

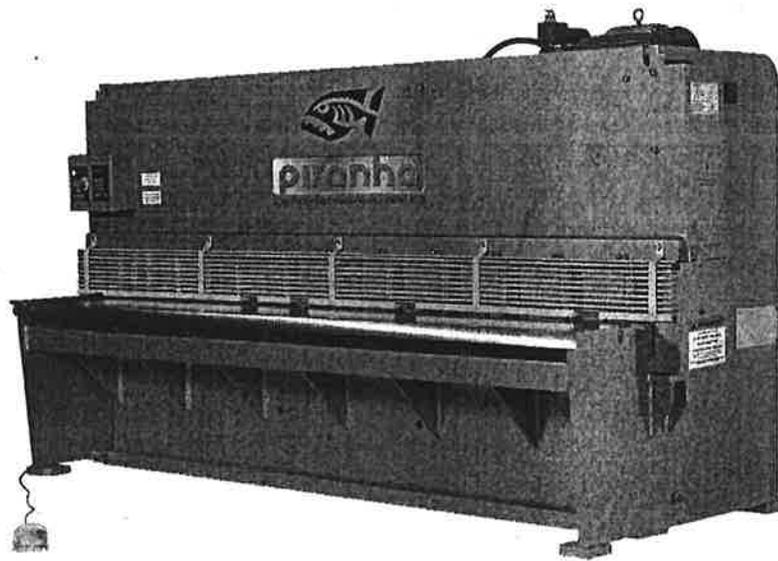
# 1/4" SHEAR



**piranha**

IRONWORKERS • PRESS BRAKES • SHEARS • BENDING ROLLS

Serial No. 1220



## Instructions & Repair Parts Manual for Piranha 1/4" Shear

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Piranha ■ P.O. Box 457 ■ Hutchinson, Kansas 67504  
Voice (800) 338-5471 ■ Fax (620) 662-1719 ■ Web Site [www.piranhafab.com](http://www.piranhafab.com)

## 1. Safety

Safety must be a primary concern. When operating or performing maintenance procedures, follow all standard safety guidelines. Do not wear loose fitting clothing or any articles that may be pulled into any moving parts.

Be sure that when operating the equipment, all safety devices operate properly. Never under any circumstances disable, remove, or alter the original configuration of the safety system.

Should any component of the safety system become inoperable, immediately discontinue operation, and notify a supervisor.

- ! **NEVER** place fingers, hands, or any other body part in or under the blade area or other moving mechanisms.
- ! Proper eye protection must be worn at all times when operating the machine.
- ! Always insure that the machine is turned **OFF** before servicing the machine.

Read and understand this manual prior to operating the machine.

The area around the Piranha Shear should be well lighted, dry, and free of obstacles.

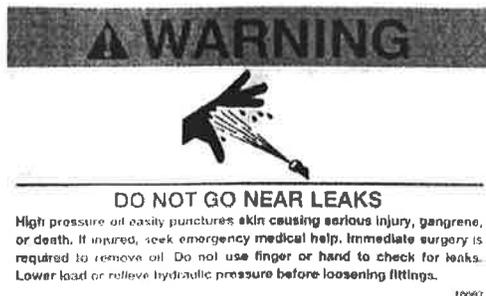
The Piranha Shear is designed for single person operation only.

When servicing the machine, always practice standard lockout/tag-out procedures to avoid personal injury.

Qualified maintenance personnel only should perform service operations on the Piranha 1/4-12 Shear.

### 1.1. Warning Labels

Located around the Piranha Shear are labels warning the operator of various dangers and precautions to be aware of when operating or servicing the machine.



Do not go near leaks

High-pressure oil easily punctures skin causing injury, gangrene and even death. If injured, seek emergency medical help.

Immediate surgery is required to remove oil. Do not use finger or hand to check for leaks. Lower load or relieve pressure before loosening fittings.

Part – T0067

**⚠ WARNING**

**Keep hands and body clear of moving parts.**

Keep hands clear of moving parts.  
Part – T0068

T0068

**⚠ WARNING**

**TO PREVENT SERIOUS BODILY INJURY  
DO NOT REMOVE THROAT GUARD  
EXCEPT WHEN SLITTING.  
REPLACE FOR NORMAL OPERATION.**

IT IS THE EMPLOYER'S RESPONSIBILITY TO IMPLEMENT THE ABOVE AND ALSO TO PROVIDE PROPER DEVICES OR MEANS THAT MAY BE NECESSARY OR REQUIRED FOR ANY PARTICULAR USE, OPERATION SET-UP OR SERVICE.

**DO NOT REMOVE THIS SIGN FROM THIS MACHINE**

T0379

To prevent serious bodily injury do not remove throat guard except when slitting. Replace for normal operation. It is the employer's responsibility to implement the above and also to provide proper devices or means that may be necessary or required for any particular use, operation set-up or service.

