

## Instruction Manual

**Model No. .... : Scotty 5000**  
**Year of Manufacture ..... : 2006**  
**Manufactured by ..... :** Scott Precision  
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## **ISSUE NOTE**

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# **1 INTRODUCTION AND SAFETY**



## 1 Introduction and Safety

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# Important Warranty Information

All Scott machines require clean, dry air. The warranty does not cover damage to machines due to impurities or water in the air supply system. An optional coalescing filter with auto drain is available.

Contact your Scott representative for details.

Scott Precision  
1555A Ocean Avenue  
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**1.1 Introduction****Fig. 1-1. Scotty 5000™**

The Scotty 5000™ uses a vacuum feeder for accuracy with many stocks, a platen mylar applicator which only heats the tab extension, tab cutting knives, and efficient receiving stacker for hands-off operation. Tab sizes range from 1/2 inch to 5 inches (12.7 mm to 127 mm) by simply rotating the Tab Size handwheel. The extra long tool steel knives quickly and easily cut a one inch (25.4 mm) tab in the first position on a 14 inch (355.6 mm) long sheet. As the tab widens, or the tab position moves toward the center of the sheet, the sheet size capability increases accordingly.



## 1 Introduction and Safety

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### 1.1.1 Scotty 5000 Machine Specifications and Utility Requirements

**Model** \_\_\_\_\_ Scotty 5000™

**Speed** \_\_\_\_\_ Up to 5000 tabs cut per hour  
Up to 4200 tabs laminated and cut per hour

**Sheet Size** \_\_\_\_\_ 355.6 mm x 342.9 mm (14" x 13-1/2") maximum  
127 mm x 111.1 mm (5" x 4-3/8") minimum

**Plastic Size** \_\_\_\_\_ 139.7 mm (5-1/2") maximum  
25.4 mm (1") minimum

**Tab Cut Size** \_\_\_\_\_ 127 mm (5") maximum  
12.7 mm (1/2") minimum

**Paper Load** \_\_\_\_\_ Approximately 2000 sheets

**Counter** \_\_\_\_\_ 1 - 999999

**Motor** \_\_\_\_\_ 1 Horse Power

**Electrical Requirements** \_\_\_\_\_ 30 Amps, 220VAC single phase, 50 or 60 Hz

**Air Requirements** \_\_\_\_\_ 6 ScFm @ 80 P.S.I. (170LPM @ 5.3 bar)

**Air Quality** \_\_\_\_\_ Clean Dry Air filtered to 5 micron

**Decibel Rating** \_\_\_\_\_ 94db

**Dimensions** \_\_\_\_\_ L-85" W-52" H-63" (L-2159mm W-1320.8mm H-1600.2mm)

**Shipping Weight** \_\_\_\_\_ 2000 lbs (910 Kg)

**Warranty** \_\_\_\_\_ One year against defects in parts and workmanship

**Note !** *All Scott Machines require clean, dry air.  
Optional air filters are available, contact your Scott representative for more details.*

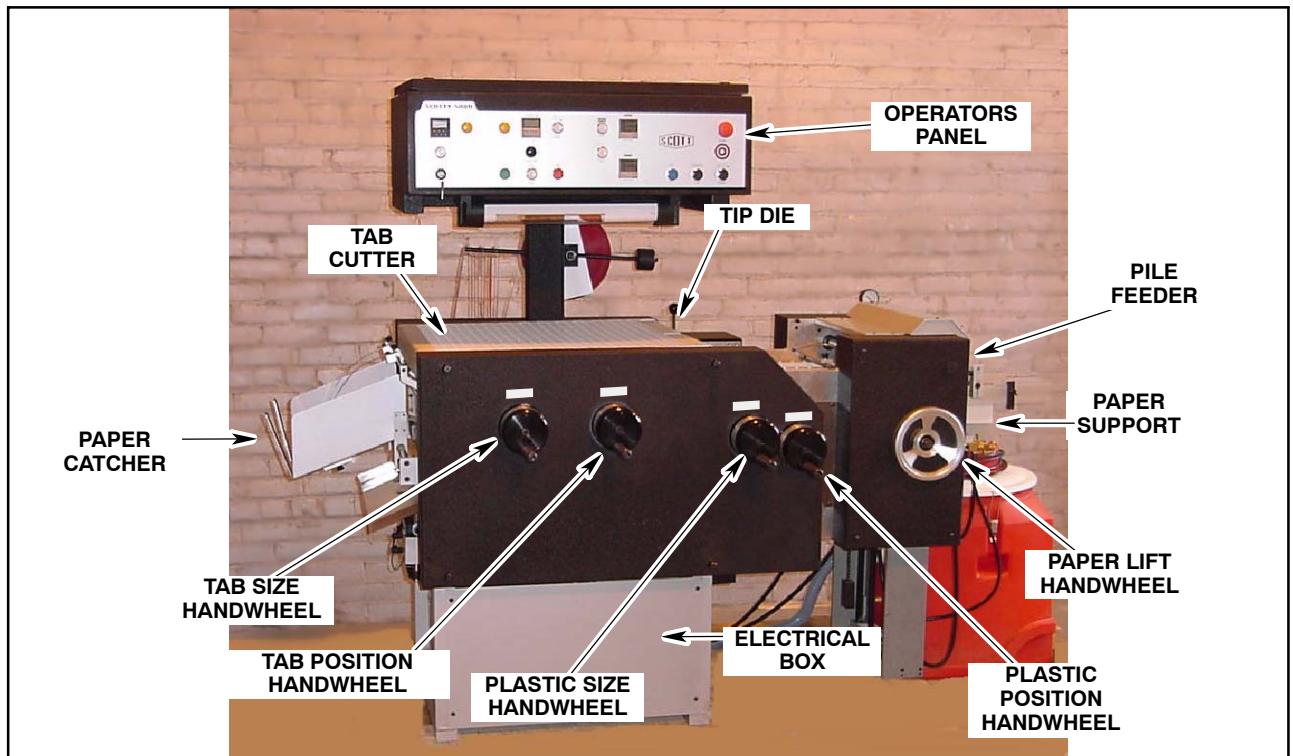


Fig. 1-2. Machine Front View

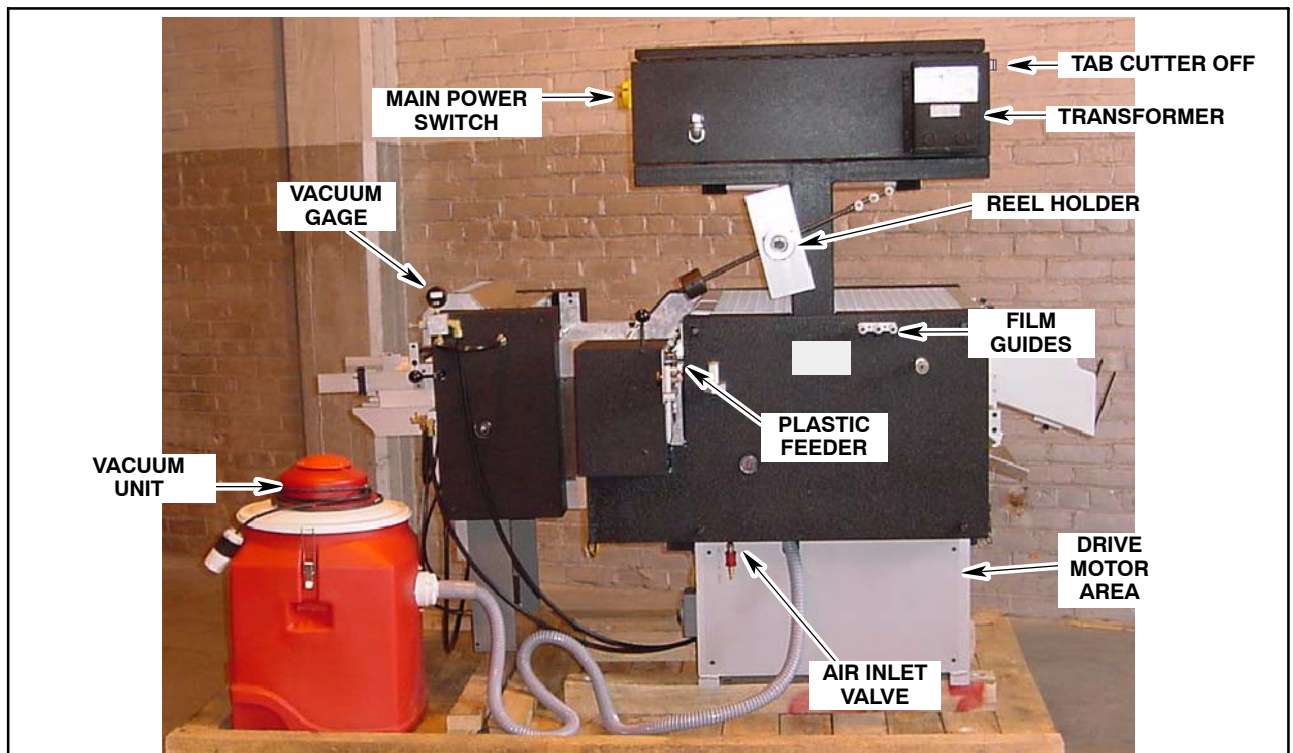


Fig. 1-3. Machine Back View



## **1 Introduction and Safety**

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### **1.2 General Safety Guidelines**

Providing a safe working environment for operating your machine is the responsibility of the user. The suggested precautions, material safety data and other suggestions that follow do not have preference over the user's own plant practices, regulations or safety committee recommendations.

Personal injury and equipment damage can be avoided by the continued adherence to the safety features provided with this machine and in keeping with the necessary governmental requirements. The guarding and interlocking safety switches have been installed on the machine for the operator's safety. These items should be maintained in good working order by the user.

It is assumed that the user's safety department has established a safety program that is in keeping with a complete analysis of industrial hazards. Before installing and operating or performing maintenance and clean-up procedures on the machine, it is suggested that the safety program be reviewed to ensure that it covers the possible hazards that might occur with the operation of this machine.

Due consideration must be given to those hazards which arise from the presence of electrical power, high temperature, and cleaning materials used in the operational areas of the machine. Proper installation and care of protective devices and over-pressure protective equipment should be considered an essential part of any safety program.

Special lock-out features are to prevent the possibility of applying power to the equipment at any time when maintenance work is in progress.

In general, personnel should be guided by all basic rules of safety associated with the equipment and the process. It should be further understood that information contained in this manual does not relieve operating and maintenance personnel of the responsibility of exercising normal good judgment in operating and care of the machine and its attendant equipment.

## 1.3 Safety Features

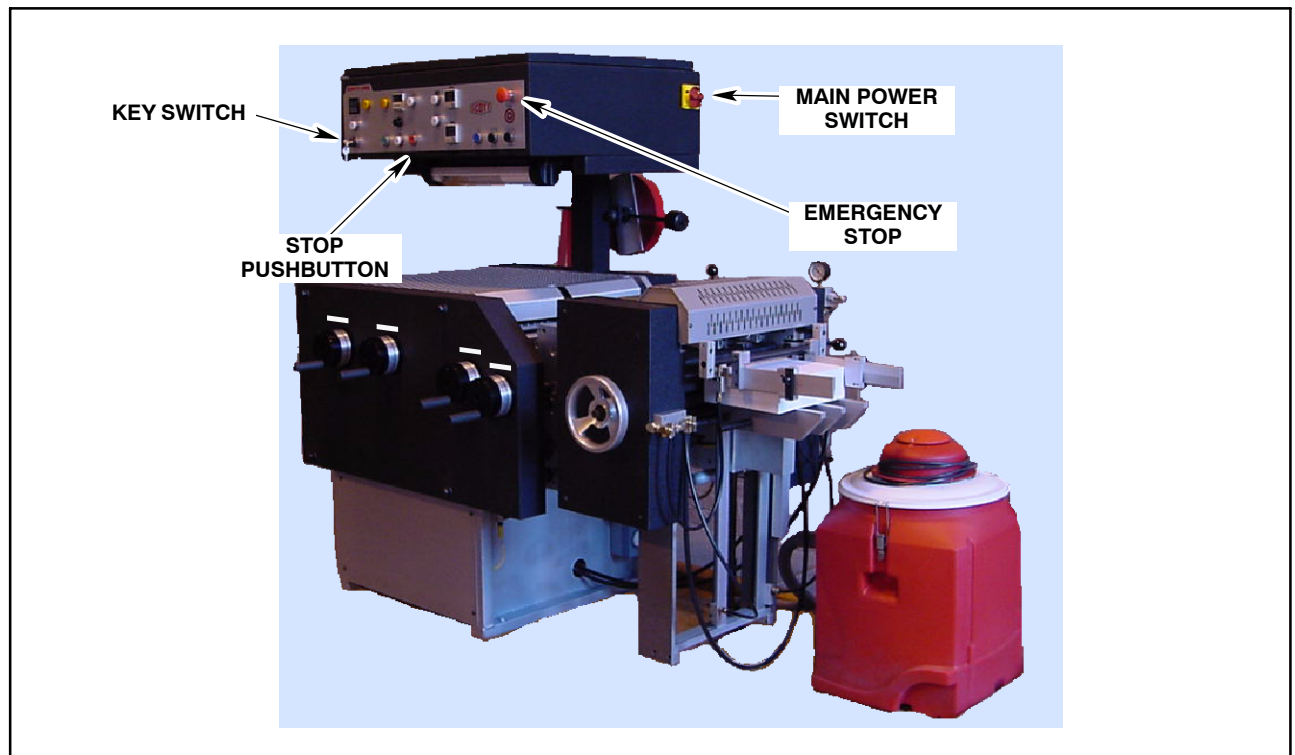


Fig. 1-4. Safety Feature Locations

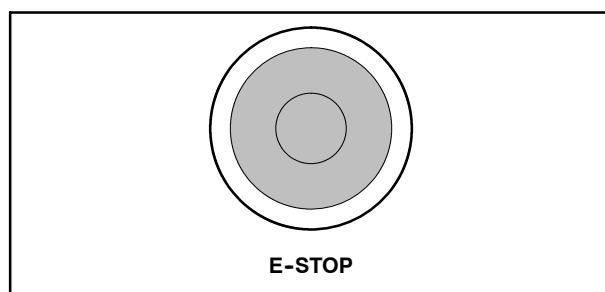


Fig. 1-5. Know Where Emergency Stop Button is Located

These safety features are to be used in conjunction with the installation, operation and maintenance instructions contained in this manual.

### 1.3.1 Emergency Stop

Stops machine drive immediately. This pushbutton must be manually pulled out to reset.

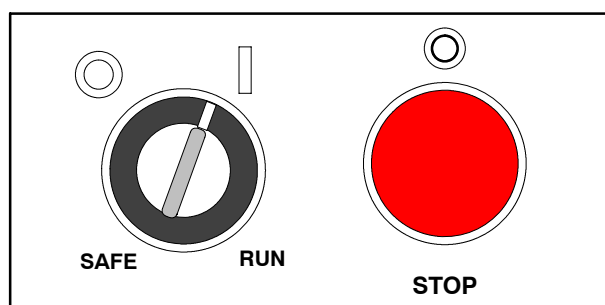


Fig. 1-6. Know How to Stop Machine & Set Key Switch to SAFE

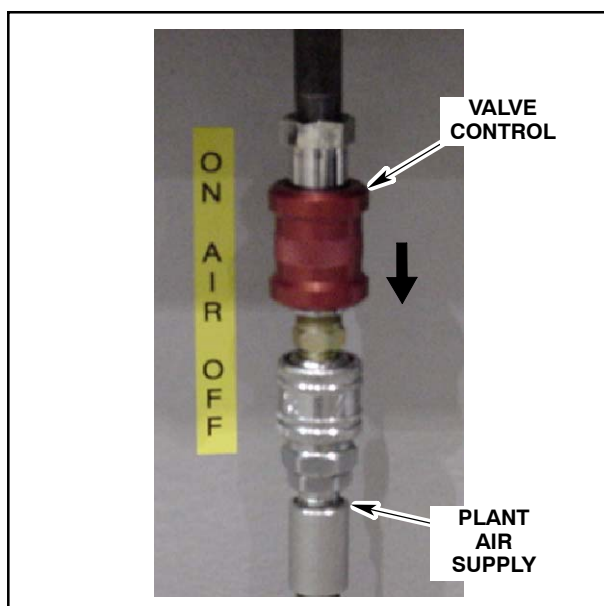
### 1.3.2 Stop and Safe

The machine operator, clean-up and maintenance personnel **MUST** be shown how to stop the machine and place the **KEY SWITCH** on the operator's **CONTROL PANEL** in the **SAFE** mode whenever machine is accessed or clean-up operations are performed.

## 1 Introduction and Safety



**Fig. 1-7. Turn Machine Off Before Making Adjustments**



**Fig. 1-8. Compressed Air Can Be Turned Off.**

### 1.3.3 Main Power Switch

If machine is to be shut down for adjustments or repairs, turn the power supply to the machine off.

### 1.3.4 Compressed Air Valve

The compressed air line at the main AIR IN features a ON/OFF valve for safety. The valve is constructed to lockout down stream air pressure when in the OFF position.

- The valve shuts off plant supplied compressed air to the machine.
- Place the valve in the closed position when the machine is not in use and prior to washing or servicing the machine.

### 1.3.5 Guards and Covers

All safety guards, protective screens and covers **MUST** be in place and securely fastened before operating the machine.

Observe Danger warnings. Use extra care around moving cutting blades.



Fig. 1-9. Cover Warnings

### 1.3.6 Safety Devices

The covers of the machine are connected to safety devices for your protection.

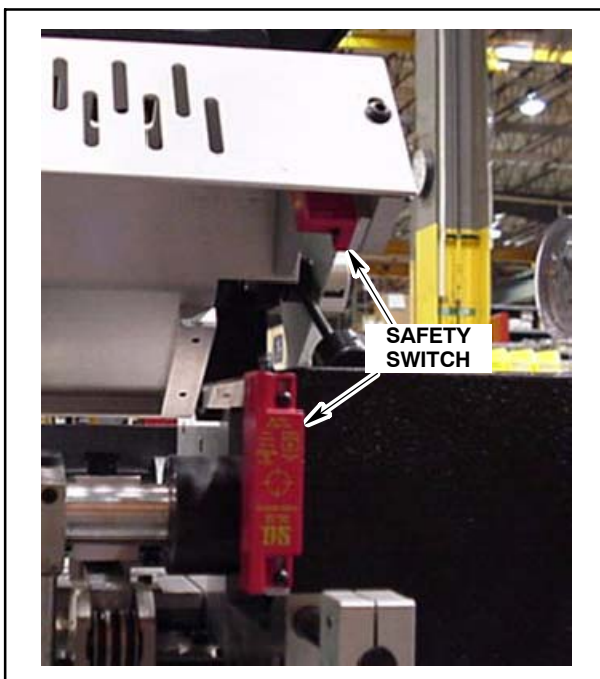


Fig. 1-10. Safety Devices

## 1 Introduction and Safety



Fig. 1-11. Warnings Indicate Personal Danger

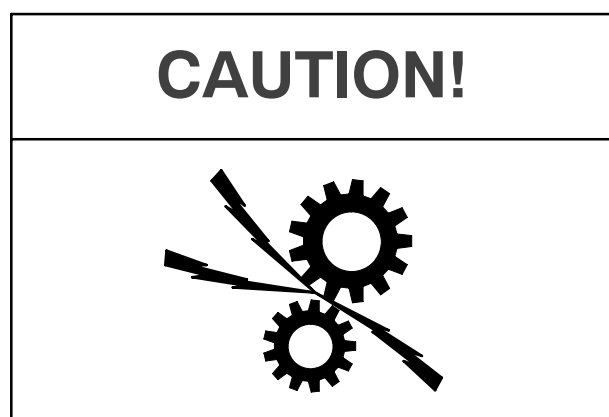


Fig. 1-12. Cautions Indicate Potential Damage to Equipment

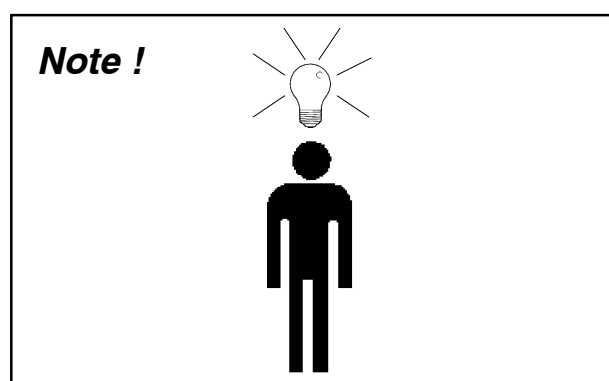
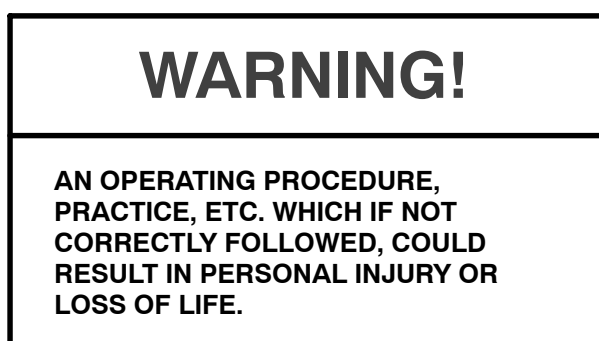


Fig. 1-13. Notes Indicate Essential Information

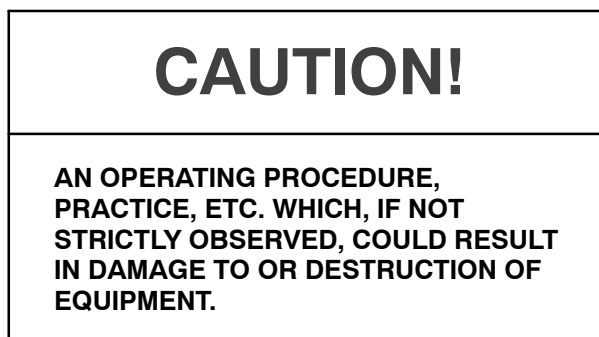
### 1.4 Warnings, Cautions & Notes

In order to emphasize certain areas in the interest of personal safety and a properly operated and maintained machine, you will encounter the words **WARNING**, **CAUTION**, and **NOTE**.

#### 1.4.1 Warnings



#### 1.4.2 Cautions



#### 1.4.3 Notes





Fig. 1-14. Heat Hazard

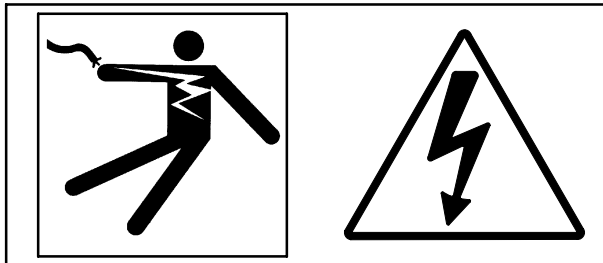


Fig. 1-15. Electrical Shock Hazard

### 1.5 Warnings

#### 1.5.1 Heat Hazards

For example, there is HOT SURFACE sign on top of the Plastic Press assembly. Look for warning signs throughout the machine. They are there to alert you to hazards.

#### 1.5.2 Electrical Shock Hazards

Look for warning signs on electrical cabinets and circuit breaker boxes. They are there to alert you to hazards of electrical shock.

## 1 Introduction and Safety

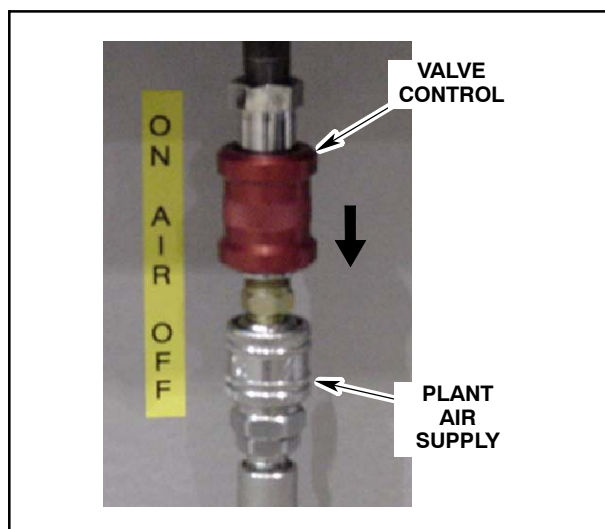


Fig. 1-16. Compressed Air Valve.

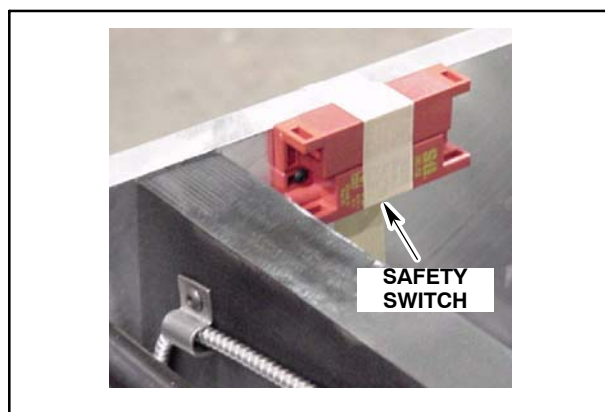


Fig. 1-17. Do Not Disable Safety Devices

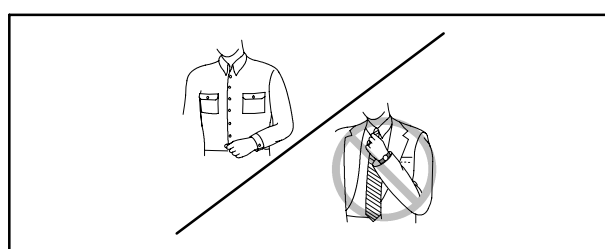


Fig. 1-18. Wear Proper Clothing

## 1.6 Safety Procedures

### 1.6.1 Compressed Air Valve

Assemblies which are air actuated may have pressure remaining in the air lines. Turn OFF valve before working on pneumatic circuits to release air trapped in the system.

## WARNING!

**DRAIN LINES OF COMPRESSED AIR TO PREVENT ACCIDENTAL ACTIVATION OF AIR DRIVEN ASSEMBLIES.**

### 1.6.2 Safety Devices

Tampering with safety mechanisms in order to disable them should not be tolerated.

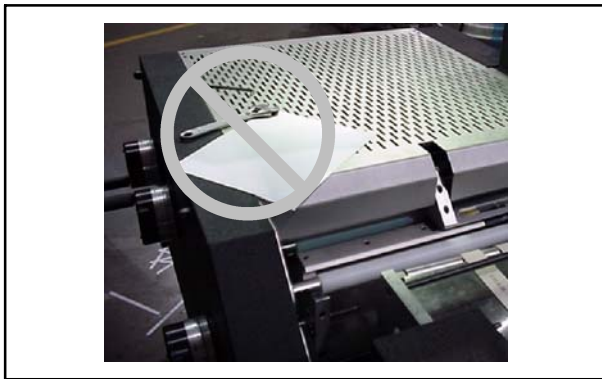
## WARNING!

**IT IS EXTREMELY DANGEROUS TO ACCESS MACHINE WHEN IT IS OPERATING OR CAPABLE OF OPERATING.**

### 1.6.3 Appropriate Dress

Personnel working in the machine operation area must remove jewelry and neckties. Personnel must wear clothing appropriate for the work area.

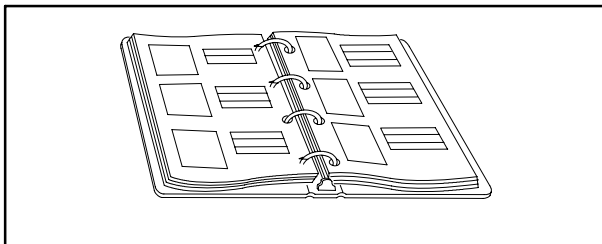




**Fig. 1-19. Keep Work Area Clean and Neat**



**Fig. 1-20. Clean Up Oil and Grease Spills**



**Fig. 1-21. Read Manuals First**

### 1.6.4 Keep Area Clean

Loose materials, tools and equipment, not essential to the operation of the machine, must be removed from the machine work area.

### 1.6.5 Grease and Oil

Clean up all oil and grease spills around the machine work area.

### 1.6.6 Manual Usage

Read and understand the instructions in the manual before operating, adjusting or servicing machine.



## **2 INSTALLATION**



## 2 Installation

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## **2.1 Installation Requirements**



**Fig. 2-1. Scotty 5000**

All procedures in this section provide advance planning and site preparation data for installation of the Scotty 5000. Environmental requirements, unpacking instructions, and electrical and physical specifications are included. This information should be used as a reference during the development of site preparation plans before you install your machine.

If any questions arise while performing any of the following procedures, contact

Training is available from Scott Office Systems at \$1500/ eight hour day, plus all travel expenses.

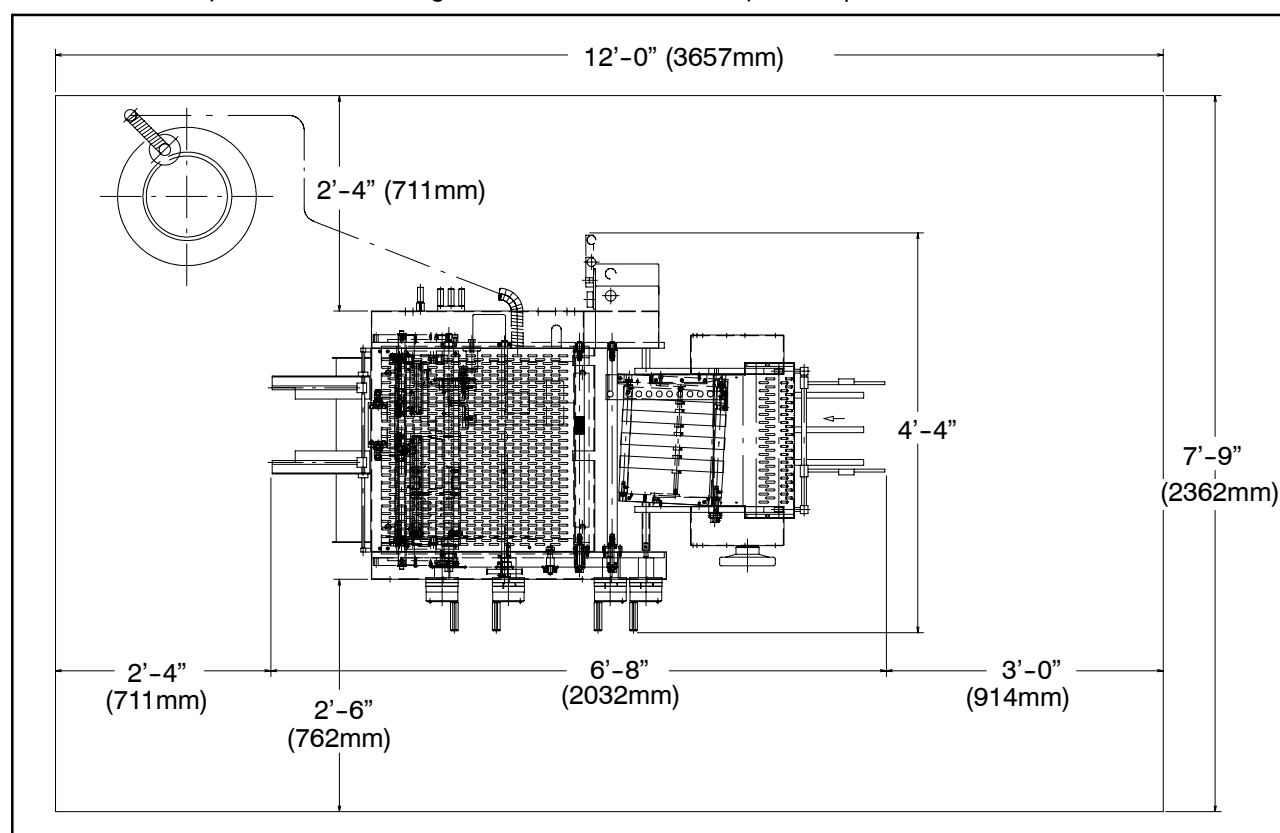
**Note !** *A forklift is required to lift the machine off the shipping skid and place it on the floor.*

## 2 Installation

### 2.1.1 Pre-Installation Requirements

The environmental requirements of the Scotty 5000 must be considered well in advance of the actual installation. Providing a well suited operating environment will help ensure a trouble free installation process. Consideration should be given to the following items:

- Power, location and rating of outlets
- Floor strength
- Level floor
- Adequate space must be provided around all four sides of the machine to permit normal operation and maintenance procedures. The figure shows the minimum space required.



**Fig. 2-2. Space Requirements**

- Space should be allocated near the feeder for a small table that can be used for jogging stock, small jobs, samples, etc.
- Provide plenty of space in front of the machine so large jobs can be easily moved in and out with skids or carts.

### 2.1.2 Uncrating & Placement

The machine will arrive crated. Inspect the external condition of the crate for visible signs of damage before opening. If damage is noticeable, notify the carrier or Scott before proceeding with the installation.

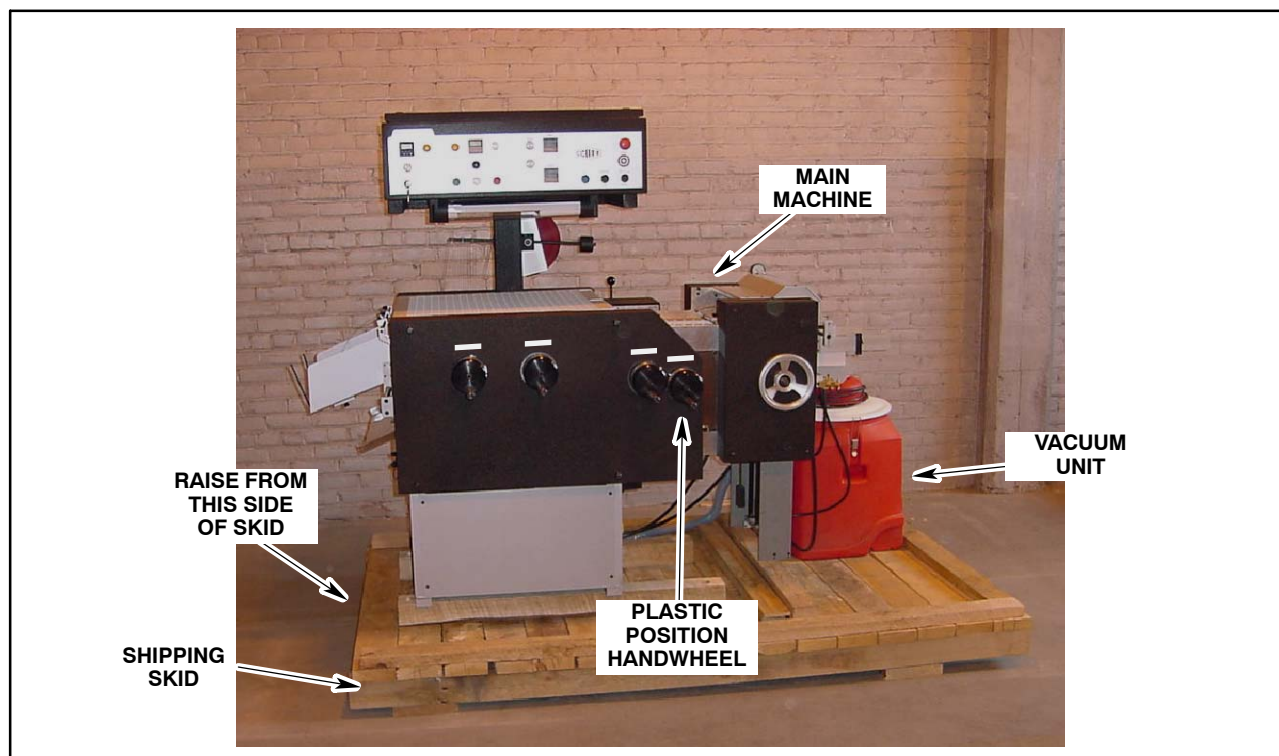


Fig. 2-3. Scotty 5000 on Shipping Skid

**Step: 1.** Remove shrink wrap enclosing the machine.

### ***CAUTION!***

**REMOVE SUPPORT BOARD BEFORE PROCEEDING FUTHER. CARE MUST BE TAKEN WHEN MOVING THE MACHINE SO AS NOT TO DAMAGE IT.**

### ***CAUTION!***

**EXTREME CAUTION MUST BE EXERCISED WHEN MOVING MACHINE TO INSTALLATION LOCATION TO PREVENT DAMAGE.**

**Step: 2.** With fork lift, place shipping skid near designated floor area of operation.

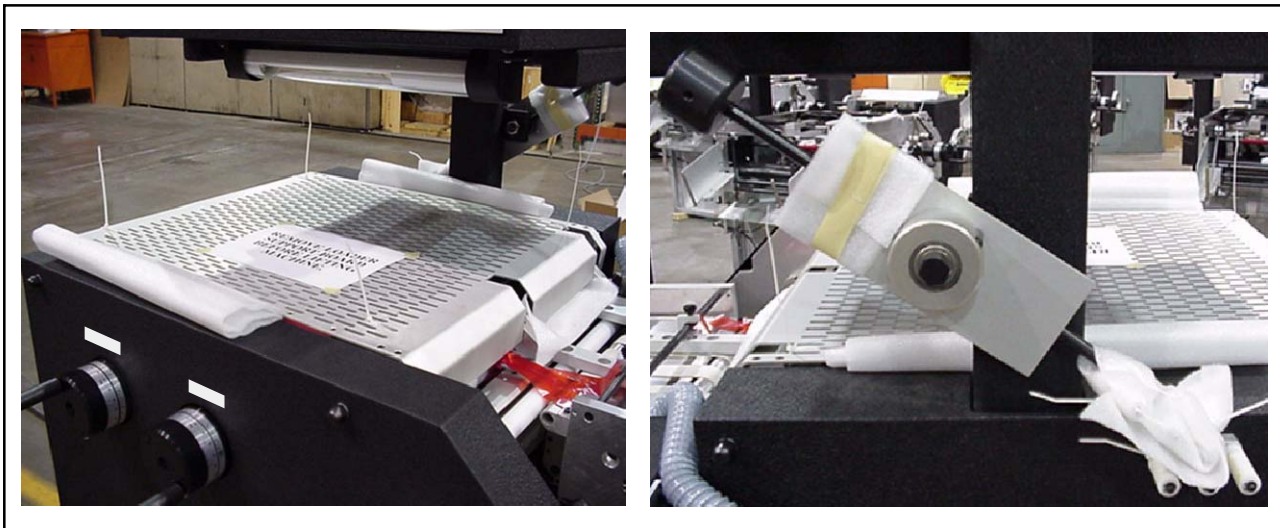
**Step: 3.** Remove vacuum unit from skid.

**Step: 4.** Remove four lag screws holding machine to shipping skid.

**Step: 5.** Raise main machine with fork lift, remove shipping skid assembly from under machine.

**Step: 6.** Lower main machine to floor.

## 2 Installation



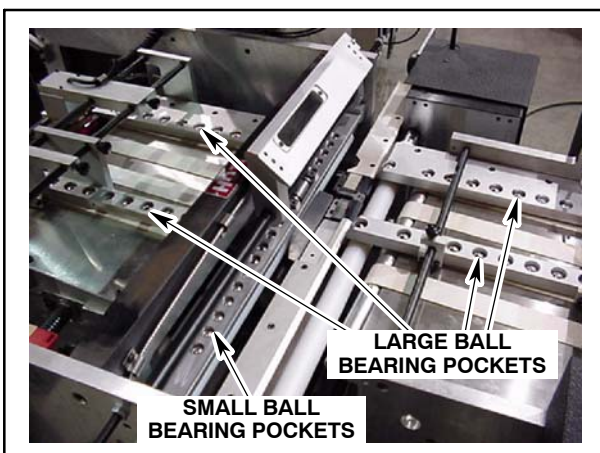
**Fig. 2-4. Remove Foam and Tie Wraps**

**Step: 7.** Remove the foam and tie wraps that were protecting the machine during shipping.



**Fig. 2-5. Remove Parts from Vacuum Canister**

**Step: 8.** Once the machine is in place, open the vacuum canister and remove packaged parts.



**Fig. 2-6. Install Ball Bearings**

**Step: 9.** Install ball bearings in the correct pockets.



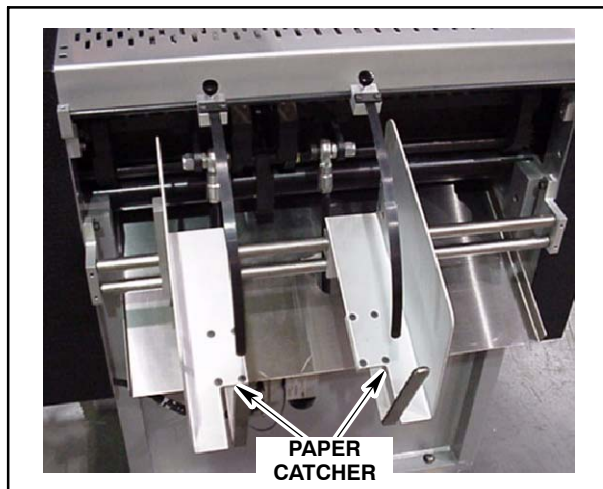


Fig. 2-7. Install Paper Catcher

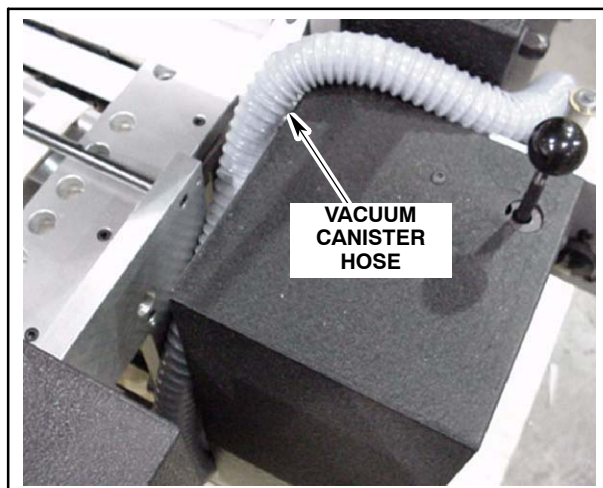


Fig. 2-8. Release Hose

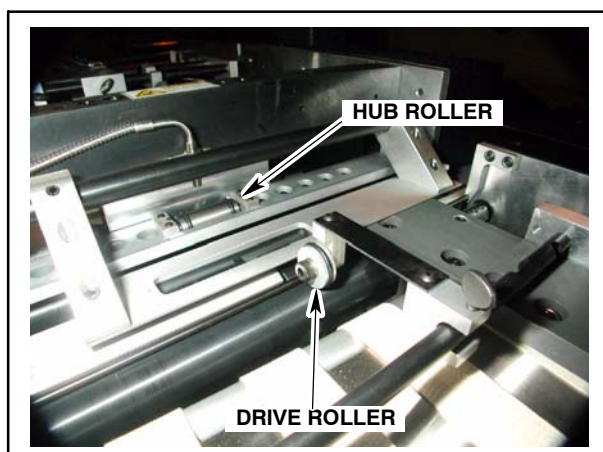


Fig. 2-9. Install Drive Roller

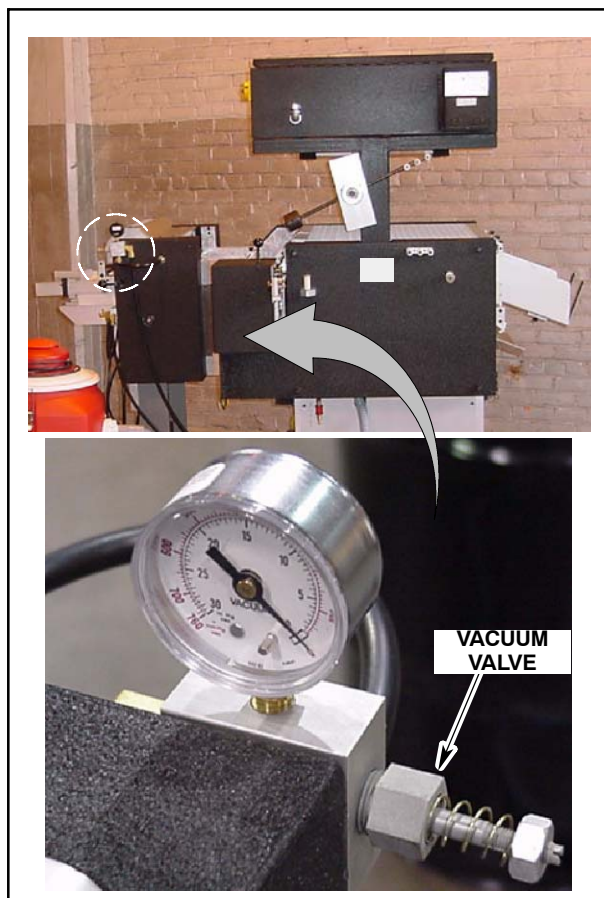
**Step: 10.** Install paper catcher parts.

**Step: 11.** Crank the Plastic Position handwheel to release the vacuum canister hose. (See Fig. 2-3. for Plastic Position Handwheel location)

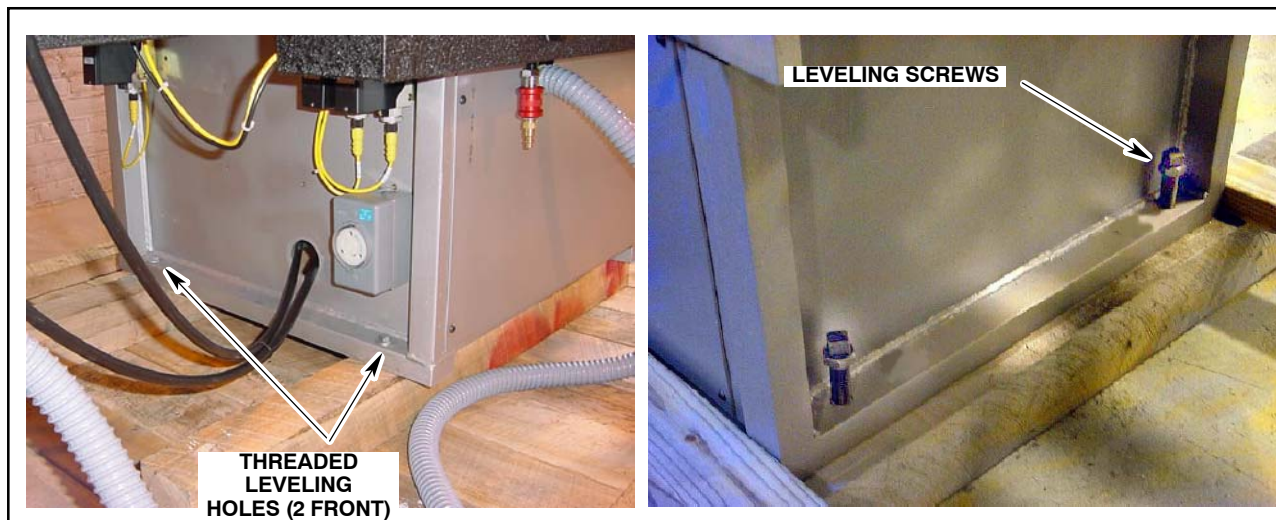
**Step: 12.** Install Drive Roller. Align drive roller to the center of the hub roller on platen unit. This is used to assist short sheets into the platen unit.

## 2 Installation

**Step: 13.** Install vacuum adjustment valve.



**Fig. 2-10. Install Vacuum Valve**



**Fig. 2-11. Leveling Rod Installation**

**Step: 14.** The machine must be on a level surface. However, If machine is to be placed on an abnormally uneven floor, machine may be leveled in the following manner:

- Install 3/4 in.-#10 threaded rods through four threaded holes In machine weldment. (See Fig. 2-11. )
- Threaded rods can then be used to level machine. Use appropriately sized jam nuts to maintain level position when attained.



