 SERIAL NUMBER 10633 AND UP
265 SERIAL NUMBER 1202 AND UP

The rear blade beam gibs are stationary and are factory adjusted and secured. No further adjustment is necessary.

The front gibs remove any play that may occur after years of service. Proper adjustment is very important. If the gibs are too tight, premature wear will occur. If the gibs are to loose, the minimum cut of .015" with a sharp knife will be intermittent.

There are three (3) adjusters on the left front side and four (4) adjusters on the right front side. Fig. 15. They are located under the removable plugs. Removing the right side table accesses the lower right plug and adjuster. Remove the plugs and follow the adjustment procedure.

1. Start with the blade beam in the up position. Turn the "MAIN POWER SELECTOR" switch "ON" and allow the MPS to reset. Press the two (2) blacks cut buttons and start the main motor. When the blade beam is at the full up position, turn the "MAIN POWER SELECTOR" to "OFF".

2. Remove the left and right side access covers.

3. Use a thin 3/4" open-end wrench to loosen the hex nut and a 1/4" Allen wrench on the adjuster screw **only where the blade beam is located**. **NOTE:** Never adjust the gibs when the blade beam is not at the gib adjusting screw! Loosen the nut and turn the Allen wrench until slight pressure is felt on the Allen wrench and zero (0) clearance between the gib and blade beam is obtained. Tighten the nut while holding the Allen wrench. Adjust left and right sides. Fig. 12.

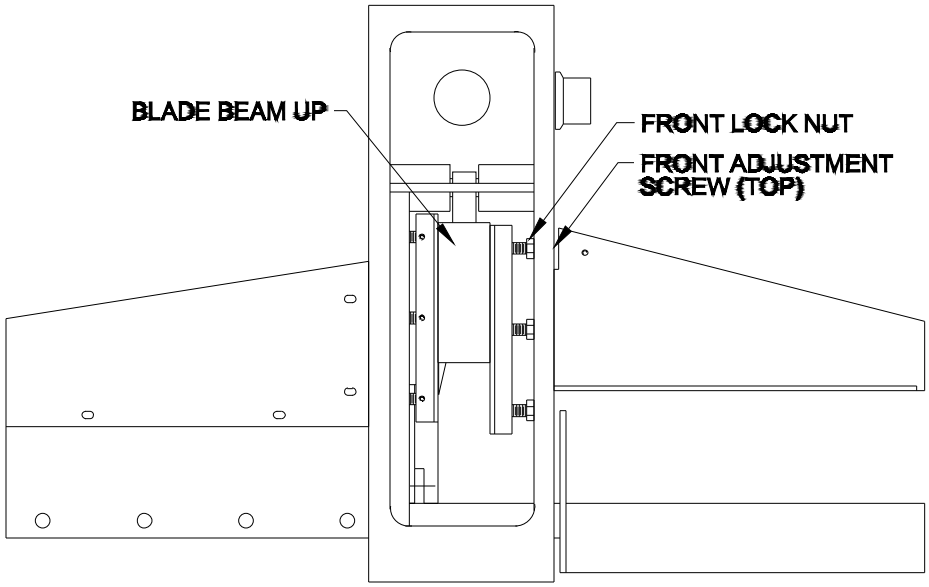


Fig 12

4. Turn the "MAIN POWER SELECTOR" to "ON" and allow the MPS to reset. Turn the "MAIN POWER SELECTOR" to "BLADE ADJUST". Press the two (2) blacks cut buttons and start the main motor.

5. Use the two (2) blacks cut buttons and jog the blade beam down and centered on the middle gib adjusters on the blade beam. Turn the "MAIN POWER SELECTOR" to "OFF".

6. Repeat step 3. See Fig. 13.

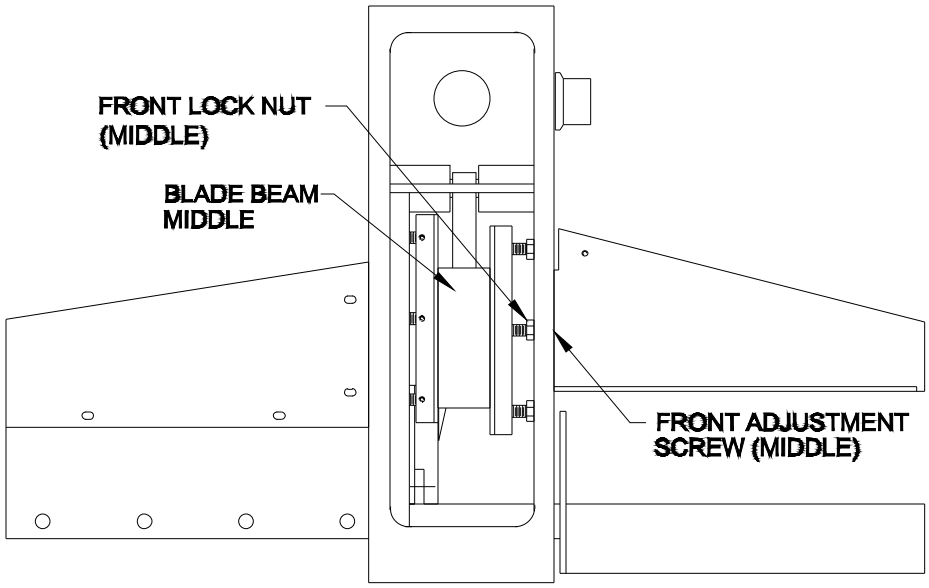


Fig 13

7. Turn the “MAIN POWER SELECTOR” to “ON” and allow the MPS to reset. Turn the “MAIN POWER SELECTOR” to “BLADE ADJUST”. Press the two (2) blacks cut buttons and start the main motor.

8. Use the two (2) blacks cut buttons and jog the blade beam down until the knife is just off the cut stick. Turn the “MAIN POWER SELECTOR” to “OFF”.

9. Repeat step 3. See Fig 14.

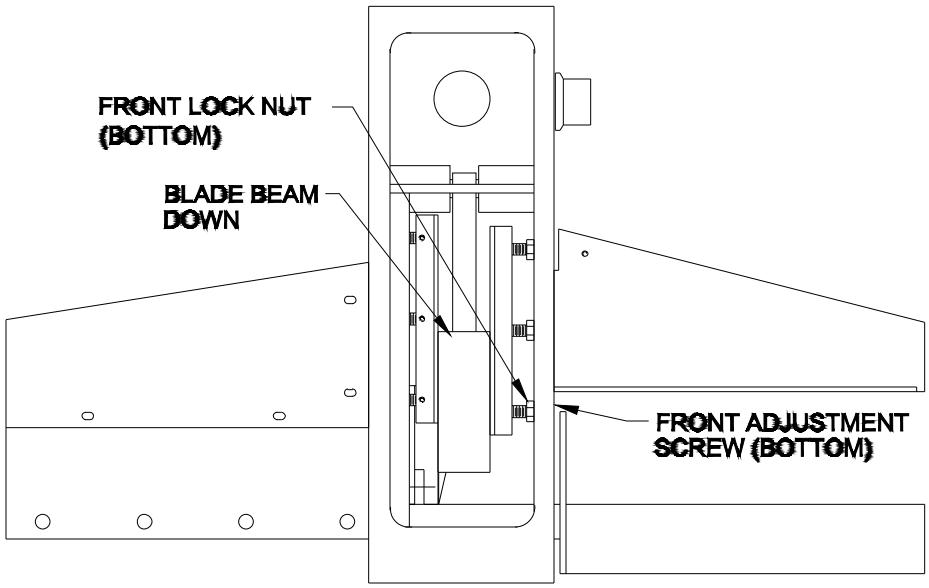


Fig 14

10. Turn the “MAIN POWER SELECTOR” to “ON” and allow the MPS to reset. Press the two (2) black cut buttons to start the main motor. The blade beam and clamp will rise to the full up position. Check while cycling the cutter that the gibs do not move. If the front gibs on the left or right move, the adjustment of the gibs is to loose. Replace the side access covers.

GIB ADJUSTMENT w/ UHMW Polyethylene
320 SERIAL NUMBER’S 10344 TO 10632
265 SERIAL NUMBER’S 1107 TO 1201

The rear blade beam gibs have been factory adjusted and secured. Under normal use adjustment is not necessary. They are stationary or fixed gibs.

The rear gib holds the blade beam at 0.020" away from the surface of the clamp, and also guide the blade beam perpendicular to the table.

The front gibs remove any play that may occur after years of service. Proper adjustment is very important. If the gibs are too tight, premature wear will occur. If the gibs are to loose, the minimum cut of .015" with a sharp knife will be intermittent.

There are three (3) adjusters on the left front side and three (3) or four (4) adjusters on the right front side. They are located under the removable plugs. Removing the right side table accesses the lower right plug and adjuster. Remove the plugs and follow the adjustment procedure. Fig. 15.

1. Remove the knife. See page 13 for procedure.

2. Remove the left and right side access covers.

3. Remove the left rear table extension cover.

4. Turn the "MAIN POWER SELECTOR" switch "ON" and allow the MPS to reset, then turn the "MAIN POWER SELECTOR" switch to "BLADE ADJUST". Press the two (2) blacks cut buttons and start the main motor.

5. Press the two (2) black cut buttons and hold them. The blade beam will lower. Turn the "MAIN POWER SELECTOR" switch to "OFF".

6. Use a precision 12" square and place it on the front of the table and up to the blade beam on either side first. Fig. 15. On the same side use a 0.020" feeler gage and place it between the blade beam and the clamp. **NOTE**: Optimal setting is when the blade beam is square to the table and at 0.020" away from the clamp face on both sides. Fig. 16.

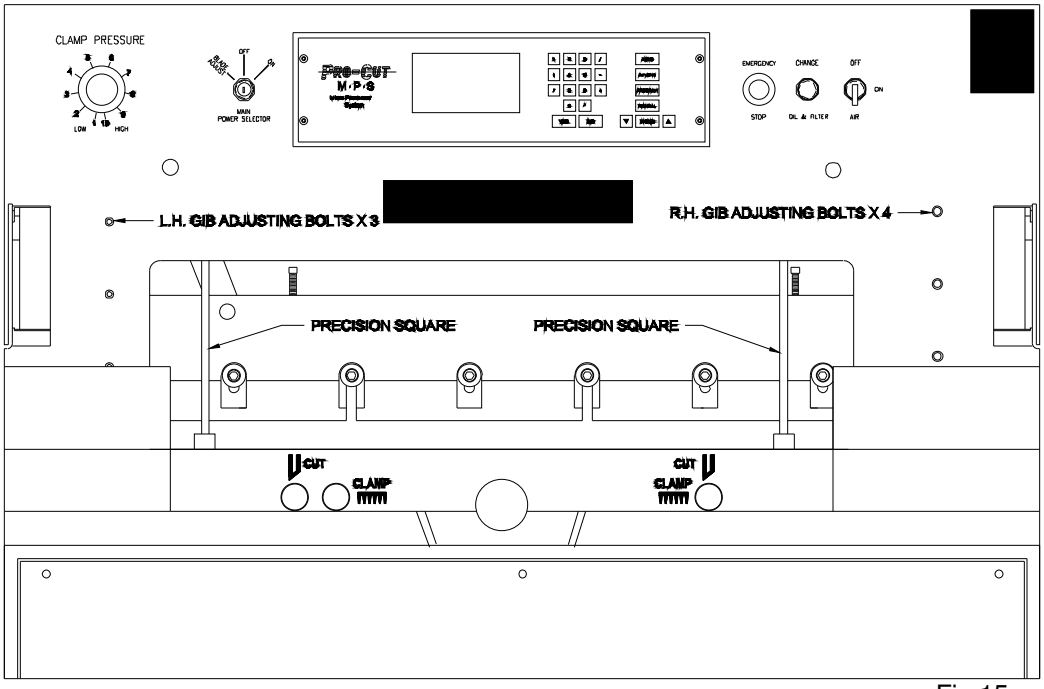


Fig 15

7. Use a 3/4" open-end wrench on the hex nuts and a 1/4" Allen wrench on the adjuster screws to keep the adjuster screws from turning. Loosen the hex nuts on the front gib adjusters 1 full turn.

8. The middle adjusters are used to help straighten the blade beam. But be careful not to bend the gibs by using to much pressure on the middle adjusters. Also watch to make sure that you still have contact with the middle gib screws when adjusting at the top and bottom.

9. To adjust the 0.020", loosen the hex nuts on the rear adjusters only where the blade beam is lined up with the adjuster.

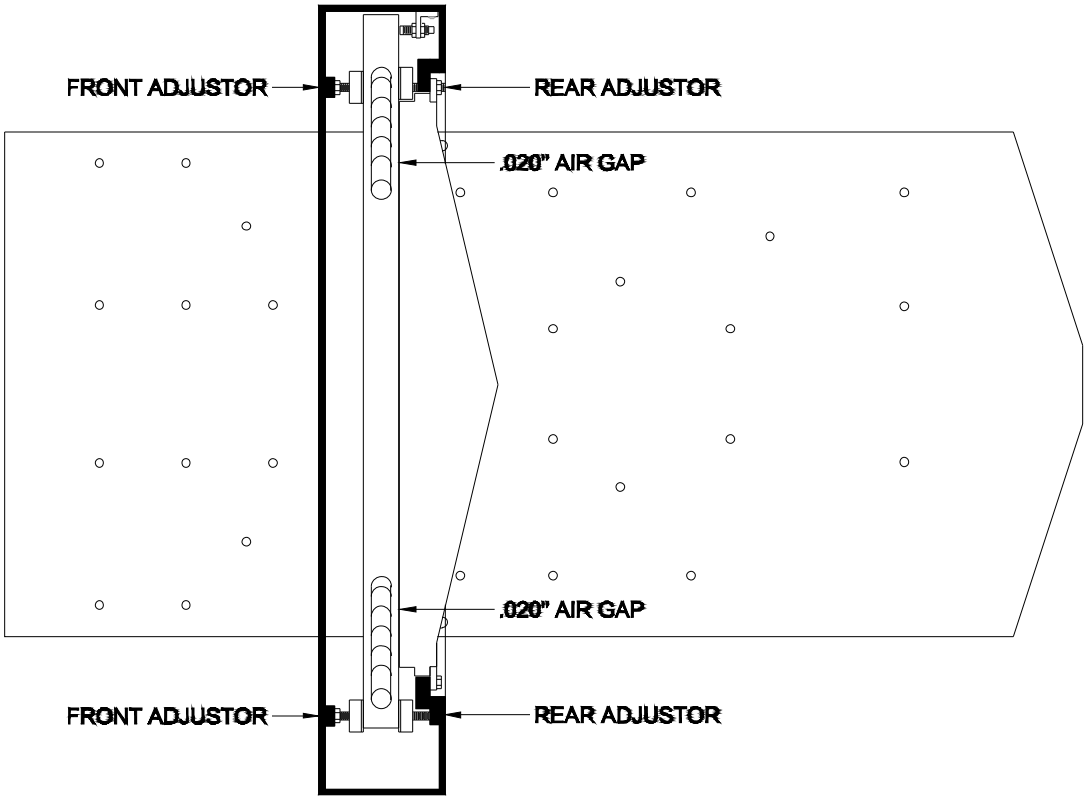


Fig 16

10. Turn the adjuster in the rear counterclockwise and the front adjuster clockwise to move the blade beam closer to the clamp. Make sure that you still have zero (0) clearance between the gibs and blade beam. Adjust both sides if necessary. Fig. 16 & 17.

11. Turn the adjuster in the front counterclockwise and the rear adjuster clockwise to move the blade beam closer to the clamp. Make sure that you still have zero (0) clearance between the gibs and blade beam. Adjust both sides if necessary. Fig. 16 & 17.

12. Tighten the rear hex nuts.

13. Recheck the square on both sides. If the blade beam is out of square the top and middle gibs have to be adjusted to move the blade beam into square.

14. Turn the "MAIN POWER SELECTOR" to "ON" and allow the MPS to reset. Press the two (2) blacks cut buttons and start the main motor. The blade beam will raise up.

15. Place the square up to the blade beam and check for square on both sides.

16. Loosen the hex nuts on the top adjusters in the rear.

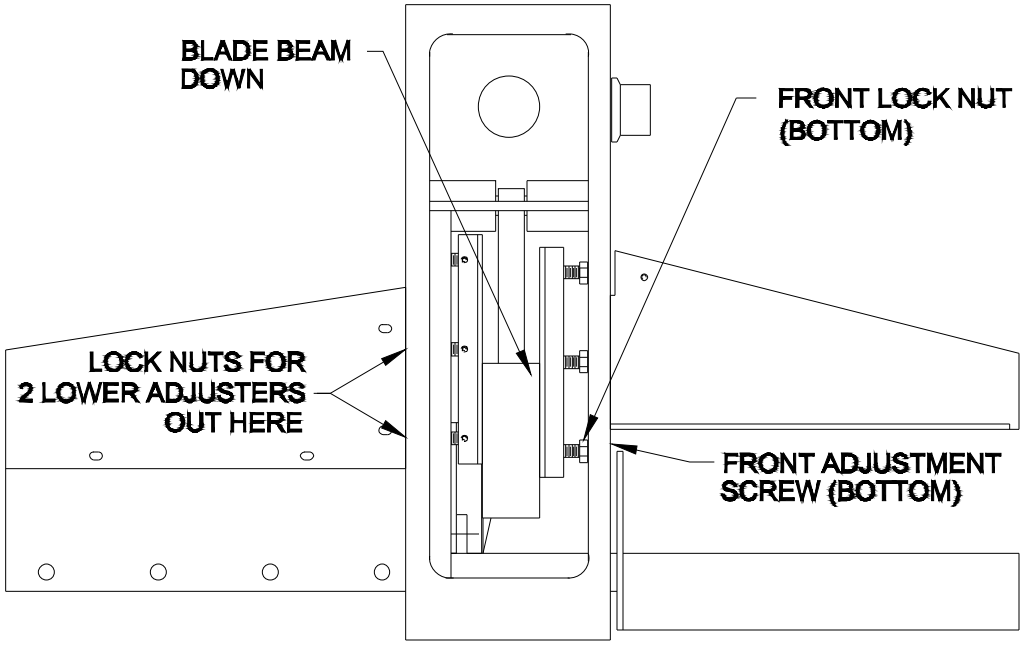


Fig 17

17. Turn the adjuster in the rear counterclockwise and the front adjuster clockwise to move the blade beam closer to the clamp. Make sure that you still have zero (0) clearance between the gibs and blade beam. Adjust both sides if necessary. Fig. 18.

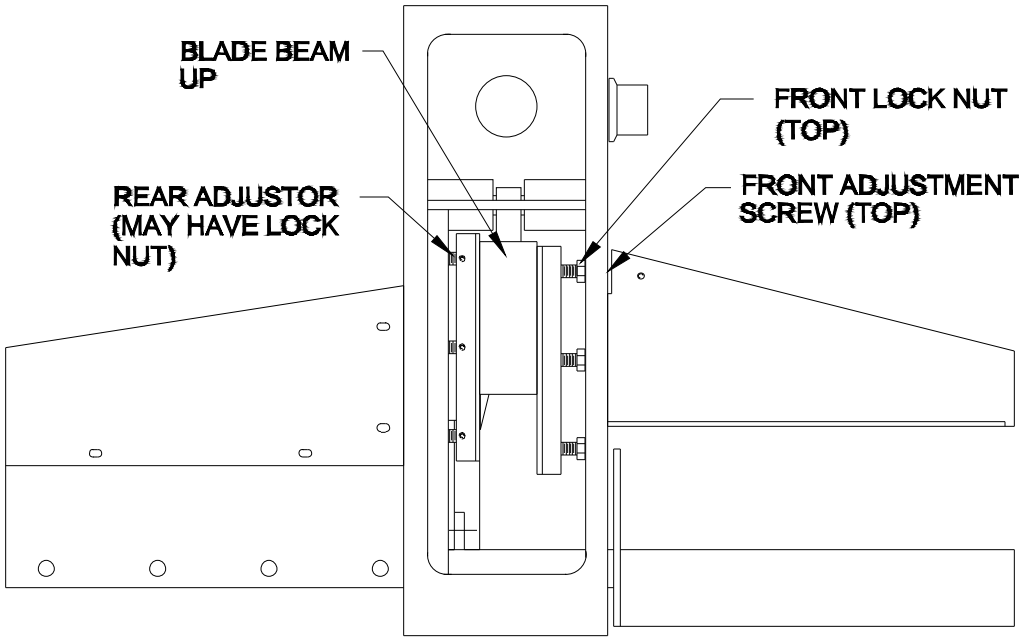


Fig 18

18. When the blade beam is square on both sides lock the hex nuts at the top.

19. Repeat steps 3 through 18 until perfect adjustments are obtained.

BLADE BEAM HEIGHT ADJUSTMENT

The knife must not hang below the clamp when in its up position.

⚠DANGER: If the knife is below the clamp in its up position, possible lacerations of the hands and fingers may occur.

1. The clamp height must be adjusted first before adjusting the blade beam. (See CLAMP HEIGHT ADJUSTMENT Page 17).

2. If the clamp is set at 4" from the table surface and the knife is still below the clamp, then the following adjustment is necessary.

3. Remove the knife using the procedure on page 13.

4. With the blade beam and the clamp in the full up position, use a 6" ruler, and place it up into the space where the knife would be, on the extreme left side. Push the ruler up until it bottoms out in the blade pocket. Fig. 19.

5. The measurement from the top of the blade pocket to the bottom of the clamp is:
   320 models 4 13/16"
   265 models 4 1/4"
   Plus or minus 1/32"

6. If the measurement is not correct, turn the "MAIN POWER SELECTOR" switch to "ON" and allow the MPS to reset. Turn the "MAIN POWER SELECTOR" switch to "BLADE ADJUST". Press the two (2) black cut buttons to start the main motor.

7. Jog the blade beam down 1" using the two (2) black cut buttons. Turn the "MAIN POWER SELECTOR" switch to "OFF".

8. Remove the right side access cover exposing the blade beam clevis and hex nut. Fig. 20.

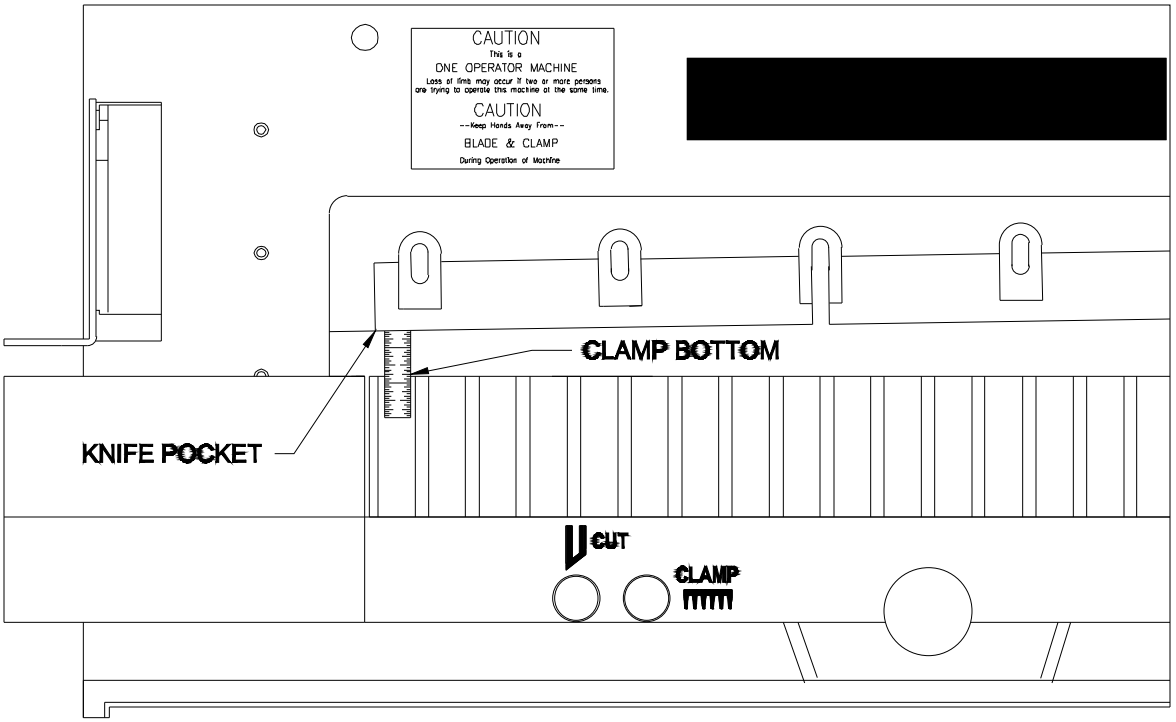


Fig 19

9. Loosen the hex nut with a 1 1/8" open end wrench. Using a pair of channel lock style pliers unscrew the cylinder shaft from the clevis to raise the blade beam. Tighten the hex nut.

10. Turn the "MAIN POWER SELECTOR" switch to "ON" and allow the MPS to reset. Press the two (2) black cut buttons to start the main motor. The blade beam will raise to the full up position. Turn the "MAIN POWER SELECTOR" switch to "OFF".

11. Repeat steps 4 through 11 until the measurement is correct. Check the top of the blade beam for any clearance problems between the beam and the frame. Replace the side cover.

12. Reinstall the knife using the procedure on page 13.

BLADE BEAM UP LIMIT SWITCH

After the blade height adjustment is set, check the blade beam up limit switch. Fig. 20.

Proper adjustment of the switch is necessary to raise the clamp after a cut.

1. The blade beam must be in the full up position for this adjustment.

2. Turn the "MAIN POWER SELECTOR" switch to "OFF" and "Lock Out" the power disconnect.

3. Remove the top rear access panel.

4. Using a 5/32" Allen wrench, loosen the two (2) button head screws holding the bracket to the frame.

5. Adjust the bracket till the switch touches the blade beam. Push the bracket down till a "click" is heard, then push down 1/8" more.

6. Tighten the button head screws.

7. Replace the access panel.

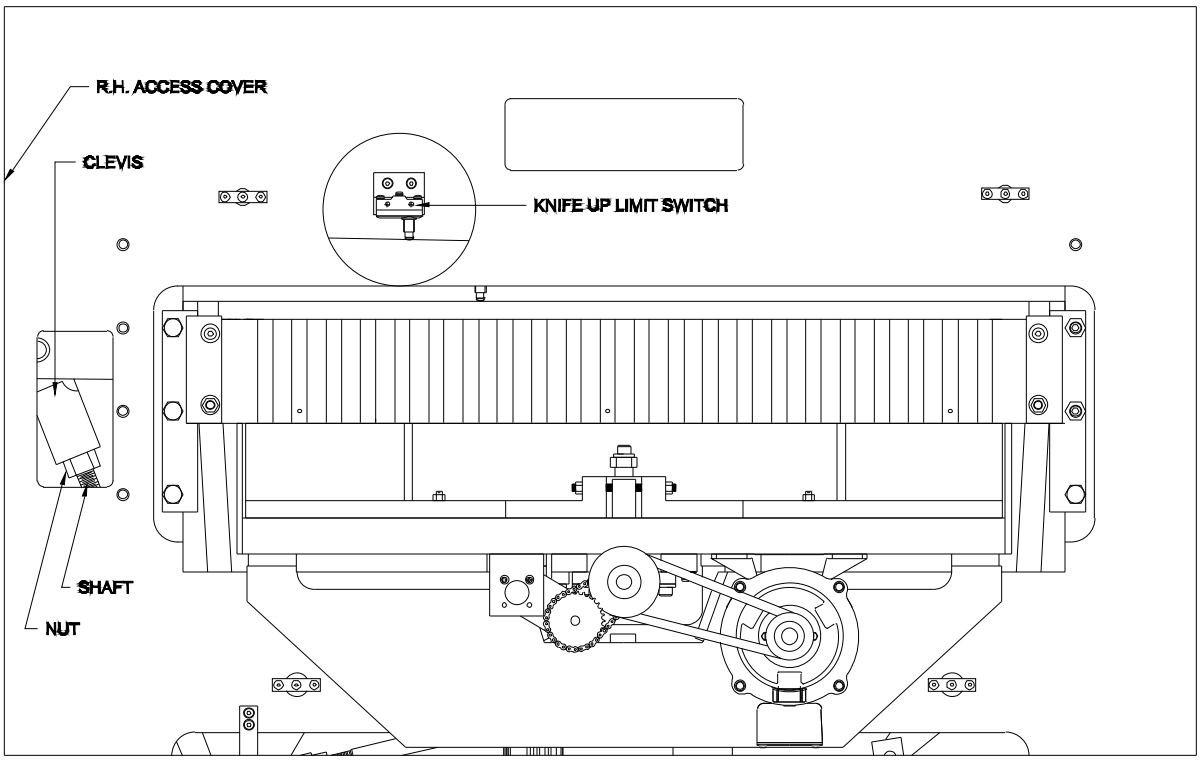


Fig 20

BLADE BEAM DOWN MPS SENSOR

The MPS knife proximity sensor detects the blade beam in its lowest position to tell the MPS that a cut was made. The MPS while in "Automatic Mode" will advance the backgauge to the next cut position when the blade beam and the clamp are in the up position.

Adjustment for Serial Numbers:
320 up to 10701
265 up to 1228

1. Turn the "MAIN POWER SELECTOR" switch to "ON" and allow the MPS to reset. Turn the "MAIN POWER SELECTOR" switch to "BLADE ADJUST". Press the two (2) black cut buttons to start the main motor.

2. Press and hold the two (2) black cut buttons until the blade beam is at the bottom.

3. Turn the "MAIN POWER SELECTOR" switch to "OFF".

4. The sensor is located on the lower right side of the frame inside of the back plate. Fig. 21.

5. The sensor adjustment is 1/16" to 1/8" away from the block mounted to the knife cylinder shaft. The light at the end of the sensor will be off when adjusted properly.

6. Use a 5/32" Allen wrench to loosen the bracket. Use a 7/16" open end-wrench to adjust the block. Use an 11/16" wrench to adjust the sensor.

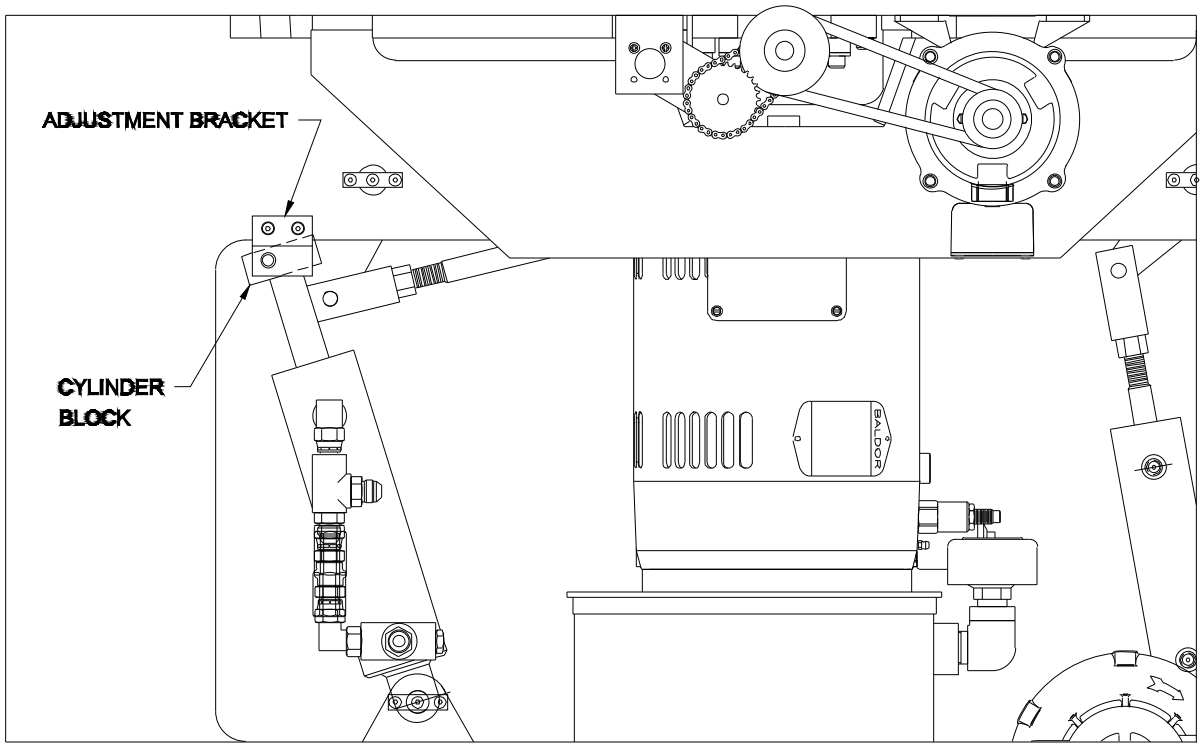


Fig 21

Adjustment for Serial Numbers:

320 10702 and up
265 1229 and up

1. Turn the “MAIN POWER SELECTOR” switch to “ON” and allow the MPS to reset. Turn the “MAIN POWER SELECTOR” switch to “BLADE ADJUST”. Press the two (2) black cut buttons to start the main motor.

2. Press and hold the two (2) black cut buttons until the blade beam is at the bottom and the main motor turns off.

3. Turn the “MAIN POWER SELECTOR” switch to “OFF”.

4. Remove the left side access panel. The sensor is inside the frame. Fig. 22.

5. The sensor adjustment is 1/16” to 1/8” away from the blade beam. The light at the end of the sensor will be off when adjusted properly.

6. Use a 5/32” Allen wrench to move the bracket. Use an 11/16” wrench to adjust the sensor.

7. Replace the side access cover.

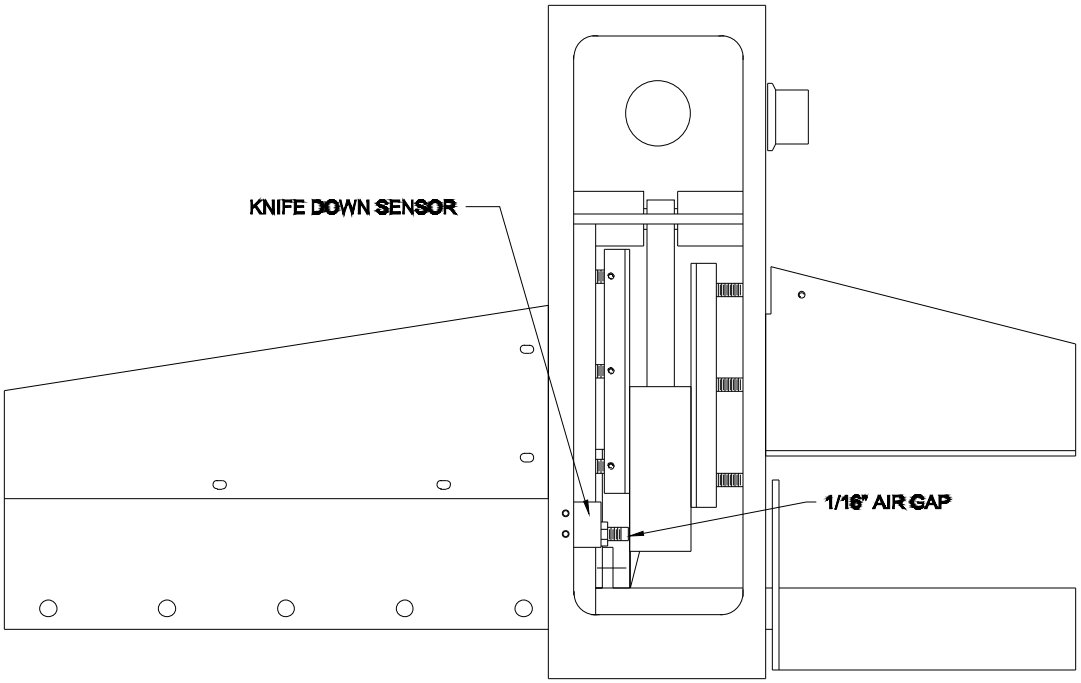


Fig 22

SQUARING THE TABLE TO THE KNIFE
320 SERIAL NUMBERS UP TO 10795
265 SERIAL NUMBERS UP TO 1262

This adjustment will make the left rear side plate square to the knife. This adjustment is very important for square cutting of paper. The table is square and pinned at the factory. This adjustment is not necessary at installation. If the table is removed, squaring the knife will be necessary. Use the following procedure to adjust it.

1. Check that the blade beam gibs are adjusted properly and with zero (0) clearance. See pg. 20.

2. Use a 1/2" high stack of the largest sheet of paper possible (17” x 22” minimum).

3. Trim approximately 1/8" off all four (4) sides of the stack. Make sure your last cut is across the longest side of the stack. When trimming make sure the stack is jogged to the left side plate and not touching the backgauge. Always turn the stack clockwise after each cut insuring the trimmed edge is to the left side plate before the next cut. Fig. 23.

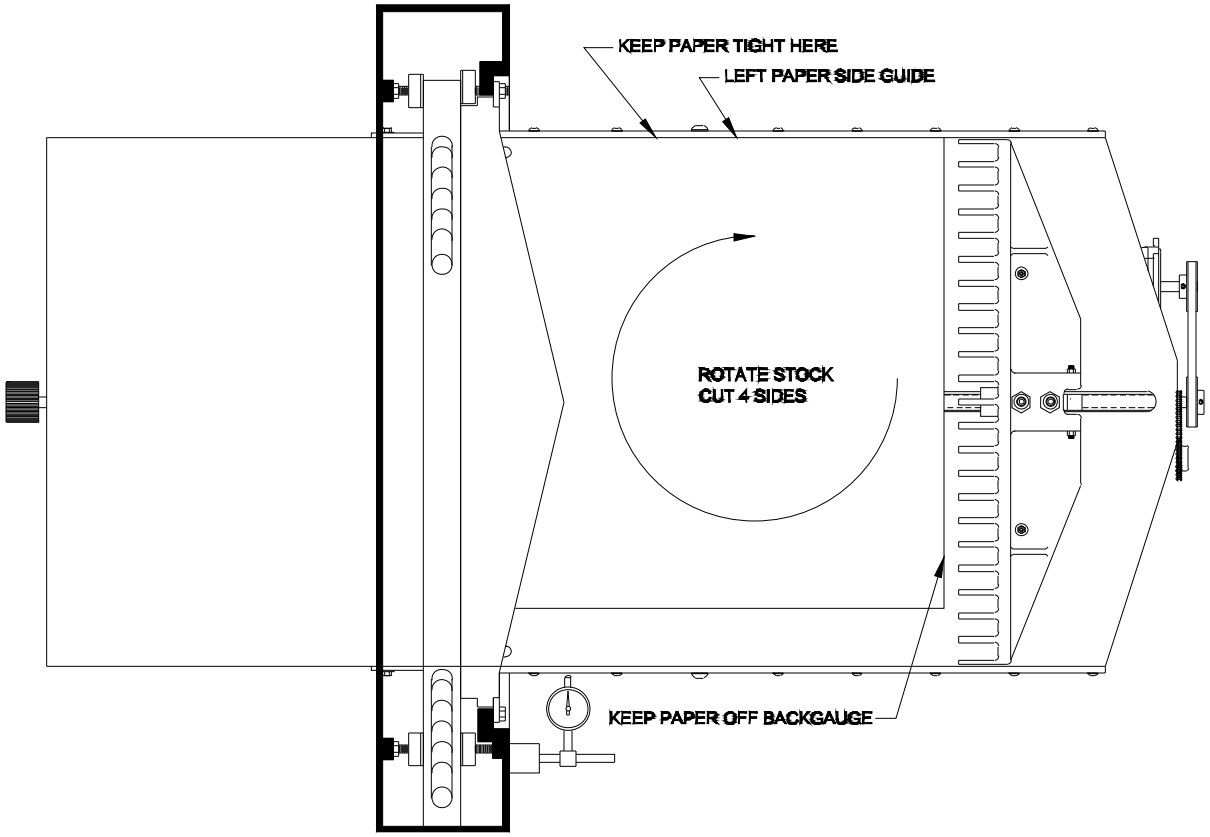


Fig 23

4. Move the backgauge forward to 12.000".

5. Divide the stack in to three (3) even stacks. Flip over the middle stack from right to left. Fig. 24.

6. If the middle stack is short on the right side then swinging the rear of the table to the right is needed. Remove the table pin on the right side of the table. Fig. 25. Loosen the eight (8) table lock bolts. Use a dead blow hammer or a hammer and a block of wood to move the table. A dial indicator must be used to record from "0" the measurement made + or -. See Fig. 23 for dial indicator placement.

7. Tighten the eight (8) bolts and repeat steps 2 through 5. If the three (3) stacks are even, you can verify the sheet is straight by folding a sheet in half. This is not as accurate as using the three (3) stacks.

8. If the middle stack is short on the left side then swinging the rear of the table to the left is needed. Remove the table pin on the right side of the table. Fig. 25. Loosen the eight (8) table lock bolts. Use a dead blow hammer or a hammer and a block of wood to move the table. A dial indicator must be used to record from "0" the measurement made + or -. See Fig. 23 for dial indicator placement.

9. Tighten the eight (8) bolts and repeat steps 2 through 5. If the three (3) stacks are even, you can verify the sheet is straight by folding a sheet in half. This is not as accurate as using the three (3) stacks.

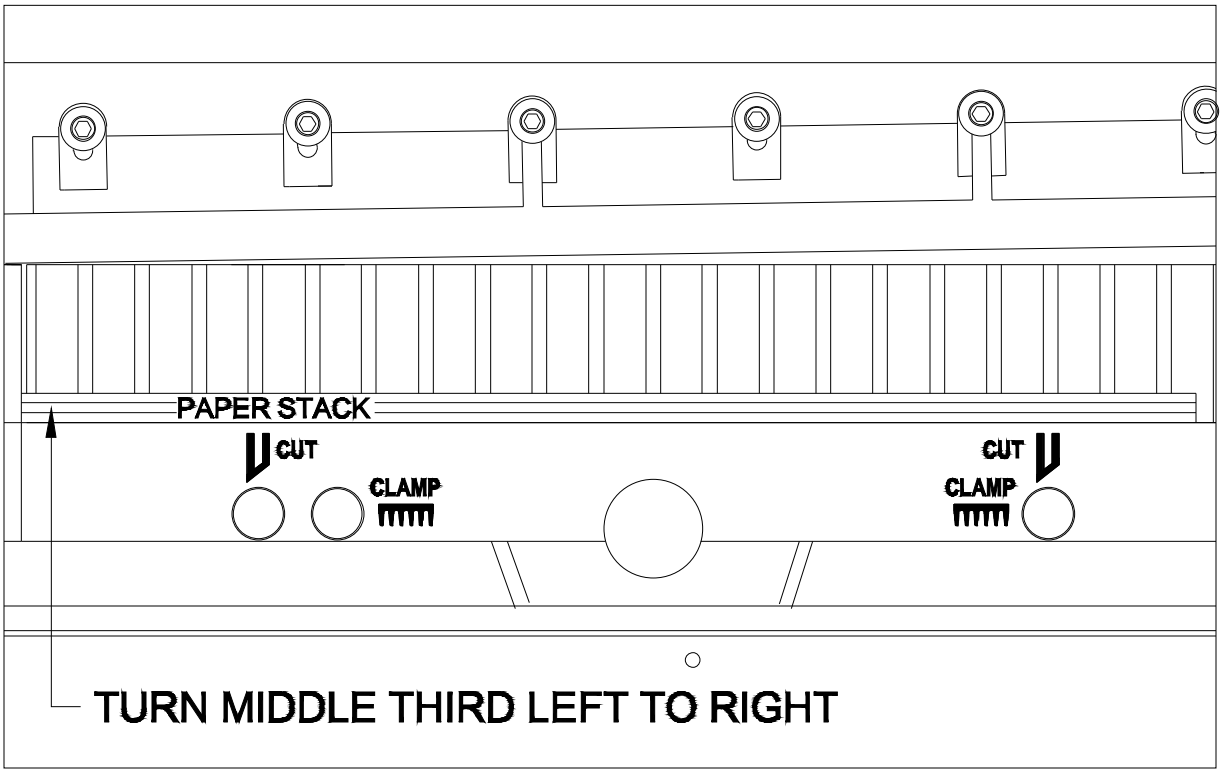

PAPER STACK
CUT
CLAMP
CUT
CLAMP
TURN MIDDLE THIRD LEFT TO RIGHT

Fig 24

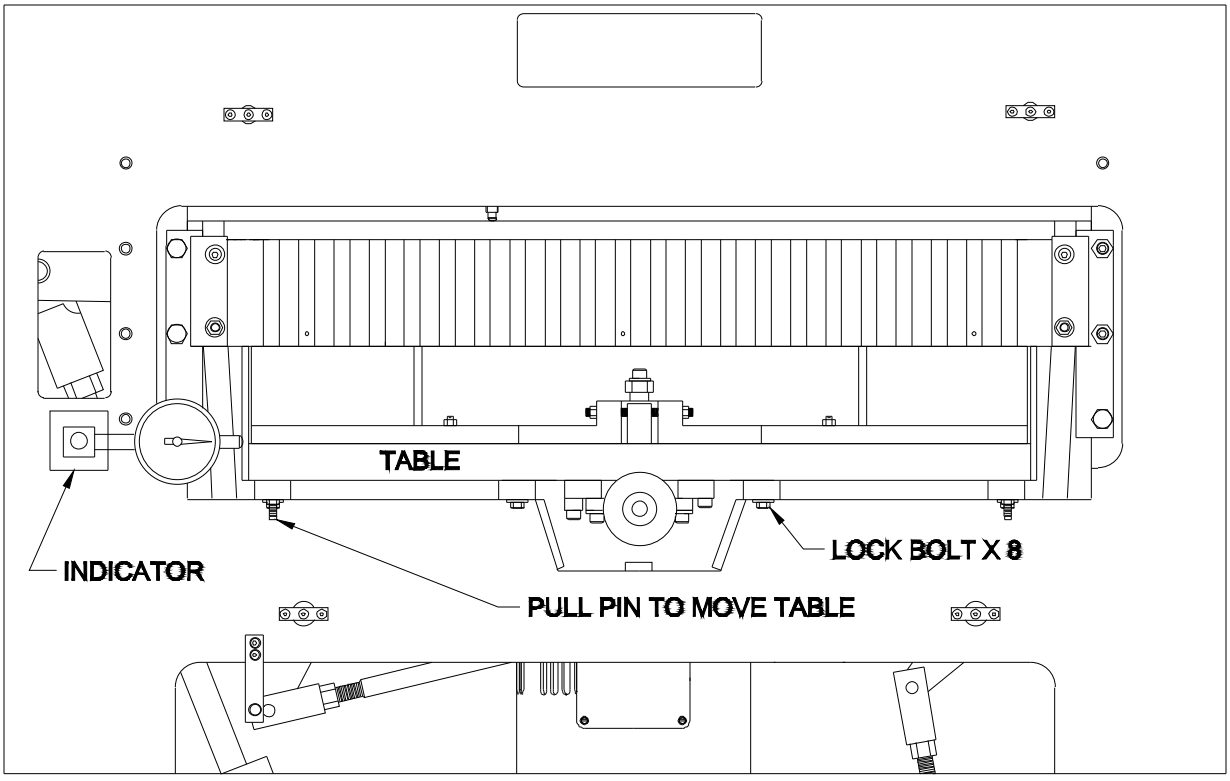


TABLE
INDICATOR
LOCK BOLT X 8
PULL PIN TO MOVE TABLE

Fig 25

SHIMMING THE BRIDGE FOR TABLE FLATNESS
320 SERIAL NUMBERS UP TO 10795
265 SERIAL NUMBERS UP TO 1262

The bridge shown in Fig. 26 is used to straighten the table and hold it in a flat position. If the table is not flat, shimming the bridge will be necessary.

1. Move the backgauge to 25.000".

2. Check the gap under the backgauge with a feeler gauge. Check the entire length and determine if the gap is more in the middle near the slot, or more at the ends. Determine the actual difference between the center and the ends.

3. If the gap is larger in the center near the slot, then the difference between the end and the center should be added under the two (2) center bridge pads. Or, subtract the difference from the two (2) bridge pads on the ends.

4. Tighten the bridge bolts and recheck the level with a feeler gauge.

5. Keep adding shims until the table is level.

6. Reset the backgauge per instructions "BACKGUAGE VERTICAL ADJUSTMENT".

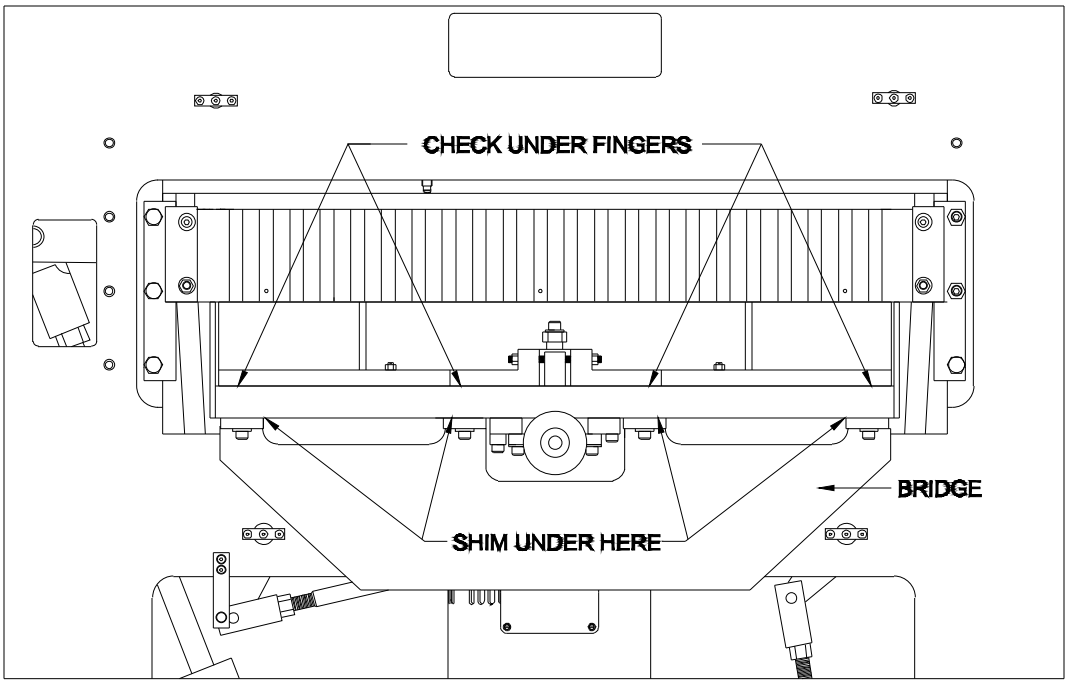


Fig 26

SQUARING THE BACKGAUGE
320 SERIAL NUMBERS UP TO 10795
265 SERIAL NUMBERS UP TO 1262

The backgauge must be parallel to the knife to insure straight cuts. To perform the test and make the adjustment use a 1" high stack of 8 1/2" x 11" paper.

1. Place the 11" side of paper against the left side of the backgauge and not touching the side plate. Cut a 1/4" off of the paper stack. Fig. 27.

2. Do not change the measure!
3. Turn the stack over from left to right and place it on the right side of the backgauge and not touching the side plate. Cut the stack. Fig. 27.