Part – T0379

**⚠ WARNING**

**TO PREVENT SERIOUS BODILY INJURY  
NEVER PLACE ANY PART OF YOUR BODY UNDER THE HOLDDOWN OR RAM(S) OR MECHANISMS, OR WITHIN THE KNIFE BLADE AREA.  
NEVER OPERATE, INSTALL KNIFE BLADES, OR MAINTAIN THIS MACHINE WITHOUT PROPER INSTRUCTIONS AND WITHOUT FIRST READING AND UNDERSTANDING THE OPERATORS OR MACHINE MANUAL.  
NEVER OPERATE WITHOUT FINGER GUARD PROPERLY INSTALLED.  
NEVER HAVE MAIN MOTOR "ON" DURING REMOVAL, INSTALLATION, OR ADJUSTMENT OF KNIFE BLADES, SCRAP CLEANOUT, OR, FOR ANY SERVICING/MAINTENANCE WHATSOEVER.**

IT IS THE EMPLOYER'S RESPONSIBILITY TO IMPLEMENT THE ABOVE AND ALSO TO PROVIDE PROPER DEVICES OR MEANS THAT MAY BE NECESSARY OR REQUIRED FOR ANY PARTICULAR USE, OPERATION SET-UP OR SERVICE.

**DO NOT REMOVE THIS SIGN FROM THIS MACHINE**

T0380

To prevent serious bodily injury; Never place any part of your body under the hold down or ram (slide) mechanisms; or within the knife blade area.

Never operate, install knife blades, or maintain this machine without first reading and understanding the operators or machine manual.

Never operate without the finger guard properly installed.

Never have main motor "on" during removal, installation, or adjustment of knife blades; scrap cleanout; or, for any servicing/maintenance whatsoever.

It is the employer's responsibility to implement the above and also to provide proper devices or means that may be necessary or required for any particular use, operation set-up or service.

Part – T0380

**⚠ WARNING**

TO INSURE PROPER OPERATION OF SHEAR BACK GAUGE;

- NEVER** RAM MATERIAL AGAINST BACK GAUGE.
- NEVER** USE BACK GAUGE DRIVE TO MOVE MATERIAL BEING CUT ON TABLE.
- NEVER** PASS MATERIAL BEING CUT OVER OR UNDER BACK GAUGE
- ALWAYS** USE DISAPPEARING FEATURE WHEN CUTTING PARTS LARGER THAN NORMAL BACK GAUGE RANGE.

FAILURE TO FOLLOW THESE INSTRUCTIONS MAY RESULT IN DAMAGE TO BACK GAUGE  
ALWAYS REFER TO OPERATION MANUAL FOR PROPER USE OF MACHINE.

DO NOT REMOVE THIS SIGN FROM THIS MACHINE

T0381

**⚠ CAUTION**

**MOVING PART  
DO NOT  
OBSTRUCT**

DO NOT REMOVE THIS SIGN FROM THIS MACHINE

T0382

**⚠ WARNING**

TO PREVENT SERIOUS BODILY INJURY  
**DO NOT ENTER REAR  
AREA OF MACHINE  
WHILE IN OPERATION**

IT IS THE EMPLOYER'S RESPONSIBILITY TO IMPLEMENT THE ABOVE AND ALSO TO  
PROVIDE PROPER DEVICES OR MEANS THAT MAY BE NECESSARY OR REQUIRED FOR  
ANY PARTICULAR USE, OPERATION SET-UP OR SERVICE.

DO NOT REMOVE THIS SIGN FROM THIS MACHINE

T0383

To insure proper operation of shear back gauge;

Never ram material against back gauge.

Never use back gauge drive to move material being cut on table.

Never pass material being cut over or under back gauge.

Always use disappearing feature cutting parts larger than normal back gauge range.

Failure to follow these instructions may result in damage to back gauge. Always refer to operation manual for proper use of machine

Part – T0381

Moving part; do not obstruct.

Part – T0382

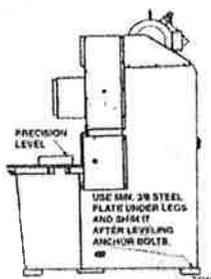
To prevent serious bodily injury;

Do not enter rear area of machine while in operation.

It is the employer's responsibility to implement the above and also to provide proper devices or means that may be necessary or required for any particular use, operation set-up or service.

Part – T0383

**IMPORTANT  
NOTE**  
BOTH ENDS OF THE BED  
TO BE LEVELED WITHIN  
0.0005 INCH/FOOT  
FOR PROPER OPERATION  
RUNNING MACHINE IN  
OUT OF LEVEL CONDITION  
WILL VOID WARRANTY.



Both ends of the bed are to be leveled within 0.0005 inch/foot for proper operation. Running the machine out of level will cause damage and void the warranty.

Part – T0384



**Maximum allowable  
clearance underneath  
finger guard is 1/2"**

Maximum allowable clearance under finger guard is 1/2".

Part – T0936

T0936

## 1.2. Safety

1. Immediately report any questionable operation, unusual action, unsafe condition or improper maintenance to the proper personnel.
2. When working with other people insure that all persons are clear of the shear prior to machine operation.
3. Insure that the proper safe material handling equipment (tongs, pliers, vacuum lifters or other mechanical devices) available to the shear operator.
4. When changing the settings of shear controls, insure that the controls are properly adjusted and test cycle the machine to verify correct operation.
5. Insure that all devices are in proper working order.
6. Anytime that the machine has been left unattended or inoperative for even a brief time, verify the correct position of all controls and proper shear operation.
7. Develop a sense of safety for yourself and any persons around you as well as your surrounding area.

### **1.3. Safety Standards & Specifications**

#### **Electrical System Design/Manufacture:**

The machines manufactured in Hutchinson, KS, are furnished with electrical/electronic products that are UL (Underwriter's Laboratory) approved. These components have the UL numbers printed or stamped on them and can be easily traced to the point of manufacture.