## WARNING!

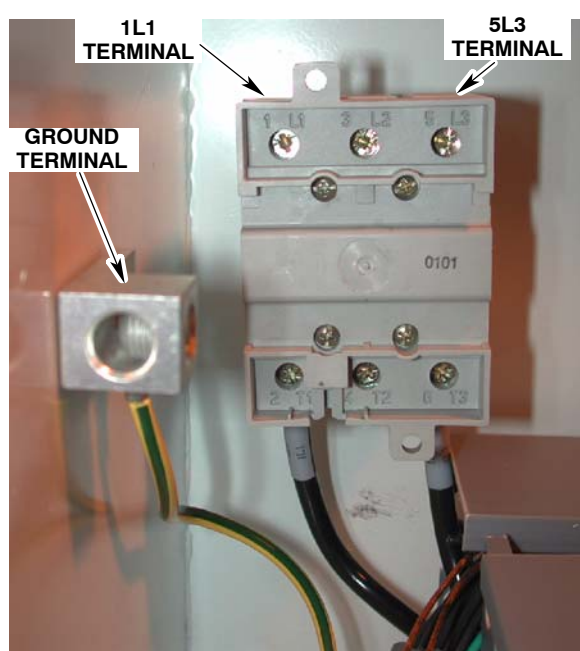
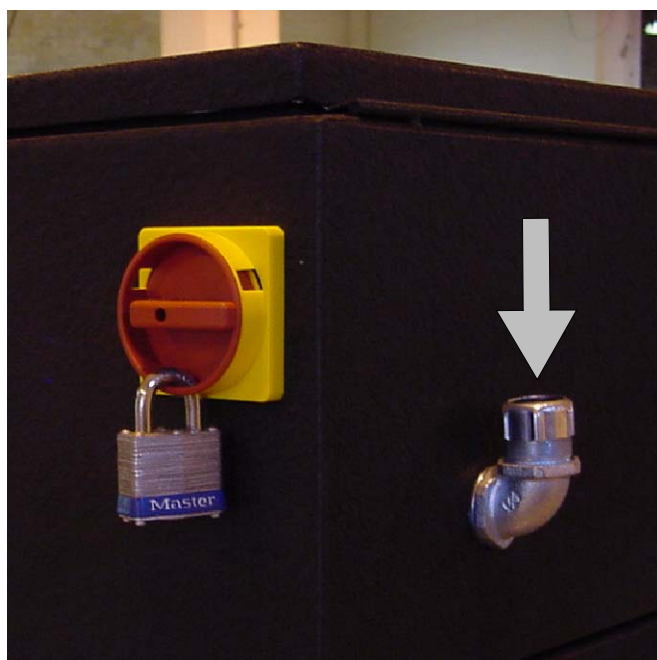
**DANGER: ELECTRICAL CONNECTIONS MUST BE MADE BY A QUALIFIED ELECTRICIAN FAMILIAR WITH APPLICABLE ELECTRICAL CODES AND REGULATIONS. ELECTRICAL CONNECTIONS MUST THEN BE MADE ONLY AFTER REVIEWING AND UNDERSTANDING THE ELECTRICAL SCHEMATICS SUPPLIED WITH MACHINE AND SAFETY SECTION OF THIS MANUAL, FAILURE TO EXERCISE NECESSARY SAFETY PRECAUTIONS CAN RESULT IN SERIOUS BODILY INJURY OR DEATH.**

## 2.2 Utility Connections

### 2.2.1 Electrical Connections

1. The machine requires No. 10, 3 wire cable including ground for 220 volt, single phase electrical power.

**Note !** *Electrical cables going to machine should be routed overhead and be of sufficient height to allow personnel to travel around entire machine without interference. The figure below shows recommended installation configuration.*



**Fig. 2-12. Installation Wiring Route**

2. Route main power electrical cable through the conduit opening in the back of the control cabinet.
3. Connect two "hot" leads onto terminals 1L1 and 5L3 on main power relay. Connect neutral lead to ground terminal.

## 2 Installation



Fig. 2-13. Connect Air Supply

### 2.2.2 Connect Air Supply

1. Supply a 1/4 NPT air line with 6 ScFm @ 80psi (170LPM @ 5.3bar) to the air shut off valve located at the back of the machine.

**Note !** *The compressed air line at the main AIR IN features a ON/OFF valve for safety. Place the valve in the closed position when connecting the machine to the plant air supply.*



Fig. 2-14. Air Supply Gage

Set the Regulator to 60psi (4.0bar).

## **3 OPERATION**



### 3 Operation

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### **3.1 General Information**

#### **3.1.1 Before Operating the Machine**

<h2><b><i>WARNING!</i></b></h2>
<p><b>AVOID SERIOUS INJURY OR EQUIPMENT DAMAGE. RESTRICT OPERATION OF THIS MACHINE TO TRAINED, QUALIFIED PERSONNEL ONLY.</b></p>

<h2><b><i>WARNING!</i></b></h2>
<p><b>EACH OPERATOR SHOULD KNOW THE LOCATION AND FUNCTION OF ALL MACHINE STOPPING CONTROLS. REVIEW MANUAL FOR EMERGENCY STOP BUTTON LOCATION.</b></p>

Do not attempt to operate the machine before reading and understanding the manual. Pay close attention to all **WARNINGS**, **CAUTIONS** and **NOTES**. Failure to do so may cause serious injury and extensive machine damage.

Read through the inspection and pre-start procedures before starting the machine. Make these checks part of your routine to insure efficiency and quality during the production run.

### 3 Operation

## 3.2 Operating Controls and Indicators Descriptions

### 3.2.1 Operator's Control Panel Layout

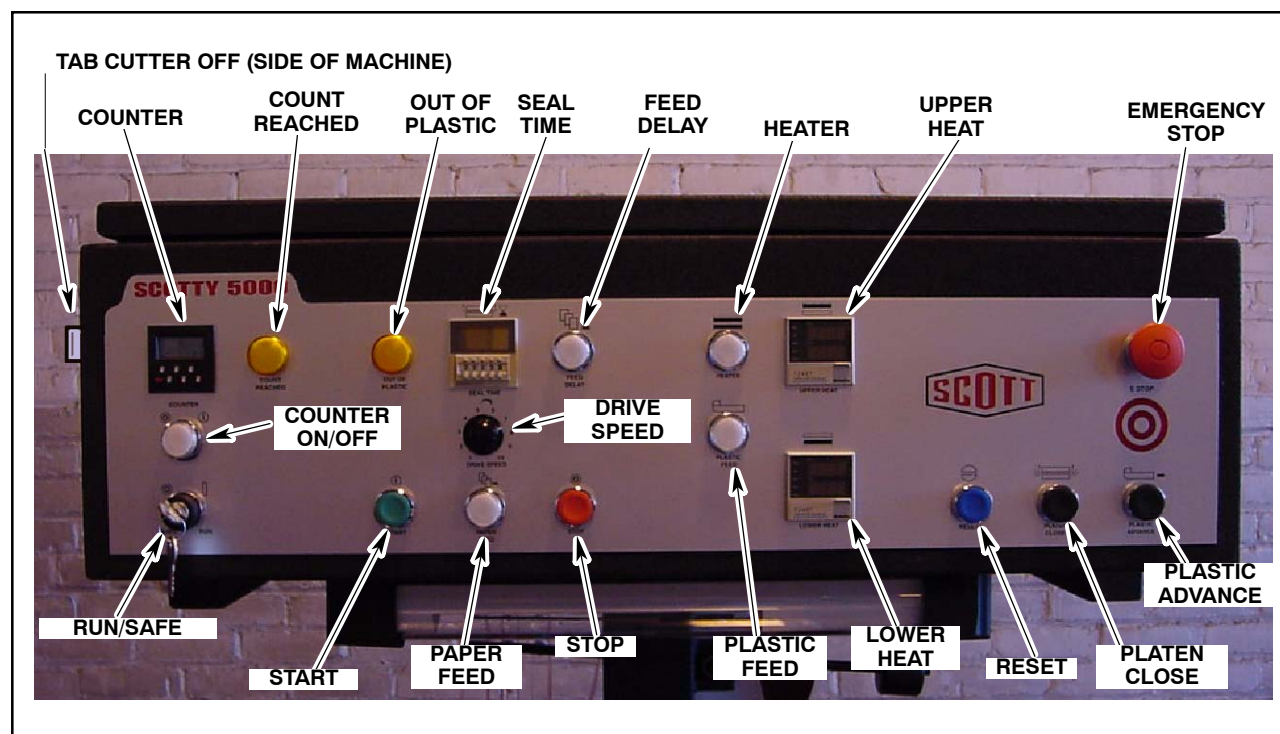


Fig. 3-1. Control Panel

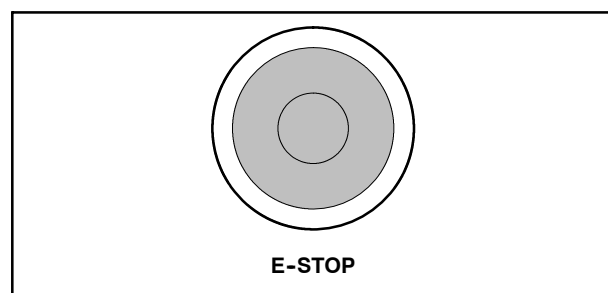


Fig. 3-2. Emergency Stop Pushbutton

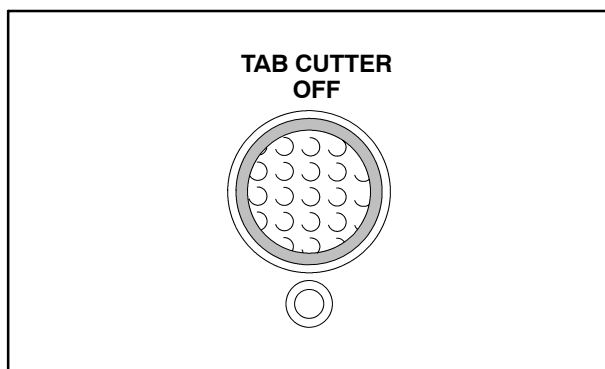
### 3.2.2 Machine Stopping Device

#### 3.2.2.1 EMERGENCY STOP - Red Pushbutton

Stops the machine drive immediately. The **Emergency Stop Button** is on the front of the machine. After a stop, the button must be manually pulled out and the **Reset** button pushed before cycling can resume.

#### 3.2.3 Main Operator's Panel Control Descriptions

The following is a list of each control on the operator's panel and a description of the functions performed at each setting.



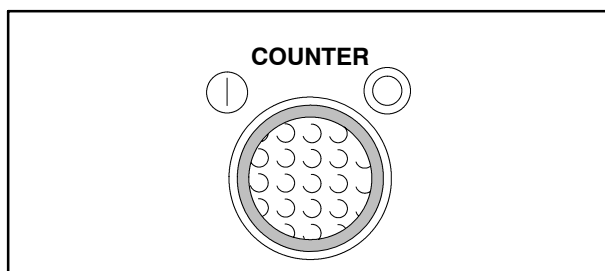
**Fig. 3-3. Tab Cutter Off**

##### 3.2.3.1 TAB CUTTER OFF - Red Illuminated Pushbutton

The Tab Cutter Off Button located on the left side of the operator's box and is used to disable the cutting knives when running production that involves laminating tabs only (not tab cutting).

**OFF-** When pushed this button disables the tab cutting knives so that sheets are not cut.

**ON -** When pushed, knives are raised into position so that tabs will be cut.

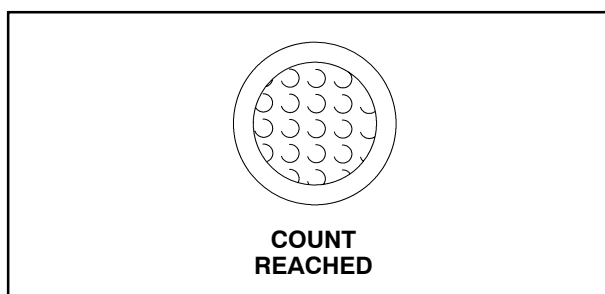


**Fig. 3-4. Counter On/Off - Illuminated Pushbutton**

##### 3.2.3.2 COUNTER ON / OFF - White Illuminated Pushbutton

When the counter button is pushed, the button illuminates indicating that the counter is on.

This will allow the operator to off the counter to run make overs without losing the current count.



**Fig. 3-5. Count Reached Lamp**

##### 3.2.3.3 COUNTER REACHED - Amber Indicator Lamp

This lamp will illuminate when the machine has produced the amount predetermined by the counter. Once the count has been reached, the paper feed vacuum pump will shut off so that paper feed will stop. Also, if plastic is being applied to the paper stock, the plastic chip removal vacuum will shut off. Both units will resume operation once the counter has been reset.

### 3 Operation

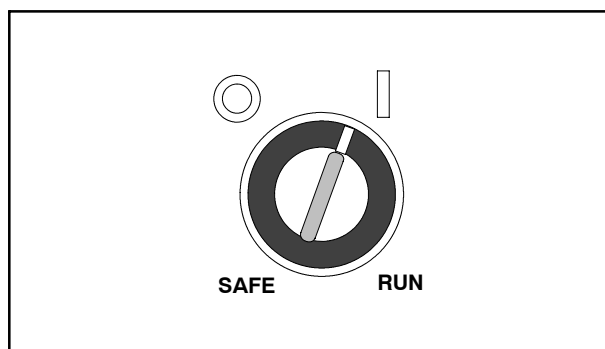


Fig. 3-6. Run/Safe Key Switch

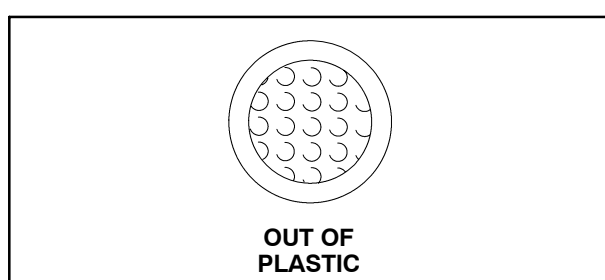


Fig. 3-7. Out of Plastic Lamp

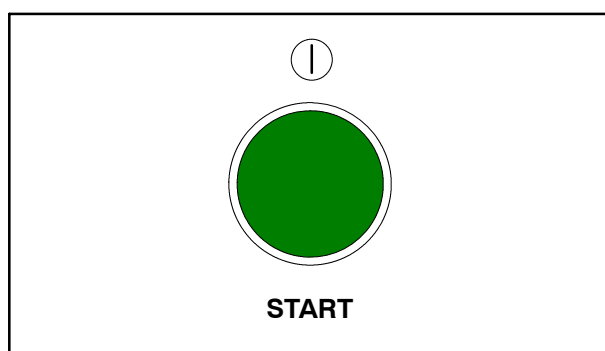


Fig. 3-8. Start Pushbutton

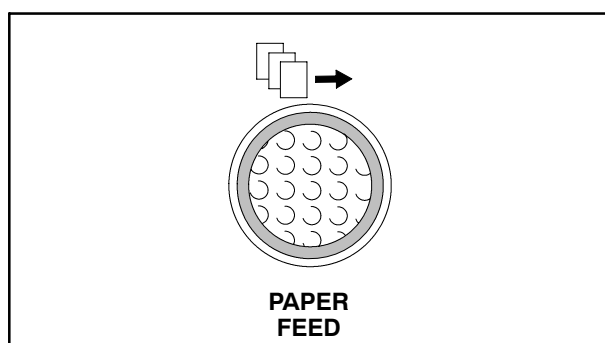


Fig. 3-9. Paper Feed Pushbutton

#### 3.2.3.4 SAFE / RUN - Key Switch

**RUN** - The machine drive cycles continuously. This is the normal switch position for production.

**SAFE** - No machine cycle is possible.

If conditions are safe, pushing RESET will allow the machine to operate.

#### 3.2.3.5 OUT OF PLASTIC - LAMP

Lamp will illuminate when upon pushing the Plastic Feed button, the proximity switch on the plastic feed does not sense plastic at the feeder discharge. The plastic chip removal vacuum and the paper feed vacuum pump will also be disabled until the plastic spool is refilled.

#### 3.2.3.6 START - Green Pushbutton

Turns on main drive motor to begin machine cycling.

This means:

- The safety switches indicate all the guards are in place.
- The EMERGENCY STOP buttons are reset.
- The RESET button is pushed.
- The pushbutton turns on the main drive motor for continuous machine cycling with the KEY switch in RUN position.

#### 3.2.3.7 PAPER FEED - White Illuminated Pushbutton

Starts the vacuum pump for the pile feeder vacuum nozzles.



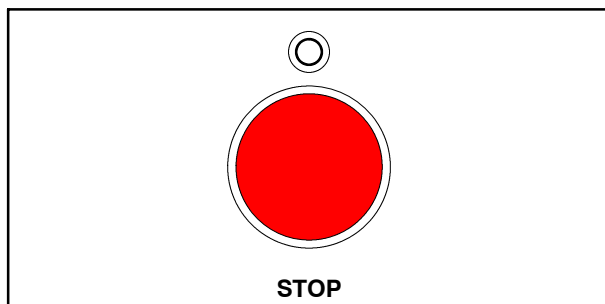


Fig. 3-10. Stop Drive Pushbutton

#### 3.2.3.8 STOP - Red Pushbutton

The pushbutton stops the machine drive. This is a “soft” stop and is intended for planned stops, not emergencies.

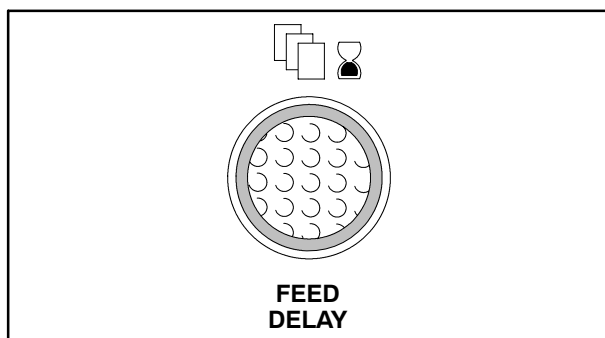


Fig. 3-11. Feed Delay - Illuminated Pushbutton

#### 3.2.3.9 FEED DELAY - White Illuminated Pushbutton

Shuts off the vacuum to the paper pick-up vacuum nozzles to prevent a new sheet from being fed into the machine until the preceding sheet has cleared the press assembly. The amount of time that the paper is in the press will depend on the time that is preset in the Seal Time unit.

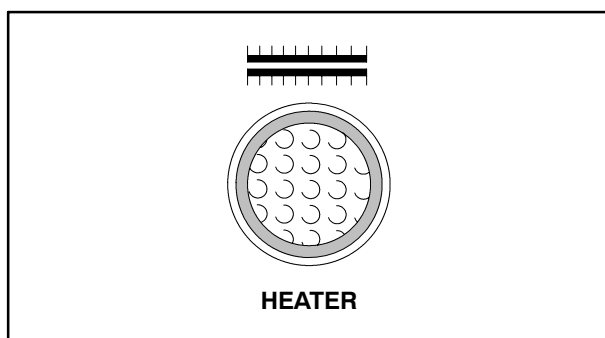


Fig. 3-12. Heaters Illuminated Pushbutton

#### 3.2.3.10 HEATERS ON / OFF -

**ON** - When pushed, the button illuminates, indicating upper and lower heaters are turned ON.

**OFF** - When pushed again, the heaters are turned OFF.

Approximate warm up time for heaters is between 10-15 minutes.

**NOTE:** See additional information under Heater Temperature Controller write-up.

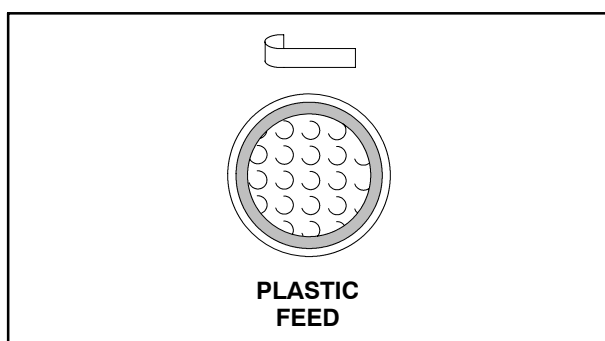
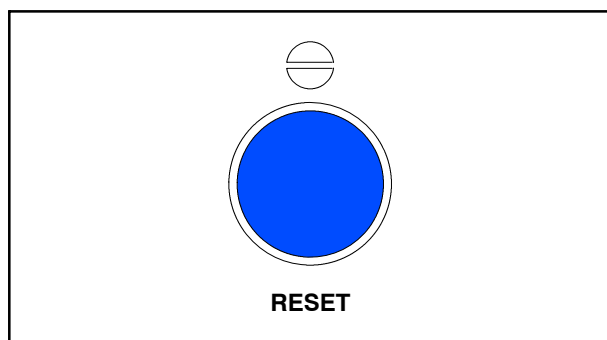


Fig. 3-13. Plastic Feed Pushbutton

#### 3.2.3.11 PLASTIC FEED - White Illuminated Pushbutton

Turns on the chip removal vacuum and allows plastic to enter the Tip Die, if the reel is threaded onto the machine. The plastic chip removal vacuum operates only when Plastic Feed is on, machine is in Run mode and machine is running.

### 3 Operation

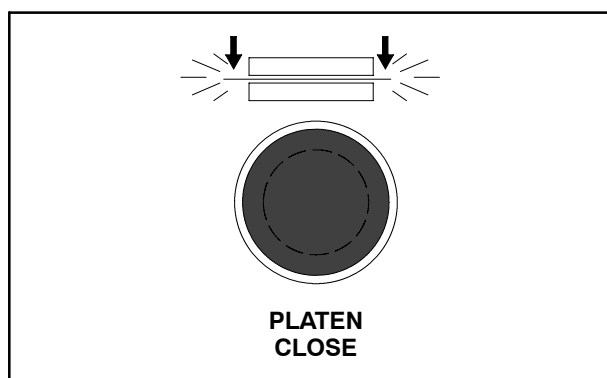


**Fig. 3-14. Reset Pushbutton**

#### 3.2.3.12 RESET - Blue Pushbutton

Resets machine, and verifies it is safe to run after an emergency stop.

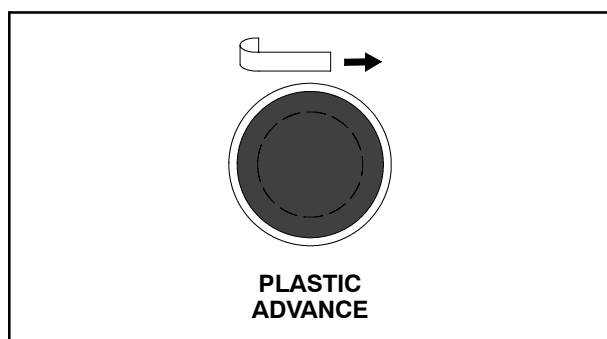
Press this button when changing the Run/Safe switch from Safe position to Run.



**Fig. 3-15. Platen Close Pushbutton**

#### 3.2.3.13 PLATEN CLOSE - Black Pushbutton

Activates plastic press air cylinder for cleaning purposes.



**Fig. 3-16. Plastic Advance Pushbutton**

#### 3.2.3.14 PLASTIC ADVANCE - Black Pushbutton

It brings plastic into the Tip Die when the machine is in Run position. It is used when loading a new reel of film and must be held in.

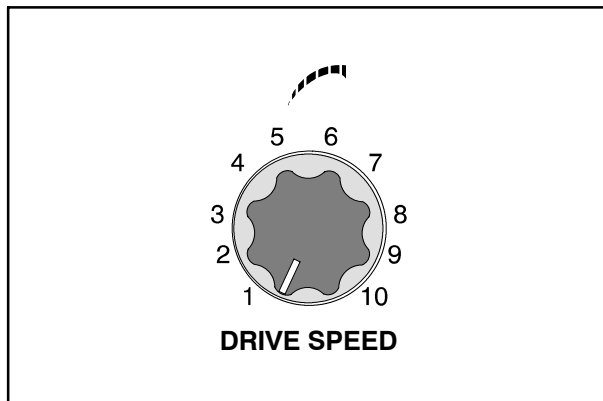


Fig. 3-17. Main Drive Feed

#### 3.2.3.15 SPEED - Adjustment Control

Adjusts main drive motor speed. The dial is turned clockwise to increase, and counterclockwise to decrease the machine drive speed.

**Note !** *Drive speeds too low or too high will cause improper machine operation.*

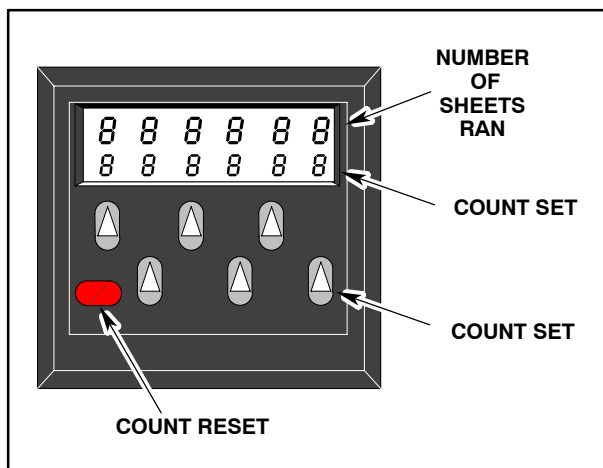


Fig. 3-18. Feeder Counter

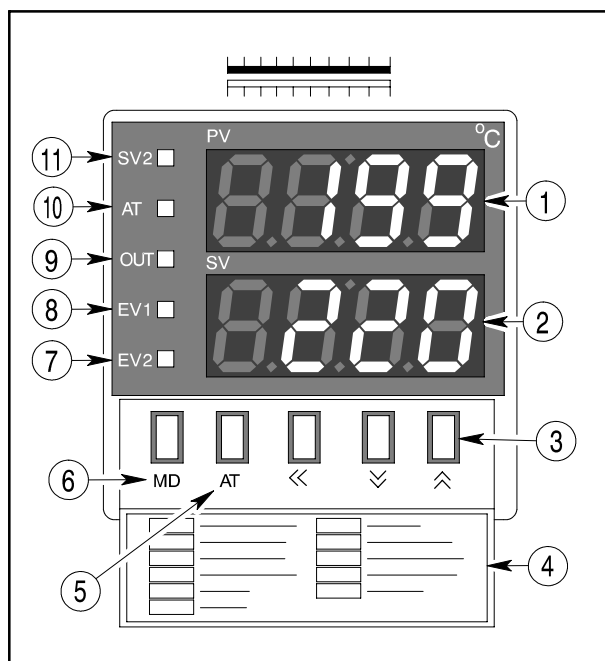
#### 3.2.3.16 FEEDER COUNTER

Activating the Feeder Counter, allows operator to specify an exact number of sheets to be run. The feeder shuts off after the requirement has been met.

The counter only counts when the machine is in RUN mode and the Counter button is ON. The digital counter counts forwards to the number specified, then shuts feeder and vacuum OFF when that number is reached.

- Do not change setting while counter is running.

### 3 Operation



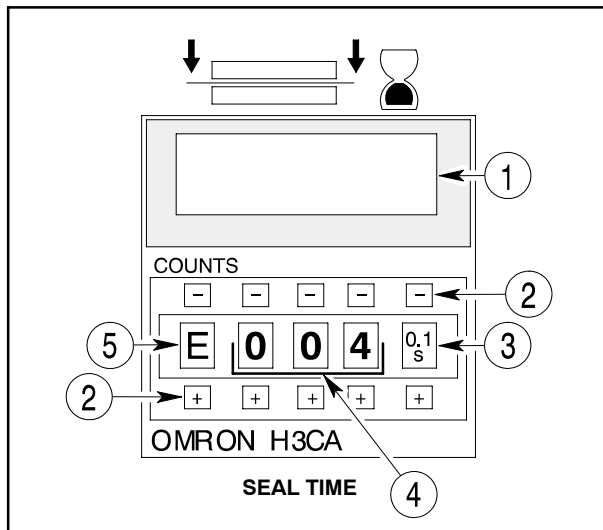
**Fig. 3-19. Heater Temperature Control**

#### 3.2.3.17 Heater Temperature Control

Controls upper and lower platen temperatures by cycling power to the heaters. The setpoint temperature is adjusted by using the buttons below the indicator display.

**Note !** *The heat controllers will automatically turn off if the machine is not run for two hours. The heat button will stay illuminated but the controllers will go dark and the platen will loose heat. To restart the machine: Press the start button while the heater button is still on and the machine will start to heat again.*

1. PV:Processing value indicator(Red color)
2. SV:Setting value indicator(Green color)
3. ARROWS(3): Key shifting the display.
4. Information for operation mode.
5. AT Key: The mode key to execute Auto tuning function.
6. MD Key: The mode key to change the items to be set, such as alarm value, etc.
7. EV2: EVENT2 Output signal lamp. (Not Used)
8. EV1: EVENT1 Output signal lamp. (Not Used)
9. OUT: Output signal lamp.
- 10.AT: The signal lamp flickers while Auto tuning is being executed.
- 11.SV2: Signal lamp for SV2 operation. (Not Used)



**Fig. 3-20. Seal Timer**

#### 3.2.3.18 Seal Timer

Operate the pushbuttons to select the desired settings.

1. Display Window
2. Operator Pushbuttons
3. Time Unit Display Window
  - Set on 0.1s always.
4. Rated Time Display Window
  - Do not set all three digits to zero.
5. Operation Mode Display Window
  - Always on "E"

### **3 Operation**

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#### **3.2.4 Scotty 5000 with Telemecanique PLC Control**

The Scotty 5000 incorporates two Telemecanique TSX07 Programmable Logic Controllers. Each controller has a series of LEDs indicating the on/off status of its inputs and outputs. Separate LEDs also verify communication between controllers. Check Electrical Sheets 8 and 8A for a listing of the devices that are attached to the controller and to which location (input/output), the device is attached.

When a device is active, the green LED is lit. The yellow com LED should always be lit. The second smaller PLC will have a blinking red LED in the error position which is normal. The larger primary PLC error lamp should not be lit.

## 3.3 Preliminary Inspection and Start-Up Procedure

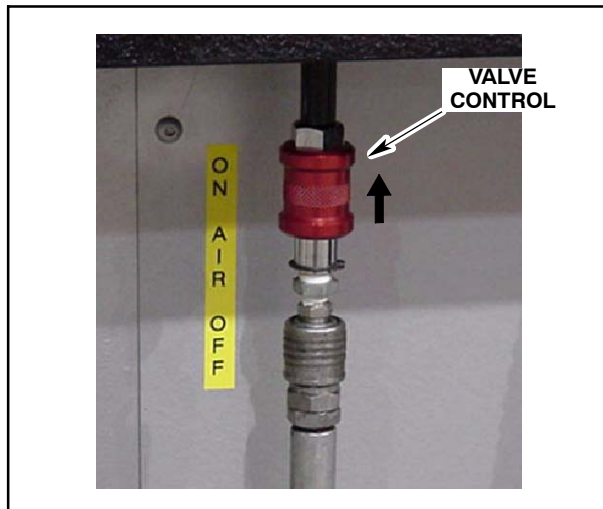


Fig. 3-21. Air Valve Control

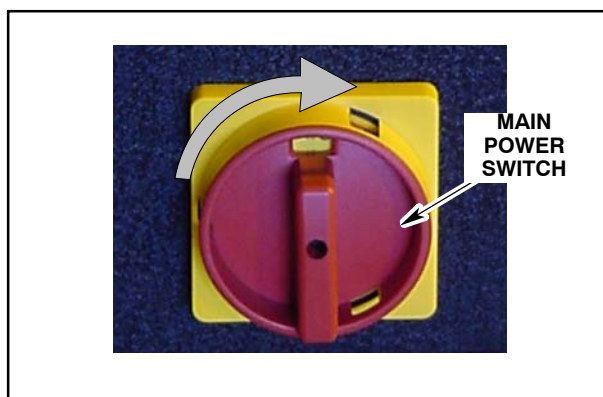


Fig. 3-22. Circuit Breaker Switch (ON)

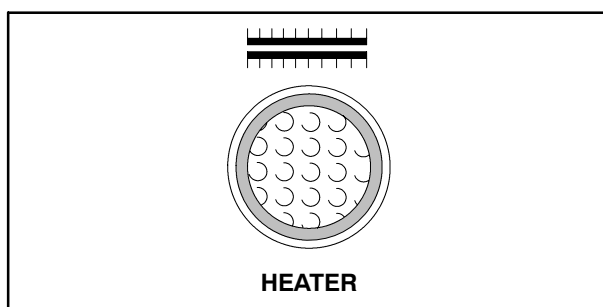


Fig. 3-23. Warm Up Heater

### 3.3.1 Preliminary Set-Up

**Step: 1.** Slide the valve control up to the **ON** position.

**Step: 2.** Main Power Switch **ON**.

To laminate plastic to paper:

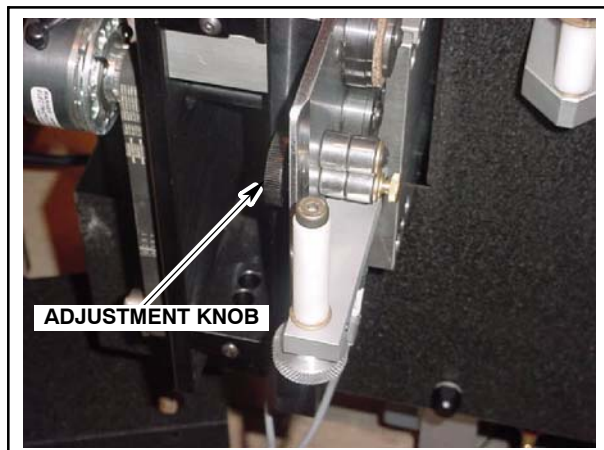
**Step: 3.** Press HEATER pushbutton.

**Step: 4.** Set temperature controllers to 220-230°F as a starting point.

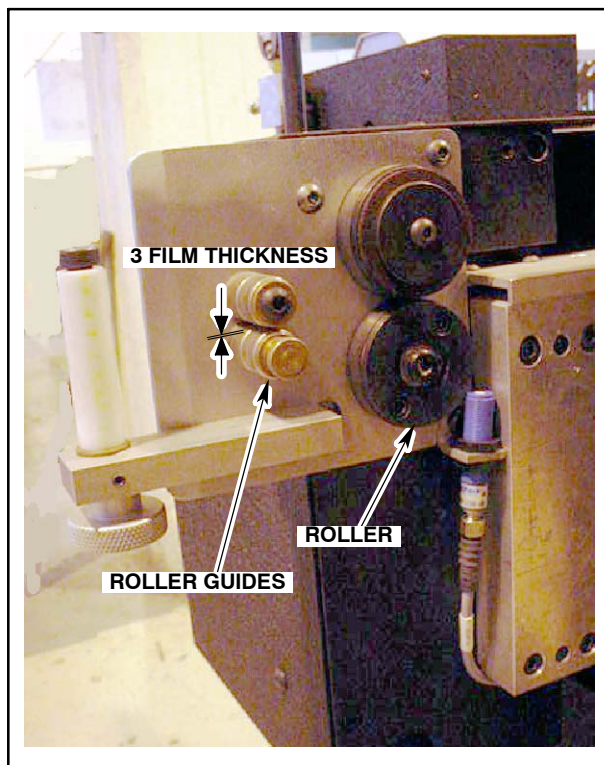
**Note !** *Starting Heaters now will allow heaters to reach operating temperature while the rest of the machine is being set up.*



### 3 Operation



**Fig. 3-24. Loosen Guide Roller Adjustment Knob**



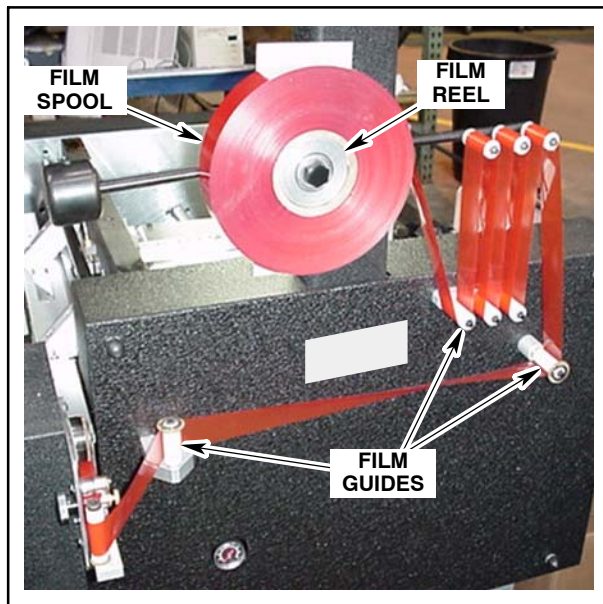
**Fig. 3-25. Set Gap Between Plastic Feed Roller Guides to 3 Film Thickness**

#### Reel Holder

**Step: 1.** Loosen adjustment knob on the bottom roller guide.

**Step: 2.** Set the gap between the plastic feed roller guides to 3 film thickness by moving the lower roller guide.

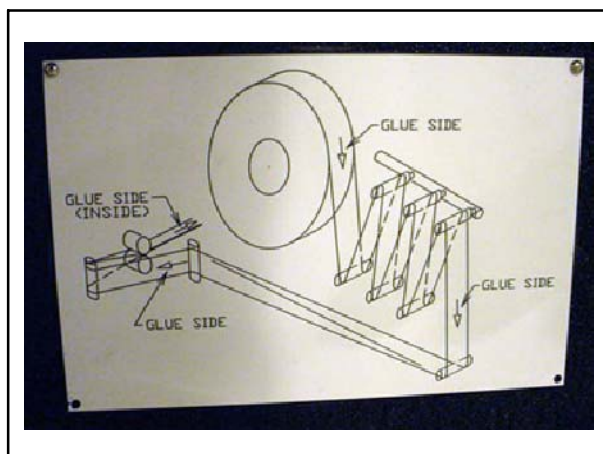
**Step: 3.** Tighten the adjustment knob.



**Fig. 3-26. Loading the Film**

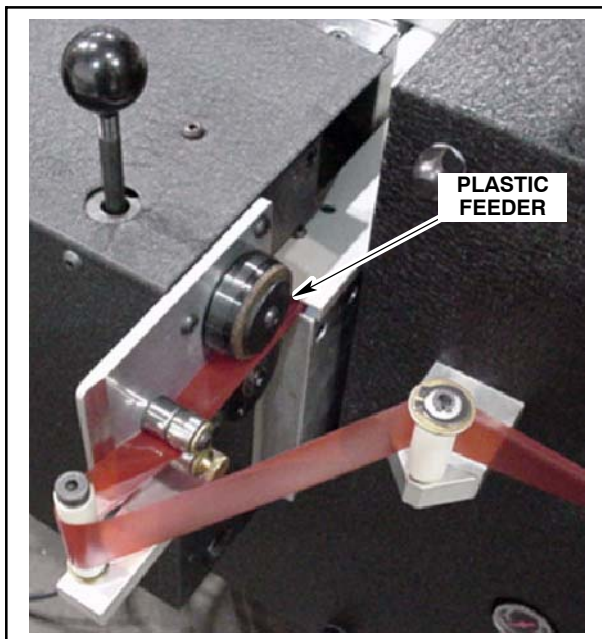
**Step: 4.** Load film reel on the reel holder.

**Step: 5.** Thread film through the film guides as shown.



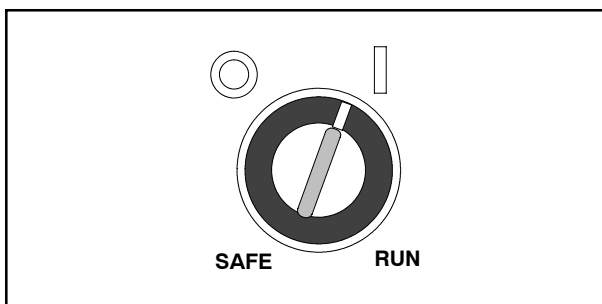
**Fig. 3-27. Refer to Decal for Film Loading**

### 3 Operation



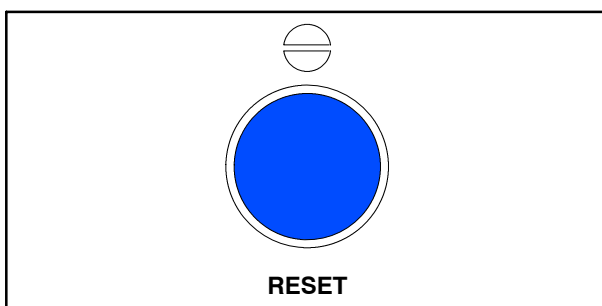
**Fig. 3-28. Hand Feed Film into Machine**

**Step: 6.** Hand feed film into the plastic feed mechanism.



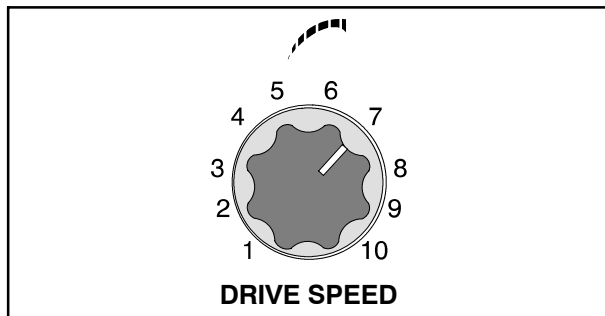
**Fig. 3-29. Key Switch**

**Step: 7.** Turn key switch to **RUN**



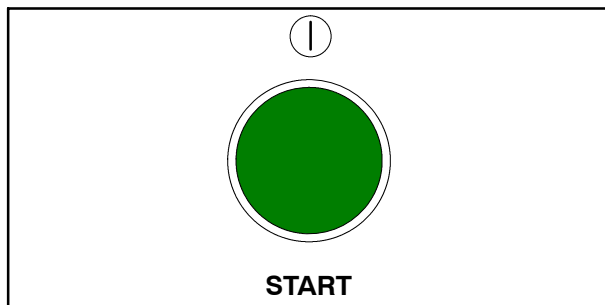
**Fig. 3-30. Reset Pushbutton**

**Step: 8.** Press RESET pushbutton.



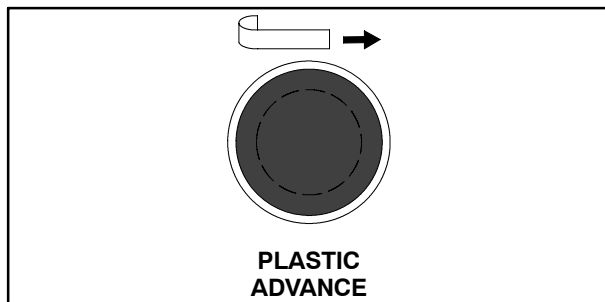
**Fig. 3-31. Adjust Drive Speed**

**Step: 9.** Adjust drive speed to 7.



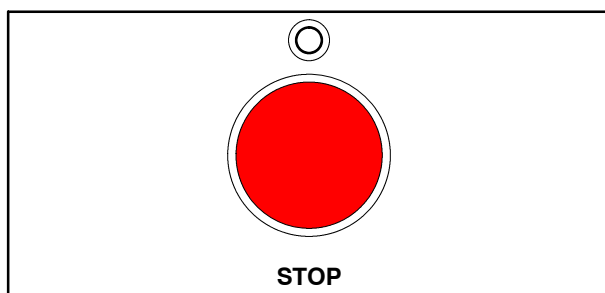
**Fig. 3-32. Start Pushbutton**

**Step: 10.** Press START pushbutton.



**Fig. 3-33. Plastic Advance Pushbutton**

**Step: 11.** Press and hold PLASTIC ADVANCE pushbutton till plastic enters the Tip Die.



**Fig. 3-34. Stop Drive Pushbutton**

**Step: 12.** Press STOP pushbutton.

### 3 Operation

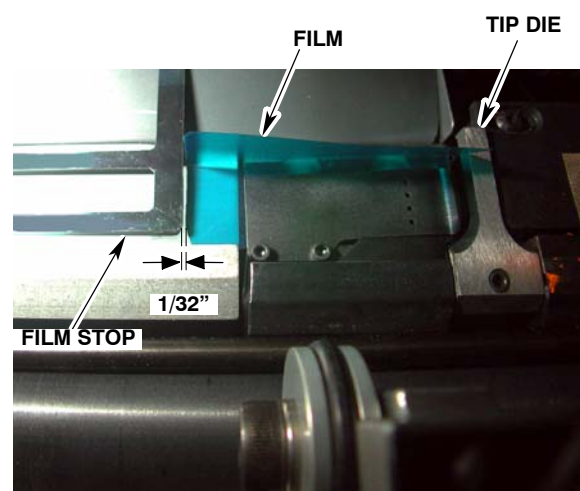
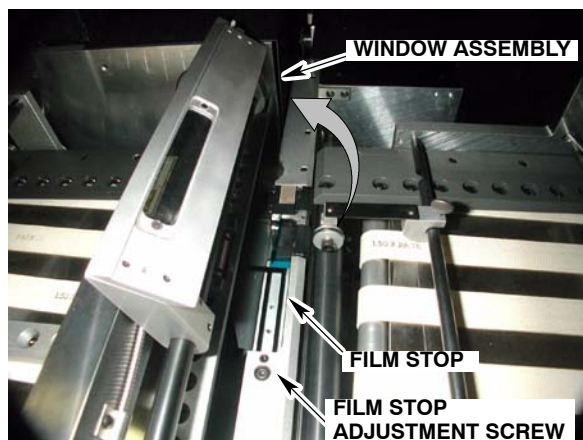


Fig. 3-35. Remove Film Scrap from Tip Die Area

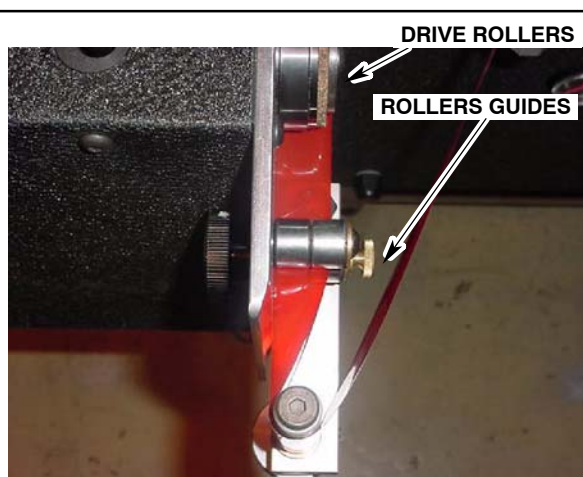


Fig. 3-36. Inspect Plastic Feed Area

**Step: 13.** Lift the window assembly to expose the Tip Die.

**Step: 14.** Loosen the film stop adjustment screw.

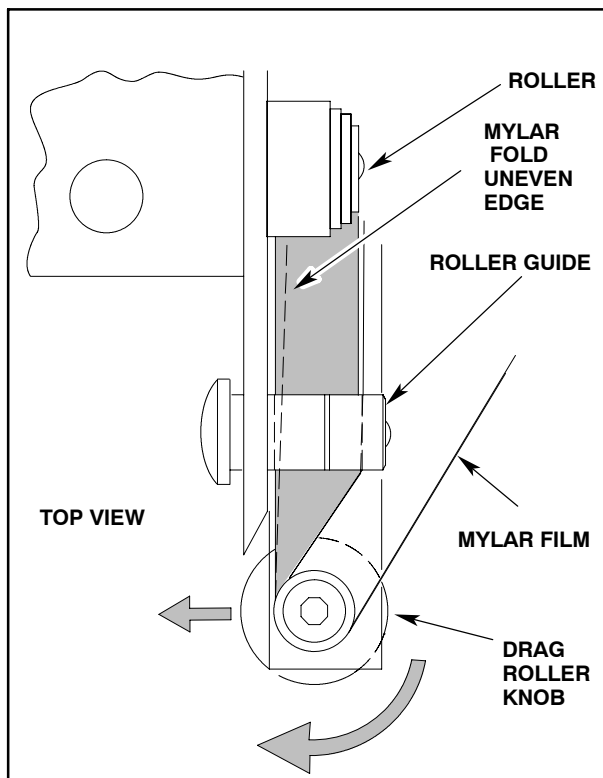
**Step: 15.** Set film stop to 1/32" from edge of film after plastic size handwheel has been set.