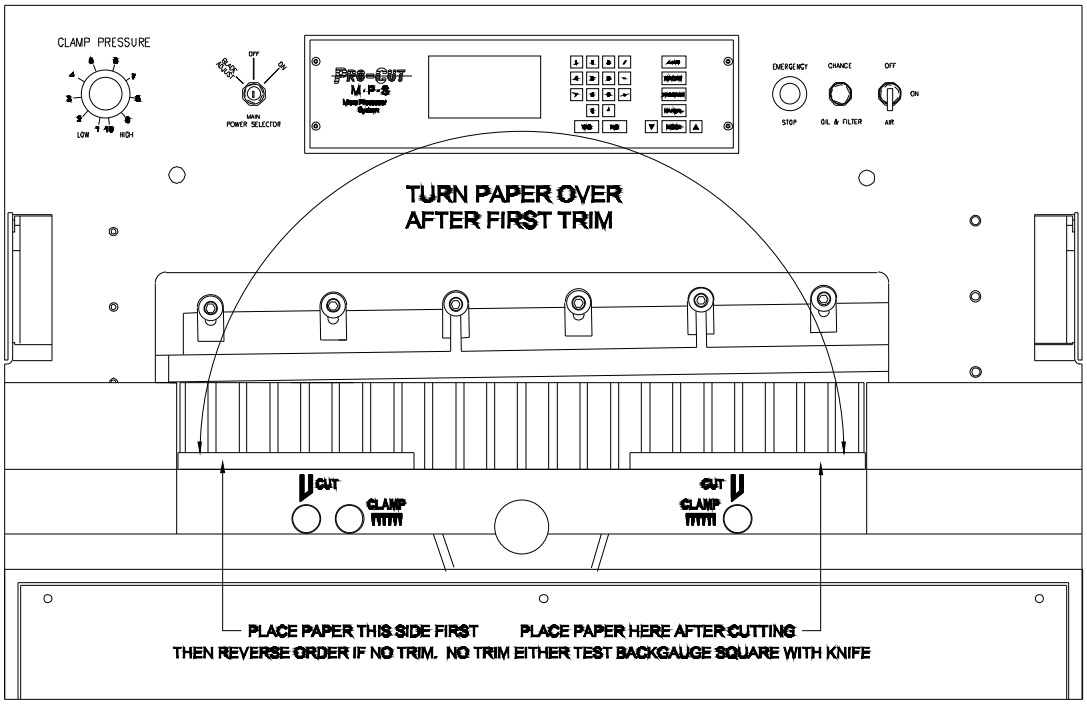


Fig 27

4. If the stack trimmed the backgauge is not straight. If there was no trim, then move the backgauge forward 1/8” and repeat steps 1 through 3 except start on the right side, then move the paper to the left side.

5. If there was still no trim then the backgauge is straight.

6. If there was trim on either side then the backgauge needs to be adjusted.

7. Loosen the rear socket head Allen bolt with a 5/16” Allen wrench, Fig. 28, indicated with an arrow.

8. Loosen the two (2) 5/16” hex jam nuts on the adjustor screws with a 1/2" wrench.

9. Loosen the adjusting screw with a 5/32” Allen wrench on the side that trimmed the paper. Tighten the other side. **CAUTION:** Do not over-tighten the adjustor. The backgauge will distort.

10. Tighten the hex jam nuts and socket head Allen bolt.

11. Recheck the straightness by repeating steps 1 through 10 until there is no trim on both sides.

BACKGAUGE VERTICAL ADJUSTMENT
320 SERIAL NUMBERS 10239 TO 10795
265 SERIAL NUMBERS 1094 TO 1262

To compensate for sheet compression under the clamp, the angle or vertical adjustment of the backgauge face can be adjusted.

Different weights, sizes, and types of paper will trim differently. Always select a paper that best suits the customers needs.

To compensate for different weights, sizes and types of paper after this adjustment has been made for a specific paper, cut fewer sheets usually 1” to 2” high stacks.

1. Place a 3 1/2" to 3 3/4" high 11” wide stack of the paper best suited to the customers needs in the center of the cutter and against the backgauge.

2. Trim 1/8” off the stack. Turn the cut edge against the backgauge and trim 1/8” more.

3. Take a sheet 1/4" from the top and 1/4" from the bottom and compare them. If they are the same size no adjustment is necessary. If they are different sizes then move the backgauge to 25.000” and follow the steps below.

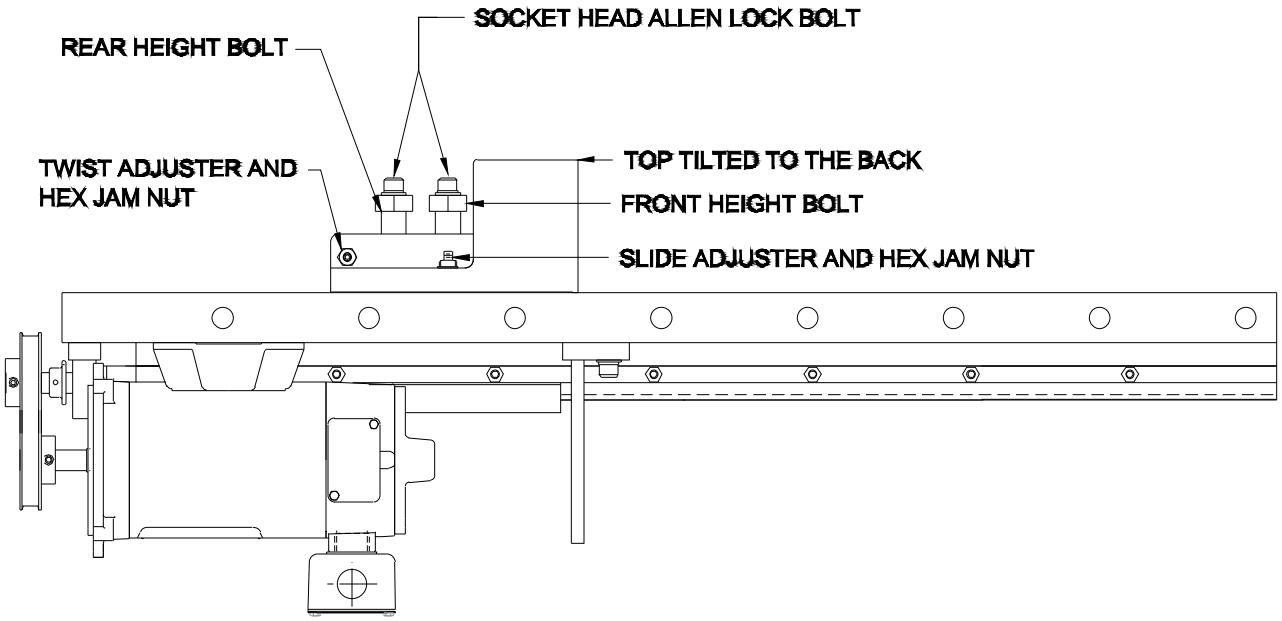


Fig 28

4. Loosen the two (2) socket head Allen lock bolts with a 5/16” Allen wrench. Fig. 28.

5. Loosen the hex jam nut on the backgauge squaring adjustor with a 1/2" wrench and loosen the adjustor with a 5/32” wrench. Do this only on one (1) side)

6. Use a 1 1/8” box or open end wrench on the large hex bolts under the socket head Allen lock bolts. Turn the rear hex bolt clockwise to shorten the top of the stack. Turn the same hex bolt counterclockwise to lengthen the top of the stack.

7. Slightly tighten the socket head Allen lock bolt in the rear.

8. Use a .002” feeler gauge close to the middle of the backgauge and adjust the front hex bolt for a slight drag. Tighten both socket head Allen lock bolts and recheck clearance. Readjust until a slight drag is achieved.

9. Slide the feeler gauge to both outer edges of the backgauge. If it is to tight or to loose, loosen the slide adjuster hex jam nuts with a 7/16” wrench and turn the Allen adjusting screws on both sides clockwise to raise the backgauge up from the table.

10. It may be necessary to repeat steps 8 and 9 until .002” feeler gauge slips from end to end with a slight drag.

11. Tighten the backgauge square adjustor and hex nut. Tighten stabilizer jam nuts. Recheck the .002”.

12. Repeat the steps 1 through 11 until both top and bottom sheets are the same size.

13. Recheck “SQUARING THE BACKGAUGE” procedure page 31.

BACKGAUGE GUIDE RAIL ADJUSTMENT
PINNED LEFT GUIDE RAIL
320 SERIAL NUMBERS 10588 TO 10795
265 SERIAL NUMBERS 1189 TO 1262

If the backgauge is continually out of square, the backgauge guide rail may be loose causing the backgauge to twist or rock.

On all cutters the right guide rail is the side that is used to adjust the twist play from the backgauge.

NOTE: Only adjust the right guide rail (right side while facing the front of the cutter). The left guide rail (left side while facing the front of the cutter) has been factory set and pinned. No further adjustment is needed.

1. Move the backgauge to random areas on the table.

2. From the back of the table grab both ends of the backgauge, and try to twist it. If there is noticeable play the right guide rail needs adjusted.

3. Move the backgauge to the rear of the table. **NOTE:** Always start at the rear of the table and move to the front. Never adjust the loose area only. Always center the backgauge block on the adjusting screws.

4. Loosen the five (5) socket head Allen bolts with a 5/16" Allen wrench along the complete length of the right guide rail. (Rail Hold Down Bolts) Fig. 29 below. Keep the bolts finger snug.

5. With the backgauge block at the adjusting location, loosen the rail adjusting hex nut with a 7/16" wrench. Fig. 29. Have someone twist the backgauge.

6. If the backgauge twists, turn the adjustment set screw with a 1/8" Allen wrench only enough to eliminate the twist. Tighten the hex nut. **NOTE:** Do not over tighten the adjustor set screw. Over tightening will cause a bind in the backgauge and slow backgauge movement.

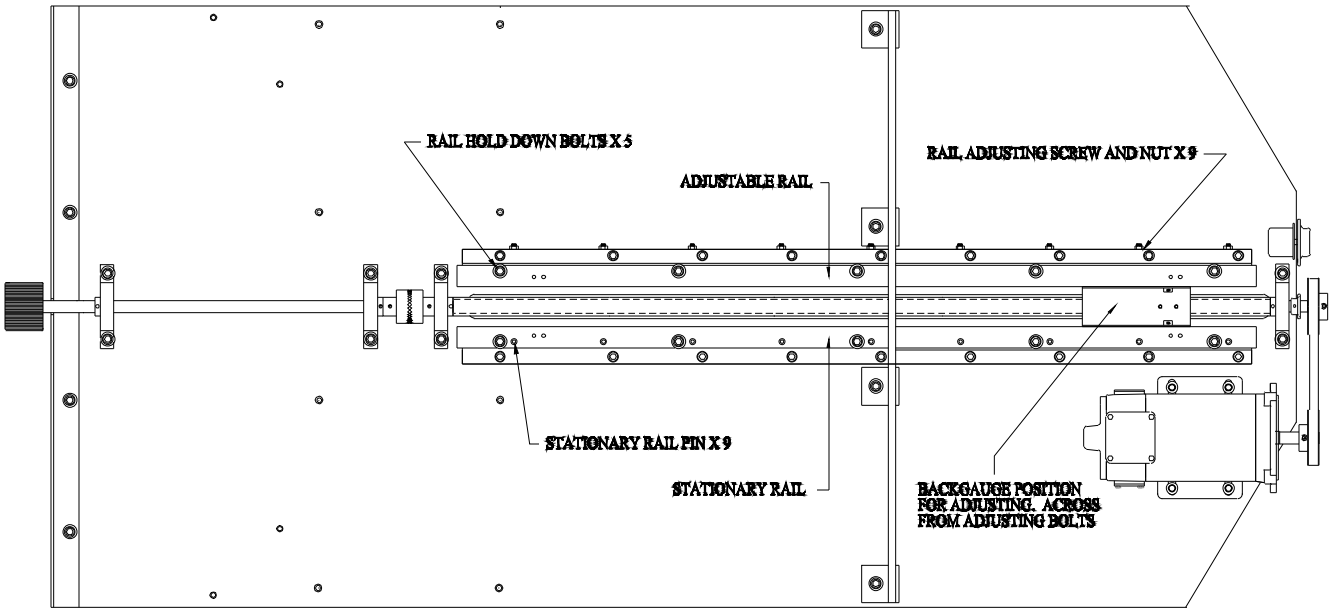


Fig 29

7. Move the backgauge forward till the backgauge block is centered on the next side adjustor.

8. Repeat steps 5 through 7 till all nine (9) side adjustors have been set.
9. Move the backgauge to the rear.

10. Tighten the first rail hold down bolt securing the guide rail to the table.

11. Move the backgauge forward till the backgauge block is centered on the next rail hold down bolt.

12. Repeat steps 10 and 11 till all five (5) bolts are tight.

BACKGAUGE GUIDE RAIL ADJUSTMENT
NON-PINNED LEFT GUIDE RAIL
320 SERIAL NUMBERS UP TO 10587
265 SERIAL NUMBERS UP TO 1188

On all cutters the right guide rail is the side that is used to adjust the twist from the backgauge. The left guide rail is for guiding the backgauge straight in relation to the left paper side plate.

If the backgauge is continually out of square, the backgauge guide rail may be loose causing the backgauge to twist. Follow the procedure " BACKGAUGE GUIDE RAIL ADJUSTMENT PINNED LEFT GUIDE RAIL" before attempting this adjustment.

If the square of the backgauge is off from location to location, then the left guide rail is not parallel with the left paper side plate bolted to the side of the table. Fig. 30.

NOTE: The left guide rail (left side while facing the front of the cutter) has been factory set and no further adjustment should be needed unless it has been tampered with.

NOTE: The left and right guide rails now have hardened pins installed for the adjustment screws to tough. The adjustment screws have flat points on them to touch the hardened pins. Contact the Procut factory for more information.

1. Use the procedure "BACKGAUGE GUIDE RAIL ADJUSTMENT PINNED LEFT GUIDE RAIL" first before continuing. This will insure that the rock is gone from the backgauge. **NOTE:** It is not necessary to tighten the socket head Allen bolts and the side adjustor hex nuts when using the procedure.

2. Move the backgauge to the rear of the table. Install a dial indicator on the face of the backgauge, and positioned to indicate the left side plate (as viewed from the front). Keep the indicator close to the table surface. Check the dial movement from back to front to make sure the indicator is touching over the entire length of the side plate. Fig. 30.

3. Move the backgauge to the rear and zero (0) the indicator.

4. Loosen the ten (10) socket head Allen bolts (Rail Hold Down Bolts) on the left and right rails with a 5/16" Allen wrench along the complete length of the right guide bar. Fig. 31. Keep them finger tight.

5. Move the backgauge till the block is centered on the rail adjusting screw and nut. Fig 31.

6. Check the indicator. If the indicator moved more than .001" then adjustment is needed. **NOTE:** The tolerance range for the guide rails is .002" from front to back. This means either +.002", -.002" or +.001" -.001" from zero (0).

7. Loosen, where the backgauge block is currently located, the two (2) rail adjusting hex nuts with a 7/16" wrench. Turn the rail adjusting screw with a 1/8" Allen wrench. If the indicator is plus (+), then loosen the rail adjusting screw on the right side slightly. Tighten the rail adjusting screw on the left side the same amount. You may not notice any movement of the indicator. This is normal. **NOTE:** Do not over tighten the rail adjusting screw. It will cause a bind in the backgauge and slow backgauge movement. Fig. 31.

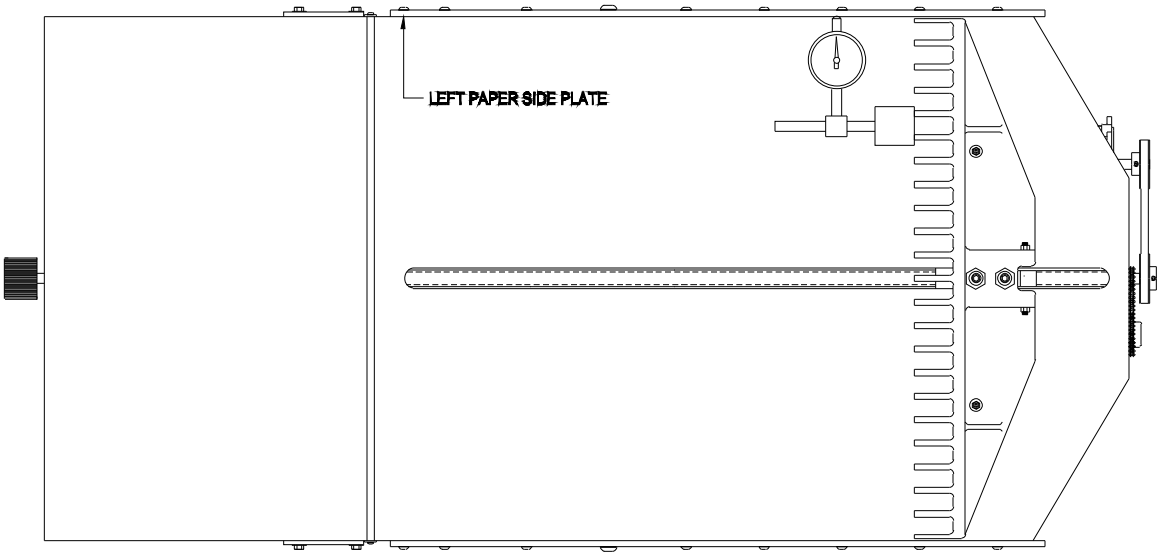


Fig 30

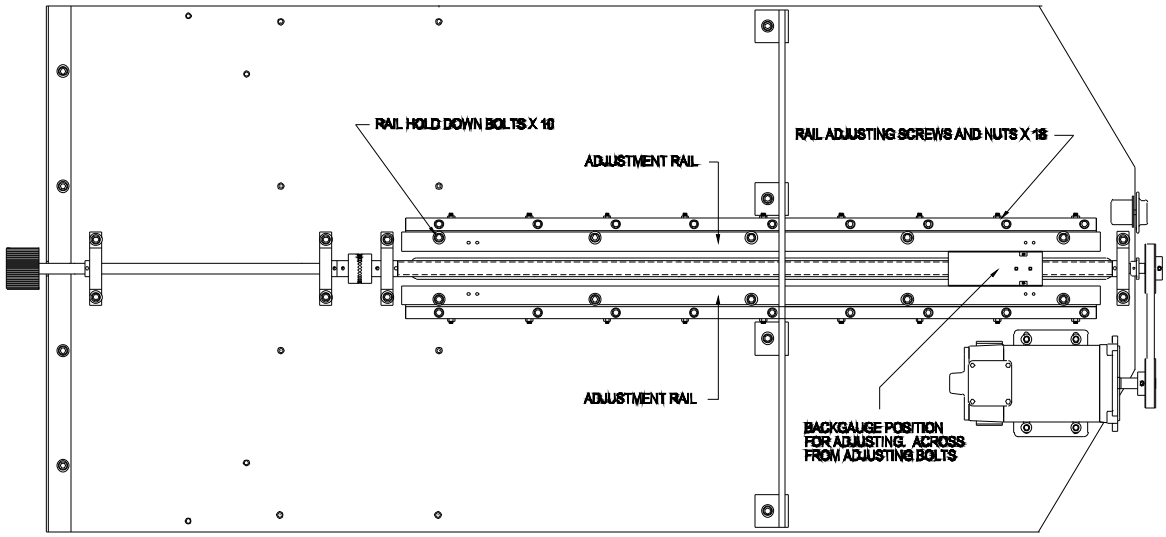


Fig 31

8. Move the backgauge forward till the backgauge block is centered on the next rail adjusting screw.

9. Repeat steps 6 through 8 till all nine (9) side adjustors have been set.

10. Move the backgauge to the rear. Repeat steps 6 through 8 until the indicator is within the adjustment range. This may take several times through this procedure. The last time check for rock in the backgauge and remove if any.

11. When adjusting is finished, move the backgauge to the rear.

12. Tighten the rail hold down Allen bolts on both left and right guide rail. Tighten the rail adjusting nuts while holding the rail adjusting screws on both left and right sides.

13. Move the backgauge forward till the backgauge block is centered on the next side rail adjusting screw.

14. Repeat steps 12 and 13 till all ten (10) rail hold down Allen bolts and eighteen (18) rail adjusting hex nuts are tight.

BACKGAUGE DRIVE BELT
320 SERIAL NUMBERS UP TO 10795
265 SERIAL NUMBERS UP TO 1262

Proper drive belt tension for Digital (D) models is 1” of deflection when pressed together between the pulleys. Fig. 32.

Proper drive belt tension for MPS models, 320 Serial Numbers up to 10687 and 265 Serial Numbers up to 1222, is 1/2” to 1” apart. Fig. 32.

Proper drive belt tension for MPS models, 320 Serial Numbers 10688 and up, and 265 Serial Numbers 1223 and up is 1”.

To Adjust: Fig. 32.

1. Loosen the four (4) motor mounting hex bolts with a 1/2” wrench or socket.

2. Pull the motor away from the center of the table to tighten the belt.

3. Tighten the four (4) motor mounting hex bolts. **NOTE:** If there are rubber washers under the motor, tighten the bolts evenly and do not crush the rubber washers.

ENCODER CHAIN ADJUSTMENT
320 SERIAL NUMBERS UP TO 10795
265 SERIAL NUMBERS UP TO 1262

Proper adjustment for all encoder chains is 1/8” to 1/4” deflection when pushed up from the bottom.

To Adjust MPS Models: Fig. 32.

1. Loosen the two (2) slotted screws, on the encoder swing bracket, with a #2 blade screwdriver and a 3/8” wrench on the nuts.

2. Adjust for proper tension and tighten screws and nuts.

To Adjust Digital (D) Models:

1. Loosen the two (2) slotted screws, on the bracket on the table bottom, with a #2 blade screwdriver.

2. Adjust for proper tension and tighten screws.

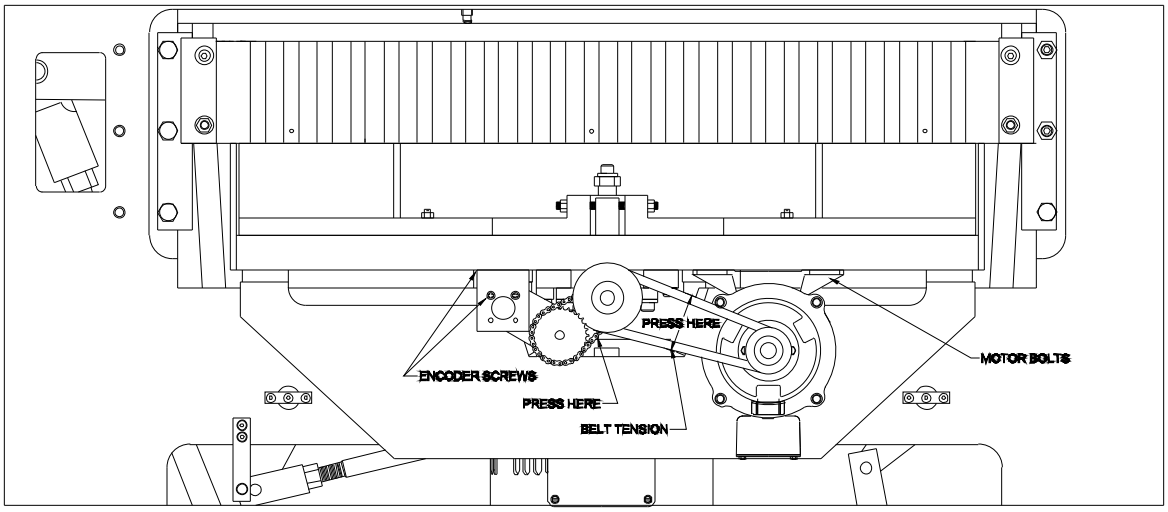


Fig 32

TABLE TO KNIFE SQUARING
OVERHEAD BACKGAUGE
320 SERIAL NUMBERS 10796 AND UP
265 SERIAL NUMBERS 1263 AND UP

This adjustment will make the left rear side plate square to the knife. This adjustment is very important for square cutting of paper. The table is square and pinned at the factory. This adjustment is not necessary at installation. If the table is removed, squaring the table to the knife will be important. Use the following procedure to adjust it.

1. Check that the blade beam gibs are adjusted properly and with zero (0) clearance. See pg. 20, Fig 12.

2. Use a 1/2" high stack of the largest sheet of paper possible (17” x 22” minimum).

3. Trim approximately 1/8” off all four (4) sides of the stack. Make sure your last cut is across the longest side of the stack. When trimming make sure the stack is jogged to the left side plate and not touching the backgauge. Always turn the stack clockwise after each cut insuring the trimmed edge is to the left side plate before the next cut. Fig. 33.

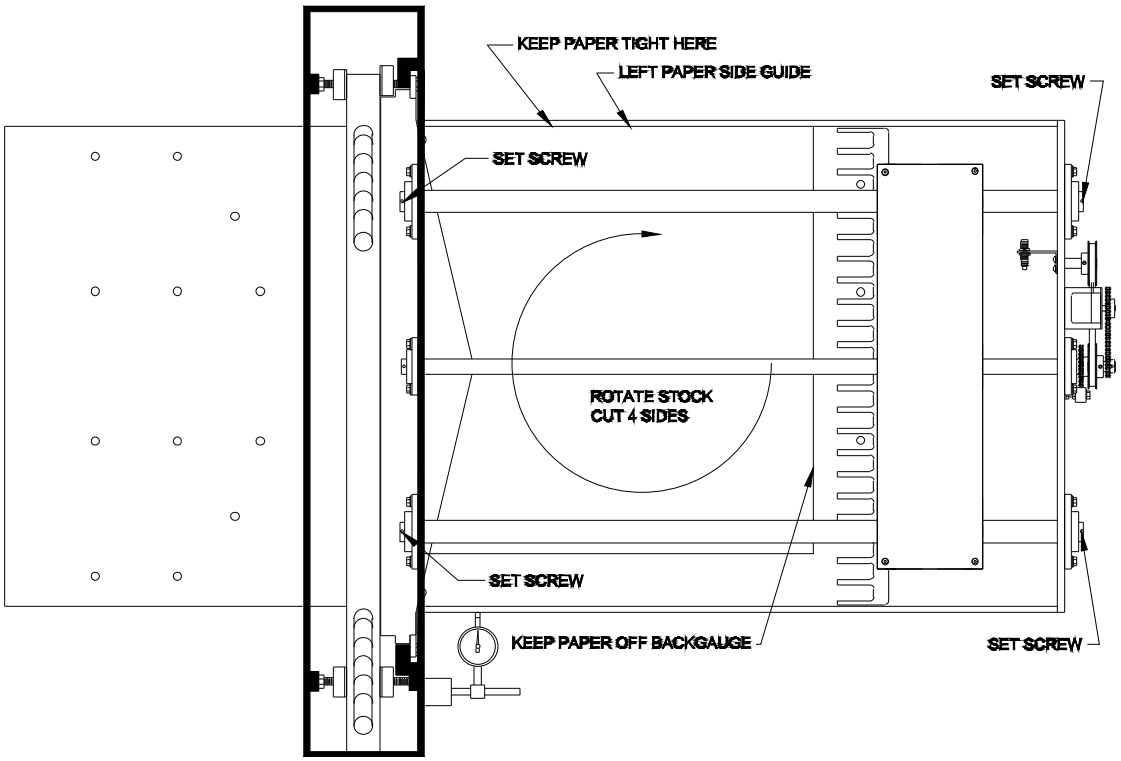


Fig 33

4. Move the backgauge forward to 12.000”.

5. Pull a few sheets out of the center of the cut paper. Turn these sheets over right to left. Place them back into the center of the stack. Fig. 34.

6. If the middle stack is short on the right side then swinging the rear of the table to the right is needed. Remove the table pin on the right side of the table. Fig. 35. Loosen the eight (8) table lock bolts under the table. Loosen the four (4) set screws on the large guide rods. Use a dead blow hammer or a hammer and a block of wood to move the table. A dial indicator must be used to record from “0” the measurement made + or -. See Fig. 33 for dial indicator placement.

7. Tighten the eight (8) bolts and the four (4) set screws. Repeat steps 2 through 5. If the three (3) stacks are even, then the table is square to the knife.
8. If the middle stack is short on the left side then swinging the rear of the table to the left is needed. Remove the table pin on the right side of the table. Fig. 35. Loosen the eight (8) table lock bolts.

Loosen the four (4) set screws on the large guide rods. Use a dead blow hammer or a hammer and a block of wood to move the table. A dial indicator must be used to record from “0” the measurement made + or -. See Fig. 33 for dial indicator placement.

9. Tighten the eight (8) bolts and the four (4) set screws. Repeat steps 2 through 5. If the three (3) stacks are even, you can verify the sheet is straight by folding a sheet in half. This is not as accurate as using the three (3) stacks.

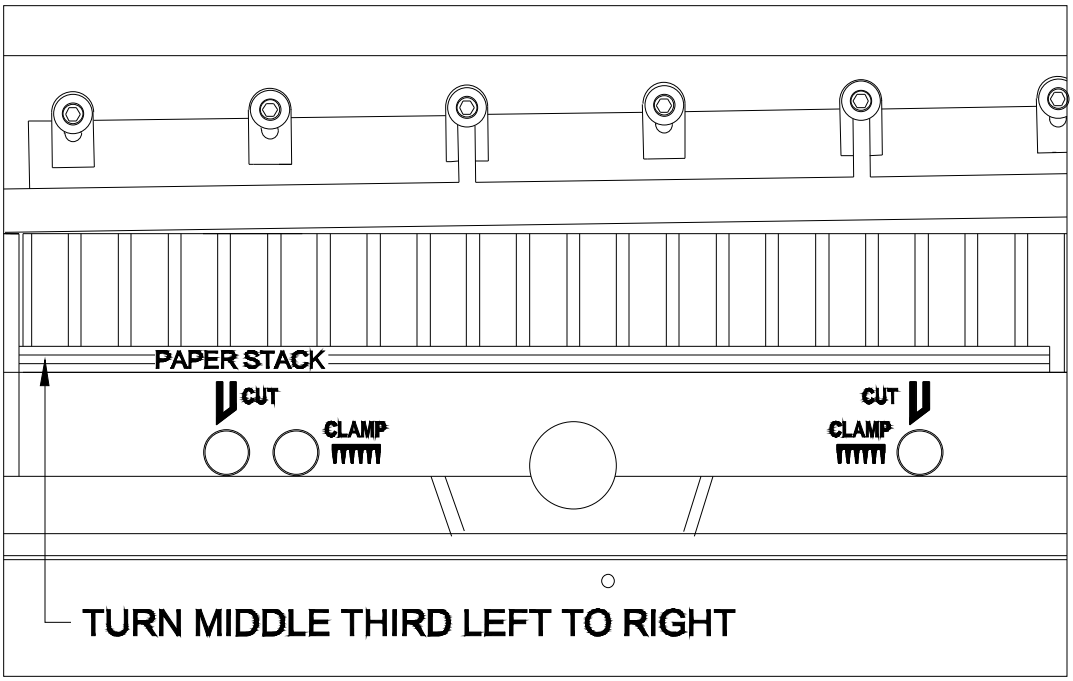


Fig 34

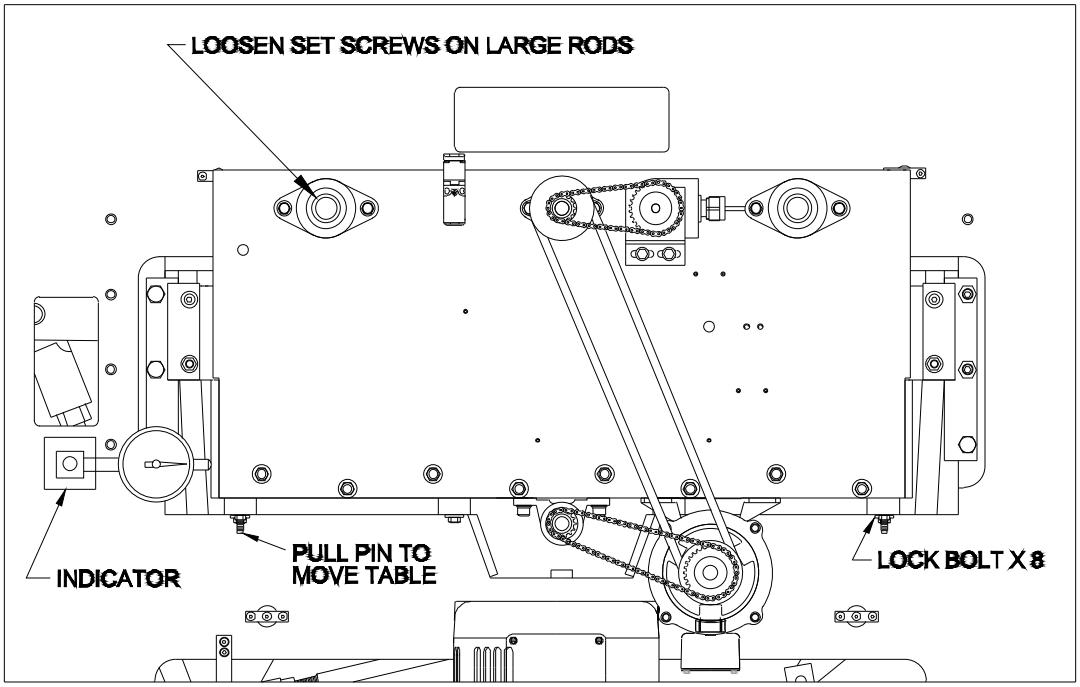


Fig 35

GUIDE ROD ADJUSTMENT
OVERHEAD BACKGAUGE
320 SERIAL NUMBERS 10796 AND UP
265 SERIAL NUMBERS 1263 AND UP

This adjustment will make the guide rods parallel to the left rear side plate and level with the table surface. It is important to square cut paper first as described in Fig. 33 page 38, and 39 above. This adjustment is not necessary at installation. If the table is removed check the adjustment shown in Fig. 33 page 38, and 39, then follow the Guide Rod Adjustment procedure.

1. Remove the cover from the top of the backgauge carrier.

2. Using a 1/8" Allen Wrench, tighten the carrier bearing set screws only if carrier twists on the guide rods. Figure 36 shows where to place your hands. Push and pull opposite ways to test for twisting movement. NOTE: Do not over tighten these screws! Backgauge binding can occur. Always use blue loctite on these screws if removed. Fig 36.

3. Move the backgauge to the back of the table and attach a dial indicator in the position shown. Fig. 37.

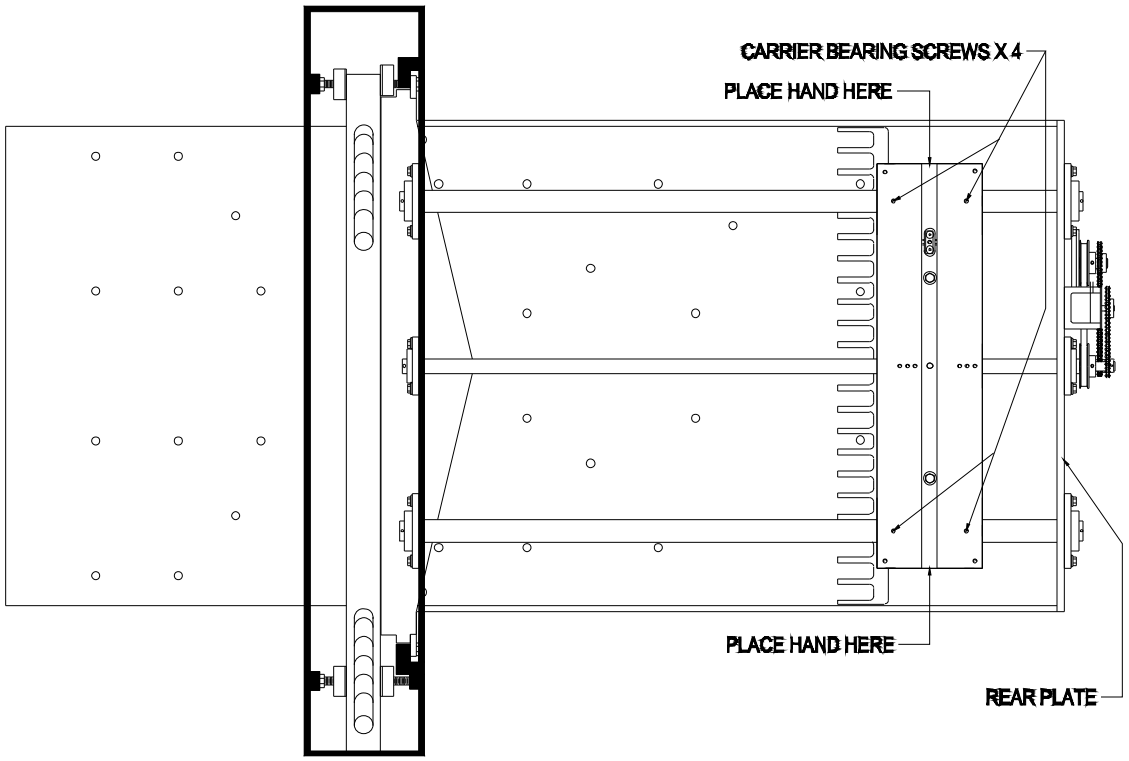


Fig. 36

4. Zero the indicator and run the backgauge to the front.

5. Observe the indicator. If the indicator is still on zero + - .001" (.002" total) then no adjustment is needed. If the indicator moved more than + - .001" (.002" total) then adjustment is needed.

6. Install two (2) wood blocks 11.250" high under the left and right guide rods at the rear of table against the rear plate. Fig. 38.

7. Move the backgauge to the front and zero the indicator.

8. Move the backgauge to the back. Loosen the two (2) hex bolts on each of the three (3) pillow blocks that are on the back plate. Fig. 37.

9. Move the backgauge assembly left or right to zero the indicator.
10. Lock the pillow block bolts.

11. Move the backgauge back to front and observe the indicator. If it is zero + - .001” (.002” total) remove the wood blocks. If it is not within tolerance, repeat steps 6 to 9 until the indicator is zero + - .001” (.002” total).

12. Check the encoder chain tension and drive belt tension after adjusting the guide rods on page 44, and 45.

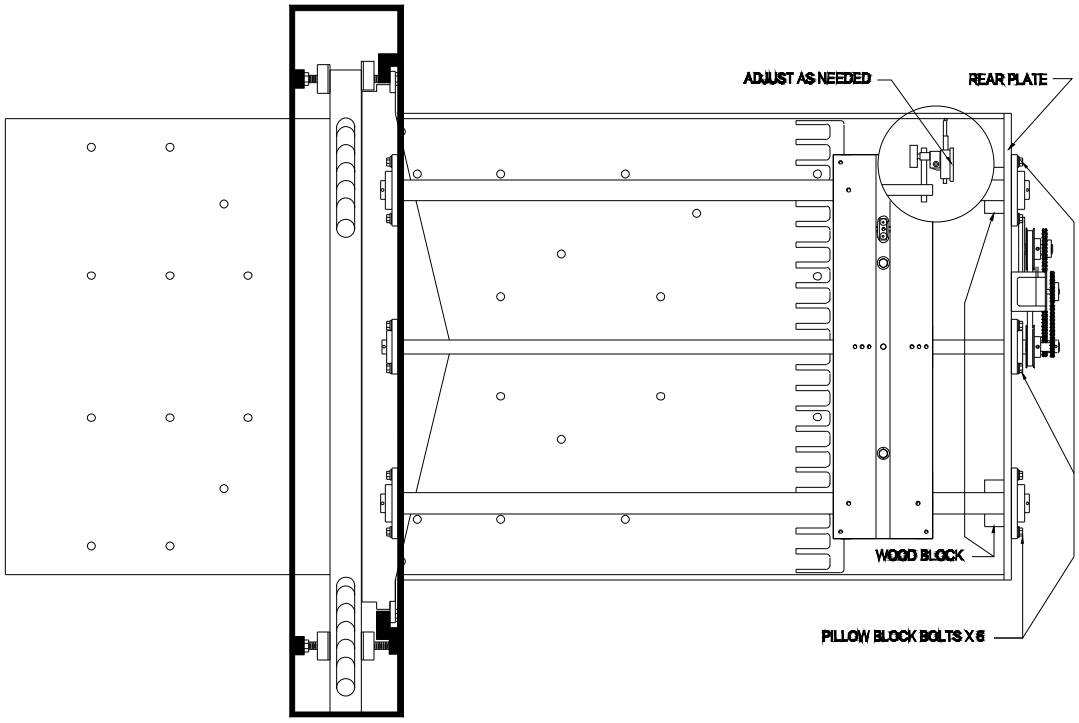


Fig. 37

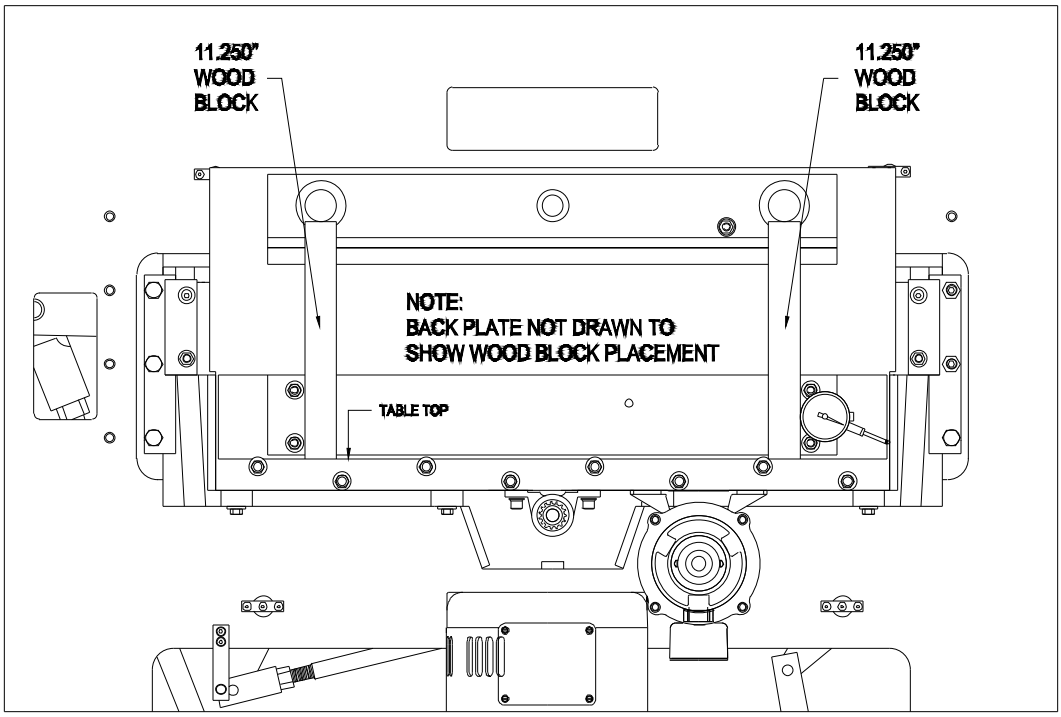


Fig. 38

SQUARING THE BACKGAUGE
OVERHEAD BACKGAUGE
320 SERIAL NUMBERS 10796 AND UP
265 SERIAL NUMBERS 1263 AND UP

The backgauge must be parallel to the knife to insure straight cuts. To perform the test and make the adjustment use a 1" high stack of 8 1/2" x 11" paper.

1. Place the stack on the left side of the backgauge and not touching the left side plate. Cut the stack. Fig. 39.

2. Do not move the backgauge!

3. Turn the stack over from left to right and place it on the right side of the backgauge and not touching the right side plate. Cut the stack. Fig. 39.

4. If the stack trimmed the backgauge is not straight. If there was no trim, then move the backgauge forward 1/8" and repeat steps 1 through 3 except start on the right side, then move to the left side.

5. If there was no trim then the backgauge is straight.

6. If there was trim on either side then the backgauge needs to be adjusted.

7. Open the rear cover and remove the cover on top of the backgauge carrier

8. Loosen the two (2) lock bolts with a 9/16 socket wrench. Fig. 40, indicated with an arrow.

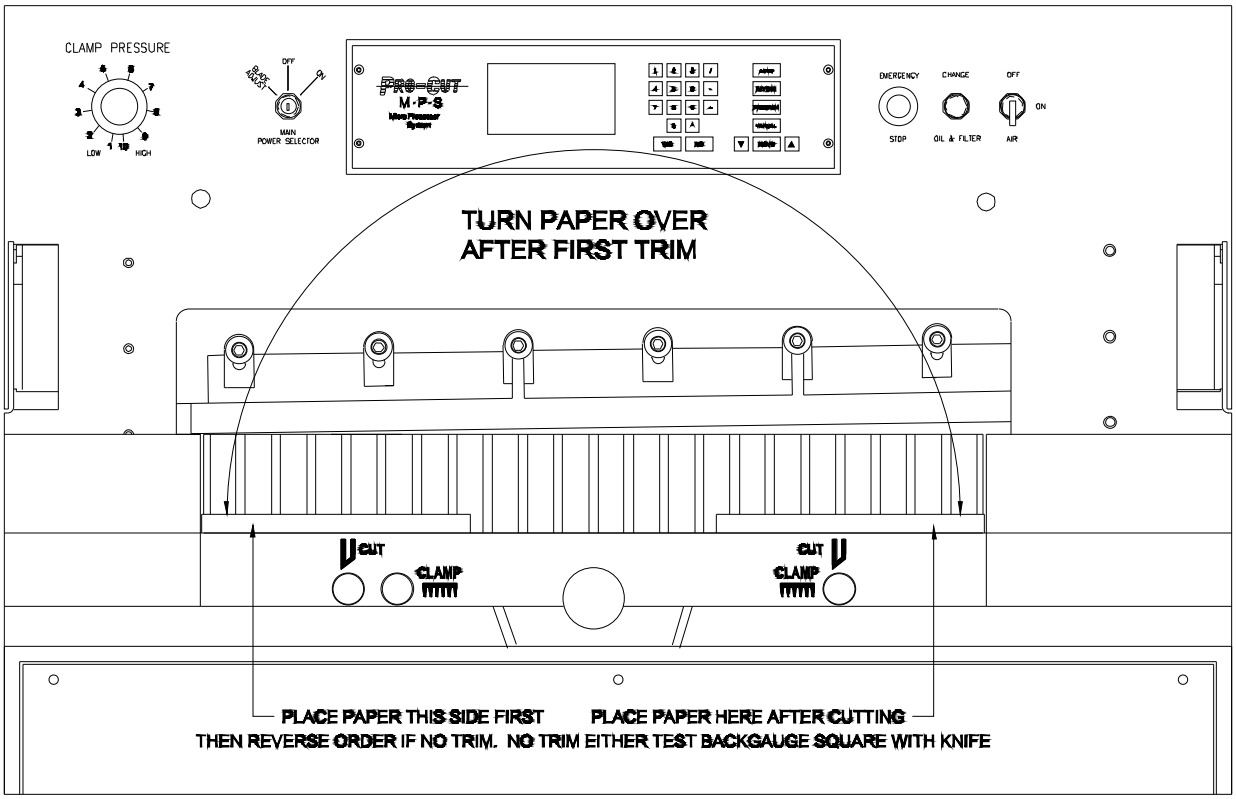


Fig 39

9. If the left side is cutting longer than the right, loosen the rear swing nut with a 9/16 socket wrench and tighten the front swing nut.

10. If the right side is cutting longer than the left, loosen the front swing nut with a 9/16 socket wrench and tighten the rear swing nut.

11. Tighten the two (2) lock bolts and repeat steps 1 through 10 until there is no trim on either side.

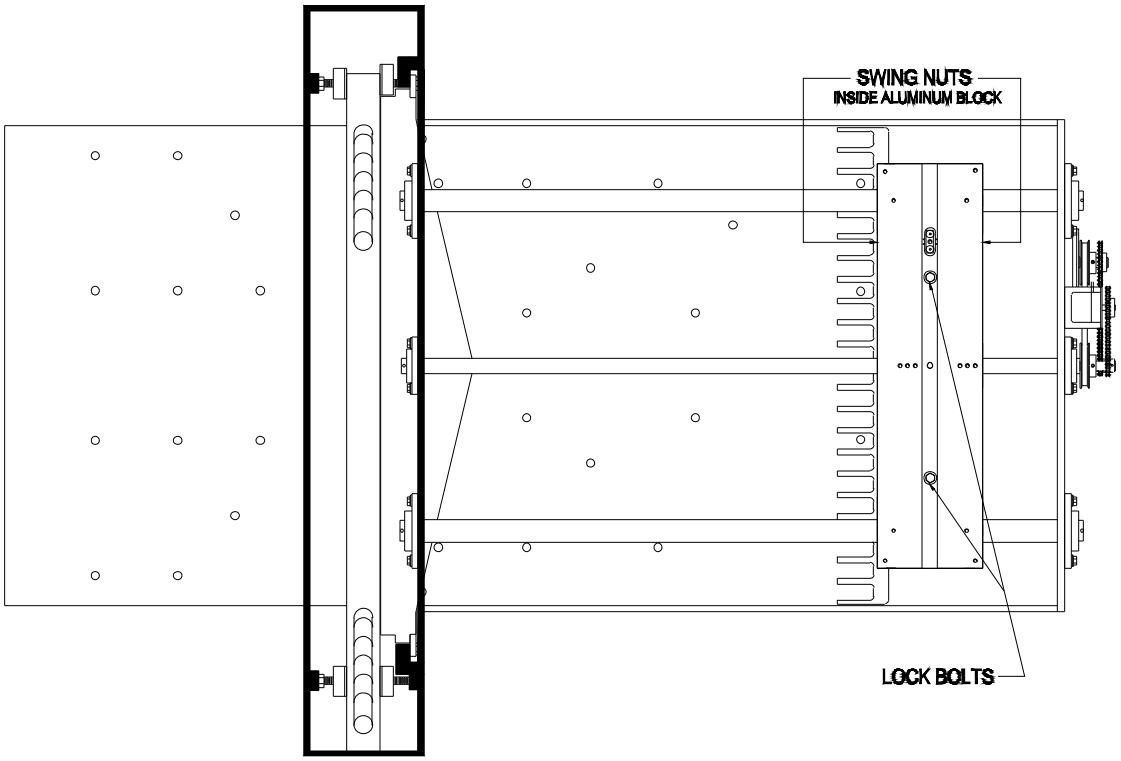


Fig. 40

BACKGAUGE VERTICAL ADJUSTMENT
OVERHEAD BACKGAUGE
320 SERIAL NUMBERS 10796 AND UP
265 SERIAL NUMBERS 1263 AND UP

To compensate for sheet compression under the clamp, the angle or vertical adjustment of the backgauge face can be adjusted.

Different weights, sizes, and types of paper will trim differently. Always select a paper that best suits the customers needs for their best results. Setting is made at the factory with 60# offset.

To compensate for different weights, sizes and types of paper after this adjustment has been make to a specific paper, cut fewer sheets usually 1” to 2” high stacks.

The backgauge fingers are designed to have a .002” air gap from the table and 1/8” air gap from its mounting plate. The adjustments for both of these are a combination of the height adjusters and the adjusting bolts. There are springs between the backgauge fingers and the mounting plate that hold the 1/8” air gap. After adjusting, the washers on the back of the mounting plate should not be loose. Fig 41.

1. Place a 3 1/2" to 3 3/4" high 11” wide stack of the paper selected by the customer in the center of the cutter and against the backgauge.
2. Trim 1/8” off the stack. Turn the cut edge against the backgauge and trim 1/8” more.

3. Take a sheet 1/4" from the top and 1/4" from the bottom and compare them. If they are the same size no adjustment is necessary. If they are different sizes then follow the steps below.