#### **Hydraulic System Design/Manufacture:**

Hydraulic components used in Piranha machines are approved by NFPA (National Fluid Power Association), and those approval numbers can be traced through the manufacturer's part numbers.

#### **ANSI/OSHA Compliance:**

Mega Manufacturing meets the current ANSI construction standards for manufacturing of ironworkers, press brakes, and shears:

#### **ANSI B11.4—Shears, Construction, Care, and Use**

The ANSI B11 standards were developed to establish levels of responsibility for manufacturing safe products, installation, training, and use of these products. The levels of responsibility are fairly evenly distributed between the manufacturer, the owner/end user of the equipment, and the operator. Specific guarding requirements are in general assigned to the owner/end user of the equipment.

Please understand that this ruling places the primary burden of responsibility for maintenance of guarding on the owner /end user of the equipment. Inherent in this requirement is the responsibility of the owner/end user of the equipment to develop and maintain guarding specific to their application for the equipment. These ANSI safety requirements may be acquired from:

**American National Standard Institute**  
254 West 43<sup>rd</sup> Street  
New York, New York 10036  
Telephone (212) 302-1286  
[www.ansi.org](http://www.ansi.org)

**PO Box 457**  
**Hutchinson, KS 67504-0457**  
**Phone: (800) 338-5471**  
**Fax: (620) 669-8964**

## 2. Introduction

The Piranha Shear is a heavy steel constructed, high performance hydraulic powered machine that provides you several important advantages surpassing most other shears in today's market. The Piranha's single hydraulic cylinder and mechanical linkage system provides the following advantages: 1. The upper shear blade moves parallel to the lower blade thus providing maximum blade life, 2. Full length gibbs guide the ram laterally and front-to-back at all times during the shearing process thus increasing rigidity, shearing accuracy, and blade life, 3. The straight-line shearing action improves shearing accuracy in all metal thickness.

The machine is fully assembled requiring only hydraulic oil and electrical power to become fully operational. The heavy steel "C" frames, interlocking cross members, ram, and bed provide the rigidity and resistance to deflection that is necessary for accurate performance. State-of-the-art, maintenance-free, aerospace bearings provide high load capacity and low friction in the form of a thin walled sleeve. They are completely non-metallic and require no lubrication.

Other standard features include: Full length hardened slides with non-metallic ways, hydraulic hold downs with replaceable polyurethane shoes, heavy duty, inch/mm motorized, disappearing back gauge with Go-To features and .100" retract feature on each stroke. A 53" squaring arm with recessed inch/mm scale, four-edge high chrome, high carbon shear blades top and bottom.

Proper understanding and application of the information and procedures given in this manual will aid in establishing a preventative maintenance program and provide assistance for correcting malfunctions that may occur in the machine. The repair parts list provides information for part procurement and assembly breakdowns to aid in disassembly and re-assembly for repair parts installation. Please have machine serial number available when contacting the factory for service or repair parts.

### Warranty

Mega Mfg. will replace or repair with like parts, either new or rebuilt, F.O.B. the factory, or refund the purchase price for any parts on ironworkers, pressbrakes, or shears, which are defective in materials and workmanship within (12) months of the date of purchase. Provided the buyer returns the warranty registration within (30) days of the purchase date, and, at the seller's option, returns the defective materials freight and delivery prepaid to the seller, which shall be the buyer's sole remedy for the defective materials. A 5 year warranty against defects in materials and workmanship applies to major structural components on pressbrakes and shears. Seller shall not be liable to purchaser or any other person for consequential or incidental damages. Hydraulic and electrical components are subject to their respective manufacturer's warranties. This warranty does not apply to machines and/or components which have been altered in any way, or subjected to abusive or abnormal use, inadequate maintenance and lubrication, or to use beyond seller recommended capacities and specifications. Seller shall not be liable under any circumstances for labor costs expended on such goods or consequential damages. Seller shall not be liable to purchaser or any other person for loss or damage directly or indirectly arising from the use of the goods or any other cause. No employee, agent, officer, or seller is authorized to make oral representations or warranty of fitness or to waive any of the foregoing terms of sale and none shall be binding on the seller.

## 4. Operator Controls

Operator selectable controls are provided on the Pedestal Control and on the Main Control Panel. Functionality of both stations is described in the following subsections.

### 4.1. Main Control Panel Programmable CNC

The main control panel is located on the left hand side of the Piranha Shear. The following subsections describe the controls located on this panel.



Figure 4: Main Control Panel-Programmable CNC

#### 4.1.1. Start

Depressing the green Start pushbutton will apply power to the electric motor that drives the Piranha Shear hydraulic power unit.

#### 4.1.2. Stop

Depressing the stop button will stop the pump motor, but will maintain electrical power to the backgauge control. Re-calibration of the backgauge is not required when the Stop button is depressed.

#### 4.1.3. E-Stop

When you depress the emergency stop, electrical power will be removed from the drive motor and all base machine control circuits, stopping all machine movement. Twist the button clockwise to reset it. The machine cannot start until the E-Stop button has been reset. The backgauge must go through its calibration sequence when the machine is powered up again.

#### **4.1.4. Up Button**

The up button will raise the ram from any position to the full up position

#### **4.1.5. Cut Length Selector Switch**

The cut length selector switch controls the stroke depth of the ram. Shortening the ram stroke permits rapid shearing of shorter material.