**Step: 16.** Retighten the film stop adjustment screw.

**Step: 17.** Remove film from Tip Die.

**Step: 18.** Lower the window assembly.

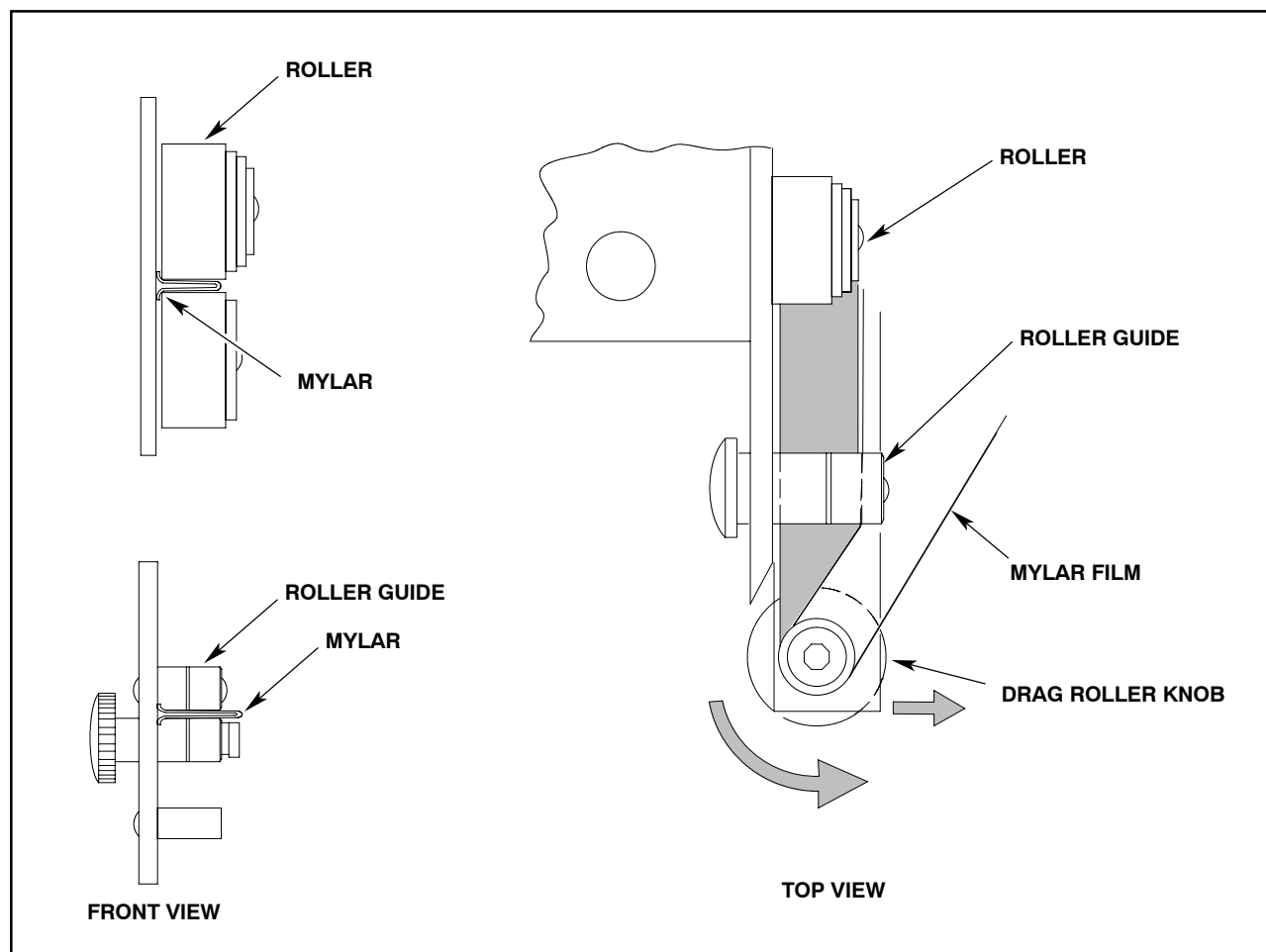
**Step: 19.** Inspect the folded plastic that has been fed through the roller guides and into the drive roller assembly.



**Step: 20.** If the plastic (Mylar) fold is uneven, move roller to the left as shown in Fig. 3-37.

**Fig. 3-37. Move Drag Roller Left If Mylar is Tracking Unevenly**

### 3 Operation



**Fig. 3-38. Inspect Plastic Feed Tracking**

**Step: 21.** If Mylar is tracking behind the fold and drive rollers, move roller to the right as shown in Fig. 3-38.



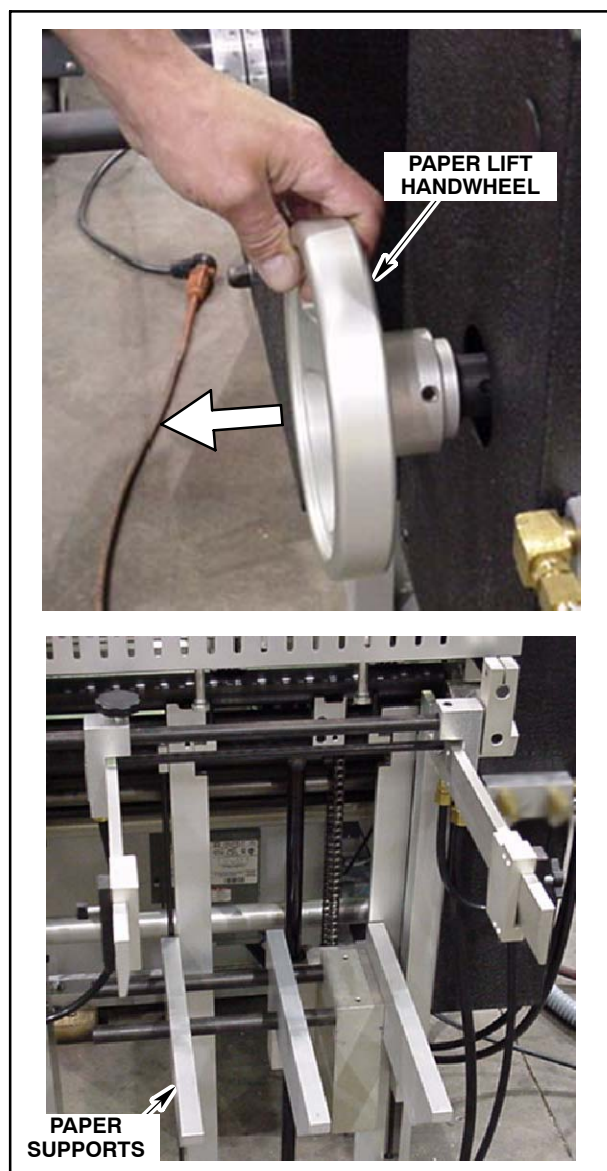


Fig. 3-39. Set Paper Lift

#### Loader Set-Up.

**Step: 1.** Pull out the paper lift handwheel and lower the paper lift.

**Step: 2.** Set paper supports to fit paper.

**Note !** *Make sure left support is not underneath left guide rail.*

### 3 Operation

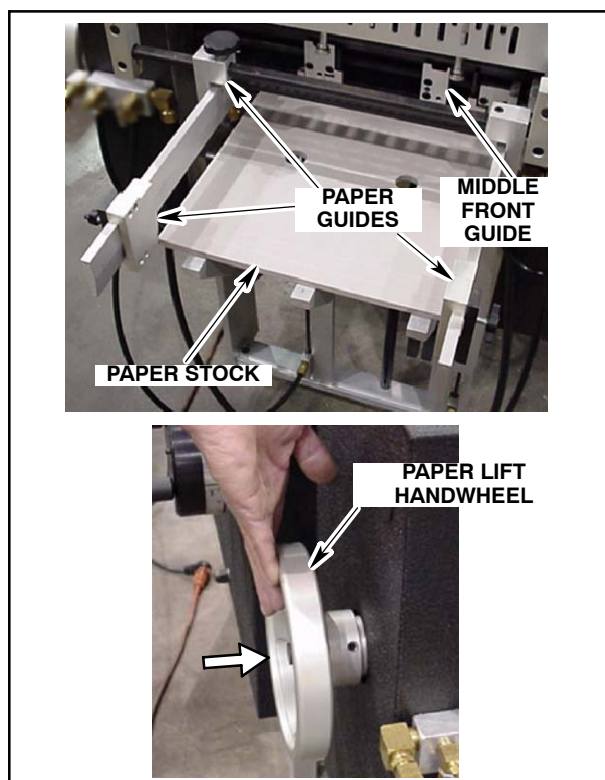


Fig. 3-40. Load Stock

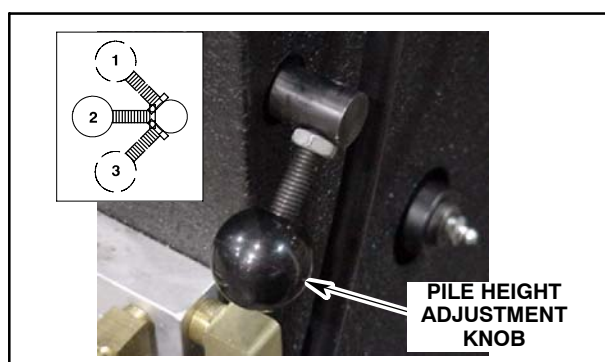


Fig. 3-41. Adjustment Knob

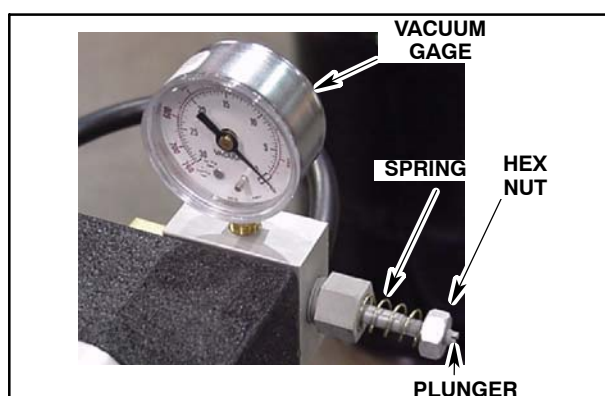


Fig. 3-42. Vacuum Setting

**Step: 3.** Load paper stock.

**Step: 4.** Push handwheel in and raise the paper lift till the paper is level with top screw of the middle front guide.

**Note !** *Make sure paper lift handwheel is fully engaged. If not, the stack may fall without warning.*

**Step: 5.** Adjust paper guides (length & width).

**Step: 6.** Depending on the curl and weight of the stock, adjust the pile height with the adjustment knob.

1. Up for heavier or downward curl stock.
2. Middle for normal and straight stock.
3. Down for lighter or upward curl stock.

**Step: 7.** Adjust Vacuum.

**Note !** *The vacuum starting point is 10 inch pounds for standard index stock. The vacuum can be adjusted by turning the hex nut to tighten or loosen the spring, while keeping the plunger stationary.*

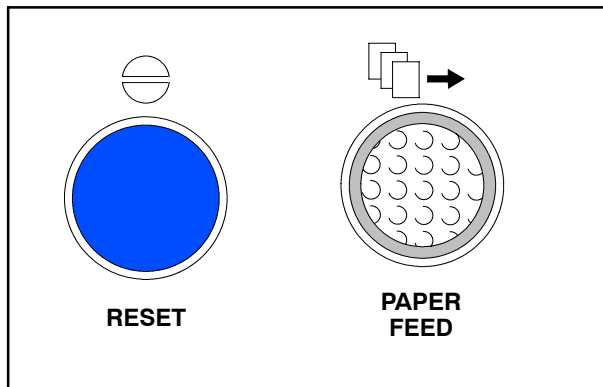


Fig. 3-43. Start Up Air Valves

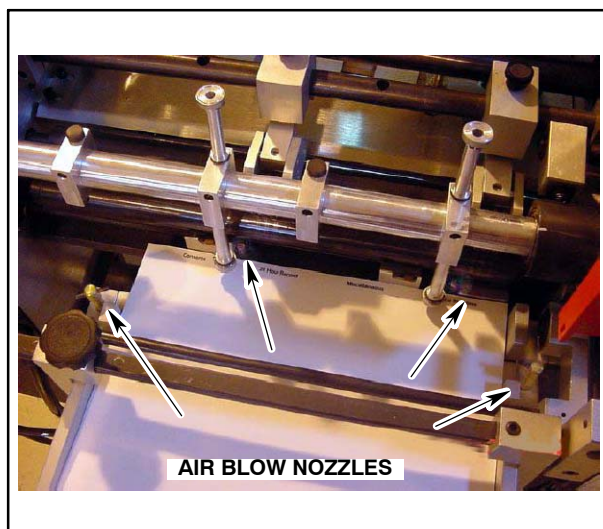


Fig. 3-44. Blow-Air System

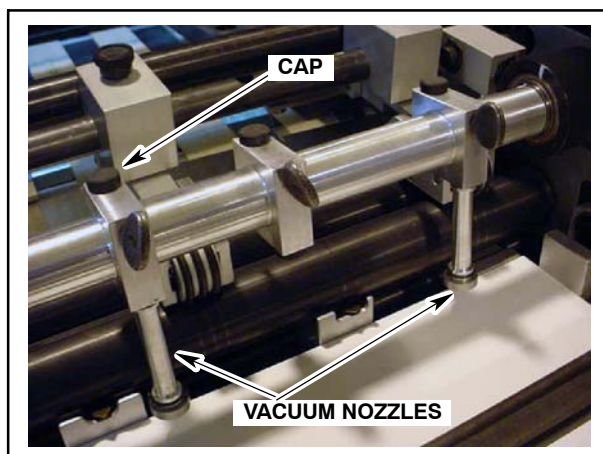


Fig. 3-45. Two Vacuum Nozzles in Place

#### 3.3.1.1 Set Sheet Separators and Separator Air Valves

Adjust valves according to the size and weight of the paper. The following steps will start the Blower, so that the system can be adjusted.

**Step: 1.** Push RESET button.

**Step: 2.** Push PAPER FEED button.

**Step: 3.** If the vacuum nozzles are not in an upward position, index machine to place them there.

#### 3.3.1.2 Blow-Air System

The blow-air system performs several functions. First, it separates the sheets so the effect of the vacuum bleeding through the paper is less critical. Also, with the second sheet separated from the first sheet, it allows air to get in between the sheets when the top sheet is removed from the stack. This prevents the first sheet from sucking up the second sheet. Another function of the blow-air is to lift the top few sheets until the top sheet is up against the sheet separator finger. This establishes a uniform height for the top sheet so that it will be in the proper position when the nozzles come down for the pick-up.

The feeder is equipped with four blow nozzles. Two of these blow in from the edges of the stack and two blow in from the front of the stack.

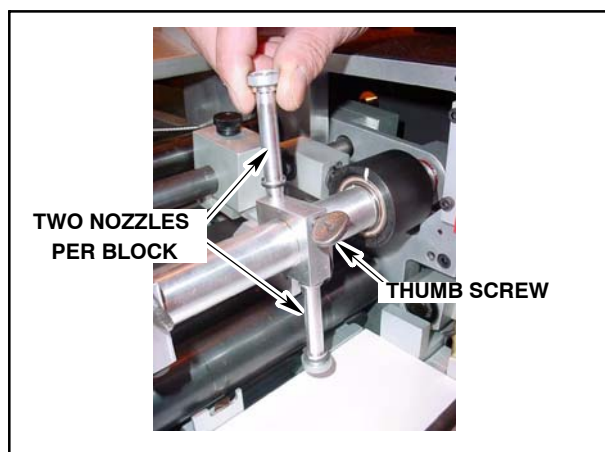
#### 3.3.1.3 Vacuum Nozzle Set-Up

It is necessary to use different quantities of vacuum nozzles to run different types of production. Vacuum nozzles may have to be moved horizontally to accommodate different sheet sizes.

Use two nozzles (one per block) for 4200 laminated and cut tabs per hour.

**Note !** *It is not possible to run 5,000 tab cut and laminated sheets per hour.*

### 3 Operation



**Fig. 3-46. Vacuum Nozzle Set Up**

Use four nozzles (two per block) when running 5,000 cut only (not laminated) tabs per hour.

To Install/remove: Loosen the thumb screw and insert/remove vacuum nozzle and rubber plug. Gently retighten thumb screws.

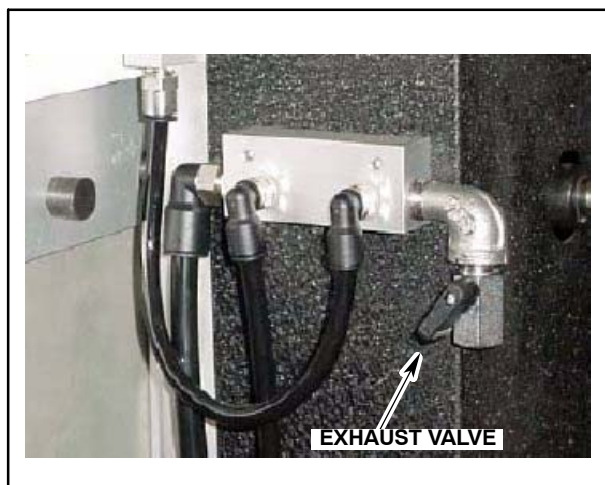


**Fig. 3-47. Side Air Blow Nozzles**

Blow air nozzle height is pre-set at the factory and should not need to be adjusted. If they need adjusting, the side nozzles are adjusted in height by screwing them either up or down. The front nozzles can be adjusted in height by first tilting them toward the stack and then screwing them either up or down.

To adjust direction of air nozzle, rotate nozzle to desired location.





**Fig. 3-48. Adjust the Air Blow At the Exhaust Valve**

The amount of blow-air from the nozzles can be adjusted by use of the exhaust valve located on the feeder guards.

The right exhaust valve controls the RH side air blow nozzle and RH top air blow nozzle. The left exhaust valve controls the LH side and top air nozzles.

## CAUTION!

**DO NOT RESTRICT THE BLOW AIR TO THE POINT WHERE IT OVERLOADS THE VACUUM PUMP. THIS CAN CAUSE THE MOTOR TO BE DAMAGED.**

**Step: 1.** Use exhaust valve to adjust over all blow air for all four blow air nozzles.

- The higher the vacuum, the more closed this valve will need to be.
- Heavier stocks will need more blow air, lighter stock will need less blow air.
- The higher the vacuum is set, the less blow air is available.

**Step: 2.** Open valves until the stock touches the separator fingers. Adjust the air valves according to size and weight of the stock.



**Fig. 3-49. Plastic Feed Window Adjustment**

#### 3.3.1.4 Plastic Feed Window Adjustment

The plastic feed window holds the Mylar in its proper open position.

To adjust the window:

**Step: 1.** Loosen the jam nut on the plastic thumb screw.

**Step: 2.** Rotate the thumb screw counter-clockwise until the window assembly is touching the tip die and the plastic feed tunnel.

**Step: 3.** Lift up the window assembly and place a piece of index stock (from current production run) and place it over the tip die area.

**Step: 4.** Set the window assembly down on top of the index stock and slowly turn the thumb screw clockwise until the index stock can be slide back and forth easily without any resistance.

**Step: 5.** Gently retighten the jam nut.

### 3 Operation

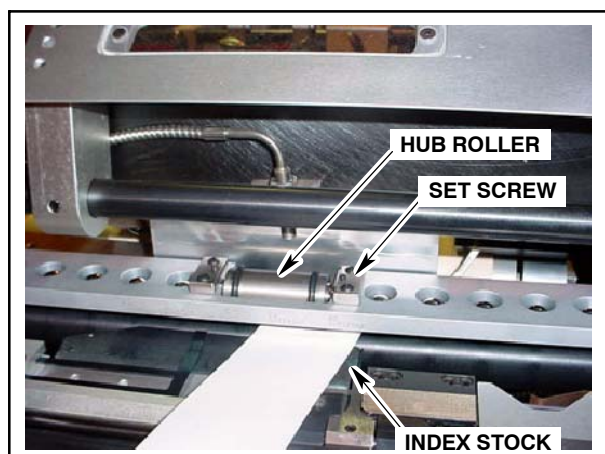


Fig. 3-50. Adjust Hub Roller Assembly

#### 3.3.2 Adjust Hub Roller

The hub roller preforms a couple of tasks. It drives the index stock with the Mylar into the platen press assembly where it is kept tight against the paper stop until the platen press seals the Mylar to the stock and then drives it out of the platen press assembly.

To adjust the Hub Assembly:

- Step: 1.** Lift the plastic window assembly.
- Step: 2.** Take a strip of stock that will be used during production and cut a small strip.
- Step: 3.** Set the machine drive to half speed.
- Step: 4.** Insert the strip of stock between the black rubber o-ring on the hub roller and the nylon in-feed roller. You should feel a slight tug on the stock.

**Note !** *If there is too much tension, the rollers could leave marks on some stocks. If there is not enough tension, the stock will not leave the platen press assembly in time for the next piece of stock to enter.*

To adjust tension:

- Step: 1.** Remove cover.
- Step: 2.** Turn the set screw clockwise for more tension and counter-clockwise for less. The roller must have equal tension on both sides.
- Step: 3.** Replace cover.
- Step: 4.** Reset Machine.
- Step: 5.** Test tension again. Repeat if necessary.

#### 3.3.3 Adjust Drive Roller

To Adjust Roller Drive:

- Step: 1.** Loosen the the thumb screw that holds the drive roller assembly to the mounting bar.
- Step: 2.** Lightly apply pressure to the spring plate with your fingers.
- Step: 3.** Retighten thumb screw.

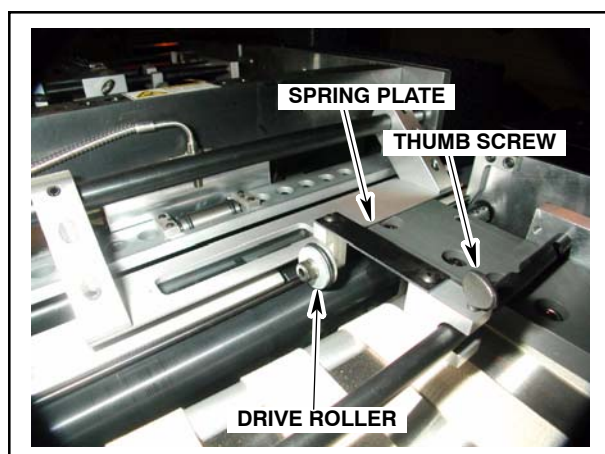


Fig. 3-51. Adjust Roller Drive

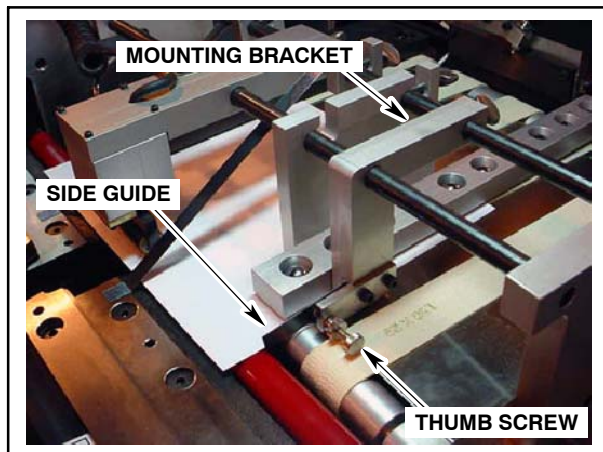


Fig. 3-52. Side Guide Set-Up

#### 3.3.4 Side Guide Set-Up

To adjust the Side Sheet Guide:

- Step: 1.** Slowly jog one piece of sheet stock (without Mylar) up to the tab cutter. Lower knife blade and stop the sheet.
- Step: 2.** Loosen the side guide thumb nut and screw.
- Step: 3.** Loosen the thumb screw on the mounting bracket and position the assembly close to the sheet stock.
- Step: 4.** Tighten mounting bracket thumb screw.
- Step: 5.** Slowly turn the thumb screw until the side guide just touches the side of the sheet stock.

**Note !** *If the side guide is positioned too tightly against the sheet stock it will stop the sheet as it passes through the conveyor. If it is positioned too far from the sheet stock it will cause the sheet to twist as it passed through.*

- Step: 6.** Tighten the thumb nut on the guide.



### 3 Operation

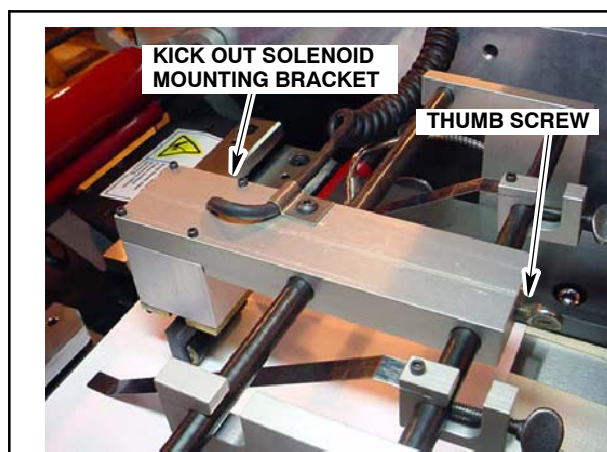


Fig. 3-53. Kick Out Solenoid Adjustment

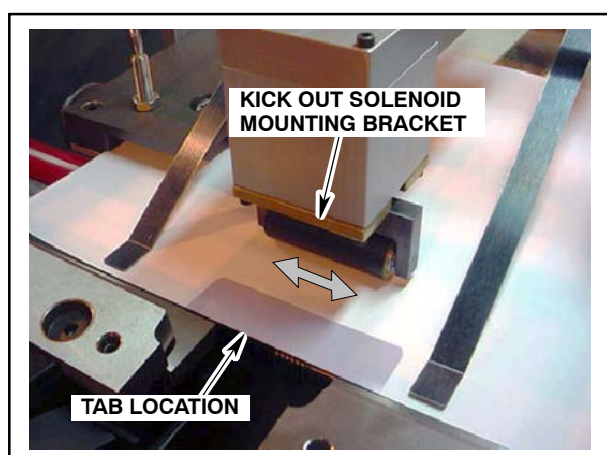


Fig. 3-54. Align Kick Out Solenoid to Tab Location

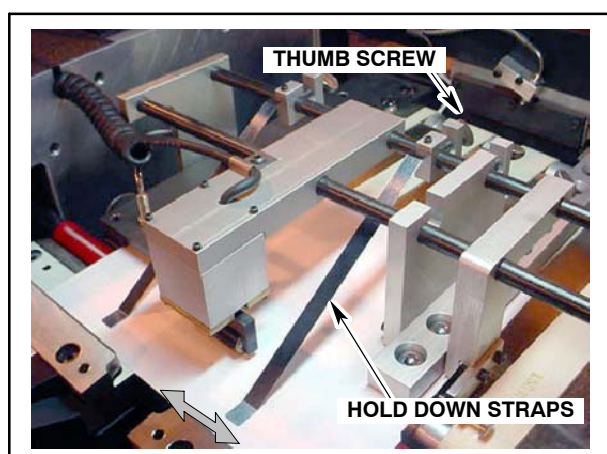


Fig. 3-55. Hold Down Straps

#### 3.3.5 Kick Out Solenoid Set-Up

**Step: 1.** Loosen the thumb screw on the solenoid mounting plate.

**Step: 2.** Position the solenoid assembly inline with the tab location.

**Step: 3.** Tighten the thumb screw.

#### 3.3.6 Sheet Hold Down Straps

**Step: 1.** Loosen the thumb screws on the hold down straps mounting block.

**Step: 2.** Position the straps so they are equally divided between the end of the sheet and the kick out solenoid.

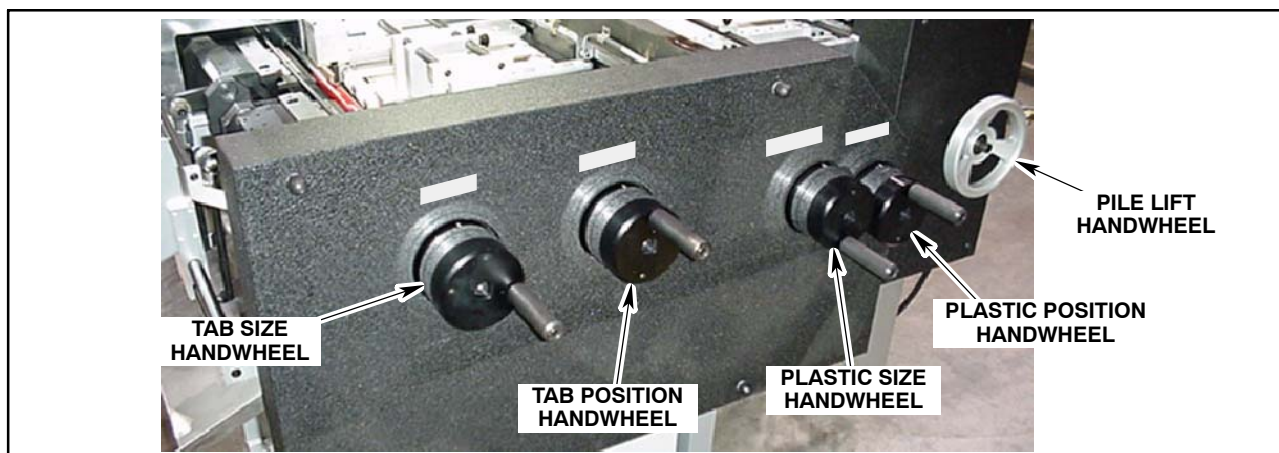
**Note !** *If the sheets have a “curl” to them, position the straps as close to the curl as possible.*

**Step: 3.** Tilt the straps down until they just touch the sheet.  
Too much down pressure will stop the sheet from passing through.

**Step: 4.** Tighten the thumb screw.

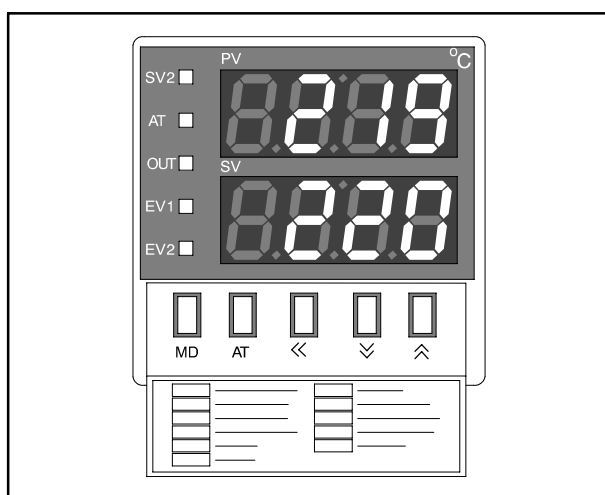
**Step: 5.** Remove the sheet from the machine.

## 3.3.7 Set Up For Production



**Fig. 3-56. Set Handwheels for Tabs**

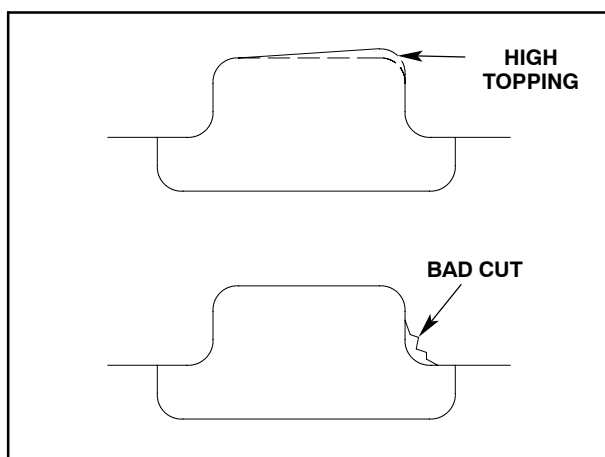
**Step: 1.** Use the charts in the back of this section to set the machine up for the desired tabs.



**Fig. 3-57. Heater Controls**

**Step: 2.** If laminating plastic to paper, check heat controls to see if they have reached their operating temperature.

**Note !** *The starting point for the heaters is 220-230 °F. This may need to be changed depending on thickness of stock and the length or type of plastic.*



**Fig. 3-58. Test Sheets**

**Step: 3.** Run at least 6 test sheets of stock. Check each sheet for:

**High Topping.**

- Roller tension.
- Steel ball placement.

**Cut (tab and edge of stock)**

- Knife blade adjustment
- Dull knives

### 3 Operation

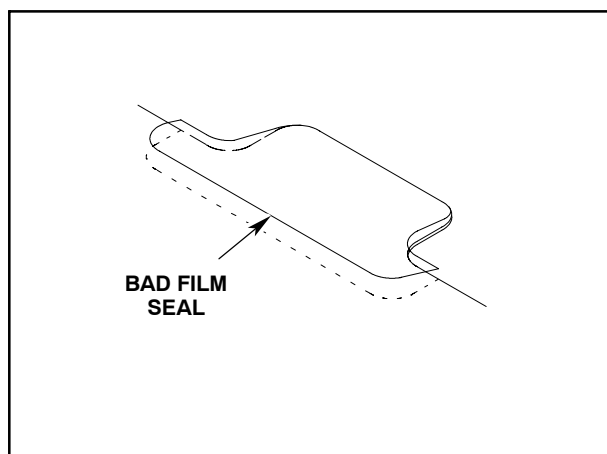


Fig. 3-59. Film Seal

#### Film Seal (adhesion to stock)

- Heat or seal time
- Bad film
- Bad paper stock

If needed make necessary adjustments and repeat till problem is corrected.

**Note !** *The film may not adhere to some coated stocks. Aqueous and Varnished stocks tend to release gas when laminated and cause bubbles in the film. Also, coated stocks tend to isolate the film from the paper not allowing the plastic to adhere to the paper fibers.*

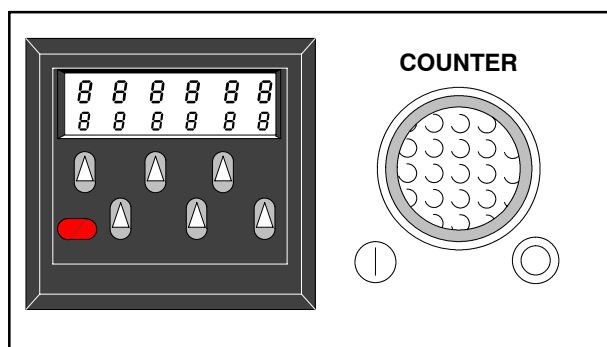


Fig. 3-60. Feeder Counter

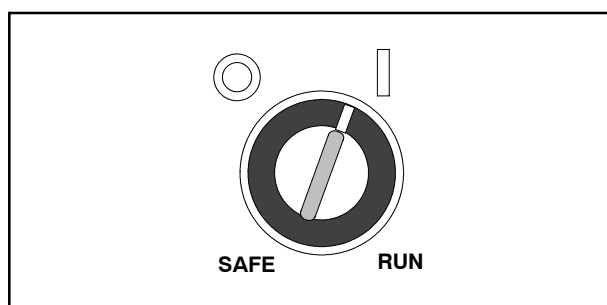


Fig. 3-61. Key Switch

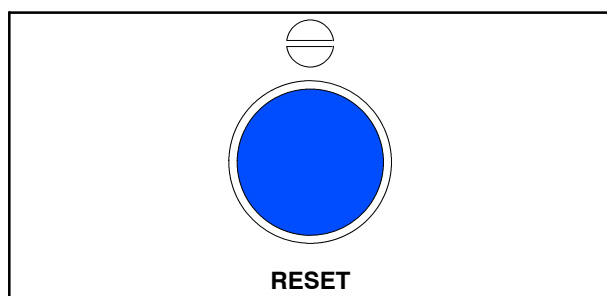


Fig. 3-62. Reset Pushbutton

#### 3.3.8 Run Production

**Step: 1.** Set counter to desired quantity of sheets to be run.

**Step: 2.** Push Counter On/Off button to start counting.

**Step: 3.** Turn key switch to RUN.

**Step: 4.** Press RESET pushbutton.

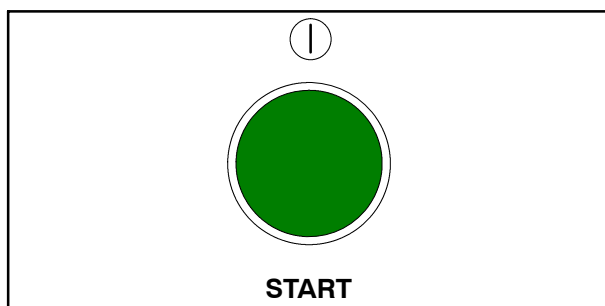


Fig. 3-63. Start Pushbutton

**Step: 5.** Press START pushbutton.

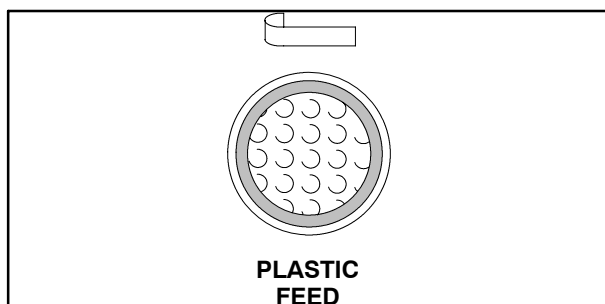


Fig. 3-64. Plastic Feed Pushbutton

**Note !** *If tabs are to be laminated, include this Step. If not, skip this Step.*

**Step: 6.** Press PLASTIC FEED pushbutton to turn ON.

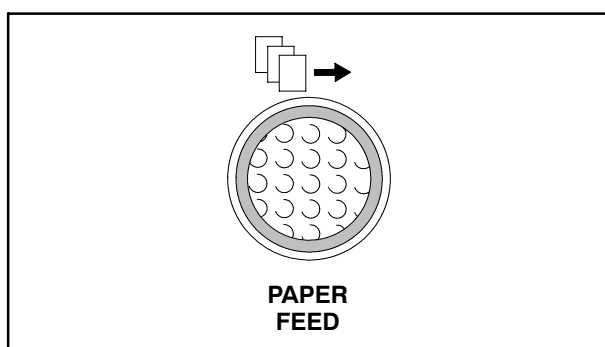


Fig. 3-65. Paper Feed Pushbutton

**Step: 7.** Press PAPER FEED pushbutton to turn ON machine for the run.

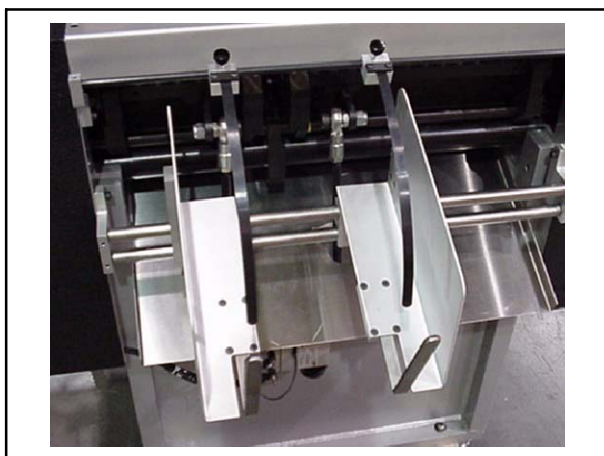


Fig. 3-66. Remove Finished Tabs

**Step: 8.** Adjust paper catcher to collect outgoing stock.

**Step: 9.** Remove finished tabs as necessary to prevent over filling the basket.

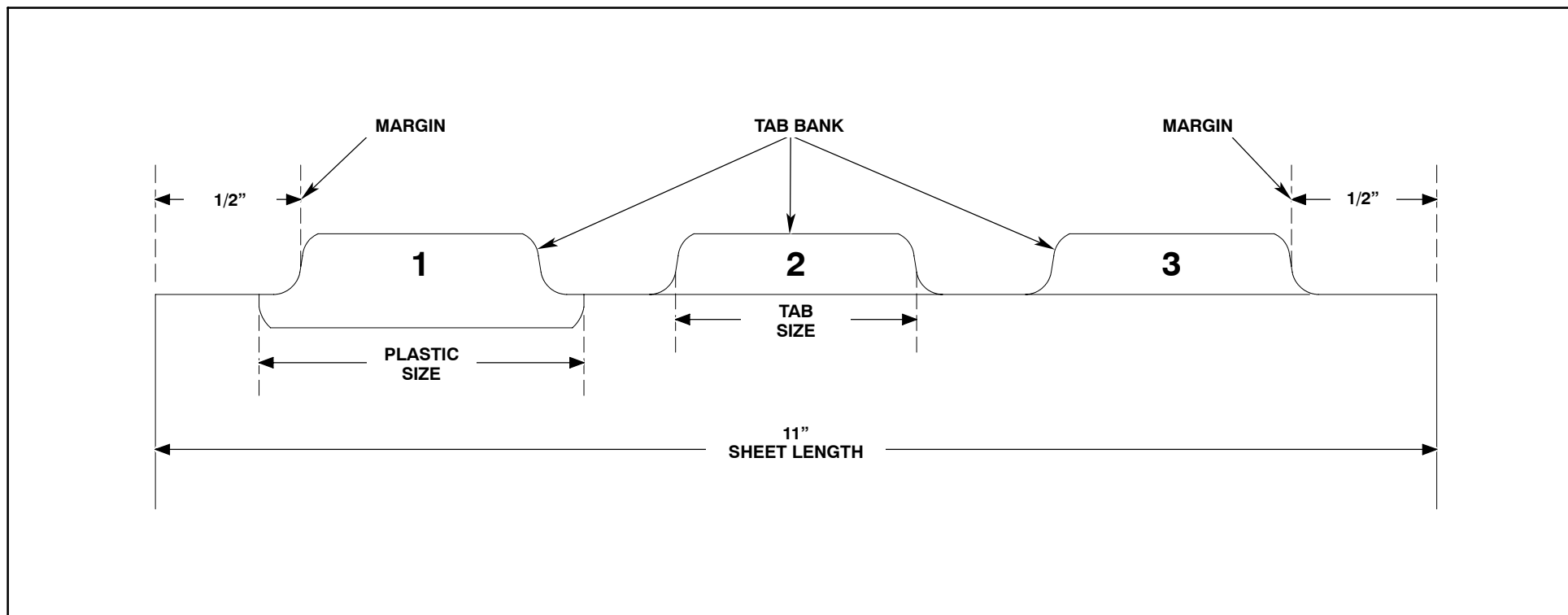
### **3 Operation**

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Intentionally Blank

## **3.4 Handwheel and Tab Set-Up**

### 3.4.1 Hand Wheel and Tab Set-Up Definitions



**Fig. 3-67. Chart Diagram (Example: English Measurement 3 Tab Bank, 11" Sheet Length, 1/2" Margin)**

Use the definitions in the above diagram to determine hand wheel set ups.

- Margin: The dimension from the top or bottom edge of the sheet to the outwardmost flat edge of the first or last tab on the page. The top and bottom margins will be the same dimension.
- Sheet Length: The overall length of the sheet of tab stock paper.
- Tab Blank: The quantity of tab divisions desired on page.
- Plastic Size: Dimension of plastic film applied to tab area prior to cutting.





**Note !** *Page intentionally left blank.*



# **HANDWHEEL SET-UPS FOR 5" SHEET WITH $\frac{3}{16}$ " MARGINS**

NOTE: SHADED AREAS ARE ACHIEVED BY TURNING THE STOCK UPSIDE DOWN. THE MIDDLE TAB IS JUST TO THE LEFT OF THE SHADED AREA.

TAB BANK	END TAB POSITIONS ONLY					ALL OTHER TAB POSITIONS				
	TAB SIZE	TABS	PLASTIC LENGTH	PLASTIC POSITION	TAB POSITION	PLASTIC LENGTH <sub>H</sub>	PLASTIC & TAB POSITIONS			
<b>3</b>	1.54	1 & 3	2.15	1.03	.96	2.29	<b>2</b>			
							2.50			
<b>4</b>	1.16	1 & 4	1.77	.84	.77	1.91	<b>2</b>	<b>3</b>		
							1.92	1.92		
<b>5</b>	.93	1 & 5	1.54	.72	.65	1.68	<b>2</b>	<b>3</b>	<b>4</b>	
							1.57	2.50	1.57	
<b>6</b>	.77	1 & 6	1.48	.64	.57	1.52	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
							1.34	2.11	2.11	1.34



# **HANDWHEEL SET-UPS FOR 6" SHEET WITH $\frac{3}{16}$ " MARGINS**

NOTE: SHADED AREAS ARE ACHIEVED BY TURNING THE STOCK UPSIDE DOWN. THE MIDDLE TAB IS JUST TO THE LEFT OF THE SHADED AREA.

TAB BANK	END TAB POSITIONS ONLY					ALL OTHER TAB POSITIONS				
	TAB SIZE	TABS	PLASTIC LENGTH	PLASTIC POSITION	TAB POSITION	PLASTIC LENGTH <sub>H</sub>	PLASTIC & TAB POSITIONS			
<b>3</b>	1.88	1 & 3	2.49	1.19	1.12	2.63	<b>2</b>			
							3.00			
<b>4</b>	1.41	1 & 4	2.02	.96	.89	2.16	<b>2</b>	<b>3</b>		
							2.30	2.30		
<b>5</b>	1.13	1 & 5	1.74	.82	.75	1.88	<b>2</b>	<b>3</b>	<b>4</b>	
							1.87	3.00	1.87	
<b>6</b>	.94	1 & 6	1.55	.73	.66	1.69	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
							1.59	2.53	2.53	1.59



# **HANDWHEEL SET-UPS FOR 7-1/4" SHEET WITH 3/16" MARGINS**

NOTE: SHADED AREAS ARE ACHIEVED BY TURNING THE STOCK UPSIDE DOWN. THE MIDDLE TAB IS JUST TO THE LEFT OF THE SHADED AREA.

END TAB POSITIONS ONLY						ALL OTHER TAB POSITIONS											
TAB BANK	TAB SIZE	TABS	PLASTIC LENGTH	PLASTIC POSITION	TAB POSITION	PLASTIC LENGTH	PLASTIC & TAB POSITION										
<b>3</b>	2.29	1 & 3	2.83	1.43	1.33	3.04	<b>2</b>										
							3.63										
<b>4</b>	1.72	1 & 4	2.26	1.15	1.05	2.47	<b>2</b>	<b>3</b>									
							2.76	2.76									
<b>5</b>	1.38	1 & 5	1.92	.93	.88	2.13	<b>2</b>	<b>3</b>	<b>4</b>								
							2.25	3.63	2.25								
<b>6</b>	1.15	1 & 6	1.69	.86	.76	1.90	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>							
							1.90	3.05	3.05	1.90							
<b>7</b>	.98	1 & 7	1.52	.78	.68	1.73	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>						
							1.66	2.64	3.63	2.64	1.66						
<b>8</b>	.86	1 & 8	1.40	.72	.62	1.61	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>					
							1.48	2.33	3.19	3.19	2.33	1.48					
<b>9</b>	.76	1 & 9	1.30	.67	.57	1.51	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>				
							1.33	2.09	2.86	3.63	2.86	2.09	1.33				
<b>10</b>	.69	1 & 10	1.23	.63	.53	1.44	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>			
							1.22	1.90	2.59	3.28	3.28	2.59	1.90	1.22			
<b>11</b>	.63	1 & 11	1.17	.60	.50	1.38	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>		
							1.13	1.75	2.38	3.00	3.63	3.00	2.38	1.75	1.13		
<b>12</b>	.57	1 & 12	1.10	.57	.47	1.32	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>	
							1.05	1.62	2.19	2.76	3.33	3.33	2.76	2.19	1.62	1.05	
<b>13</b>	.53	1 & 13	1.07	.55	.45	1.28	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>
							.98	1.51	2.04	2.56	3.09	3.63	3.09	2.56	2.04	1.51	.98



### HANDWHEEL SET-UPS FOR 7-<sup>1</sup>/<sub>4</sub>" SHEET WITH <sup>1</sup>/<sub>4</sub>" MARGINS

NOTE: SHADED AREAS ARE ACHIEVED BY TURNING THE STOCK UPSIDE DOWN. THE MIDDLE TAB IS JUST TO THE LEFT OF THE SHADED AREA.