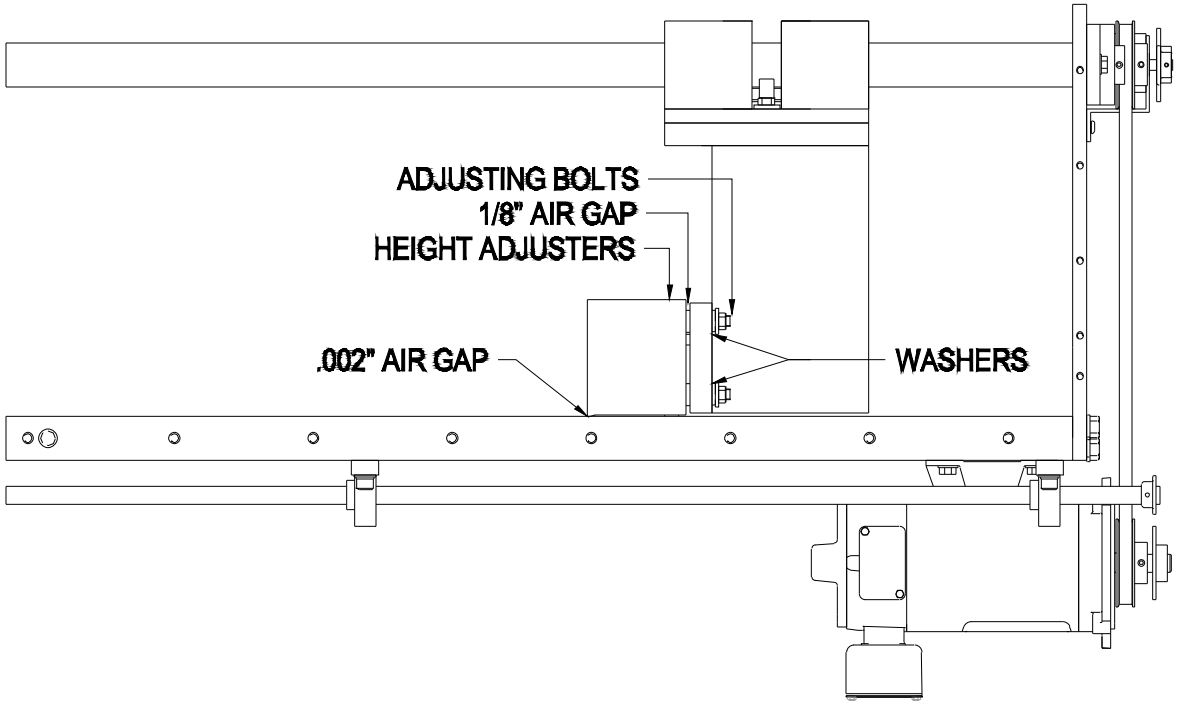


Fig 41

4. If the top sheet is longer than the bottom sheet, loosen the top two (2) hex nuts with a 9/16" wrench and tighten the bottom two (2) hex nuts. Use small amounts of movement to avoid over adjusting. Always adjust all the nuts the same amount of movement and make sure that the washers are not loose after the adjustment is complete. Fig. 41.

5. Check the .002" air gap between the table and the backgauge first with a feeler gage whenever step 4 is completed. Adjust the two (2) height adjusters Fig 41 with a 1/8" Allen Wrench. Clockwise movements will raise the fingers from the table.

6. Repeat steps 1 through 5 until the desired setting is achieved.

7. Recheck "SQUARING THE BACKGAUGE OVERHEAD BACKGAUGE" procedure page 42 Fig. 39.

BACKGAUGE DRIVE BELT AND HANDWHEEL CHAIN TENSION
OVERHEAD BACKGAUGE
320 SERIAL NUMBERS 10795 AND UP
265 SERIAL NUMBERS 1262 AND UP

Proper drive belt tension for Digital (D) models is 1" of deflection when squeezing the belt between the pulleys.

Proper drive belt tension for MPS II models is 1" of deflection when squeezing the belt between the pulleys.

To Adjust: Fig. 42.

1. Loosen the four (4) motor lock bolts with a 1/2" wrench or socket.

2. Loosen the two (2) hand wheel lock bolts with a 5/16" Allen Wrench.

3. Pull the motor away from the center of the table to tighten the belt.

4. Tighten the four (4) motor lock bolts. **NOTE:** If there are rubber washers under the motor, tighten the bolts evenly and do not crush the rubber washers.

5. Adjust the handwheel chain using the Handwheel and Encoder Chain Adjustment procedure page 45.

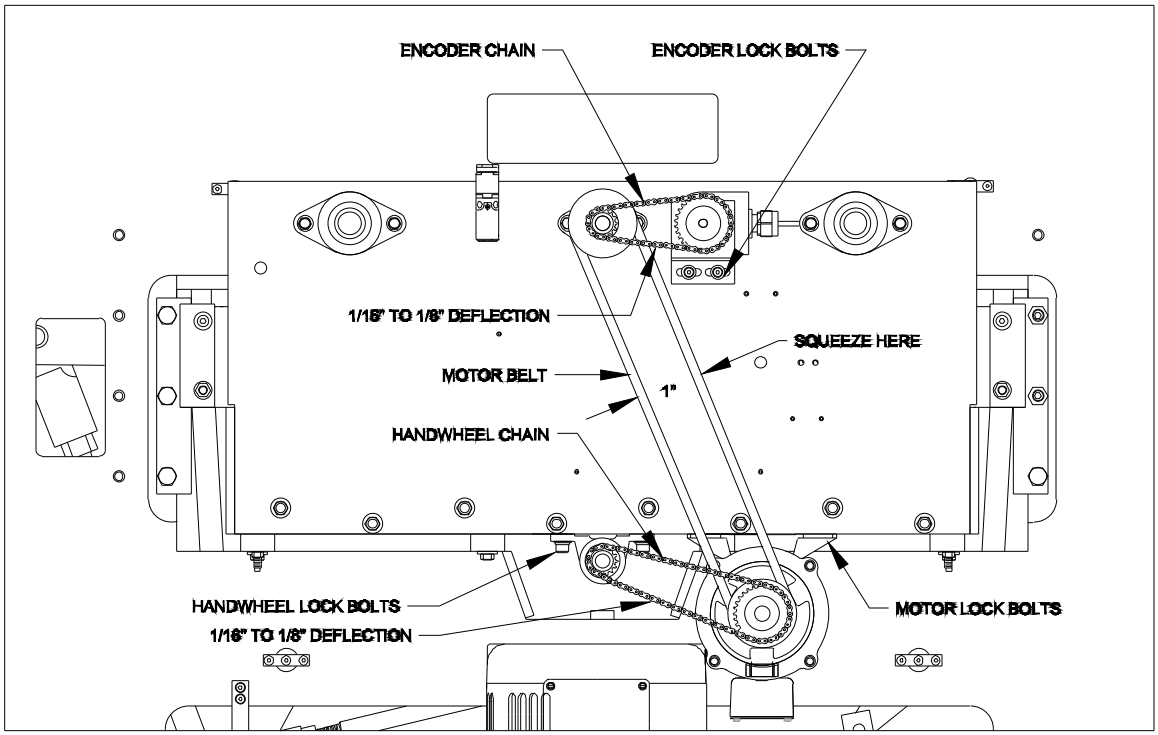


Fig. 42

HANDWHEEL AND ENCODER CHAIN ADJUSTMENT
OVERHEAD BACKGAUGE
320 SERIAL NUMBERS 10795 AND UP
265 SERIAL NUMBERS 1262 AND UP

Proper adjustment for all handwheel and encoder chains is 1/16” to 1/8” deflection when the chain is pushed up from the bottom.

To adjust the handwheel chain on all models: Fig 42

1. Loosen the two (2) hand wheel lock bolts with a 5/16” Allen Wrench.

2. Move the bearing block left or right for proper adjustment. Tighten the handwheel lock bolts.

To adjust the encoder chain on all models: Fig. 42.

1. Loosen the two (2) encoder lock bolts, on the encoder bracket, with a 5/32” Allen Wrench.

2. Adjust for proper tension and tighten the encoder lock bolts.

HYDRAULIC SYSTEM CALIBRATION GUIDE
SILVER STACKED BLOCKS WITH REXROTH AND SUN VALVES
WITH AND WITHOUT SOFT CLAMP
320 SERIAL NUMBERS 10101 TO 10422
265 SERIAL NUMBERS 1035 TO 1136

Before making the following adjustments, be sure the knife is sharp, there are no oil leaks, and the blade beam and clamp can be cycled.

1. Remove the black “Clamp Pressure Knob” Fig. 43 located on the front face of the cutter with a 3/32” Allen wrench.

2. Turn the “Remote Pressure Valve” Fig 43A with a 5/32” Allen wrench, clockwise till it stops.

3. Loosen the “Clamp Pressure Adjuster” locknut Fig. 44 with a 9/16” wrench. Use a 5/32” Allen wrench and turn the “Clamp Pressure Adjuster” clockwise until it stops. Fig. 44.

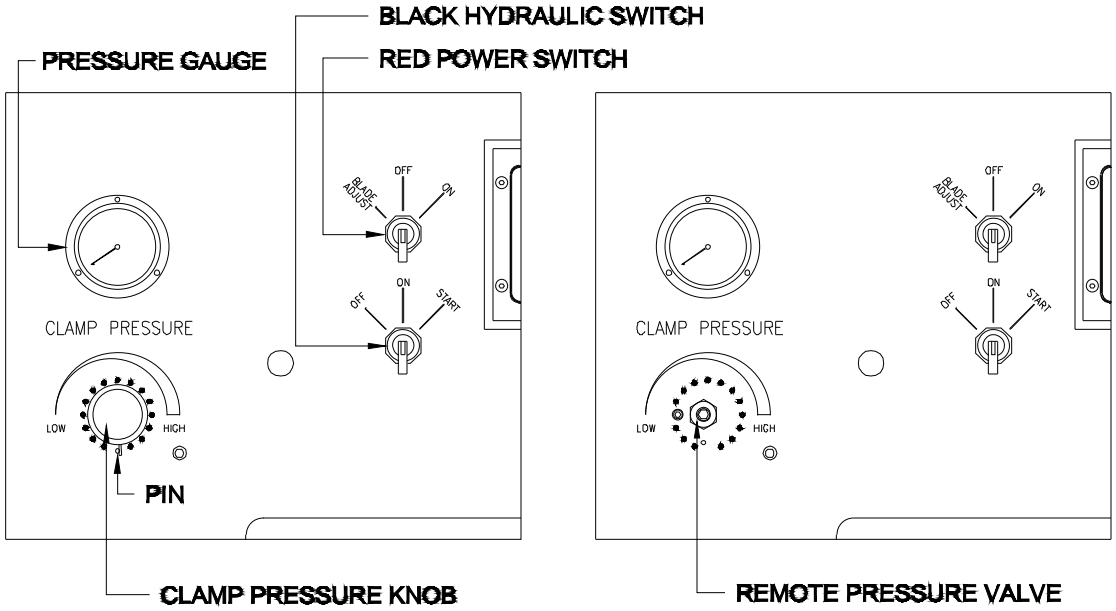


Fig 43 Fig 43A

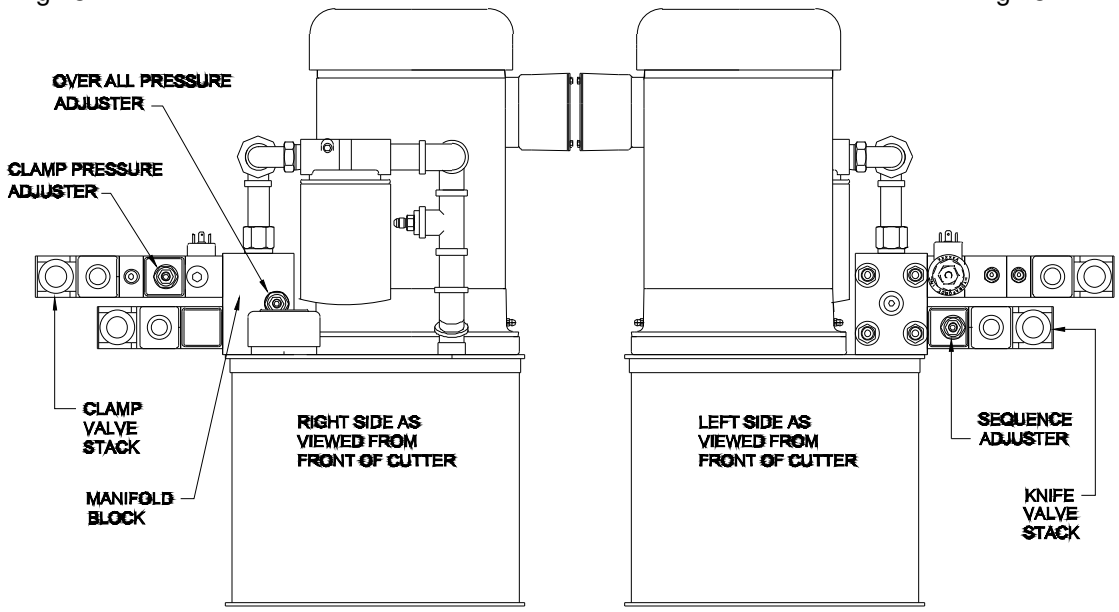


Fig 44 Fig 44A

4. Turn the “Red Power Switch” Fig. 43 to “On” and allow the computer to reset. Turn the “Black Hydraulic Switch” to “Start” the hydraulic motor.

5. Press the “Red Clamp Button” and the “Right Black Cut Button” at front of the cutter table or side tables to bring the clamp down. The “Pressure Gauge” on the face of the cutter must read 1800 psi.

6. If the “Pressure Gauge” is not at 1800 psi, loosen the “Over All Pressure Adjuster” locknut Fig. 44 with a 9/16” wrench. Use a 5/32” Allen wrench in the adjuster stem. Turn the Allen wrench clockwise to increase pressure.

7. Repeat step 5 and 6 until the pressure is 1800 psi. Tighten the “Over All Pressure Adjuster” locknut.

8. The clamp maximum pressure is 1500 psi. With the Allen wrench turn the “Clamp Pressure Adjuster” Fig. 44 and the “Remote Pressure Valve” Fig. 43A stems counterclockwise, 1/2 turn at a time. Press the “Red Clamp Button” and the “Right Black Cut Button” to bring the clamp down. Repeat this step until the “Pressure Gauge” reads 1500 psi.

9. Reinstall the “Clamp Pressure Knob”. Be careful not to move the adjustment of the valve while installing it. Make sure the indicator pin is pointing to high (maximum) and tighten the setscrew. Fig. 43.

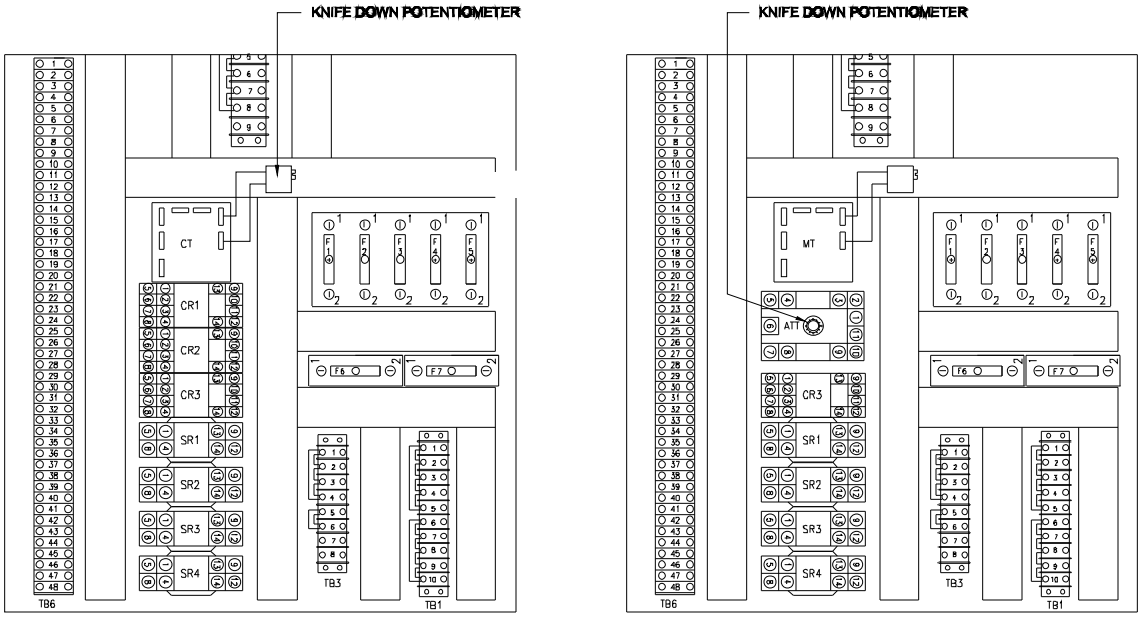
10. Tighten the “Clamp Pressure Adjuster” locknut. Fig. 44.

11. Objective: The clamp pressure should be at 1500 psi before the knife contacts the paper. If this condition does not exist, readjust the “Sequence Adjuster” per steps 12, 13, and 14.

12. Turn the “Clamp Pressure Knob” to maximum pressure (full clockwise). Press both “Black Cut Buttons” and observe the speed of the knife down and up motion.

13. Loosen the “Sequence Adjuster” locknut with a 9/16” wrench. Fig. 44A. Using a 5/32” Allen wrench, turn the “Sequence Adjuster” clockwise one (1) flat at a time, to slow the knife down. Continue to cycle the cutter with the “Black Cut Buttons”. When the knife speed is slower moving down than moving up, turn the Allen wrench counterclockwise until the speed moving down is slightly slower than the speed moving up.

14. Tighten the “Sequence Adjuster” locknut. Fig. 44A.



320 SERIAL NUMBER 10101 -10373
265 SERIAL NUMBER 1035 - 1121

320 SERIAL NUMBER 10374 - 10422
265 SERIAL NUMBER 1122 - 1136

Fig 45

15. Place a 1” high stack of 8 1/2” x 11” paper into the cutter. Press and hold the “Black Cut Buttons” until the clamp and knife have cycled down and back up. The knife should cut the bottom sheet and pause about 2 to 3 seconds before moving up.

16. If the bottom sheet did not cut or there was not enough pause turn off all power to the cutter. Open the main power box located on the left side rear face. Locate the “Knife Down Potentiometer” in Fig. 45. **NOTE:** The “Knife Down Potentiometer” is located in different locations. Use the serial number chart to locate the correct potentiometer. Turn the “Knife Down Potentiometer” clockwise to lengthen the pause.

HYDRAULIC SYSTEM CALIBRATION GUIDE
GOLD VICKERS SYSTEM WITH SEQUENCE VALVE
320 SERIAL NUMBERS 10403, 10423 to 10626
265 SERIAL NUMBERS 1129, 1137 to 1198

Before making the following adjustments, be sure the knife is sharp, there are no oil leaks, and the blade beam and clamp can be cycled.

1. Remove the black "Clamp Pressure Knob" Fig. 46 located on the front face of the cutter with a 3/32" Allen wrench.

2. Remove the "Stop Collar" Fig 46A with a 3/32" Allen wrench. Use a 3/16" Allen wrench in the "Remote Pressure Valve" stem to keep it from turning.

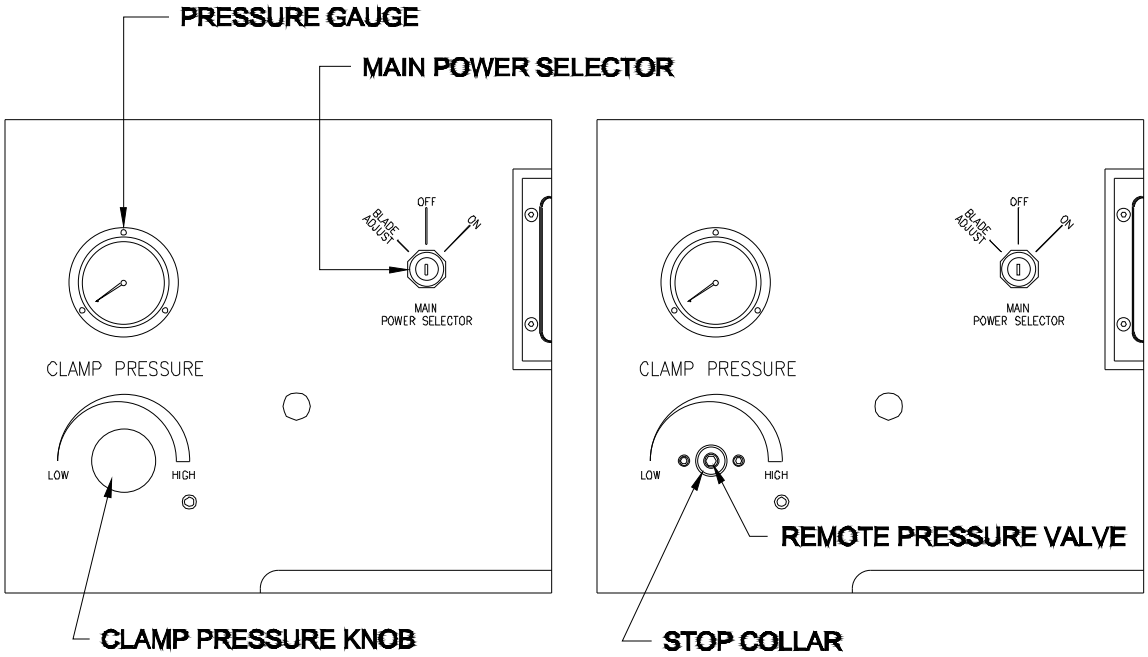


Fig 46 Fig 46A

3. Turn the "Remote Pressure Valve" Fig. 46A with a 3/16" Allen wrench, clockwise till it stops.

4. Turn the "Main Power Selector" switch Fig. 46 to "ON" and allow the MPS to reset. Press the "Black Cut Buttons" at the front of the cutter table to start the hydraulic motor.

5. Press the "Red Clamp Button" and the "Right Black Cut Button" at the front of the cutter table to bring the clamp down. The "Pressure Gauge" on the face of the cutter must read 1800 psi.

6. If the "Pressure Gauge" is not at 1800 psi, loosen "Over All Pressure Adjuster" locknut Fig. 47 with a 3/4" wrench. Use a 3/16" Allen wrench in the adjuster stem. Turn the Allen wrench clockwise to increase pressure.

7. Repeat step 5 and 6 until the pressure is 1800 psi. Tighten the "Over All Pressure Adjuster" locknut.

8. The clamp maximum pressure is 1500 psi. With the Allen wrench turn the "Remote Pressure Valve" Fig. 46A stem counterclockwise to lower the pressure to 1500 psi. Press the "Red Clamp Button" and the "Right Black Cut Button" to bring the clamp down. Repeat this step until the "Pressure Gauge" reads 1500 psi.

9. Reinstall the "Stop Collar". Fig. 46A. Hold the stem while threading the "Stop Collar". Bottom the "Stop Collar" to the "Remote Pressure Valve" body and tighten the setscrew.

10. Install the Clamp Pressure Knob Fig. 46 and tighten the setscrew.

11. Objective: The clamp pressure should be at 1500 psi before the knife contacts the paper. If this condition does not exist, readjust the “Sequence Adjuster” per steps 12,13, and 14.

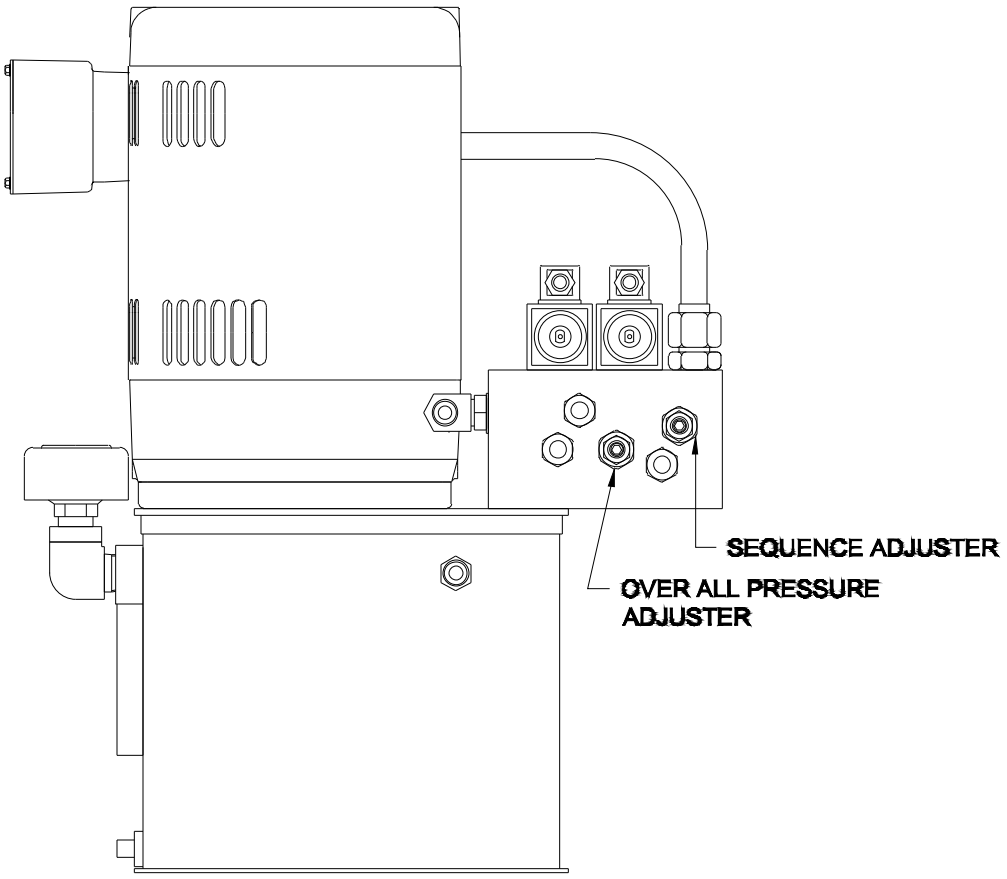


Fig 47

12. Turn the “Clamp Pressure Knob” to maximum pressure (full clockwise). Press both “Black Cut Buttons” and observe the speed of the knife down and up motion.

13. Loosen the “Sequence Adjuster” locknut with a 3/4” wrench. Fig. 47. Using a 3/16” Allen wrench, turn the “Sequence Adjuster” clockwise one (1) flat at a time, to slow the knife down. Continue to cycle the cutter with the “Black Cut Buttons”. When the knife speed is slower moving down than moving up, turn the Allen wrench counterclockwise until the speed moving down is slightly slower than the speed moving up.

14. Tighten the “Sequence Adjuster” locknut. Fig. 47.

HYDRAULIC SYSTEM CALIBRATION GUIDE
GOLD VICKERS SYSTEM WITH HYDRAULIC UPDATE KIT
AND SEQUENCE ADJUSTER ON KNIFE CYLINDER
320 SERIAL NUMBERS 10403, 10423 to 10644
265 SERIAL NUMBERS 1129, 1137 to 1206

Before making the following adjustments, be sure the knife is sharp, there are no oil leaks, and the blade beam and clamp can be cycled.

1. Remove the black “Clamp Pressure Knob” Fig. 48 located on the front face of the cutter with a 3/32” Allen wrench.

2. Remove the “Stop Collar” Fig 48A with a 3/32” Allen wrench. Use a 3/16” Allen wrench in the “Remote Pressure Valve” stem to keep it from turning.

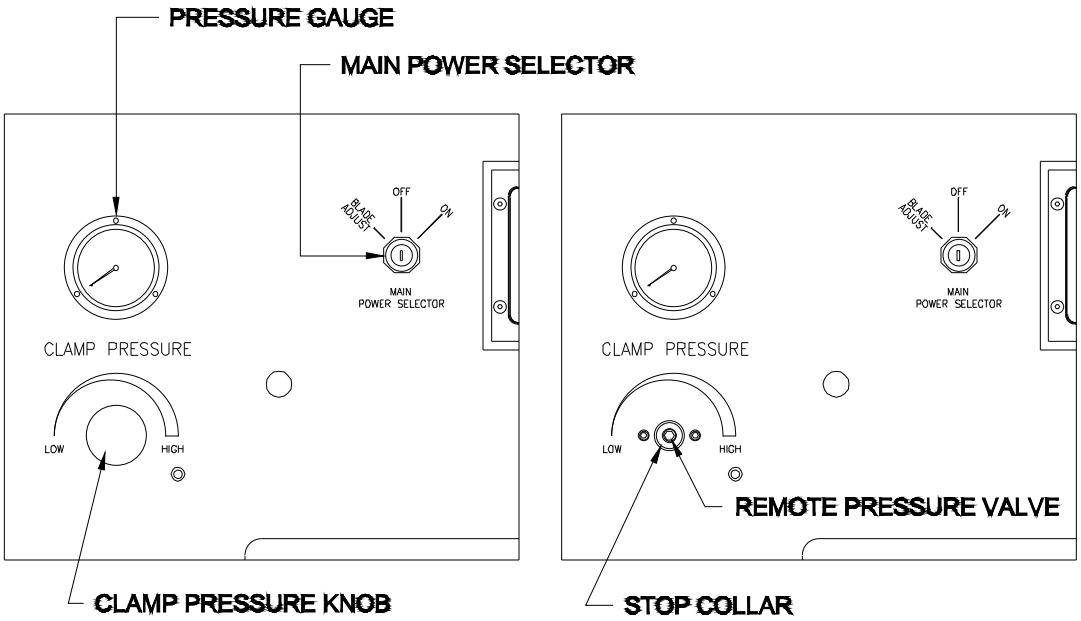


Fig 48 Fig 48A

3. Turn the “Remote Pressure Valve” Fig. 48A with a 3/16” Allen wrench, clockwise till it stops.

4. Turn the “Main Power Selector” switch Fig. 48 to “ON” and allow the MPS to reset. Press both “Black Cut Buttons” at the front of the cutter table to start the hydraulic motor.

5. Press both “Black Cut Buttons” to operate the cutter. The “Pressure Gauge” on the face of the cutter must read 1800 psi. **NOTE: 1800-psi. will only happen when the knife and clamp are moving down.**

6. If the “Pressure Gauge” is not at 1800 psi, loosen “Over All Pressure Adjuster” locknut Fig. 49A with a 3/4” wrench. Use a 3/16” Allen wrench in the adjuster stem. Turn the Allen wrench clockwise to increase pressure.

7. Repeat step 5 and 6 until the pressure is 1800 psi. Tighten the “Over All Pressure Adjuster locknut.

8. The clamp maximum pressure is 1500 psi. With the Allen wrench turn the “Remote Pressure Valve” Fig. 48A stem counterclockwise to lower the pressure to 1500 psi. Press the “Black Cut Buttons” to operate the cutter. Repeat this step until the “Pressure Gauge” reads 1500 psi. **NOTE: 1500-psi. will only happen when the knife and clamp are moving down.**

9. Reinstall the “Stop Collar”. Fig. 48A. Hold the stem while threading the “Stop Collar”. Bottom the “Stop Collar” to the “Remote Pressure Valve” body and tighten the setscrew.

10. Install the “Clamp Pressure Knob” Fig. 48 and tighten the setscrew.

11. Press both “Black Cut Buttons” and operate the cutter. When the knife and clamp raise up the “Pressure Gauge” must read 700 to 800 psi.

12. Loosen the “Up Pressure Adjuster” locknut with a 13mm wrench. Fig. 49. Using a 5/32” Allen wrench, turn the “Up Pressure Adjuster” clockwise to increase the pressure.

13. Repeat steps 11 and 12 until the pressure is 700 to 800 psi. Tighten the “Up Pressure Adjuster” locknut.

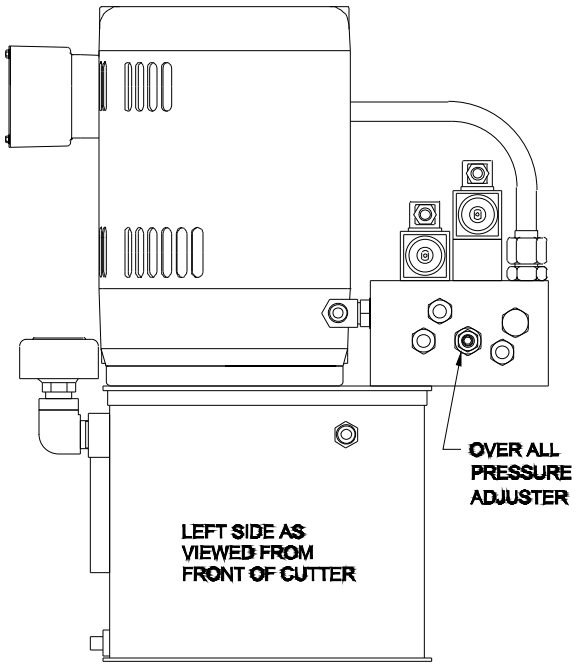


Fig 49

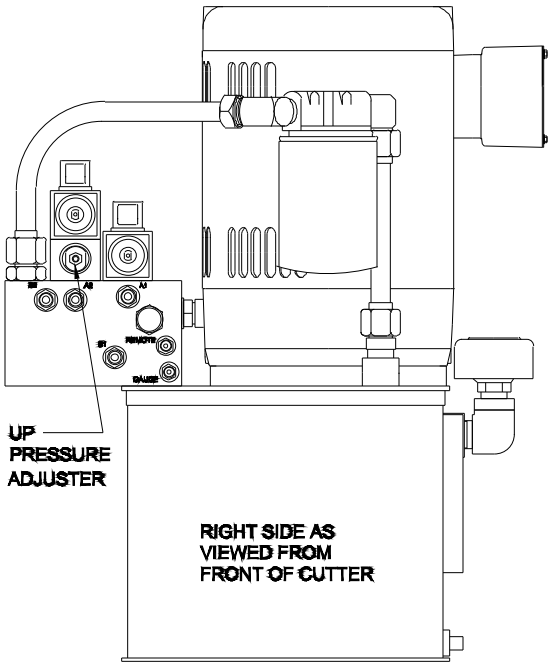


Fig 49A

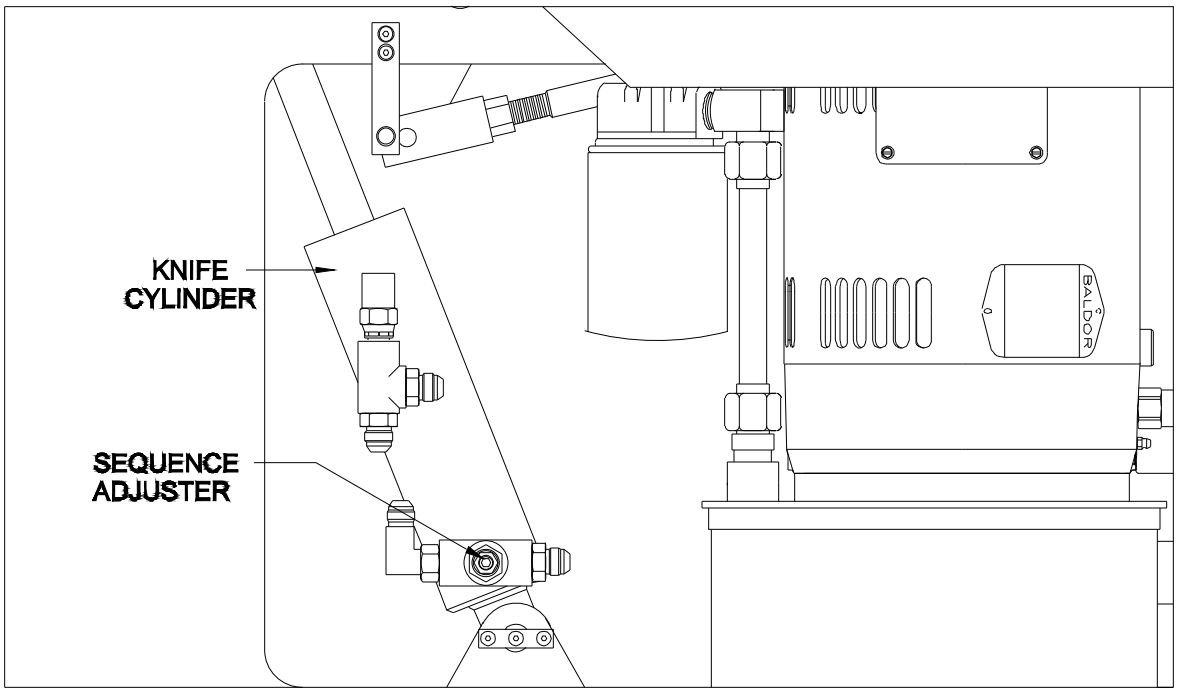


Fig 50

14. Objective: The clamp pressure should be at 1500 psi before the knife contacts the paper. If this condition does not exist, readjust the "Sequence Adjuster" per steps 15, 16, and 17.

15. Turn the "Clamp Pressure Knob" to maximum pressure (full clockwise). Press both "Black Cut Buttons" and observe the speed of the knife down and up motion.

16. Loosen the "Sequence Adjuster" locknut with a 9/16" wrench. Fig. 50. Using a 5/32" Allen wrench, turn the "Sequence Adjuster" counterclockwise one (1) flat at a time, to slow the knife down. Continue to cycle the cutter with the "Black Cut Buttons". When the knife speed is slower moving down than moving up, turn the Allen wrench clockwise until the speed moving down is slightly slower than the speed moving up.

17. Tighten the “Sequence Adjuster” locknut.

HYDRAULIC SYSTEM CALIBRATION GUIDE
RED MANIFOLD BLOCK
PRESSURE GAUGE ON FRONT FACE
320 SERIAL NUMBERS 10645 to 10768
265 SERIAL NUMBERS 1207 to 1248

Before making the following adjustments, be sure the knife is sharp, there are no oil leaks, and the blade beam and clamp can be cycled.

1. Remove the black “Clamp Pressure Knob” located on the front face of the cutter. If the “Clamp Pressure Knob” has “Hole for Allen Wrench” Fig. 51 proceed to step 2. If the “Clamp Pressure Knob” is as Fig. 52 proceed to steps 3 and 4.

2. The “Clamp Pressure Knob” will have two (2) set screws and a “Hole for Allen Wrench”. Using a 3/32” Allen wrench, loosen the setscrew recessed the furthest. Place a 1/4” Allen wrench in the “Hole for Allen Wrench”, into the “Remote Pressure Valve”. Hold the Allen wrench while turning the “Clamp Pressure Knob” counterclockwise. Proceed to step 5.

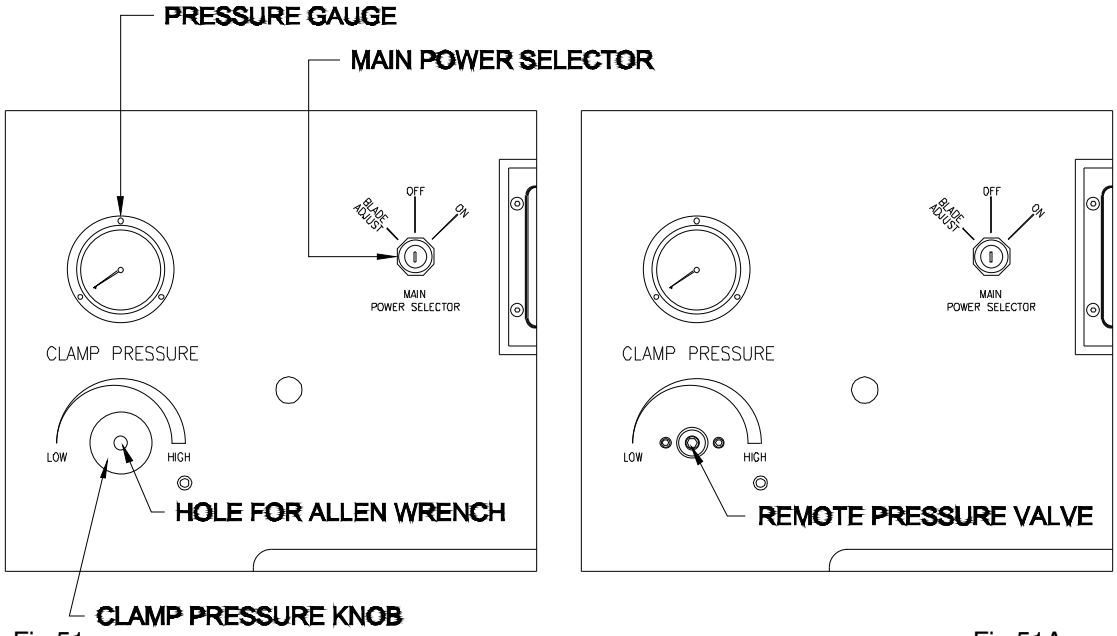


Fig 51 Fig 51A

3. Using a 3/32” Allen wrench remove the “Clamp Pressure Knob”. Fig. 52

4. Remove the “Stop Collar” Fig. 52A with a 3/32” Allen wrench. Use a 1/4” Allen wrench in the “Remote Pressure Valve” stem and keep it from turning.

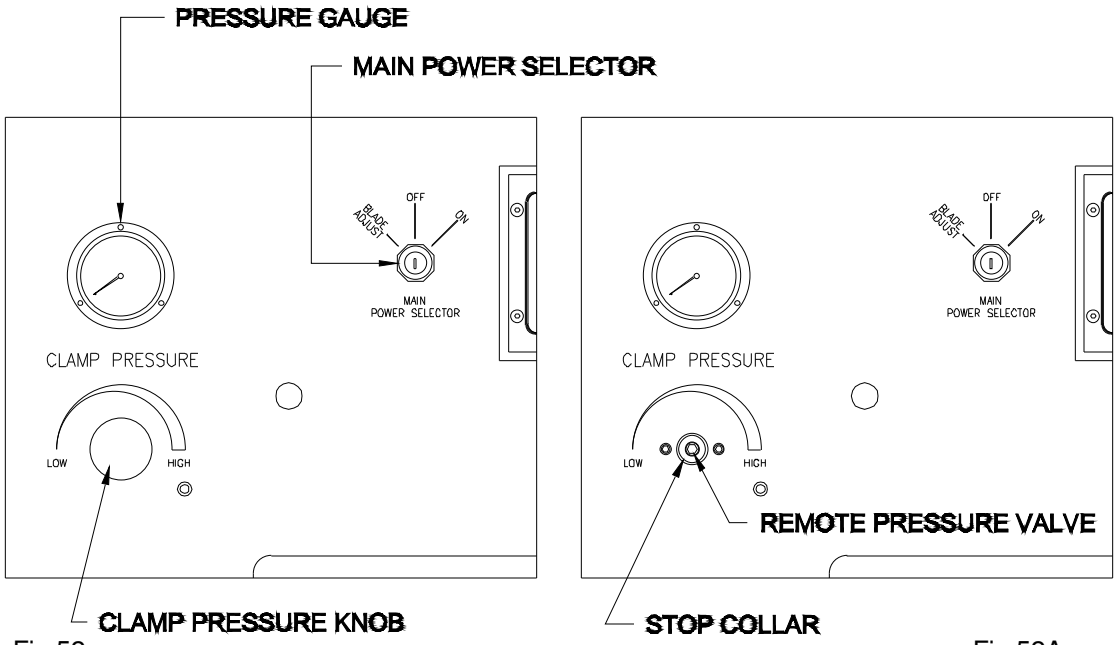


Fig 52 Fig 52A

5. Turn the "Remote Pressure Valve" Fig. 52A with a 1/4" Allen wrench, clockwise till it stops.

6. Turn the "Main Power Selector" switch Fig. 52 to "ON" and allow the MPS to reset. Press both "Black Cut Buttons" at the front of the cutter table to start the hydraulic motor.

7. Press both "Black Cut Buttons" to operate the cutter. The "Pressure Gauge" on the face of the cutter must read 1800 psi. **NOTE: 1800-psi. will only happen when the knife and clamp are moving down.**

8. If the "Pressure Gauge" is not at 1800 psi, loosen "Over All Pressure Adjuster" locknut Fig. 53 with a 3/4" wrench. Use a 1/4" Allen wrench in the adjuster stem. Turn the Allen wrench clockwise to increase pressure.

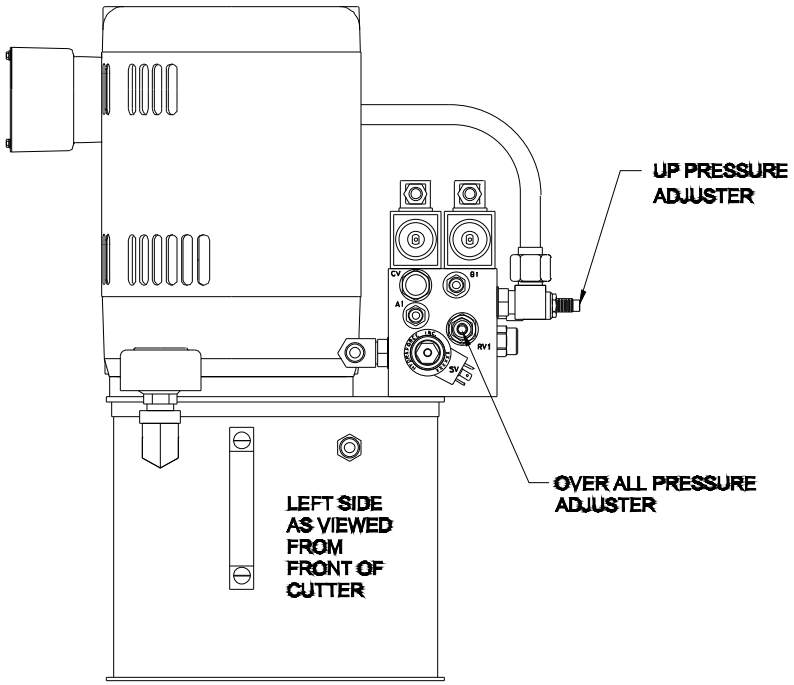


Fig 53

9. Repeat step 7 and 8 until the pressure is 1800 psi. Tighten the "Over All Pressure Adjuster" locknut.

10. The clamp maximum pressure is 1500 psi. With the Allen wrench turn the “Remote Pressure Valve” Fig. 52A counterclockwise to lower the pressure to 1500 psi. Press both “Black Cut Buttons” to operate the cutter. Repeat this step until the “Pressure Gauge” reads 1500 psi. **NOTE: the 1500-psi. will only happen when the knife and clamp are moving down.**

11. Reinstall the “Stop Collar” Fig. 52A or the “Clamp Pressure Knob” Fig. 51 assembly. Hold the stem while threading the “Stop Collar” or the “Clamp Pressure Knob”. Bottom the “Stop Collar” or the “Clamp Pressure Knob” to the “Remote Pressure Valve” body and tighten the setscrew.

12. Install the “Clamp Pressure Knob” Fig 52 and tighten the setscrew.

13. Press both “Black Cut Buttons” and operate the cutter. When the knife and clamp raise up the “Pressure Gauge” must read 500 to 600 psi.

14. Loosen the “Up Pressure Adjuster” locknut with a 3/4” wrench. Fig. 53. Using a 1/4” Allen wrench, turn the “Up Pressure Adjuster” clockwise to increase the pressure.

15. Repeat steps 13 and 14 until the pressure is 500 to 600 psi. Tighten the “Up Pressure Adjuster” locknut.

16. Objective: The clamp pressure should be at 1500 psi before the knife contacts the paper. If this condition does not exist, readjust the “Sequence Adjuster” per steps 17,18, and 19.

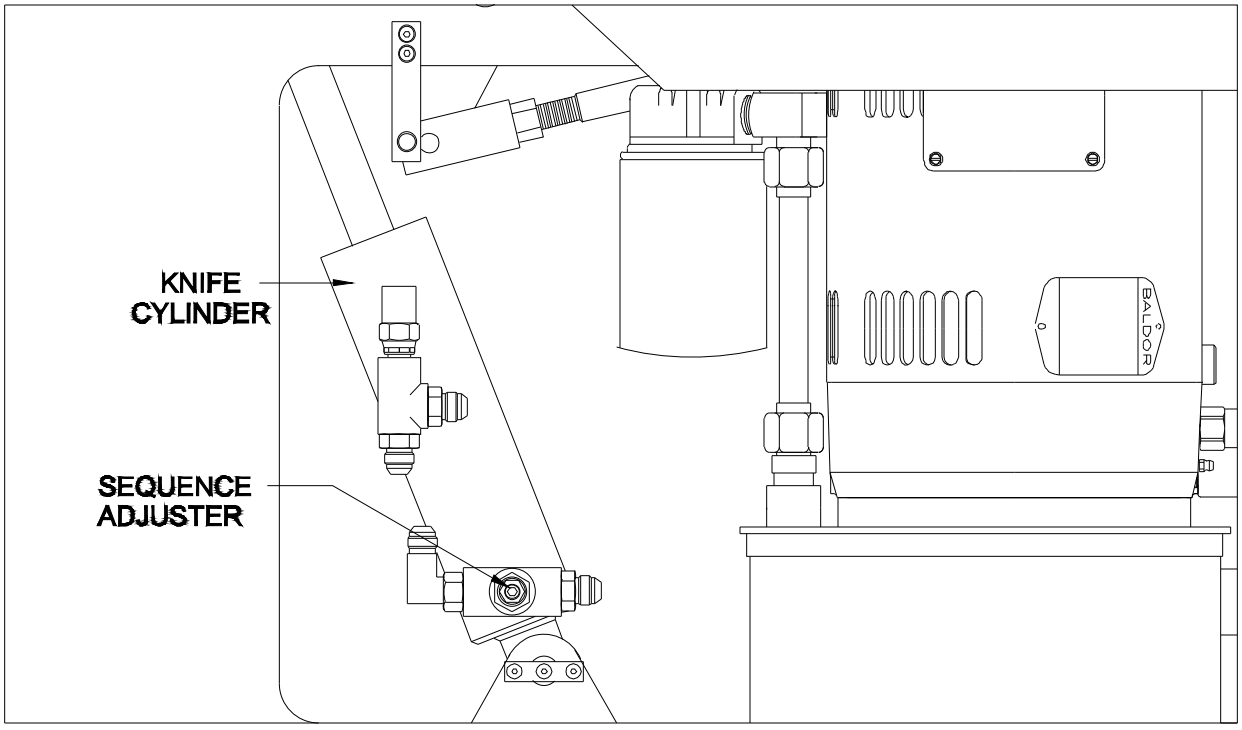


Fig 54

17. Turn the “Clamp Pressure Knob” to maximum pressure (full clockwise). Press both “Black Cut Buttons” and observe the speed of the knife down and up motion.

18. Loosen the “Sequence Adjuster” locknut with a 9/16” wrench. Fig. 50. Using a 5/32” Allen wrench, turn the “Sequence Adjuster” counterclockwise one (1) flat at a time, to slow the knife down. Continue to cycle the cutter with the “Black Cut Buttons”. When the knife speed is slower moving down than moving up, turn the Allen wrench clockwise until the speed moving down is slightly slower than the speed moving up.

19. Tighten the “Sequence Adjuster” locknut.

HYDRAULIC SYSTEM CALIBRATION GUIDE
RED MANIFOLD BLOCK
NO PRESSURE GAUGE ON FRONT FACE
320 SERIAL NUMBERS 10769 and up
265 SERIAL NUMBERS 1249 and up

Before making the following adjustments, be sure the knife is sharp, there are no oil leaks, and the blade beam and clamp can be cycled.

1. Remove the “Gauge Plug” on the side of the “Red Manifold Block”. Fig. 55. Install the gauge kit (PC-S-0802) into the “Red Manifold Block”.

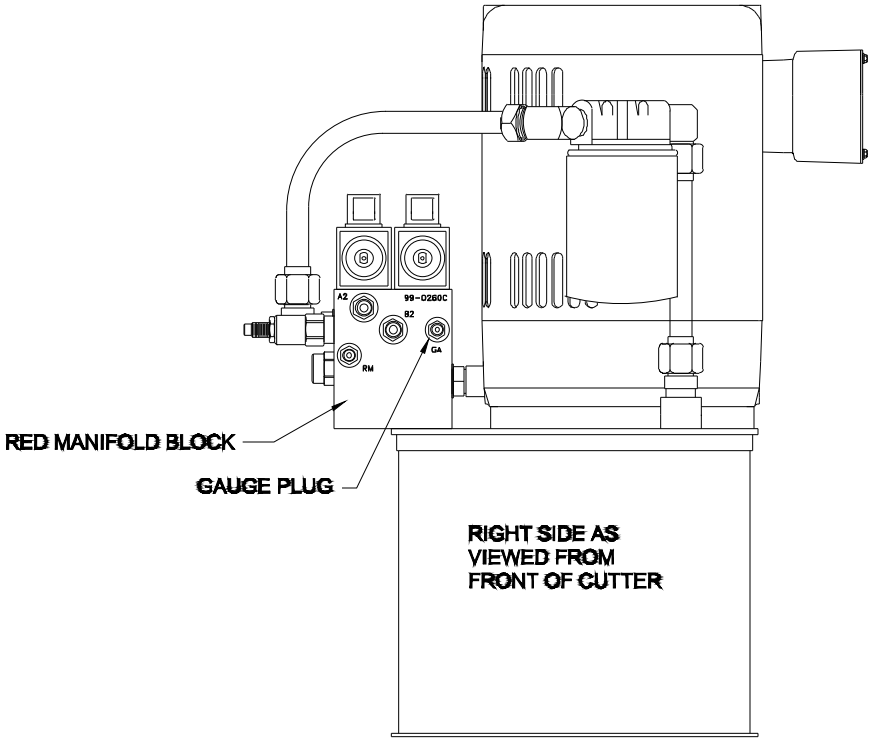


Fig 55

2. Remove the black “Clamp Pressure Knob” Fig. 56 located on the front face of the cutter with a 3/32” Allen wrench.

3. The back of the “Collar” Fig. 56A must be 1/8” to 3/16” from the face of the cutter. Using a 3/32” Allen wrench loosen the setscrew. Use a 5/32” Allen Wrench in the “Remote Pressure Valve” stem to keep it from turning. Tighten the setscrew.