#### **4.1.6. Mode Selector Switch**

The run mode selector switch permits three operating modes:

**Single:** The ram will descend when the footswitch is depressed and will pause when the footswitch is released at any point during the down stroke. The shear ram will complete only one cycle in this mode. The footswitch must be reactivated to begin a new shearing cycle.

**Jog:** During a shear cycle, the ram will stop when the footswitch is released.

**Continuous:** The ram will cycle continuously when the footswitch is depressed. Releasing the footswitch during the down stroke will cause the ram to stop, releasing the footswitch during the upstroke will not affect the return stroke of the ram.

#### **4.1.7. Shadow Light Switch**

The shadow light switch will turn on lights that cast a shadow line onto the material being sheared.

## 4.2. Backgauge Control-Programmable CNC

### 4.2.1 Keypad Functions



**MAIN BACKGAUGE CONTROL CONSOLE**

### 4.2.2 Calibration / Re-calibration

On initial power up or when the E-Stop button has been depressed, the backgauge /controller must be calibrated. The controller will sequence through a start routine and ask for the calibration button to be depressed. Simply depress the "CAL" (F2) button and the backgauge will automatically perform the calibration sequence.



**CALIBRATION SCREEN**

### 4.2.3 Programming A Job

When the calibration sequence has been performed, the controller will display the "MAIN SCREEN". See Figure #3.



### MAIN SCREEN

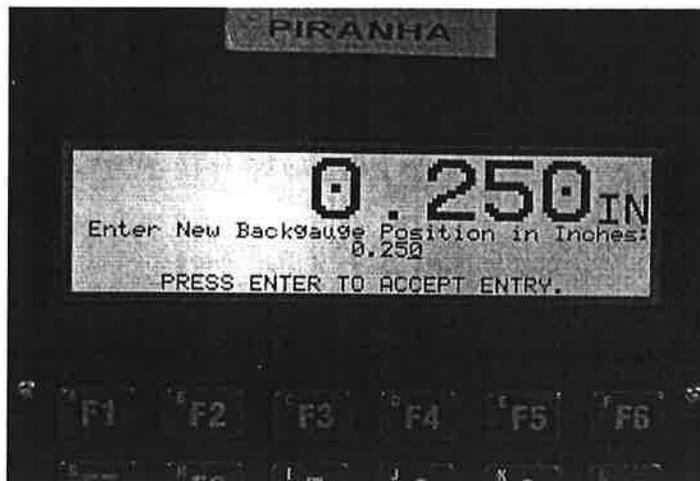
**IN/MM:** Depress the IN/MM button to toggle between Inch and MM modes. Programming may be done in either mode.

**RETR:** Depressing the RETR button will cause the backgauge to position in the fully retracted mode, i.e.: the backstop bar will be positioned at the furthest dimension and parked in the “disappearing position.”

Two options are available for programming a job, a single “Go-To” dimension, or a multi step job.

#### 4.2.3.1 Go-To Function

Depress the “Go-To” button, enter the desired dimension (must be between .250 & 36.00”) and press enter. The control will display an “Entry accepted” message and the backgauge will move to the programmed position. Position the material against the backstop bar, operate the footswitch to initiate the shear cycle.



### GO-TO SCREEN

### 4.2.3.2 Programming Jobs

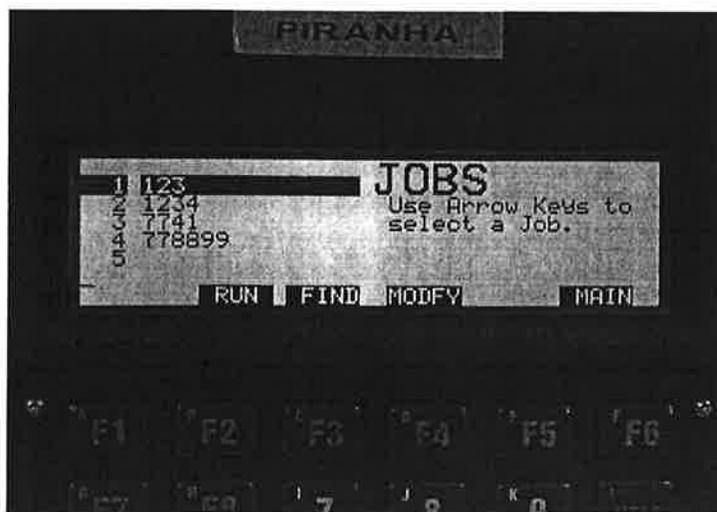
To program a multi step job, perform the following steps:

1. Depress the "JOBS" button (F1)
2. Use the up or down arrow keys to select a blank job field.
3. Depress the "MODIFY" button.
4. Depress the "NEW" button.
5. Enter a job name. The entry may be all alphas, numeric or alphanumeric. To use the alpha characters, depress the "SHIFT" button which is located on the lower left corner of the keypad.

1 to 100

**Note:** If you make an error entering the job title, use the left/right arrow button to move the cursor under the incorrect digit, press the "DEL" button, and continue entering the correct information.