END TAB POSITIONS ONLY						ALL OTHER TAB POSITIONS												
TAB BANK	TAB SIZE	TABS	PLASTIC LENGTH	PLASTIC POSITION	TAB POSITION	PLASTIC LENGTH	PLASTIC & TAB POSITION											
<b>3</b>	2.25	1 & 3	2.86	1.45	1.38	3.00	<b>2</b>											
							3.63											
<b>4</b>	1.69	1 & 4	2.30	1.16	1.09	2.44	<b>2</b>	<b>3</b>										
							2.78	2.78										
<b>5</b>	1.35	1 & 5	1.96	1.00	.93	2.10	<b>2</b>	<b>3</b>	<b>4</b>									
							2.28	3.63	2.28									
<b>6</b>	1.13	1 & 6	1.74	.88	.81	1.88	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>								
							1.94	3.06	3.06	1.94								
<b>7</b>	.96	1 & 7	1.57	.80	.73	1.71	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>							
							1.70	2.66	3.63	2.66	1.70							
<b>8</b>	.84	1 & 8	1.45	.74	.67	1.59	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>						
							1.51	2.36	3.20	3.20	2.36	1.51						
<b>9</b>	.75	1 & 9	1.36	.70	.63	1.50	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>					
							1.37	2.13	2.88	3.63	2.88	2.13	1.37					
<b>10</b>	.68	1 & 10	1.29	.66	.59	1.43	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>				
							1.26	1.94	2.61	3.29	3.29	2.61	1.94	1.26				
<b>11</b>	.61	1 & 11	1.22	.63	.56	1.36	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>			
							1.17	1.78	2.40	3.01	3.63	3.01	2.40	1.78	1.17			
<b>12</b>	.56	1 & 12	1.17	.60	.53	1.31	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>		
							1.09	1.66	2.22	2.78	3.34	3.34	2.78	2.22	1.66	1.09		
<b>13</b>	.52	1 & 13	1.13	.58	.51	1.27	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>	
							1.03	1.55	2.07	2.59	3.10	2.63	3.10	2.59	2.07	1.55	1.03	



### HANDWHEEL SET-UPS FOR 7-3/4" SHEET WITH 3/16" MARGINS

NOTE: SHADED AREAS ARE ACHIEVED BY TURNING THE STOCK UPSIDE DOWN. THE MIDDLE TAB IS JUST TO THE LEFT OF THE SHADED AREA.

	END TAB POSITIONS ONLY					ALL OTHER TAB POSITIONS														
TAB BANK	TAB SIZE	TABS	PLASTIC LENGTH	PLASTIC POSITION	TAB POSITION	PLASTIC LENGTH	PLASTIC & TAB POSITION													
3	2.46	1 & 3	3.00	1.52	1.42	3.21	2													
							3.88													
4	1.84	1 & 4	2.38	1.21	1.11	2.59	2	3												
							2.95	2.95												
5	1.47	1 & 5	2.01	1.02	.92	2.20	2	3	4											
							2.40	3.88	2.40											
6	1.23	1 & 6	1.77	.90	.80	1.98	2	3	4	5										
							2.03	3.26	3.26	2.03										
7	1.05	1 & 7	1.59	81	.71	1.80	2	3	4	5	6									
							1.77	2.82	3.88	2.82	1.77									
8	.92	1 & 8	1.46	.75	.65	1.67	2	3	4	5	6	7								
							1.57	2.49	3.41	3.41	2.49	1.57								
9	.82	1 & 9	1.36	.70	.60	1.57	2	3	4	5	6	7	8							
							1.42	2.23	3.05	3.88	3.05	2.23	1.42							
10	.74	1 & 10	1.28	.66	.56	1.49	2	3	4	5	6	7	8	9						
							1.29	2.03	2.77	3.50	3.50	2.77	2.03	1.29						
11	.67	1 & 11	1.21	.62	.52	1.42	2	3	4	5	6	7	8	9	10					
							1.19	1.86	2.53	3.20	3.88	3.20	2.53	1.86	1.19					
12	.61	1 & 12	1.15	.59	.49	1.36	2	3	4	5	6	7	8	9	10	11				
							1.11	1.72	2.34	2.95	3.56	3.56	2.95	2.34	1.72	1.11				
13	.57	1 & 13	1.11	.57	.47	1.32	2	3	4	5	6	7	8	9	10	11	12			
							1.04	1.60	2.17	2.74	3.31	3.88	3.31	2.74	2.17	1.60	1.04			
14	.53	1 & 14	1.07	.55	.45	1.28	2	3	4	5	6	7	8	9	10	11	12	13		
							.98	1.50	2.03	2.55	3.08	3.61	3.61	3.08	2.55	2.03	1.50	.98		
15	.50	1 & 15	1.04	.53	.43	1.25	2	3	4	5	6	7	8	9	10	11	12	13	14	
							.92	1.41	1.90	2.40	2.89	3.38	3.88	3.38	2.89	2.40	1.90	1.41	.92	



# **HANDWHEEL SET-UPS FOR 7-<sup>3</sup>/<sub>4</sub>" SHEET WITH <sup>1</sup>/<sub>4</sub>" MARGINS**

NOTE: SHADED AREAS ARE ACHIEVED BY TURNING THE STOCK UPSIDE DOWN. THE MIDDLE TAB IS JUST TO THE LEFT OF THE SHADED AREA.

	END TAB POSITIONS ONLY					ALL OTHER TAB POSITIONS														
TAB BANK	TAB SIZE	TABS	PLASTIC LENGTH	PLASTIC POSITION	TAB POSITION	PLASTIC LENGTH	PLASTIC & TAB POSITION													
3	2.42	1 & 3	3.03	1.53	1.46	3.17	2													
							3.88													
4	1.81	1 & 4	2.42	1.23	1.16	2.56	2	3												
							2.97	2.97												
5	1.45	1 & 5	2.06	1.05	.98	2.20	2	3	4											
							2.43	3.88	2.43											
6	1.21	1 & 6	1.82	.92	.85	1.96	2	3	4	5										
							2.06	3.27	3.27	2.06										
7	1.04	1 & 7	1.65	.84	.77	1.79	2	3	4	5	6									
							1.80	2.84	3.88	2.84	1.80									
8	.91	1 & 8	1.52	.77	.70	1.66	2	3	4	5	6	7								
							1.61	2.52	3.42	3.42	2.52	1.61								
9	.81	1 & 9	1.42	.72	.65	1.56	2	3	4	5	6	7	8							
							1.46	2.26	3.07	3.88	3.07	2.26	1.46							
10	.73	1 & 10	1.34	.68	.61	1.48	2	3	4	5	6	7	8	9						
							1.34	2.06	2.79	3.51	3.51	2.79	2.06	1.34						
11	.66	1 & 11	1.27	.65	.58	1.41	2	3	4	5	6	7	8	9	10					
							1.24	1.90	2.56	3.22	3.88	3.22	2.56	1.90	1.24					
12	.60	1 & 12	1.21	.62	.55	1.35	2	3	4	5	6	7	8	9	10	11				
							1.16	1.76	2.36	2.97	3.57	3.57	2.97	2.36	1.76	1.16				
13	.56	1 & 13	1.17	.60	.53	1.31	2	3	4	5	6	7	8	9	10	11	12			
							1.09	1.64	2.20	2.76	3.31	3.88	3.31	2.76	2.20	1.64	1.09			
14	.52	1 & 14	1.13	.58	.51	1.27	2	3	4	5	6	7	8	9	10	11	12	13		
							1.03	1.54	2.06	2.58	3.09	3.61	3.61	3.09	2.58	2.06	1.54	1.03		
15	.48	1 & 15	1.09	.56	.49	1.23	2	3	4	5	6	7	8	9	10	11	12	13	14	
							.97	1.46	1.94	2.42	2.91	3.39	3.88	3.39	2.91	2.42	1.94	1.46	.97	



# **HANDWHEEL SET-UPS FOR 8" SHEET WITH $\frac{3}{16}$ " MARGINS**

NOTE: SHADED AREAS ARE ACHIEVED BY TURNING THE STOCK UPSIDE DOWN. THE MIDDLE TAB IS JUST TO THE LEFT OF THE SHADED AREA.

TAB BANK	END TAB POSITIONS ONLY					ALL OTHER TAB POSITIONS				
	TAB SIZE	TABS	PLASTIC LENGTH	PLASTIC POSITION	TAB POSITION	PLASTIC LENGTH	PLASTIC & TAB POSITION			
<b>3</b>	2.54	1 & 3	3.15	1.53	1.46	3.29	<b>2</b>			
							4.00			
<b>4</b>	1.91	1 & 4	2.52	1.21	1.14	2.66	<b>2</b>	<b>3</b>		
							3.05	3.05		
<b>5</b>	1.53	1 & 5	2.14	1.02	.95	2.28	<b>2</b>	<b>3</b>	<b>4</b>	
							2.47	4.00	2.47	
<b>6</b>	1.27	1 & 6	1.88	.89	.82	2.02	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
							2.09	3.36	3.36	2.09





# **HANDWHEEL SET-UPS FOR 8-1/2" SHEET WITH 3/16" MARGINS**

NOTE: SHADED AREAS ARE ACHIEVED BY TURNING THE STOCK UPSIDE DOWN. THE MIDDLE TAB IS JUST TO THE LEFT OF THE SHADED AREA.

	END TAB POSITIONS ONLY					ALL OTHER TAB POSITIONS														
TAB BANK	TAB SIZE	TABS	PLASTIC LENGTH	PLASTIC POSITION	TAB POSITION	PLASTIC LENGTH	PLASTIC & TAB POSITION													
3	2.71	1 & 3	3.25	1.64	1.54	3.46	2													
							4.25													
4	2.03	1 & 4	2.57	1.30	1.20	2.78	2	3												
							3.23	3.23												
5	1.63	1 & 5	2.17	1.10	1.00	2.38	2	3	4											
							2.62	4.25	2.62											
6	1.35	1 & 6	1.89	.96	.86	2.10	2	3	4	5										
							2.22	3.57	3.57	2.22										
7	1.16	1 & 7	1.70	.87	.77	1.91	2	3	4	5	6									
							1.93	3.09	4.25	3.09	1.93									
8	1.01	1 & 8	1.55	.79	.69	1.76	2	3	4	5	6	7								
							1.71	2.72	3.74	3.74	2.72	1.71								
9	.90	1 & 9	1.44	.74	.64	1.65	2	3	4	5	6	7	8							
							1.54	2.44	3.34	4.25	3.34	2.44	1.54							
10	.81	1 & 10	1.35	.69	.59	1.56	2	3	4	5	6	7	8	9						
							1.41	2.22	3.03	3.84	3.84	3.03	2.22	1.41						
11	.74	1 & 11	1.28	.66	.56	1.49	2	3	4	5	6	7	8	9	10					
							1.29	2.03	2.77	3.51	4.25	3.51	2.77	2.03	1.29					
12	.68	1 & 12	1.22	.63	.53	1.43	2	3	4	5	6	7	8	9	10	11				
							1.20	1.88	2.56	3.23	3.91	3.91	3.23	2.56	1.88	1.20				
13	.63	1 & 13	1.17	.60	.50	1.38	2	3	4	5	6	7	8	9	10	11	12			
							1.13	1.75	2.38	3.00	3.62	4.25	3.62	3.00	2.38	1.75	1.13			
14	.58	1 & 14	1.12	.58	.48	1.33	2	3	4	5	6	7	8	9	10	11	12	13		
							1.06	1.64	2.22	2.80	3.38	3.96	3.96	3.38	2.80	2.22	1.64	1.06		
15	.54	1 & 15	1.08	.56	.46	1.29	2	3	4	5	6	7	8	9	10	11	12	13	14	
							1.00	1.54	2.08	2.62	3.16	3.70	4.25	3.70	3.16	2.62	2.08	1.54	1.00	



# **HANDWHEEL SET-UPS FOR 8-1/2" SHEET WITH 1/4" MARGINS**

NOTE: SHADED AREAS ARE ACHIEVED BY TURNING THE STOCK UPSIDE DOWN. THE MIDDLE TAB IS JUST TO THE LEFT OF THE SHADED AREA.

END TAB POSITIONS ONLY						ALL OTHER TAB POSITIONS														
TAB BANK	TAB SIZE	TABS	PLASTIC LENGTH	PLASTIC POSITION	TAB POSITION	PLASTIC LENGTH	PLASTIC & TAB POSITION													
3	2.67	1 & 3	3.28	1.65	1.58	3.42	2													
							4.25													
4	2.00	1 & 4	2.61	1.32	1.25	2.75	2	3												
							3.25	3.25												
5	1.60	1 & 5	2.21	1.12	1.05	2.35	2	3	4											
							2.65	4.25	2.65											
6	1.33	1 & 6	1.94	.99	.92	2.08	2	3	4	5										
							2.25	3.58	3.58	2.25										
7	1.14	1 & 7	1.75	.89	.82	1.89	2	3	4	5	6									
							1.96	3.10	4.25	3.10	1.96									
8	1.00	1 & 8	1.61	.82	.75	1.75	2	3	4	5	6	7								
							1.75	2.75	3.75	3.75	2.75	1.75								
9	.89	1 & 9	1.50	.76	.69	1.64	2	3	4	5	6	7	8							
							1.58	2.47	3.36	4.25	3.36	2.47	1.58							
10	.80	1 & 10	1.41	.72	.65	1.55	2	3	4	5	6	7	8	9						
							1.45	2.25	3.05	3.85	3.85	3.05	2.25	1.45						
11	.73	1 & 11	1.34	.68	.61	1.48	2	3	4	5	6	7	8	9	10					
							1.34	2.07	2.79	3.52	4.25	3.52	2.79	2.07	1.34					
12	.67	1 & 12	1.28	.65	.58	1.42	2	3	4	5	6	7	8	9	10	11				
							1.25	1.92	2.58	3.25	3.91	3.91	3.25	2.58	1.92	1.25				
13	.62	1 & 13	1.23	.73	.56	1.37	2	3	4	5	6	7	8	9	10	11	12			
							1.17	1.79	2.40	3.02	3.63	4.25	3.63	3.02	2.40	1.79	1.17			
14	.57	1 & 14	1.18	.61	.54	1.32	2	3	4	5	6	7	8	9	10	11	12	13		
							1.11	1.68	2.25	2.82	3.39	3.96	3.96	3.39	2.82	2.25	1.68	1.11		
15	.53	1 & 15	1.14	.59	.52	1.28	2	3	4	5	6	7	8	9	10	11	12	13	14	
							1.05	1.58	2.12	2.65	3.18	3.71	4.25	3.71	3.18	2.65	2.12	1.58	1.05	



# **HANDWHEEL SET-UPS FOR 8-1/2" SHEET WITH 1/2" MARGINS**

NOTE: SHADED AREAS ARE ACHIEVED BY TURNING THE STOCK UPSIDE DOWN. THE MIDDLE TAB IS JUST TO THE LEFT OF THE SHADED AREA.

BANK	SIZE	SIZE	PLASTIC POSITIONS & TAB POSITION HANDWHEEL DIMENSION														
			1	2													
2	3.75	4.50	1	2													
			2.38	2.38													
3	2.50	3.25	1	2	3												
			1.75	4.25	1.75												
4	1.88	2.63	1	2	3	4											
			1.44	3.31	3.31	1.44											
5	1.50	2.25	1	2	3	4	5										
			1.25	2.75	4.25	2.75	1.25										
6	1.25	2.00	1	2	3	4	5	6									
			1.13	2.38	3.63	3.63	2.38	1.13									
7	1.07	1.82	1	2	3	4	5	6	7								
			1.04	2.11	3.18	4.25	3.18	2.11	1.04								
8	.94	1.69	1	2	3	4	5	6	7	8							
			.97	1.91	2.84	3.78	3.78	2.84	1.91	.97							
9	.83	1.58	1	2	3	4	5	6	7	8	9						
			.92	1.75	2.58	3.42	4.25	3.42	2.58	1.75	.92						
10	.75	1.50	1	2	3	4	5	6	7	8	9	10					
			.88	1.63	2.38	3.13	3.88	3.88	3.13	2.38	1.63	.88					
11	.68	1.43	1	2	3	4	5	6	7	8	9	10	11				
			.84	1.52	2.20	2.88	3.56	4.25	3.56	2.88	2.20	1.52	.84				
12	.63	1.38	1	2	3	4	5	6	7	8	9	10	11	12			
			.81	1.44	2.06	2.69	3.31	3.94	3.94	3.31	2.69	2.06	1.44	.81			
13	.58	1.33	1	2	3	4	5	6	7	8	9	10	11	12	13		
			.79	1.36	1.94	2.52	3.09	3.67	4.25	3.67	3.09	2.52	1.94	1.36	.79		
14	.54	1.29	1	2	3	4	5	6	7	8	9	10	11	12	13	14	
			.77	1.30	1.84	2.37	2.91	3.44	3.98	3.98	3.44	2.91	2.37	1.84	1.30	.77	
15	.50	1.25	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
			.75	1.25	1.75	2.25	2.75	3.25	3.75	4.25	3.75	3.25	2.75	2.25	1.75	1.25	.75



# **HANDWHEEL SET-UPS FOR 9" SHEET WITH $\frac{3}{16}$ " MARGINS**

NOTE: SHADED AREAS ARE ACHIEVED BY TURNING THE STOCK UPSIDE DOWN. THE MIDDLE TAB IS JUST TO THE LEFT OF THE SHADED AREA.

TAB BANK	END TAB POSITIONS ONLY					ALL OTHER TAB POSITIONS				
	TAB SIZE	TABS	PLASTIC LENGTH	PLASTIC POSITION	TAB POSITION	PLASTIC LENGTH	PLASTIC & TAB POSITION			
<b>3</b>	2.88	1 & 3	3.49	1.70	1.63	3.63	<b>2</b>			
							4.50			
<b>4</b>	2.16	1 & 4	2.77	1.34	1.27	2.91	<b>2</b>	<b>3</b>		
							3.42	3.42		
<b>5</b>	1.73	1 & 5	2.34	1.12	1.05	2.48	<b>2</b>	<b>3</b>	<b>4</b>	
							2.75	4.50	2.75	
<b>6</b>	1.44	1 & 6	2.05	.98	.91	2.19	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
							2.34	3.78	3.78	2.34



# **HANDWHEEL SET-UPS FOR 9-1/2" SHEET WITH 3/16" MARGINS**

NOTE: SHADED AREAS ARE ACHIEVED BY TURNING THE STOCK UPSIDE DOWN. THE MIDDLE TAB IS JUST TO THE LEFT OF THE SHADED AREA.

END TAB POSITIONS ONLY						ALL OTHER TAB POSITIONS														
TAB BANK	TAB SIZE	TABS	PLASTIC LENGTH	PLASTIC POSITION	TAB POSITION	PLASTIC LENGTH	PLASTIC & TAB POSITION													
3	3.04	1 & 3	3.58	1.81	1.71	3.79	2													
							4.75													
4	2.28	1 & 4	2.82	1.43	1.33	3.03	2	3												
							3.61	3.61												
5	1.83	1 & 5	2.37	1.20	1.10	2.58	2	3	4											
							2.92	4.75	2.92											
6	1.52	1 & 6	2.06	1.05	.95	2.27	2	3	4	5										
							2.47	3.99	3.99	2.47										
7	1.30	1 & 7	1.84	.94	.84	2.05	2	3	4	5	6									
							2.14	3.44	4.75	3.44	2.14									
8	1.14	1 & 8	1.68	.86	.76	1.89	2	3	4	5	6	7								
							1.90	3.04	4.18	4.18	3.04	1.90								
9	1.01	1 & 9	1.55	.79	.69	1.76	2	3	4	5	6	7	8							
							1.71	2.72	3.73	4.75	3.73	2.72	1.71							
10	.91	1 & 10	1.45	.74	.64	1.66	2	3	4	5	6	7	8	9						
							1.56	2.47	3.38	4.29	4.29	3.38	2.47	1.56						
11	.83	1 & 11	1.37	.70	.60	1.58	2	3	4	5	6	7	8	9	10					
							1.43	2.26	3.09	3.92	4.75	3.92	3.09	2.26	1.43					
12	.76	1 & 12	1.30	.67	.57	1.51	2	3	4	5	6	7	8	9	10	11				
							1.33	2.09	2.85	3.61	4.37	4.37	3.61	2.85	2.09	1.33				
13	.70	1 & 13	1.24	.64	.54	1.45	2	3	4	5	6	7	8	9	10	11	12			
							1.24	1.94	2.64	3.34	4.04	4.75	4.04	3.34	2.64	1.94	1.24			
14	.65	1 & 14	1.19	.61	.51	1.40	2	3	4	5	6	7	8	9	10	11	12	13		
							1.16	1.81	2.47	3.12	3.77	4.42	4.42	3.77	3.12	2.47	1.81	1.16		
15	.61	1 & 15	1.15	.59	.49	1.36	2	3	4	5	6	7	8	9	10	11	12	13	14	
							1.10	1.71	2.32	2.92	3.53	4.14	4.75	4.14	3.53	2.92	2.32	1.71	1.10	



### HANDWHEEL SET-UPS FOR 9-1/2" SHEET WITH 1/4" MARGINS

NOTE: SHADED AREAS ARE ACHIEVED BY TURNING THE STOCK UPSIDE DOWN. THE MIDDLE TAB IS JUST TO THE LEFT OF THE SHADED AREA.

END TAB POSITIONS ONLY						ALL OTHER TAB POSITIONS														
TAB BANK	TAB SIZE	TABS	PLASTIC LENGTH	PLASTIC POSITION	TAB POSITION	PLASTIC LENGTH	PLASTIC & TAB POSITION													
3	3.00	1 & 3	3.61	1.83	1.75	3.75	2													
							4.75													
4	2.25	1 & 4	2.86	1.46	1.38	3.00	2	3												
							3.63	3.63												
5	1.80	1 & 5	2.41	1.23	1.15	2.55	2	3	4											
							2.95	4.75	2.95											
6	1.50	1 & 6	2.11	1.08	1.00	2.25	2	3	4	5										
							2.50	4.00	4.00	2.50										
7	1.29	1 & 7	1.90	.97	.89	2.04	2	3	4	5	6									
							2.18	3.46	4.75	3.46	2.18									
8	1.13	1 & 8	1.74	.89	.81	1.89	2	3	4	5	6	7								
							1.94	3.06	4.19	4.19	3.06	1.94								
9	1.00	1 & 9	1.61	.83	.75	1.75	2	3	4	5	6	7	8							
							1.75	2.75	3.75	4.75	3.75	2.75	1.75							
10	.90	1 & 10	1.51	.78	.70	1.65	2	3	4	5	6	7	8	9						
							1.60	2.50	3.40	4.30	4.30	3.40	2.50	1.60						
11	.82	1 & 11	1.43	.73	.66	1.57	2	3	4	5	6	7	8	9	10					
							1.48	2.30	3.11	3.93	4.75	3.93	3.11	2.30	1.48					
12	.75	1 & 12	1.36	.70	.62	1.50	2	3	4	5	6	7	8	9	10	11				
							1.38	2.13	2.88	3.63	4.38	4.38	3.63	2.88	2.13	1.38				
13	.69	1 & 13	1.30	.68	.60	1.44	2	3	4	5	6	7	8	9	10	11	12			
							1.29	1.98	2.67	3.36	4.06	4.75	4.06	3.36	2.67	1.98	1.29			
14	.64	1 & 14	1.25	.65	.57	1.39	2	3	4	5	6	7	8	9	10	11	12	13		
							1.21	1.86	2.50	3.14	3.78	4.42	4.42	3.78	3.14	2.50	1.86	1.21		
15	.60	1 & 15	1.21	.63	.55	1.35	2	3	4	5	6	7	8	9	10	11	12	13	14	
							1.15	1.75	2.35	2.95	3.55	4.15	4.75	4.15	3.55	2.95	2.35	1.75	1.15	



### HANDWHEEL SET-UPS FOR 9-1/2" SHEET WITH 1/2" MARGINS

NOTE: SHADED AREAS ARE ACHIEVED BY TURNING THE STOCK UPSIDE DOWN. THE MIDDLE TAB IS JUST TO THE LEFT OF THE SHADED AREA.

TAB BANK	TAB SIZE	PLASTIC SIZE	PLASTIC POSITIONS & TAB POSITION HANDWHEEL DIMENSION														
			1	2													
2	4.25	5.00	1	2													
			2.63	2.63													
3	2.83	3.58	1	2	3												
			1.92	4.75	1.92												
4	2.13	2.88	1	2	3	4											
			1.56	3.68	3.68	1.56											
5	1.70	2.45	1	2	3	4	5										
			1.35	3.05	4.75	3.05	1.35										
6	1.42	2.17	1	2	3	4	5	6									
			1.21	2.63	4.04	4.04	2.63	1.21									
7	1.21	1.96	1	2	3	4	5	6	7								
			1.11	2.32	3.54	4.75	3.54	2.32	1.11								
8	1.06	1.81	1	2	3	4	5	6	7	8							
			1.03	2.09	3.16	4.22	4.22	3.16	2.09	1.03							
9	.94	1.69	1	2	3	4	5	6	7	8	9						
			.97	1.92	2.86	3.80	4.75	3.80	2.86	1.92	.97						
10	.85	1.60	1	2	3	4	5	6	7	8	9	10					
			.93	1.78	2.63	3.48	4.33	4.33	3.48	2.63	1.78	.93					
11	.77	1.52	1	2	3	4	5	6	7	8	9	10	11				
			.89	1.66	2.43	3.20	3.97	4.75	3.97	3.20	2.43	1.66	.89				
12	.71	1.46	1	2	3	4	5	6	7	8	9	10	11	12			
			.85	1.56	2.27	2.98	3.69	4.39	4.39	3.69	2.98	2.27	1.56	.85			
13	.65	1.40	1	2	3	4	5	6	7	8	9	10	11	12	13		
			.83	1.48	2.13	2.79	3.44	4.09	4.75	4.09	3.44	2.79	2.13	1.48	.83		
14	.61	1.36	1	2	3	4	5	6	7	8	9	10	11	12	13	14	
			.80	1.41	2.02	2.62	3.23	3.84	4.45	4.45	3.84	3.23	2.62	2.02	1.41	.80	
15	.57	1.32	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
			.78	1.35	1.92	2.48	3.05	3.61	4.18	4.75	4.18	3.61	3.05	2.48	1.92	1.35	.78



# **HANDWHEEL SET-UPS FOR 11" SHEET WITH 1/8" MARGINS**

NOTE: SHADED AREAS ARE ACHIEVED BY TURNING THE STOCK UPSIDE DOWN. THE MIDDLE TAB IS JUST TO THE LEFT OF THE SHADED AREA.

END TAB POSITIONS ONLY						ALL OTHER TAB POSITIONS													
TAB BANK	TAB SIZE	TABS	PLASTIC LENGTH	PLASTIC POSITION	TAB POSITION	PLASTIC LENGTH	PLASTIC & TAB POSITIONS												
3	3.58	1 & 3	4.08	2.06	1.91	4.33	2												
							5.50												
4	2.69	1 & 4	3.19	1.61	1.47	3.44	2	3											
							4.16	4.16											
5	2.15	1 & 5	2.65	1.35	1.20	2.90	2	3	4										
							3.35	5.50	3.35										
6	1.79	1 & 6	2.29	1.17	1.02	2.54	2	3	4	5									
							2.81	4.60	4.60	2.81									
7	1.54	1 & 7	2.04	1.04	.89	2.29	2	3	4	5	6								
							2.43	3.97	5.50	3.97	2.43								
8	1.34	1 & 8	1.84	.94	.79	2.09	2	3	4	5	6	7							
							2.14	3.49	4.84	4.84	3.49	2.14							
9	1.19	1 & 9	1.69	.87	.72	1.94	2	3	4	5	6	7	8						
							1.91	3.10	4.30	5.50	4.30	3.10	1.91						
10	1.07	1 & 10	1.57	.80	.66	1.82	2	3	4	5	6	7	8	9					
							1.74	2.81	3.89	4.96	4.96	3.89	2.81	1.74					
11	.98	1 & 11	1.48	.76	.60	1.73	2	3	4	5	6	7	8	9	10				
							1.58	2.56	3.54	4.52	5.50	4.52	3.54	2.56	1.58				
12	.90	1 & 12	1.40	.72	.56	1.65	2	3	4	5	6	7	8	9	10	11			
							1.46	2.36	3.26	4.16	5.06	5.06	4.16	3.26	2.36	1.46			
13	.83	1 & 13	1.33	.69	.53	1.58	2	3	4	5	6	7	8	9	10	11	12		
							1.36	2.19	3.02	3.85	4.68	5.50	4.68	3.85	3.02	2.19	1.36		
14	.77	1 & 14	1.27	.66	.50	1.52	2	3	4	5	6	7	8	9	10	11	12	13	
							1.27	2.04	2.81	3.58	4.35	5.12	5.12	4.35	3.58	2.81	2.04	1.27	
15	.72	1 & 15	1.22	.63	.47	1.47	2	3	4	5	6	7	8	9	10	11	12	13	14
							1.19	1.91	2.63	3.35	4.07	4.79	5.50	4.79	4.07	3.35	2.63	1.91	1.19





# **HANDWHEEL SET-UPS FOR 11" SHEET WITH 3/16" MARGINS**

NOTE: SHADED AREAS ARE ACHIEVED BY TURNING THE STOCK UPSIDE DOWN. THE MIDDLE TAB IS JUST TO THE LEFT OF THE SHADED AREA.

END TAB POSITIONS ONLY						ALL OTHER TAB POSITIONS														
TAB BANK	TAB SIZE	TABS	PLASTIC LENGTH	PLASTIC POSITION	TAB POSITION	PLASTIC LENGTH	PLASTIC & TAB POSITION													
3	3.54	1 & 3	4.08	2.05	1.95	4.29	2													
							5.50													
4	2.66	1 & 4	3.20	1.61	1.51	3.41	2	3												
							4.17	4.17												
5	2.13	1 & 5	2.67	1.35	1.25	2.88	2	3	4											
							3.36	5.50	3.36											
6	1.77	1 & 6	2.31	1.17	1.07	2.52	2	3	4	5										
							2.84	4.61	4.61	2.84										
7	1.52	1 & 7	2.06	1.04	.94	2.27	2	3	4	5	6									
							2.46	3.98	5.50	3.98	2.46									
8	1.33	1 & 8	1.87	.94	.84	2.08	2	3	4	5	6	7								
							2.17	3.50	4.83	4.83	3.50	2.17								
9	1.18	1 & 9	1.72	.87	.77	1.93	2	3	4	5	6	7	8							
							1.95	3.13	4.31	5.50	4.31	3.13	1.95							
10	1.06	1 & 10	1.60	.82	.72	1.81	2	3	4	5	6	7	8	9						
							1.78	2.84	3.90	4.96	4.96	3.90	2.84	1.78						
11	.97	1 & 11	1.51	.76	.66	1.72	2	3	4	5	6	7	8	9	10					
							1.62	2.59	3.56	4.54	5.50	4.54	3.56	2.59	1.62					
12	.89	1 & 12	1.43	.73	.63	1.64	2	3	4	5	6	7	8	9	10	11				
							1.52	2.41	3.30	4.18	5.06	5.06	4.18	3.30	2.41	1.52				
13	.82	1 & 13	1.36	.69	.59	1.57	2	3	4	5	6	7	8	9	10	11	12			
							1.41	2.23	3.05	3.87	4.69	5.50	4.69	3.87	3.05	2.23	1.41			
14	.76	1 & 14	1.30	.66	.56	1.51	2	3	4	5	6	7	8	9	10	11	12	13		
							1.32	2.08	2.84	3.60	4.36	5.12	5.12	4.36	3.60	2.84	2.08	1.32		
15	.71	1 & 15	1.25	.64	.54	1.46	2	3	4	5	6	7	8	9	10	11	12	13	14	
							1.25	1.96	2.67	3.38	4.09	4.80	5.50	4.80	4.09	3.38	2.67	1.96	1.25	



### HANDWHEEL SET-UPS FOR 11" SHEET WITH 1/4" MARGINS

NOTE: SHADED AREAS ARE ACHIEVED BY TURNING THE STOCK UPSIDE DOWN. THE MIDDLE TAB IS JUST TO THE LEFT OF THE SHADED AREA.

	END TAB POSITIONS ONLY					ALL OTHER TAB POSITIONS														
TAB BANK	TAB SIZE	TABS	PLASTIC LENGTH	PLASTIC POSITION	TAB POSITION	PLASTIC LENGTH	PLASTIC & TAB POSITION													
3	3.50	1 & 3	4.11	2.07	2.00	4.25	2													
							5.50													
4	2.62	1 & 4	3.23	1.63	1.56	3.37	2	3												
							4.18	4.18												
5	2.10	1 & 5	2.71	1.37	1.30	2.85	2	3	4											
							3.40	5.50	3.40											
6	1.75	1 & 6	2.36	1.19	1.12	2.50	2	3	4	5										
							2.87	4.62	4.62	2.87										
7	1.50	1 & 7	2.11	1.07	1.00	2.25	2	3	4	5	6									
							2.50	4.00	5.50	4.00	2.50									
8	1.31	1 & 8	1.92	.97	.90	2.06	2	3	4	5	6	7								
							2.21	3.52	4.83	4.83	3.52	2.21								
9	1.17	1 & 9	1.78	.90	.83	1.92	2	3	4	5	6	7	8							
							2.00	3.17	4.34	5.50	4.34	3.17	2.00							
10	1.05	1 & 10	1.66	.84	.77	1.80	2	3	4	5	6	7	8	9						
							1.82	2.87	3.92	4.97	4.97	3.92	2.87	1.82						
11	.95	1 & 11	1.56	.79	.72	1.70	2	3	4	5	6	7	8	9	10					
							1.67	2.62	3.58	4.54	5.50	4.54	3.58	2.62	1.67					
12	.87	1 & 12	1.48	.75	.68	1.62	2	3	4	5	6	7	8	9	10	11				
							1.55	2.42	3.30	4.18	5.06	5.06	4.18	3.30	2.42	1.55				
13	.80	1 & 13	1.41	.72	.65	1.55	2	3	4	5	6	7	8	9	10	11	12			
							1.46	2.27	3.08	3.89	4.70	5.50	4.70	3.89	3.08	2.27	1.46			
14	.75	1 & 14	1.36	.69	.62	1.50	2	3	4	5	6	7	8	9	10	11	12	13		
							1.38	2.12	2.88	3.62	4.37	5.12	5.12	4.37	3.62	2.88	2.12	1.38		
15	.70	1 & 15	1.31	.67	.60	1.45	2	3	4	5	6	7	8	9	10	11	12	13	14	
							1.30	2.00	2.70	3.40	4.10	4.80	5.50	4.80	4.10	3.40	2.70	2.00	1.30	



### HANDWHEEL SET-UPS FOR 11" SHEET WITH 1/2" MARGINS

NOTE: SHADED AREAS ARE ACHIEVED BY TURNING THE STOCK UPSIDE DOWN. THE MIDDLE TAB IS JUST TO THE LEFT OF THE SHADED AREA.

TAB BANK	TAB SIZE	PLASTIC SIZE	PLASTIC POSITIONS & TAB POSITION HANDWHEEL DIMENSION														
			1	2													
2	5.00	5.75	1	2													
			3.00	3.00													
3	3.34	4.08	1	2	3												
			2.17	5.50	2.17												
4	2.50	3.25	1	2	3	4											
			1.75	4.25	4.25	1.75											
5	2.00	2.75	1	2	3	4	5										
			1.50	3.50	5.50	3.50	1.50										
6	1.66	2.41	1	2	3	4	5	6									
			1.33	3.00	4.66	4.66	3.00	1.33									
7	1.43	2.18	1	2	3	4	5	6	7								
			1.21	2.64	4.07	5.50	4.07	2.64	1.21								
8	1.25	2.00	1	2	3	4	5	6	7	8							
			1.13	2.38	3.63	4.88	4.88	3.63	2.38	1.13							
9	1.11	1.86	1	2	3	4	5	6	7	8	9						
			1.06	2.17	3.28	4.39	5.50	4.39	3.28	2.17	1.06						
10	1.00	1.75	1	2	3	4	5	6	7	8	9	10					
			1.00	2.00	3.00	4.00	5.00	5.00	4.00	3.00	2.00	1.00					
..	.91	1.66	1	2	3	4	5	6	7	8	9	10	11				
			.96	1.87	2.78	3.69	4.60	5.50	4.60	3.69	2.78	1.87	.96				
12	.83	1.58	1	2	3	4	5	6	7	8	9	10	11	12			
			.92	1.75	2.58	3.41	4.24	5.07	5.07	4.24	3.41	2.58	1.75	.92			
13	.77	1.52	1	2	3	4	5	6	7	8	9	10	11	12	13		
			.89	1.66	2.43	3.20	3.97	4.74	5.50	4.74	3.97	3.20	2.43	1.66	.89		
14	.71	1.46	1	2	3	4	5	6	7	8	9	10	11	12	13	14	
			.85	1.57	2.28	2.99	3.70	4.41	5.12	5.12	4.41	3.70	2.99	2.28	1.57	.85	
15	.67	1.42	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
			.82	1.49	2.16	2.83	3.50	4.17	4.84	5.50	4.84	4.17	3.50	2.83	2.16	1.49	.82



### HANDWHEEL SET-UPS FOR 12" SHEET WITH 3/16" MARGINS

NOTE: SHADED AREAS ARE ACHIEVED BY TURNING THE STOCK UPSIDE DOWN. THE MIDDLE TAB IS JUST TO THE LEFT OF THE SHADED AREA.

	END TAB POSITIONS ONLY					ALL OTHER TAB POSITIONS														
TAB BANK	TAB SIZE	TABS	PLASTIC LENGTH	PLASTIC POSITION	TAB POSITION	PLASTIC LENGTH	PLASTIC & TAB POSITION													
3	3.87	1 & 3	4.41	2.22	2.12	4.62	2													
							6.00													
4	2.91	1 & 4	3.45	1.74	1.64	3.66	2	3												
							4.55	4.55												
5	2.33	1 & 5	2.87	1.45	1.35	3.08	2	3	4											
							3.67	6.00	3.67											
6	1.94	1 & 6	2.48	1.26	1.16	2.69	2	3	4	5										
							3.09	5.03	5.03	3.09										
7	1.66	1 & 7	2.20	1.12	1.02	2.41	2	3	4	5	6									
							2.68	4.34	6.00	4.34	2.68									
8	1.45	1 & 8	1.99	1.01	.91	2.20	2	3	4	5	6	7								
							2.37	3.82	5.27	5.27	3.82	2.37								
9	1.29	1 & 9	1.83	.93	.83	2.04	2	3	4	5	6	7	8							
							2.12	3.41	4.70	6.00	4.70	3.41	2.12							
10	1.16	1 & 10	1.70	.87	.77	1.91	2	3	4	5	6	7	8	9						
							1.93	3.09	4.25	5.42	5.42	4.25	3.09	1.93						
11	1.06	1 & 11	1.60	.81	.71	1.81	2	3	4	5	6	7	8	9	10					
							1.77	2.83	3.88	4.94	6.00	4.94	3.88	2.83	1.77					
12	.97	1 & 12	1.51	.77	.67	1.72	2	3	4	5	6	7	8	9	10	11				
							1.64	2.61	3.58	4.54	5.51	5.51	4.54	3.58	2.61	1.64				
13	.89	1 & 13	1.43	.73	.63	1.64	2	3	4	5	6	7	8	9	10	11	12			
							1.53	2.42	3.32	4.21	5.10	6.00	5.10	4.21	3.32	2.42	1.53			
14	.83	1 & 14	1.37	.70	.60	1.58	2	3	4	5	6	7	8	9	10	11	12	13		
							1.43	2.26	3.09	3.92	4.75	5.58	5.58	4.75	3.92	3.09	2.26	1.43		
15	.77	1 & 15	1.31	.67	.57	1.52	2	3	4	5	6	7	8	9	10	11	12	13	14	
							1.35	2.12	2.90	3.67	4.45	5.22	6.00	5.22	4.45	3.67	2.90	2.12	1.35	



# **HANDWHEEL SET-UPS FOR 12" SHEET WITH 1/4" MARGINS**

NOTE: SHADED AREAS ARE ACHIEVED BY TURNING THE STOCK UPSIDE DOWN. THE MIDDLE TAB IS JUST TO THE LEFT OF THE SHADED AREA.

	END TAB POSITIONS ONLY					ALL OTHER TAB POSITIONS														
TAB BANK	TAB SIZE	TABS	PLASTIC LENGTH	PLASTIC POSITION	TAB POSITION	PLASTIC LENGTH	PLASTIC & TAB POSITION													
3	3.83	1 & 3	4.44	2.24	2.17	4.58	2													
							6.00													
4	2.87	1 & 4	3.48	1.75	1.68	3.62	2	3												
							4.56	4.56												
5	2.30	1 & 5	2.91	1.47	1.40	3.05	2	3	4											
							3.70	6.00	3.70											
6	1.92	1 & 6	2.53	1.28	1.21	2.67	2	3	4	5										
							3.12	5.04	5.04	3.12										
7	1.64	1 & 7	2.25	1.14	1.07	2.39	2	3	4	5	6									
							2.71	4.36	6.00	4.36	2.71									
8	1.44	1 & 8	2.05	.96	.97	2.19	2	3	4	5	6	7								
							2.41	3.84	5.28	5.28	3.84	2.41								
9	1.28	1 & 9	1.89	.94	.89	2.03	2	3	4	5	6	7	8							
							2.17	3.44	4.72	6.00	4.72	3.44	2.17							
10	1.15	1 & 10	1.76	.90	.83	1.90	2	3	4	5	6	7	8	9						
							1.98	3.13	4.28	5.43	5.43	4.28	3.13	1.98						
11	1.04	1 & 11	1.65	.84	.77	1.79	2	3	4	5	6	7	8	9	10					
							1.82	2.86	3.91	4.95	6.00	4.95	3.91	2.86	1.82					
12	.96	1 & 12	1.57	.80	.73	1.71	2	3	4	5	6	7	8	9	10	11				
							1.69	2.65	3.60	4.56	5.52	5.52	4.56	3.60	2.65	1.69				
13	.88	1 & 13	1.49	.76	.69	1.63	2	3	4	5	6	7	8	9	10	11	12			
							1.58	2.46	3.34	4.23	5.11	6.00	5.11	4.23	3.34	2.46	1.58			
14	.82	1 & 14	1.43	.73	.66	1.57	2	3	4	5	6	7	8	9	10	11	12	13		
							1.48	2.30	3.12	3.94	4.77	5.59	5.59	4.77	3.94	3.12	2.30	1.48		
15	.77	1 & 15	1.38	.70	.63	1.52	2	3	4	5	6	7	8	9	10	11	12	13	14	
							1.40	2.17	2.93	3.70	4.46	5.23	6.00	5.23	4.46	3.70	2.93	2.17	1.40	



### HANDWHEEL SET-UPS FOR 12" SHEET WITH 1/2" MARGINS

NOTE: SHADED AREAS ARE ACHIEVED BY TURNING THE STOCK UPSIDE DOWN. THE MIDDLE TAB IS JUST TO THE LEFT OF THE SHADED AREA.

TAB BANK	TAB SIZE	PLASTIC SIZE	PLASTIC POSITIONS & TAB POSITION HANDWHEEL DIMENSION														
			1	2	3												
3	3.66	4.41	1	2	3												
			2.33	6.00	2.33												
4	2.75	3.50	1	2	3	4											
			1.88	4.63	4.63	1.88											
5	2.20	2.95	1	2	3	4	5										
			1.60	3.80	6.00	3.80	1.60										
6	1.83	2.58	1	2	3	4	5	6									
			1.42	3.25	5.08	5.08	3.25	1.42									
7	1.57	2.32	1	2	3	4	5	6	7								
			1.29	2.86	4.43	6.00	4.43	2.86	1.29								
8	1.38	2.13	1	2	3	4	5	6	7	8							
			1.19	2.56	3.94	5.31	5.31	3.94	2.56	1.19							
9	1.22	1.97	1	2	3	4	5	6	7	8	9						
			1.11	2.33	3.55	4.78	6.00	4.78	3.55	2.33	1.11						
10	1.10	1.85	1	2	3	4	5	6	7	8	9	10					
			1.05	2.15	3.25	4.35	5.45	5.45	4.35	3.25	2.15	1.05					
11	1.00	1.75	1	2	3	4	5	6	7	8	9	10	11				
			1.00	2.00	3.00	4.00	5.00	6.00	5.00	4.00	3.00	2.00	1.00				
12	.92	1.67	1	2	3	4	5	6	7	8	9	10	11	12			
			.96	1.88	2.79	3.71	4.62	5.54	5.54	4.62	3.71	2.79	1.88	.96			
13	.85	1.60	1	2	3	4	5	6	7	8	9	10	11	12	13		
			.92	1.77	2.61	3.46	4.31	5.15	6.00	5.15	4.31	3.46	2.61	1.77	.92		
14	.79	1.54	1	2	3	4	5	6	7	8	9	10	11	12	13	14	
			.89	1.68	2.46	3.25	4.03	4.82	5.60	5.60	4.82	4.03	3.25	2.46	1.68	.89	
15	.73	1.48	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
			.87	1.60	2.33	3.07	3.80	4.53	5.26	6.00	5.26	4.53	3.80	3.07	2.33	1.60	.87



### HANDWHEEL SET-UPS FOR 14" SHEET WITH 3/16" MARGINS

NOTE: SHADED AREAS ARE ACHIEVED BY TURNING THE STOCK UPSIDE DOWN. THE MIDDLE TAB IS JUST TO THE LEFT OF THE SHADED AREA.

END TAB POSITIONS ONLY						ALL OTHER TAB POSITIONS													
TAB BANK	TAB SIZE	TABS	PLASTIC LENGTH	PLASTIC POSITION	TAB POSITION	PLASTIC LENGTH	PLASTIC & TAB POSITION												
3	4.54	1 & 3	5.08	2.55	2.45	5.29	2												
							7.00												
4	3.41	1 & 4	3.95	1.99	1.89	4.16	2	3											
							5.30	5.30											
5	2.73	1 & 5	3.27	1.65	1.55	3.48	2	3	4										
							4.28	7.00	4.28										
6	2.27	1 & 6	2.81	1.42	1.32	3.02	2	3	4	5									
							3.59	5.86	5.86	3.59									
7	1.95	1 & 7	2.49	1.26	1.16	2.70	2	3	4	5	6								
							3.11	5.06	7.00	5.06	3.11								
8	1.70	1 & 8	2.24	1.13	1.03	2.45	2	3	4	5	6	7							
							2.73	4.43	6.13	6.13	4.43	2.73							
9	1.51	1 & 9	2.05	1.04	.94	2.26	2	3	4	5	6	7	8						
							2.45	3.96	5.48	7.00	5.48	3.96	2.45						
10	1.36	1 & 10	1.90	.97	.87	2.11	2	3	4	5	6	7	8	9					
							2.23	3.59	4.95	6.31	6.31	4.95	3.59	2.23					
11	1.24	1 & 11	1.78	.91	.81	1.99	2	3	4	5	6	7	8	9	10				
							2.05	3.29	4.53	5.77	7.00	5.77	4.53	3.29	2.05				
12	1.13	1 & 12	1.67	.85	.75	1.88	2	3	4	5	6	7	8	9	10	11			
							1.89	3.02	4.16	5.29	6.43	6.43	5.29	4.16	3.02	1.89			
13	1.05	1 & 13	1.59	.81	.71	1.80	2	3	4	5	6	7	8	9	10	11	12		
							1.76	2.81	3.86	4.90	5.95	7.00	5.95	4.90	3.86	2.81	1.76		
14	.97	1 & 14	1.51	.77	.67	1.72	2	3	4	5	6	7	8	9	10	11	12	13	
							1.65	2.62	3.59	4.56	5.54	6.51	6.51	5.54	4.56	3.59	2.62	1.65	
15	.91	1 & 15	1.45	.74	.64	1.66	2	3	4	5	6	7	8	9	10	11	12	13	14
							1.55	2.46	3.36	4.27	5.18	6.09	7.0	6.09	5.18	4.27	3.36	2.46	1.55





### HANDWHEEL SET-UPS FOR 14" SHEET WITH 1/4" MARGINS

NOTE: SHADED AREAS ARE ACHIEVED BY TURNING THE STOCK UPSIDE DOWN. THE MIDDLE TAB IS JUST TO THE LEFT OF THE SHADED AREA.