4. Turn the “Remote Pressure Valve” clockwise till it stops. Fig. 56A

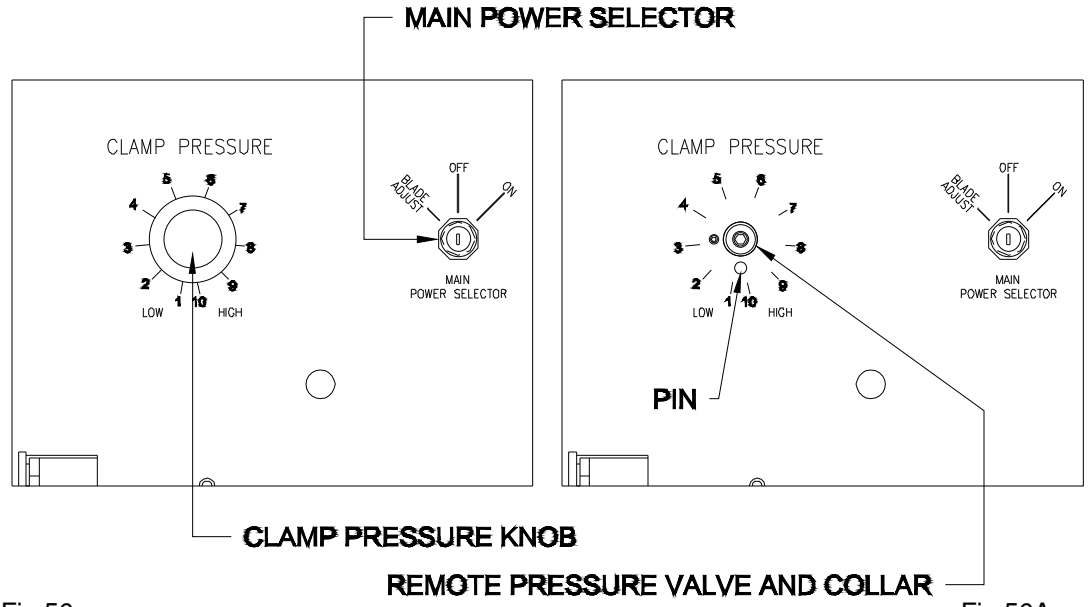


Fig 56 Fig 56A

5. Turn the "Main Power Selector" switch Fig. 56 to "ON" and allow the MPS to reset. Press both "Black Cut Buttons" at the front of the cutter table to start the hydraulic motor.

6. Press both "Black Cut Buttons" to operate the cutter. The "Pressure Gauge" on the "Red Manifold Block" must read 1800 psi. **NOTE: 1800-psi. will only happen when the knife and clamp are moving down.**

7. If the "Pressure Gauge" is not at 1800 psi, loosen "Over All Pressure Adjuster" locknut Fig. 57 with a 3/4" wrench. Use a 1/4" Allen wrench in the adjuster stem. Turn the Allen wrench clockwise to increase pressure.

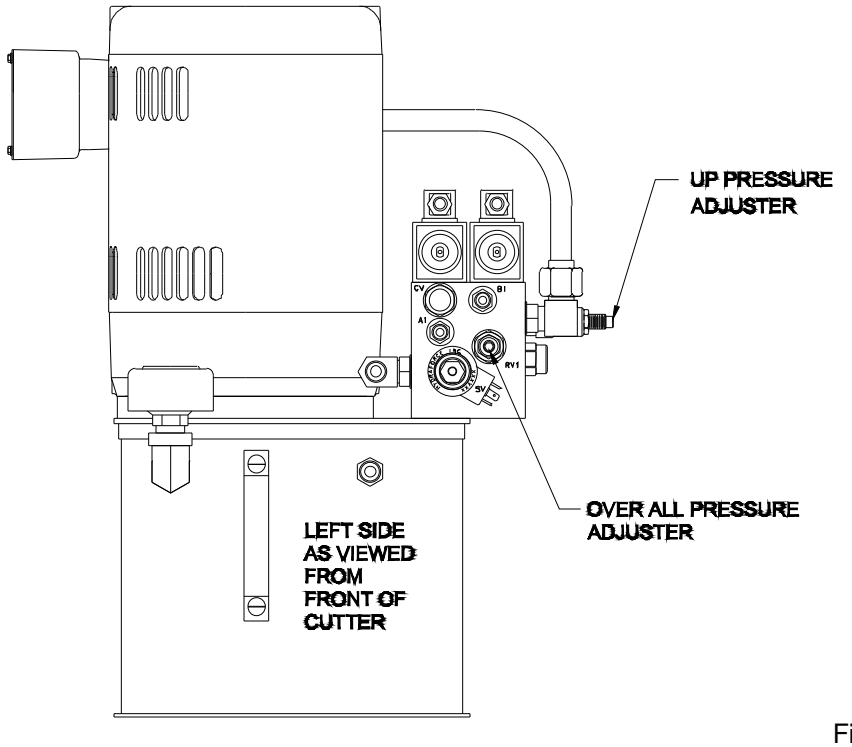


Fig 57

8. Repeat step 7 and 8 until the pressure is 1800 psi. Tighten the "Over All Pressure Adjuster locknut.

9. The clamp maximum pressure is 1500 psi. With the Allen wrench turn the “Remote Pressure Valve” Fig. 56A stem counterclockwise to lower the pressure to 1500 psi. Press both “Black Cut Buttons” to operate the cutter. Repeat this step until the “Pressure Gauge” reads 1500 psi. **NOTE: 1500-psi. will only happen when the knife and clamp are moving down.**

10. Reinstall the “Clamp Pressure Knob”. Fig. 56. The “Clamp Pressure Knob” has a pin that must locate to the right of the “Pin” Fig 56A on the cutter face. The “Clamp Pressure Knob” must not touch the face of the cutter. Recheck step 9.

11. Press both “Black Cut Buttons” and operate the cutter. When the knife and clamp raise up the “Pressure Gauge” must read 500 to 600 psi.

12. Loosen the “Up Pressure Adjuster” locknut with a 3/4” wrench. Fig. 57. Using a 1/4” Allen wrench, turn the “Up Pressure Adjuster” clockwise to increase the pressure.

13. Repeat steps 11 and 12 until the pressure is 500 to 600 psi. Tighten the “Up Pressure Adjuster” locknut.

14. Objective: The clamp pressure should be at 1500 psi before the knife contacts the paper. If this condition does not exist, readjust the “Sequence Adjuster” per steps 15,16, and 17.

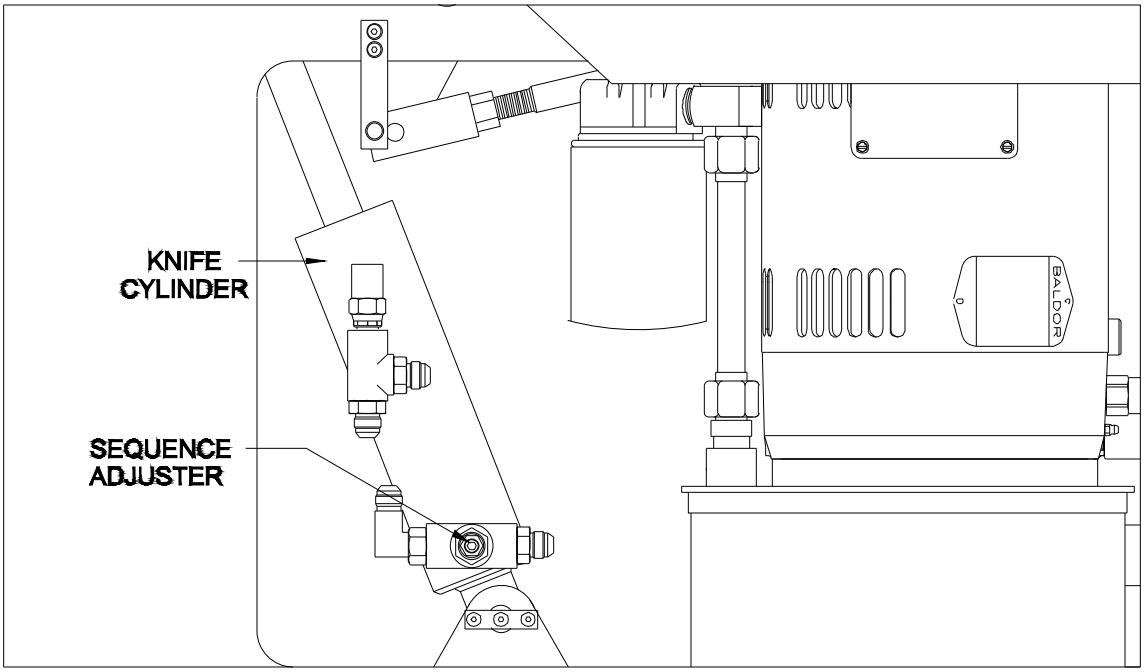


Fig 58

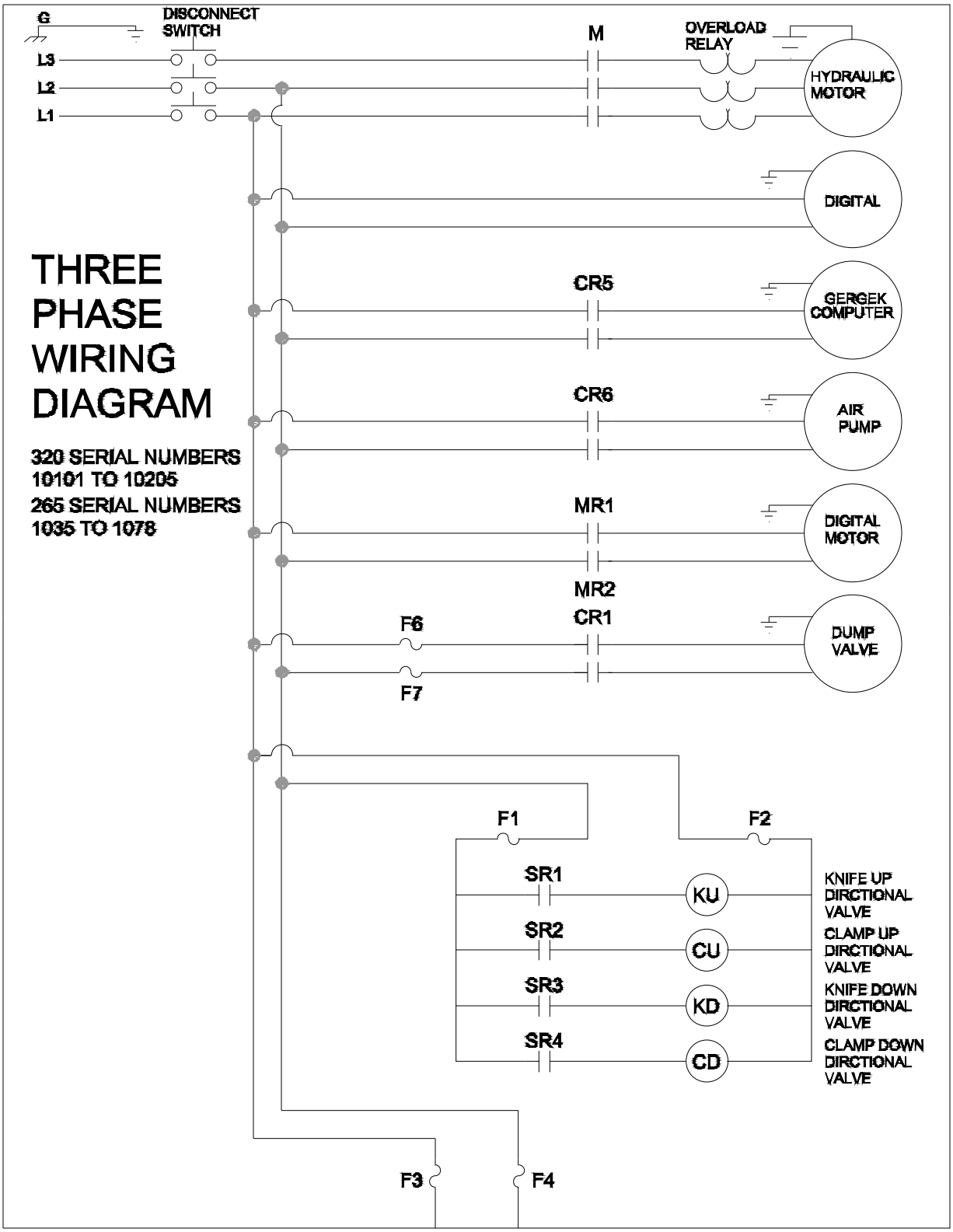
15. Turn the “Clamp Pressure Knob” to maximum pressure (full clockwise). Press both “Black Cut Buttons” and observe the speed of the knife down and up motion.

16. Loosen the “Sequence Adjuster” locknut with a 9/16” wrench. Fig. 58. Using a 5/32” Allen wrench, turn the “Sequence Adjuster” counterclockwise one (1) flat at a time, to slow the knife down. Continue to cycle the cutter with both “Black Cut Buttons”. When the knife speed is slower moving down than moving up, turn the Allen wrench clockwise until the speed moving down is slightly slower than the speed moving up.

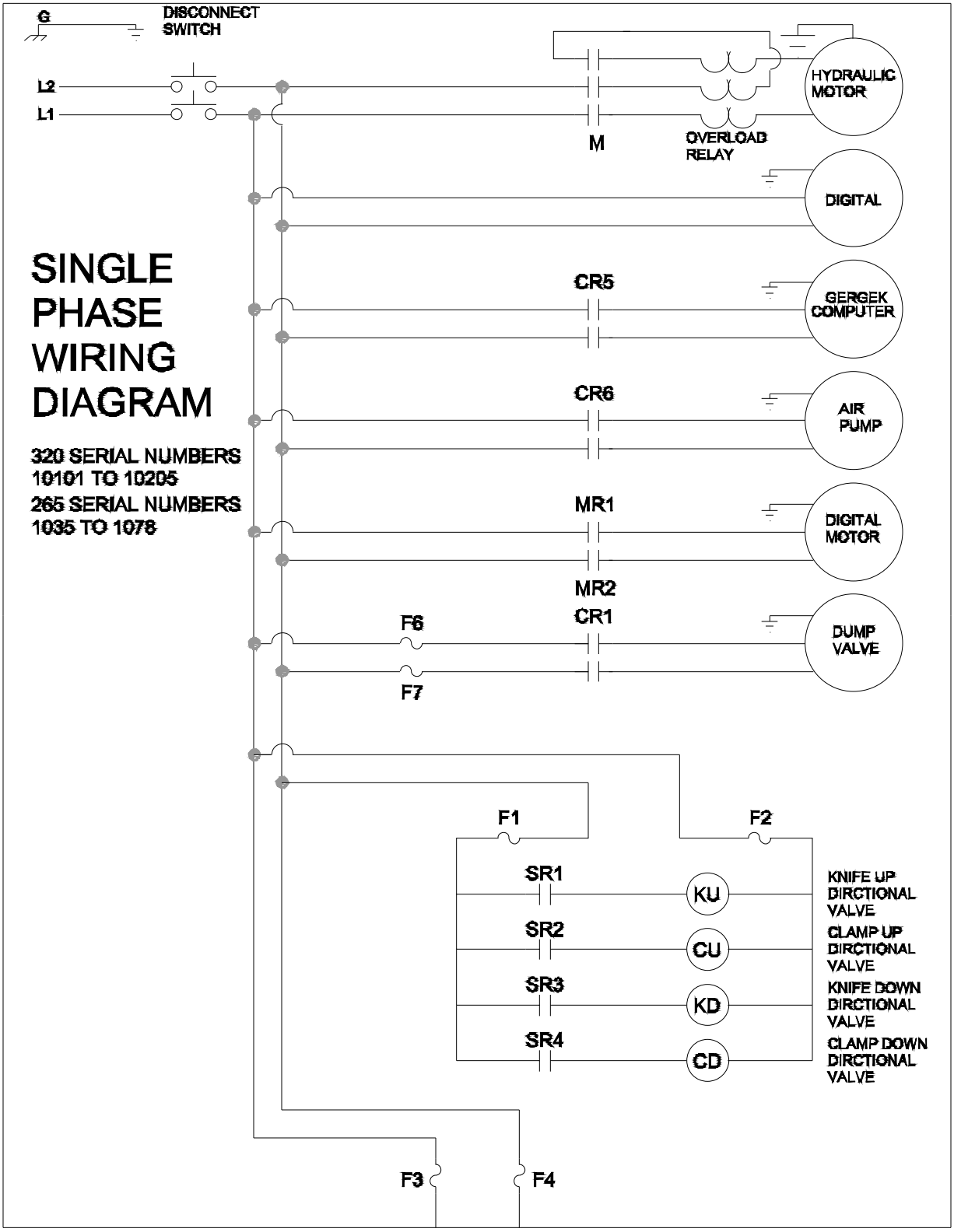
17. Tighten the “Sequence Adjuster” locknut.

18. Remove the gauge kit and install the “Gauge Plug” into the “Red Manifold Block”. Fig. 55.

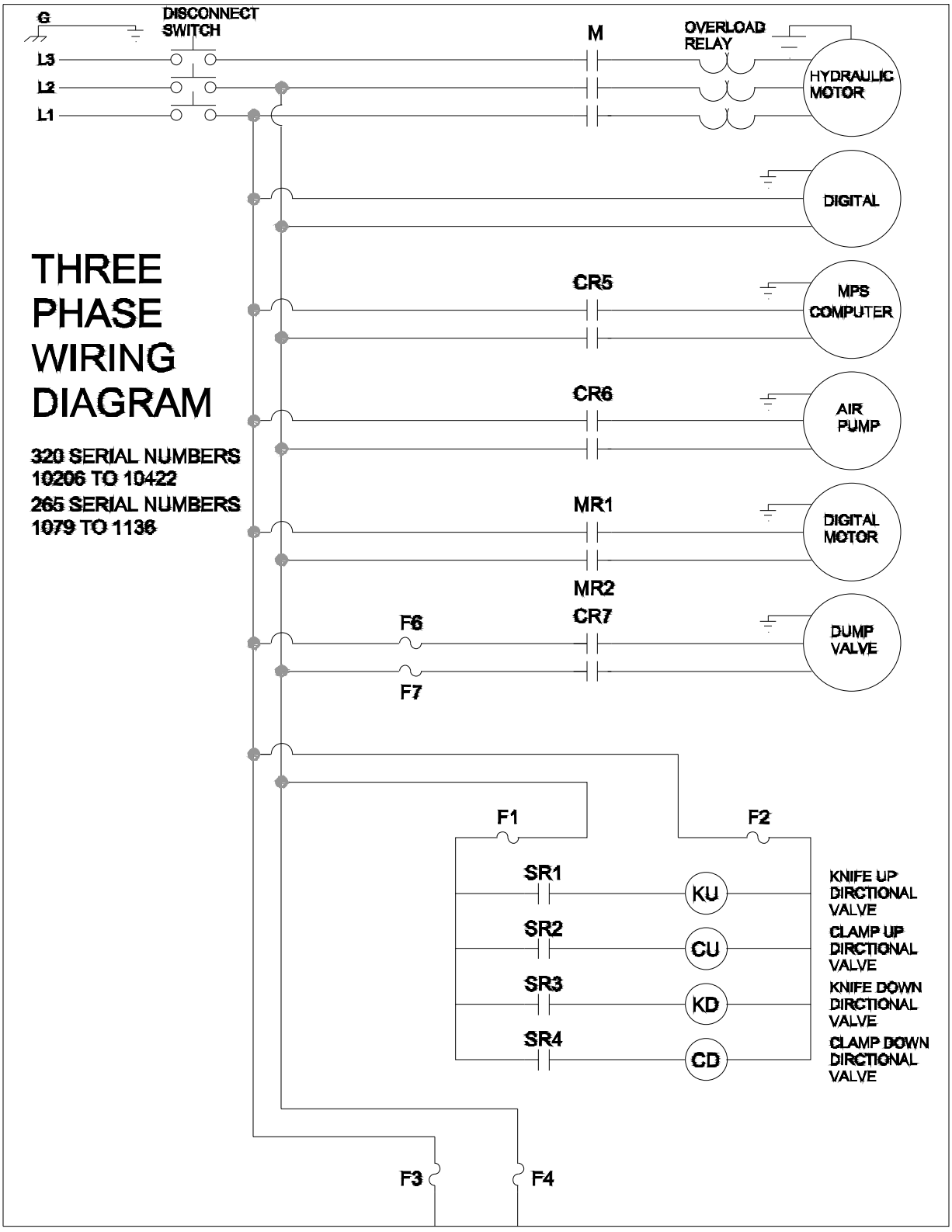
THREE PHASE HIGH VOLTAGE WIRING DIAGRAM
320 SERIAL NUMBERS 10101 to 10205
265 SERIAL NUMBERS 1035 to 1078



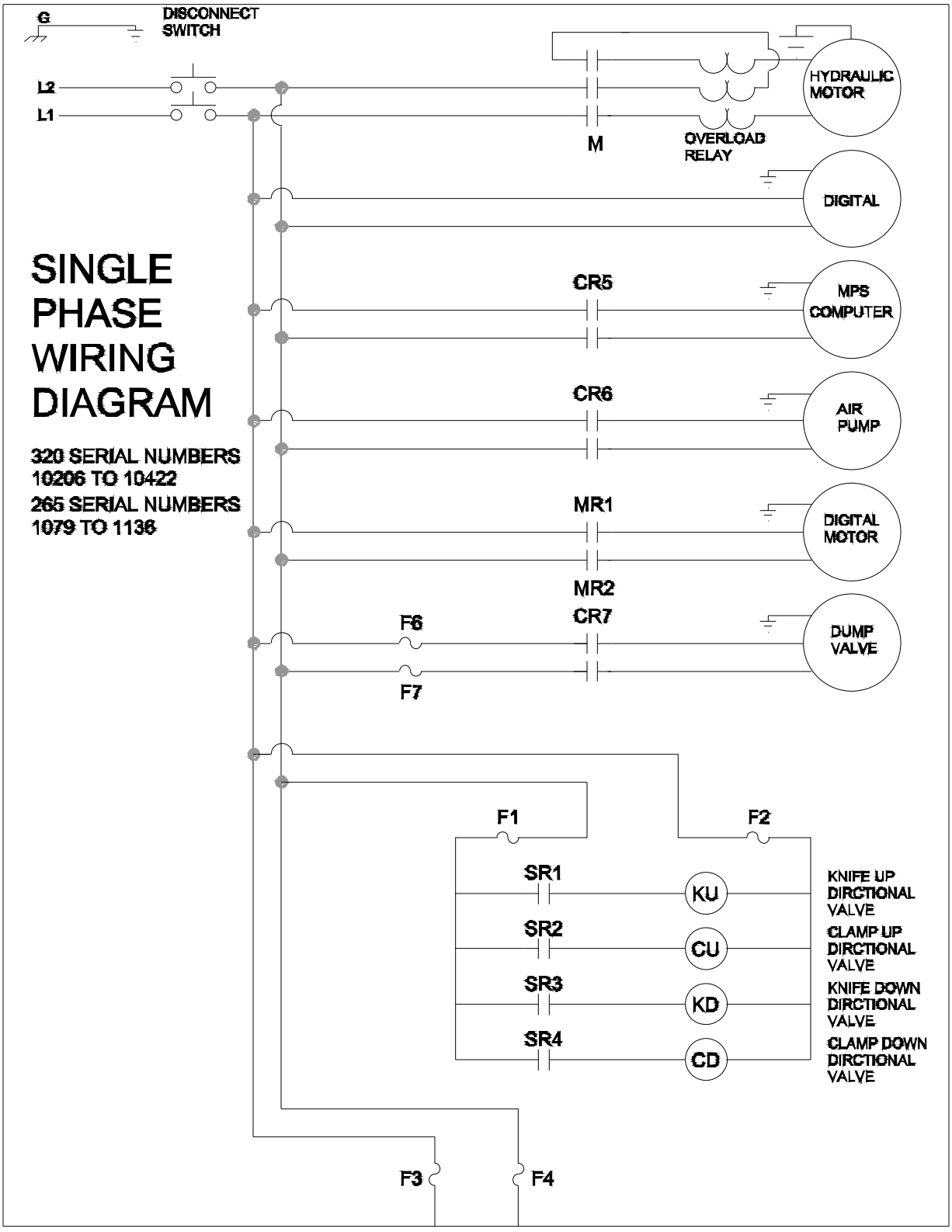
SINGLE PHASE HIGH VOLTAGE WIRING DIAGRAM
320 SERIAL NUMBERS 10101 to 10205
265 SERIAL NUMBERS 1035 to 1078



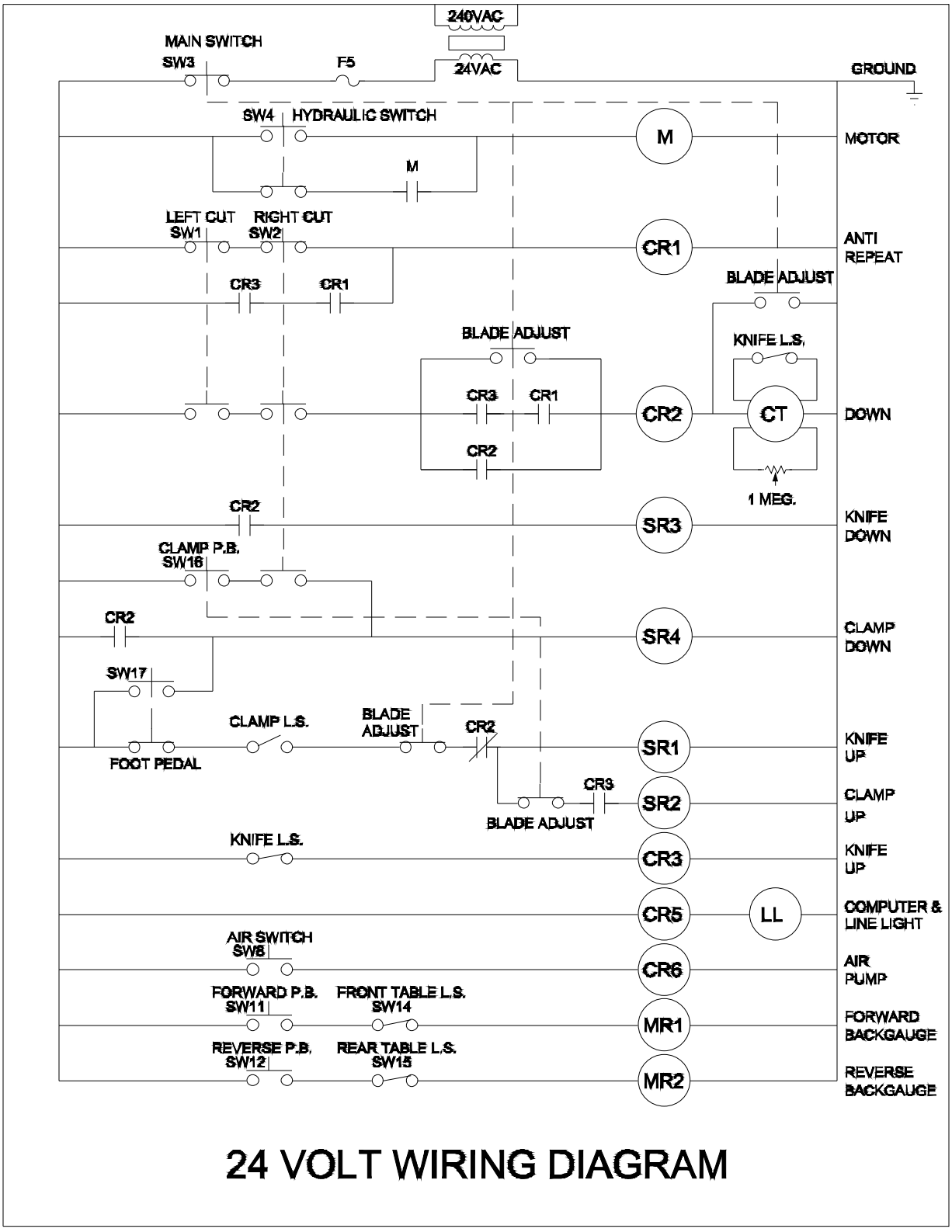
THREE PHASE HIGH VOLTAGE WIRING DIAGRAM
320 SERIAL NUMBERS 10206 to 10422
265 SERIAL NUMBERS 1079 to 1136



SINGLE PHASE HIGH VOLTAGE WIRING DIAGRAM
320 SERIAL NUMBERS 10206 to 10422
265 SERIAL NUMBERS 1079 to 1136

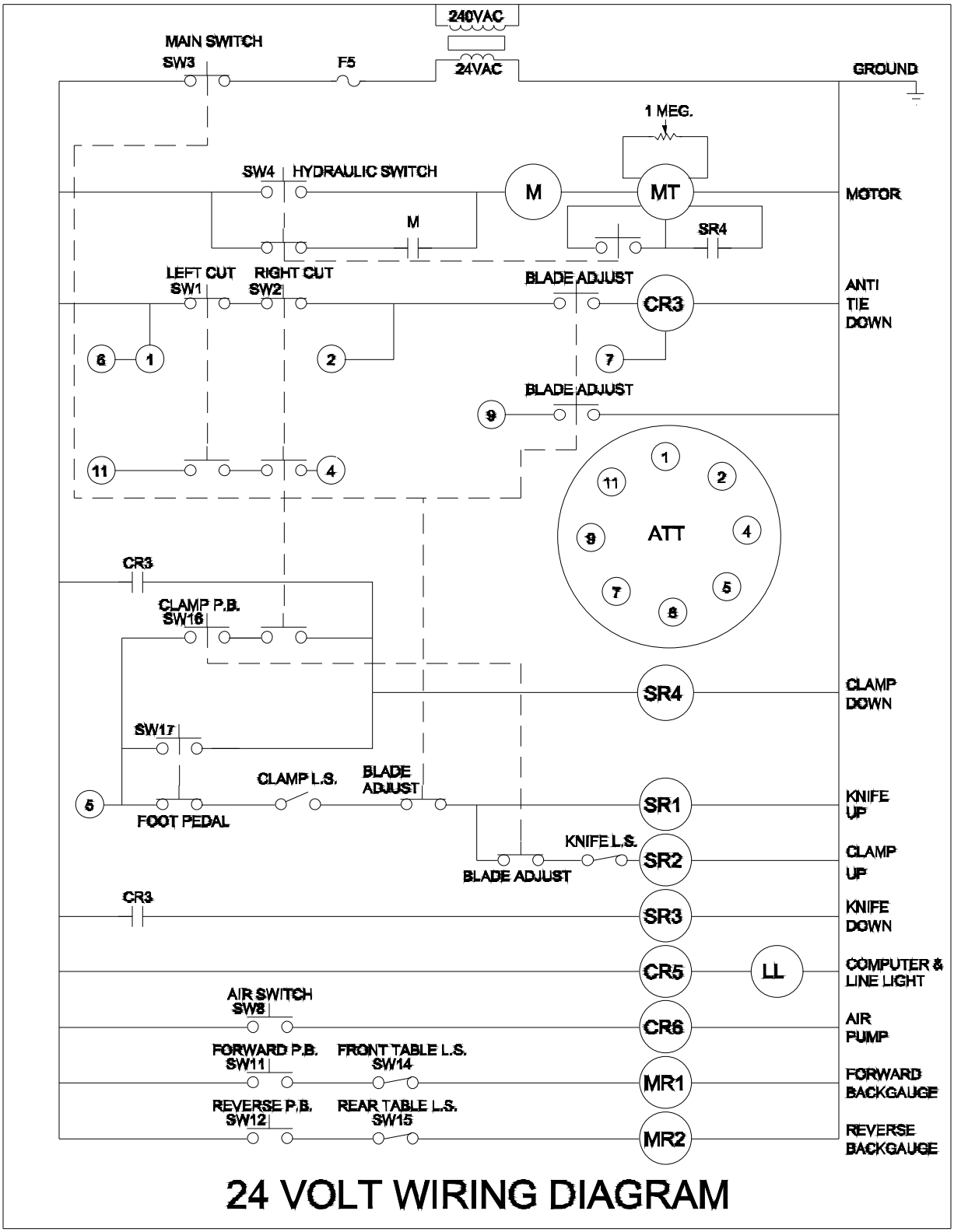


LOW VOLTAGE WIRING DIAGRAM
320 SERIAL NUMBERS 10101 to 10373
265 SERIAL NUMBERS 1035 to 1121



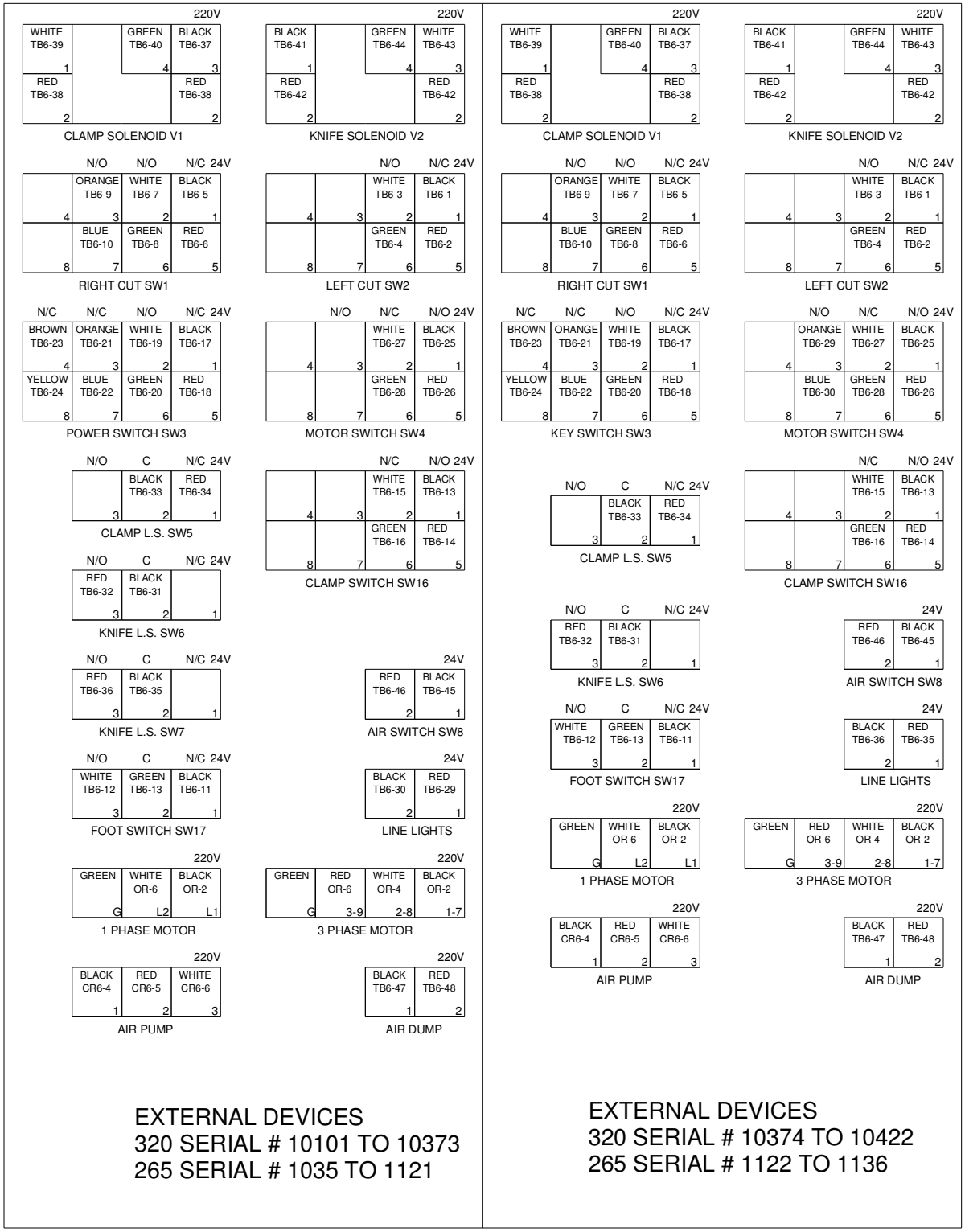
24 VOLT WIRING DIAGRAM

LOW VOLTAGE WIRING DIAGRAM
320 SERIAL NUMBERS 10374 to 10422
265 SERIAL NUMBERS 1122 to 1136

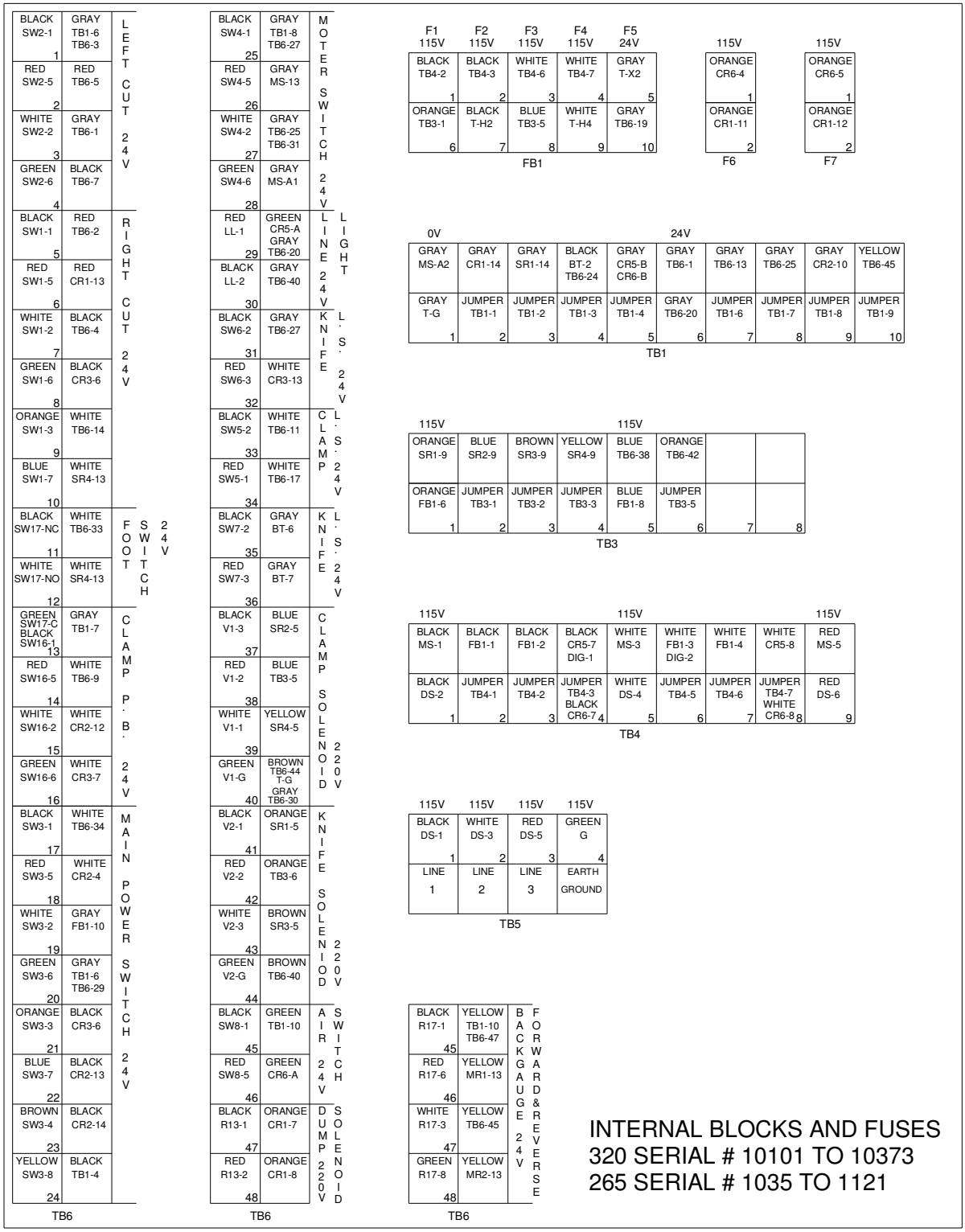


24 VOLT WIRING DIAGRAM

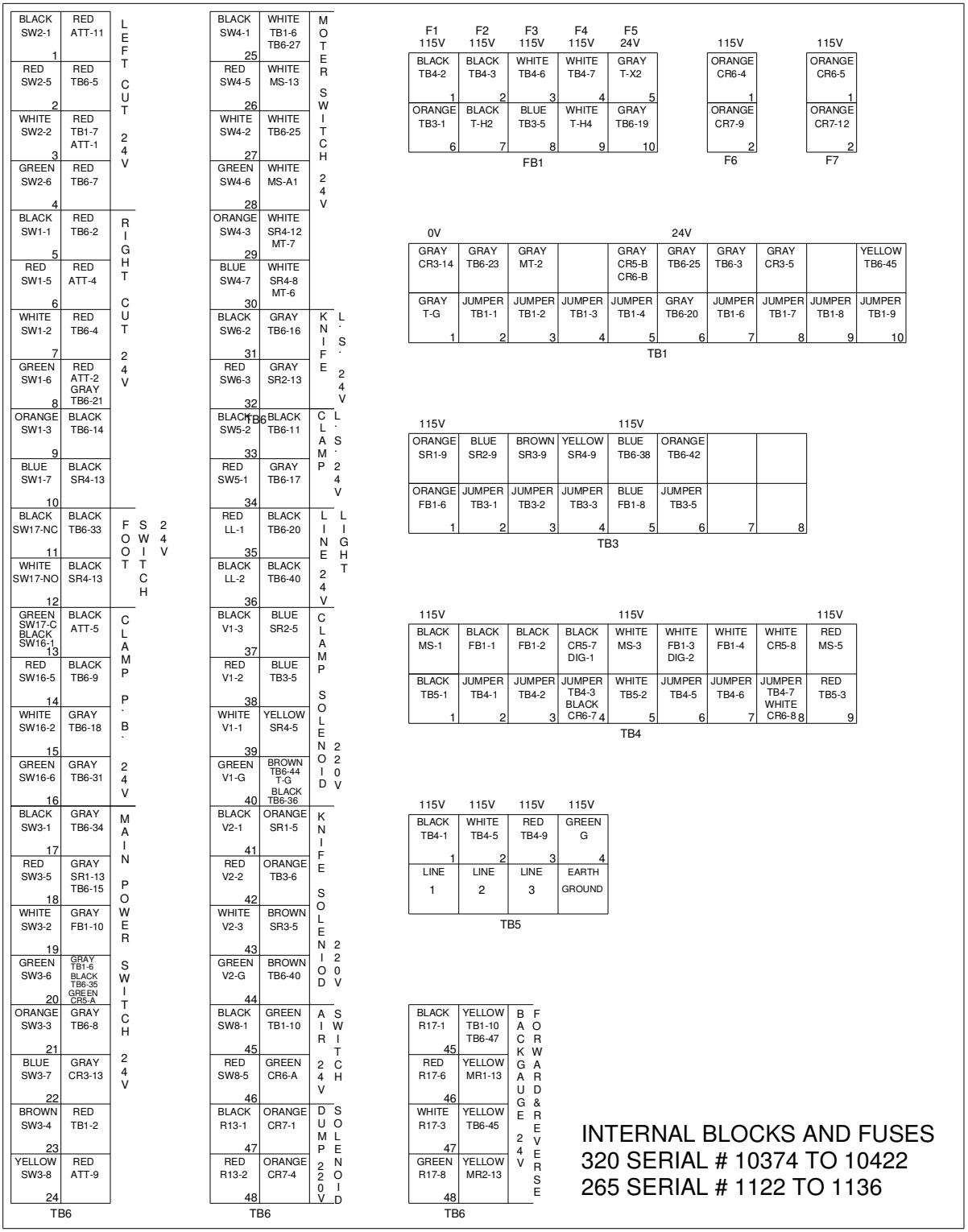
POINT TO POINT WIRING LAYOUTS
EXTERNAL DEVICES
320 SERIAL NUMBERS 10101 to 10422
265 SERIAL NUMBERS 1035 to 1136



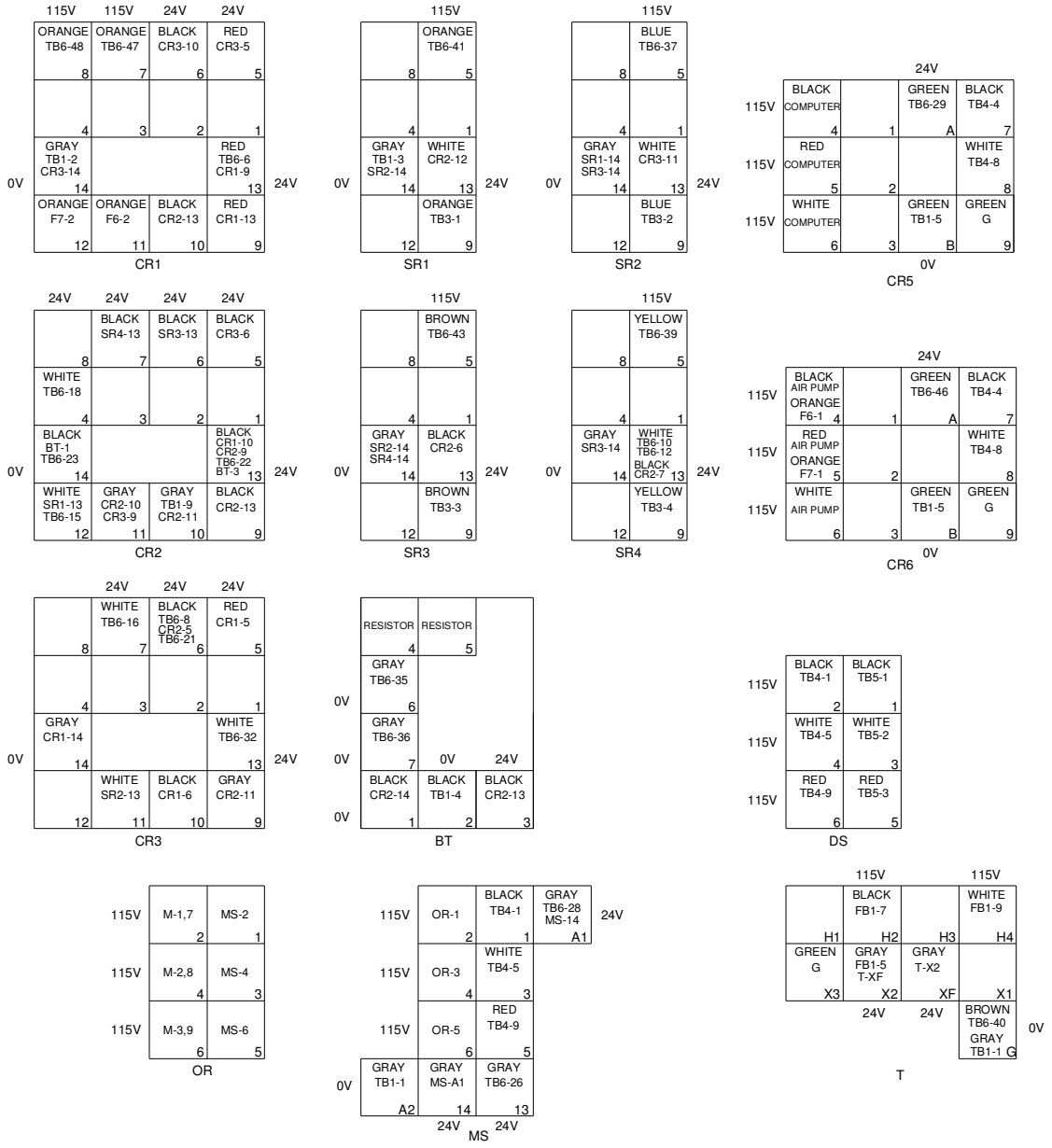
POINT TO POINT WIRING LAYOUTS
INTERNAL BLOCKS AND FUSES
320 SERIAL NUMBERS 10101 to 10373
265 SERIAL NUMBERS 1035 to 1121



POINT TO POINT WIRING LAYOUTS
INTERNAL BLOCKS AND FUSES
320 SERIAL NUMBERS 10374 to 10422
265 SERIAL NUMBERS 1122 to 1136