6. When the job title is programmed, depress the "ENTER" button.
7. Depress the "EDIT" button.
8. Enter the target backgauge dimension and depress the "ENTER" button.
9. Enter the number of cuts (or cycles) in the "Reps" field; depress the "ENTER" button.
10. To enter additional steps or cycles, depress the "ADD" (F1) button and repeat steps 8 & 9.
11. If one of the steps requires the backgauge to retract fully, depress the "RTRCT" button (F5) in the "Length" field.
12. When the job is programmed, depress the: "DONE" (F6) button.
13. To run the job, depress the "DONE" button.
14. Depress the "RUN" button.
15. Depress the "ENTER" button, and the backgauge will advance to the position programmed in step 1.
16. When the complete job has been cycled, the screen will display "JOB COMPLETE".
17. Depress the "OK" (F5) button and the screen will revert to the "MAIN SCREEN" display.



MULTI-STEP JOB SCREEN

#### 4.2.4 Recalling and Running an Existing Job

1. From the Main screen, depress the "JOBS" button (F1)
2. Using the up/down arrow buttons, maneuver the desired job to the highlighted field and depress "RUN" (F2).
3. Enter the number of cycles required to run this job.
4. The screen will display a confirmation of the job number to run, depress the "ENTER" button to run the job.

#### 4.2.5 Editing a Job

1. From the Main screen, depress the "JOBS" button (F1)
2. Using the up/down arrow buttons, maneuver the job list to the highlighted field and depress "MODIFY" (F4).
3. The "JOB ENTRY" screen will display.
4. Depress the "EDIT" (F3) button.
5. The parameters of each step will display. Using the up/down arrow buttons, move the field to the step to edit and depress the "EDIT" (F2) button.
6. Edit the first field or press the "ENTER" button to advance to the next field to be changed. Make the desired changes and depress the "ENTER" button to accept the changes.
7. Depress the "DONE" (F6) button to complete the sequence.
8. Depress the "DONE" (F6) button again to enter the "JOBS" screen.

#### 4.2.6 Renaming a Job

1. From the Main screen, depress the "JOBS" (F1) button
2. Using the up/down arrow buttons, maneuver the job list to the highlighted field and depress "MODIFY" (F4).
3. The "JOB ENTRY" screen will display.
4. Depress the "RENAM" (F2) button.
5. Enter the new name for the job,
6. Depress the "ENTER" button to accept the changes.
7. Depress the "DONE" (F6) button to complete the sequence.

#### 4.2.7 Copying a Job

1. From the Main screen, depress the "JOBS" (F1) button
2. Using the up/down arrow buttons, maneuver the job list to the highlighted field and depress "MODIFY" (F4).
3. The "JOB ENTRY" screen will display.
4. Depress the "COPY" (F4) button.
5. The COPY screen will display information stating the "copy from XXX and the New Job will be XXX (2)"
6. Depress the "OK" (F2) button.
7. The job will be copied and renamed XXX (2).
8. To rename the job, use the up/down arrow buttons, maneuver the job to the highlighted field.
8. Depress the "RENAM" (F2) button.
9. Enter the new name for the job,
10. Depress the "ENTER" button to accept the changes.
11. Depress the "DONE" (F6) button to complete the sequence.

#### 4.2.8 Stroke Counter

1. From the Main screen, depress the "RESET" (F3) button
2. To reset the stroke counter, depress the "STRKS" (F4) button.
3. Depress "DONE" (F6) button.

#### 4.2.9 Hour Meter

1. From the Main screen, depress the "RESET" (F3) button
2. To reset the hour meter, depress the "HOURS" (F2) button.
3. Depress "DONE" (F6) button.

#### 4.2.10 Protected Access Screens

F7, - F9 are dedicated function pushbuttons.

F9 will return an operator to the "MAIN SCREEN"

F7 is a protected access screen for supervisor entry. This screen permits the resetting of service-required messages and other machine tuning functions. A temporary access code (9999) is programmed, permitting initial access to the protected screen. This enables a supervisor to enter preferred access code. The following section describes the functions available in the Supervisor Screen.

**Delay Time:** Permits programming a "global" time delay between shearing cycles in Continuous Mode.

**Zero Offset:** Permits electronic tuning of the backgauge calibration position. This is a "global" adjustment.

##### **Zero Offset Adjustment Procedure:**

1. Press F7 Button
2. Enter password, Factory Default is 9999
3. Press Enter
4. Press Zero Offset button (F2)
5. Enter correction dimension
6. Press Enter
7. Press Done (F6)

**Service Notes:** At predetermined intervals, a \*Svc. Req'd message will appear in the upper left corner of the display. This function reminds the operator or maintenance department that scheduled preventative maintenance is due. Depressing the "SERVICE NOTES" (F3) pushbutton will display the maintenance requirements for this service cycle. Piranha highly recommends that this schedule is followed. Failure to do so may result in unscheduled maintenance requirements. Follow on-screen instructions to reset the service timer.

**To clear the service reminder,** press F7 and enter the Supervisor password (Factory default password is 9999) and press Enter. Press F3 – Clear – Done.

**Reset:** Supervisor Hours & Supervisor Strokes

**New Password:** Permits supervisor(s) to change password at their discretion.

**F8:** is a Mega protected screen and is only accessible through a password supplied by the factory. This section contains vital machine operational codes and settings and must not be accessed without authorization and supervision from a Piranha service engineer.

### 4.3. Main Control Panel Programmable GOTO

The main control panel is located on the left hand side of the Piranha Shear. The following subsections describe the controls located on this panel.



Figure 5: Main Control Panel-Programmable GOTO

#### 4.3.1. Start

Depressing the green Start pushbutton will apply power to the electric motor that drives the Piranha 1/4-12 Shear hydraulic power unit.