	END TAB POSITIONS ONLY					ALL OTHER TAB POSITIONS														
TAB BANK	TAB SIZE	TABS	PLASTIC LENGTH	PLASTIC POSITION	TAB POSITION	PLASTIC LENGTH	PLASTIC & TAB POSITION													
3	4.50	1 & 3	5.11	2.57	2.50	5.25	2													
							7.00													
4	3.37	1 & 4	3.98	2.01	1.94	4.12	2	3												
							5.31	5.31												
5	2.70	1 & 5	3.31	1.67	1.60	3.45	2	3	4											
							4.30	7.00	4.30											
6	2.25	1 & 6	2.86	1.44	1.37	3.00	2	3	4	5										
							3.62	5.87	5.87	3.62										
7	1.93	1 & 7	2.54	1.28	1.21	2.68	2	3	4	5	6									
							3.14	5.07	7.00	5.07	3.14									
8	1.69	1 & 8	2.30	1.16	1.09	2.44	2	3	4	5	6	7								
							2.78	4.47	6.15	6.15	4.47	2.78								
9	1.50	1 & 9	2.11	1.07	1.00	2.25	2	3	4	5	6	7	8							
							2.50	4.00	5.50	7.00	5.50	4.00	2.50							
10	1.35	1 & 10	1.96	1.00	.93	2.10	2	3	4	5	6	7	8	9						
							2.75	3.62	4.98	6.33	6.33	4.98	3.62	2.75						
11	1.23	1 & 11	1.84	.93	.86	1.98	2	3	4	5	6	7	8	9	10					
							2.09	3.32	4.54	5.77	7.00	5.77	4.54	3.32	2.09					
12	1.12	1 & 12	1.73	.88	.81	1.87	2	3	4	5	6	7	8	9	10	11				
							1.94	3.06	4.19	5.31	6.44	6.44	5.31	4.19	3.06	1.94				
13	1.04	1 & 13	1.65	.84	.77	1.79	2	3	4	5	6	7	8	9	10	11	12			
							1.81	2.85	3.88	4.92	5.96	7.00	5.96	4.92	3.88	2.85	1.81			
14	.96	1 & 14	1.57	.80	.73	1.71	2	3	4	5	6	7	8	9	10	11	12	13		
							1.70	2.66	3.62	4.59	5.55	6.52	6.52	5.55	4.59	3.62	2.66	1.70		
15	.90	1 & 15	1.51	.77	.70	1.65	2	3	4	5	6	7	8	9	10	11	12	13	14	
							1.60	2.50	3.40	4.30	5.20	6.10	7.00	6.10	5.20	4.30	3.40	2.50	1.60	



### HANDWHEEL SET-UPS FOR 14" SHEET WITH 1/2" MARGINS

NOTE: SHADED AREAS ARE ACHIEVED BY TURNING THE STOCK UPSIDE DOWN. THE MIDDLE TAB IS JUST TO THE LEFT OF THE SHADED AREA.

TAB BANK	TAB SIZE	PLASTIC SIZE	PLASTIC POSITIONS & TAB POSITION HANDWHEEL DIMENSION														
			1	2	3												
3	4.33	5.08	1	2	3												
			2.67	7.00	2.67												
4	3.25	4.00	1	2	3	4											
			2.13	5.38	5.38	2.13											
5	2.60	3.35	1	2	3	4	5										
			1.80	4.40	7.00	4.40	1.80										
6	2.17	2.92	1	2	3	4	5	6									
			1.58	3.75	5.92	5.92	3.75	1.58									
7	1.86	2.61	1	2	3	4	5	6	7								
			1.43	3.29	5.14	7.00	5.14	3.29	1.43								
8	1.63	2.38	1	2	3	4	5	6	7	8							
			1.31	2.94	4.56	6.19	6.19	4.56	2.94	1.31							
9	1.44	2.19	1	2	3	4	5	6	7	8	9						
			1.22	2.67	4.11	5.55	7.00	5.55	4.11	2.67	1.22						
10	1.30	2.05	1	2	3	4	5	6	7	8	9	10					
			1.15	2.45	3.75	5.05	6.35	6.35	5.05	3.75	2.45	1.15					
11	1.18	1.93	1	2	3	4	5	6	7	8	9	10	11				
			1.09	2.27	3.45	4.63	5.81	7.00	5.81	4.63	3.45	2.27	1.09				
12	1.08	1.83	1	2	3	4	5	6	7	8	9	10	11	12			
			1.04	2.13	3.21	4.29	5.37	6.46	6.46	5.37	4.29	3.21	2.13	1.04			
13	1.00	1.75	1	2	3	4	5	6	7	8	9	10	11	12	13		
			1.00	2.00	3.00	4.00	5.00	6.00	7.00	6.00	5.00	4.00	3.00	2.00	1.00		
14	.93	1.68	1	2	3	4	5	6	7	8	9	10	11	12	13	14	
			.96	1.89	2.82	3.75	4.68	5.60	6.53	6.53	5.60	4.68	3.75	2.82	1.89	.96	
15	.87	1.62	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
			.93	1.80	2.67	3.53	4.40	5.26	6.13	7.00	6.13	5.26	4.40	3.53	2.67	1.80	.93

**METRIC HANDWHEEL SET-UPS FOR A4 (297mm x 210mm) TAB SIDE: 297 MM MARGIN: 0 MM**

NOTE: SHADED AREAS ARE ACHIEVED BY TURNING THE STOCK UPSIDE DOWN. THE MIDDLE TAB IS JUST TO THE LEFT OF THE SHADED AREA.

END TAB POSITIONS ONLY						ALL OTHER TAB POSITIONS													
TAB BANK	TABS	TAB SIZE	PLASTIC LENGTH	PLASTIC POSITION	TAB POSITION	PLASTIC LENGTH	POSITION DIMENSION												
2	-	148.50	158.50	84.25	74.25	-													
3	1 & 3	99.00	109.00	59.50	49.50	118.00	2												
							148.50												
4	1 & 4	74.25	84.25	47.00	37.00	93.25	2	3											
							111.25	111.25											
5	1 & 5	59.25	69.25	39.50	29.50	78.25	2	3	4										
							89.25	148.50	89.25										
6	1 & 6	49.50	59.50	34.75	24.75	68.50	2	3	4	5									
							74.25	123.75	123.75	74.25									
7	1 & 7	42.25	52.25	31.00	21.00	61.25	2	3	4	5	6								
							64.00	106.25	148.50	106.25	64.00								
8	1 & 8	37.00	47.00	28.50	18.50	56.00	2	3	4	5	6	7							
							55.50	92.50	129.50	129.50	92.50	55.50							
9	1 & 9	33.00	43.00	26.50	16.50	52.00	2	3	4	5	6	7	8						
							49.50	82.50	115.50	148.50	115.50	82.50	49.50						
10	1 & 10	29.50	39.50	24.75	14.75	48.50	2	3	4	5	6	7	8	9					
							44.25	73.75	113.25	138.00	138.00	113.25	73.75	44.25					
11	1 & 11	27.00	37.00	23.50	13.50	46.00	2	3	4	5	6	7	8	9	10				
							40.50	67.50	94.50	121.50	148.50	121.50	94.50	67.50	40.50				
12	1 & 12	24.75	34.75	22.25	12.25	43.75	2	3	4	5	6	7	8	9	10	11			
							37.00	61.75	86.50	111.25	136.00	136.00	111.25	86.50	61.75	37.00			
13	1 & 13	22.75	32.75	21.25	11.25	41.75	2	3	4	5	6	7	8	9	10	11	12		
							34.75	57.50	80.25	103.00	125.75	148.50	125.75	103.00	80.25	57.50	34.75		
14	1 & 14	21.00	31.00	20.50	10.50	40.00	2	3	4	5	6	7	8	9	10	11	12	13	
							31.50	52.50	73.50	94.50	115.50	136.50	136.50	115.50	94.50	73.50	52.50	31.50	
15	1 & 15	19.75	29.75	19.75	9.75	38.75	2	3	4	5	6	7	8	9	10	11	12	13	14
							30.00	49.75	69.50	89.25	109.00	128.75	148.50	128.75	109.00	89.25	69.50	49.75	30.00

**METRIC HANDWHEEL SET-UPS FOR A4 (297mm x 210mm) TAB SIDE: 210 MM MARGIN: 0 MM**

*NOTE: SHADED AREAS ARE ACHIEVED BY TURNING THE STOCK UPSIDE DOWN. THE MIDDLE TAB IS JUST TO THE LEFT OF THE SHADED AREA.*

END TAB POSITIONS ONLY						ALL OTHER TAB POSITIONS													
TAB BANK	TABS	TAB SIZE	PLASTIC LENGTH	PLASTIC POSITION	TAB POSITION	PLASTIC LENGTH	POSITION DIMENSION												
2	-	105.00	115.00	62.50	52.50	-													
3	1 & 3	70.00	80.00	45.00	35.00	89.00	2												
							105.00												
4	1 & 4	52.50	62.50	36.25	26.25	71.50	2	3											
							78.75	78.75											
5	1 & 5	42.00	52.00	31.00	21.00	61.00	2	3	4										
							63.00	105.00	63.00										
6	1 & 6	35.00	45.00	27.50	17.50	54.00	2	3	4	5									
							52.50	87.50	87.50	52.50									
7	1 & 7	30.00	40.00	25.00	15.00	49.00	2	3	4	5	6								
							45.00	75.00	105.00	75.00	45.00								
8	1 & 8	26.25	36.25	23.00	13.00	45.25	2	3	4	5	6	7							
							39.25	65.50	91.75	91.75	65.50	39.25							
9	1 & 9	23.25	33.25	21.50	11.50	45.25	2	3	4	5	6	7	8						
							35.25	58.50	81.75	105.00	81.75	58.50	35.25						
10	1 & 10	21.00	31.00	20.50	10.50	40.00	2	3	4	5	6	7	8	9					
							31.50	52.50	83.50	104.00	104.00	83.50	52.50	31.50					
11	1 & 11	19.00	29.00	19.50	9.50	38.00	2	3	4	5	6	7	8	9	10				
							29.00	48.00	67.00	86.00	105.00	86.00	67.00	48.00	29.00				
12	1 & 12	17.50	27.50	18.75	8.75	36.50	2	3	4	5	6	7	8	9	10	11			
							26.25	43.75	61.25	78.75	96.25	96.25	78.75	61.25	43.75	26.25			
13	1 & 13	16.00	26.00	18.00	8.00	35.00	2	3	4	5	6	7	8	9	10	11	12		
							25.00	41.00	57.00	73.00	89.00	105.00	89.00	73.00	57.00	41.00	25.00		
14	1 & 14	15.00	25.00	17.25	7.50	34.00	2	3	4	5	6	7	8	9	10	11	12	13	
							22.50	37.50	52.50	67.50	82.50	97.50	97.50	82.50	67.50	52.50	37.50	22.50	
15	1 & 15	14.00	24.00	17.00	7.00	33.00	2	3	4	5	6	7	8	9	10	11	12	13	14
							21.00	35.00	49.00	63.00	77.00	91.00	105.00	91.00	77.00	63.00	49.00	35.00	21.00

**METRIC HANDWHEEL SET-UPS FOR A4 (297mm x 210mm) TAB SIDE: 297 MM MARGIN: 1 MM**

*NOTE: SHADED AREAS ARE ACHIEVED BY TURNING THE STOCK UPSIDE DOWN. THE MIDDLE TAB IS JUST TO THE LEFT OF THE SHADED AREA.*

END TAB POSITIONS ONLY							ALL OTHER TAB POSITIONS												
TAB BANK	TABS	TAB SIZE	PLASTIC LENGTH	PLASTIC POSITION	TAB POSITION	PLASTIC LENGTH	POSITION DIMENSION												
2	-	147.00	157.50	80.75	74.75	-													
3	1 & 3	98.00	108.25	56.00	50.00	117.25	2												
							148.50												
4	1 & 4	73.75	83.75	43.75	37.75	92.75	2	3											
							111.50	111.50											
5	1 & 5	59.00	69.00	36.50	30.50	78.00	2	3	4										
							89.50	148.50	89.50										
6	1 & 6	49.00	59.00	31.50	25.50	68.00	2	3	4	5									
							74.50	123.50	123.50	74.50									
7	1 & 7	42.00	52.00	28.00	22.00	61.00	2	3	4	5	6								
							64.50	106.50	148.50	106.50	64.00								
8	1 & 8	36.75	46.75	25.25	19.25	55.75	2	3	4	5	6	7							
							56.00	92.75	129.50	129.50	92.75	56.00							
9	1 & 9	32.75	42.75	23.25	17.25	51.75	2	3	4	5	6	7	8						
							50.25	83.00	115.75	148.50	115.75	83.00	50.25						
10	1 & 10	29.50	39.50	21.75	15.75	48.50	2	3	4	5	6	7	8	9					
							45.25	74.75	114.25	136.00	136.00	114.25	74.75	45.25					
11	1 & 11	26.75	36.75	20.25	14.25	45.75	2	3	4	5	6	7	8	9	10				
							41.50	68.25	95.00	121.75	148.50	121.75	95.00	68.25	41.50				
12	1 & 12	24.50	34.50	19.25	13.25	43.50	2	3	4	5	6	7	8	9	10	11			
							37.50	62.25	86.75	111.25	135.75	135.75	111.25	86.75	62.25	37.50			
13	1 & 13	22.50	32.50	16.25	12.25	41.50	2	3	4	5	6	7	8	9	10	11	12		
							36.00	58.50	81.00	103.50	126.00	148.50	126.00	103.50	81.00	58.50	36.00		
14	1 & 14	21.00	31.00	17.50	11.50	40.00	2	3	4	5	6	7	8	9	10	11	12	13	
							32.50	53.50	74.50	95.50	116.50	137.50	137.50	116.50	95.50	74.50	53.50	32.50	
15	1 & 15	19.50	29.50	16.75	10.75	38.50	2	3	4	5	6	7	8	9	10	11	12	13	14
							31.50	51.00	70.50	90.00	109.50	129.00	148.50	129.00	109.50	90.00	70.50	51.00	31.50

**METRIC HANDWHEEL SET-UPS FOR A4 (297mm x 210mm) TAB SIDE: 210 MM MARGIN: 1 MM**

*NOTE: SHADED AREAS ARE ACHIEVED BY TURNING THE STOCK UPSIDE DOWN. THE MIDDLE TAB IS JUST TO THE LEFT OF THE SHADED AREA.*

END TAB POSITIONS ONLY						ALL OTHER TAB POSITIONS													
TAB BANK	TABS	TAB SIZE	PLASTIC LENGTH	PLASTIC POSITION	TAB POSITION	PLASTIC LENGTH	POSITION DIMENSION												
2	-	104.00	114.00	59.00	53.00	-													
3	1 & 3	69.25	79.25	41.50	35.50	88.25	2												
							105.00												
4	1 & 4	52.00	62.00	33.00	27.00	71.00	2	3											
							79.00	79.00											
5	1 & 5	41.50	51.50	27.75	21.75	60.50	2	3	4										
							63.50	105.00	63.50										
6	1 & 6	34.50	44.50	24.25	18.25	53.50	2	3	4	5									
							52.75	87.25	87.25	52.75									
7	1 & 7	29.50	39.50	21.75	15.75	48.50	2	3	4	5	6								
							46.00	75.50	105.00	75.50	46.00								
8	1 & 8	26.00	36.00	20.00	14.00	45.00	2	3	4	5	6	7							
							40.00	66.00	92.00	92.00	66.00	40.00							
9	1 & 9	23.00	33.00	18.50	12.50	42.00	2	3	4	5	6	7	8						
							36.00	59.00	82.00	105.00	82.00	59.00	36.00						
10	1 & 10	20.75	30.75	17.25	11.25	39.75	2	3	4	5	6	7	8	9					
							32.00	52.75	83.50	100.75	100.75	83.50	52.75	32.00					
11	1 & 11	18.75	28.75	16.25	10.25	37.75	2	3	4	5	6	7	8	9	10				
							30.00	48.75	67.50	86.25	105.00	86.25	67.50	48.75	30.00				
12	1 & 12	17.25	27.25	15.50	9.50	36.25	2	3	4	5	6	7	8	9	10	11			
							26.75	44.00	61.25	78.50	95.75	95.75	78.50	61.25	44.00	26.75			
13	1 & 13	16.00	26.00	15.00	9.00	35.00	2	3	4	5	6	7	8	9	10	11	12		
							25.00	41.00	57.00	73.00	89.00	105.00	89.00	73.00	57.00	41.00	25.00		
14	1 & 14	14.75	24.75	14.25	8.25	33.75	2	3	4	5	6	7	8	9	10	11	12	13	
							23.00	37.75	52.50	67.25	82.00	96.75	96.75	82.00	67.25	52.50	37.75	23.00	
15	1 & 15	13.75	23.75	13.75	7.75	32.75	2	3	4	5	6	7	8	9	10	11	12	13	14
							22.50	36.25	50.00	63.75	77.50	91.25	105.00	91.25	77.50	63.75	50.00	36.25	22.50

## **4 MAINTENANCE**





## 4 Maintenance

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## 4.1 Maintenance

### 4.1.1 Machine Lubrication

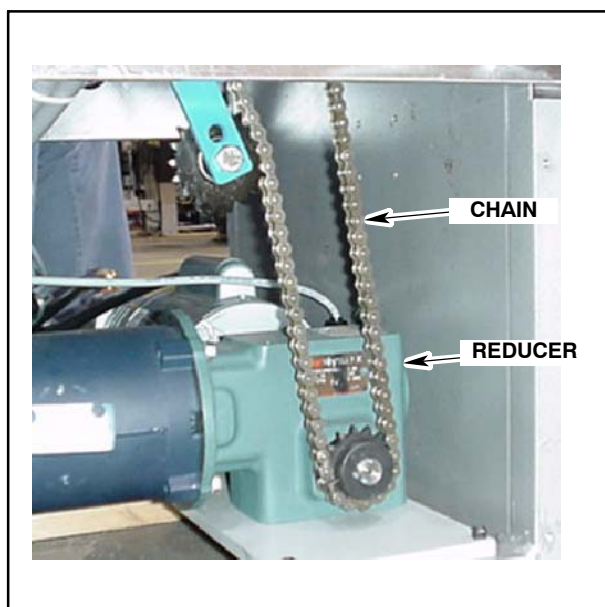


Fig. 4-1. Main Drive Gear

#### 4.1.1.1 Main Drive

The Dodge Tigear reducer incorporates the unique **Relialube** system which eliminates the lengthy preparation normally required to put a reducer into service. The Dodge Tigear reducer is properly filled at the factory with sufficient lubricant for all mounting positions.

The lubricant is Mobil SHC-634, a synthesized hydrocarbon formulated for extremely long life. Do not add or remove oil at installation or change oil after break-in. **Change oil only when performing maintenance that requires gearbox disassembly.**

**Note !** *If oil must be replaced, use only Mobil SHC-634 or Ultrachem Chemlube 140. Do not confuse Mobil SHC-634 with Mobilgear 634. Mobilgear 634 is an EP type gear oil NOT suitable for use in the Relialube system.*

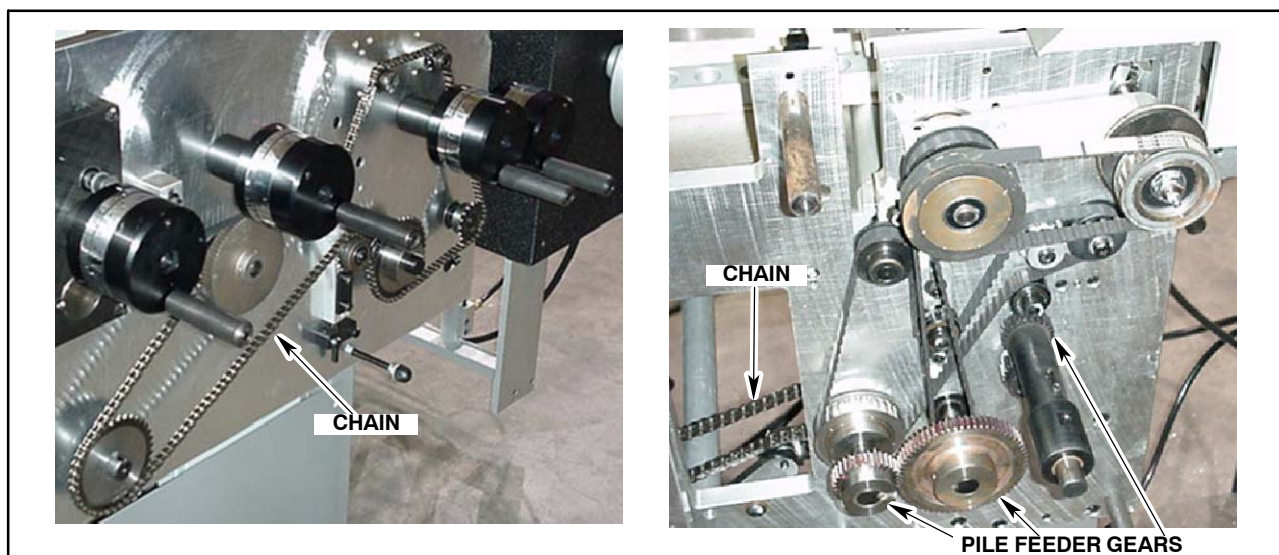


Fig. 4-2. Drive Chains

#### 4.1.1.2 Chain Lubrication

Use chain lubrication CRC 03050 or Superior Graphite 35201G. Apply Lubricant to chain with machine set to 2 or 3 on the speed adjustment control. Lubricant should be applied before chain is dry, once a month or about every 200 operating hours. Also apply lithium grease to Pile Feed gears.

**Note !** *Use CRC 03050 or Superior Graphite 35201G for Chain Lubrication.  
Use White Lithium Grease for Pile Feed Gear Lubrication.*

## 4 Maintenance



Fig. 4-3. Grease Fittings on Vacuum Bar

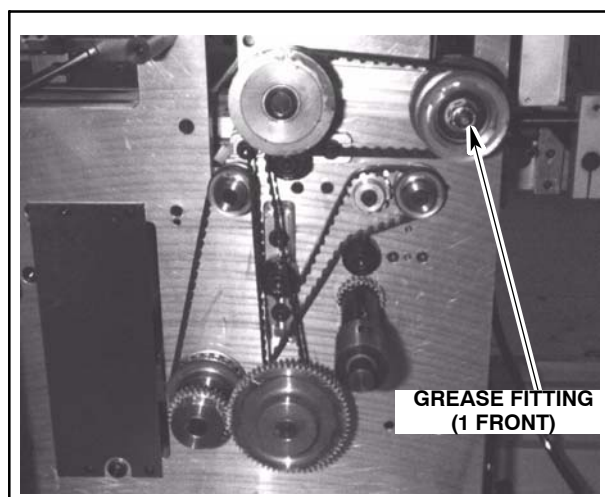


Fig. 4-4. Grease Fitting - Pile Lift Shaft

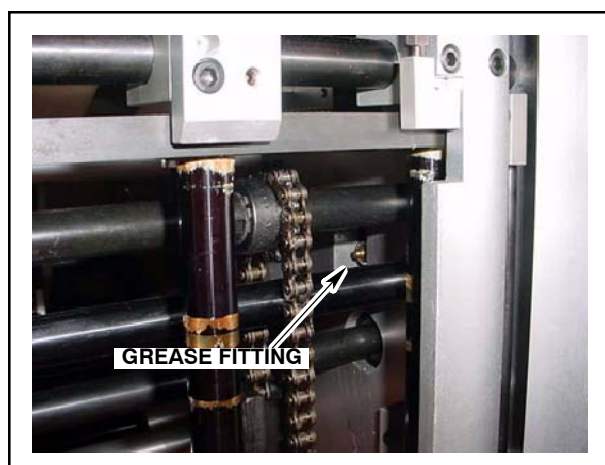


Fig. 4-5. Grease Fitting - Inside Pile Feeder

### 4.1.1.3 Feeder Area Hand Fittings

**Note !** *Use White Lithium Grease for paper feeder lubrication.*

There are four hand grease fittings in the paper feeder area.

All fittings should be greased every 200 operating hours or once a month. One shot of grease is all that is necessary.

Two fittings are located on the ends of the vacuum bar. To lubricate, **remove the access covers.**

One hand grease fitting is located on the Pile Lift Shaft.

One hand grease fitting is located inside the pile feeder.



Fig. 4-6. Plastic Feed Slide

### 4.1.1.4 Plastic Feed Slide

There is one grease fitting located on the plastic feed slide inside the cover on the plastic feed mechanism. This fitting should be lubricated once every month. One shot of grease is all that is necessary.

**Note !** Use White Lithium Grease for Plastic Feed Slide Lubrication.

ASSEMBLY UNIT / VENDOR	UNITS	INTERVAL	LUBE SPECIFICATION
REDUCER (DODGE TIGEAR) <i>RELIALUBE SYSTEM</i>	-----	-----	MOBIL SHC-634 OR ULTRACHEM CHEMLUBE 140 (Change oil only when performing maintenance that requires gearbox disassembly.)
CHAINS	3 CHAINS	200 HOURS	CRC 03050 or Superior Graphite 35201G
FEEDER (3 OUTSIDE, 1 INSIDE)	4 FITTINGS	200 HOURS	White Lithium Grease
PLASTIC FEED SLIDE	1 FITTING	200 HOURS	White Lithium Grease
Table 4-1. HAND LUBE LOCATIONS AND INTERVALS			Part 1 of 1

## 4 Maintenance



**Fig. 4-7. Gast Vacuum Pump Model 1023-101Q-G608X**

### 4.1.2 Vacuum Pump Maintenance

Regular inspection can prevent unnecessary damage and repairs. Intake and exhaust filters require periodic inspection and replacement. Initial inspection is suggested at 500 hours. After that, user should determine the frequency. Keeping filter clean can prevent most problems. Dirty filter decrease unit performance and service life.

**WARNING** - Muffler box may become very hot during operation. Do not touch these parts until unit has been turned off and allowed to cool.

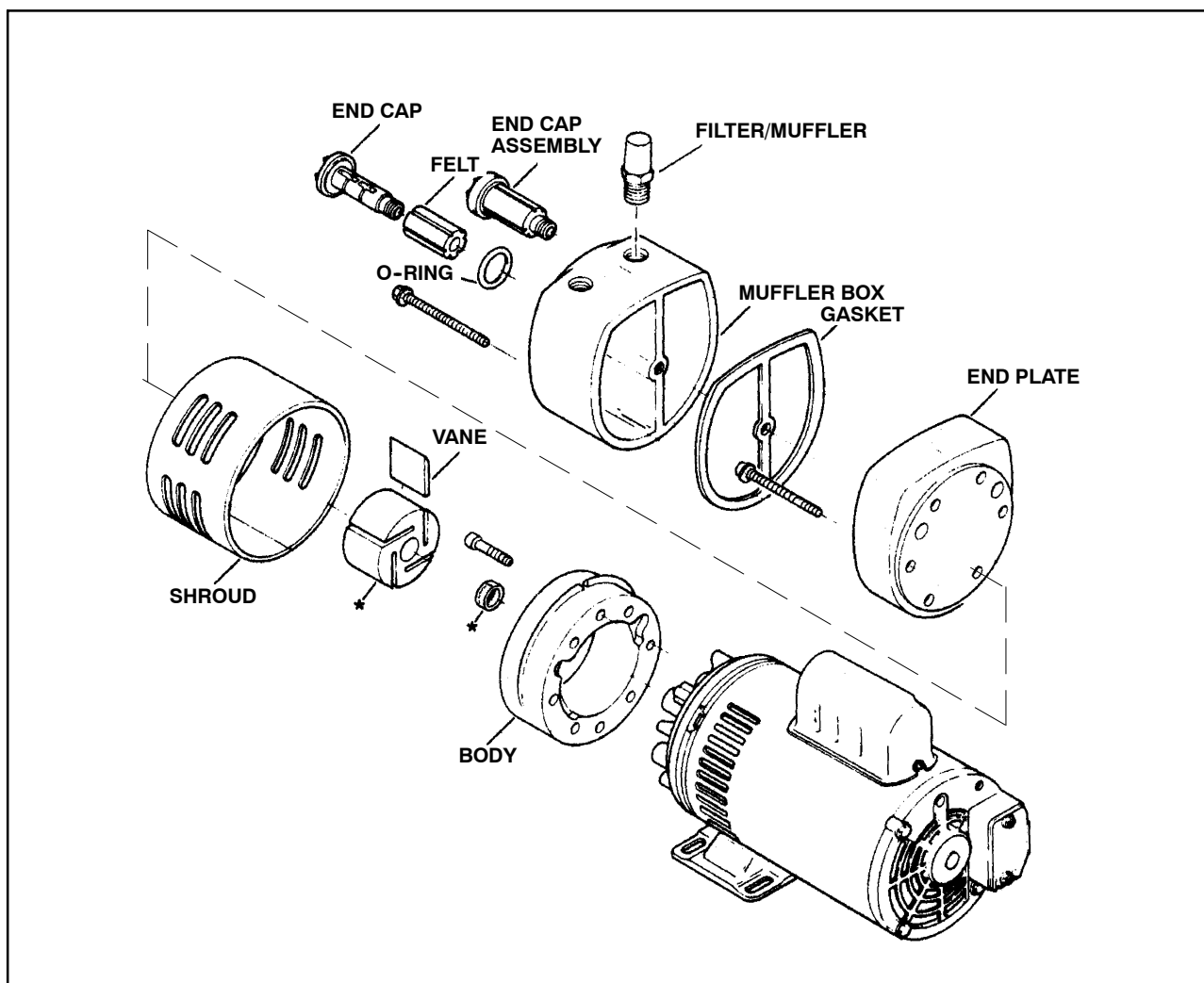
#### Vacuum Pump Service Kit: HW-47110

#### Includes:

**Vanes (4)**  
**Gasket (1)**  
**O Ring (2)**  
**Felt (2)**

VACUUM PUMP TROUBLESHOOTING GUIDE						
REASON FOR PROBLEM	LOW		HIGH		PUMP OVER-HEATING	MOTOR OVER-LOAD
	VACUUM	PRESSURE	VACUUM	PRESSURE		
FILTER DIRTY	X	X	AT PUMP		X	X
MUFFLER DIRTY		X		AT PUMP	X	X
VACUUM LINE COLLAPSED	X		AT PUMP		X	X
RELIEF VALVE SET TOO HIGH				X	X	X
RELIEF VALVE SET TOO LOW	X	X				
PLUGGED VACUUM / PRESSURE LINE	X	X	AT PUMP	AT PUMP	X	X
VANES STICKING	X	X				
RUNNING AT TOO HIGH RPM			X	X	X	X
VANES WORN (REPLACE)	X	X				
SHAFT SEAL WORN (REPLACE)	X	X				
DUST OR OFFSET POWDER IN PUMP	X	X			X	X
MOTOR NOT WIRED CORRECTLY	X	X			X	





**Fig. 4-8. Gast Vacuum Pump Model 1023-101Q-G608X**

### 4.1.2.1 Filter Inspection and Replacement

**Step: 1.** Make sure all power is turned off and all pressure and vacuum is released from the unit.

**Step: 2.** Remove filters and inspect.

**Step: 3.** Check for rips, tears, cuts, brittleness and excessive foreign matter.  
*Replace immediately if any of the above conditions exist.*  
*If not, precede to the next step.*

**Step: 4.** Clean with compressed air if filter looks serviceable. *Recheck for above conditions.*

**Step: 5.** Inspect filter/muffler for compacted debris. *Replace immediately if present.*

**Step: 6.** Check o-ring for softness and pliability.  
*Replace if not.*

**Step: 7.** Remove muffler box and inspect.

**Step: 8.** Clean out debris.

**Step: 9.** Check for cracks and tears in gasket.  
*Replace if necessary.*

**Step: 10.** Reassemble muffler box.

**Step: 11.** Install filters and end cap.

### Flushing

Should excessive dirt, foreign particles, moisture, or oil be permitted to enter unit, vanes will act sluggish or even break. Flushing unit should remove these materials.

**Caution** – Do not use kerosene or other combustible solvents to flush unit. Use only Gast AH225B flushing solvent or equivalent.

## 4 Maintenance

### 4.1.3 Machine Timing

Proper timing must exist to obtain acceptable machine operation. Operation of machine while out of time will result in unacceptable production and may result in machine damage and/or personal injury. Disturbances to the timing of the machine requires completion of the following timing adjustment procedures:

- Feeder Timing
- Plastic Feed and Cut Timing
- Machine Cycle Timing

**Note !** *Fig. 4-9. and Fig. 4-10. provide views of the front and rear sections of the machine. Fig. 4-11. is a view of the drive chain connection. All figures within this section can be easily located on the machine by referring to the appropriate view and/or drive chain for component location.*

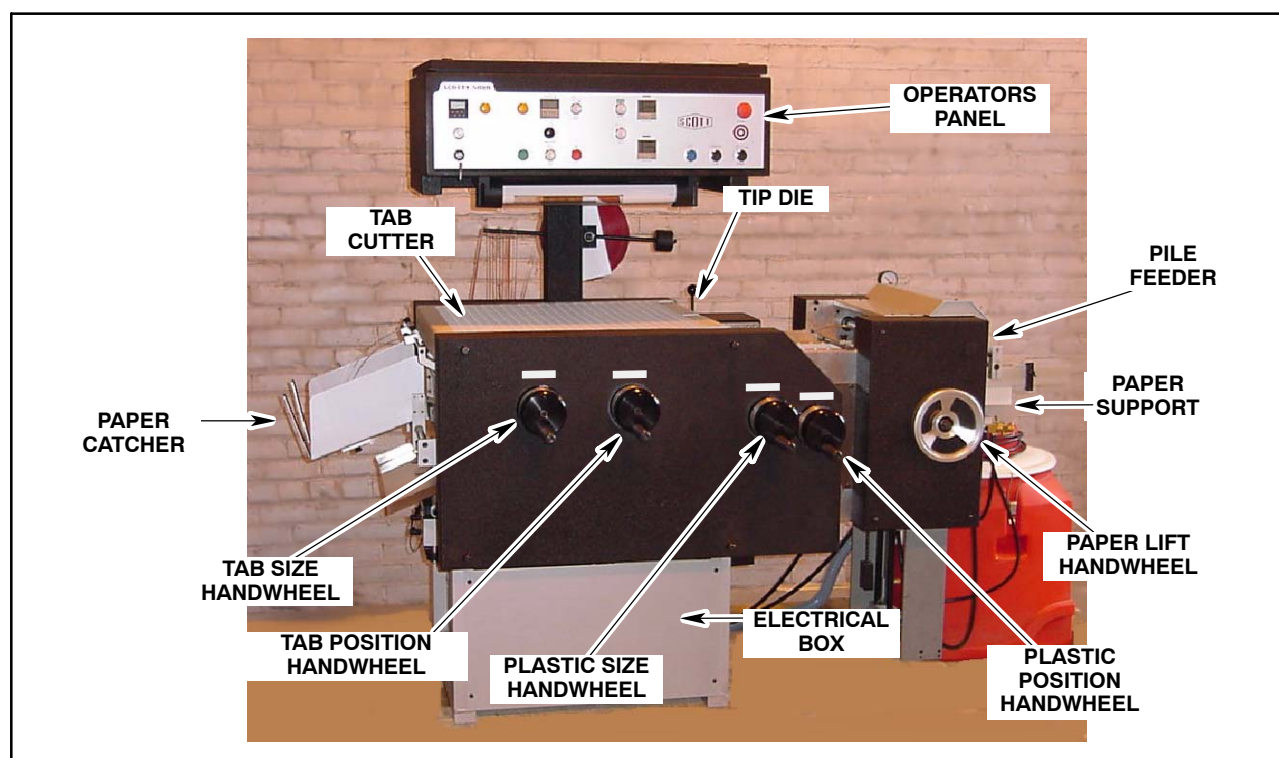


Fig. 4-9. Machine Front View

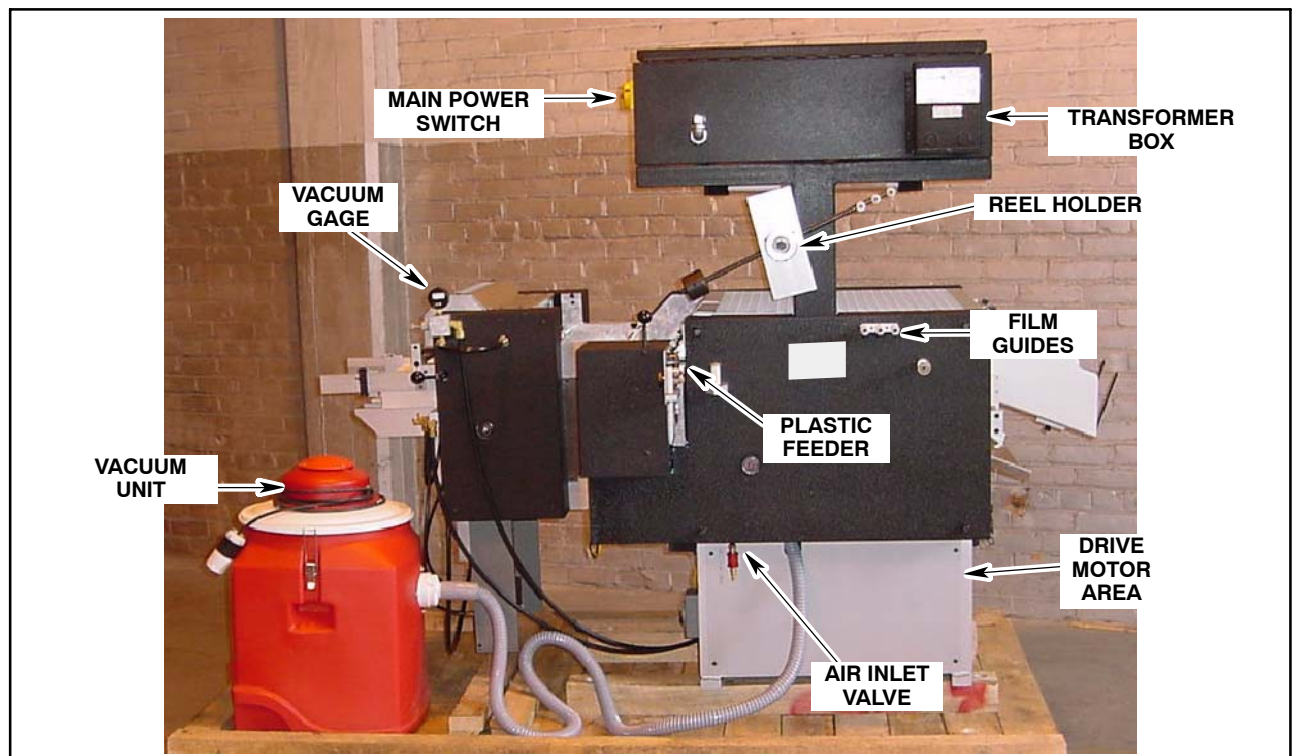


Fig. 4-10. Machine Back View



## 4 Maintenance

### 4.1.4 Preparation for Timing Procedures

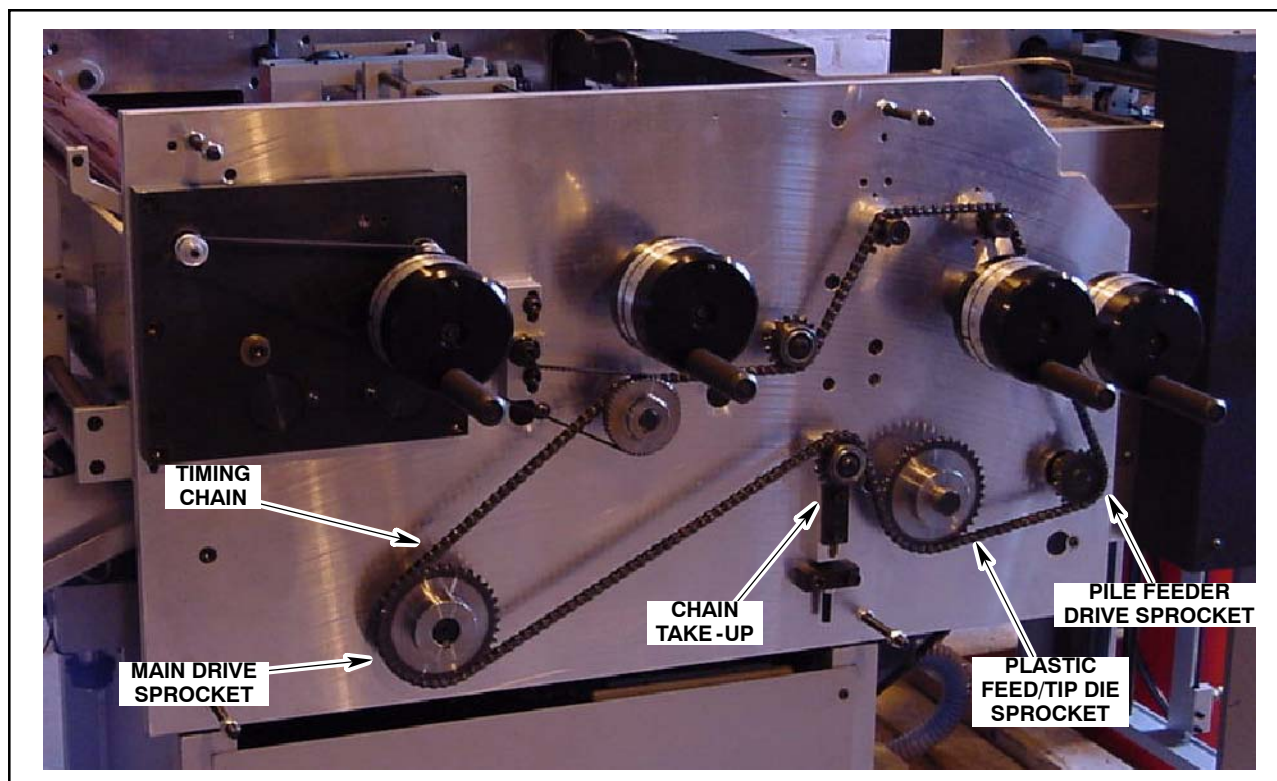


Fig. 4-11. Timing Chain Connections

## ***CAUTION!***

BEFORE ATTEMPTING TIMING PROCEDURES, DISCONNECT POWER FROM MACHINE AT THE SOURCE CONNECTION AND LOCKOUT/TAGOUT THE POWER SWITCH (REFER TO SAFETY TAGS). FAILURE TO COMPLY CAN RESULT IN SERIOUS BODILY INJURY OR DEATH FROM ELECTRIC SHOCK OR UNEXPECTED MACHINE MOVEMENT.

### 4.1.5 Timing Procedures

Before machine timing can be performed a mechanic must remove the timing chain (Fig. 4-11. ) from the Main Drive sprocket, Plastic Feed/ Tip Die sprocket, and Pile Feeder Drive sprocket. This is accomplished by loosening the Chain Take-up and removing the chain.

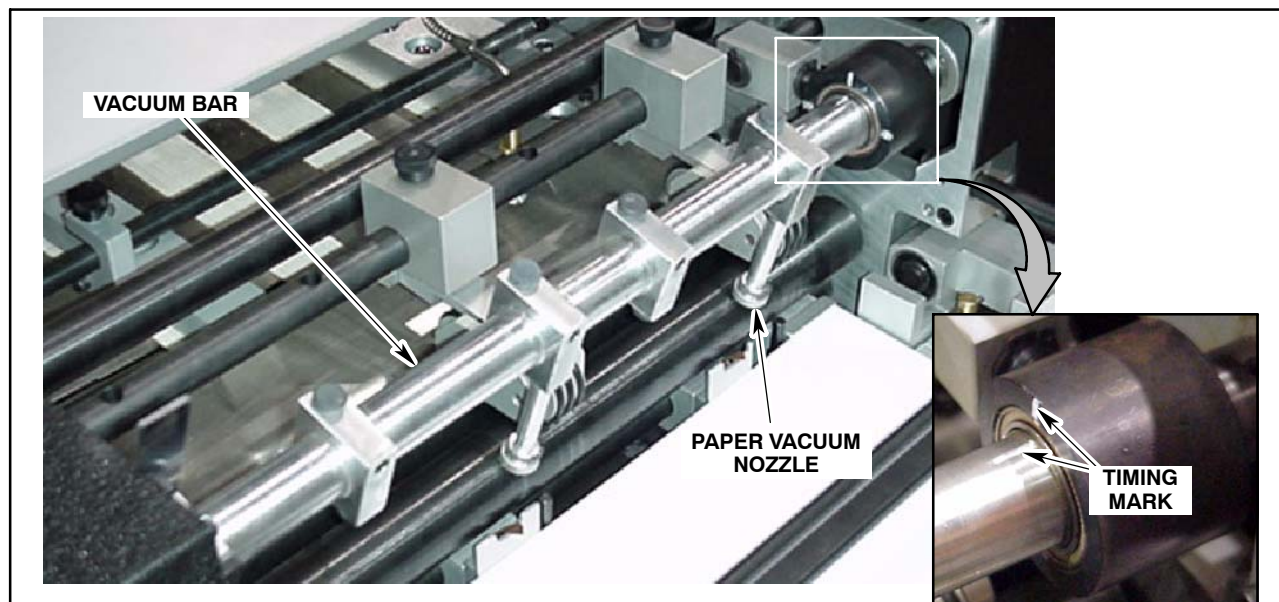


Fig. 4-12. Position the Paper Vacuum Nozzle

#### 4.1.5.1 Feeder Timing

**Step: 1.** Locate vacuum bar on feeder section.

**Step: 2.** Nozzles on vacuum bar are correctly timed when positioned as shown in Fig. 4-12.

**Step: 3.** If nozzles are incorrectly aligned, perform Steps 4 and 5.

**Step: 4.** Turn feeder drive shaft sprocket counterclockwise to move nozzles through normal rotation cycle. (See Fig. 4-11. )

**Step: 5.** When nozzles have reached correct position, vacuum bar will be properly timed. (See Fig. 4-12. ).

## CAUTION!

*Incorrect rotation (clockwise) of feeder drive sprocket will set vacuum bar out of proper timing sequence with machine. If this occurs, perform the following:*

- Cycle paper pile feeder through two complete rotation (See Fig. 4-12. )
- Turn feeder drive shaft counterclockwise to relocate nozzles in correct position. (See Fig. 4-12. )
- Rotation of vacuum bar to position nozzles will not set feeder assembly in proper timed position.

## 4 Maintenance

### 4.1.5.2 Plastic Feed & Cut Operating Arm

The Plastic Feed and Cut operating arm is located on backside of machine just above vacuum pump assembly.

Timing marks are located on top of rectangular block and frame of machine.

**Step: 1.** Align mark on rectangular block with mark on frame of machine.

**Step: 2.** If rectangular block moves out of position, secure with long flat file to left of block and clamp file to frame of machine. (See Fig. 4-13. )

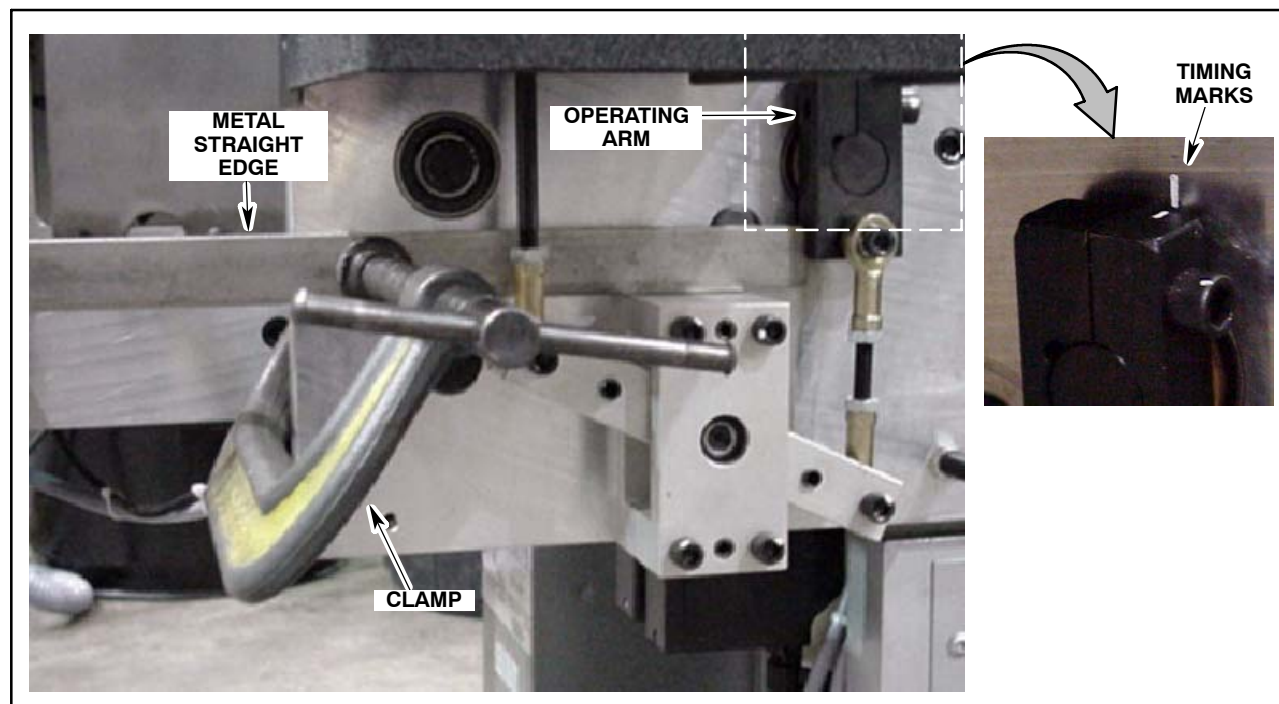


Fig. 4-13. Cut Operation Arm

### 4.1.5.3 Machine Cycle Timing

Machine Cycle Collar:

- Step: 1.** Return power to the machine.
- Step: 2.** Use the Drive Speed control to slowly index the machine until the timing screw is aligned with the timing mark and set.