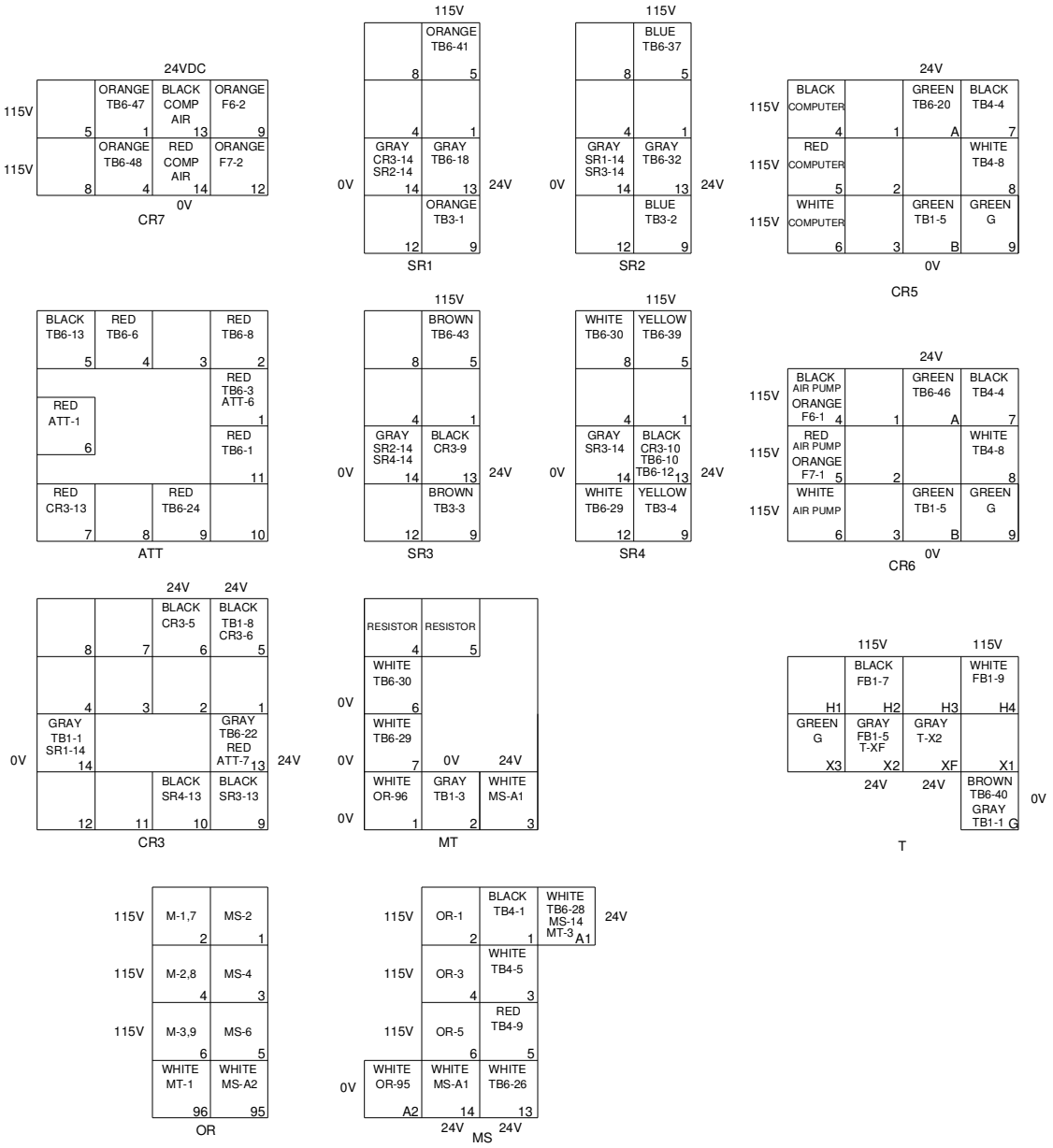


POINT TO POINT WIRING LAYOUTS
INTERNAL DEVICES
320 SERIAL NUMBERS 10101 to 10373
265 SERIAL NUMBERS 1035 to 1121

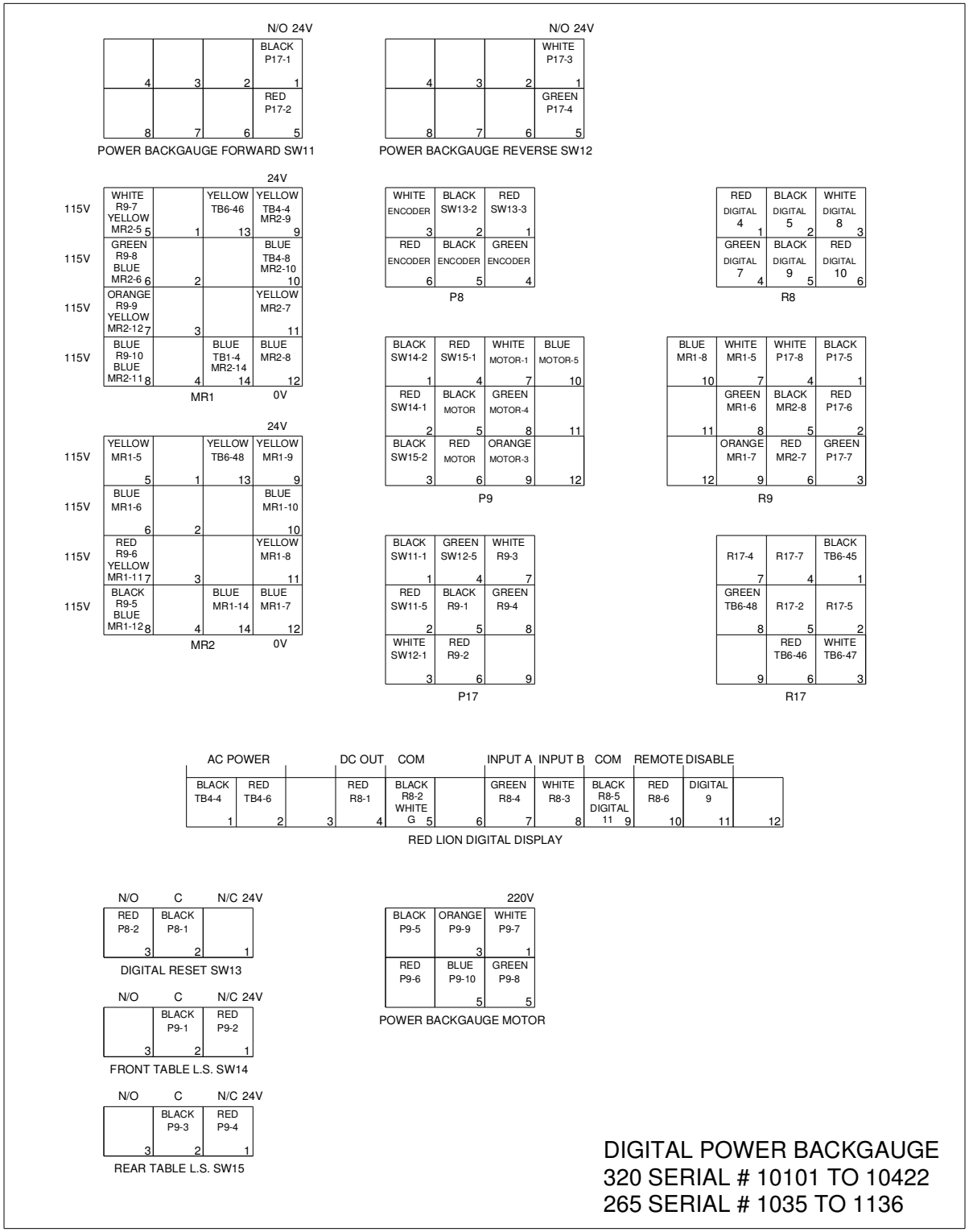


INTERNAL DEVICES
320 SERIAL # 10101 TO 10373
265 SERIAL # 1035 TO 1121

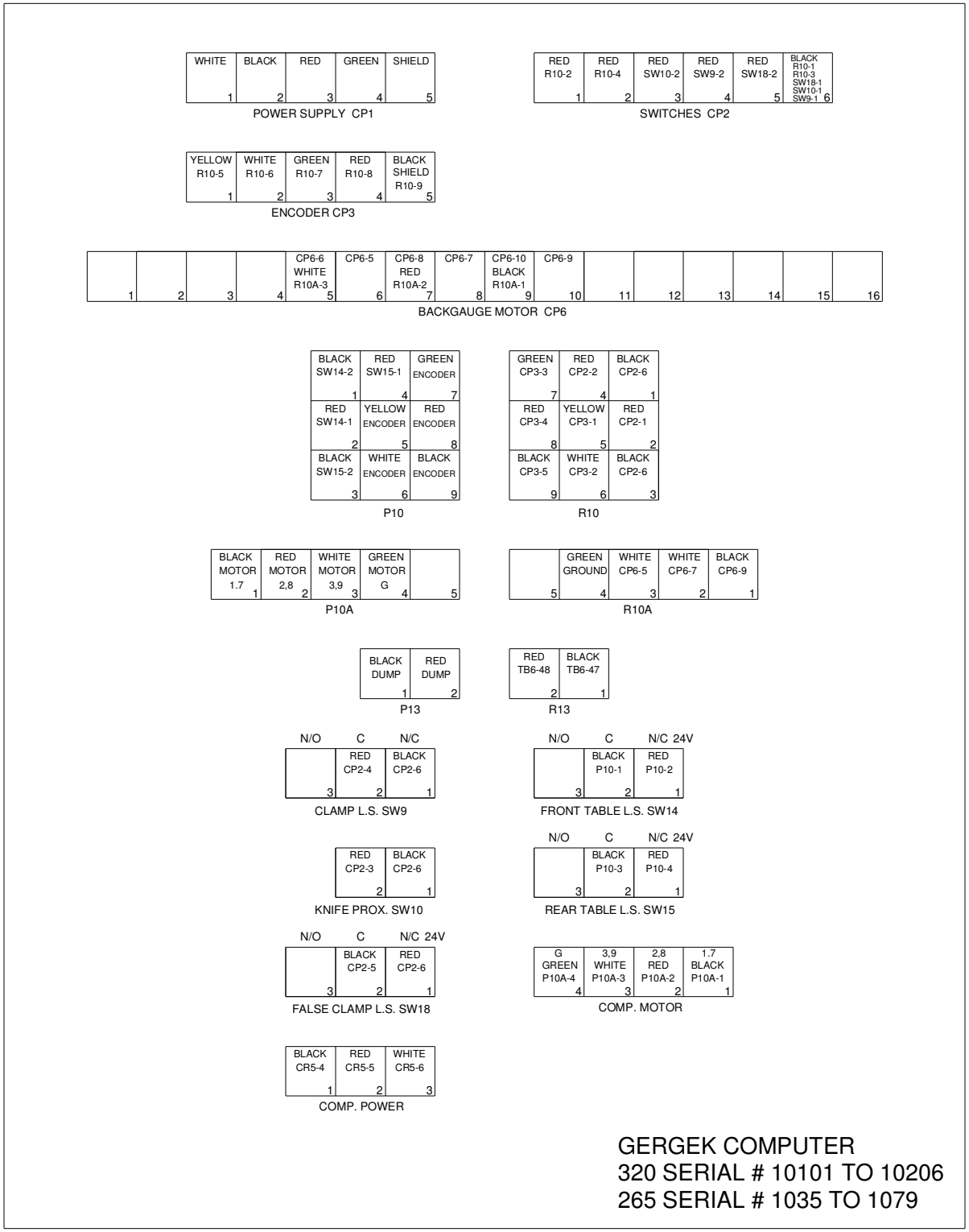
POINT TO POINT WIRING LAYOUTS
INTERNAL DEVICES
320 SERIAL NUMBERS 10374 to 10422
265 SERIAL NUMBERS 1122 to 1136



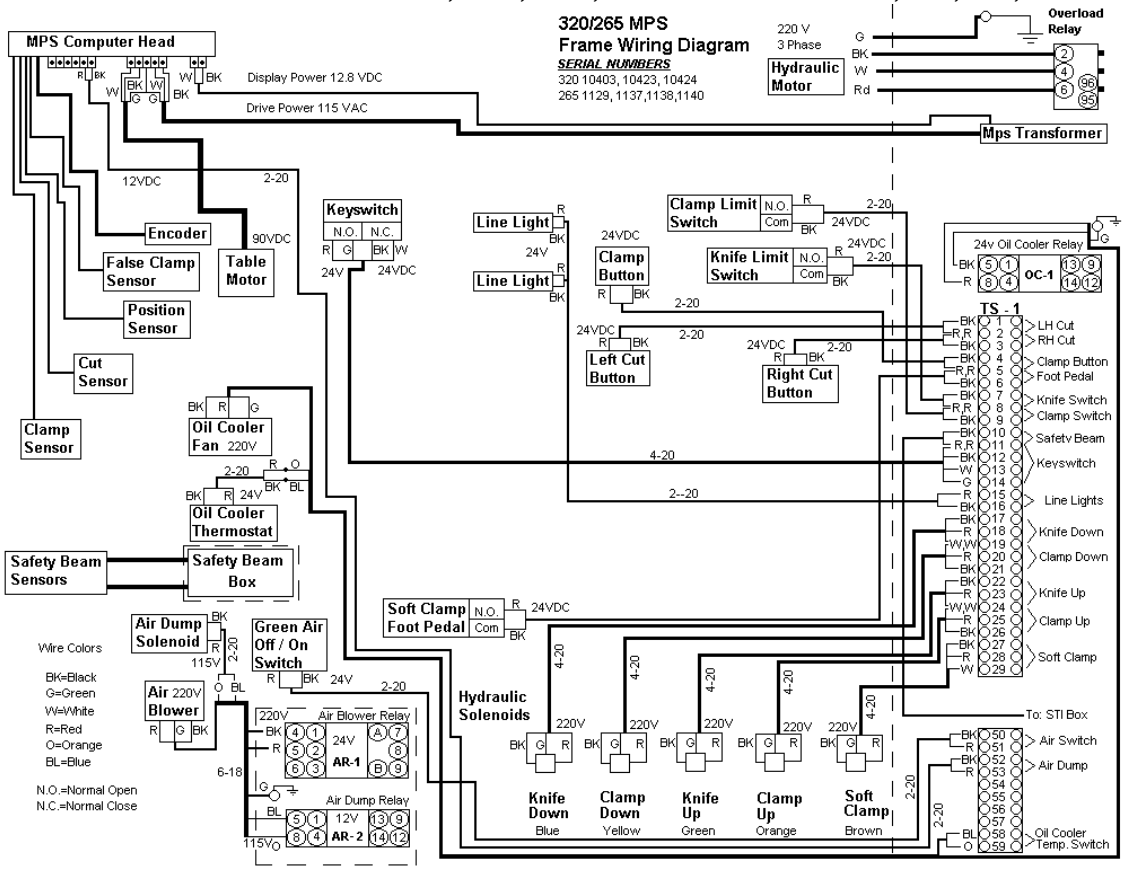
POINT TO POINT WIRING LAYOUTS
DIGITAL WITH POWER BACKGAUGE
320 SERIAL NUMBERS 10101 to 10422
265 SERIAL NUMBERS 1035 to 1136



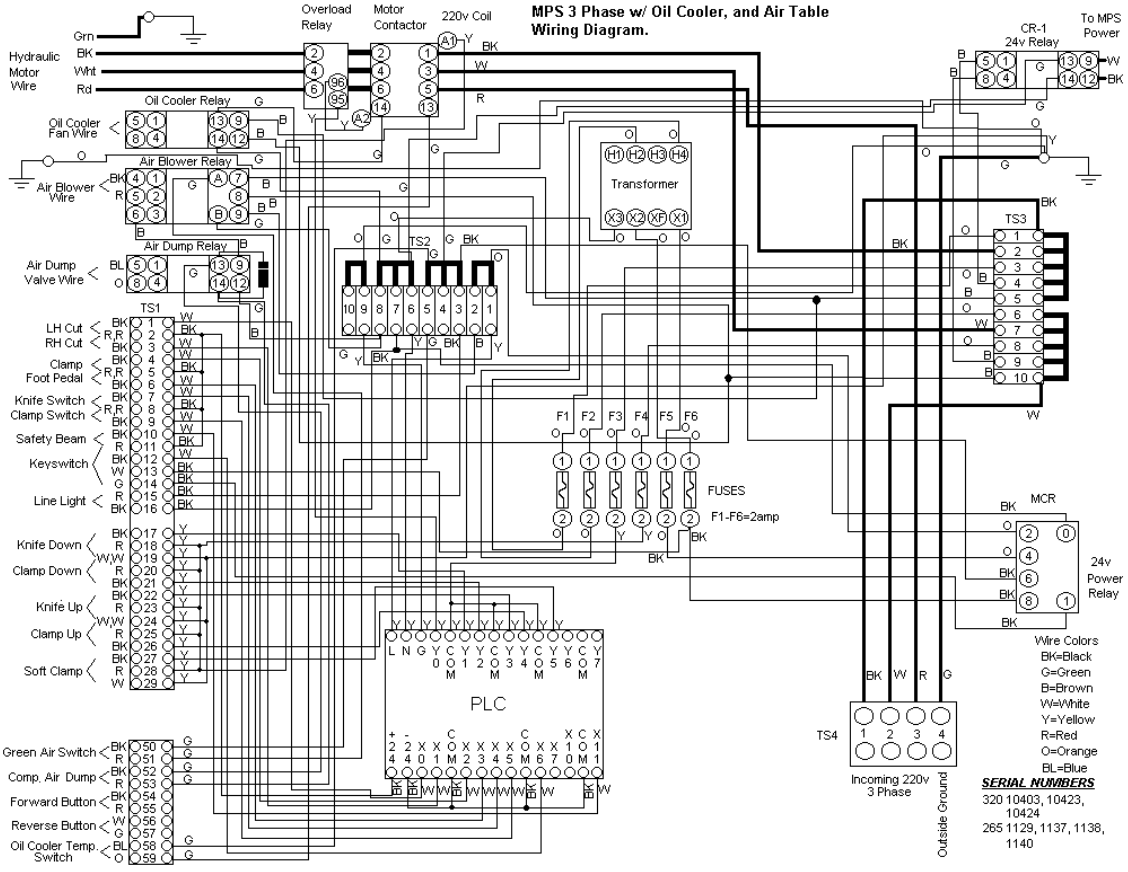
POINT TO POINT WIRING LAYOUTS
GERGEK COMPUTER
320 SERIAL NUMBERS 10101 to 10206
265 SERIAL NUMBERS 1035 to 1079



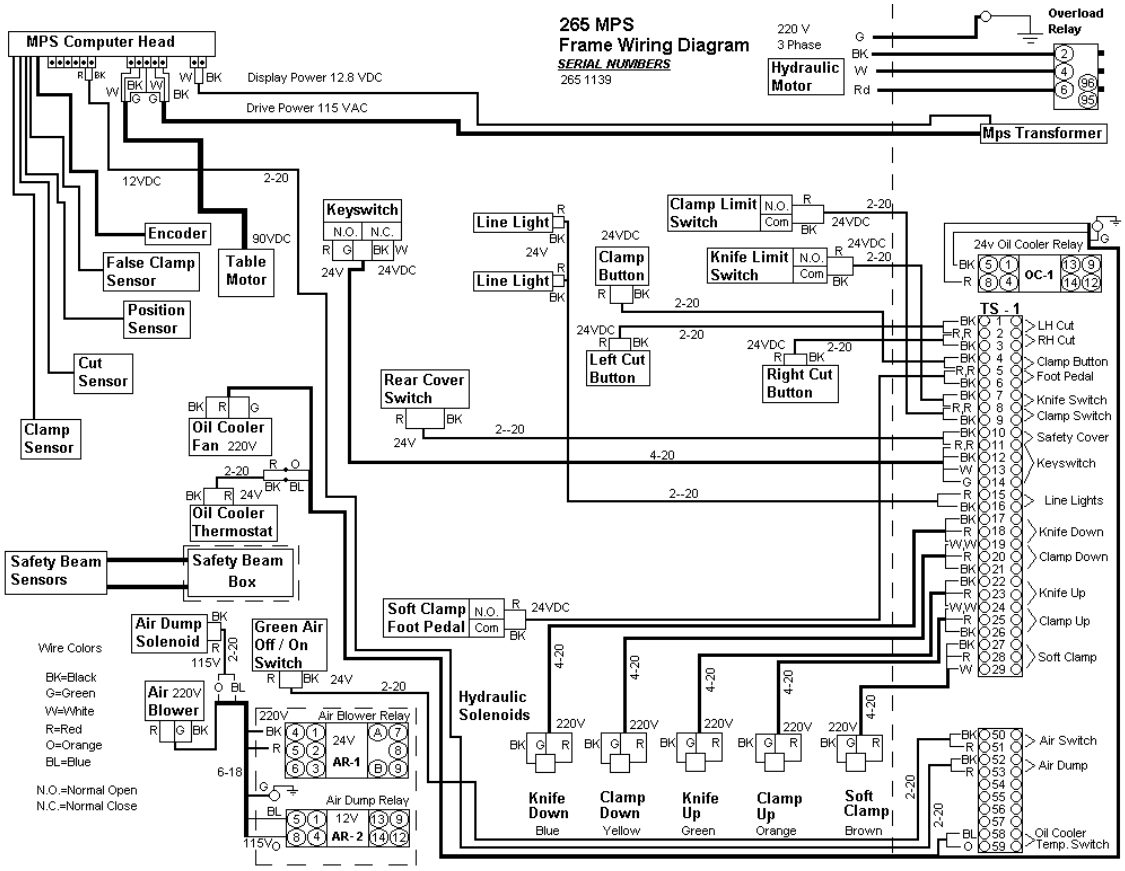
FRAME WIRING 320 SERIAL NUMBERS 10403, 10423, 10424; 265 SERIAL NUMBERS 1129, 1137, 1138, 1140



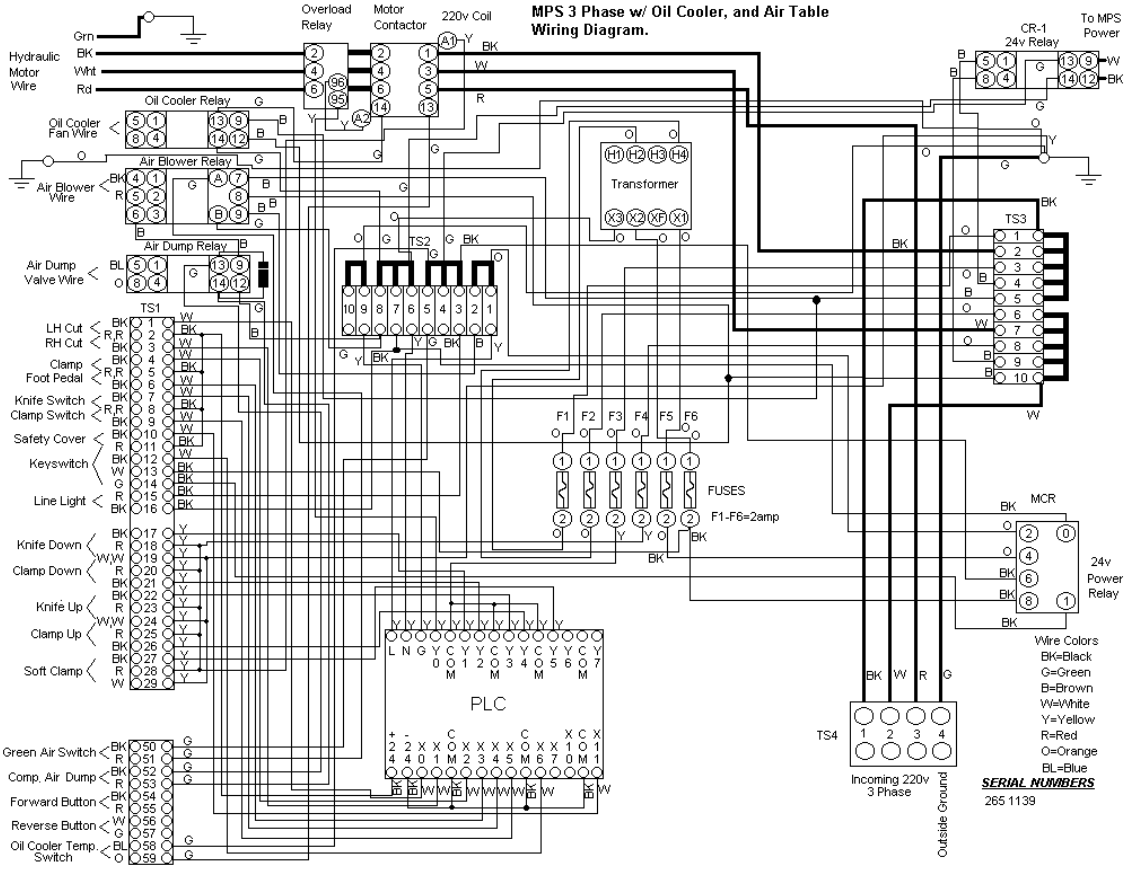
ELECTRIC PANEL WIRE 320 SERIAL NUMBERS 10403, 10423, 10424; 265 SERIAL NUMBERS 1129, 1137, 1138, 1140



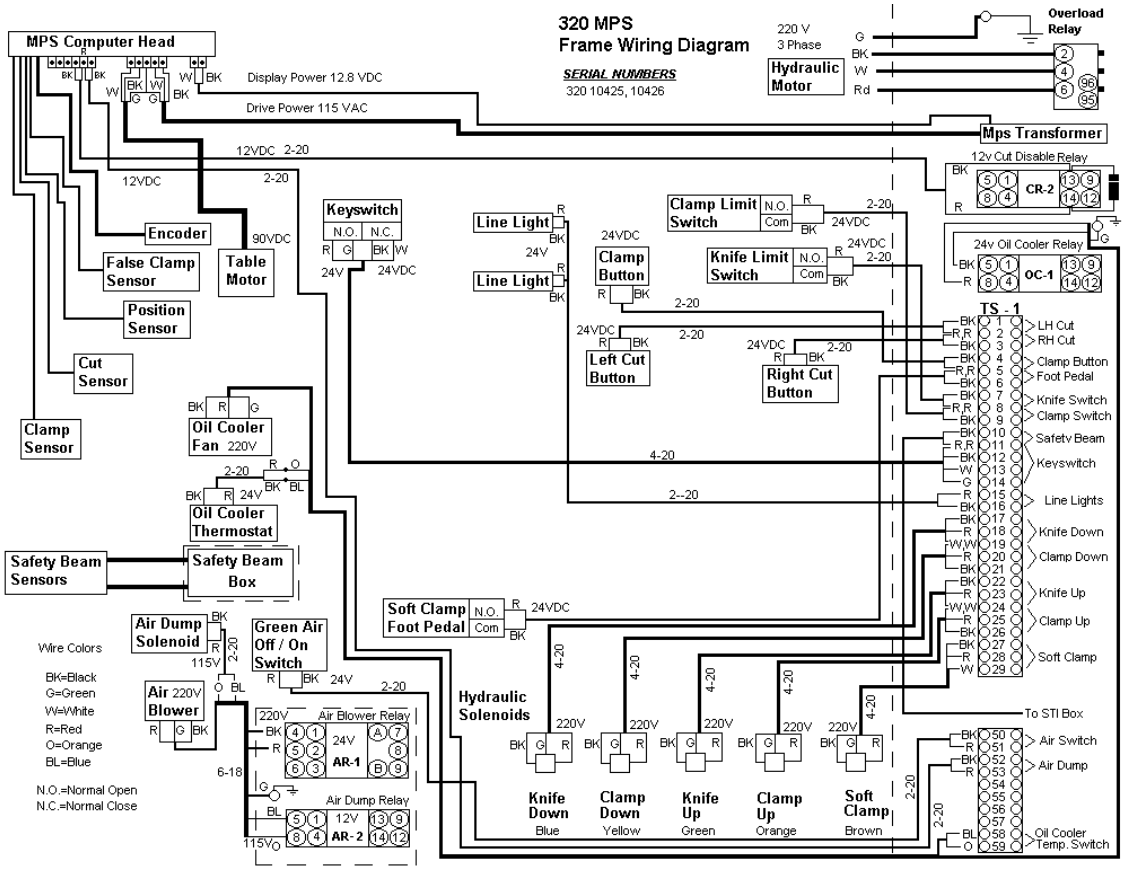
FRAME WIRING 265 SERIAL NUMBERS 1139



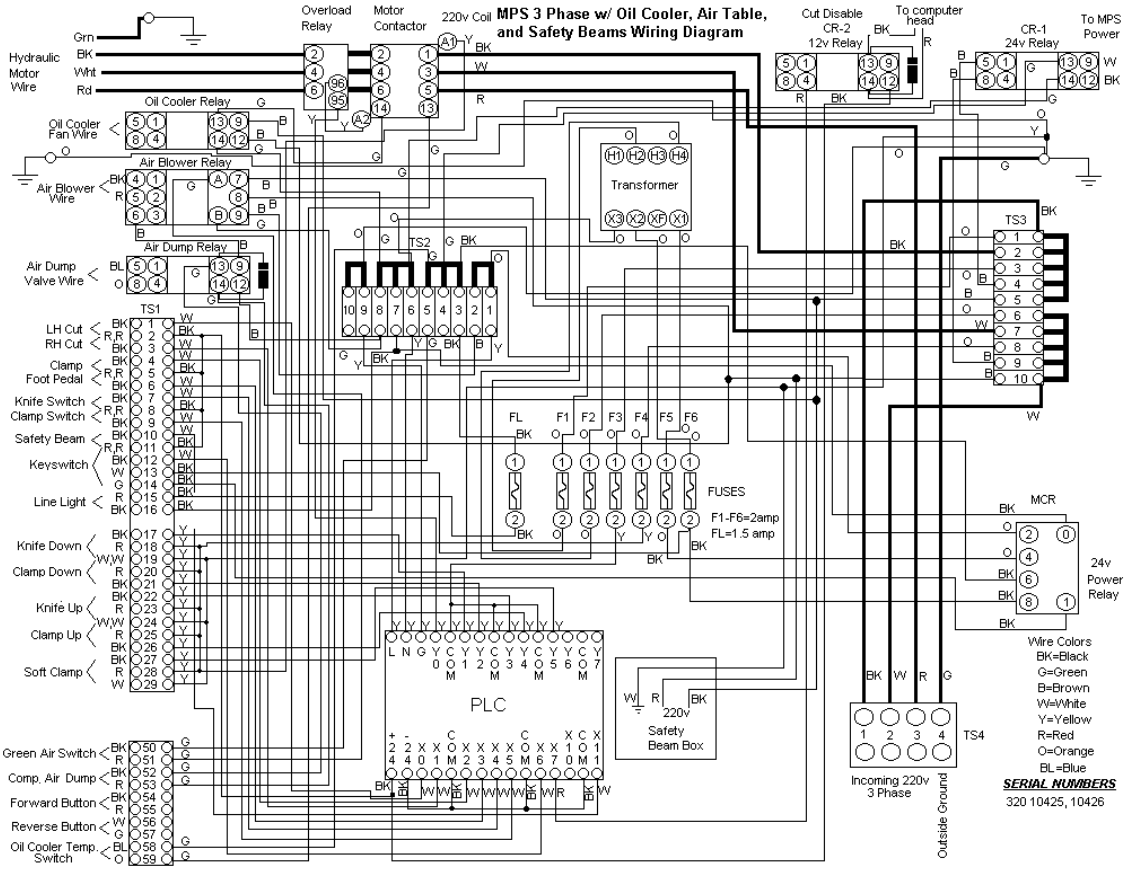
ELECTRIC PANEL WIRING 265 SERIAL NUMBERS 1139



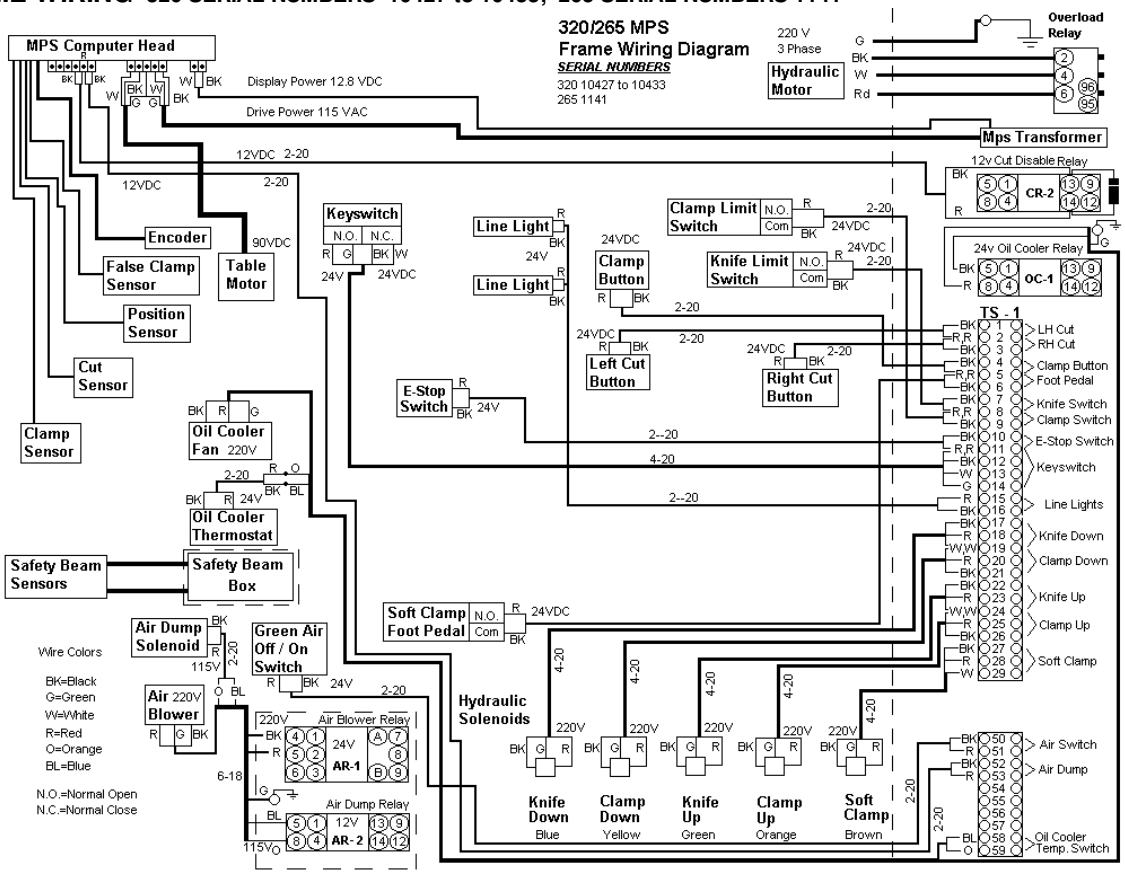
FRAME WIRING 320 SERIAL NUMBERS 10425 to 10426



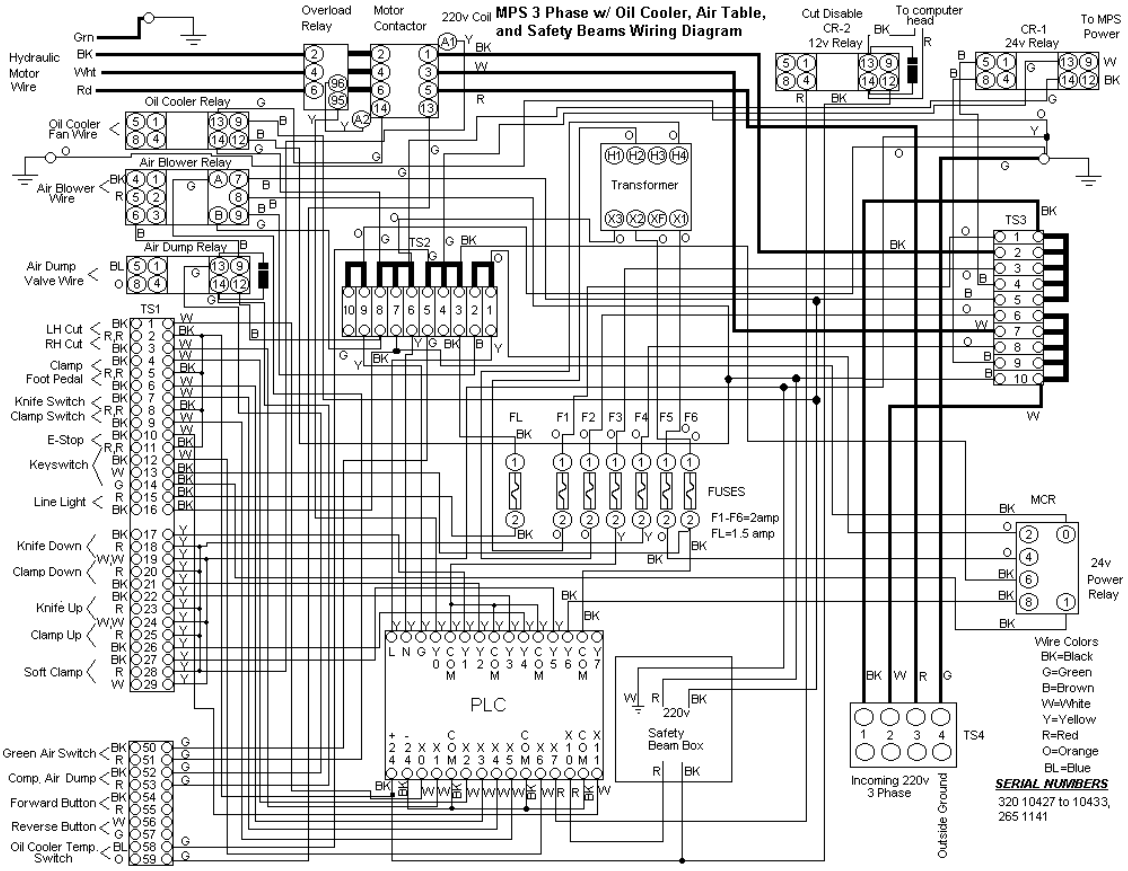
ELECTRIC PANEL WIRING 320 SERIAL NUMBERS 10425 to 10426



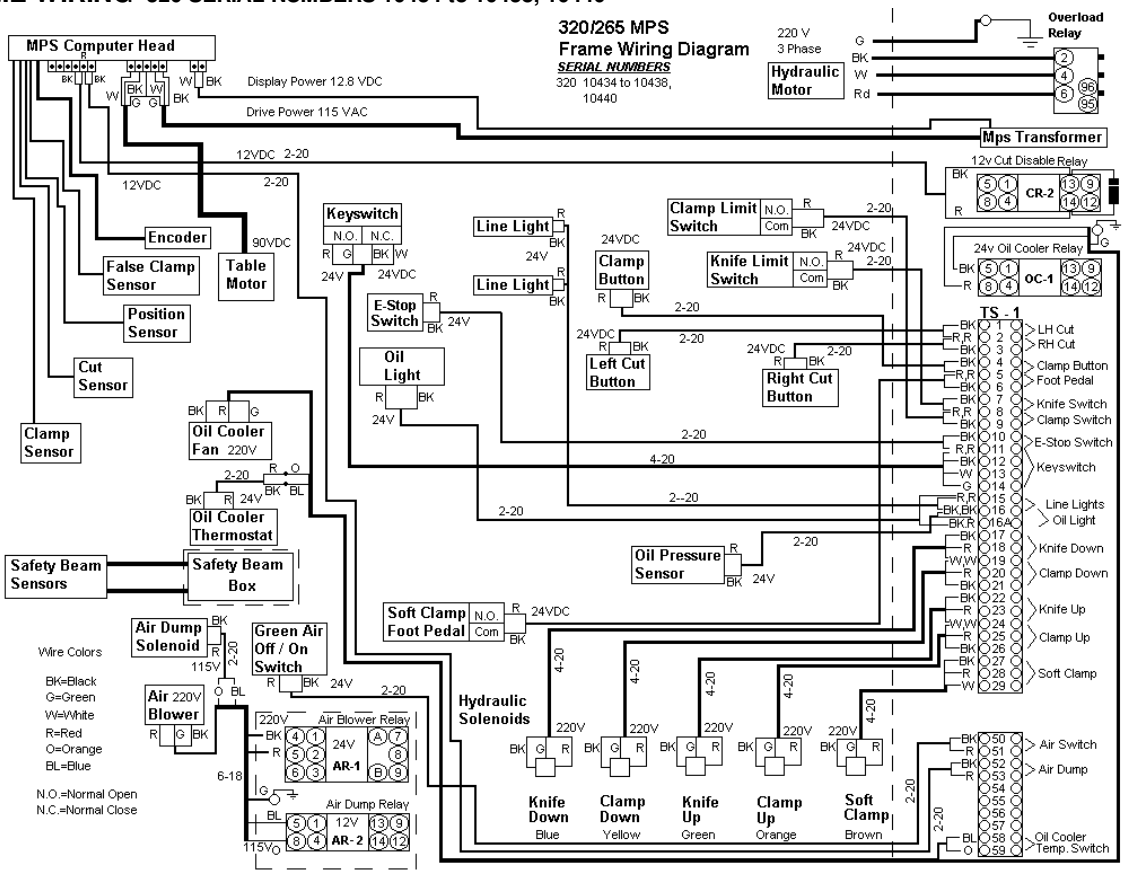
FRAME WIRING 320 SERIAL NUMBERS 10427 to 10433; 265 SERIAL NUMBERS 1141



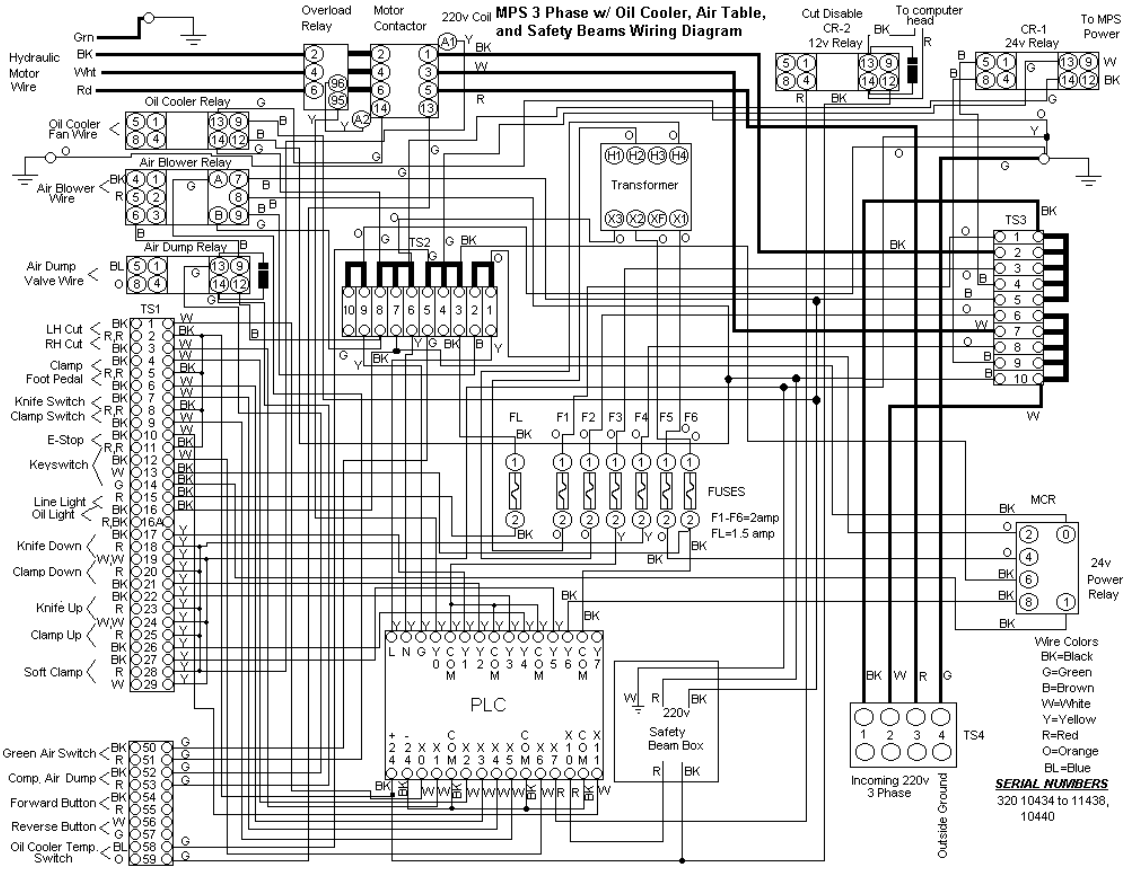
ELECTRIC PANEL WIRING 320 SERIAL NUMBERS 10427 to 10433; 265 SERIAL NUMBERS 1141



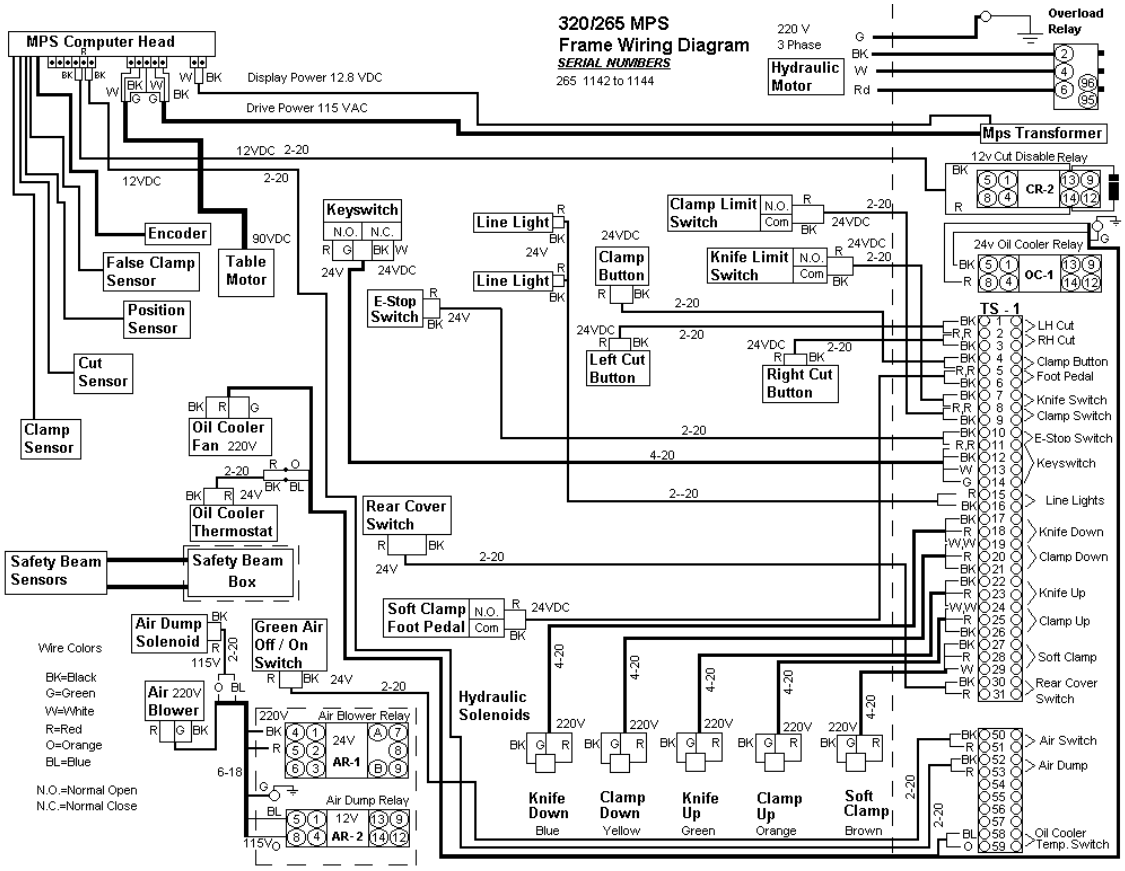
FRAME WIRING 320 SERIAL NUMBERS 10434 to 10438, 10440



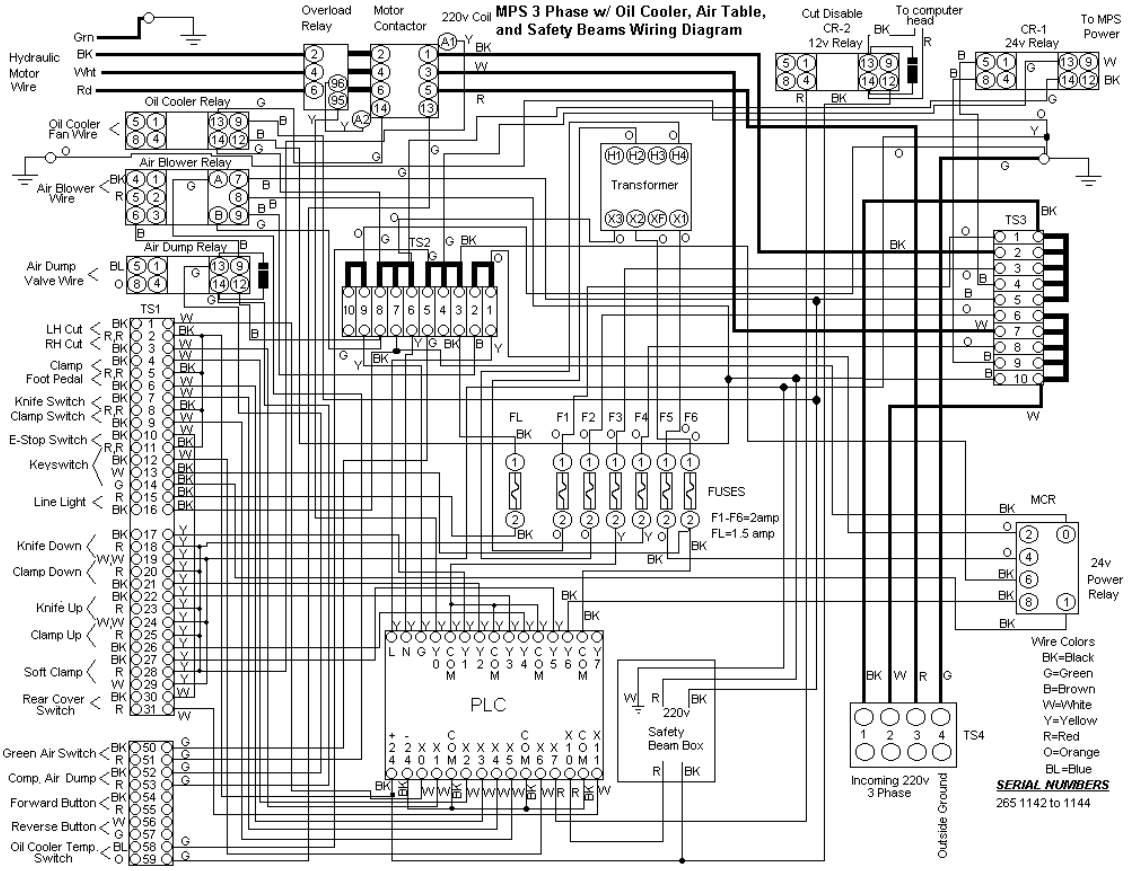
ELECTRIC PANEL WIRING 320 SERIAL NUMBERS 10434 to 10438, 10440



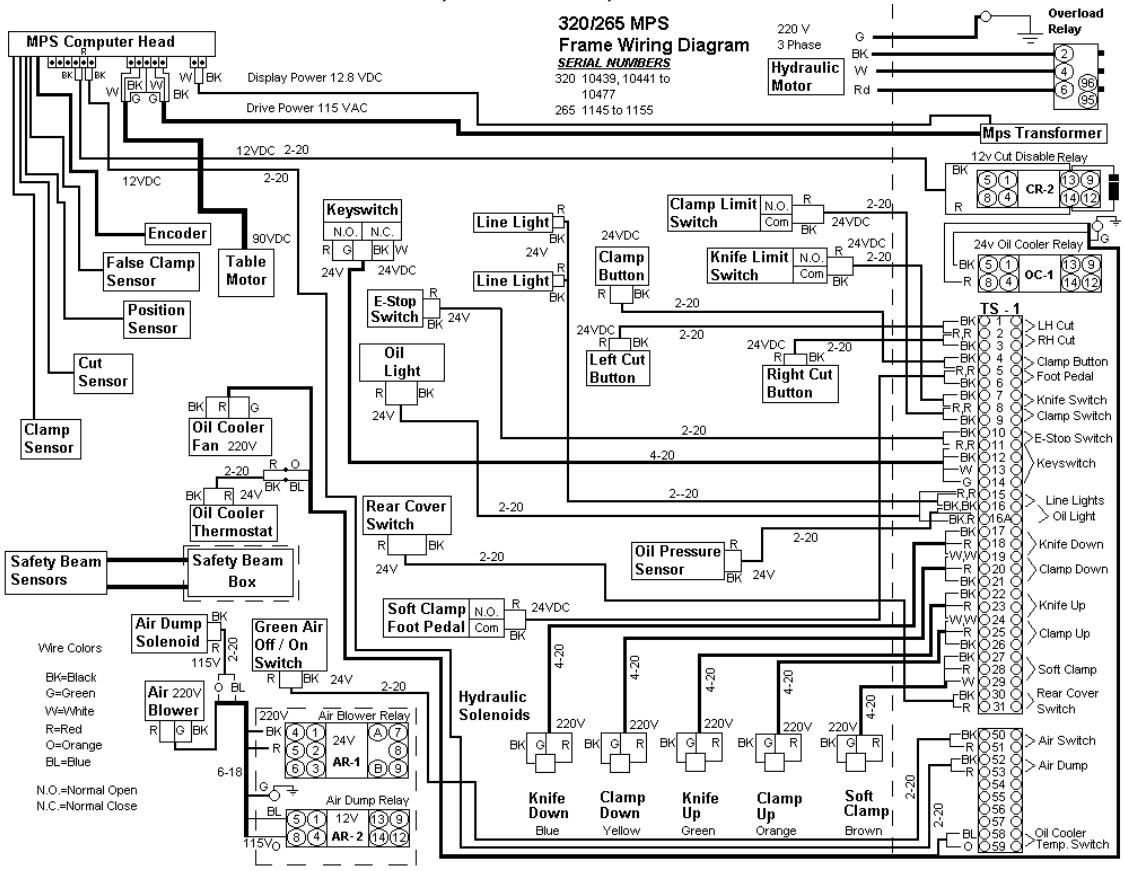
FRAME WIRING 265 SERIAL NUMBERS 1142 to 1144