#### 4.3.2. Stop

Depressing the stop button will stop the pump motor.

#### 4.3.3. Up Button

The up button will raise the ram from any position to the full up position

#### 4.3.4. Mode Selector Switch

The run mode selector switch permits the operator to select between three operating modes:

**Single:** The ram will descend when the footswitch is depressed and will pause when the footswitch is released at any point during the down stroke. The shear ram will complete only one cycle in this mode. The footswitch must be reactivated to begin a new shearing cycle.

**Jog:** During a shear cycle, the ram will stop when the footswitch is released.

**Continuous:** The ram will cycle continuously when the footswitch is depressed. Releasing the footswitch during the down stroke will cause the ram to stop, releasing the footswitch during the upstroke will not affect the return stroke of the ram.

#### 4.4. Backgauge Control-Programmable GOTO

##### 4.4.1. Programming and Data Entry Keys

**0-9** Use the number keys to input numerical values, or to perform special functions when used in conjunction with the Function (FCN) key.

**IN/MM** Select measurement unit (inch or metric). Depress this key to toggle between the two modes.

**FCN** Function key is used in conjunction with other data entry keys to enable special functions.

**CAL** Used to enable calibrate the backgauge.

**GO** Used to initiate backgauge movement to a programmed position.

**CLR** Clears data entry, zeros display, cancels preset mode.

**Decimal** Used to enter decimal during data entry. Restores display to target after GO has been depressed.

**Decimal Blinking** Target dimension is being displayed, to view actual dimension, momentarily depress CAL button.

**Decimal Solid** Actual position is being displayed, to view target dimension, depress decimal point button.

##### 4.4.2. Programming Functions

###### 4.4.2.1. Backgauge Positioning

Enter desired dimension using keypad and depress GO button. Backgauge will position to programmed dimension.

###### 4.4.2.2. Presets

This control will store 9 preset dimensions (1-9).

To **program a preset dimension**, (1) enter the dimension using the keypad, (2) press FCN, the letter "P" will show on the left side of the display.

(3) press and hold the preset number the dimension is to be stored with until the flashing stops. For example, if a dimension of 12.375" is to be stored in preset #7, use the following procedure. On the keypad enter (1) (2) (.) (3) (7) (5) (FCN) Press and hold (7) until the flashing stops. 12.375" has been stored in preset #7.

To **recall a stored preset**, press the FCN key, press the desired stored preset number (1-9), when the GO button is depressed, the backgauge will position to the preset dimension. For example, to recall preset #7 (which has a dimension of 12.375" stored), Press FCN, press #7 (on the keypad), 12.375

## 6. Maintenance Procedures

### **BEFORE MAINTAINING OR REPAIRING THE SHEAR, READ AND UNDERSTAND THE CURRENT ANSI B11.4 STANDARD.**

This section describes the procedures and requirements for maintaining and repairing the major components of the Piranha Shear.

#### 6.1. Maintenance Schedule

This section outlines the suggested points and intervals for regular scheduled maintenance. The hydraulic power unit is very sensitive to dirt and other contaminants, but will provide many years of reliable service with a minimum amount of service. The operating temperature and the cleanliness of the oil directly affect the life of the hydraulic oil. Regular oil and filter changes will keep the system clean and free of sticking and clogged valves. Because hydraulic cylinders are lubricated with every stroke, keeping them clean and free of scratches and dings that may damage the cylinder rod seals is most important.

The Piranha Shear is shipped with an extra hydraulic oil filter. It is important that after the first forty hours of operation the oil filter be replaced. Upon using the included extra oil filter it is suggested that a replacement filter be ordered for the next scheduled filter change.

See parts list for correct filter part number.

1. After First 40 hours:
  - Change hydraulic filter
  - Check fluid level
  - Check gib clearances
  - Grease ram slides
  - Check fittings, bolts, nuts for tightness
2. Every 40 hours (weekly) thereafter:
  - Grease ram slides.
  - Check fittings, bolts, nuts for tightness
3. Every 3 months:
  - Change hydraulic filter  
*The hydraulic filter element should be changed every 3 months depending on workload and environmental conditions. See repair parts section for re-ordering instructions and part numbers.*
  - Check hydraulic fluid level
  - Check machine level & gib clearances
4. Every Year:
  - Grease electric motor
  - Check machine level
5. Every Two (2) years:
  - Change hydraulic fluid