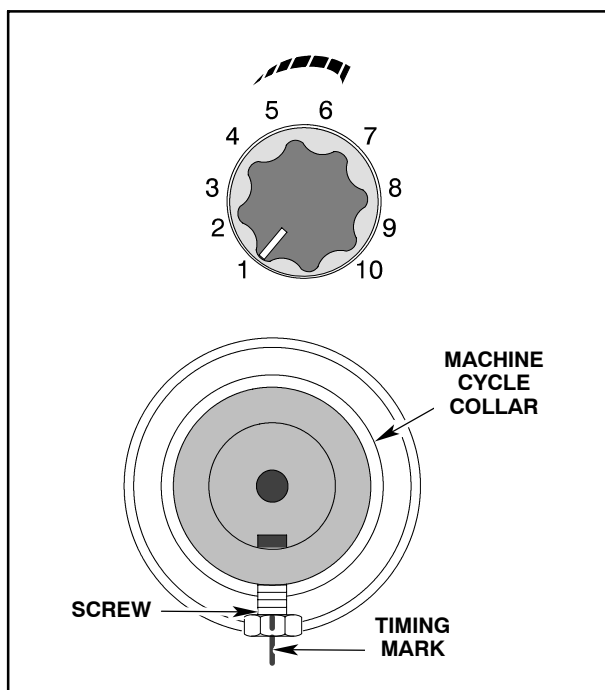


Fig. 4-14. Align Timing Screw with Timing Mark

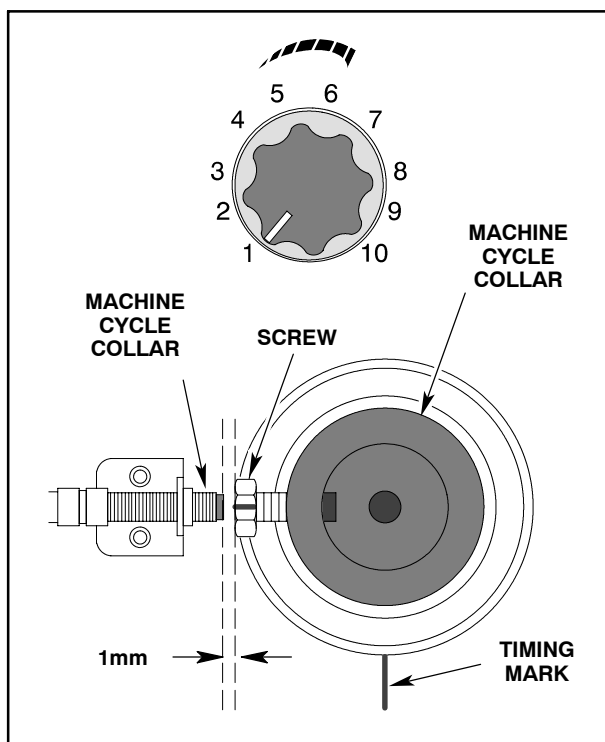
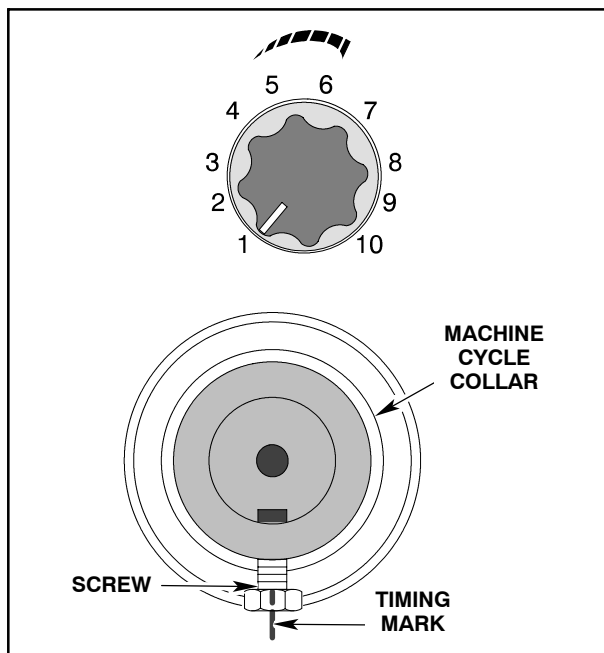


Fig. 4-15. Adjust Proximity Switch to Drive Screw

- Step: 3.** Use the Drive Speed control to slowly index the machine until the screw is aligned to the Proximity switch.
- Step: 4.** Adjust the Proximity Switch as close as possible to the machine cycle collar screw without touching the screw. The gap should be no greater than 1mm.

## 4 Maintenance



**Fig. 4-16. Align Drive Screw With Timing Mark**

**Step: 5.** Use the Drive Speed control to slowly index the machine until the screw is aligned with the timing mark again.

**Step: 6.** Remove electrical power when this is done.



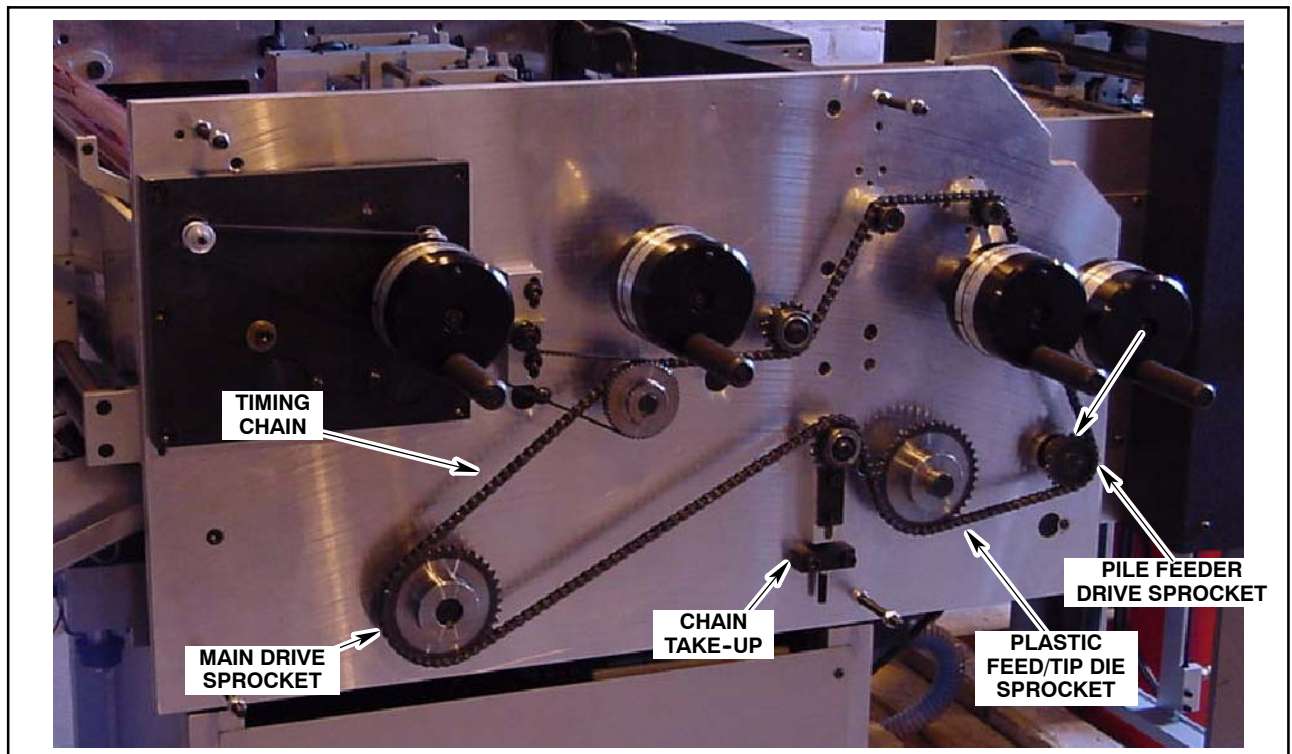


Fig. 4-17. Drive Chain Connections

### 4.1.6 Reinstall Chains

- Step: 1.** Replace timing chain around Main Drive, Plastic Feed and Cut, and Pile Feed Drive sprockets.
- Step: 2.** Make sure there is no slack between these sprockets.
- Step: 3.** Use the chain Take-Up to tighten chain allowing 1/2 inch (12.7mm) of slack in the chain halfway between the Take-Up and the Main Drive Sprocket.

## CAUTION!

*Before machine can be started, remove "C" clamp and file if used to position plastic feed and cut operating arm in Operation 4.1.5.2.*

- Step: 4.** Replace front and rear cover guards.

## 4 Maintenance

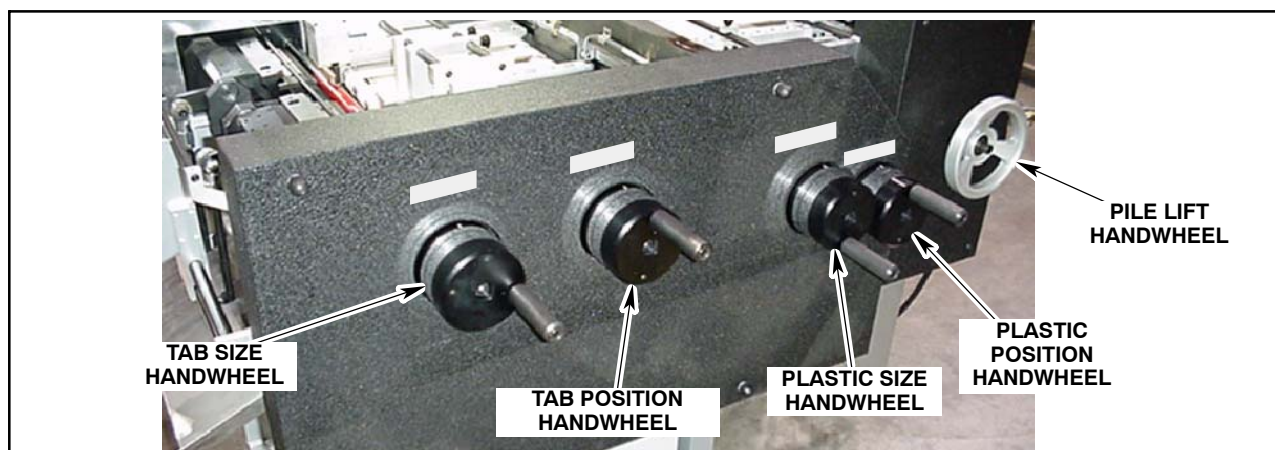


Fig. 4-18. Handwheel Locations

## 4.2 Calibration

Proper calibration must exist to obtain acceptable machine operation. Re-calibration of the handwheels may become necessary when difficulties arise in making the tab size, tab location, plastic size, or correct location of plastic in regards to dimensions set on the handwheels.

### 4.2.1 Preparation for Calibration Procedures

Prior to attempting calibration procedures It is important to have proper materials and ensure the Initial setting on handwheels corresponds to size of paper being utilized.

Paper size is not critical during normal run cycles of the machine. Tabs that are slightly “off” can be corrected by adjustment of the handwheels to correspond to position of the tab or plastic. The printing can be off due to improper printing registration or improper sheet cutting which can also be adjusted with the handwheels.

The handwheels should be calibrated as accurately as possible during the calibration procedures. Therefore, paper size must also be accurate. Measure the stock prior to performing calibrations. Stock sizes vary and can be under or oversize by 1/16th or more of an inch (1.5mm). This will not effect machines operation, if the printing is perfect, but positioning of the dials must be corrected when stock is reversed to do corresponding tab positions.

There are four handwheels that are located on the front of the machine:

**Note !** *The handwheels referred to In this section are shown on drawing Fig. 4-18.*

Plastic Position Handwheel sets plastic position on the paper stock. Measured from edge of paper furthestmost away from operator to center of plastic being applied.

Plastic Size Handwheel sets length of plastic being applied to paper.

Tab Position Handwheel positions paper to be tab cut and is measured from edge of paper, furthestmost away from operator to center of tab. Sheet is pushed 1/4 inch (6.3mm) when both Plastic Position and Tab Position Handwheels are set to the same settings.

Tab Size Handwheel sets size of tab cut.

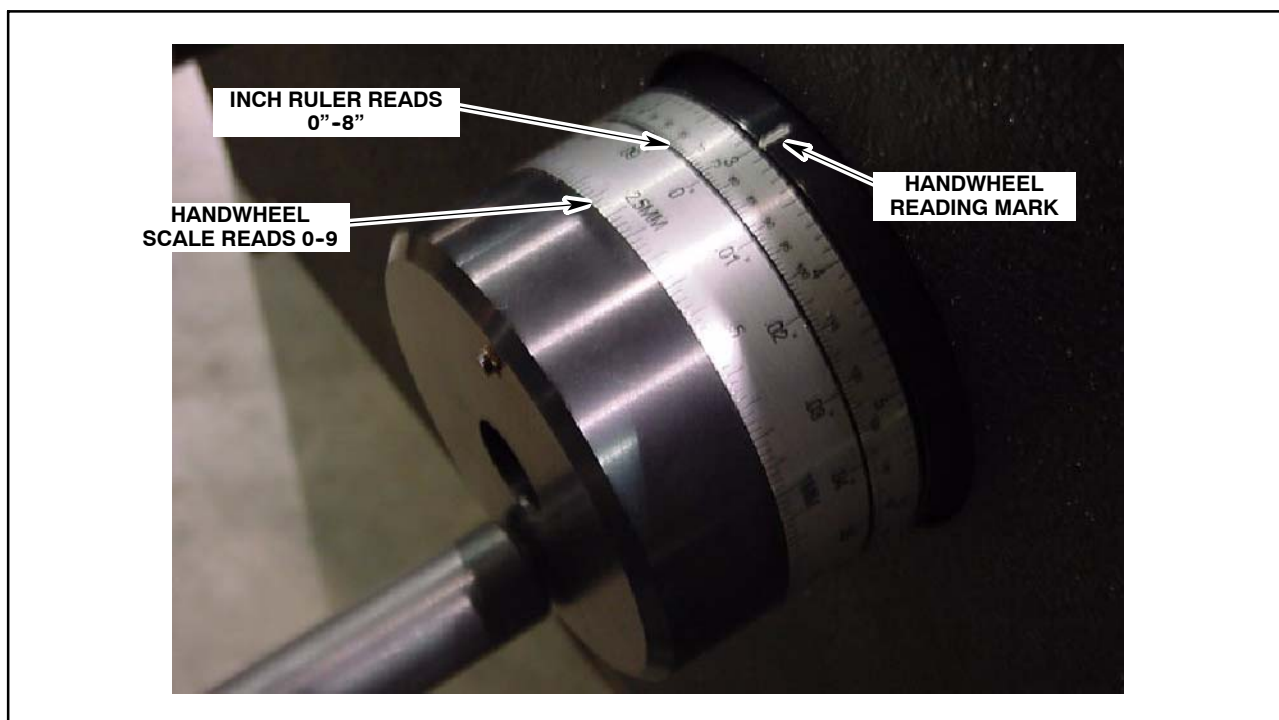


Fig. 4-19. Handwheel Configuration

### 4.2.2 Handwheel Settings

The recommended settings for the plastic size handwheels and tab size handwheel is 3.00 inches and 4.00 inches (76.2mm & 101.6mm) respectively. (See Fig. 4-18. for handwheel locations) These settings are to be used no matter what size paper is being used for calibration procedures.

Set the Plastic Position handwheel and Tab Position handwheel to the center line of the paper size (i.e. on eleven inch paper handwheels are set to 5.50 inches (139.7mm)). Both handwheels are set the same. (Fig. 4-19. )

All handwheels display two decimal places, tenths and hundredths.

The handwheel calibration procedures in this section are based on the following parameters:

11 Inch (279.4mm) Sheet Size	
Handwheel	Settings
Plastic Position Handwheel	5.50 (139.7mm)
Plastic Size Handwheel	3.00 (76.2mm)
Tab Position Handwheel	5.50 (139.7mm)
Tab Size Handwheel	4.00 (101.6mm)

**Note !** *Do not change handwheel settings after they have been correctly set.*



## 4 Maintenance

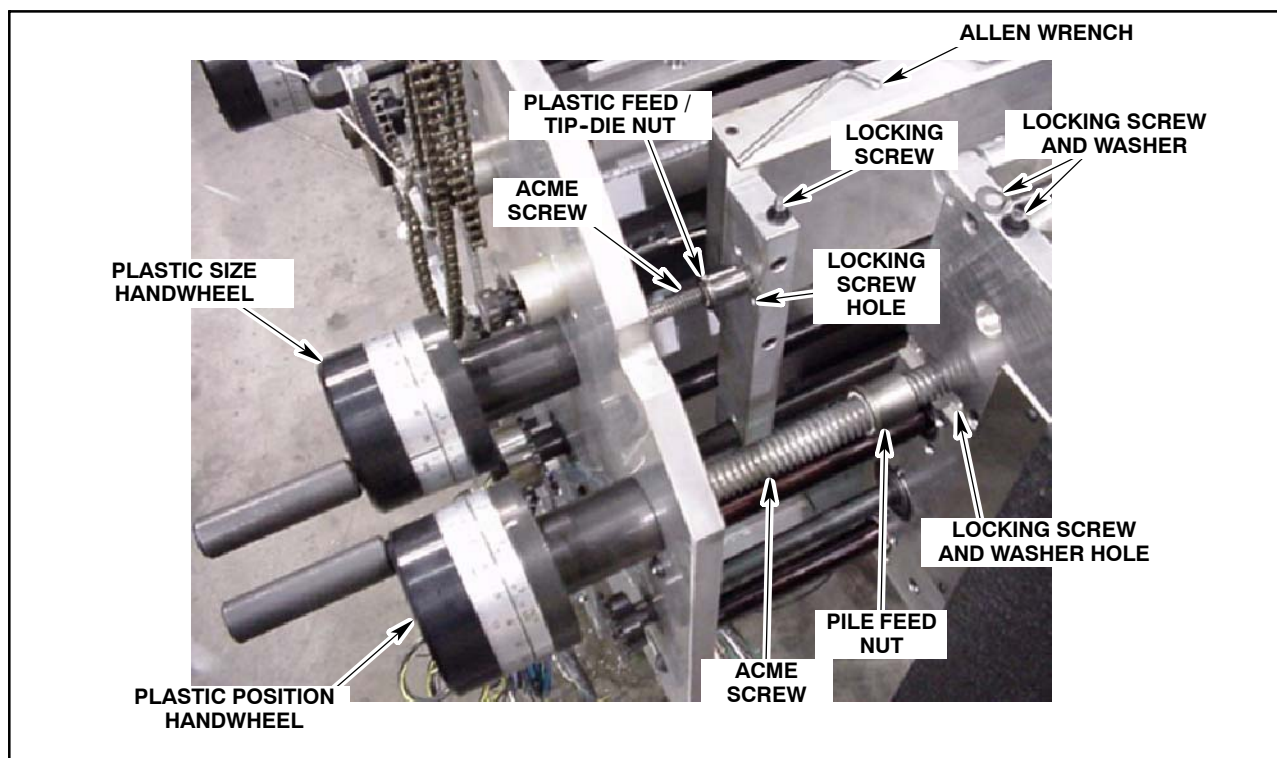
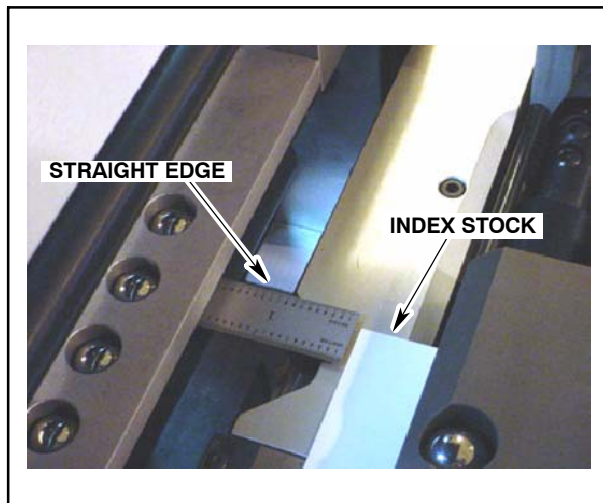


Fig. 4-20. Handwheel Calibration

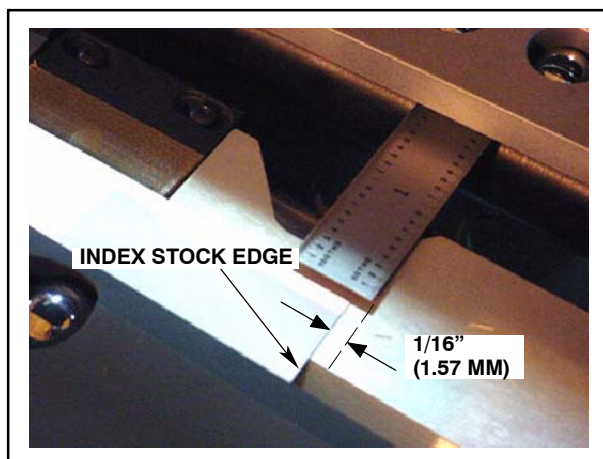
### 4.2.3 Handwheel Calibration Procedures

#### 4.2.3.1 Plastic Size Handwheel

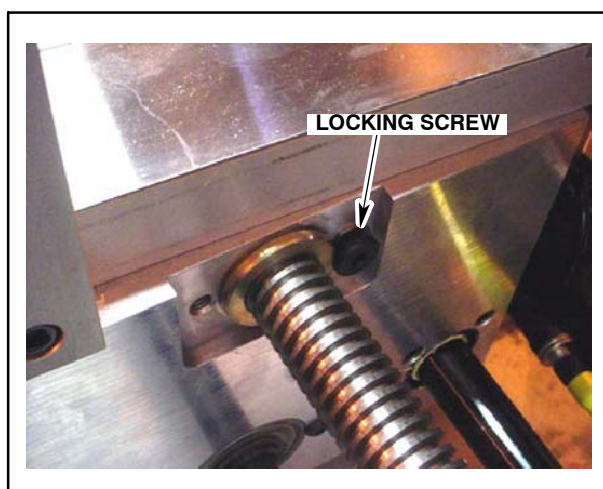
- Step: 1.** If power has not been applied to machine, do so at this time and make sure the heaters are turned on.
- Step: 2.** Turn plastic feed ON.
- Step: 3.** Check heaters to see if they are up to operating temperature.
- Step: 4.** Run one piece of paper through the machine.
- Step: 5.** If length of plastic equals 3.00 inches (76.2mm) proceed to 4.2.3.3. If length is more than or less than 3.00 inches (76.2mm), perform the following steps.
- Step: 6.** To adjust plastic size. remove locking screw that retains nut located on side of plastic feed/tip-die mounting plate (See Fig. 4-20. ).
- Step: 7.** By rotating nut clockwise, the plastic lengths will become longer. A counterclockwise rotation will shorten plastic lengths. Make sure plate location is up against shoulder of the nut when checking piece size.
- Step: 8.** Run one piece of paper through machine, then measure the plastic.
- Step: 9.** If plastic is at desired length, you may then reinstall locking screw. If not, repeat steps 6 and 7 until desired length is achieved.
- Step: 10.** Finally, use the machine speed control to slowly index one piece of paper up into machine, feeding plastic out. Stop paper just before plastic is about to cut. Position plastic stop away from end of plastic piece approximately 1/32th inch (.75mm).



**Fig. 4-21. Place Straight Edge Against Paper Side Guide**



**Fig. 4-22. Distance Between Index Stock and Straight Edge Should Be 1/16th"**



**Fig. 4-23. Locking Screw**

### 4.2.3.2 Tab Position Handwheel

- Step: 1.** Place the tab position handwheel to the same setting as the plastic position handwheel.
- Step: 2.** Jog one piece of index stock through the feeder register conveyor up to the middle of the plastic feed plate and stop.
- Step: 3.** E-Stop the machine and turn the main air supply off.
- Step: 4.** Place a straight edge (18-24 inches long) against the paper side guide. It should be underneath the ball holder on the tab position register conveyor and completely against the paper side guide.

The distance between the straight edge and the index stock should be 1/16" (1.57mm).

If the distance between the straight edge and the index stock is not 1/16", proceed to the next step.

- Step: 5.** Remove the locking screw that holds the conveyor into the handwheel lead screw.  
**NOTE:** Do not lose "D" washer that is located behind the shoulder of the adjustment screw.
- Step: 6.** Move the Tab Position register conveyor adjustment until the 1/16" measurement is achieved.  
**NOTE:** Make sure the straight edge is maintained against the side guide when the conveyor is being moved.
- Step: 7.** Replace locking screw.

## 4 Maintenance

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### 4.2.3.3 Plastic Position Handwheel

- Step: 1.** Turn plastic feed ON. Run two sheets of paper through machine.
- Step: 2.** Use the machine speed controller to index both sheets of paper together to ensure plastic is lined up properly. If they do not line up, run two more sheets of paper, repeat until proper alignment is achieved.

**Note !** *Check to ensure plastic stop is not set too close or too far away from plastic.*

- Step: 3.** Flip one sheet over, then use the machine speed controller to index both sheets together. Plastic on reversed sheet should back up plastic on other sheet. If this is not achieved, perform feeder adjustment in Steps 4 through 6.
- Step: 4.** Remove locking screw that retains nut inside plate of feeder. Do not lose washer located behind shoulder of locking screw. (See Fig. 4-20. ).
- Step: 5.** Rotate nut clockwise to move plastic toward middle of paper. Rotate nut counterclockwise to move plastic toward end of sheet, insuring washer is located between nut shoulder and plate.
- Step: 6.** Adjust feeder forward or backward until two sheets can run through machine with plastic properly backing up reversed sheet.
- Step: 7.** Repeat steps 1, 2, 3, 5 and 6 until plastic is properly centered.
- Step: 8.** Reinstall locking screw and tighten.

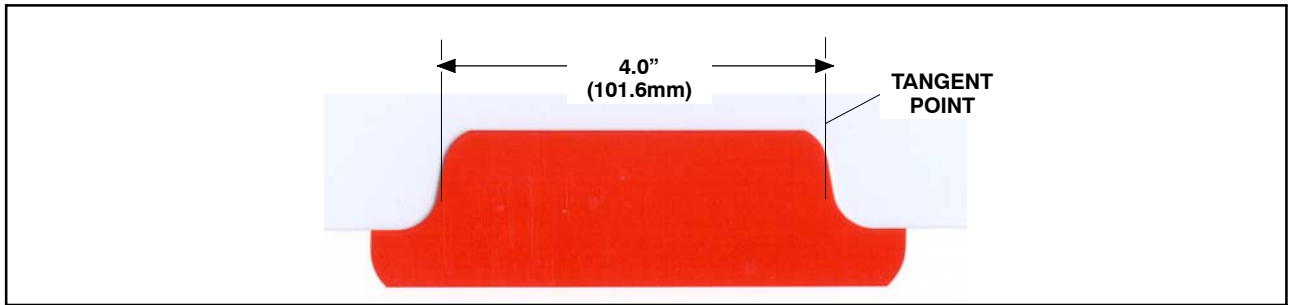
### 4.2.3.4 Tab Position Handwheel Calibration

The Handwheel to position the tab is calibrated in this manner.

- Step: 1.** Place the tab position conveyor handwheel to the same setting as the plastic position handwheel.
- Step: 2.** Remove the locking screw that holds the conveyor into the handwheel lead screw.
- Step: 3.** Place a straight edge, 18 to 24 inches (457.2 – 609.6mm) long, against the paper side guide underneath the ball holder on the belt conveyor of the feeder. Make sure the straight edge is completely against the paper side guide.
- Step: 4.** Position the conveyor that feeds the paper into the tabcutter knives so the straight edge is up against the paper guide bar underneath the ball holder.
- Step: 5.** Move the conveyor away from the straight edge by 1/16 inch (1.5mm).

**Note !** *Make sure the straight edge is maintained against both side guides before moving the tab position conveyor back.*

- Step: 6.** Move the locking nut up against the conveyor and replace the locking nut.



**Fig. 4-24. Tab**

### 4.2.3.5 Tab Position Calibration

Tab position calibration sets two dimensions at the same time: the tab size and the center line of tabcut on the paper. Measure tab at point along side where small straight side meets curve near top of tab. This is approximately 1/3 the distance down from edge of paper. (See Fig. 4-24. )

**Step: 1.** Run two sheets through the machine, if measurement equals 4.0 inches (101.6mm) as set on handwheel, proceed to Step 4. If not, perform Steps 2 and 3, then perform Steps 4 through 8.

**Note !** *When Tab Size handwheel is rotated both knife packages move simultaneously. The smaller the size selected on Tab Size handwheel relates to closeness of knife packages.*

**Step: 2.** Remove one locking screw on one knife package that holds nut in place. There is one left hand and right hand threaded, acme screw that operates each knife package.

**Step: 3.** Adjust one knife package to achieve the 4.0 inch (101.6mm) dimension by moving the package backwards or forwards.

**Note !** *The package that you move depends which way the tab is out of center. This can be determined by turning a sheet over and indexing both together, if they do not back each other up, move the knife package that helps to bring the tab toward the center of the sheet. Run another sheet through and measure the tab. If size is correct proceed to step 4. If not, repeat this method until correct.*

**Step: 4.** Run two sheets of paper through machine.

**Step: 5.** Use the machine speed control to slowly index both sheets together, ensuring tabs align with each other.

**Step: 6.** Flip one sheet over, then slowly index sheets together again. Tabs should back up each other if knife packages are correctly aligned.

**Step: 7.** If tabs do not back up to each other, move both knife packages half the distance that the tabs are off by. Direction to move knife packages depends on which side tabs are out of center.

**Note !** *Ensure both knife packages are moved equally to maintain 4.0 inch (101.6mm) tab dimension.*

**Step: 8.** Reinstall locking screws and tighten.

## **4 Maintenance**

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### **4.2.4 Pile Feeder**

The paper feeder used on the Scotty 5000 is specially designed to feed index stocks at high speeds. It is very important for the operator to keep the feeder in good working condition and to learn how to adjust and correct for various operating conditions. The importance of this is magnified by two conditions. First, the machine is handling papers which have already been through two or three other machines and, because of this, may not be in first class condition. Second, the stocks being fed may vary, and will vary greatly in feeding ability. Knowing how to make fine adjustments to compensate for various paper conditions will greatly increase the productivity of this machine.

The most critical area in any paper feeder is at the point where the vacuum nozzles contact the top sheet to lift it from the stack. If papers and operating conditions were uniform all of the time this would not present a problem. However, the papers handled by this machine tend to have various curls, warpage, ripples, etc., which greatly hamper feeding. The sheets may tend to curl up or down or the entire stack may be tilted due to moisture from printing. The following "hints" will help the operator to keep the Scotty 5000 operating at maximum production speeds.

1. **Sheet separator fingers.**  
The position and condition of the sheet separator fingers should be carefully maintained. When properly installed, the feeder nozzles should come down until the bottom of the nozzles are exactly in line with the fingers. Care should be taken to make certain that the fingers are free and extend into the sheet about 1/4-inch (6.3mm). Whenever the position of nozzles is changed the stack guide should be moved until the finger is slightly to the left of the nozzle.
2. **Vacuum Nozzles.**  
The machine is equipped with a floating nozzle cup which does two things. First, it allows for slight variations in the height of the stack and, second, it allows the cup of the nozzle to conform to the curl of the paper. The advantage of the floating nozzle cup is that it will compensate for a much wider range of operating conditions. It is important to make certain that there is no binding condition in the floating "cup" of the nozzle which prevents it from dropping down on the paper each time.
3. **Paper side and back guides.**  
The right hand guide remains in the same position for all sheet sizes. The left hand guide must be adjusted for sheet size. Allow approximately 1/16" (1.5mm) freedom in the stack. The back guides should be adjusted close to the stack.
4. **Compensating for a tilted stack of paper.**  
Uneven paper stacks can be compensated for by inserting strips of binder's board every so often on the low side of the stack. Also the use of binder's board the same size as the sheets is recommended as a platform for the stack. Make sure it is heavy enough not to be picked up by the nozzles.
5. **Curled stock.**  
The nozzles will compensate for quite a bit of curl in the paper. However, if the curl is too bad it may be necessary to roll the stock by hand before loading it into the pile feeder.
6. **Pile Height Adjustment.**  
During the operation of the machine, the paper stack automatically rises until the top sheet reaches a predetermined height. The stack height is controlled by a checking bar above the stack. As the stack approaches the feeding height, the checking bar begins to strike the top of the stack. The higher the stack, the less the bar moves and the less the stack rises until it finally stops rising at all. As sheets are fed into the machine, this has the effect of lowering the top of the stack and the stack begins to rise. The height that the stack will rise to, is controlled by a hand knob on the outside of the R.H. feeder cover. Lifting this hand knob will cause the stack to rise to a higher point. Lowering the hand knob will cause the stack to stop rising at a lower point. In operation, the operator should lower the hand knob to its bottom point; then with the machine running and the vacuum on, gradually lift the knob until the feeder begins to feed. The knob should be kept at it's lowest position possible allowing stock to feed.



**4.2.4.1 Vacuum System for Feeding Paper**

The machine is equipped with a vacuum pump which provides both vacuum for pick-up and blow air for separating the sheets. The degree of vacuum can be adjusted by adjusting the nut on the vacuum relief valve located on the vacuum gage.

The degree to which the vacuum is adjusted depends on the weight and porosity of the paper being fed. Generally speaking, the lighter and thinner the paper, the lower the vacuum required. The normal range of vacuum required will vary from about 5 to 10 inches (.18 to .34 BAR) of mercury as shown on the gage. The best practice is to run as low as possible with continuous feeding and with as least vacuum as possible.

**4.2.4.2 Blow-Air System**

The blow-air system performs several functions. First, it separates the sheets so the effect of the vacuum bleeding through the paper is less critical. Also, with the second sheet separated from the first sheet, it allows air to get in between the sheets when the top sheet is removed from the stack. This prevents the first sheet from sucking up the second sheet. Another function of the blow-air is to lift the top few sheets until the top sheet is up against the sheet separator finger. This establishes a uniform height for the top sheet so that it will be in the proper position when the nozzles come down for the pick-up.

The feeder is equipped with four blow nozzles. Two of these blow in from the edges of the stack and two blow in from the front of the stack.

Blow air nozzle height is pre-set at the factory and should not need to be adjusted. If they need adjusting, the side nozzles are adjusted in height by screwing them either up or down. The front nozzles can be adjusted in height by first tilting them toward the stack and then screwing them either up or down. The amount of blow-air from the nozzles can be adjusted by use of the exhaust valve located on the left feeder guard. Individual nozzles can be adjusted by the hand valves located on the left and right feeder guards.

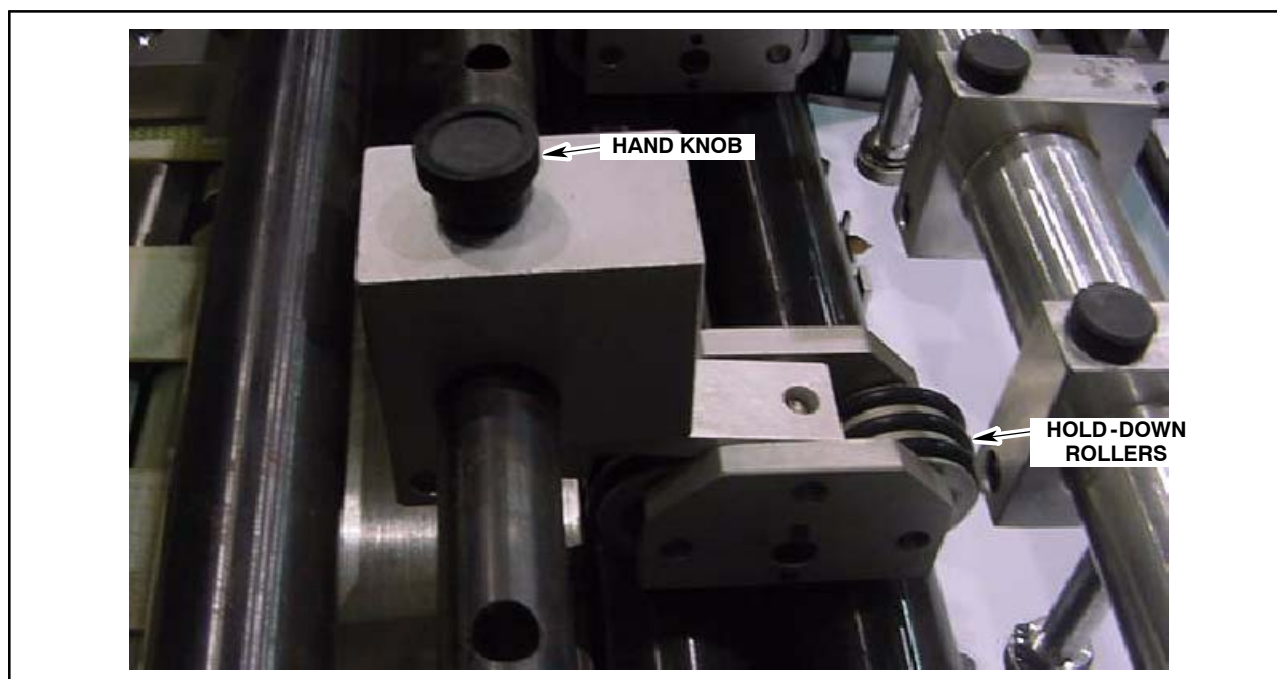
***CAUTION!***

***DO NOT RESTRICT THE BLOW AIR TO THE POINT WHERE IT OVERLOADS THE VACUUM PUMP. THIS CAN CAUSE THE MOTOR TO BE DAMAGED.***

**4.2.4.3 Moving the Nozzles**

The vacuum nozzles are held in place by ball plunger screws. To change positions, loosen the screw, then pull the nozzle straight out. When installing them, first push the nozzle in and then tighten the screw.

## 4 Maintenance



**Fig. 4-25. Pull In / Hold-Down Rollers**

### 4.2.4.4 Moving the Pull In / Hold-Down Rollers

The rollers can be positioned in any one of four positions. To change, pull the hand knob up to disengage and slide the assembly along the shaft to the position desired.

**4.2.4.5 Plastic Feed and Fold Mechanism**

The incoming plastic is folded by passing between two roller assemblies just before it reaches the drive rollers. The space between these rollers determines the sharpness of the fold or crease. The degree of fold or crease is very important since it determines the ability of the cut piece to open and be picked up by the sheet. If the fold is too tight, the piece will tend to be slow in opening or will not open sufficiently for the sheet to pick it up. If the fold is too open, the edge of the sheet may not always find the apex of the fold and the plastic may go on the sheet with uneven legs. Use three thickness of plastic as a general gap.

**4.2.4.6 Plastic Tip-Die Mechanism**

The plastic tip-die package is one of the “key” units of the machine. Unless this device is working properly, the machine cannot function in the way it is designed to do. Aside from its primary function of cutting off and making the plastic tip, it also has opener springs to align the strip for the cut and cause the ends to open even if the Mylar sticks together. These parts are light enough to compress during the cutting but still open the tip. The first two fingers are located under the die cover so as to open the end of the strip. The outside finger is located in such a way to insure that the strip is fed out over and under it. The shape of these parts is very critical since they must perform their function but not interfere with the feeding of the strip. If these become damaged they must be replaced. When replacing, they must be bent to the exact shape shown on the drawing to be furnished when your machine is installed.

**4.2.4.7 Chip Removal System**

The machine is equipped with an automatic chip removal system which pulls the cut-out or plastic chip from between the dies and deposits it in a waste container. This eliminates the need to sweep up the chips and insures that the chips are removed.

**4.2.4.8 Removing and Replacing the Plastic Tip-Die Unit**

The plastic tip-die unit is designed in such a way that it can be easily removed from the machine. To remove, do the following:

- Step: 1.** Depress E Stop button and turn air off. This is for the operator's safety.
- Step: 2.** Remove the four screws which mount the Nylon in-feed roller and remove this roller.
- Step: 3.** Set the plastic length handwheel at about 6 inches (152.4mm) and the paper feed handwheel at about 8 inches (203.2mm).
- Step: 4.** Remove the pin which connects the drive mechanism to the cutting package.
- Step: 5.** Remove the three screws which mount the cutting package.
- Step: 6.** Slide the package toward the feeder and lift to remove.

When re-installing the plastic tip-die unit, carefully do the following:

- Step: 1.** Follow the reverse of the above procedure.
- Step: 2.** When connecting the drive mechanism to the cutting package, make certain that the cut-off finger is horizontal in the “up” position. If it is tilted up it may interfere with the sheet or fail to cut all the way through the plastic. If it is tilted down, it will interfere with the plastic being fed out.

**4.2.4.9 Changing Tab Cutter Knives**

This instruction has been revised. See Operation Section.



## 4 Maintenance

### 4.2.5 Paper Stocks

The ability of the machine to produce high quality work with a minimum of scrap at a high net rate is very much dependent on the type and condition of the index paper being used. Although the machine will do a good job on a wide range of sheet sizes and paper weights, the following factors should be considered in order to realize the best production and highest profit from the operation of the Scotty 5000:

#### 1. Bonding Ability of the Paper Stock.

Although the plastic tab films used to produce indexes are very high in quality and will bond well to most types of paper stocks, there are several factors which make some papers less desirable for indexes. Some papers will not allow a good bond under any condition--clay filled stocks, coated stocks, high rag content papers, etc. Some stocks will bond well to one side and not to the other. Some stocks will bond satisfactorily when the seal timer is set for a longer time period. FOR BEST RESULTS IN QUALITY OF BOND AND HIGH NET PRODUCTION RATES, USE PAPERS WHICH BOND EASILY.

#### 2. Flatness of the Sheets.

By the time indexes reach the plastic tab machine they have already been run through two or three other machines, have picked up moisture from the printing operation and, in many cases, have been poorly stored so by the time they reach the plastic tab operation, the paper is in very poor condition. There are several things which can be done to improve the condition of the paper stock. First, it will pay to select papers which tend to remain more stable after several operations. If possible, it is desirable to have printing, storage and index tabbing in a humidity controlled atmosphere. If this is not possible, then it may be desirable to cover the jobs with plastic between operations. Sometimes a "curl" will cause problems in feeding and sometime it will not, depending on the position of the curl. Under the normal procedure for producing indexes, the producer prints the full bank of tabs in sequence. This creates a problem since it requires that the paper be loaded with a certain side up for a particular tab position. In order for the paper to feed properly, it may be necessary to hand-roll the stock before loading when running some of the tab positions. On larger jobs this condition can be eliminated by changing the procedure in plate making and printing.

Example: 5-tab bank

A ----- B ----- C ----- D ----- E--

The normal procedure is to make 2 plates and print as follows:

SIDE ONE--PLATE ONE

--A ----- B ----- C ----- D ----- E--

SIDE TWO--PLATE TWO

--E ----- D ----- C ----- B ----- A-

An improved procedure for printing larger runs to allow the indexes to be run with either side up when plastic tabbing:

Divide the paper into two equal lots.

Make two plates and print as follows:

SIDE ONE--PLATE ONE--FIRST LOT

--A-----B ----- C ----- B ----- A--

SIDE TWO--PLATE ONE--FIRST LOT

--A ----- B ----- C ----- B ----- A--

SIDE ONE--PLATE TWO--SECOND LOT

--E ----- D ----- C ----- D ----- E--

SIDE TWO--PLATE TWO--SECOND LOT

--E ----- D ----- C ----- D ----- E--

3. Weight of the paper stock being fed.  
The weight of the paper stock, within the normal range of stocks used for index tabs, has some effect on the running rate or production of the machine. If the stock becomes warped or curled, the lighter stocks will be harder to handle. Stocks lighter than 28# (105 g/m<sup>2</sup>) may tend to buckle when the leading edge picks up the plastic and reaches the platens. Lighter stocks may also require more careful adjustment of the left hand register sheet guide before the tab cutter.
4. Damaged Sheets.  
Sheets with bent corners, bad paper cutting or some other mechanical defect can not only slow down the production rate of the machine but will also cause a much higher percentage of scrap work. It will increase your profits to keep stocks in the best possible condition when running on high speed equipment.

## 4 Maintenance

### 4.2.6 Procedure To Set Tab Cutting Knives

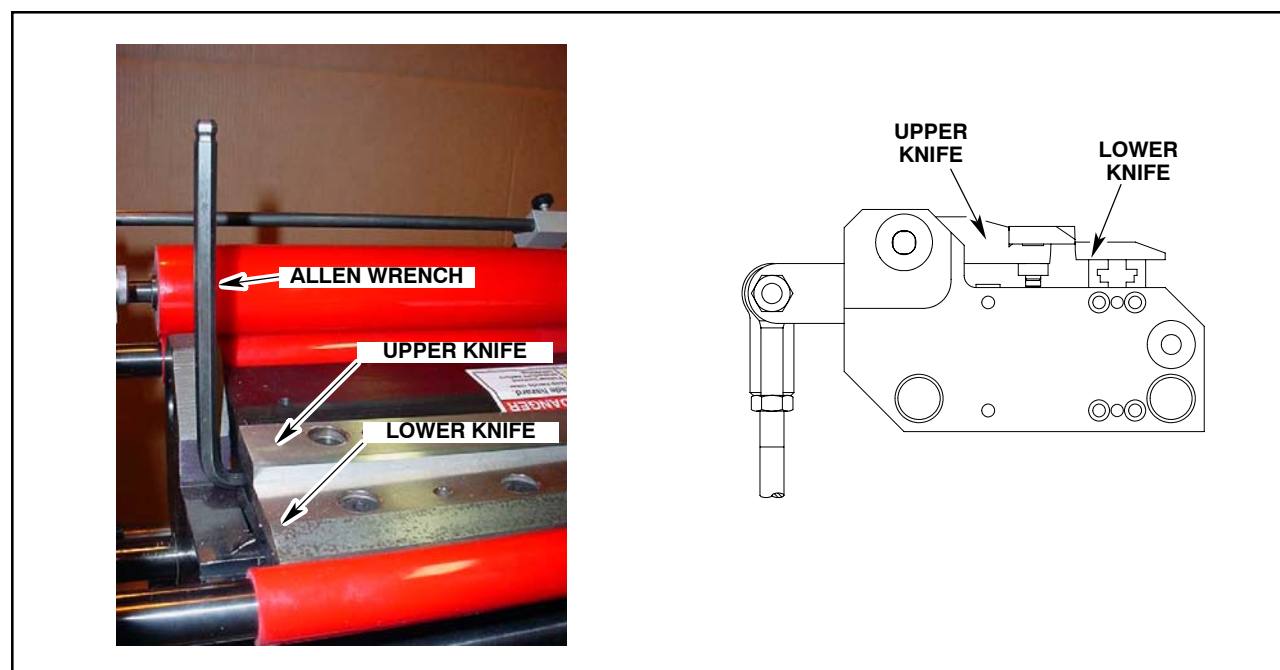


Fig. 4-26. Tab Cutter

The following procedure must be followed in setting the tab cutting knives.

If this procedure is not followed, you will ruin your knives, spend an excessive amount in sharpening charges and eventually damage the tab cutting packages on your machine. **All operators should read this sheet.**

**Note !** *The knives are precision made and must be sent to Scott for sharpening.*

Before going into a detailed explanation, a summary of the procedure is as follows:

- Step: 1.** Depress E-Stop button and turn air off.
- Step: 2.** Place the lower knife against the upper with no space between them.
- Step: 3.** Before tightening lower knife, raise and lower the upper knife for "clearing" action.
- Step: 4.** If knives bump or rub, do the job again.
- Step: 5.** Check cutting ability of knives with at least .002" (.05mm) Mylar (the index tab film you use on machine).
- Step: 6.** If the knives do not cut the Mylar, go through the procedure again. If they still do not cut send the knives to Scott for sharpening. **NEVER JAM THE LOWER KNIFE AGAINST THE UPPER TO MAKE THEM CUT.**

The following is a detailed explanation of the above summary:

- Step: 1.** Depress E Stop button and turn air off. This is for the operators safety and permits the operator to rotate the upper knives by hand. Unless this is done, you cannot get a proper setting.
- Step: 2.** To support the upper knife, insert an Allen wrench under the knife holder at the end, away from the tab contour. This prevents the knife from falling into a downward position.
- Step: 3.** Make sure the upper knife is seated properly, with the pin against the knife holder and the screws firmly tightened.