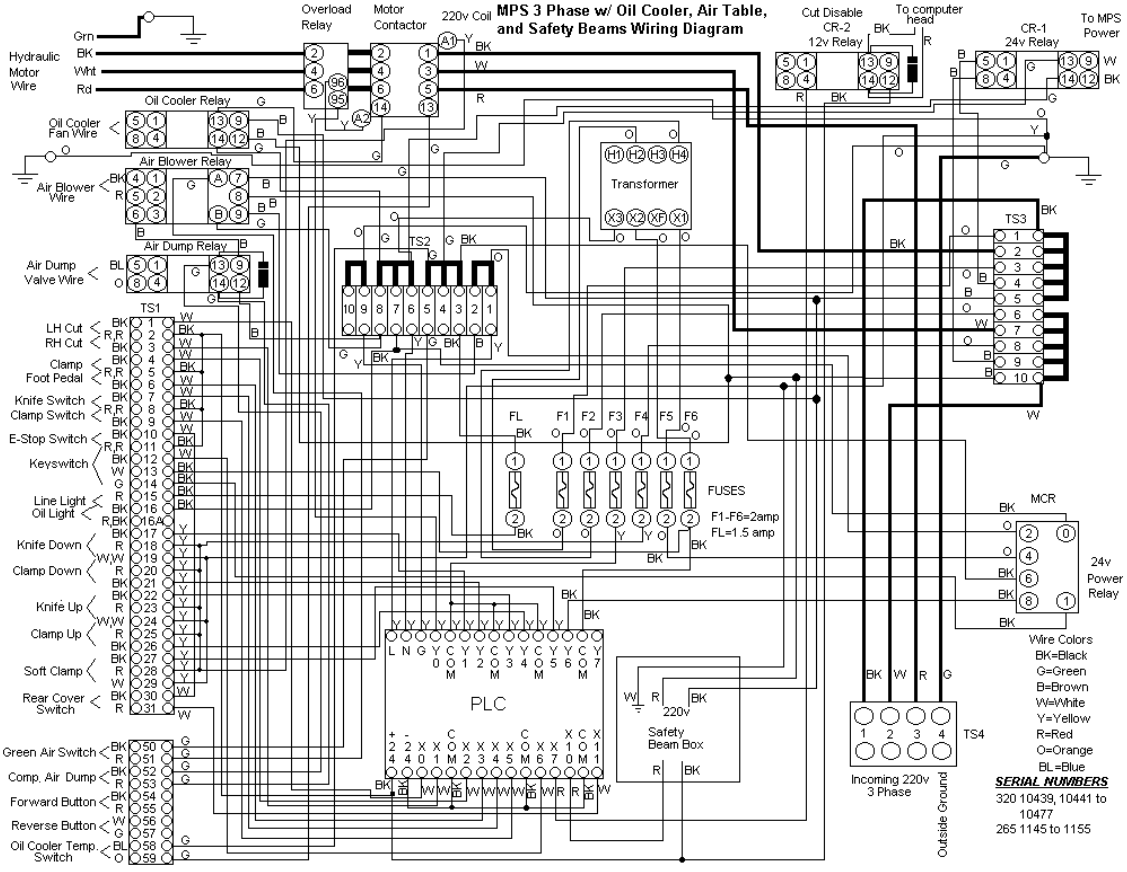
ELECTRIC PANEL WIRING 265 SERIAL NUMBERS 1142 to 1144



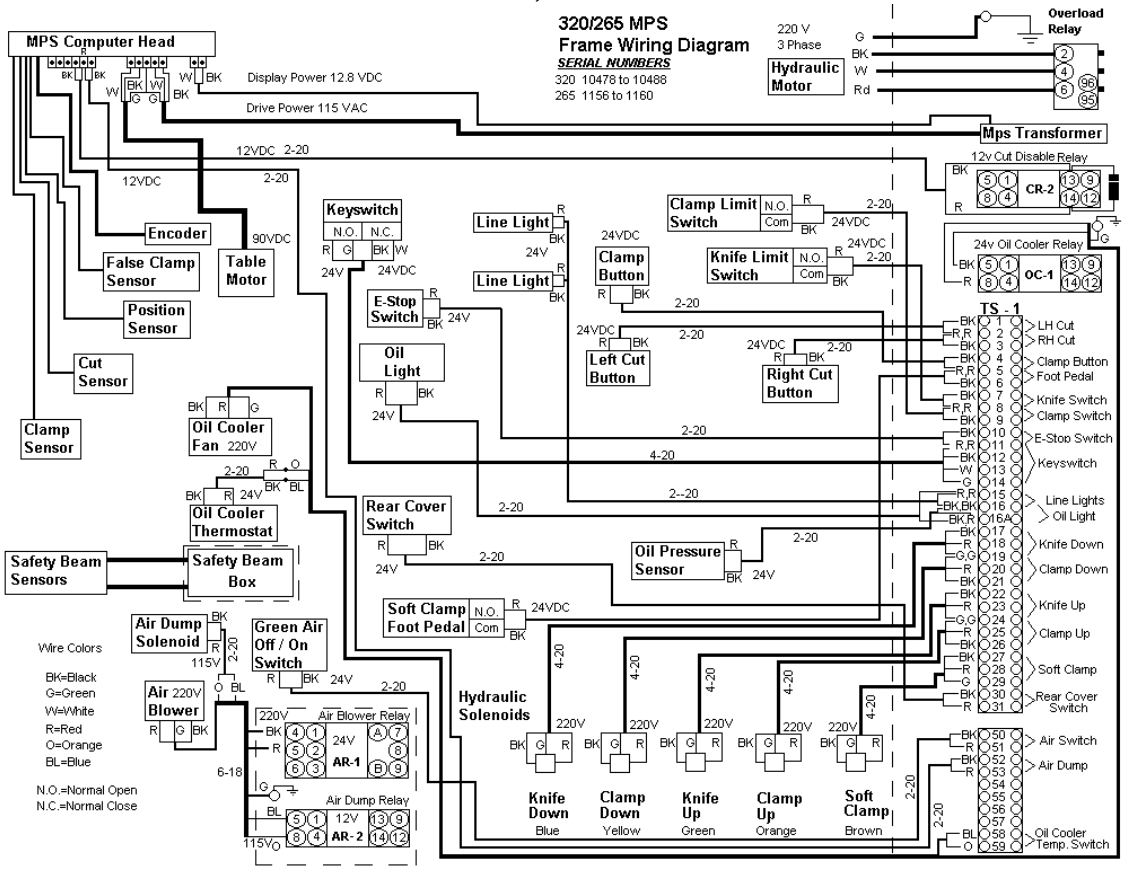
FRAME WIRING 320 SERIAL NUMBERS 10439, 10441 to 10477; 265 SERIAL NUMBERS 1145 to 1155



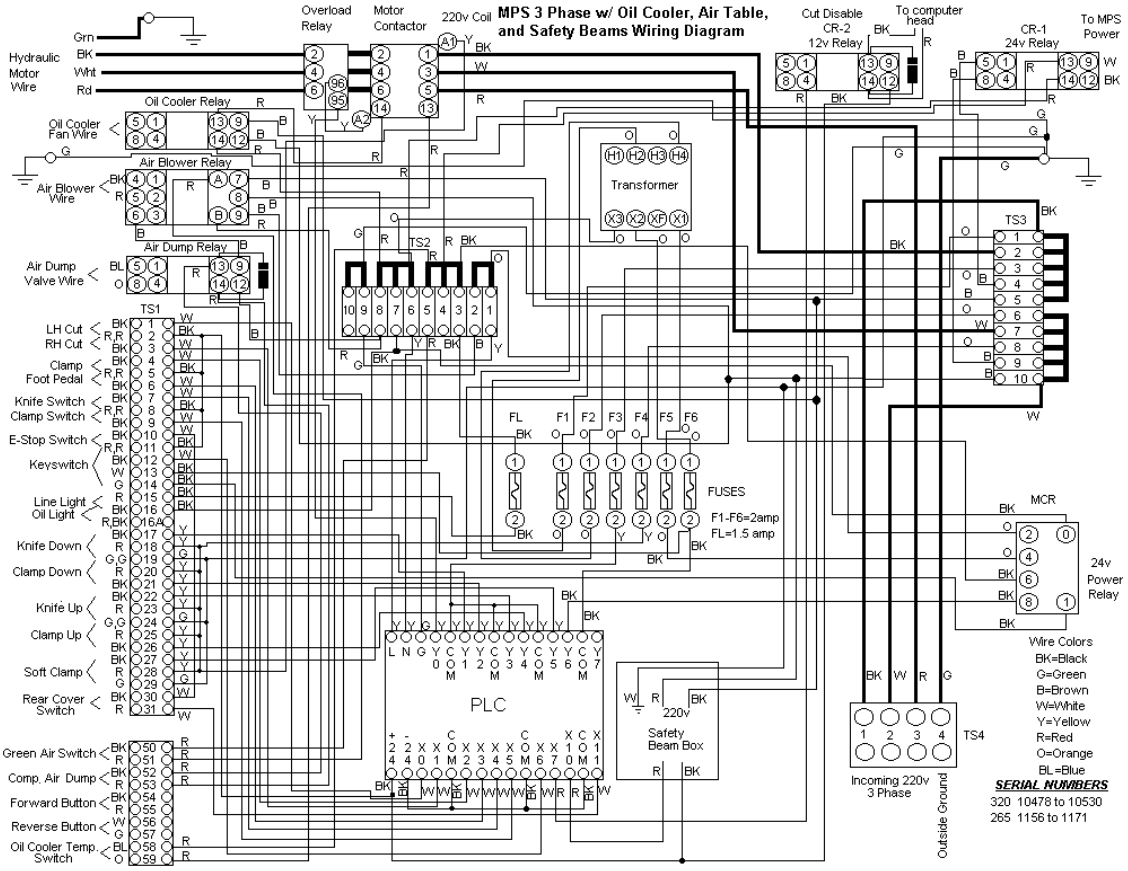
ELECTRIC PANEL WIRING 320 SERIAL NUMBERS 10439, 10441 to 10477; 265 SERIAL NUMBERS 1145 to 1155



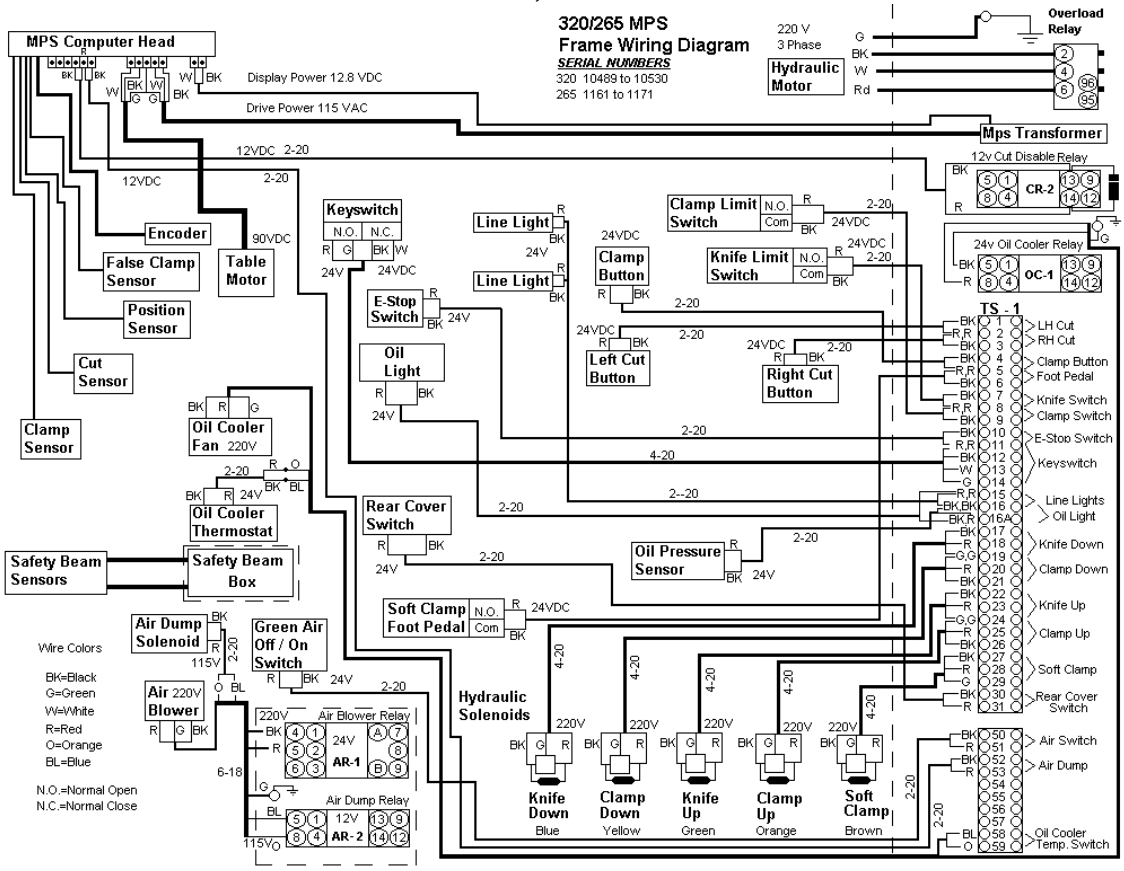
FRAME WIRING 320 SERIAL NUMBERS 10478 to 10488; 265 SERIAL NUMBERS 1156 to 1160



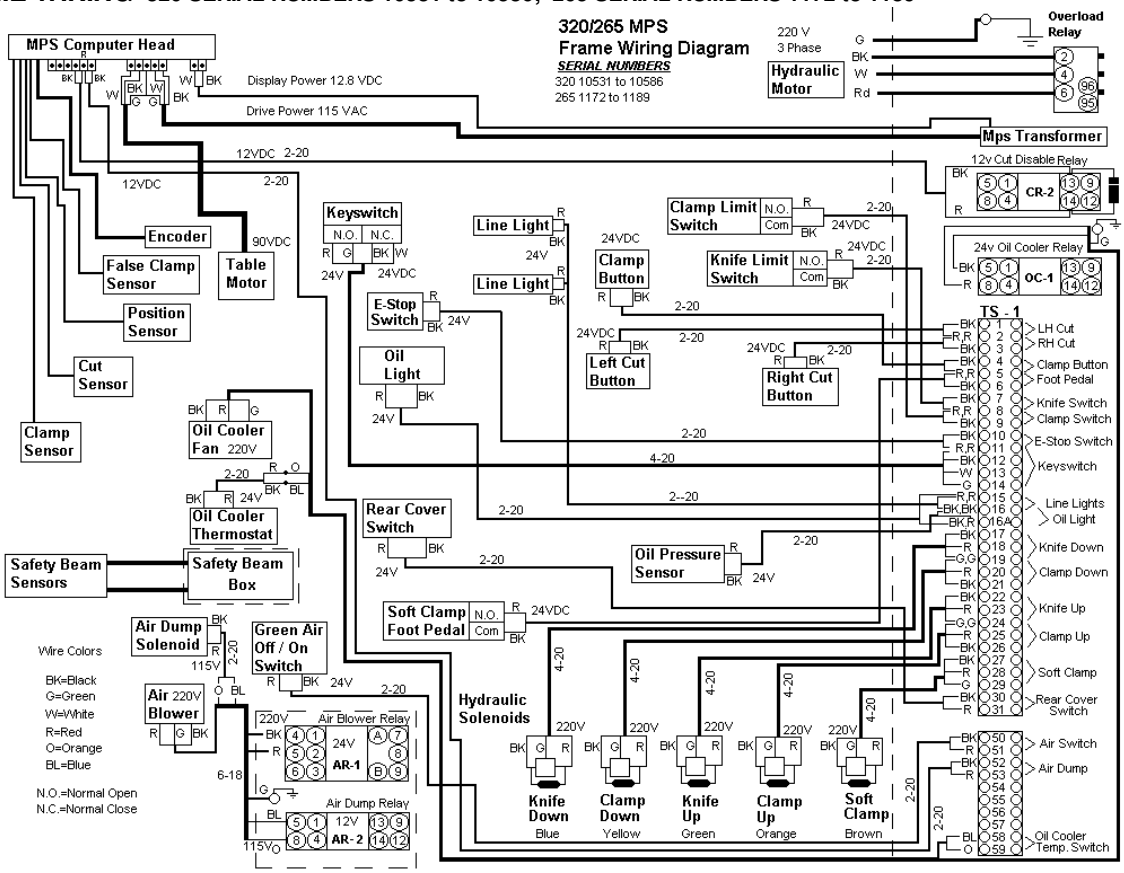
ELECTRIC PANEL WIRING 320 SERIAL NUMBERS 10478 to 10530; 265 SERIAL NUMBERS 1156 to 1171



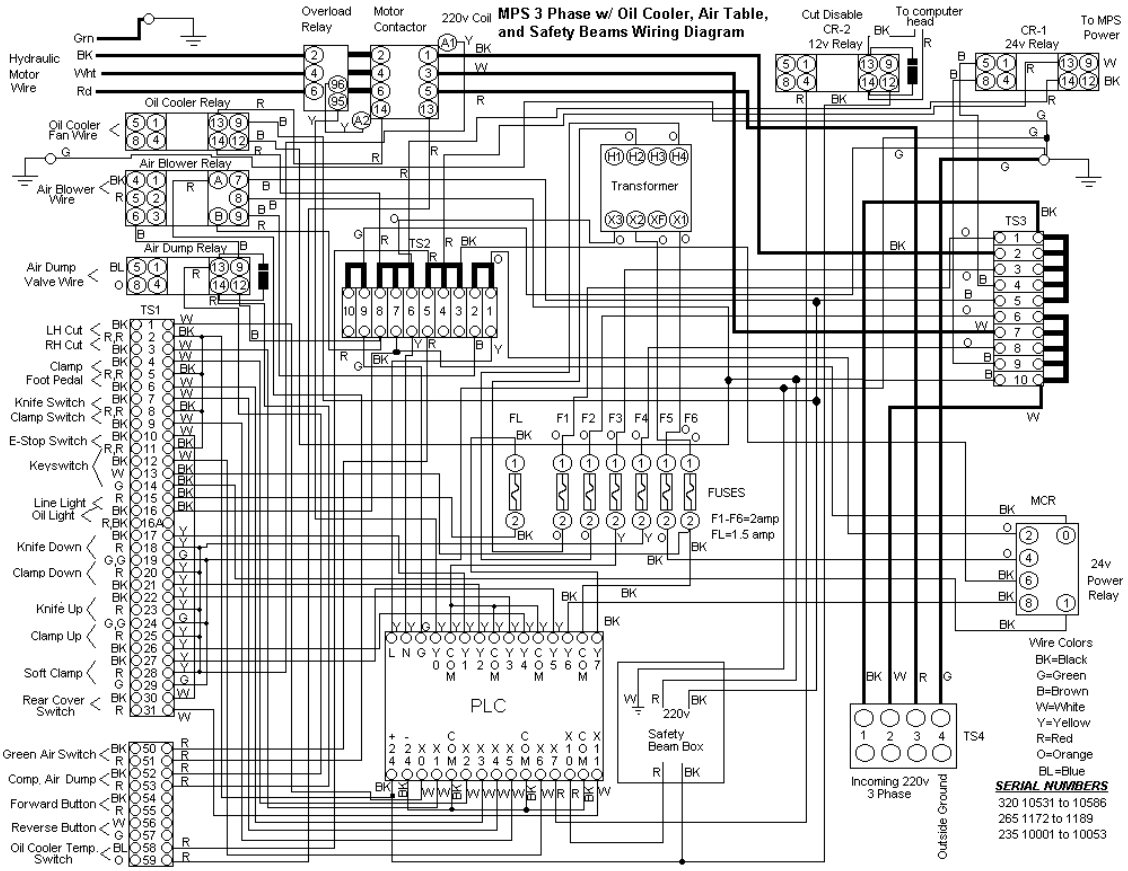
FRAME WIRING 320 SERIAL NUMBERS 10489 to 10530; 265 SERIAL NUMBERS 1161 to 1171



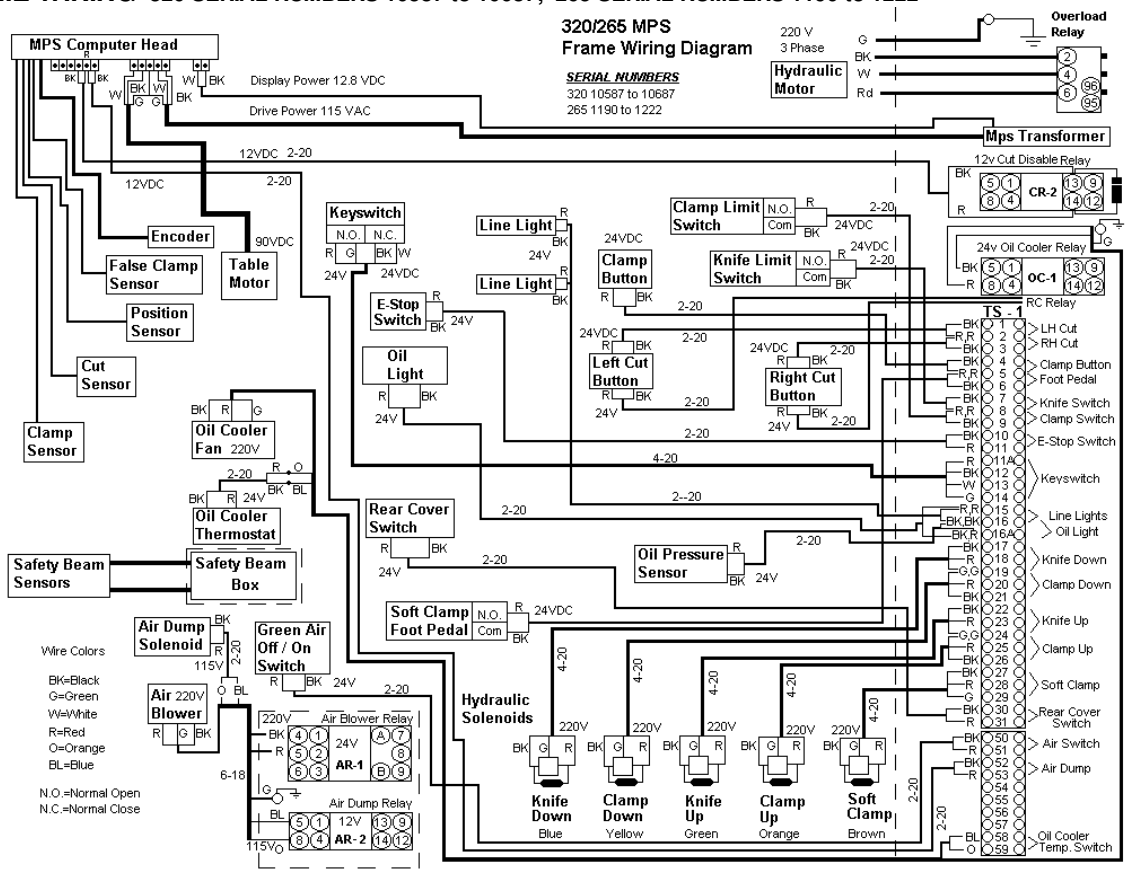
FRAME WIRING 320 SERIAL NUMBERS 10531 to 10586; 265 SERIAL NUMBERS 1172 to 1189



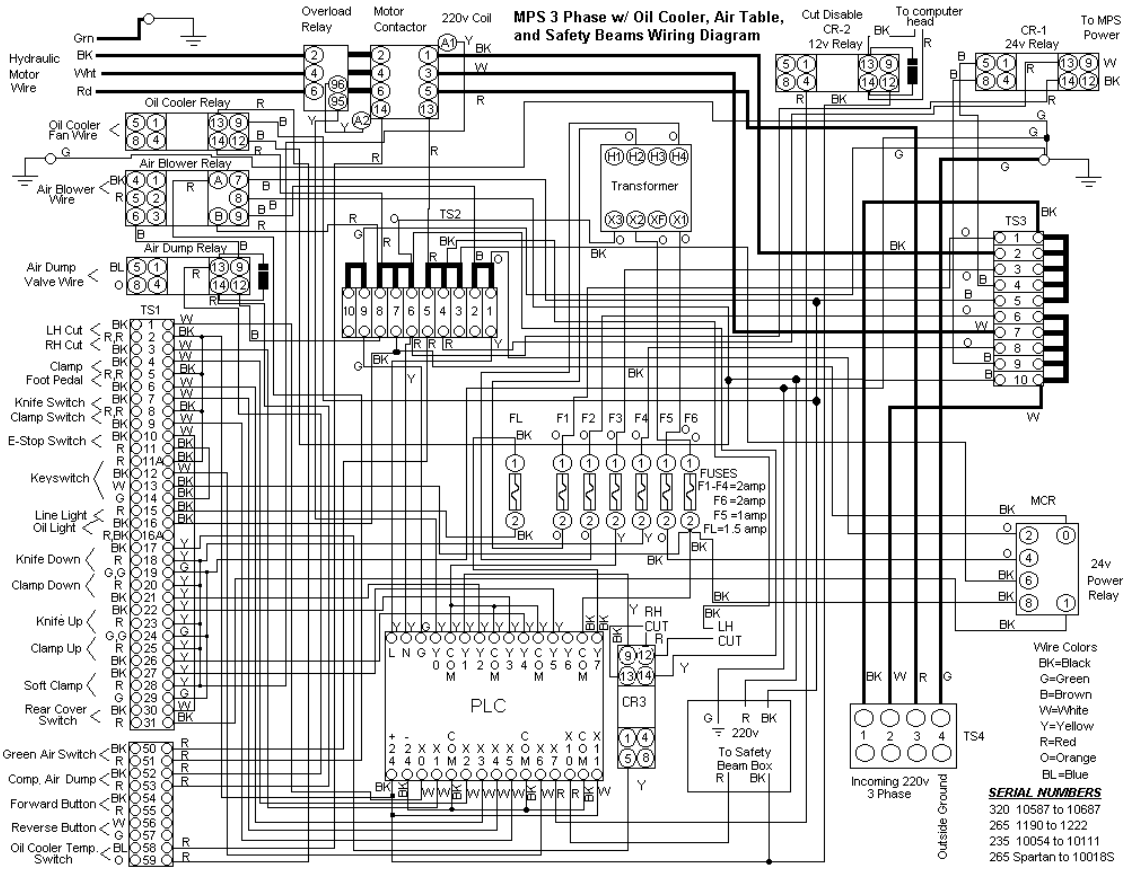
ELECTRIC PANEL WIRING 320 SERIAL NUMBERS 10531 to 10586; 265 SERIAL NUMBERS 1172 to 1189



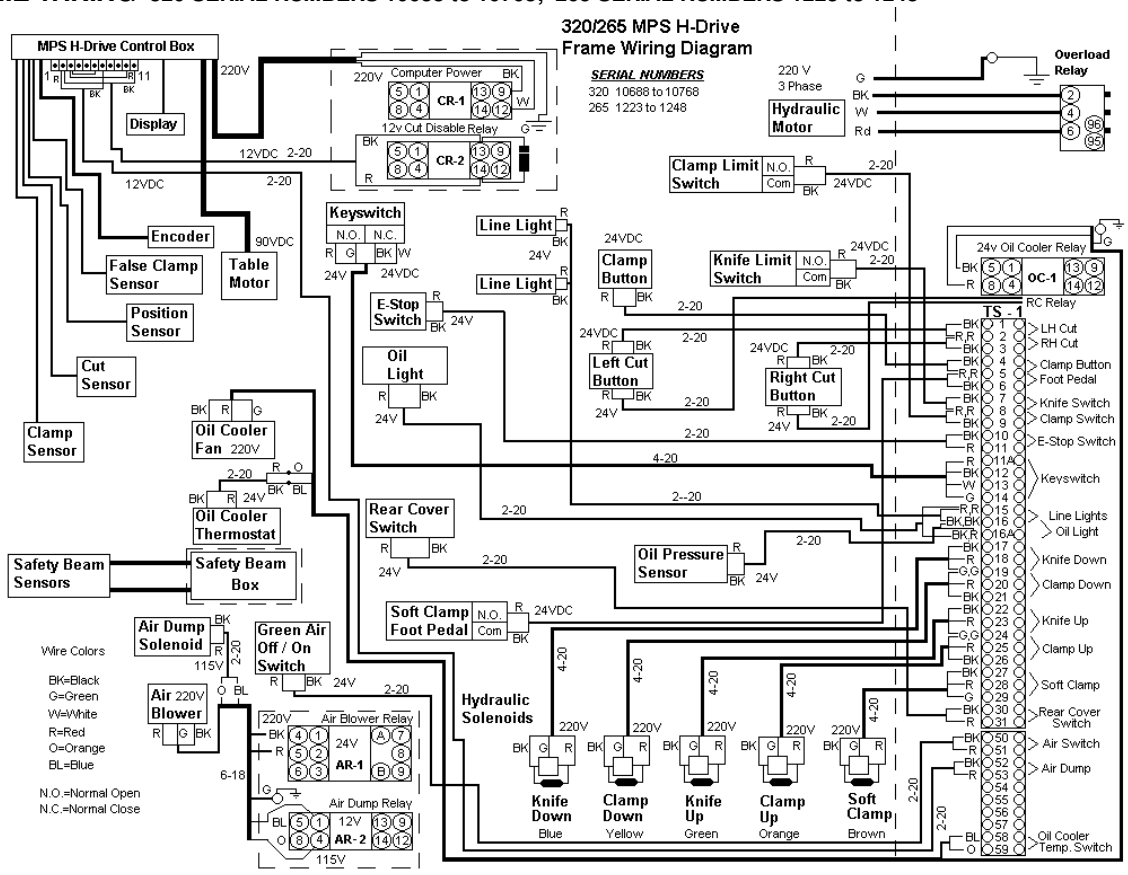
FRAME WIRING 320 SERIAL NUMBERS 10587 to 10687; 265 SERIAL NUMBERS 1190 to 1222



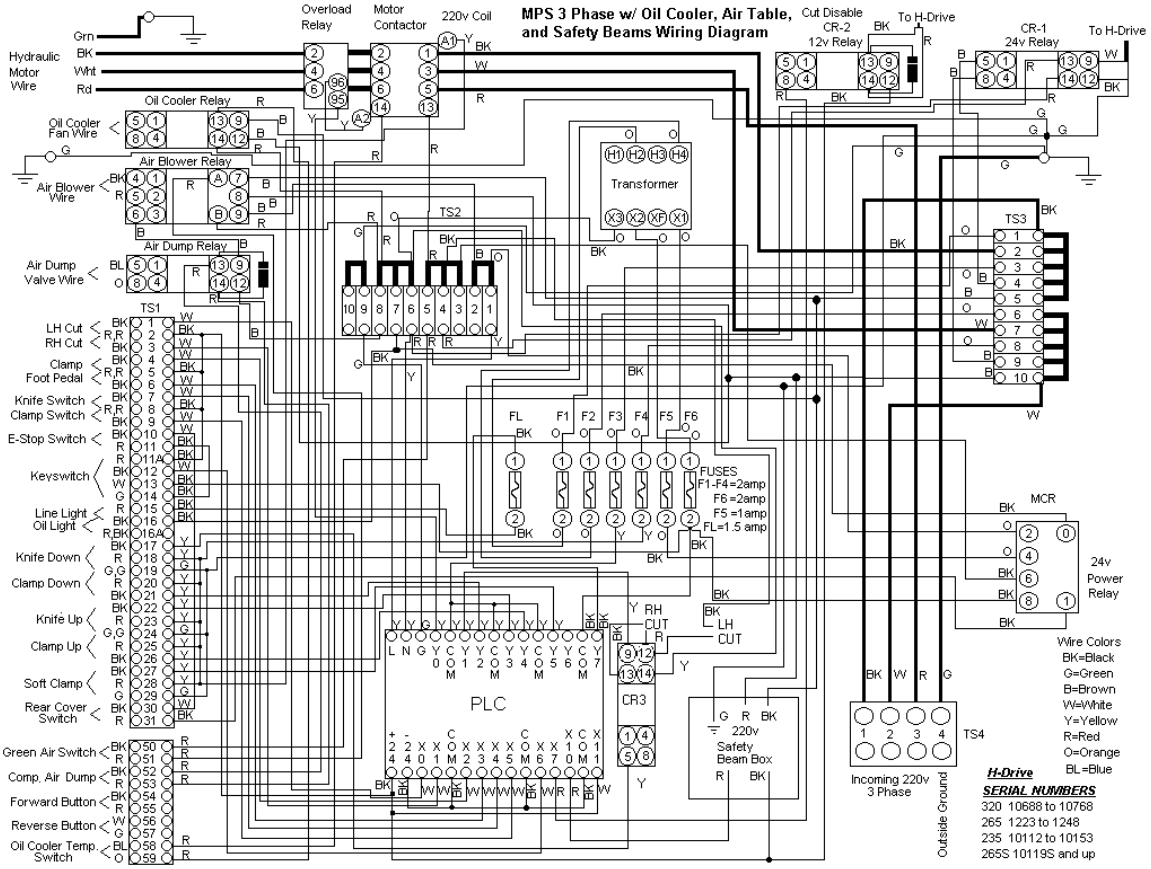
ELECTRIC PANEL WIRING 320 SERIAL NUMBERS 10587 to 10687; 265 SERIAL NUMBERS 1190 to 1222



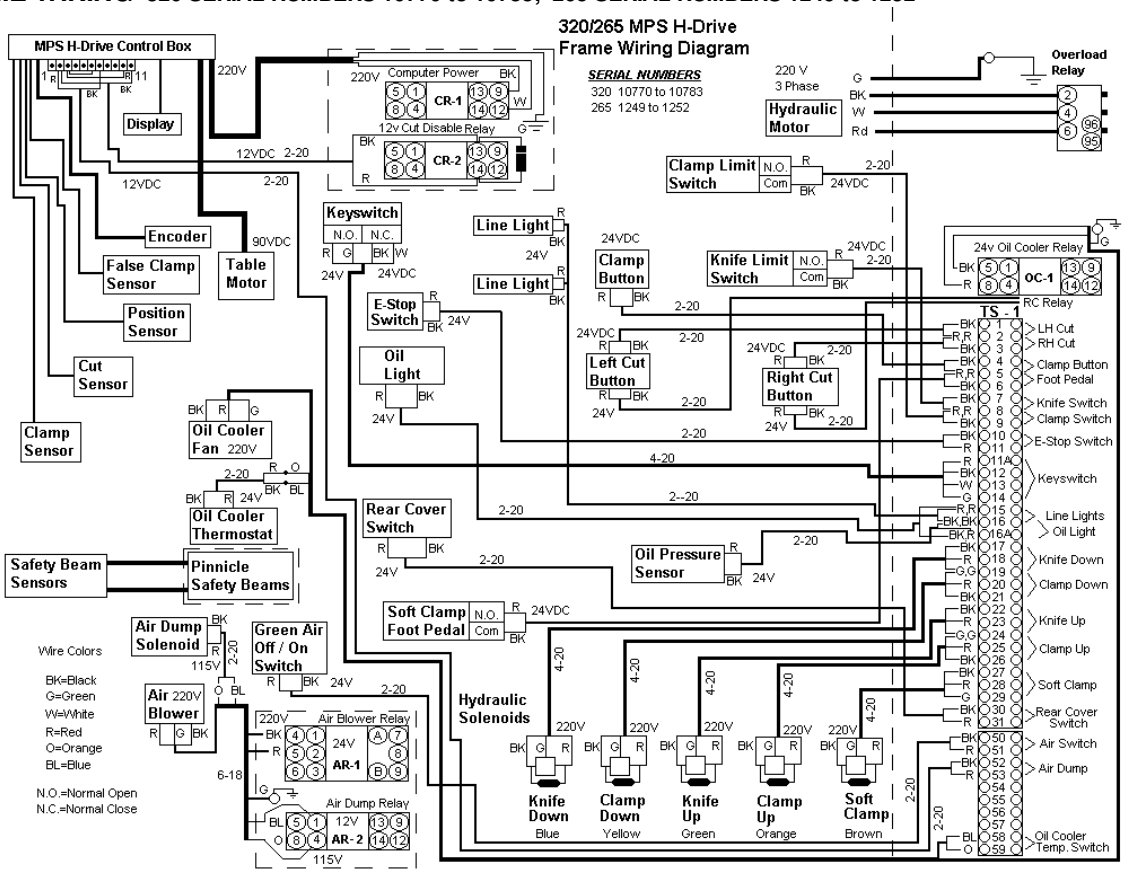
FRAME WIRING 320 SERIAL NUMBERS 10688 to 10768; 265 SERIAL NUMBERS 1223 to 1248



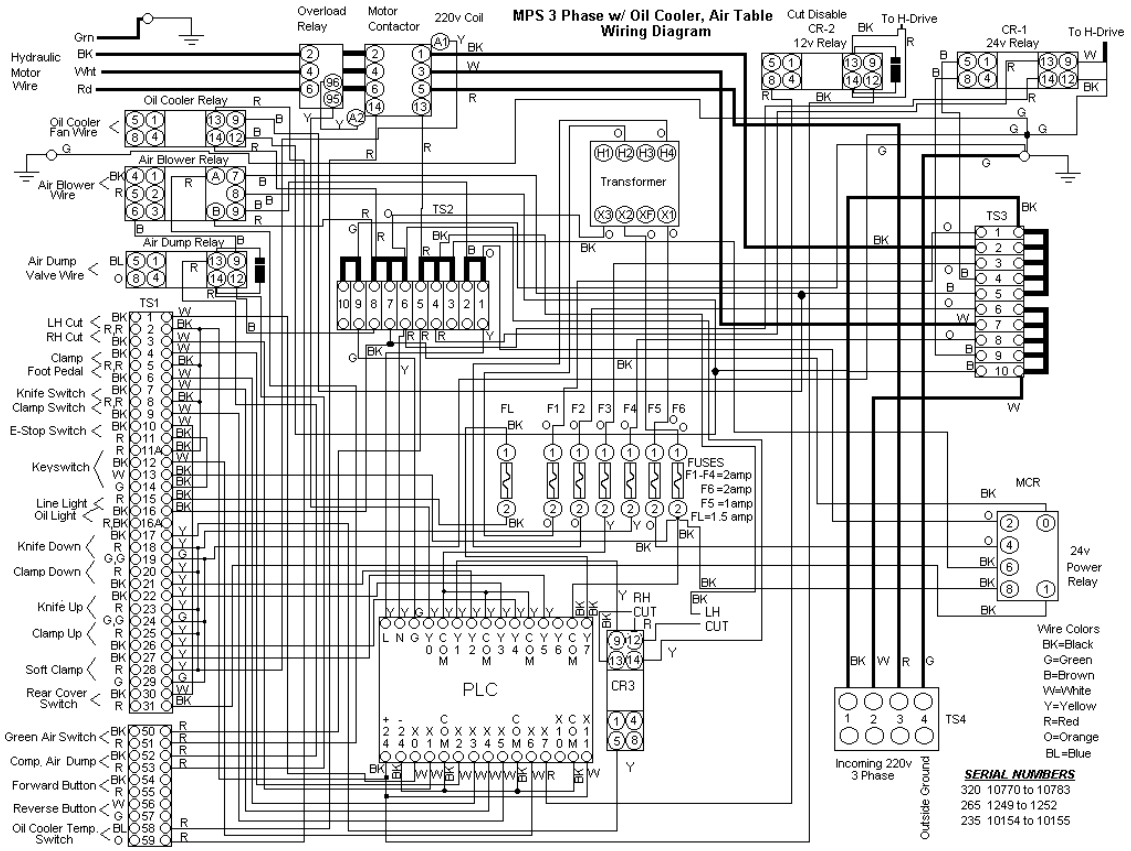
ELECTRIC PANEL WIRING 320 SERIAL NUMBERS 10688 to 10768; 265 SERIAL NUMBERS 1223 to 1248



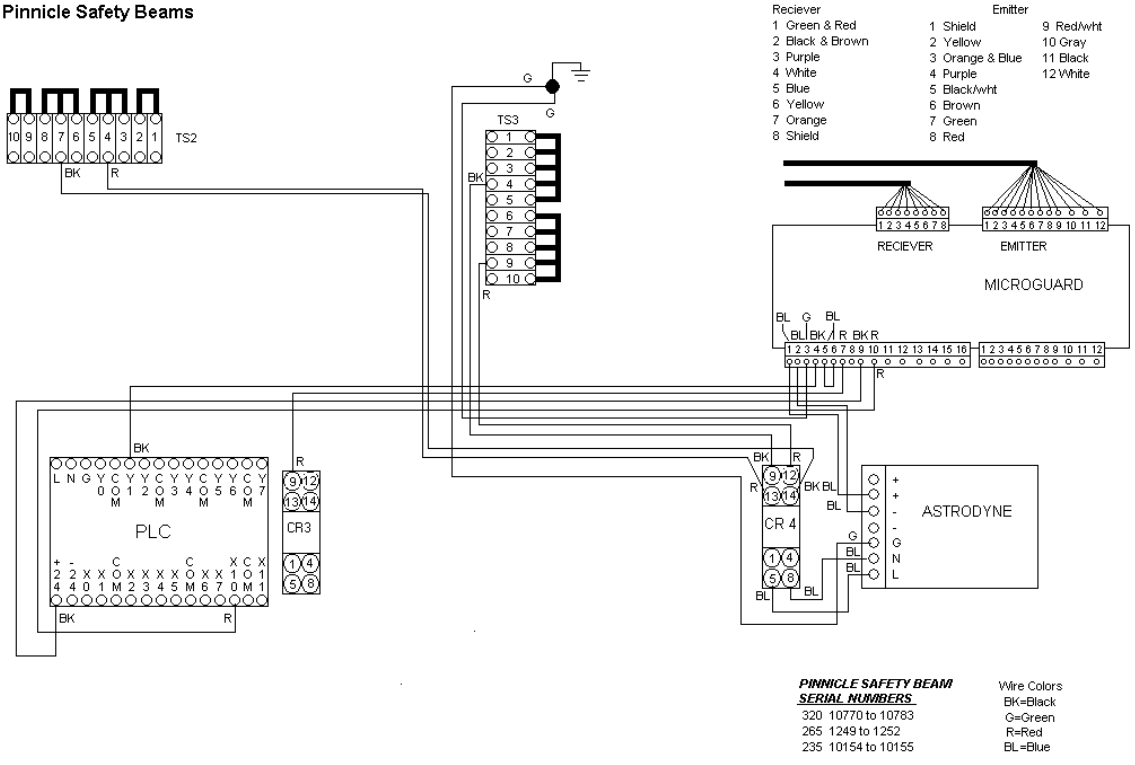
FRAME WIRING 320 SERIAL NUMBERS 10770 to 10783; 265 SERIAL NUMBERS 1249 to 1252



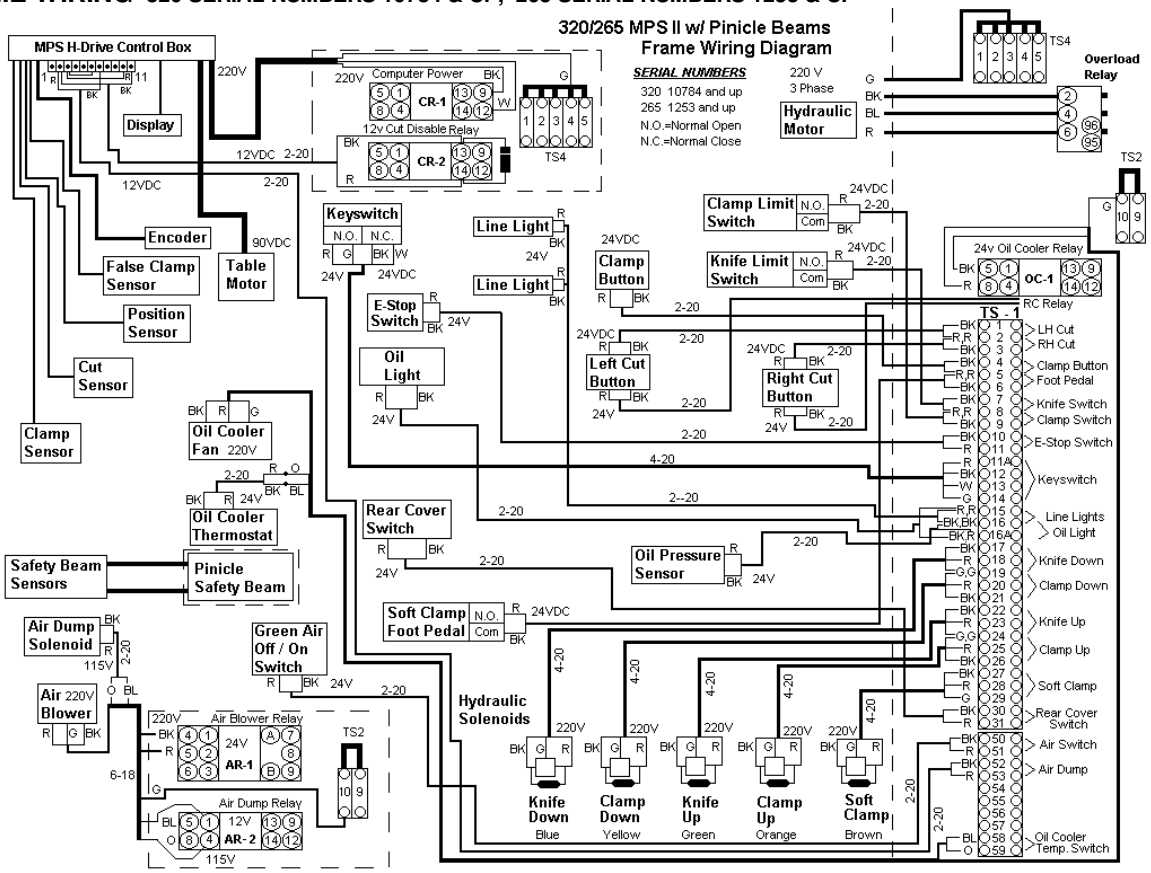
ELECTRIC PANEL WIRING 320 SERIAL NUMBERS 10770 to 10783; 265 SERIAL NUMBERS 1249 to 1252



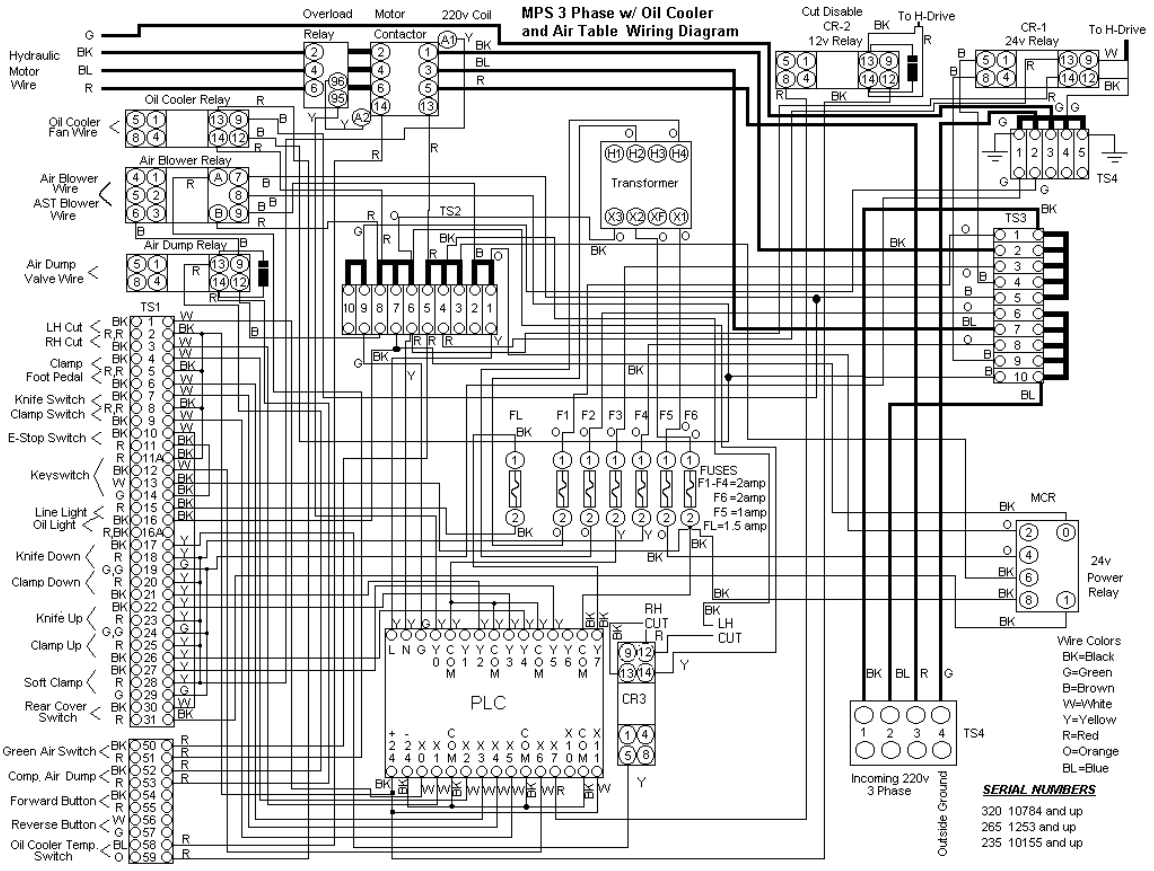
SAFETY BEAMS 320 SERIAL NUMBERS 10770 to 10783; 265 SERIAL NUMBERS 1249 to 1252



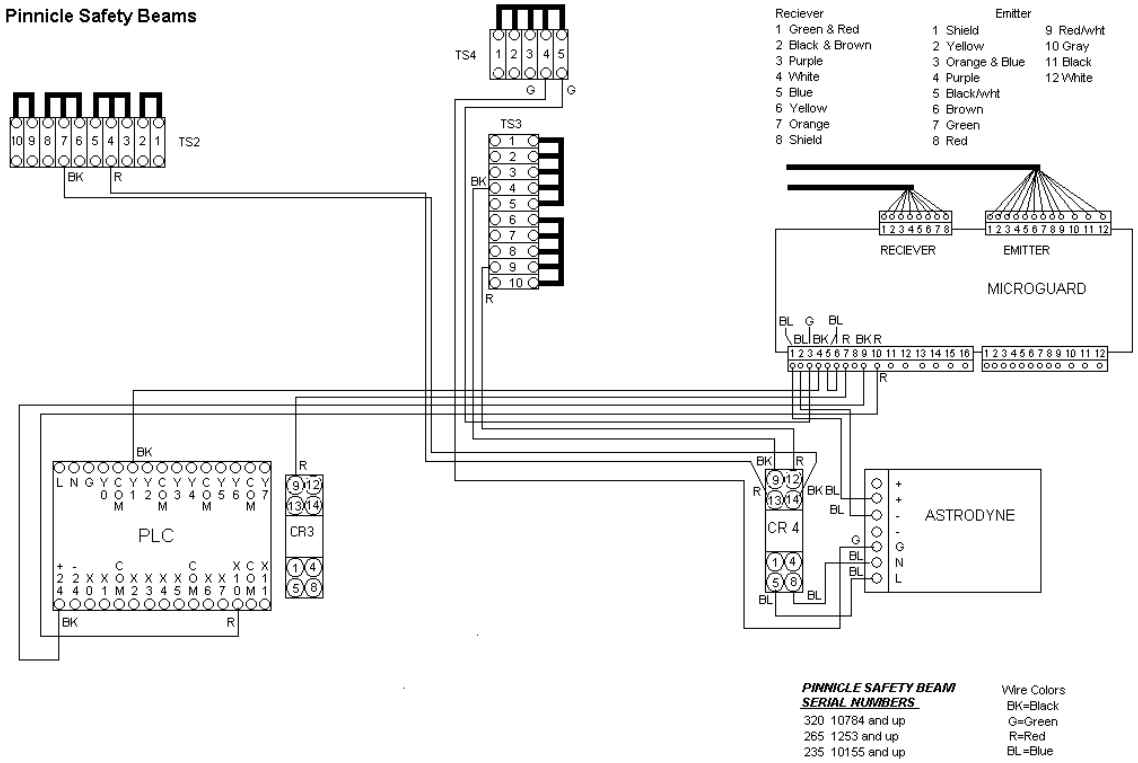
FRAME WIRING 320 SERIAL NUMBERS 10784 & UP; 265 SERIAL NUMBERS 1253 & UP



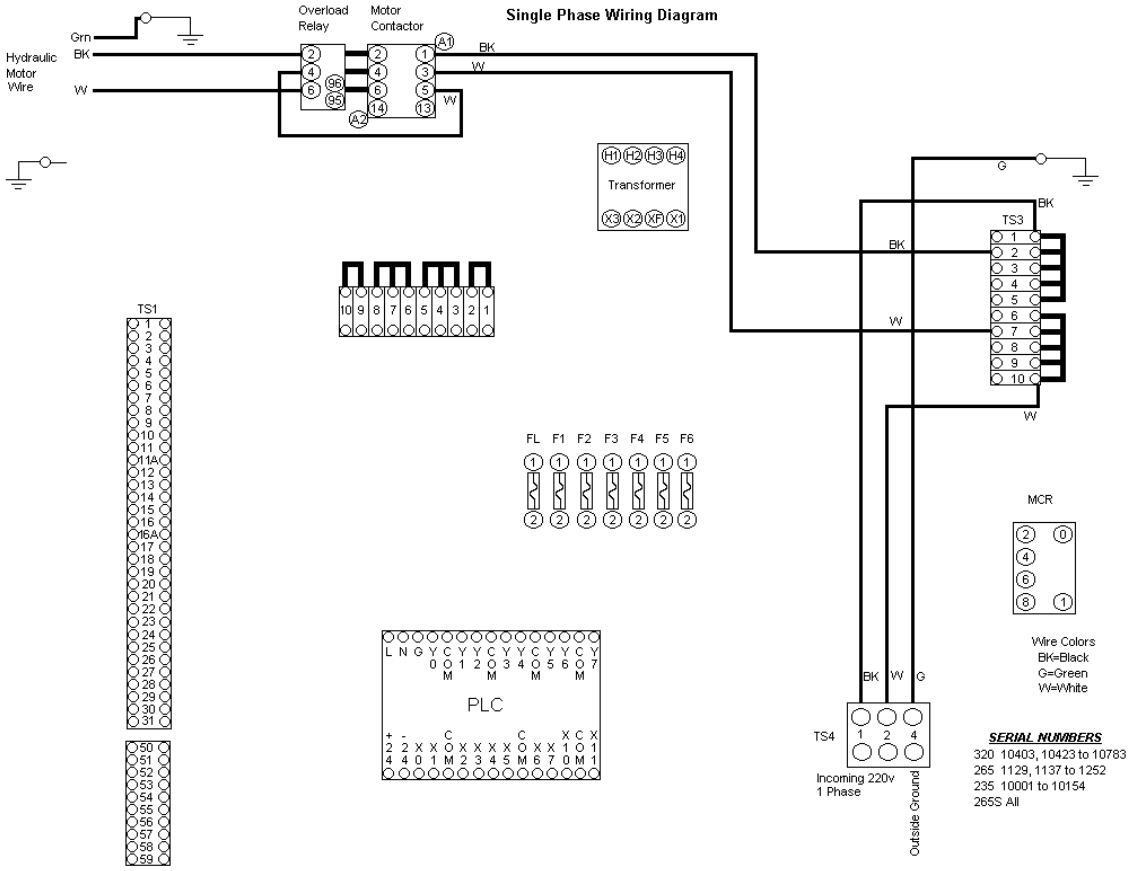
ELECTRIC PANEL WIRING 320 SERIAL NUMBERS 10784 & UP; 265 SERIAL NUMBERS 1253 & UP