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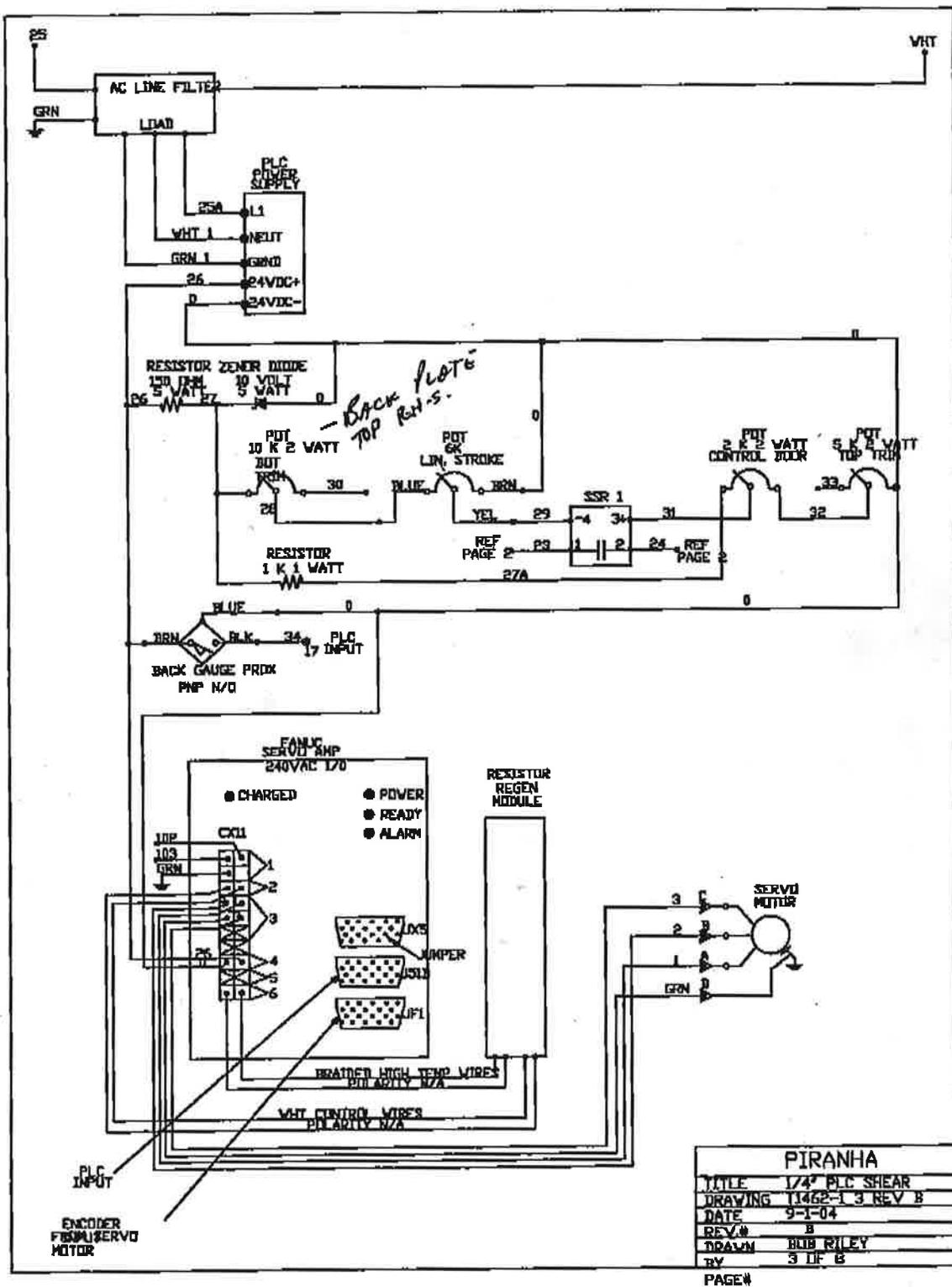


Figure 9 Electrical Diagram 3 of 10

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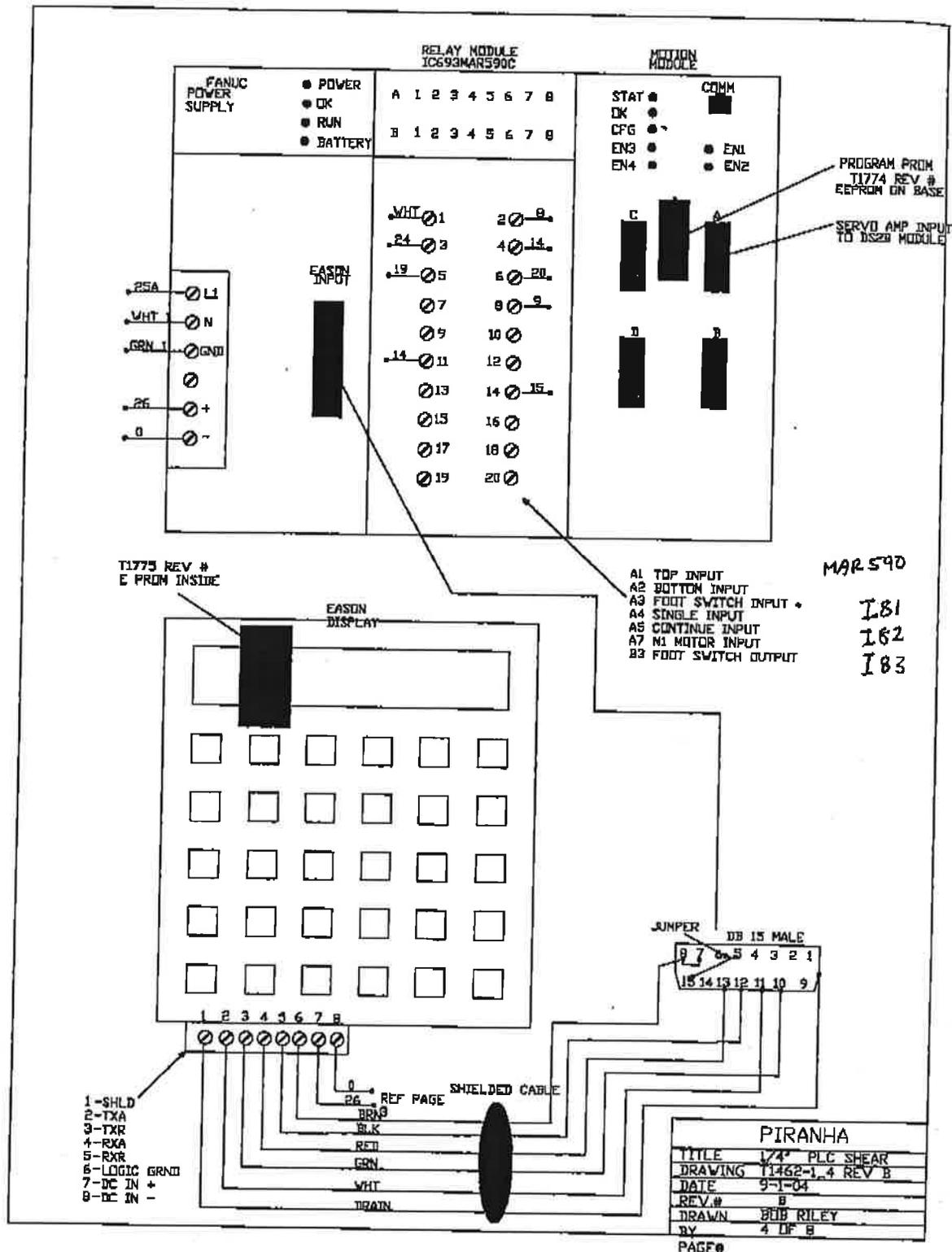