- Step: 4.** Set the lower knife in position against the upper knife. Install the screws but do not tighten them.
- Step: 5.** Move the wrench into a position so that the full length of the cutting edge of the upper knife is just below the cutting edge of the lower knife.
- Step: 6.** Slide the lower knife into position against the upper knife so that you have full contact of the two blades--at the contour and the entire length of the blades.
- Step: 7.** In this step, you will "clear" the knives so that although set closely they will not bump or rub. To do this, remove the wrench and very carefully rotate the upper knife once or twice. NOTE: LEAVE THE LOWER KNIFE FREE WHEN DOING THIS. DO NOT PUSH THE LOWER AGAINST THE UPPER. This "clearing action" will move the lower blade away from the upper. After the "clearing action" the knives are still very close to each other but if they were too close the procedure automatically puts the lower in the proper position since the screws on the lower knife have not yet been tightened.
- Step: 8.** Then....(1) tighten the center screw, (2) tighten the screw at the contour end and (3) tighten screw at the off-contour end. You may tighten the screws in any order if this helps to keep the blade from moving.

**Note !** *The "clearing action" may be used each time a screw is tightened to insure that you have not twisted the lower knife or pushed it against the upper. You do not want the knives to bump or rub.*

- Step: 9.** After the three screws have been tightened, again "clear" the blades to make sure no bumps or rubs. A very slight "brushing" of the blades is acceptable.
- Step: 10.** Then .... take a piece of .002 (.05mm) Mylar index tab film and check the cutting ability of the knives. It is necessary that they cut this thin film at the contour and at least one inch away from the contour. It is not necessary that they cut the thin film the entire length of the blade (all that is necessary is that this part cut thin 20 lb. paper)
- Step: 11.** Tighten all the other screws and then recheck with the "clearing action" and the .002" (.05mm) Mylar.
- Step: 12.** If the blades do not cut the Mylar, repeat the above steps until the cutting is satisfactory.

**Note !** *IF YOU HAVE A "PERFECT SETTING" AND AFTER RUNNING THE MACHINE AWHILE YOU NOTICE THAT THEY "SQUEAK", GO THROUGH THE ENTIRE PROCEDURE AGAIN. IF YOU HAVE TO DO THIS ONCE, WE HAVE FOUND THAT THE "SQUEAK" WILL NOT RE-OCCUR. DO NOT PUT OIL ON THE KNIVES TO ELIMINATE THE NOISE. YOU MUST RESET THE KNIVES.*

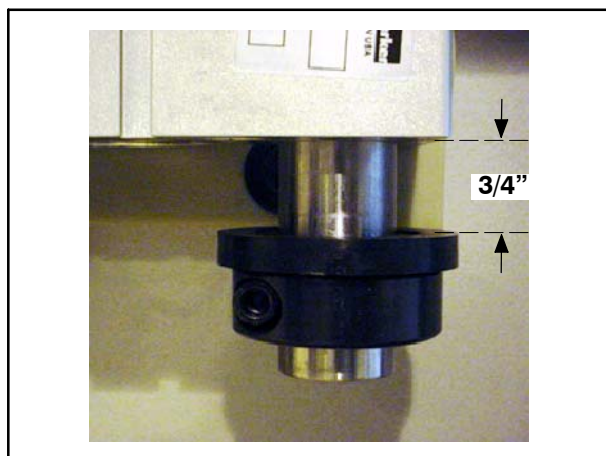
If you cannot get the proper setting by doing the above procedure, send your knives to Scott for sharpening. DO NOT JAM THE KNIVES INTO EACH OTHER TO MAKE THEM CUT.

The above procedure is important for several reasons:

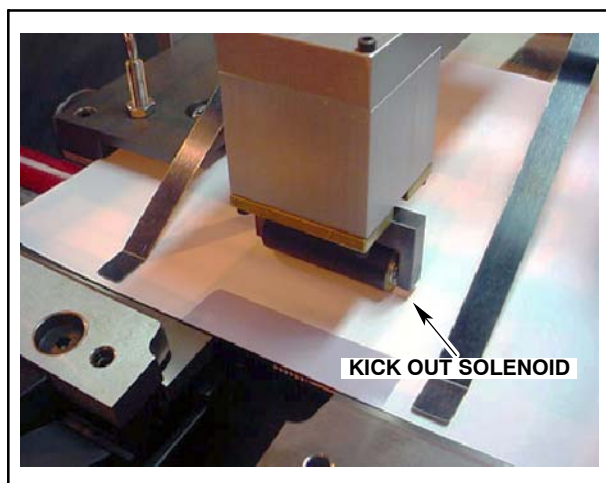
1. If the above is not done, your knives will require much more sharpening than they should. This alone is expensive.
2. If the above is not done, you will need new knives much more often. The knives are made to very close tolerances and are extremely expensive.
3. If the machine is run with dull knives or the lower knives are jammed against the uppers, you can ruin the tab cutting packages and operating cylinders of your machine. Replacement of the packages is an expensive job with machine down time of weeks, depending on the availability of the new replacement packages.

**IMPORTANT:** MAKE SURE YOUR OPERATORS FOLLOW THE ABOVE PROCEDURE. THERE ARE NO ALTERNATE PROCEDURES THAT WILL WORK SATISFACTORILY IN THE LONG RUN.

## 4 Maintenance



**Fig. 4-27. 3/8" Gap Between Stop Pad and Bottom of Cylinder**



**Fig. 4-28. Kick Out Solenoid Set Up**

### 4.2.7 Set Tab Cut Cylinder

The tab cut cylinder should have a 3/4" stroke.

If not, the stroke can be reset by the follow:

**Step: 1.** Loosen the metric screw on the cylinder stop and set a gap of 3/4" between the rubber stop pads and the bottom of the cylinder.

### 4.2.8 Kick Out Solenoid Set Up

The kick out solenoid assists the index stock out of the tab cutter and into the paper basket.

It is important that the solenoid kicks the stock out at just the right time.

If the solenoid drops too soon, it will buckle the stock as it is being cut.

If the solenoid drops too late, the stock may not clear the tab cutter section in time for the next piece of stock to be fed in.

The kick out solenoid is controlled by a reed switch that is mounted on the tab cutter cylinder.



Fig. 4-29. Push Up Tab Cut Cylinder Piston

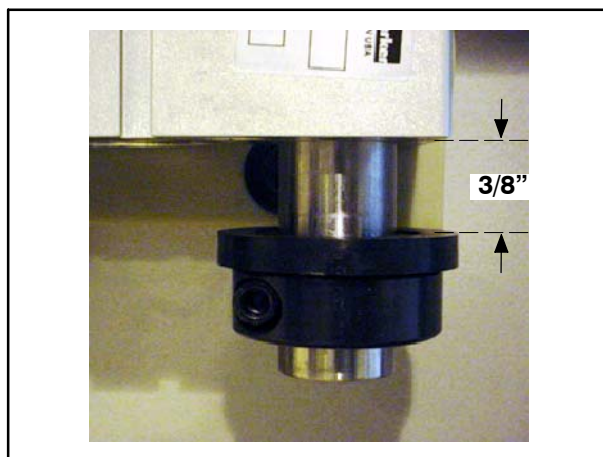


Fig. 4-30. 3/8" Gap Between Stop Pad and Bottom of Cylinder

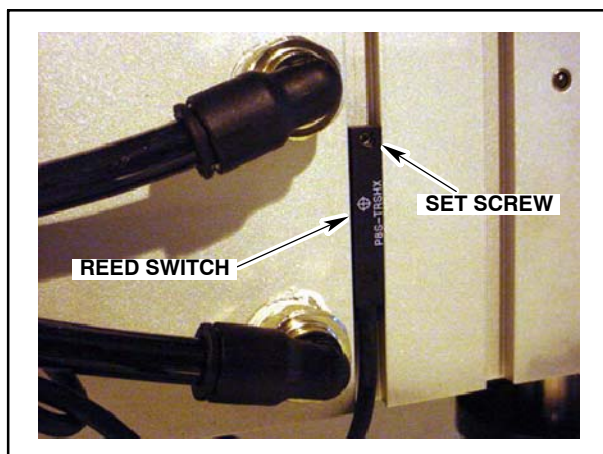


Fig. 4-31. Reed Switch

To set the solenoid kick out reed switch:

- Step: 1.** Turn the drive speed all the way down.
- Step: 2.** Shut the air supply off.
- Step: 3.** Push the Start button.
- Step: 4.** Slowly push up on the cylinder piston until the roller on the kick out solenoid drops.

There should be a gap of 3/8" between the rubber stop pad and the bottom of the tab cut cylinder.

If the gap between the rubber stop pad and the bottom of the tab cut cylinder is not 3/8", proceed to the next step.

- Step: 5.** Loosen the set screw on the reed switch and slide the switch up or down. Since the reed switch is made of plastic, use care when tightening set screw.



## 4 Maintenance

### 4.2.9 Plastic Tip Die

With Scott's tip die exchange program, it is not necessary for you to set the dies. Simply remove the entire unit and return it to Scott. For a modest fee, a factory refurbished die will be returned in its place. To decrease your down time, we may pre-ship a die to you before the return of your unit. Contact Scott for further details.

The plastic tip die is one of the "key" components of the machine. Unless this device is working properly, the machine will not function in the correct manner. Aside from its primary cutting and making plastic tip functions, it also has openers to align the strip for the cut, and make ends open even though they have a tendency to stick together. The openers are light enough to compress during cutting but still open the tip.

- The first two openers are located inside the strip in order to open ends of the tape.
- The openers are located in such a way to ensure the strip is fed out over and under them.
- Shape of the openers is very critical since they must perform their function, but not interfere with feeding of the tape.
- If openers become damaged they must be replaced.
- When replacement is necessary, openers must be bent to an exact shape. See "Installing Plastic Openers In Plastic Tip-Die".

**Note !** *The Plastic Tip-Die is designed in such a way that it can easily be removed from or reinstalled on the machine.*

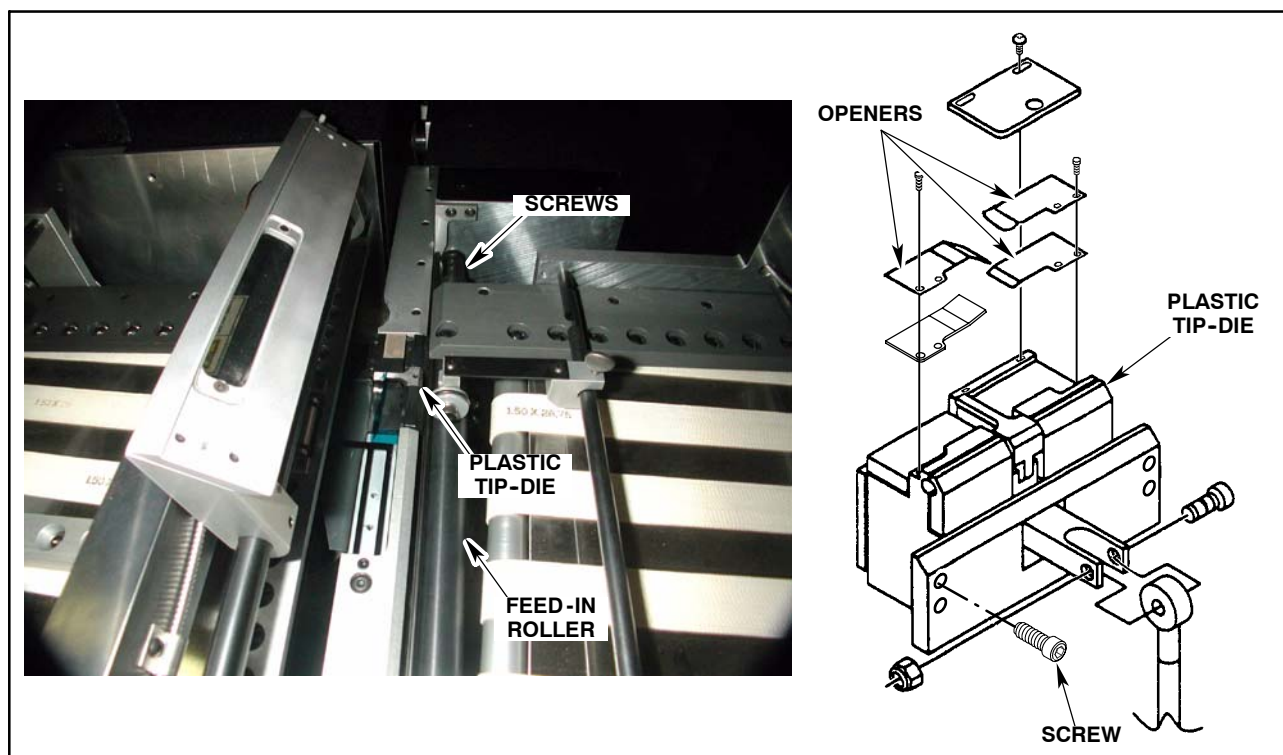


Fig. 4-32. Plastic Tip-Die

**4.2.9.1 Removal - Plastic Tip-Die**

- Step: 1.** Use the Machine Speed controller to slowly index the machine until the screws in the feed-in roller in the front of the press assembly are in the upward direction.
- Step: 2.** Turn machine **OFF**, then disconnect main machine power source.
- Step: 3.** Lockout/tagout main power switch.
- Step: 4.** Loosen screw which holds feed-in roller in place, then remove the roller.
- Step: 5.** Set plastic length handwheel to 5-1/2 inches (139.7mm).
- Step: 6.** Set pile feed register handwheel to 1 inch (25.4mm).
- Step: 7.** Remove pin which connects drive rod-end to plastic tip-die.
- Step: 8.** Remove two screws which mount plastic tip-die to mounting plate.
- Step: 9.** Slide plastic tip-die toward feeder and lift to remove.

**4.2.9.2 Reinstall - Plastic Tip-Die**

- Step: 1.** Turn machine **OFF**, then disconnect main machine power source.
- Step: 2.** Lockout/tagout main power switch.
- Step: 3.** Slide plastic tip-die in toward feeder.
- Step: 4.** Mount plastic tip-die to mounting plate with two screws. and tighten.
- Step: 5.** Connect plastic tip-die to rod-end and install pin.

**Note !** *Ensure tip-die “finger” is horizontal when in the “up” position. If tilted up, it may interfere with sheet or fail to cut all the way through plastic. If tilted down, it will interfere with plastic being fed out.*

- Step: 6.** Mount feed-in roller with four screws and tighten.
- Step: 7.** Reinstall the ball hold down assembly.
- Step: 8.** Remove lockout/tagout on main power switch.
- Step: 9.** Restore main machine power source.



## 4 Maintenance



Fig. 4-33. Paper Stop Adjustment Valves

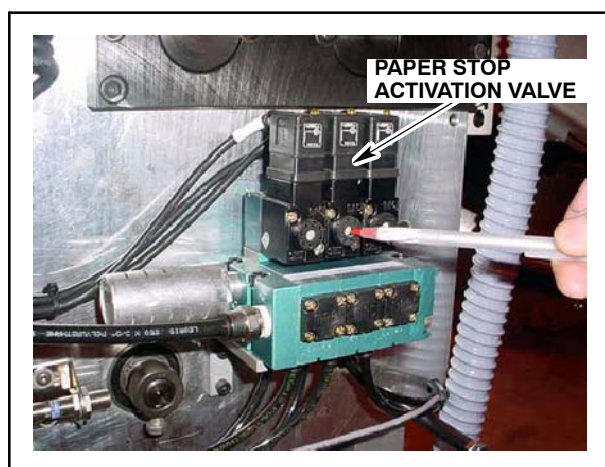


Fig. 4-34. Paper Stop Activation Button

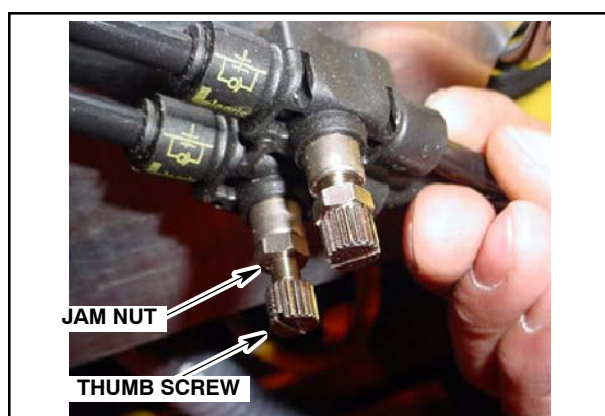


Fig. 4-35. Flow Controls

### 4.2.10 Paper Stop Adjustment

The paper stop cylinder is equipped with two flow control adjustment valves. One is for up motion and the other is for down motion.

If the cylinder opens or closes too hard, it can cause premature wear to the cylinders and paper stop parts.

If the cylinder is too slow, it will not stop the sheet stock in time.

The cylinder should have a smooth up and down motion.

To Adjust:

**Step: 1.** Remove the rear cover.

**Step: 2.** Depress the paper stop activation button in for Up Motion and release button for Down motion.

**Step: 3.** To adjust the “up” or “down” motion, loosen the jam nut on the flow control.

**Step: 4.** Turn thumb screw clockwise (in) to slow stop motion or counter-clockwise (out) to speed up stop motion.

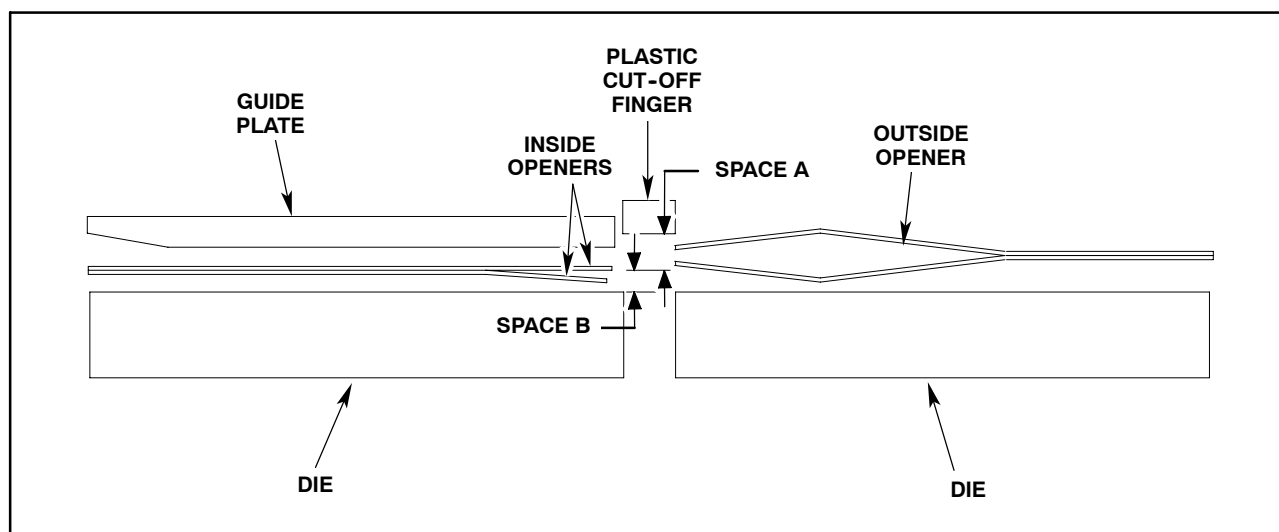
**Step: 5.** After paper stop cylinder is properly adjusted, tighten jam nut on thumb screw.

### 4.2.10.1 Installing Plastic Openers On Plastic Tip-Die

The purpose of the “Inside” plastic openers is to ensure that the end of the folded strip of plastic (Mylar) is positively opened after each cut. The “outside” plastic opener performs two functions. First, helps to ensure plastic tabs open after they are cut-off. Secondly, helps to control the piece of plastic as it opens so that it does not “jump” out of position.

Inside and outside openers are furnished as flat pieces. In order for them to function correctly, they must be carefully shaped and mounted into the plastic tip-die mechanism.

### 4.2.10.2 Shaping of Inside Openers



**Fig. 4-36. Inside / Outside Openers**

**Step: 1.** Keep upper opener straight.

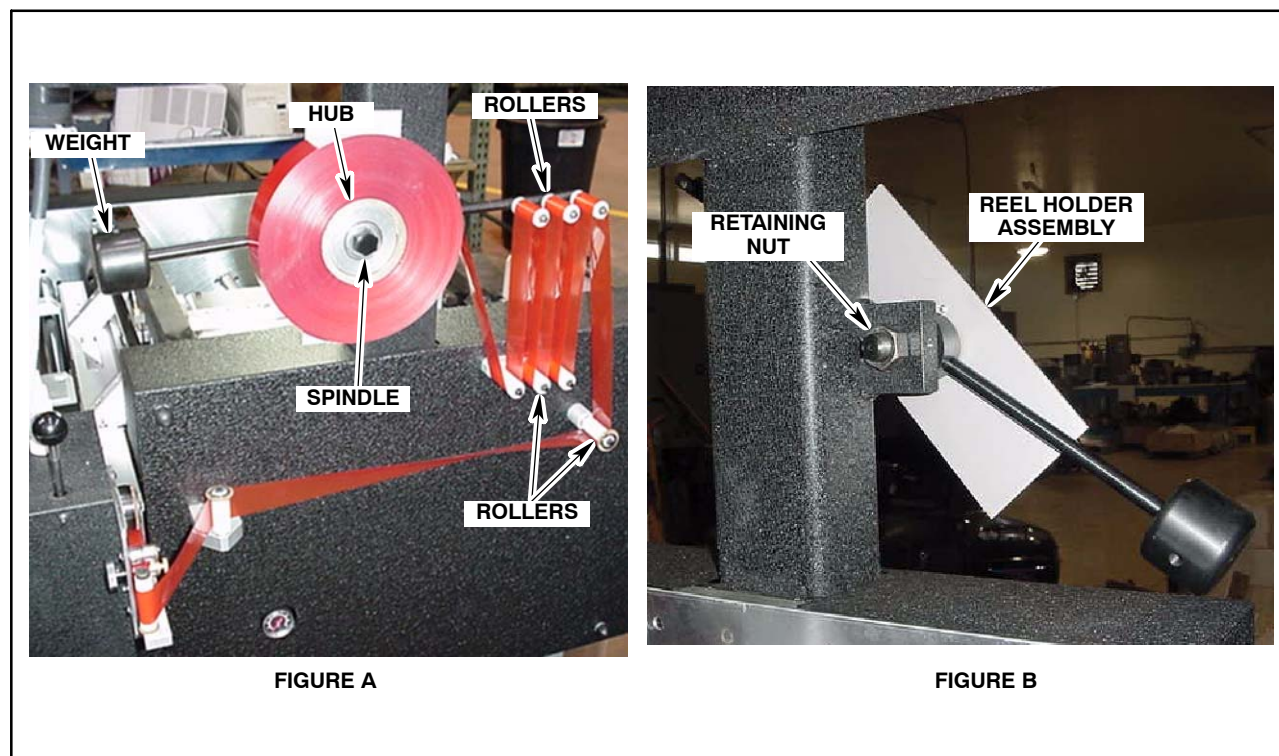
**Step: 2.** Carefully bend “lower” portion of inside opener, along row of holes near tip, until it is just-off contact of the die.

**IMPORTANT:** The openers are viewed from the back of the tip-die in this illustration (Fig. 4-36. ). Notice that the plastic tip-die finger is shown from the narrow tip end of the finger – not from the hinge or pivot end of the finger.

## 4 Maintenance

### 4.2.11 Plastic Reel Holder Adjustment Procedure

The following procedure will allow you to adjust the plastic reel holder assembly for proper operation.



**Fig. 4-37. Reel Holder Assembly**

As shown in Fig. A, the spindle of the reel holder assembly is located in the middle of the unit. As the plastic reel unwinds and finally runs out, the weight on the left side of the reel holder causes the spindle to become loosened. This causes the rollers on the right side to start tracking up toward the bottom of the control cabinet. When the rollers become too high, tension will be lost on the tape. This causes the tape to become inconsistent in plastic lengths.

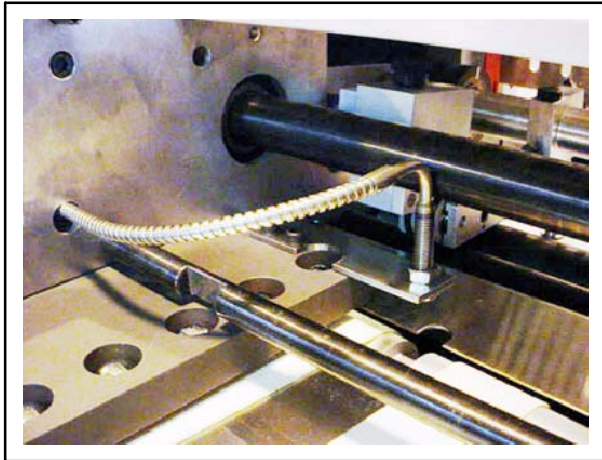
To adjust the reel holder spindle, it is necessary to loosen both the jam nut and set screw located in the center of the left side of the retaining nut. The retaining nut is located just underneath the control panel on the front side as shown in Fig. B. The set screw requires a 1/8 inch Allen wrench to loosen.

**Note !** *You must not loosen the set screw completely or you will not be able to maintain your adjustment of the reel holder spindle.*

After the set screw is slightly backed off, start running plastic through the machine. Adjust the spindle so that the reel holder rollers are staying around a 3 o'clock position. The rollers should not move up or down more than an inch either side of this position when the plastic is running. If this does occur, it may be necessary to clean, oil, and/or replace the bearings of the reel holder assembly.

Once the reel holder assembly has been properly adjusted, make sure you tighten the set screw in the retaining nut and the jam nut to keep the reel holder spindle from moving.

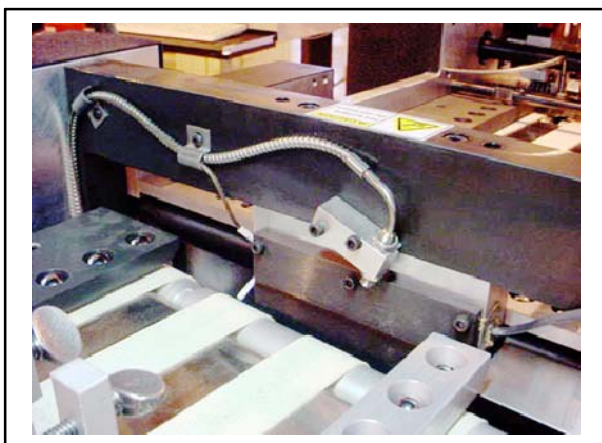
You will have to occasionally readjust the reel holder assembly because of the severe jolt given to the assembly when the tape completely runs out.



**Fig. 4-38. Paper Trip Fiber Optic Sensor**



**Fig. 4-39. Paper Press Fiber Optic Sensor**



**Fig. 4-40. Paper Stop (Out of Stop) Fiber Optic Sensor**

## **4.3 Fiber Optics**

The Scotty 5000 has four sets of fiber optic sensors. Each set has an upper and lower optic.

### **4.3.1 Fiber Optic Sensor Locations**

1. Paper Trip/Counter

2. Paper Press

3. Paper Stop (Out of Stop)



## 4 Maintenance

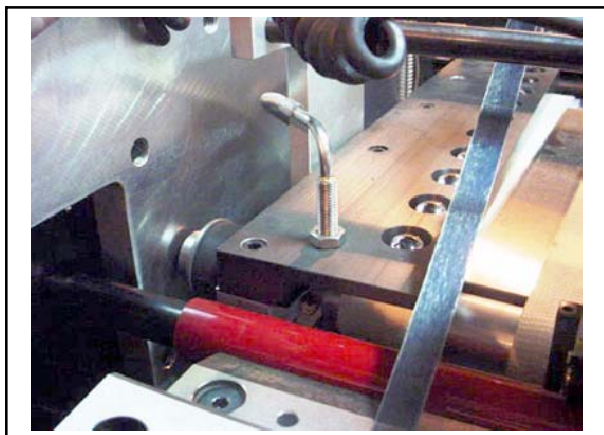


Fig. 4-41. Tab Cutter Fiber Optic Sensor

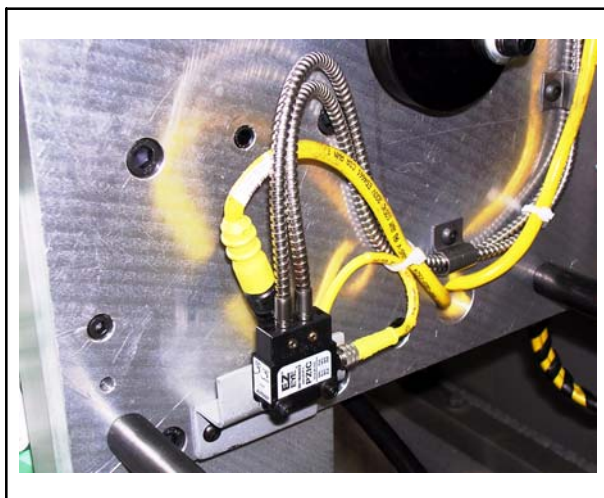


Fig. 4-42. Fiber Optic Amplifier

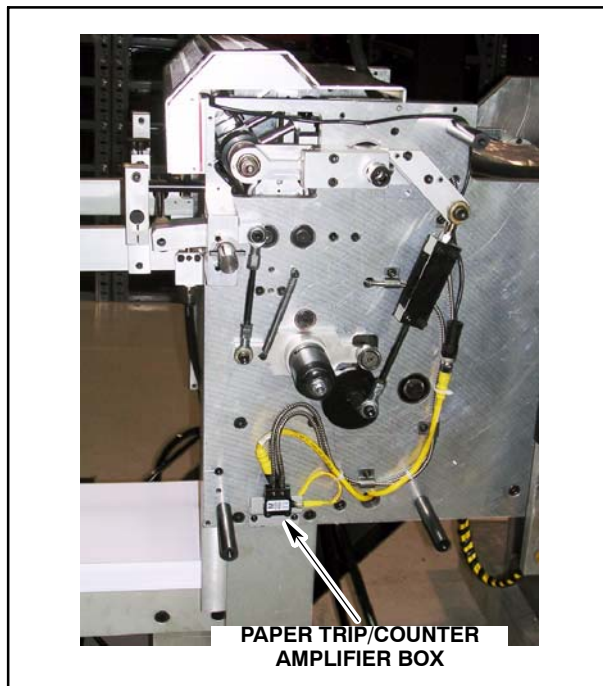
### 4. Tab Cutter

#### 4.3.2 Fiber Optic Adjustment

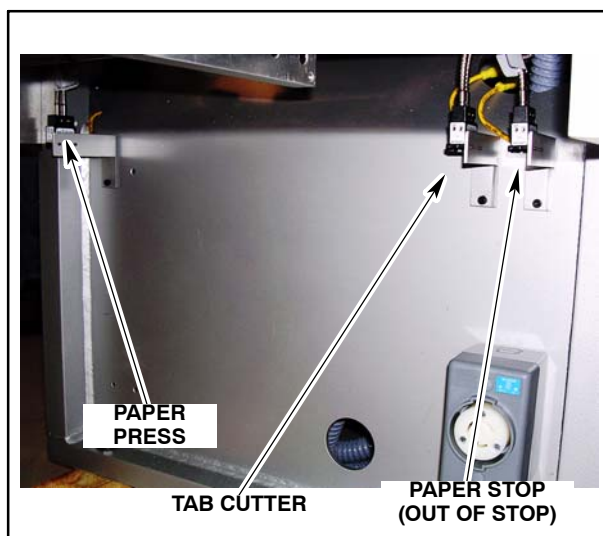
The fiber optic amplifier needs to be setup for proper sensor alignment before being put into operation. This is accomplished by running the “AutoSet” routine.

Due to the variety of different paper stocks, it may require slight excess gain (sensitivity) adjustment. If the sensitivity is set too strong, it will read through some paper stocks. If it is set too weak, it will not read the paper stock at all.

**Note !** *Do not attempt Fiber Optic Adjustments unless you are familiar with performing this type of adjustment.*



**Fig. 4-43. Fiber Optic Amplifier Location**



**Fig. 4-44. Fiber Optic Amplifier Locations**

### 4.3.2.1 Amplifier Locations

1. Paper Trip/Counter - mounted inside the pile feeder cover on the R.H. side.
2. Paper Press - Mounted to machine base under pile feeder.
3. Paper Stop (Out of Stop) - Mounted to machine base under pile feeder.
4. Tab Cutter - Mounted to machine base under pile feeder.

## 4 Maintenance

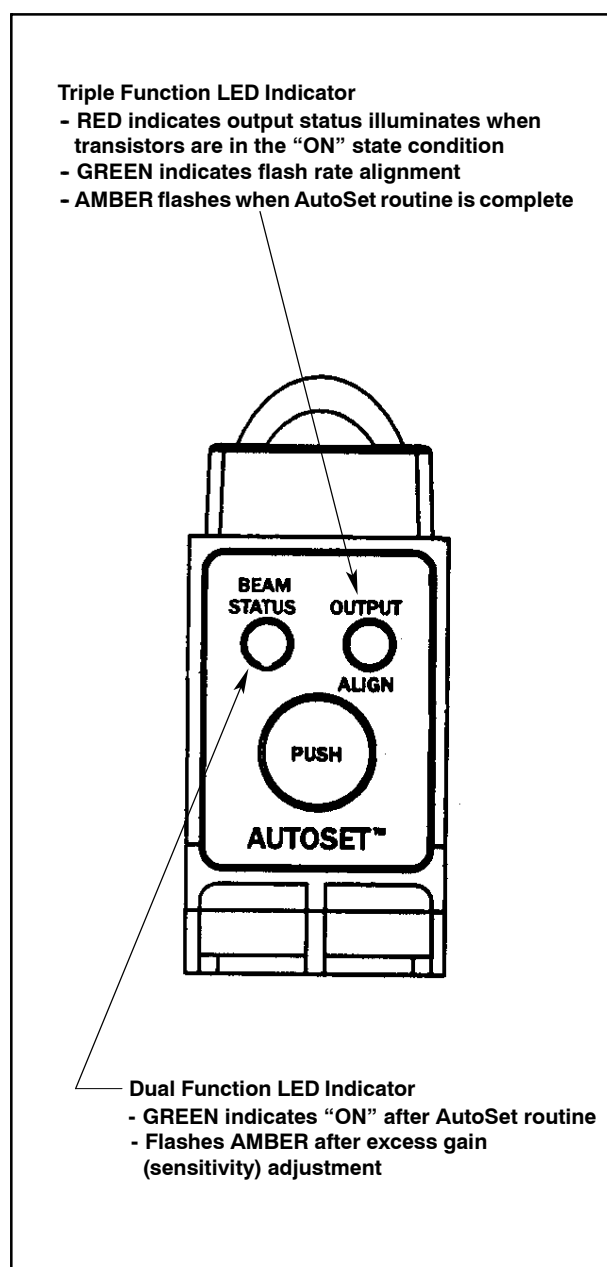


Fig. 4-45. Fiber Optic Amplifier Adjustment

To AutoSet Fiber Optic Amplifiers:

- Step: 1.** E-Stop the machine.
- Step: 2.** Place sensor into light state condition.
- Step: 3.** Press and hold "AutoSet" button until Alignment Indicator (Green LED) begins to flash.
- Step: 4.** Release button beam status indicator (Green LED) will illuminate.
- Step: 5.** Alignment indicator flashes Amber when AutoSet routine is complete.

Test the amplifier setting:

- Step: 6.** Use a piece of 20# bond (copy paper) and put it between the tips of the optic. A red light should turn on indicating that the amplifier is now set.

To Adjust excess gain (sensitivity) of Fiber Optic Amplifier:

**Note !** *This optional adjustment is to be initiated after performing the AutoSet routine*

- Step: 1.** Tap "AutoSet" button twice. When Status Indicator (Amber LED) flashes, excess gain (sensitivity) has been increased.

**Note !** *Procedure can be repeated until Max Excess Gain is achieved (Amber LED will cease to flash at Max Excess Gain)*

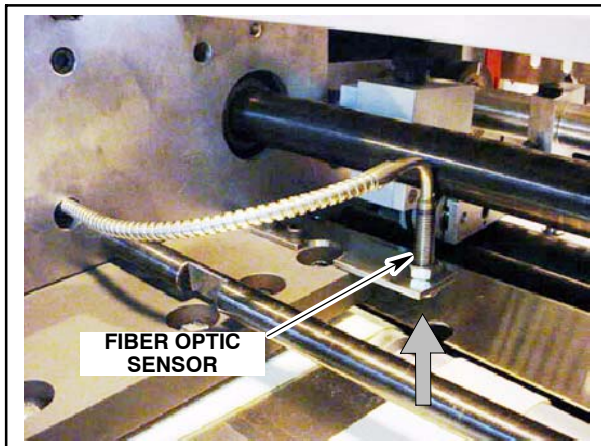


Fig. 4-46. Cleaning of Fiber Optics

### 4.3.3 Fiber Optic Sensor Cleaning

Some paper stocks may produce fiber dust which builds up on the fiber optics and causes machine problems.

**Step: 1.** E-Stop Machine.

**Step: 2.** The optic sensor should be blown off daily with compressed air.

**Step: 3.** Wipe off tips of the fiber optic sensors with a clean dry cloth.

**Note !** *The use of harsh chemicals can damage fiber optics*



## 4 Maintenance

### 4.4 Machine Cleaning

All feed, drive, hold down and tension rollers should be cleaned with a mild detergent soap only.

**Note !** *The use of any harsh chemicals can damage rollers.*

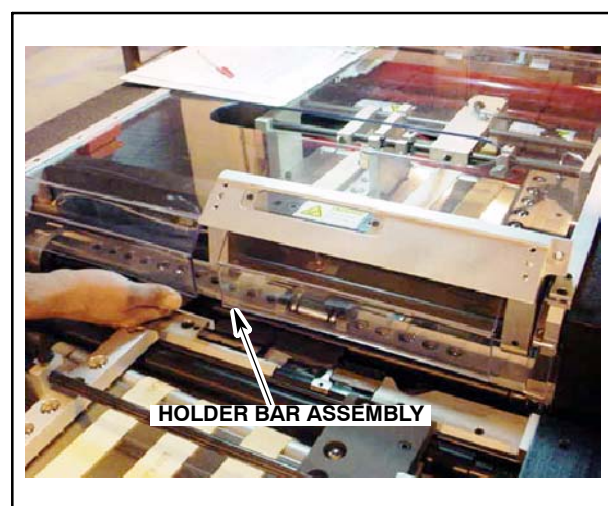


Fig. 4-47. Remove Holder Bar Assembly

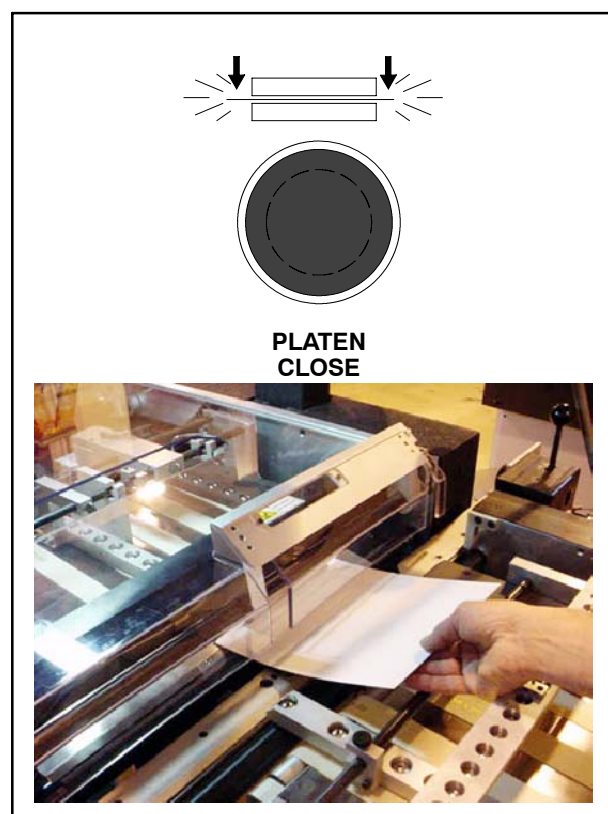


Fig. 4-48. Push Platen Close Button Several Times Until Paper Comes Out Clean

#### 4.4.1 Clean Platen Unit

After repetitive cycles of laminating Mylar, adhesives build up on the platens and needs to be cleaned.

**Note !** *Platens have a precision micro finish. Do not use metal objects to remove adhesive or Mylar from the platens*

- Step: 1.** E- Stop must be off (out).
- Step: 2.** Turn on main power.
- Step: 3.** Turn on main air supply.
- Step: 4.** Heat up platens to minimum of 225 Deg.
- Step: 5.** Remove Plexiglass cover.
- Step: 6.** Lift Plastic Window assembly.
- Step: 7.** Lift up and remove holder bar assembly.  
**Use extreme caution - platen is hot.**
- Step: 8.** Replace Plexiglass cover.
- Step: 9.** Reset the machine.
- Step: 10.** Apply a light oil or baby oil to a scrap piece of paper or uncoated stock.
- Step: 11.** Place oil coated paper between upper and lower platens and press Platen Close button several times.



**5 SCOTTY 5000 PARTS**

**5 SCOTTY 5000 PARTS**

### Scott Office Systems Parts Ordering Information

1. When corresponding or ordering parts from **Scott Office Systems** include complete Business Name, Street Address, City, State, Country, Zip Code and Machine Serial Number.
2. Order by part number and description as shown in the manual.
3. No minimum charge on orders.
4. Specify how shipments are to be made – Freight, Parcel Post, or Express. If routing is not specified, we will use our own judgement and not be responsible for the additional costs or delays.
5. Always confirm fax or phone orders by clearly marking “Confirmation”.
6. Address all correspondence to:

Scott Precision  
1555A Ocean Avenue  
Bohemia, NY 11716 USA  
Tel: +1 631-468-8776  
Fax: +1 631-468-8775  
[www.scottprecision.com](http://www.scottprecision.com)

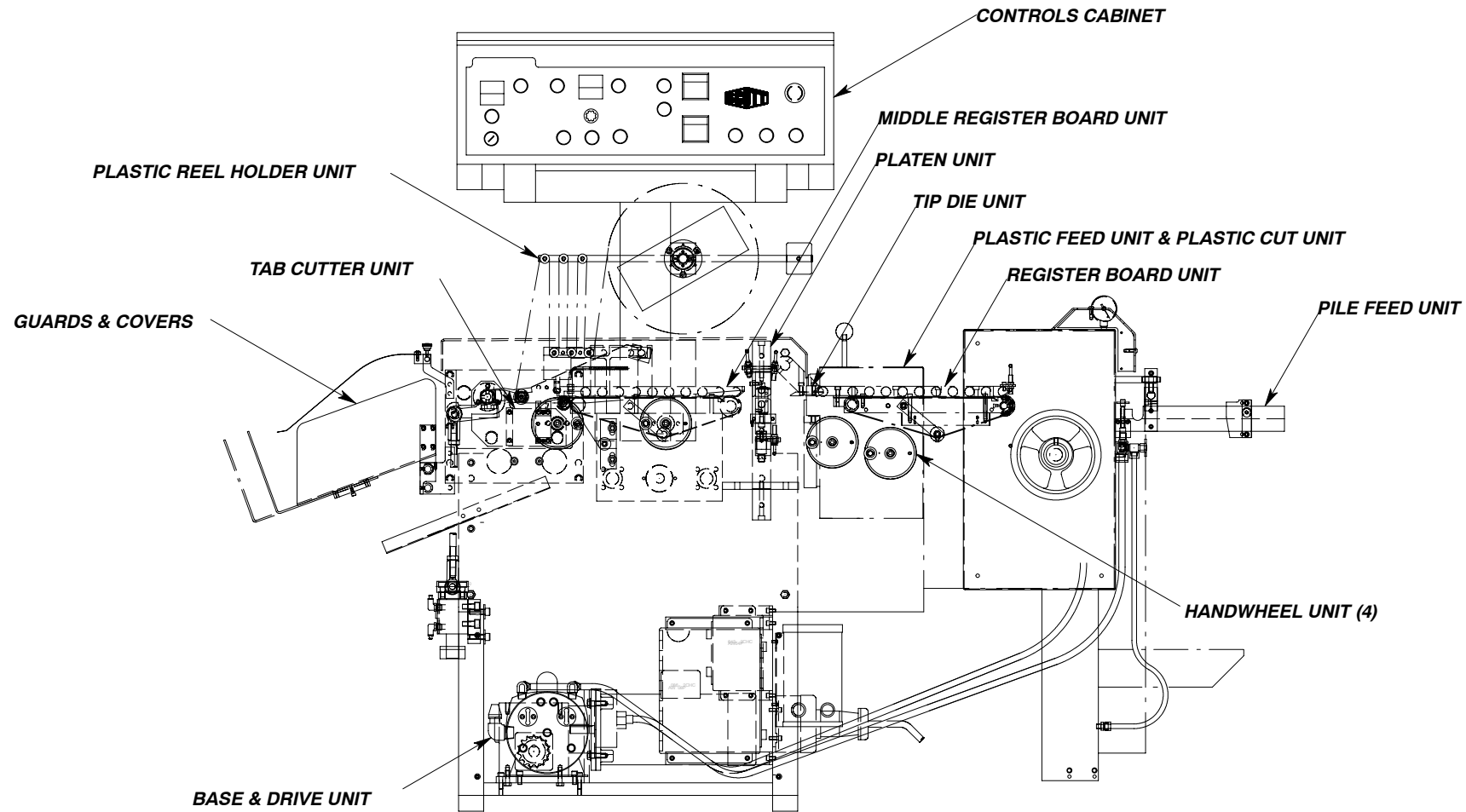
## 5 SCOTTY 5000 PARTS

### PARTS RETURN

To enable us to handle credit efficiently and promptly, and to save our Customers unnecessary expense and delay, the following procedures have been established.

1. Customers are requested not to return parts of any kind without first communicating by letter or telephone with the Parts Service Department. We will advise what procedures to follow to expedite the issue of credit and the applicable restocking charge. A Return Material Code Number indicating the authorization to return parts will be issued. NOTE: Proof of purchase must be established before credit can be approved.
2. All shipments returned MUST contain a copy of the Invoice Number or Packing List that parts were received on and the reason for return noted. Shipments may be refused if the above procedure is not followed.
3. No parts are to be returned without a Return Authorization Number issued by Parts Service.
4. Requests for credit of returned parts must contain Invoice Number and Date of Purchase.
5. Parts are to be returned "Prepaid".
6. Parts shipped out over one (1) year cannot be accepted. Any parts for which an invoice (proof of purchase) cannot be found, will not be accepted.
7. Return all Parts to: Scott Precision  
1555A Ocean Avenue  
Bohemia, NY 11716 USA  
Tel: +1 631-468-8776  
Fax: +1 631-468-8775  
www.scottprecision.com
8. Restocking charge is \$25.00 or 10% whichever is greater.
9. Warranty Part Shipments – Shipment of parts under warranty will be handled by U.P.S. Ground. Customer will incur all shipping expenses by other than U.P.S. Ground.