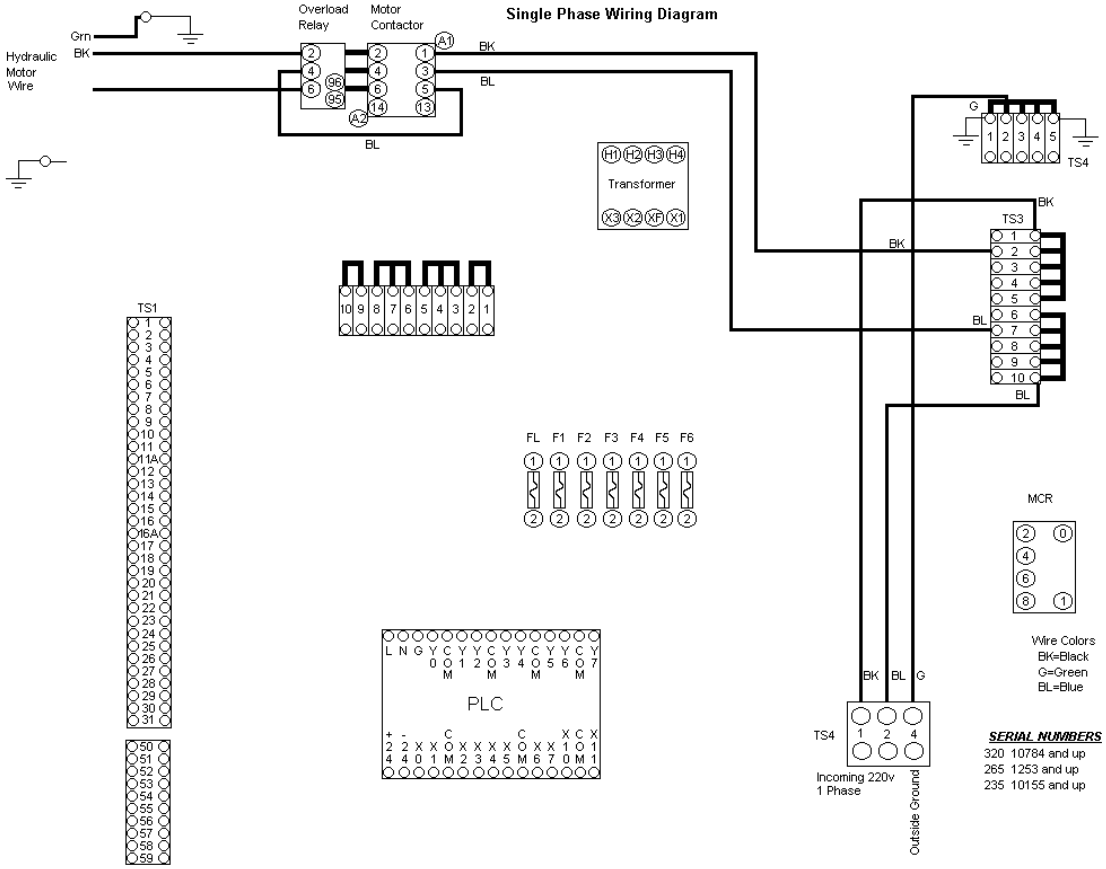
SAFETY BEAMS 320 SERIAL NUMBERS 10784 & UP; 265 SERIAL NUMBERS 1253 & UP



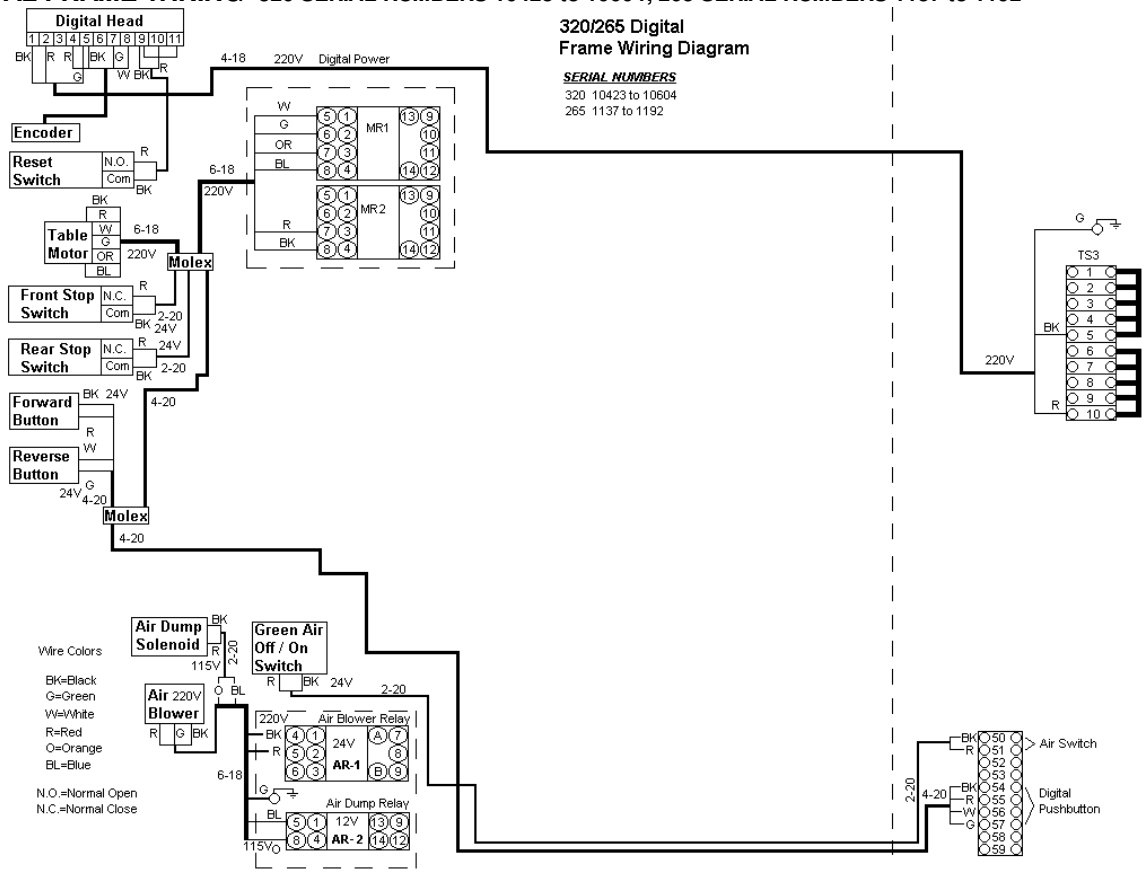
SINGLE PHASE WIRING 320 SERIAL NUMBERS 10403, 10423 to 10783; 265 SERIAL NUMBERS 1129, 1137 to 1152



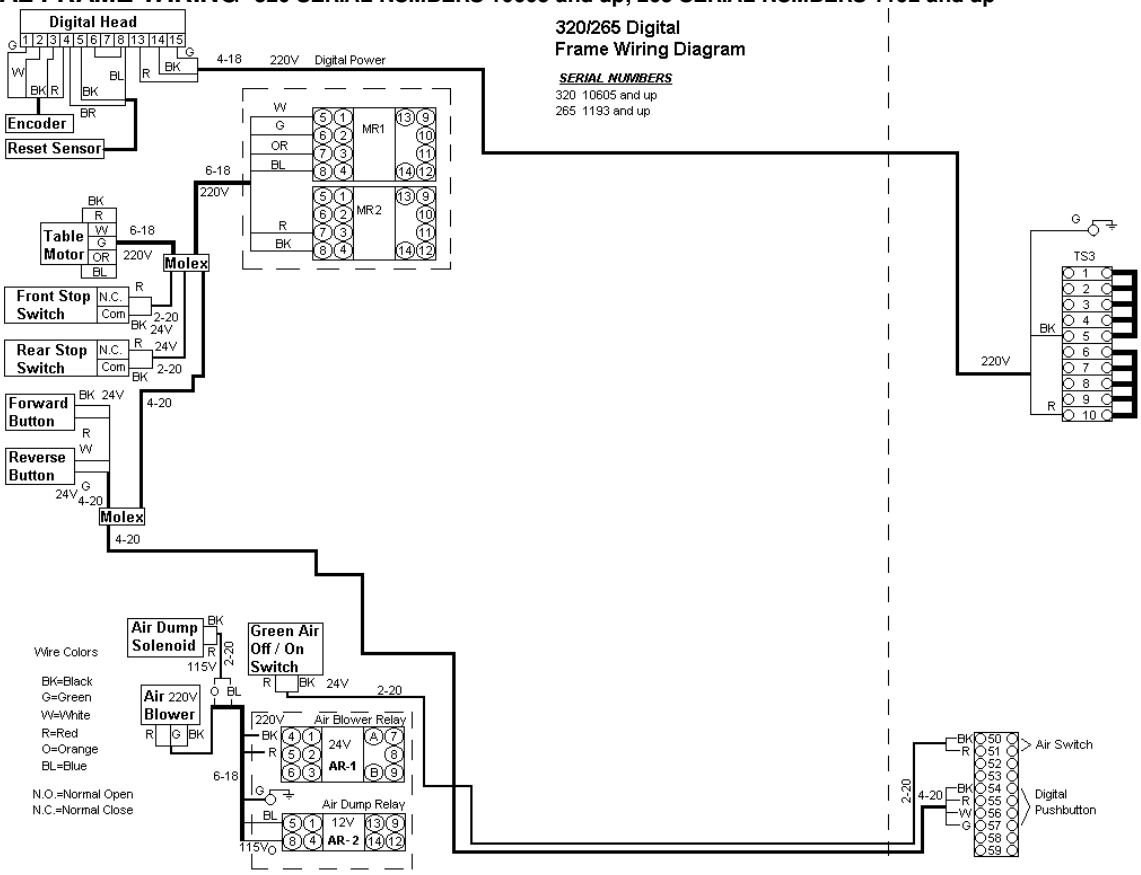
SINGLE PHASE WIRING 320 SERIAL NUMBERS 10784 and up; 265 SERIAL NUMBERS 1153 and up



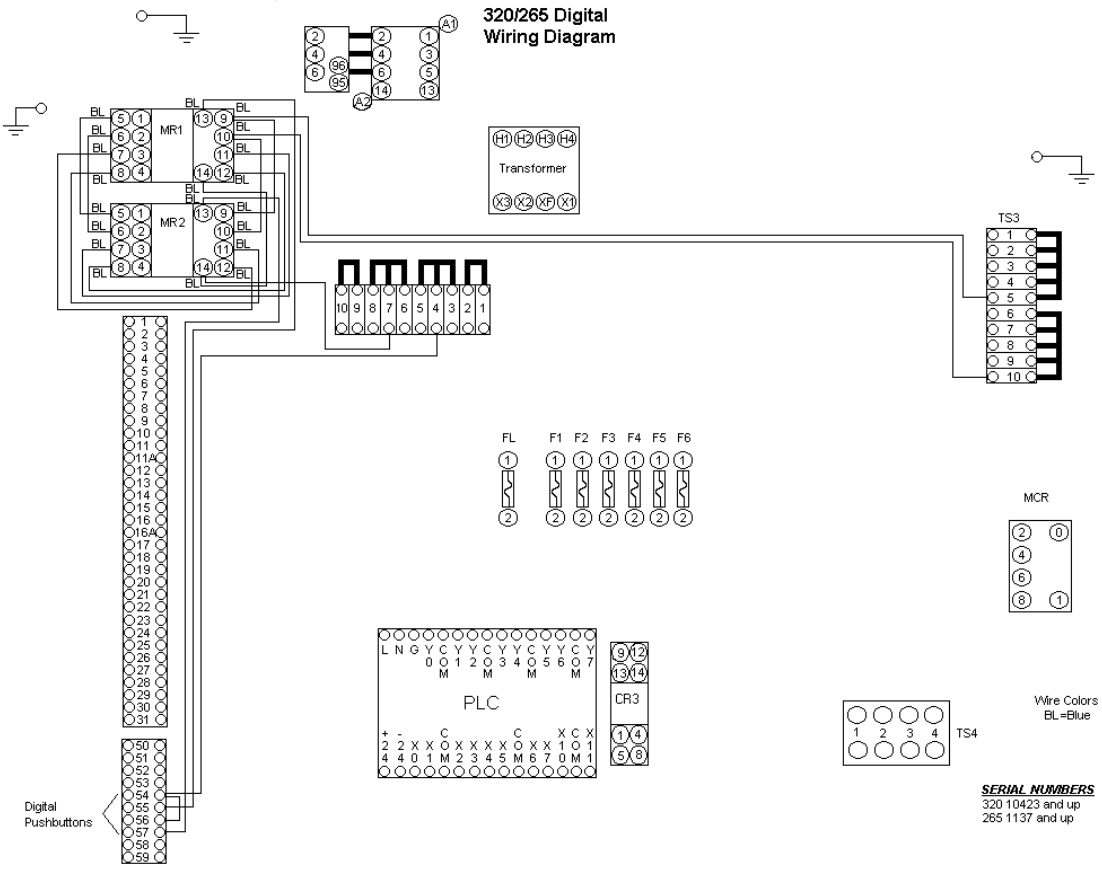
DIGITAL FRAME WIRING 320 SERIAL NUMBERS 10423 to 10604; 265 SERIAL NUMBERS 1137 to 1192



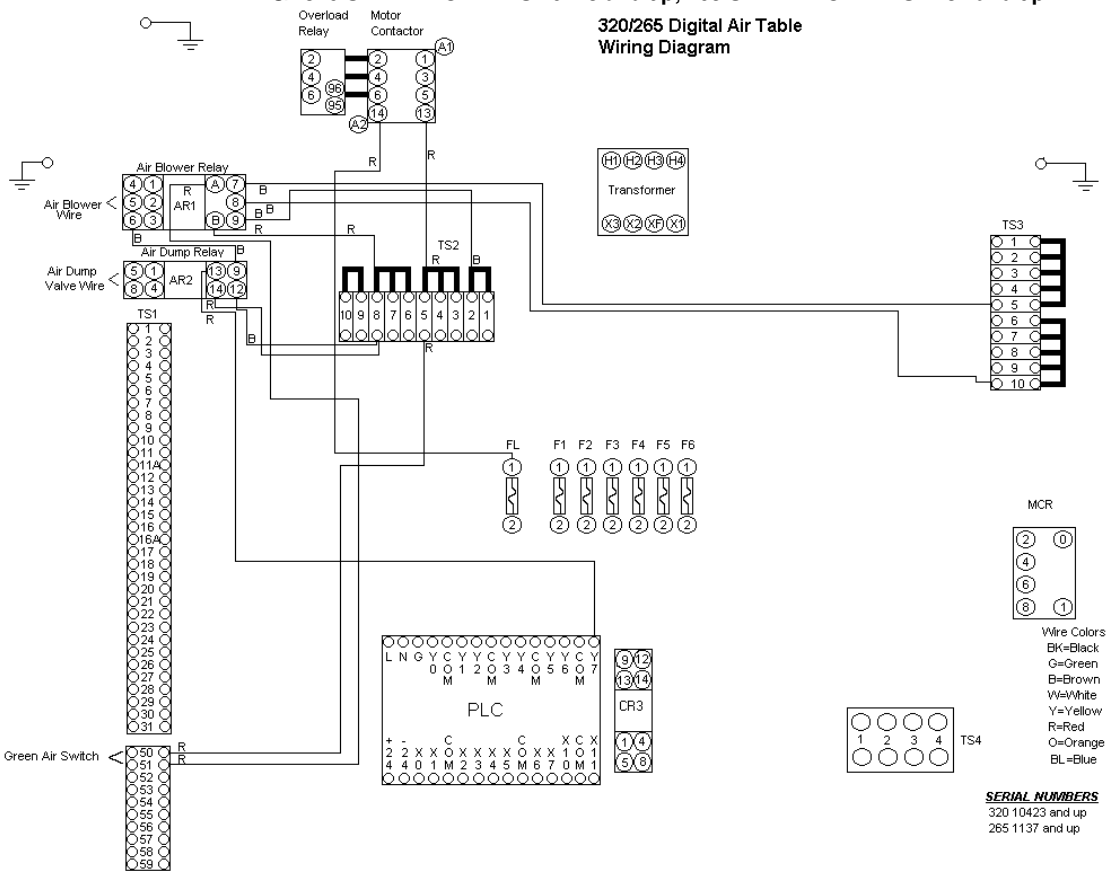
DIGITAL FRAME WIRING 320 SERIAL NUMBERS 10605 and up; 265 SERIAL NUMBERS 1192 and up



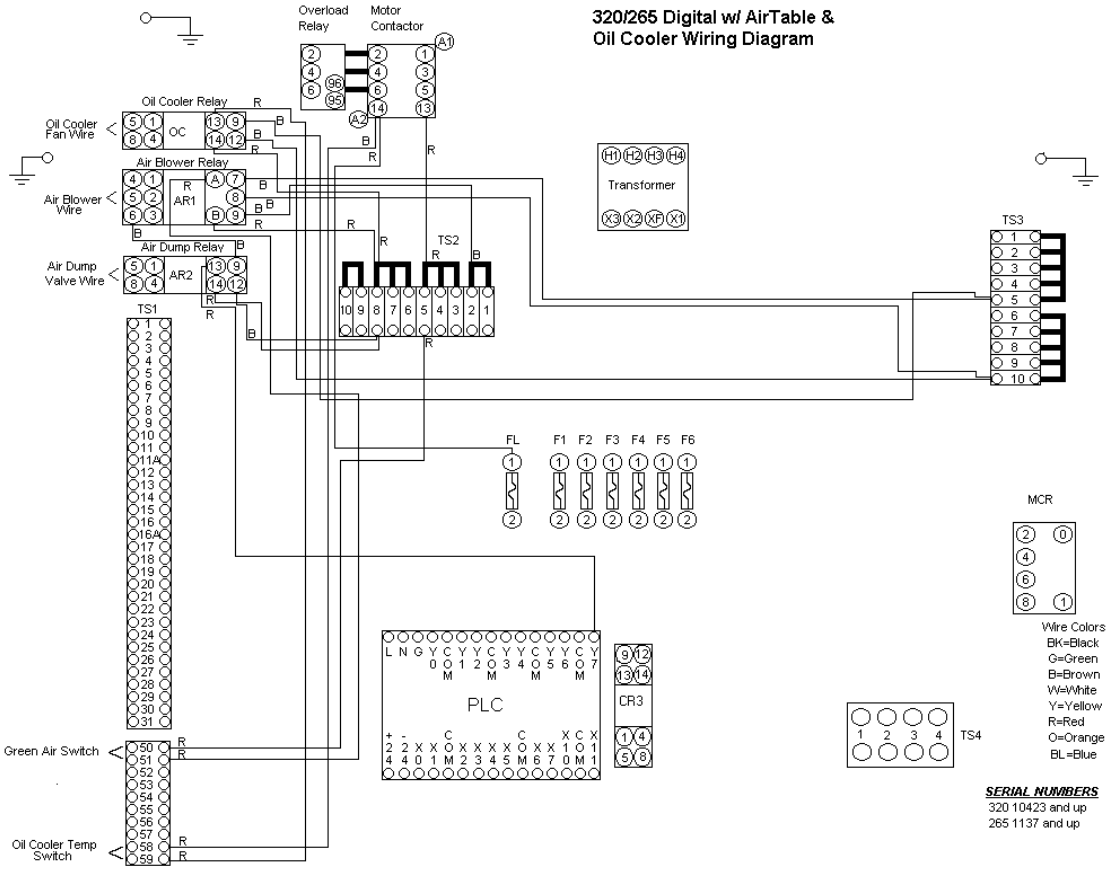
DIGITAL WIRING 320 SERIAL NUMBERS 10423 and up; 265 SERIAL NUMBERS 1137 and up



DIGITAL AIR TABLE WIRING 320 SERIAL NUMBERS 10423 and up; 265 SERIAL NUMBERS 1137 and up



DIGITAL AIR OIL COOLER WIRING 320 SERIAL NUMBERS 10423 and up; 265 SERIAL NUMBERS 1137 and up



TROUBLE SHOOTING GUIDE
MECHANICAL, ELECTRICAL, and HYDRAULIC
NOTE: PLC, Computer, and Digital troubleshooting are available in there own sections.

Problem	Cause
No Electrical Power.	1. Main disconnect off. 2. Main breaker tripped.
Motor will not start.	1. Defective start switch. 2. Defective motor starter. 3. Defective Capacitors. 4. Defective Motor. 5. Defective PLC or connector.
Motor starts but hydraulic pump not working.	1. Pump coupling came loose. 2. Defective pump. 3. Air locked pump. 4. Low hydraulic fluid. 5. Leaking hose in tank.
Soft Clamp pedal depressed and clamp will not come down.	1. Check to see if the pedal is plugged in. 2. Pedal switch is defective. 3. Relay SR4 is defective. 4. Defective PLC or connector. 5. Defective clamp down solenoid. 6. Lacking lubrication in clamp mechanism.
Cut buttons pushed and clamp will not come down under pressure.	1. Defective coils in directional valves. 2. Defective relay – CR1, CR2, SR3, SR4, ATT. 3. Cut button not connected. 4. Cut button defective. 5. Soft clamp pedal defective or unplugged. 6. Defective PLC or connector.
Cut buttons pushed and clamp comes down, but knife stays up.	1. Defective check valve. 2. Defective sequence valve. 3. Defective coil in directional valve.
Knife returns but clamp stays down.	1. Knife limit switch out of adjustment. 2. Knife limit switch defective. 3. Defective coil in directional valve. 4. SR2 relay defective. 5. Defective PLC or connector.
Knife starts down but returns without releasing the cut buttons.	1. Defective cut buttons. 2. Loose connections at TB6 No's 1-8. 3. Potentiometer damaged in BT.
Knife and clamp will not return.	1. Defective relay SR1. 2. Defective relay CR3. 3. Defective knife limit switch. 4. Defective directional valve coils. 5. Defective PLC or connector.
Clamp will not hold pressure.	1. Clamp cylinder seals worn. 2. Variable pressure valve set to low. 3. Sequence valve damaged or misadjusted.

Problem	Cause
Clamp not parallel to table.	1. Clamp leveling rod out of adjustment. 2. Worn clamp linkage.
Concave cutting variation from top to bottom.	1. Soft stock not firmly clamped. 2. Dull knife or not ground properly. 3. Blade beam gibs loose.
Inconsistent stopping of knife in down position.	1. Nut loose on knife cylinder. 2. Worn blade beam linkage.
Knife hesitation.	1. Dull knife. 2. Seals worn in cylinder. 3. Check valve on knife cylinder defective. 4. Sequence valve defective.
Knife drift down.	1. Defective check valve on knife cylinder. 2. Defective seals on knife cylinder.
Erratic operation – Power loss.	1. Clogged filter. 2. Loose pump to motor coupling. 3. Low hydraulic fluid. 4. Dirt in relief valve. 5. Defective pump.

PLC TROUBLESHOOTING

SAFE MODE

The PLC has a built in safe guard to prevent a voltage spike or power surge from damaging the memory. The Run Indicator "On" is the normal operating mode. Fig. 59. The Run Indicator "Off" indicates the PLC has placed itself in safe mode and will not operate the "Y" Outputs. The PLC must be returned to the factory to re-program the PLC. The PLC is password protected and can't be re-programmed in the field.

115VAC POWER INPUT

The PLC operates on 115VAC supplied from the control transformer through the F5 fuse (see pages 72 through 84 for control transformer and F5 fuse locations). The Power Indicator Fig. 59 must be "On" for the PLC to operate. To test the 115VAC Power Input voltage reading place the black voltage meter probe on the "N" screw terminal and the red voltage meter probe on the "L" screw terminal. If no voltage is indicated on the meter test the F5 fuse. If the F5 fuse is defective replace it with a new AGC-1 fuse. If the F5 fuse blows again, the PLC will need to be replaced (see Replacing PLC Terminal Strips and PLC Removal below). If there is 115VAC, and there is no Power Indicator light then the Terminal Strip will need replaced.

24VDC INTERNAL POWER SUPPLY

The PLC has a 24VDC Internal Power Supply Fig. 59 that is used to power the "X" Inputs through mechanical switches located on the cutter (see pages 72 through 84 for switch locations). To test the 24VDC Internal Power Supply voltage place the black voltage meter probe on the "-24VDC screw terminal and the red voltage meter probe on the +24VDC screw terminal.

INPUTS

The switches that operate the cutter are inputs to the PLC. The switches are connected to the "X" Inputs Fig. 59 at the PLC. These are isolated 24VDC inputs are powered by the 24VDC Internal Power Supply. To take voltage readings place the red voltage meters probe on the +24VDC screw terminal, and the black voltage meter probe on "X" Input screw terminal that applies. If there is 24VDC, and there is no "X" Indicator Light then the Terminal Strip will need replaced.

OUTPUTS

The PLC has relays that send voltage to operate the cutter. These are the "Y" Outputs Fig. 59. The "Y0" through "Y5" are 1 power leg of 220VAC. The "Y6 and "Y7" are 24VAC. Voltage readings for the "Y0" through "Y5" Outputs are read by placing one voltage meter probe on the bottom of the F4 fuse (see pages 72 through 84) and one voltage meter probe on the "Y" Output screw terminal that applies. Voltage readings for the "Y6 and "Y7" Outputs are read by placing the black voltage meter probe on Terminal strip TS2 position 7 (see pages 72 through 84) and the red voltage meter probe on the "Y6" or "Y7" Output screw terminal that applies. If the Indicator Light is on and the voltage meter shows no voltage the Terminal Strip will need replaced.

REPLACING THE PLC TERMINAL STRIPS AND PLC REMOVAL

The "X" and "Y" Terminal Strips are removable circuit board edge connectors. Fig. 59. If the Terminal Strips are the same color as the PLC box, they must be replaced with a Terminal Strip that is black in color. To remove a Terminal Strip from the PLC locate the small holes at each end, and use a small screwdriver to pry the Terminal Strip out toward you. The new Terminal Strip can be pressed tightly into place and the wires installed from the old Terminal Strip. If the PLC is being removed, both Terminal Strips must be removed. The PLC is clipped from the bottom to a rail. Pull the clip down with a screwdriver and the PLC will release from the rail.

PLC PROGRAMMING

The PLC has been factory programmed for each individual cutter. The Program Information is printed on the orange sticker as indicated in Fig. 59. This information is needed to program a replacement PLC.

PLC CONNECTION CHART
320 SERIAL NUMBERS 10427 AND UP
265 SERIAL NUMBERS 1141 AND UP

X0	Left Hand Cut Button	Y0	Hydraulic Motor Start
X1	Right Hand Cut Button	Y1	Knife Down
X2	Red Clamp Down Button	Y2	Clamp Down
X3	Foot Pedal	Y3	Knife Up
X4	Knife Up Limit Switch	Y4	Clamp Up
X5	Clamp Up Limit Switch	Y5	Soft Clamp
X6	Blade Adjust		
X7	Computer Cut Disable		
X10	Safety Beams		
X11	Rear Cover		

320 SERIAL NUMBERS 10403, 10423 TO 10426
265 SERIAL NUMBERS 1129, 1137 TO 1140

X0	Left Hand Cut Button	Y0	Hydraulic Motor Start
X1	Right Hand Cut Button	Y1	Knife Down
X2	Red Clamp Down Button	Y2	Clamp Down
X3	Foot Pedal	Y3	Knife Up
X4	Knife Up Limit Switch	Y4	Clamp Up
X5	Clamp Up Limit Switch	Y5	Soft Clamp
X6	Blade Adjust		
X11	Safety Beams		

320 SERIAL NUMBERS 10423 TO 10586
265 SERIAL NUMBERS 1137 TO 1189

Y6 Power Enable

320 SERIAL NUMBERS 10531 AND UP MPS ONLY
265 SERIAL NUMBERS 1172 AND UP MPS ONLY

Y7 Line Lights On When Motor On

320 SERIAL NUMBERS 10432 AND UP DIGITAL AIR TABLE ONLY
265 SERIAL NUMBERS 1137 AND UP DIGITAL AIR TABLE ONLY

Y7 Air Dump Valve

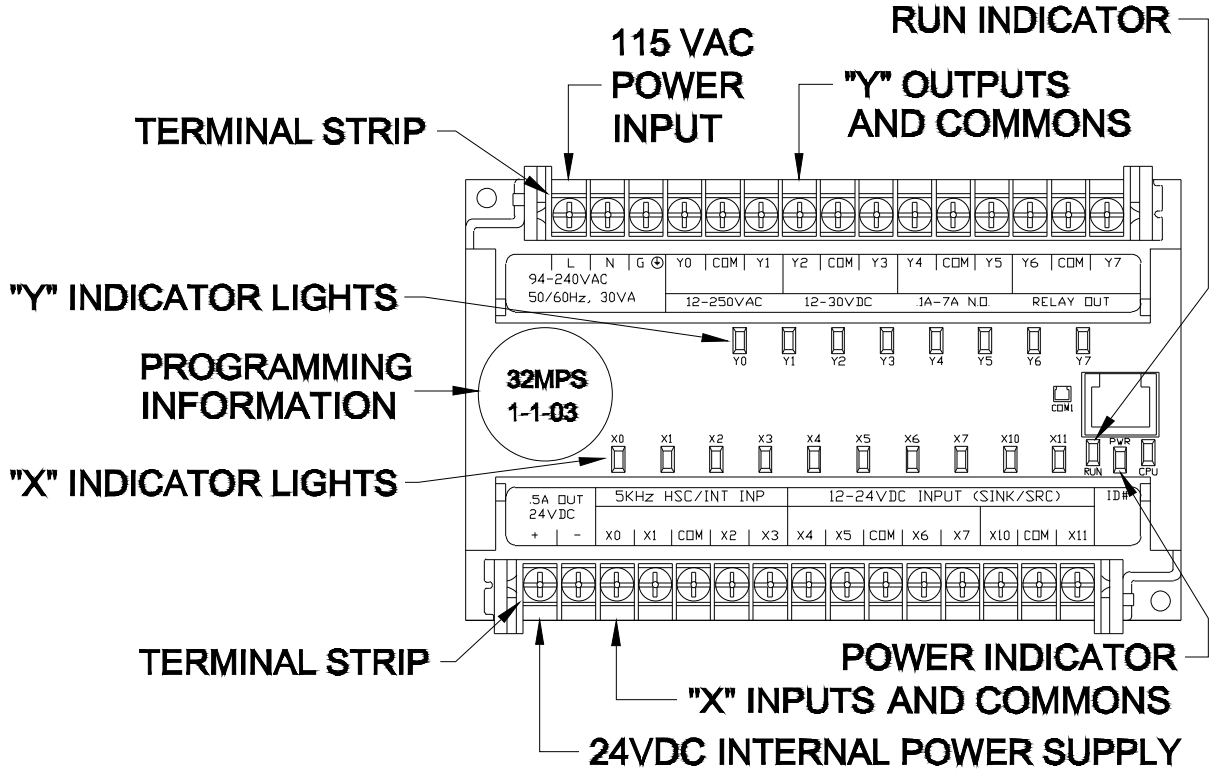


Fig 59

RED LION DIGITAL DISPLAY PROGRAMMING

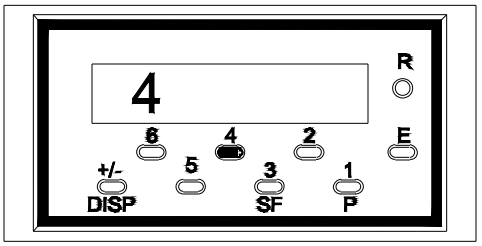
Entering modes and functions are easily accomplished by pressing the appropriate digit key as indicated by the embossed number above it. For the Counter Mode, you would enter 41 by pressing the front panel key 4. Then press the front panel key 1. The leftmost LED's show the function, and the rightmost show the present mode.

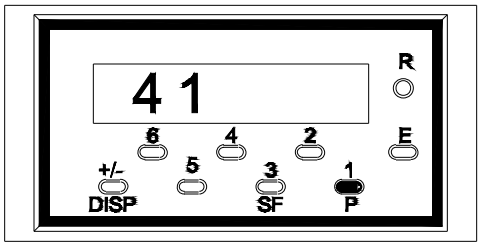
To change the mode, first remove the jumper from the #11 (PGM-DIS) terminal on the back of the unit. Make sure you turn off all power to the cutter to de-power the unit.

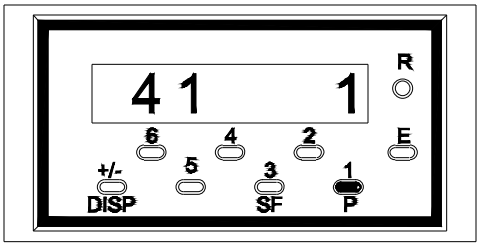
Press the keys as indicated in the next steps followed by the E key to finalize the change. If you do not press the E key within 15 seconds the display will return to the operation mode and not save the change.

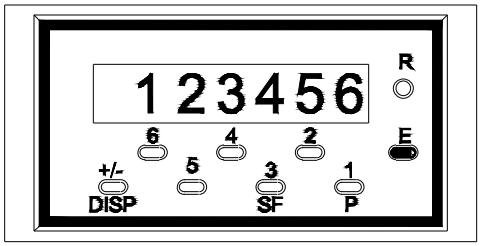
For inch display:

Counter Mode:

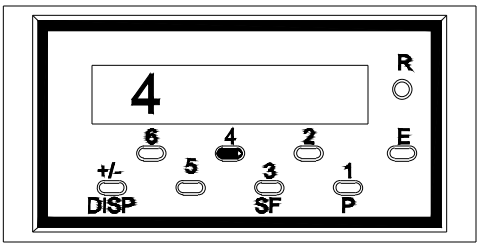


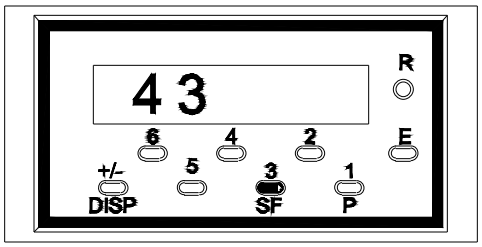


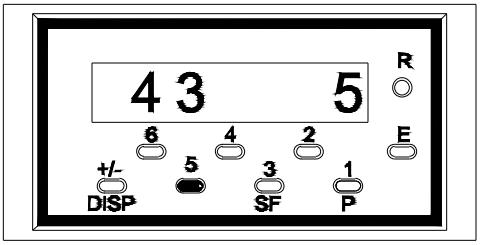


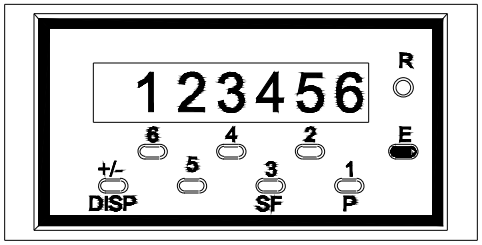


Encoder Input Mode:

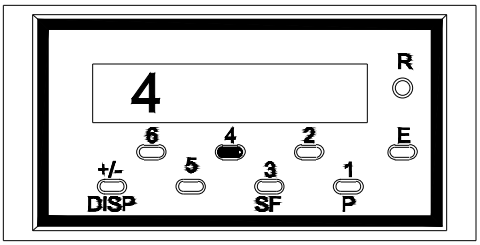


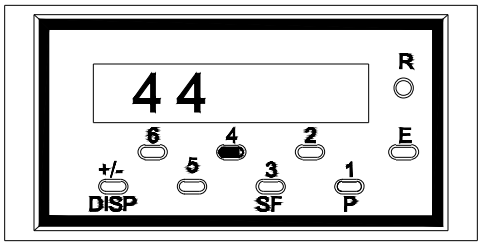


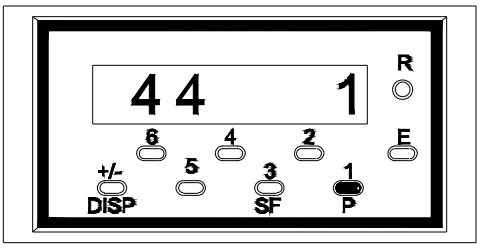


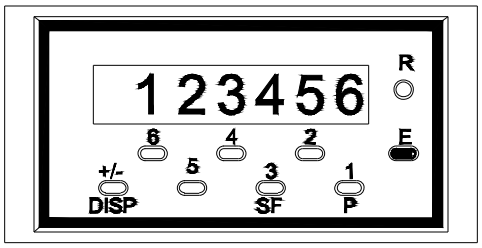


Input Pulse Mode:

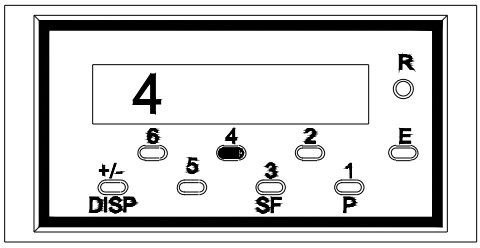


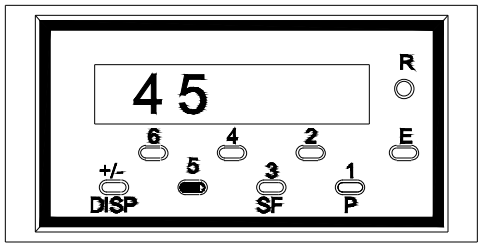


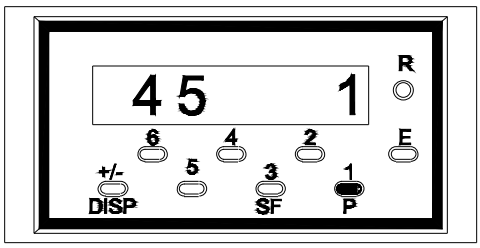


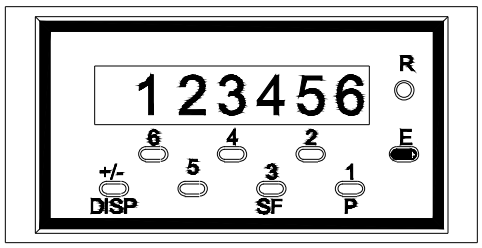


Scale Multiplier Mode:

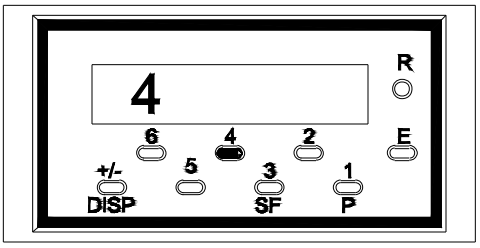


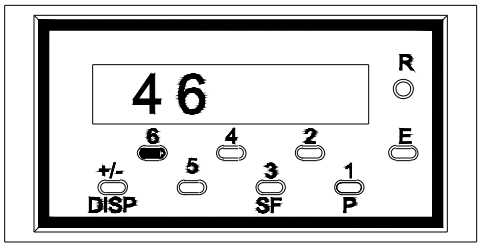


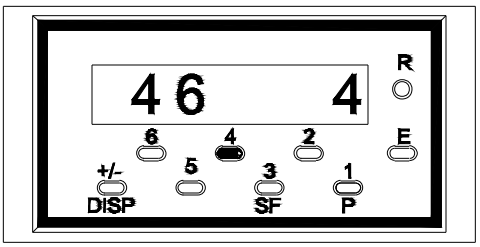


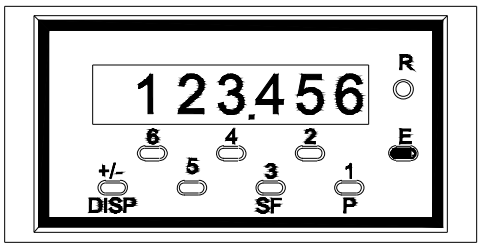


Decimal Point Mode:

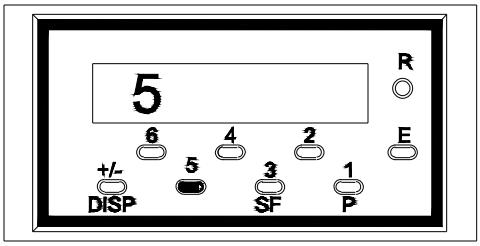


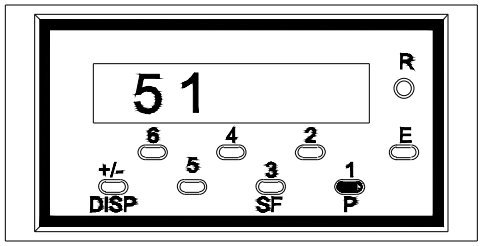


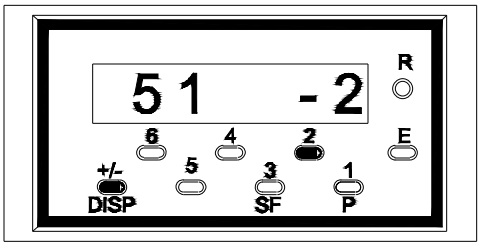


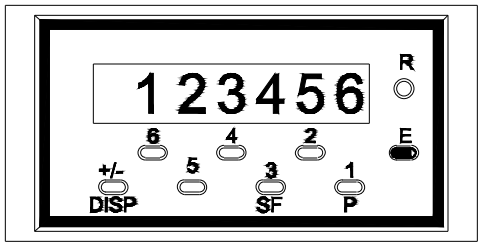


Counter Reset Mode:

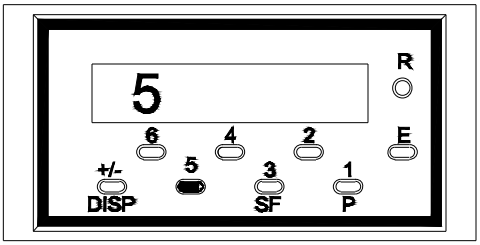


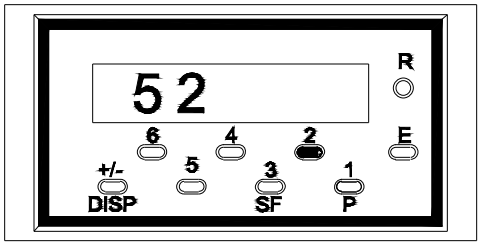


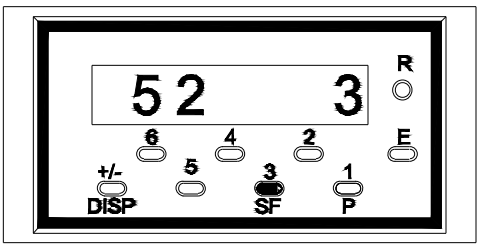


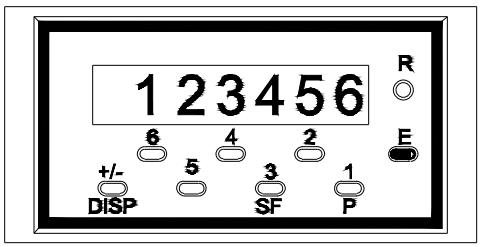


Output Mode:

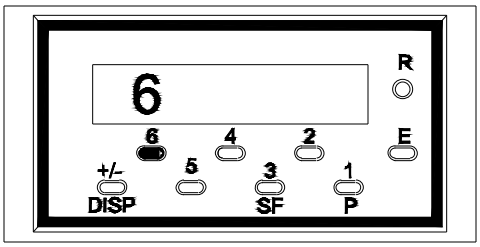


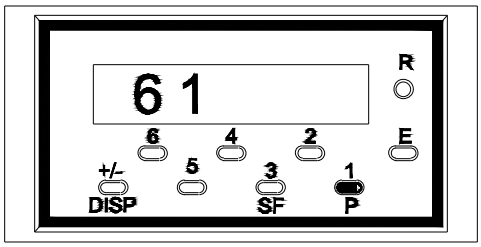


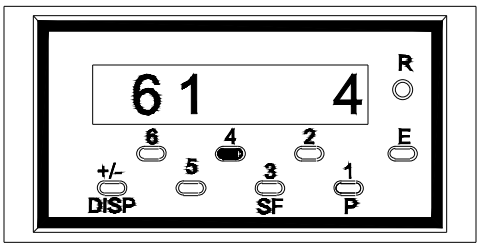


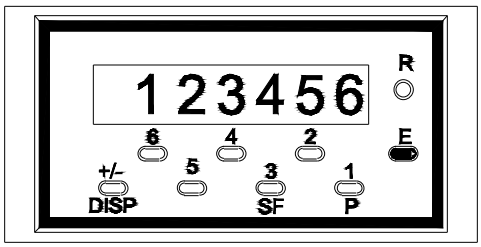


Right Hand Zeros Mode:

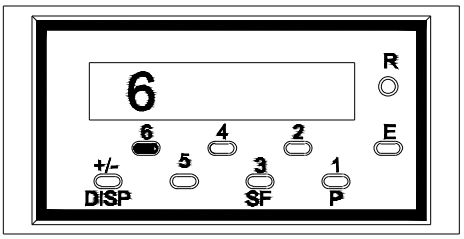


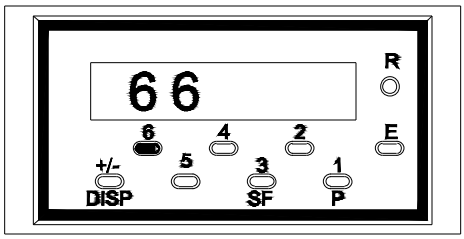


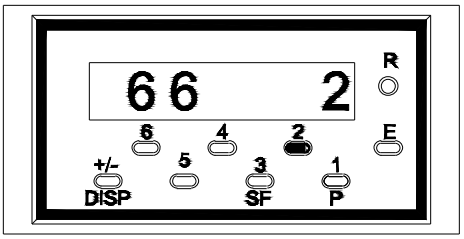


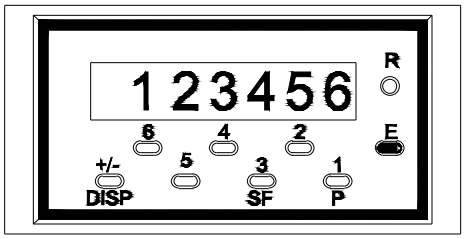


Operator Functions Mode:

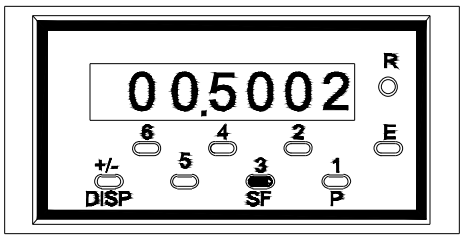


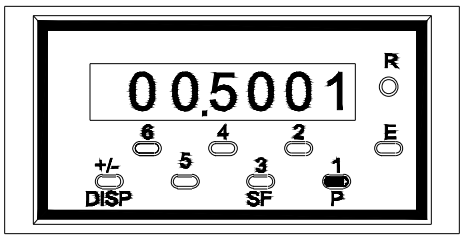


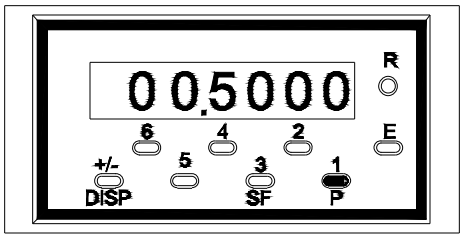


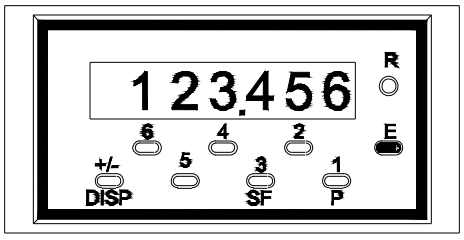


Scale Factor Setting:

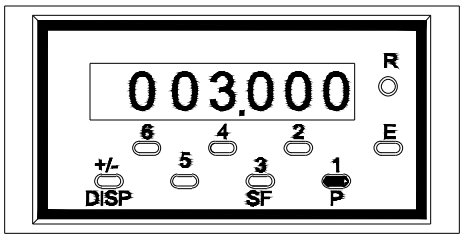


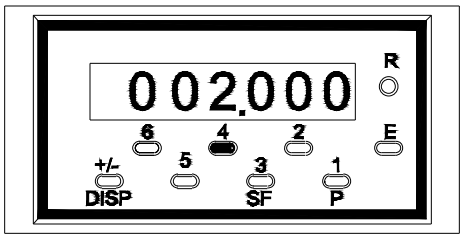


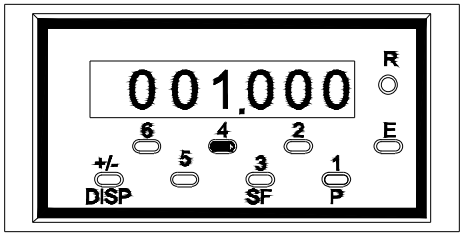


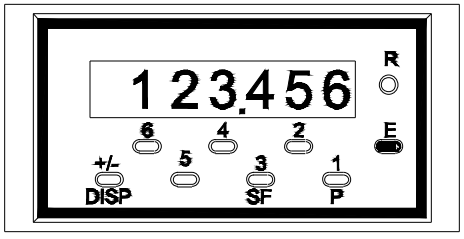


Preset Reset Value:





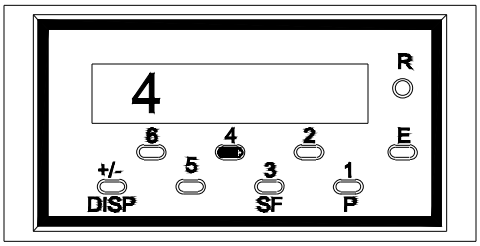


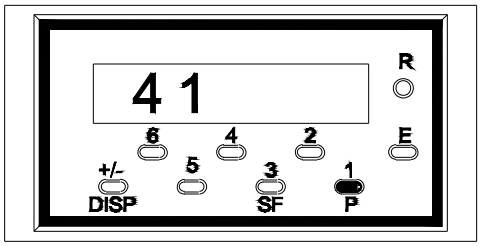


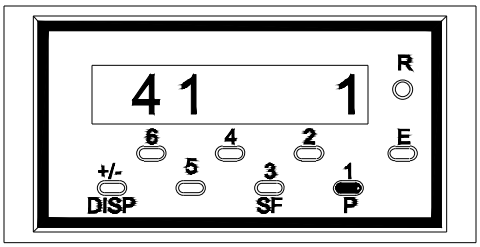
The preset reset is a variable setting somewhere between .500” and 1.000”. Set this value for each individual cutter. This can be changed without removing the jumper wire.