Figure 10: Electrical Diagram 4 of 10

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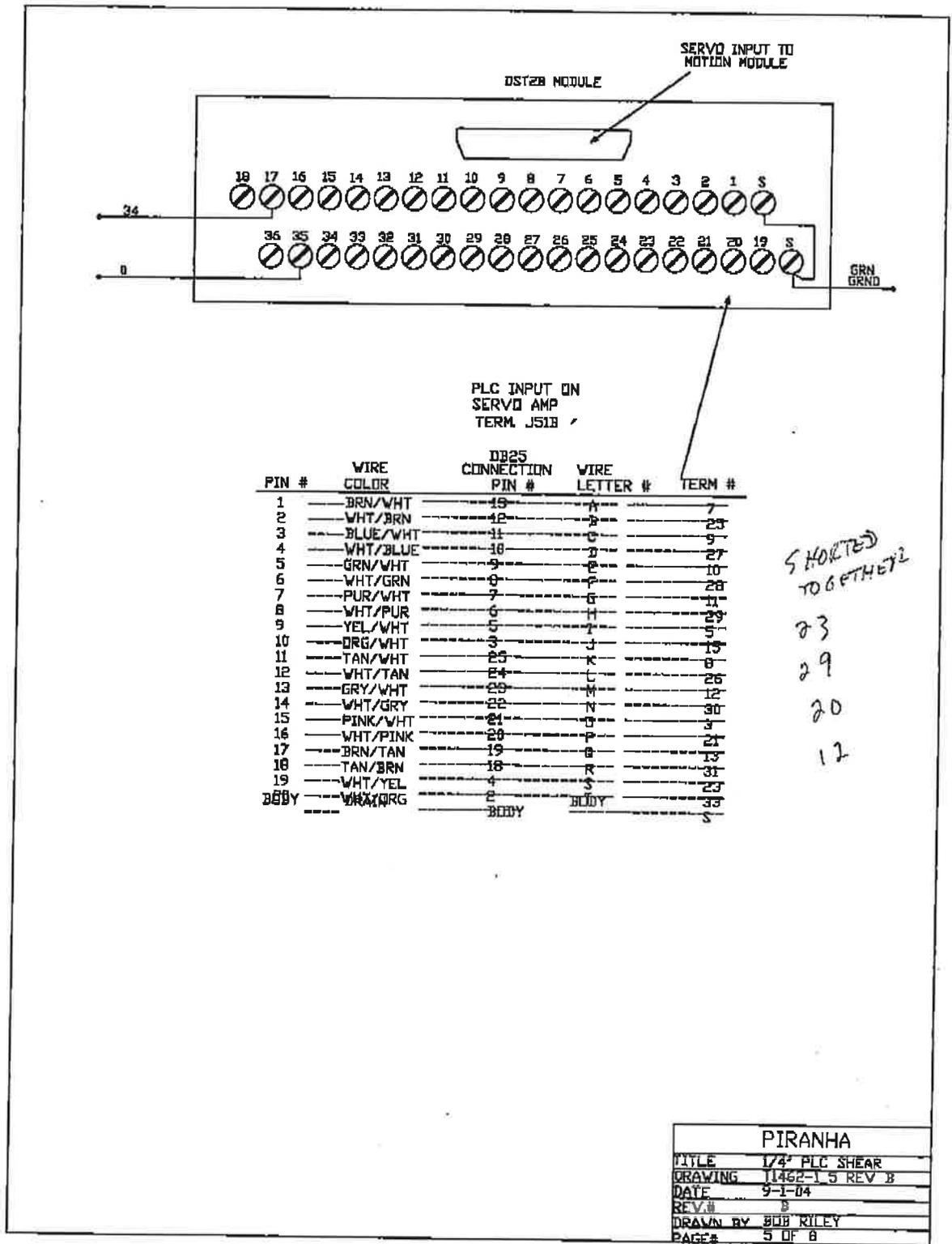


Figure 11 Electrical Diagram 5 of 10