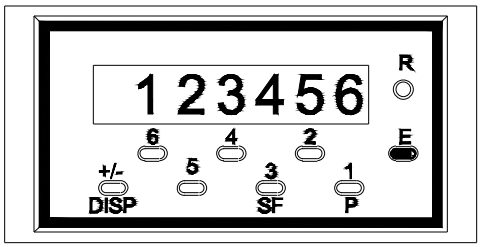
For metric display:

Counter Mode:

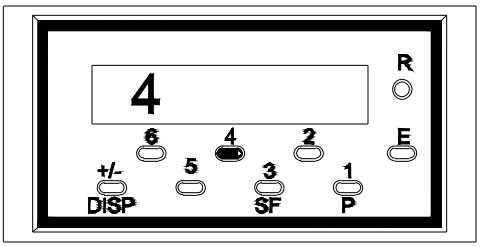


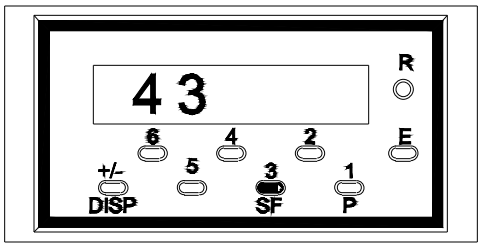


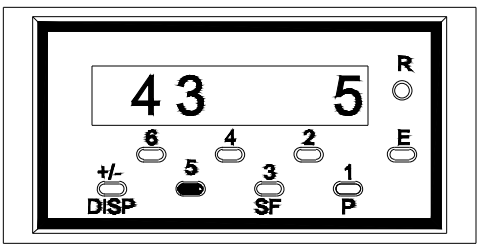


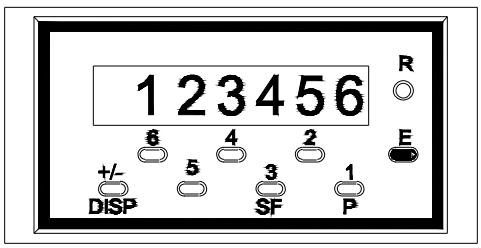


Encoder Input Mode:

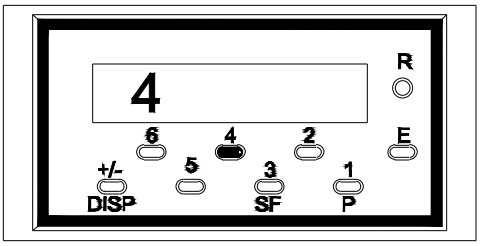


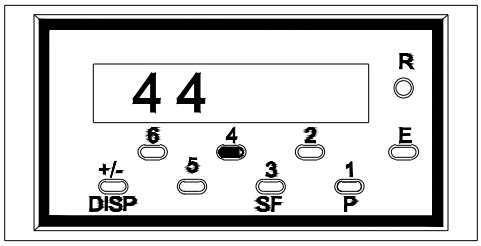


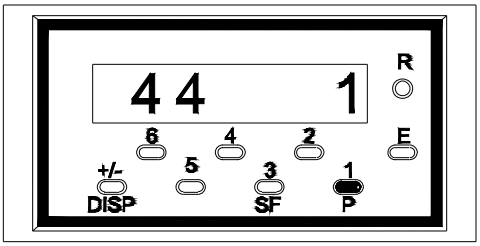


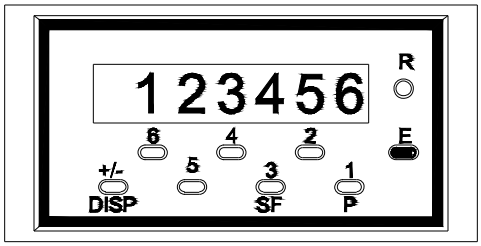


Input Pulse Mode:

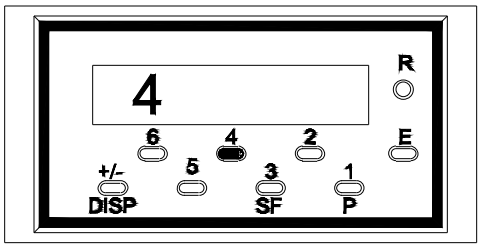


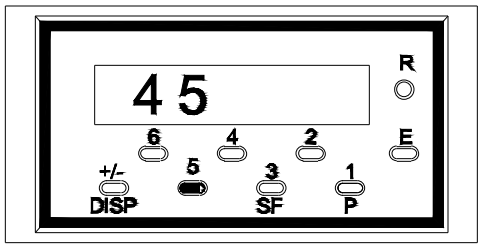


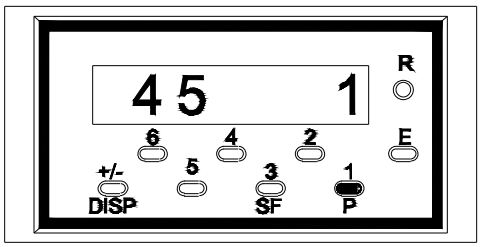


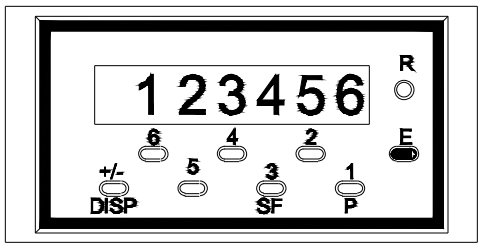


Scale Multiplier Mode:

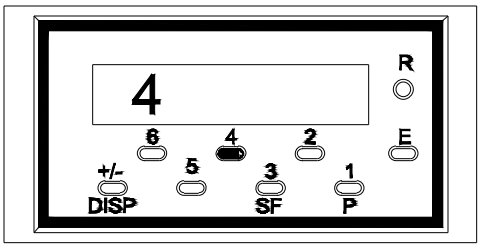


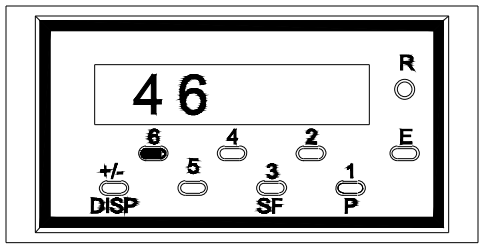


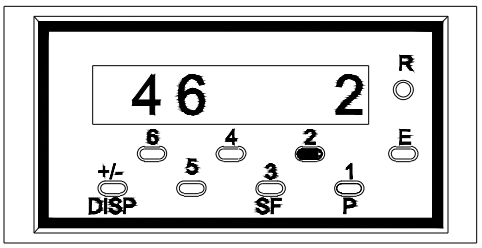


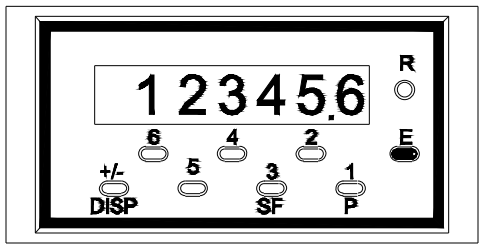


Decimal Point Mode:

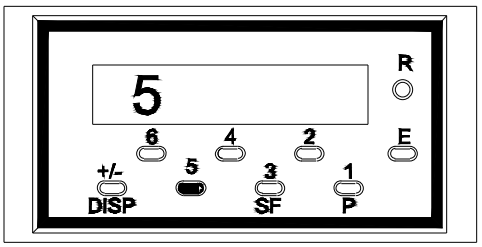


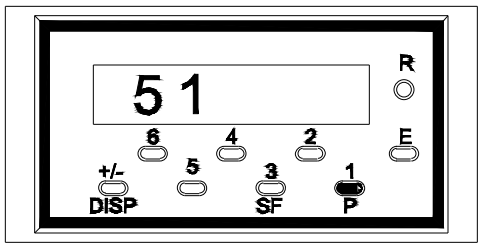


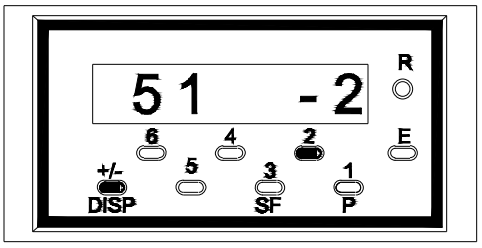


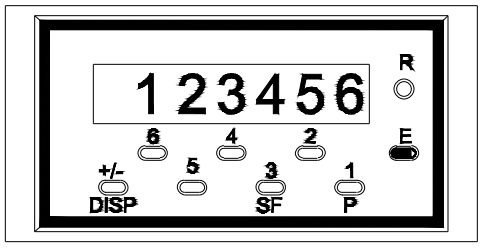


Counter Reset Mode:

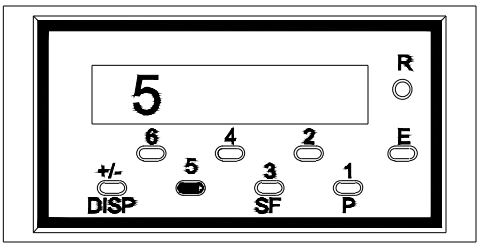


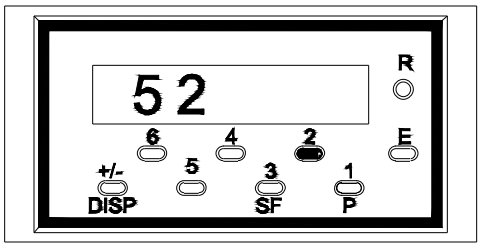


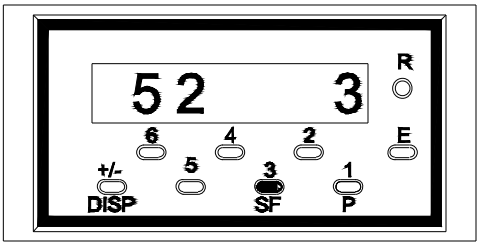


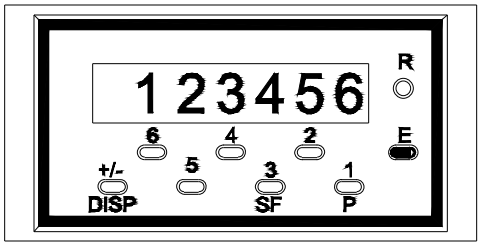


Output Mode:

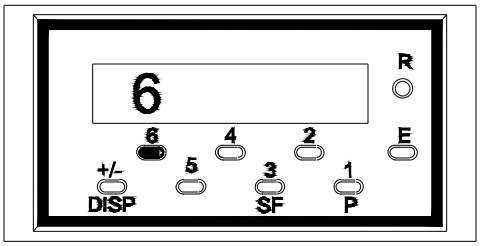


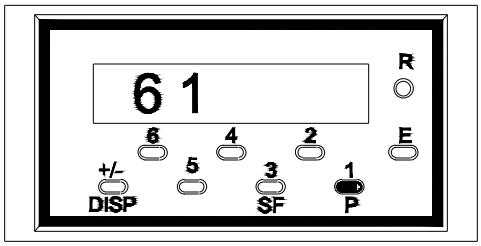


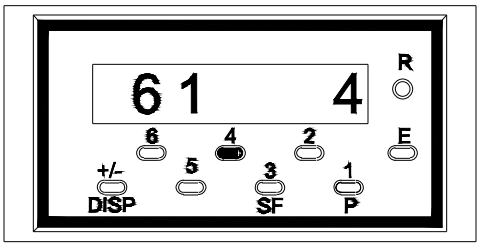


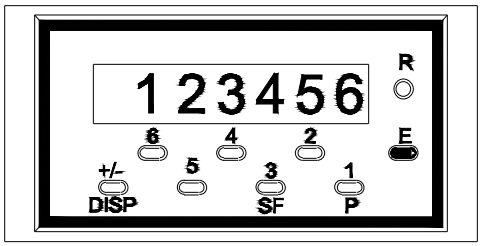


Right Hand Zeros Mode:

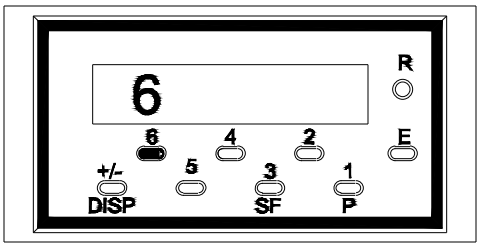


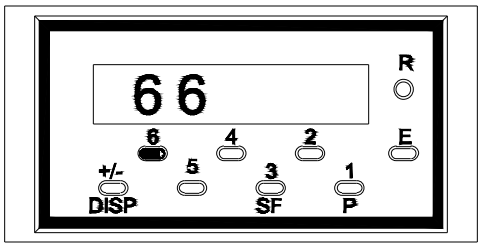


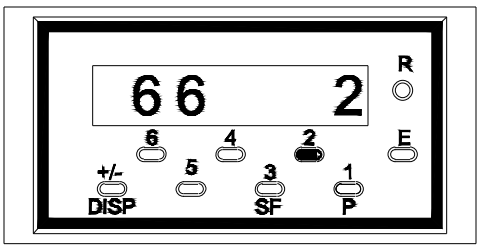


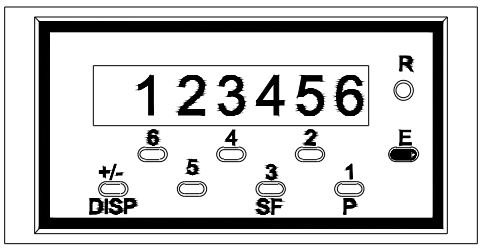


Operator Functions Mode:

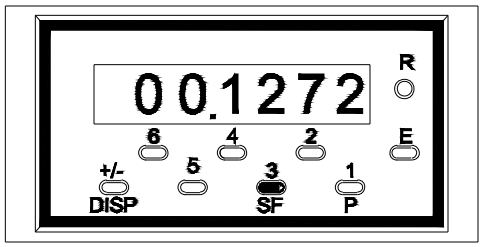


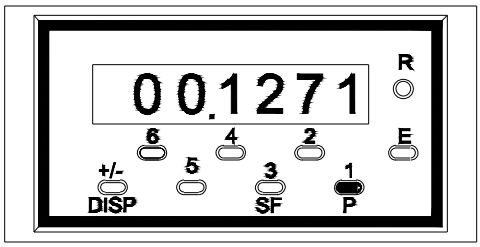


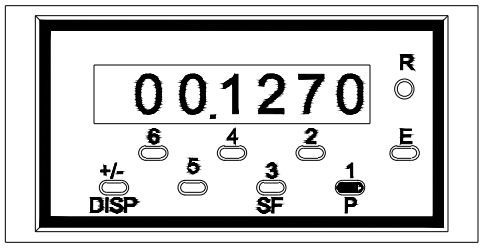


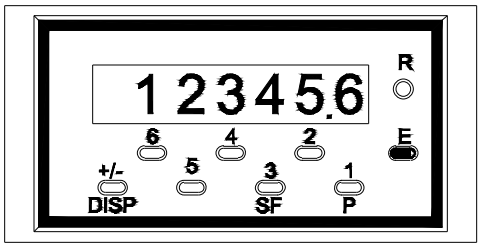


Scale Factor Setting:

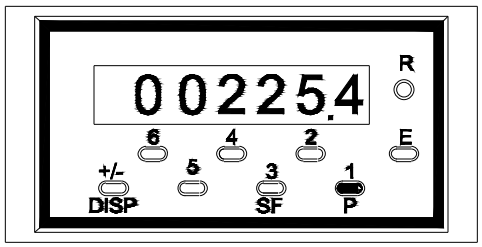


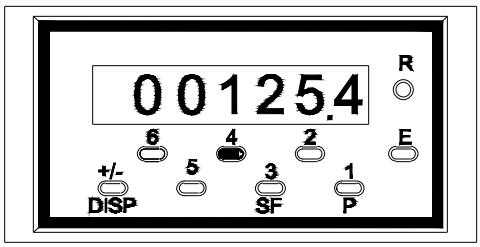


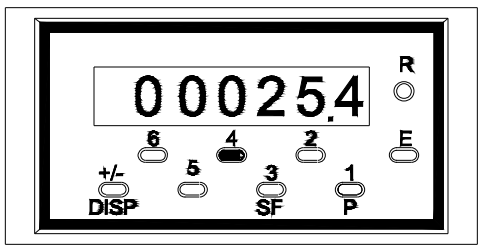


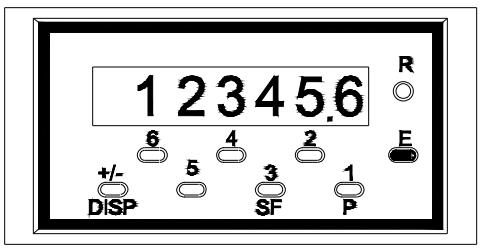


Preset Reset Value:





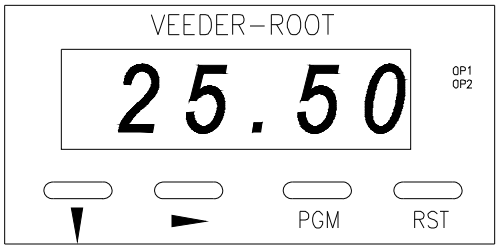




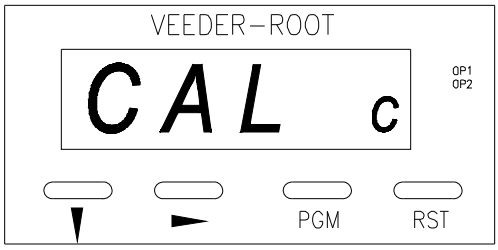
The preset reset is a variable setting somewhere between 12.0mm and 25.4mm. Set this value for each individual cutter. This can be changed without removing the jumper wire.

VEEDER ROOT DIGITAL DISPLAY PROGRAMMING

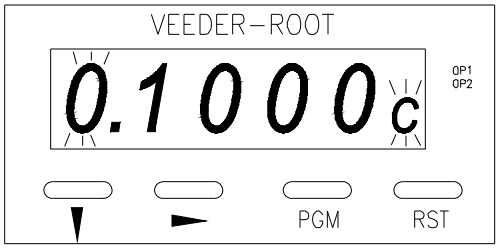
Entering Program Mode and Basic Operation.



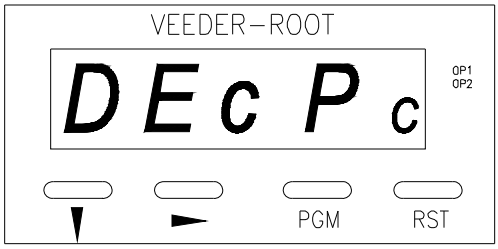
The Program Mode can be accessed from the Operation mode by holding the ***PGM*** key for 3 seconds.



The name of the first parameter will appear on the primary display.
If there is no key activity for 3 seconds, or ► is pressed, next screen will appear.



Pressing the Scroll Key (►) or no key activity for 3 seconds will display the value for that parameter. The secondary display will indicate the one digit identifier for the parameter. The digit in the secondary display will flash to indicate the unit is in Program Mode. If the Scroll Key (►) was pressed (instead of waiting 3 seconds), the unit is in Edit Operation, as indicated by the MSD Flashing. If there had been no key activity for 3 seconds, press the scroll and edit buttons to change the value as in Operation Mode. Press the ***PGM*** key to enter any changes.



Successive presses of the ***PGM*** key will scroll the display through the remaining parameters in the Program Mode. To exit the Program Mode, Press and hold the ***PGM*** key for 3 seconds.

Note: Parameter names will not appear on the main display if the “HELP” function has been disabled in Program Mode.

PARAMETER SEQUENCE FROM OPERATION MODE

PoSn	**Position**

Function: Displays position value.

PGM

PGM

High Alarm Value
Function: Defines the position value at or
above which Alarm 1 will activate.
Setting is ***40.00*** for 320 serial numbers 10795 and lower and
265 serial numbers 1262 and lower.
Setting is ***33.50*** for 320 serial numbers 10796 and up, and
265 serial numbers 1263 and up.

PGM

Low Alarm Value
Function: Defines the position value at or
below which Alarm 2 will activate.
Setting is ***00.50*** for 320 serial numbers 10795 and lower and
265 serial numbers 1262 and lower.
Setting is ***3.00*** for 320 serial numbers 10796 and up and
265 serial numbers 1263 and up.

PARAMETER SEQUENCE FROM PROGRAM MODE

PGM

Calibration Factor
Function: Used to scale the input into engineering by multiplying this value
by the number of pulses received.
Setting is ***0.1000*** for all cutters.

PGM

Decimal Position
Function: Set the decimal point position for
the position and alarm displays.
Setting is ***000.00*** for all cutters.

PGM

Reset Value
Function: Defines the home position by
Selecting a value other than zero or another
value within the displayed range of the
device to which the counter can reset.
This is a variable setting for all cutters and can be recorded here for ease of reprogramming.

Filter Speed
Function: Enables the debounce filter of the counter to properly match the application.

◄►
PGM

Setting is ***10000*** for all cutters.

◄►
PGM

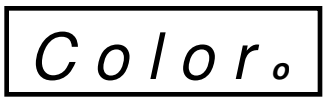
Front Panel Reset Enable
Function: Determines whether the Front Panel Reset Key is to be used to reset the
position display.
Setting is ***DIS*** for all cutters.

◄►
PGM

Retransmission Enable/Select
Function: Determines whether the voltage/
Current is an output, and if so, which range.
Setting is ***NONE*** for all cutters.

◄►
PGM

Serial Communication Enabled
Function: Activates the RS-485
communication option on the board.
Setting is ***NONE*** for all cutters.



◄►
PGM

Display Color Change
Function: Defines the color or the display.
Setting is ***RED*** for all cutters.

◄►
PGM

Preset Lock
Function: Determines whether the Alarm
Value can be changed via the front panel.
Setting is ***EN*** for all cutters.

◄►
PGM

Help Prompt
Function: Determines whether the multi-
character parameter name will appear on the
main display for 3 seconds prior to the
parameter value appearing.
Setting is ***HLP Y*** for all cutters.

PROCUT MPS SERVICE
BLACK TRANSFORMER BOX
320 SERIAL NUMBERS 10206 TO 10687
265 SERIAL NUMBERS 1079 TO 1222

ICON LIST

**** 99999999 ****	Entry to set up routine
●●●●●	Select desired display intensity
0.000 units	Select desired units
-->Flashing numbers	Memory test (or erase)
↑↑↑↑↑ ???????? ↑↑↑↑↑	Drive direction check
▲▲▲▲ 12345..? ▲▲▲▲	Enter max rear value
- - - - - 12345..? - - - - -	Enter false clamp size
▼▼▼▼ 12345..? ▼▼▼▼	Enter minimum front value
???? __ Units/sec. ????	Enter desired drive speed
? .009, counting to .000 ?	Select auto correction or not
???? +-0.000 ????	Enter settling tolerances
?? .000 (or .999) ??	Select "true size" or not
?? **--->>>** ??	Select auto eject or not
???? ????	Calibrate gauge--key in true position
▬ ▬ ▬ ▬ ▬ ▬	Clamp down or not sensing up

SETUP ROUTINE:

The Set Up Routine is used for the initial power up of the MPS Computer. It is not to be used to troubleshoot problems that may happen. This Routine is to allow the MPS Computer to learn the parameters in which it is to operate. Only use this Routine if a motor, circuit board, chip, display or drive box are changed. This Routine has been done at the factory for new installations.

TO ENTER THE SETUP ROUTINE:

Move the backgauge so that it is at least 10 inches (250mm) from the back of the machine. Make sure that the clamp and the knife is in the full up position. Turn the power selector switch to the ON position. The display will start to count from 9 toward 0. At this time press the ***9*** key before counting gets to 5.

NOTE -- *If the numbers are less than 5, DEMONSTRATION mode will be selected.*

1. ●●●●● The display will change intensity. When the brightest screen appears, press **<YES>**.

2. The display will flash .00 in, then .000 in, then .00 cm, .000 cm, .0 mm, .00 mm, .00 sun, .000 sun, etc. When .000 in appears in the display press **<YES>**.

The computer will automatically check the wiring for all of the sensing switches, which were installed. If any are incorrect, a buzzer will pulse and an error message will appear (see ERROR MESSAGES). Otherwise, you will advance to the next step.

3. ↑↑↑↑↑↑↑↑ The display will show a series of up arrows. Press **<▲>** to operate the gauge. **Pro-cut MPS** does not know if the motor is wired correctly, so it will accelerate the motor VERY slowly. If the gauge moves backwards press **<YES>**. If it moves forward press **<NO>**.

If a NO MOTION SEEN error occurs and the gauge was moving, press and hold **<0>** and turn the handwheel to check for encoder operation. Check all connections carefully. If the gauge did not move, check the drive belt and the wires to the motor for poor connections.

4. ▲▲▲▲▲: in. (or cm, mm, sun) Enter maximum rear position.
38.125 for 320 & 265 Models.
29.250 for 265 Spartan.
25.062 for 235

5. ---------: in. (or cm, mm, sun) Enter false paper clamp size.
2.000 for All Models.

6. ▼▼▼▼▼: in. (or cm, mm, sun) Enter minimum front position.
1.000 for 320 & 265 Models.
2.000 for 265 Spartan & 235 Models

This is also a continuation of the SET UP routine. These steps can be accessed from MANUAL mode by pressing **<OPTIONS>**. If accessed from MANUAL mode, the routine can be exited at any time by pressing **<MANUAL>**, **<PROGRAM>**, or **<AUTOMATIC>**.

7. in. (or cm, mm, sun) / sec Enter desired speed (limited by table size).
?????????????????????????? ***5*** for 320 & 265 Models.
3 for 265 Spartan & 235 Models

8. .009, counting to .000 Auto correction on or off.
Press **<NO>** if the backgauge should not correct its position if it is knocked away from the target in AUTOMATIC mode. Press **<YES>** if it should.

NOTE -- *Correction would be turned off if each cut had to be adjusted to meet the image on the sheet. Typically this would be done in cases where final size was not crucial (if the stock was going into a die cutter or another similar process).*

9. +-0.000 Enter the desired settling accuracy (>0).
Use the **<NUMBER>** keys to display the cutting accuracy desired. **Pro-cut MPS** will try to position with zero error every time. The accuracy represents two things. First, the point where the computer will accept a cut cycle in AUTOMATIC mode without signaling an error. Second, the distance the gauge can be moved before it will recorrect, if auto correction is on. The larger this number, the faster the operator can cut the stock. Press **<YES>**.

10. .000, then .999 Choose true or fake position.
Press **<YES>** at .000 if the position should be faked to the perfect programmed position in AUTOMATIC mode. Press **<YES>** at .999 if the true position should always be displayed.

11. **--->→→→?** Auto eject operation on or off.
Press **<YES>** to activate automatic push out operation. Press **<NO>** if you wish push outs to occur only as programmed by the operator. The automatic push out feature will move the backgauge forward about 8 inches (or to the false clamp or minimum front) before any automatic reverse drive if the move was initiated by the knife stroke.

12. The backgauge will now drive to the rear of the machine looking for the position sensor. IT IS IMPERATIVE THAT THE POSITION SWITCH IS ADJUSTED PROPERLY FOR THE GAUGE TO STOP BEFORE HITTING THE REAR OF THE MACHINE. If the backgauge bumps into the rear, turn the power off and then back on. Check the LED indicator on the sensor and adjust the sensor position as needed.

When the gauge reaches the position sensor, the display will ask for a rear reference position. Move the gauge to an EXACT unit value. Use **<NUMBERS>** to display the position of the gauge. Press **<YES>**.

The Set Up Routine is now done and normal operation can now begin.

BACKGAUGE CALIBRATION (Manual Mode Only)

To calibrate the backgauge without using the Set Up Routine.

1. Cut a small lift of paper at an even position (16.000").
2. Move the backgauge ½ of the last size cut. (16.000" / 2 = 8.000") Cut the paper.
3. Stack the sheets if front of the knife on top of the sheets behind the knife.
4. Jog and compare the piles for size. If the piles are the same size then no Calibration is needed. If the sheets on the top of the stack are longer than the bottom, the measure must be made shorter than displayed. If the sheets on the top of the stack are shorter than the bottom, the measure must be made longer than displayed. Approximate the amount needed to correct the measure.
5. Press ***OPTIONS*** key and then the ***LAST*** key. The measure where the backgauge is at will be displayed on the top line. Type in the corrected value using ***NUMBERS*** and then press ***YES***. This will correct the display.
6. Repeat this procedure until both stack of paper are even.

KEY TEST

To test the keys on the keyboards.

1. With power off, press and hold the ***MOVE*** key.
2. Turn on the power and wait till the **VERSION** is displayed.
3. While still holding the ***MOVE*** key press the ***0*** key.
4. Release the ***MOVE*** key.
5. Press any key except ***MANUAL*** and it will be displayed on the screen.
6. Press the ***MANUAL*** key to exit.

ERASE ALL PROGRAMS

To erase all of the programs stored in the MPS Computer.

1. Follow the Set Up Routine Instructions and enter the Set Up Routine.
2. Complete step #1.
3. When step #2 is displayed select a measuring system other than the one being used. This will erase all of the programs.
4. Turn off the power.
5. Turn on the power and enter the Set Up Routine.
6. Complete all steps of the Set Up Routine.

ERROR CODES

NOTE*—Any time a buzzer pulses, the display will show a message that you should read. It will display a row of E's for non-fatal error or a row of X's for fatal error. Use the chart below to diagnose the error code.*

Procut MPS systems contain several error check routines. If a non-fatal error is realized (operation can continue without turning the power off), E's will appear in the display along with a number representing the problem. To escape an error message, press ***(<ANY KEY>).***

ERROR NUMBER	***CAUSE***
0	Full set up routine required for operation.
1	Top of memory exceeded.
2	AC zero cross not detected.
3	Memory retention error at start up.
4	Duplicated memory error at start up.
5	Encoder direction error.
6	No motion seen during motor drive routine.
7	Memory too full for more jobs.
8	Not enough space to insert a cut.
9	Memory failure during set up routine.
10	Clamp sense has a wiring error in set up routine.
11	Cut sense has a wiring error in set up routine.
12	Position sense wiring error in set up routine.
13	No motion seen during set up routine.
14	Drive direction error during set up routine.
15	Smaller rear reference value required.
16	High-speed drive direction error.
17	Drive error during deceleration routine.
18	Drive error in slow speed braking routine.
19	Drive error during brake exit routine.
20	Target value was lost during motor drive routine.
21	Drive error during velocity check routine.
22	Target is too far forward in auto mode.
23	Target value is too far back.
24	Job memory is invalid.
25	The calculated number is too big.
26	The calculated number is too small.
27	Cannot divide by zero.
28	Encoder is turning too slowly—change the gearing.
29	Encoder is turning too quickly—change the gearing.

If a fatal error is realized (power must be turned off and the system reinitialized), X's will appear in the display along with a number representing the problem. The numbers and errors are as follows—

ERROR NUMBER	***CAUSE***
0	The zero set from the encoder is not working.
1	The zero set from the encoder is too late.
2	The zero set from the encoder is too soon.
3	Job memory is losing data at power on.
4	AC+ power failure detected at start up.
5	AC- power failure detected at start up.
6	Position sense wiring error at start up.
7	No motion seen when drive should have occurred.
8	A key was pressed at start up to disable drive.
9	The encoder calibration zero set was missed.
10	Internal data has been lost in the CPU.
11	The watchdog reset has run out. Restart the unit.

PROCUT H-DRIVE MPS SERVICE
320 SERIAL NUMBERS 10688 TO 10769
265 SERIAL NUMBERS 1223 TO 1249

H-DRIVE ICON LIST

Copyrite GMS 1999 Version ?????????	Copyrite and Display Version of Software Version of software in display head
Drive: ????????? =>40" ///// = .5"	Drive Version of Software and OEM lead screw pitch Version of software in drive box
9999's down to 1111's	Power on operation, preparing for auto-calibration routine
++++ Memory test ++++ → number	Memory test in process to verify all combinations of data the number represents the location being tested
??????? 1 = Inch 2 = cm 3 = mm 4 = sun	Use 1, 2, 3, or 4 key to select the units of measurement
*****→→→→→→→→→ →→→→→→→→→→→	Data is being sent from the display to the H-Drive
*****←←←←←←←←← ←←←←←←←←←←	Data is being sent from the H-Drive to the display
↕↕↕↕↕↕↕↕↕↕↕↕↕↕↕↕↕↕↕ ?????????????????	Use drive keys to verify motor drive direction
▲▲▲▲: in. (or cm, mm, sun) ?????????	Enter maximum rear position Keyed in numbers will show in the lower line
---------: in. (or cm, mm, sun) ?????????	Enter clamp shoe (false paper clamp) size Keyed in numbers will show in the lower line
▼▼▼▼: in. (or cm, mm, sun) ?????????	Enter minimum front position Keyed in numbers will show in the lower line
in. (or cm, mm, sun) / sec ?????????????????	Enter desired speed (limited by table size) Keyed in numbers will show in the upper line
+ - 0.000 in. (or cm,mm,sun) ↕----------↕	Accuracy of stopping and auto-correction Keyed in numbers will show in the upper line
---→→→? YES NO	Auto eject operation on or off. To activate automatic push out operation.
*****→→→→→→→→→ →→→→→→→→→→→	Data is being sent from the display to the H-Drive. Please wait while communications between computers is established.
*****←←←←←←←←← ←←←←←←←←←←	Data is being sent from the H-Drive to the display. Please wait while communications between computers is established.
>>>AUTO<<< **********	Press the ***AUTOMATIC*** key. the gauge will be moved to the rear of the cutter automatically to calibrate.
↑↑↑↑↑↑↑↑↑↑↑↑↑↑↑↑↑↑↑ ?????????????????????	Reverse drive check at power on. Please wait while the reverse drive is verified.

↓↓↓↓↓↓↓↓↓↓↓↓↓↓↓↓↓↓ Forward drive check at power on.
?????????????????? Please wait while forward drive is verified.

↑↓↑↓↑???????????↑↓↑↓↑ Calibration drive at power on.
Numbers Please wait. The numbers represent encoder counts, not position.

.000 in. (or cm, mm, sun) Enter an exact reference position.
?????????????????? Gauge must be at the **exact** value keyed in to assure accuracy.

EEEEEEEEEEEEEE Non fatal error--press any key to continue.
See error section of this manual for more information on these messages.

XXXXXXXXXXXXXXXX Fatal error--turn power off and check.
See error section of this manual for more information on these messages.

H-DRIVE SETUP ROUTINE

The Set Up Routine is used for the initial power up of the MPS Computer. It is not to be used to troubleshoot problems that may happen. This Routine is to allow the MPS Computer to learn the parameters in which it is to operate. Only use this Routine if a motor, circuit board, chip, display or drive box are changed. This Routine has been done at the factory for new installations.

TO ENTER THE SET UP ROUTINE:

Move the backgauge so that it is at least 10 inches (250mm) from the back of the machine. Make sure that the clamp and the knife is in the full up position. Turn the power selector switch to the ON position. The display will give the copy write and version screen, the drive version, then will start to count from 9 toward 0. At this time press the ***9*** key before counting gets to 0.

1. ???? 1 = Inch Use ***1,2,3,*** or ***4*** key to select the units of measurement.
   2 = cm 3 = mm 4 = sun

2. ↕↕↕↕↕↕↕↕↕↕↕↕↕↕↕↕↕↕ Use drive keys (▲ or ▼) to verify motor drive direction. Watch the ?????????????????? gauge as you press either ARROW key. Press YES if the gauge is moving the direction of the pressed arrow. Press NO if the direction is wrong.

3. ▲▲▲▲: in. Enter maximum rear position.
   38.125 for 320 & 265 Models.
   29.250 for 265 Spartan.
   25.062 for 235

4. ---------: in. Enter false paper clamp size.
   2.000 for All Models.

5. ▼▼▼▼: in. Enter minimum front position.
   1.000 for 320 & 265 Models.
   2.000 for 265 Spartan & 235 Models

6. in. (or cm, mm, sun) / sec Enter desired speed (limited by table size).
   ?????????????????? ***5*** for 320 & 265 Models.
   3 for 265 Spartan & 235 Models

7. + - 0.000 in. Accuracy
   ↕----------↕ ***0.004*** for All Models

8. **---→→→?** Auto eject operation on or off.
   YES NO ***YES*** to activate automatic push out operation.
   NO if you wish push outs to occur only as programmed by the operator.
   NOTE: **Not all H-Drives have Auto-Eject.**

9. >>>AUTO<<< Press the ***AUTOMATIC*** key.
   ********** The gauge will be moved to the rear of the cutter automatically to calibrate.

10. .000 in. Enter an exact reference position.
    ????????? Gauge must be at the **exact** value keyed in to assure accuracy.

The Set Up Routine is now done and normal operation can now begin.

H-DRIVE EXTRA FUNCTIONS

H-DRIVE BACKGAUGE CALIBRATION (Manual Mode Only)

1. To calibrate backgauge without using Set Up Routine.
2. Cut a small lift of paper at an even position (16.000").
3. Move the backgauge ½ of the last size cut. (16.000" / 2 = 8.000") Cut the paper.
4. Stack the sheets if front of the knife on top of the sheets behind the knife.
5. Jog and compare the piles for size. If the piles are the same size then no Calibration is needed. If the sheets on the top of the stack are longer than the bottom, the measure must be made shorter than displayed. If the sheets on the top of the stack are shorter than the bottom, the measure must be made longer than displayed. Approximate the amount needed to correct the measure.
6. Press ***OPTIONS*** key and then the ***LAST*** key. The measure where the backgauge is at will be displayed on the top line. Type in the corrected value using ***NUMBERS*** and then press ***YES***. This will correct the display.
7. Repeat this procedure until both stack of paper are even.

H-DRIVE KEY TEST
To test the keys on the keyboards.

1. With power off, press and hold the ***YES*** key.
2. Turn on the power and wait till the **Key Test** and the **YES** are displayed.
3. Release the ***YES*** key.
4. Press any key and it will be displayed on the screen.

H-DRIVE ERASE ALL PROGRAMS
To erase all of the programs stored in the MPS Computer.

1. With the power off, press and hold the ***PROGRAM*** key.
2. Turn on the power and wait till it asks if you want to erase all programs in memory.
3. Release the ***PROGRAM*** key.
4. Follow the prompts and answer the questions to erase all programs.

H-DRIVE ERRORS

There are two types of error messages in the MPS Computer. Non-fatal errors are those that have EEEE's shown across the top of the display. These can be recovered from by pressing any key. Fatal errors have XXXX's across the screen. In these cases pressing any key will initiate a full reset with re-calibration. In either case, refer to the number on the bottom line to evaluate the problem.

NON-FATAL ERRORS FROM THE H-DRIVE

b4 AC power sense not operating for motor drive
88 Too many drive motor over currents; speed is being lowered
87 Over current on drive motor; check for binding in back gauge
81 No motion seen during motor drive
80 Target lost at H-Drive; requested target is beyond the limits of the table

NON-FATAL ERRORS FROM THE DISPLAY

27 Clamp shoe size is less than minimum front size; set up routine is required
26 Clamp shoe size is greater than 10 inches; set up routine is required
25 Maximum rear is less than 10 inches; set up routine is required
24 Maximum rear is too big; set up routine is required
23 Sun (Japanese) pitch does not agree with cm pitch; set up routine is required
22 Inch pitch does not agree with cm pitch; set up routine is required
21 Pitch is too great; encoder is turning 10 or more turns per inch; set up routine is required
12 Cut stroke occurred during drive to position
11 Keyed-in number cannot be zero
10 Keyed-in number is too small
9 Keyed-in number is too big
8 Target value is too far back
7 Target value is too far forward
6 Position sensor is tripped (set up routine after memory test when sensors are checked)
5 Memory failure in set up routine (duplicated data does not match)
4 There is not enough space to insert a cut
3 Memory is too full to add this label (or sheet divide) routine
2 Duplicated memory error at start up
1 Memory retention error at start up (by passed by pressing any key but not fixed)

FATAL ERRORS FROM THE H-DRIVE

c0 Too many shaft encoder counts without a zero set
bf Duplicated shaft encoder zero set value has been lost
be Impaired drive at forward test during start up
bd No motion at start up on the forward drive test
bb Impaired drive at reverse test during start up
ba No motion at start up on the reverse drive test
b9 Reverse drive is forward during the start up drive test
b8 Shaft encoder zero set missing after position sense tripped on start up
b7 No motion at start up preset reverse drive
b6 Position sense error
b5 No motion (or backwards) at start up drive; check motor; go through set up routine
b0 Watchdog reset at the H-drive due to power problems; the computer has gotten entirely lost

FATAL ERRORS FROM THE DISPLAY

00 Watchdog reset at the display due to power problems; the computer has gotten entirely lost
01 Pressed key during start up calibration drive has caused immediate shut down

PROCUT MPSII SERVICE
320 SERIAL NUMBERS 10770 AND UP
265 SERIAL NUMBERS 1250 AND UP

THE MPS II SETUP ROUTINE

All **MPS II** units have been programmed to what type of machine they have been installed on so they can operate properly. The information is stored in multiple locations and is verified at any power on. If an error exists the following routine will need to be done. To force this routine, at power on immediately press and hold the ***PROGRAM*** key. When the “key pressed” screen appears, release the key and press ***YES*** to the “enter setup routine?” screen. You will then—

1. Be asked which languages you wish to install and use. Press either ***YES*** or ***NO*** to each language selection. *NOTE*: If you only select 1 language, you will not be asked at startup to select a language resulting in a speedier startup.
2. Erase (or not erase) the job memory. Press ***NO*** if you do not want to erase the jobs. If you select ***YES*** to erase the job memory, you will be asked if you want to save the old memory. The normal response is ***NO***.
3. Wait for the data down load to the drive panel.
4. Test the motor direction. Press the ▲ or ▼ key. If the backgauge moves incorrectly, then remove the power and switch the wires at the motor. If the backgauge moves correctly press ***YES***.
5. Key in the rear table size followed by ***YES***. 235 is ***25.062"***. 320 and 265 is ***38.125"*** before serial # 10769 and #1249. ***35.125"*** is for #10769, #1249, and up.
6. Key in the clamp shoe width followed by ***YES***. ***2.000"*** for all models.
7. Key in the minimum cut followed by ***YES***. ***2.000"*** for 235. ***1.000"*** for 320 and 265.
8. Select the desired backgauge speed. Follow the screen prompt for instructions. ***3*** for 235. ***5*** for 265. ***8*** for 320.
9. Enter the tolerance*. ***.003"*** for all models followed by ***YES***.

The unit will restart automatically.

* The tolerance allows the display to settle on a position. Almost all mechanical systems contain a certain amount of flex or vibration. If the tolerance is too small, any flex or vibration will cause the current position display to flutter between numbers. Generally the tolerance is set to .003 inches (.007 cm), although tighter tolerances can be selected. To insure the display is stable, the drive control will re-correct the gauge anytime that the error is more than half of the tolerance setting. A .003 setting will yield actual accuracy to .0015 inches (.004 cm). Larger tolerances allow faster positioning and faster cutting.

MPS II EXTRA FUNCTIONS

To calibrate for size error.

1. Cut a small lift of paper at an even position (16.000").
2. Move the backgauge ½ of the last size cut. (16.000" / 2 = 8.000") Cut the paper.
3. Stack the sheets if front of the knife on top of the sheets behind the knife.
4. Jog and compare the piles for size. If the piles are the same size then no Calibration is needed. If the sheets on the top of the stack are longer than the bottom, the measure must be made shorter than displayed. If the sheets on the top of the stack are shorter than the bottom, the measure must be made longer than displayed. Approximate the amount needed to correct the measure.
5. Press the ***^ 9*** keys. The measure where the backgauge is at will be displayed on the top left line indicated by backgauge position. Type in the corrected value using ***NUMBERS*** and then press ***YES***. This will correct the display.
6. Repeat this procedure until both stack of paper are even.

ERROR MESSAGES

The control system is constantly checking to make sure that everything is correct during operation. If anything appears to be wrong, a message will appear on the screen. These can be of two different types—

1. Minor, where pressing any key will clear the screen and resume normal operation.
2. Major, where the power will have to be turned off and back on again, or repairs may be necessary.

Note: If the minor error is not corrected, the message will continue.

Minor error prompts:

Entered value is too small!!!	Check keyed in value to move to
This value cannot be zero!!	Cannot divide by 0
Cut stroke early!!	Wait longer before cutting
Job number already used!	Choose a different number
Out of job programming memory!	Memory chip is full erase some of the jobs
Job number not found!!	Try another number
There are no more jobs!!	First 999 used OR no more jobs to review
Not enough available memory!	Label or divide require too much space
The information is incomplete!	Not enough input to continue
Target is out of table range!!	Trying to go too far back or forward
Target lost!!!	Information in computer was lost
No motion seen at backgauge	Bind error or mechanical problem
No motion seen!!	Check encoder or mechanical binding
Loose cable in drive box—fix!	Ribbon cable in H-Drive is disconnected
Loose cable on drive box	D or 5 pin connector are disconnected
Error in the job memory!	Data in memory is invalid setup will be forced
Error in lead screw values!	Inch, cm mm, sun pitches disagree, setup will be forced
Error in machine sizes!!	Machine sizes are impossible for machine setup will be forced

Major error prompts:

Watchdog reset, turn power off	Computer seized, check power and all connections
Key pressed during calibration	Instant shut off
Watchdog reset-drive unit	Computer in H-Drive seized check power and all connections
No motion-forward drive test!	Drive test failed, check motor
Position sense error!!	Check for unplugged connector
No motion-reverse drive test!	Drive test failed, check motor
Zero set missing-calibration!	Check for loose cable to the encoder
Reverse drive is forward!!	Drive test failed reverse motor wires
No motion at start up reverse!	Drive test failed, check motor
Impaired drive at reverse test	Drive test failed
No motion at start up forward!	Drive test failed, check motor
Impaired drive at forward test	Drive test failed, check motor
H-Drive data lost on zero set!	Computer malfunction, check power and all connections
Encoder error-missed zero set	Check connections to the encoder
Improper data download!	Check connections between drive box and display
Value is out of range. Must be … try again	Recalibration value error, check the displayed allowed range and

MPS II HIDDEN KEY FUNCTIONS

The **MPS II** has several functions that can be accessed by hidden keys. Some of these functions are diagnostic or troubleshooting functions. Others are for operators. You must decide which you can teach.

1. Press ***MOVE*** at power on for burn in mode.
    a. Press ***YES*** and you will be taken to the operation screen. A program can now be selected or created. When ***AUTO*** is pressed it will run the backgauge from position to position until ***MANUAL*** is pressed.
    b. Press ***^(SHIFT)*** at burn in mode question screen to review fonts
    c. Press ***PROGRAM*** and the duplicated memory is destroyed and the setup routine is forced
    d. Press ***1, 2, and 3*** to read the jumper wires.

2. Press ***AUTO*** at power on for prompt review. Instructions appear on the screen.

3. Press ***PROGRAM*** at power on to enter setup routine. Press ***^9*** to go directly to the speed and tolerance settings.

4. Press ***MANUAL*** at power on to enter demonstration mode. A program can now be selected or created. When ***AUTO*** is pressed it will run the display without moving the backgauge. It will pause then move to the next position. Turn off power to quit.

5. In the MANUAL MODE, press ***^5*** then ***^7*** to adjust speed and tolerance.

6. Press any other key than listed above and you will be placed in the key test routine.

7. Press ***REVIEW*** at power on to erase user programs.

MPS TROUBLSHOOTING GUIDE

The Pro-cut MPS is designed to be very easy to service and maintain. In general turning the power off and back on to see if things straighten out automatically should attack complications in the computer. If this occurs frequently (more than once a year, excluding thunder storms), the AC power should be checked. Refer to the WIRING section in this manual. Connections on the display console or electrical problems within the machine itself could also be at fault. Plug all connectors in and out a few times to make sure they are clean. Refer to the MAINTENANCE section in this manual.

BASIC TROUBLESHOOTING

The **Pro-cut MPS** display console houses printed circuit boards--the CPU board and three keyboards. In general, these parts are not user serviceable. The display console has been designed with a universal mount and plug-in connecting cables so that it is very easy to remove and exchange. This would be the procedure for any serious problems in the computer.

There are, however, a number if problems that can be taken care of by the service person. The following contains titles of possible problems and steps to take if a problem does exist.

NOTE: During thunderstorms or in the event of some severe electrical disturbance, it is possible for any computer to "lose track" of itself. If such a failure occurs, turning the power off and then back on should correct it.

1. **Pro-cut MPS** WILL NOT SWITCH ON:

    a. The power switch on the machine is not on.
    b. The wall circuit breaker has been turned off or is tripped.
    c. There is a blown fuse somewhere in the supply line. Replace.
    d. Check the power indicator LED'S on the side of the drive box.

2. **Pro-Cut MPS** DEFAULTS INTO SET UP ROUTINE.

    a. Memory has been contaminated. Go through the SET UP routine to correct this.

NOTE -- *If this occurs frequently, to make sure all cables and connections are secure. If this does not cure the problem replace the memory chip inside the unit.*

3. **Pro-cut MPS** HAS NO BACKGAUGE DRIVE.

    a. The motor belt or pulley is loose.
    b. Check for a mechanical bind--oil the lead screw and check for tightness in backgauge unit.
    c. The motor brushes are bad. Examine them for wear.
    d. Check the Motor LED'S on the side of the drive box. Will be illuminated if power is going to motor.
    e. Check the Sensor LED'S on the side of the drive box. Clamp and knife must be illuminated.

4. **Pro-cut MPS** DOES NOT COUNT ONE FOR ONE WITH THE TABLE:

    a. The reference values used in the SET UP routine were not exact.
    b. The shaft encoder or the lead screw sprocket is loose. Check for tightness. Mark the sprockets at a mechanical reference point and run the backgauge back and forth. Check the markings at the same reference point for alignment.

5. **Pro-cut MPS** HAS IMPROPER OR ERRATIC COUNTING (BACKGAUGE POSITION).

    a. The shaft encoder cable has failed. Check the cable for bad connections. Replace if necessary.
    b. The encoder has failed. Check status on drive box. Replace if necessary

NOTE -- *Cable connections can fail due to contamination. Keep the cable ends away from dirt and oil (etc.) when they are not connected. Sometimes just removing the connector and putting it back on can cure a connection problem here. The sliding action of the pins can help self clean them. It is a good idea to insert and remove the cables a few times at the time of installation.*

6. **Pro-cut MPS** TENDS TO SUFFER COUNT FAILURES.

    a. Connection problem. See previous paragraph (5).
    b. The shaft encoder is failing. Replace the shaft encoder.

7. **Pro-cut MPS** HAS IRRELEVANT DATA IN THE MEMORY.

    a. The memory was not erased at the time of installation. Follow procedure to erase memory.

8. **Pro-cut MPS** IS OUT OF MEMORY.

    a. Memory was not erased at the time of installation. Follow procedure to erase memory.
    b. All of the job memory space has been used. Delete unused jobs as desired or follow procedure to erase memory

9. **Pro-cut MPS** DOES NOT ADVANCE TO THE NEXT CUT IN AUTOMATIC.

    a. The cut sensor is out of adjustment. Adjust the sensor as necessary.

10. **Pro-cut MPS** BACKGUAGE DOES NOT MOVE AND DASHED LINES ON DISPLAY.

    a. The clamp sensor is out of adjustment. Adjust the sensor as necessary.