## 5.1 ASSEMBLY LOCATOR

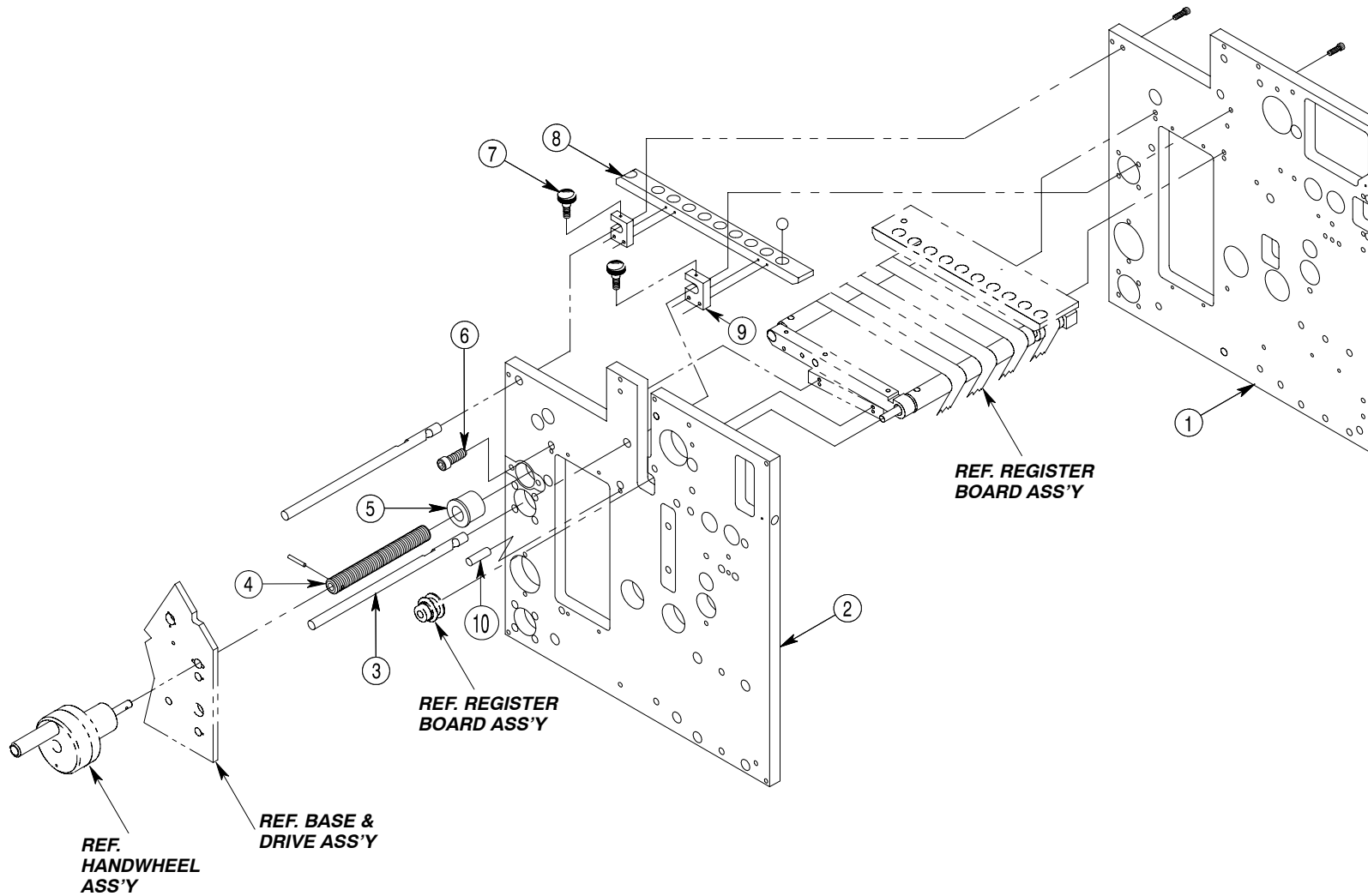




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## 5 SCOTTY 5000 PARTS

## 5.2 PILE FEED - REGISTER BOARD ADJUSTMENT





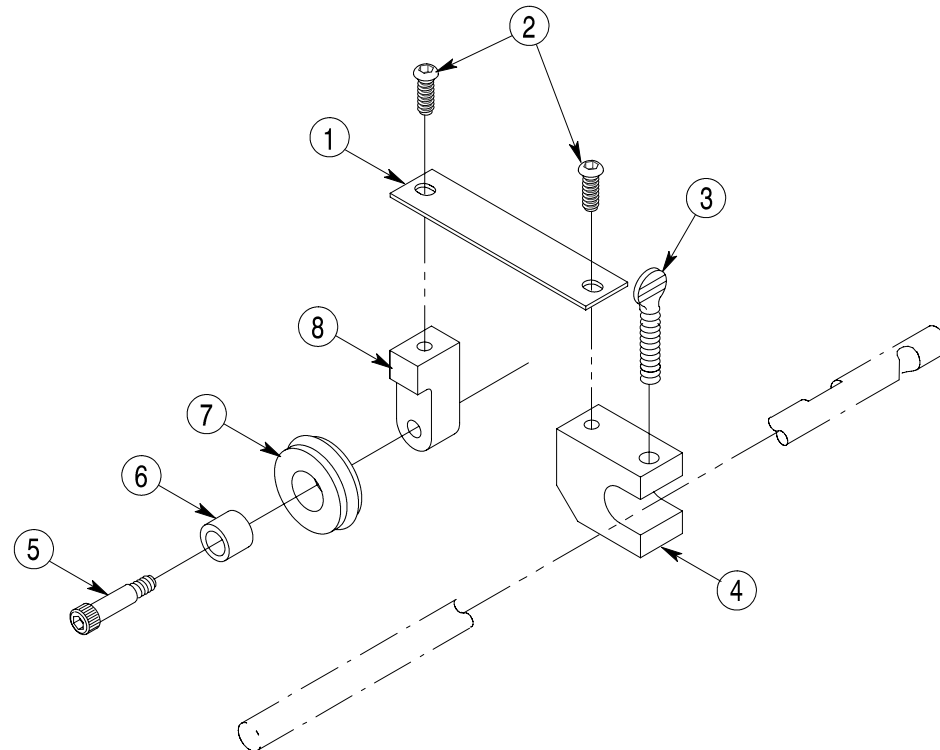


## 5 SCOTTY 5000 PARTS

ITEM #	PART #	DESCRIPTION	# REQ
1	PF-0196-1	PLATE, FRONT SIDE, RH	1
2	PF-0195	PLATE, FRONT SIDE, LH	1
3	PF-0170-1	BAR, CROSS	2
	HW-51230	SCREW, SHC	2
4	PF-0183	SCREW, ACME ADJUST	1
	HW-57090	PIN, SPRING,	1
5	PF-0184	NUT, ACME	1
	HW-82030	SCREW, LOCK	1
	HW-49130	D-SHAPED WASHER	1

ITEM #	PART #	DESCRIPTION	# REQ
6	HW-51230	SCREW, SHC,	4
7	HW-81010	KNOB,	2
8	FP-0101	BAR, HOLD DOWN	1
	HW-84080	BALL, STEEL,	10
9	PF-0159	CLAMP, PAPER HOLD, DOWN	2
	HW-51100	SCREW, SHC,	4
10	HW-57190	PIN, SPRING	4

### 5.3 PILE FEED - DRIVE ROLLER ASSEMBLY





## 5 SCOTTY 5000 PARTS

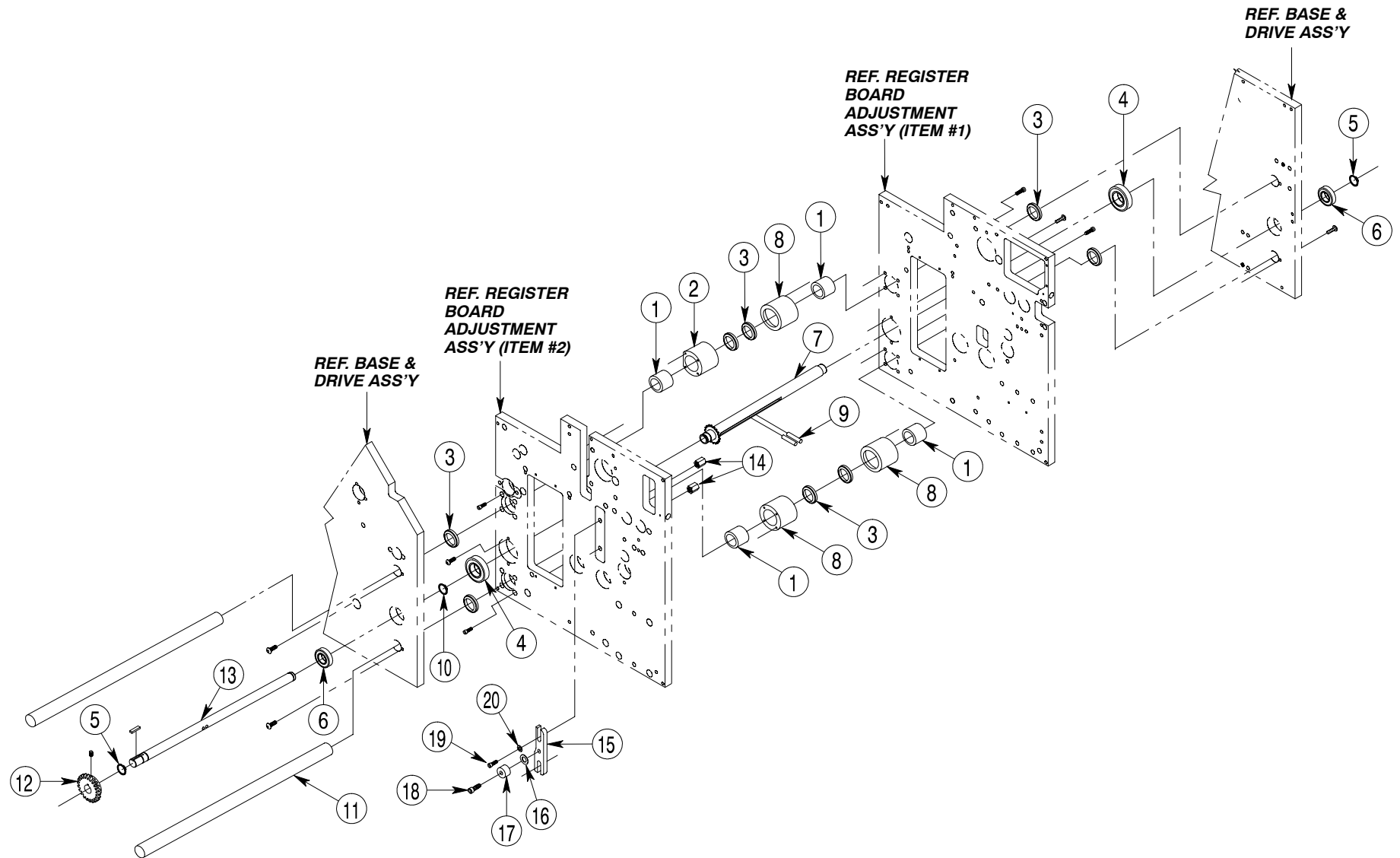
ITEM #	PART #	DESCRIPTION	# REQ
1	FP-0105	PLATE, SPRING	1
2	HW-53100	SCREW, BUTTON HD.,	2
3	HW-55460	SCREW, THUMB,	1
4	FP-0104	CLAMP, ROLLER	1
5	HW-55075	SCREW. SHOULDER,	1

ITEM #	PART #	DESCRIPTION	# REQ
6	HW-67030	BEARING, NEEDLE	1
7	C-2151	WHEEL, PULL BACK	1
	HW-74060	O-RING,	1
8	FP-0103	BLOCK, ROLLER	1

## 5 SCOTTY 5000 PARTS

5-10

### 5.4 PILE FEED DRIVE



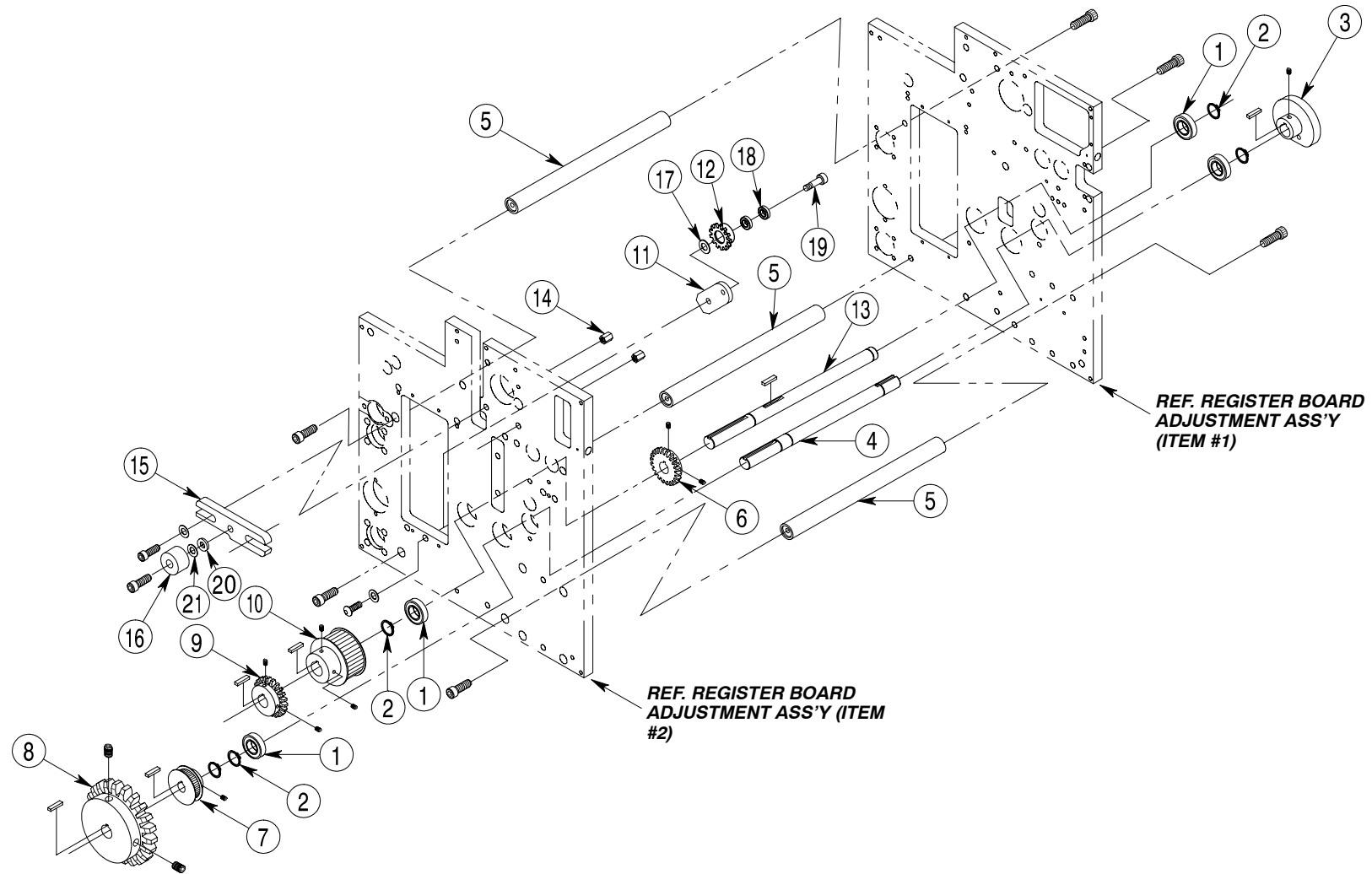


## 5 SCOTTY 5000 PARTS

ITEM #	PART #	DESCRIPTION	# REQ
1	HW-65040	BUSHING, BALL	4
2	PF-0113	BLOCK, BALL BUSHING	1
	HW-51230	SCREW, SHC,	4
3	HW-73030	SEAL	8
4	HW-66060	BEARING, BALL	2
	HW-53150	SCREW, BUTTON HD.,	4
5	HW-61050	RING, RETAINING	2
6	HW-66040	BEARING, BALL	2
7	PF-0110	TUBE, DRIVE	1
8	PF-0112	BLOCK, BALL BUSHING	3
	HW-51230	SCREW, SHC,	12
9	HW-57190	PIN, SPRING,	2
10	HW-61080	RING, RETAINING	1

ITEM #	PART #	DESCRIPTION	# REQ
11	PF-7801	SHAFT	2
	HW-53150	SCREW, BUTTON HD.,	3
	HW-49040	WASHER, FLAT,	3
12	HW-87030	SPROCKET,	1
13	PF-0111	SHAFT, MAIN DRIVE	1
	HW-59030	KEY, SQUARE,	1
14	HW-85070	NUT, ALLEN,	2
15	PF-0157	BAR, TENSION ROLLER MTG.	1
16	HW-49060	WASHER, FLAT	1
17	HW-71060	ROLLER YOKE	1
18	HW-51480	SCREW, SHC.,	1
19	HW-51380	SCREW, SHC,	2
20	HW-49050	WASHER, FLAT,	2

## 5.5 PILE FEED DRIVE & TENSIONER





## 5 SCOTTY 5000 PARTS

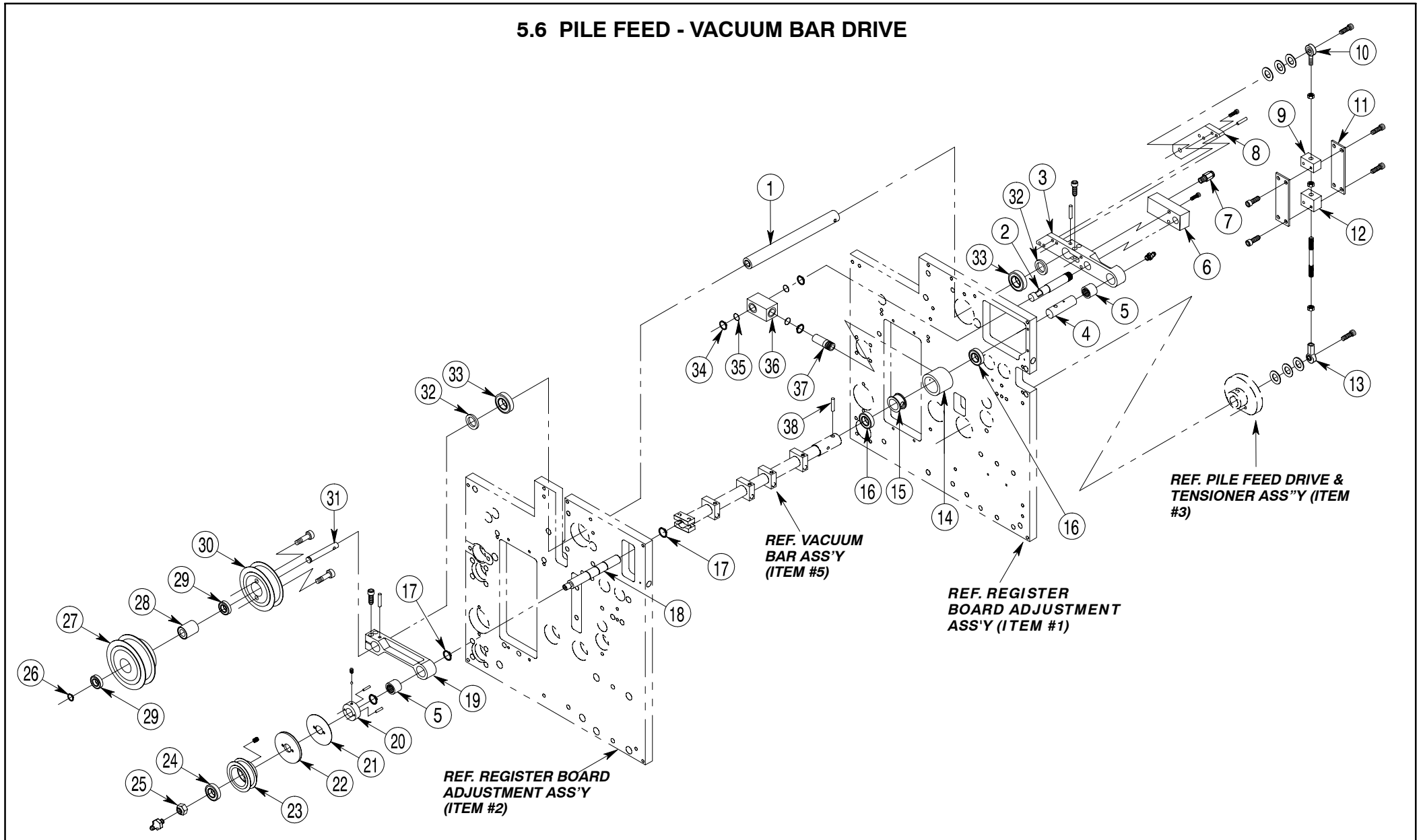
ITEM #	PART #	DESCRIPTION	# REQ
1	HW-66040	BEARING, BALL	4
2	HW-61050	RING, RETAINING	5
3	PF-0108	CAM, PILE LIFT	1
	HW-52090	SCREW, SET,	1
	HW-59030	KEY, SQUARE,	1
4	PF-0107	SHAFT, PILE LIFT CAM	1
5	PF-0114	SPACER, MAIN SLIDE PLATE	3
	HW-51480	SCREW,SHC,	6
6	HW-87030	SPROCKET,	1
	HW-59030	KEY, SQUARE,	1
7	HW-86040	PULLEY, TIMING GEAR	1
	HW-59030	KEY, SQUARE,	1
8	HW-88030	GEAR, BROWNING	1
	HW-59030	KEY, SQUARE,	1
9	HW-88020	GEAR, BROWNING	1
	HW-59030	KEY, SQUARE,	1
10	HW-86060	PULLEY, TIMING GEAR	1
	HW-59030	KEY, SQUARE,	1

ITEM #	PART #	DESCRIPTION	# REQ
11	C-2059	PLATE, TAKE UP	1
	HW-53220	SCREW, BUTTON HD.,	1
	HW-49060	RACE, THRUST	1
12	HW-87020	SPROCKET,	1
13	PF-0109	SHAFT	1
14	HW-85070	NUT, ALLEN	2
15	PF-0157	BAR, TENSION ROLLER MTG.	1
	HW-49050	WASHER, FLAT,	2
	HW-51390	SCREW, SHC,	2
16	HW-71060	ROLLER, YOKE	1
	HW-51520	SCREW, SHC,	1
17	HW-49050	WASHER, FLAT,	1
18	HW-66100	BEARING, BALL,	2
19	HW-51390	SCREW, SHC,	1
20	PF-0156	SPACER	1
21	HW-49110	WASHER, FLAT	1

17B HW-69170 Race, Thrust 1



## 5.6 PILE FEED - VACUUM BAR DRIVE





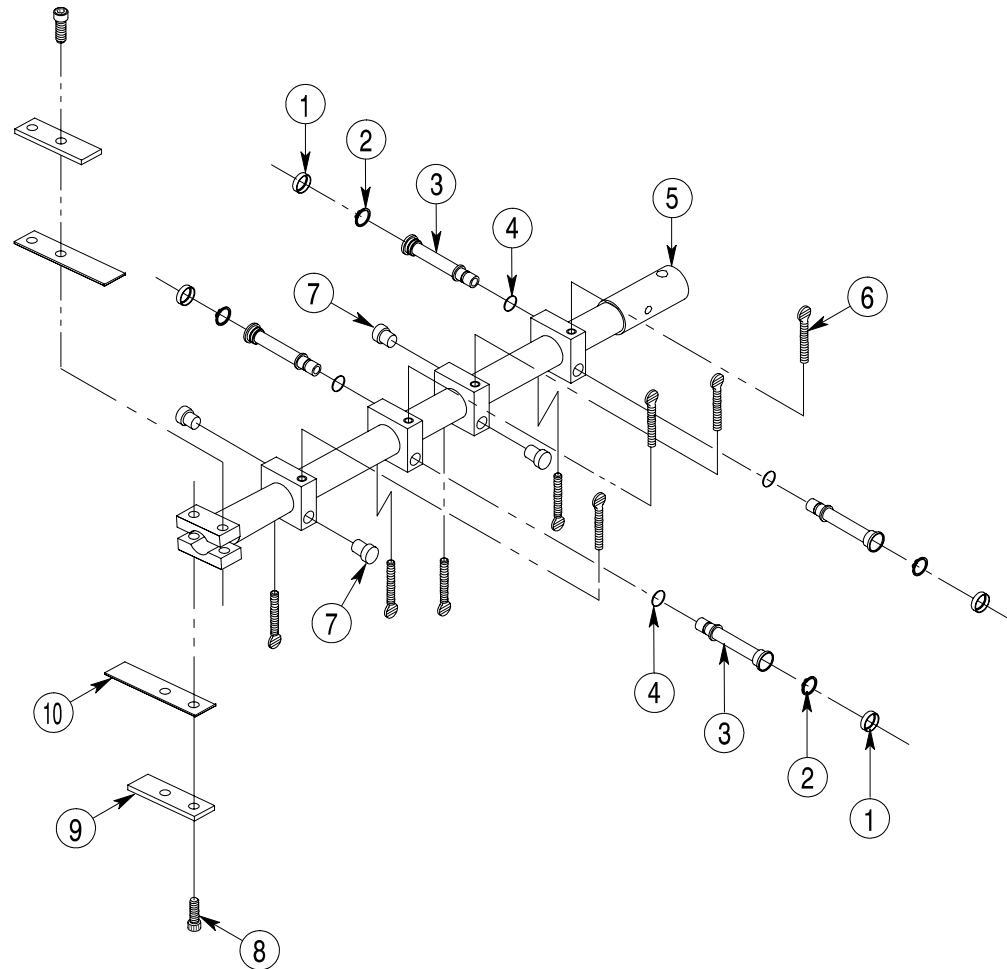
## 5 SCOTTY 5000 PARTS

ITEM #	PART #	DESCRIPTION	# REQ
1	PF-0147	SHAFT, VACUUM PICK UP	1
2	PF-0140	PIPE, VACUUM CONNECTION	1
3	PF-0198	ARM, NOZZLE LIFT RH.	1
	HW-57200	PIN, SPRING,	1
	HW-51240	SCREW, SHC.,	2
4	PF-0217	SHAFT, VACUUM BAR PIVOT	1
	HW-63100	FITTING, GREASE,	1
5	HW-72030	ROLLER, CLUTCH	2
6	PF-0143	BLOCK, VACUUM, CONNECTION	1
	HW-51240	SCREW, SHC.,	2
7	HW-63300	CONNECTOR, MALE,	1
8	PF-0150	ARM, VACUUM PICK UP	1
	HW-51210	SCREW, SHC,	2
	HW-57180	PIN, SPRING,	2
9	PF-0160	BLOCK, SPACER	1
10	HW-70090	ROD END, MALE	1
	HW-51470	SCREW, SHC.,	1
	HW-60230	NUT, NYLON INSERT,	1
	HW-49060	WASHER, SAE,	3
11	PF-0161	SIDE, PLATE	2
	HW-51190	SCREW, SHC,	8
12	PF-0162	BLOCK, SPACER	1
13	HW-70030	ROD END, FEMALE	1
	HW-60130	NUT, JAM,	1
	PF-0163	CONNECTING ROD	1
	HW-60210	NUT, NYLON INSERT,	1
	HW-51380	SCREW, SHC.,	1
	HW-49050	WASHER, SAE	3
14	PF-0136	RING, VACUUM CONNECTION	1
15	PF-0137	RING, VACUUM CONNECTION	1
16	HW-66160	BEARING, BALL	2

ITEM #	PART #	DESCRIPTION	# REQ
17	HW-61050	RING, RETAINING	3
18	PF-0134	SHAFT, VACUUM BAR DRIVE	1
19	PF-0146	ARM, NOZZLE LIFT LH.	1
	HW-57200	PIN, SPRING,	1
	HW-51240	SCREW, SHC.,	2
20	PF-0216	RING, SLIP CLUTCH PLATE MTG.	1
	HW-52090	SCREW, SHC.,	1
	HW-84020	BALL, NYLON,	1
	HW-57080	PIN, SPRING,	2
21	PF-0139	PLATE, SLIP CLUTCH	1
22	PF-0138	CLUTCH PLATE	1
23	PF-8605-A	PULLEY, GEAR BELT	1
	HW-79060	SPRING, COMPRESSION	2
	HW-57090	PIN, SPRING,	2
24	HW-66040	BEARING, BALL	1
25	HW-60250	NUT, NYLON INSERT,	1
	HW-63120	FITTING, GREASE,	1
26	HW-61040	RING, RETAINING	1
27	PF-8607-A	PULLEY, GEAR BELT	1
28	PF-0223	SPACER, BEARING	1
29	HW-66020	BEARING, BALL	2
30	PF-8606-A	PULLEY, GEAR BELT	1
	HW-51260	SCREW, SHC,	2
31	PF-0145	SHAFT, IDLER	1
32	HW-69220	THRUST, RACE	2
33	HW-66050	BEARING, BALL	2
34	HW-61220	RING, RETAINING	3
35	HW-74030	O-RING, PARKER	3
36	PF-0141	BLOCK, VACUUM CONNECTION	1
37	PF-0142	PIPE, VACUUM CONNECTION	1
38	HW-57170	PIN, SPRING,	1

22B	PF-0138-1	LINER	1
23D	HW-56030	DOWEL	1

## 5.7 PILE FEED - VACUUM BAR



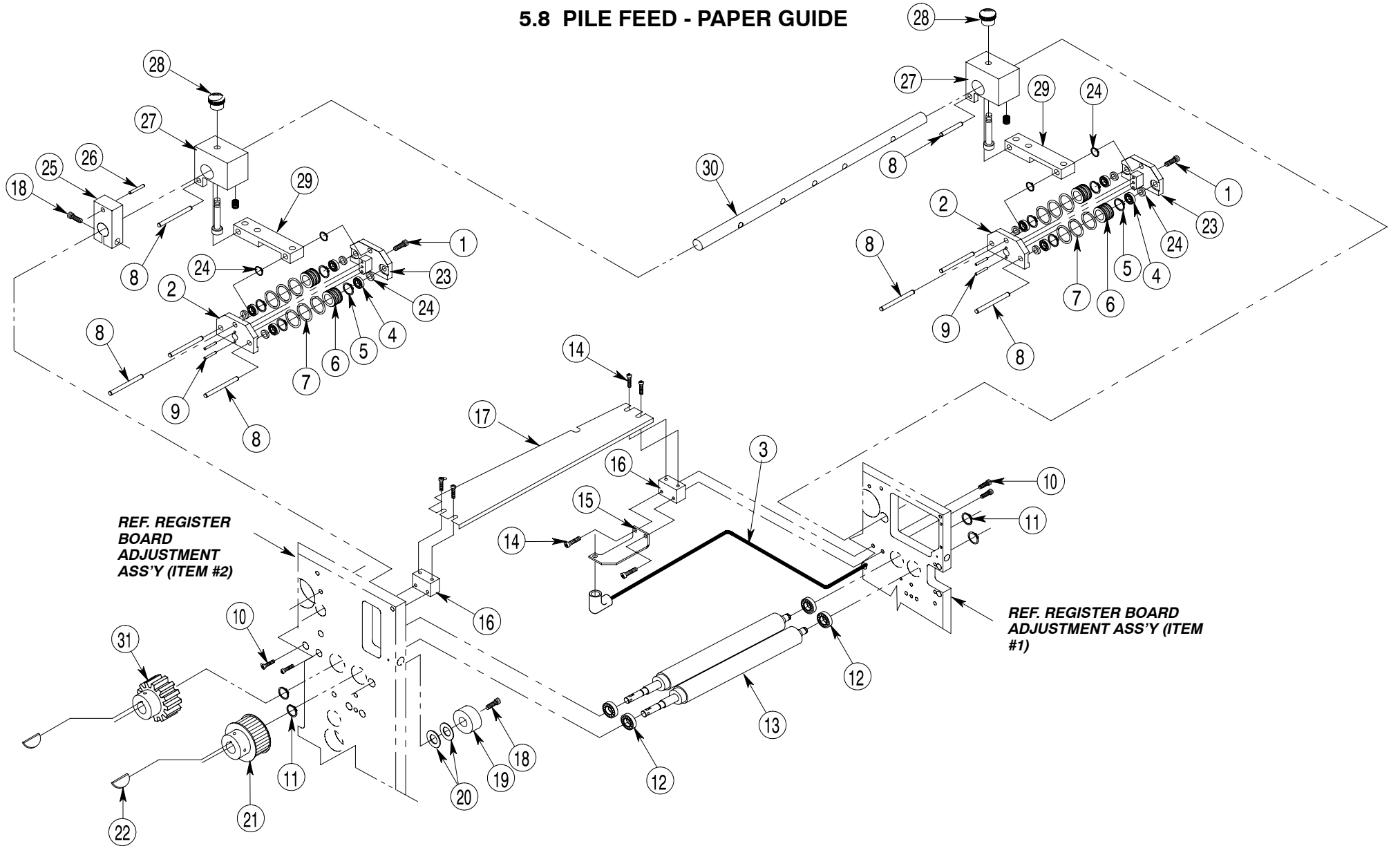


## 5 SCOTTY 5000 PARTS

ITEM #	PART #	DESCRIPTION	# REQ
1	PF-0228	CUP, PICKUP NOZZLE	4
2	HW-61040	RING, RETAINING	4
3	PF-0231	VACUUM, NOZZLE	4
4	HW-74020	O-RING	4
5	PF-0135	BAR, VACUUM	1

ITEM #	PART #	DESCRIPTION	# REQ
6	HW-55470	SCREW, THUMB,	8
7	PF-0151	PLUG	4
8	HW-51270	SCREW, SHC,	2
9	PF-0149	PLATE, RETAINING	2
10	PF-0148	FINGER, SPRING	6

## 5.8 PILE FEED - PAPER GUIDE



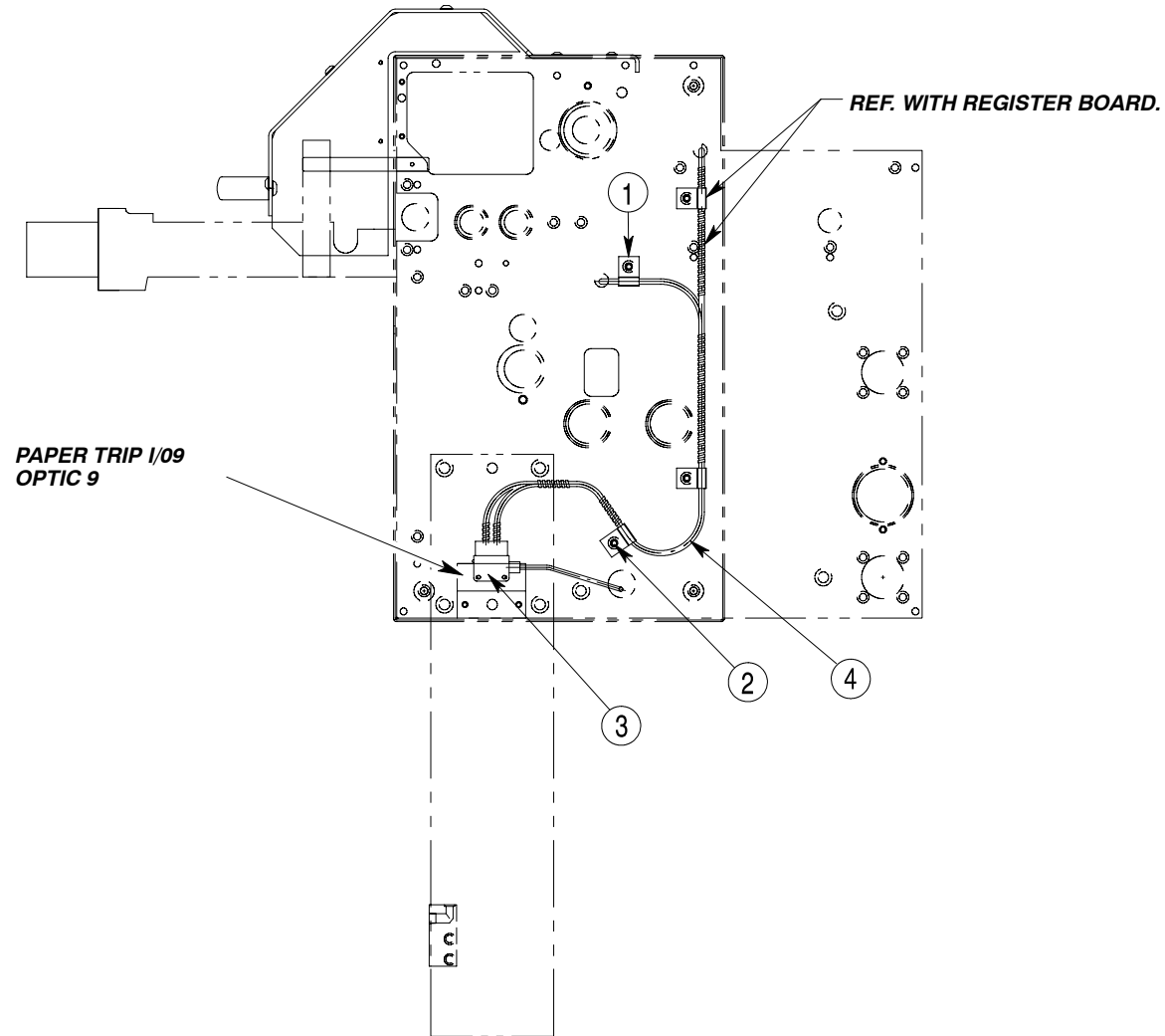


## 5 SCOTTY 5000 PARTS

ITEM #	PART #	DESCRIPTION	# REQ
1	HW-51120	SCREW, SHC	2
2	PF-0124	PLATE, HOLD DOWN ROLLER	2
3	HW-97010	FIBER, OPTIC	1
4	HW-66009	BEARING, BALL	8
5	HW-62010	RING, RETAINING	8
6	PF-0123	ROLLER, PAPER HOLD DOWN	4
7	HW-74060	O-RING, PARKER	12
8	HW-56120	DOWEL, PIN	8
9	HW-57050	PIN, SPRING	4
10	HW-51210	SCREW, SHC	4
11	HW-61040	RING, RETAINING	4
12	HW-66020	BEARING, BALL	4
13	PF-0115	ROLLER, MAIN FEED	2
14	HW-51200	SCREW, SHC	6
15	FP-0102	BRACKET, SWITCH	1
16	PF-0232	BLOCK, PAPER SUPPORT PLATE	2
17	PF-0233-1	PLATE, PAPER SUPPORT	1
18	HW-51390	SCREW, SHC	2

ITEM #	PART #	DESCRIPTION	# REQ
19	HW-71050	ROLLER, YOKE	1
20	HW-49050	WASHER, FLAT	2
21	HW-86030	PULLEY, TIMING GEAR	1
22	HW-58010	KEY, WOODRUFF	2
23	PF-0122	PLATE, HOLD DOWN ROLLER	2
24	HW-61200	RING, RETAINING	12
25	PF-0127	BLOCK, SHAFT MTG.	1
26	HW-57200	PIN, SPRING	1
27	PF-0125	BLOCK, MOUNTING	2
	HW-79090	SPRING, COMP	2
28	HW-81000	KNOB,	2
	HW-55040	SCREW, SHOULDER	2
29	PF-0121	LEVER, ROLLER	2
30	PF-0126	SHAFT, PAPER HOLD	1
31	PF-8603-A	PULLEY, TIMING GEAR	1

## 5.9 PILE FEED - OPTIC MOUNTING





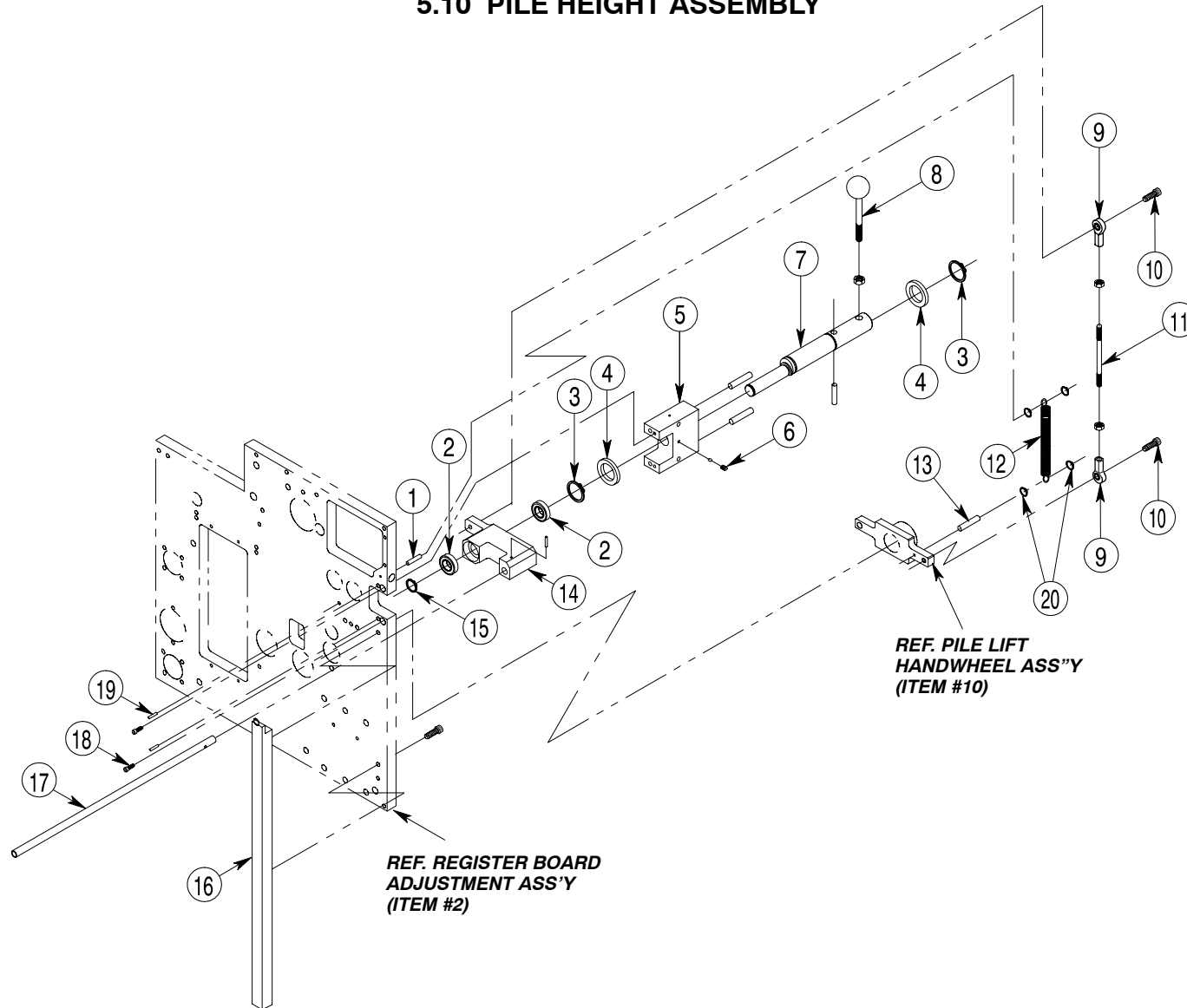


## 5 SCOTTY 5000 PARTS

ITEM #	PART #	DESCRIPTION	# REQ
1	HW-95010	CHANNEL, TRAC	4
2	HW-53140	SCREW, BUTTON HD.,	4
3	HW-97017	AMPLIFIER	1
	HW-97018	ADAPTER, CORD	1
	HW-51026	SCREW, SOC HD.,	2
	HW-53060	SCREW, BUTTON HD.,	2
	FP-0107	BRACKET, SWITCH	1
4	HW-97010	FIBER OPTIC	REF.

ITEM #	PART #	DESCRIPTION	# REQ
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## 5.10 PILE HEIGHT ASSEMBLY



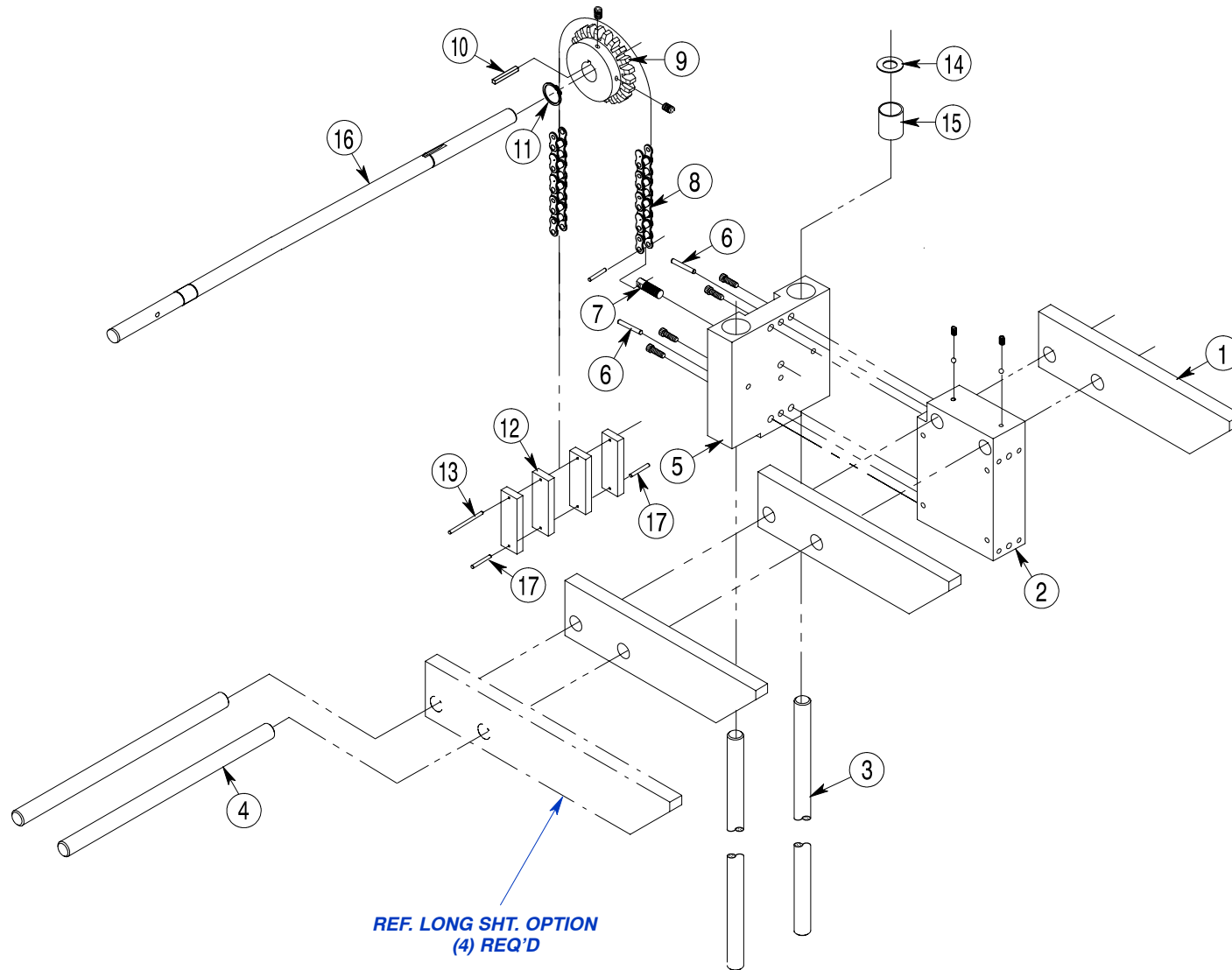


## 5 SCOTTY 5000 PARTS

ITEM #	PART #	DESCRIPTION	# REQ
1	HW-57140	PIN, SPRING,	1
2	HW-66020	BEARING, BALL	2
3	HW-61130	RING, RETAINER	2
4	HW-69090	THRUST, RACE	2
5	PF-0169	BLOCK, SHEET CHECK MTG.	1
	HW-57190	PIN, SPRING,	2
6	HW-52080	SCREW, SET,	1
	HW-84020	BALL, NYLON,	1
7	PF-0166	SHAFT, SHEET CHECK PIVOT	1
	HW-57190	PIN, SPRING,	1
8	HW-81060	BALL	1
	HW-60140	NUT, JAM,	1
	HW-52250	SCREW, SET,	1
9	HW-70030	ROD, END FEMALE	2
10	HW-51370	SCREW, SHC.,	2

ITEM #	PART #	DESCRIPTION	# REQ
11	PF-0194	CONNECTING ROD	1
	HW-60130	NUT, JAM,	2
12	HW-80050	SPRING. EXTENSION.	1
	HW-80025	SPRING. EXTENTION.	1
13	HW-57110	PIN, SPRING,	1
14	PF-0165	ROCKER, ARM	1
	HW-57030	PIN, SPRING,	1
15	HW-61110	RING, RETAINING	1
16	PF-0168	GUIDE, SIDE RACK	1
	HW-51230	SCREW, SHC.,	2
17	PF-0167	BAR, PILE HEIGHT CHANGE	1
18	HW-51230	SCREW, SHC.,	2
19	HW-57190	PIN, SPRING,	2
20	HW-61190	RING, GRIP	4

## 5.11 PILE LIFT DRIVE



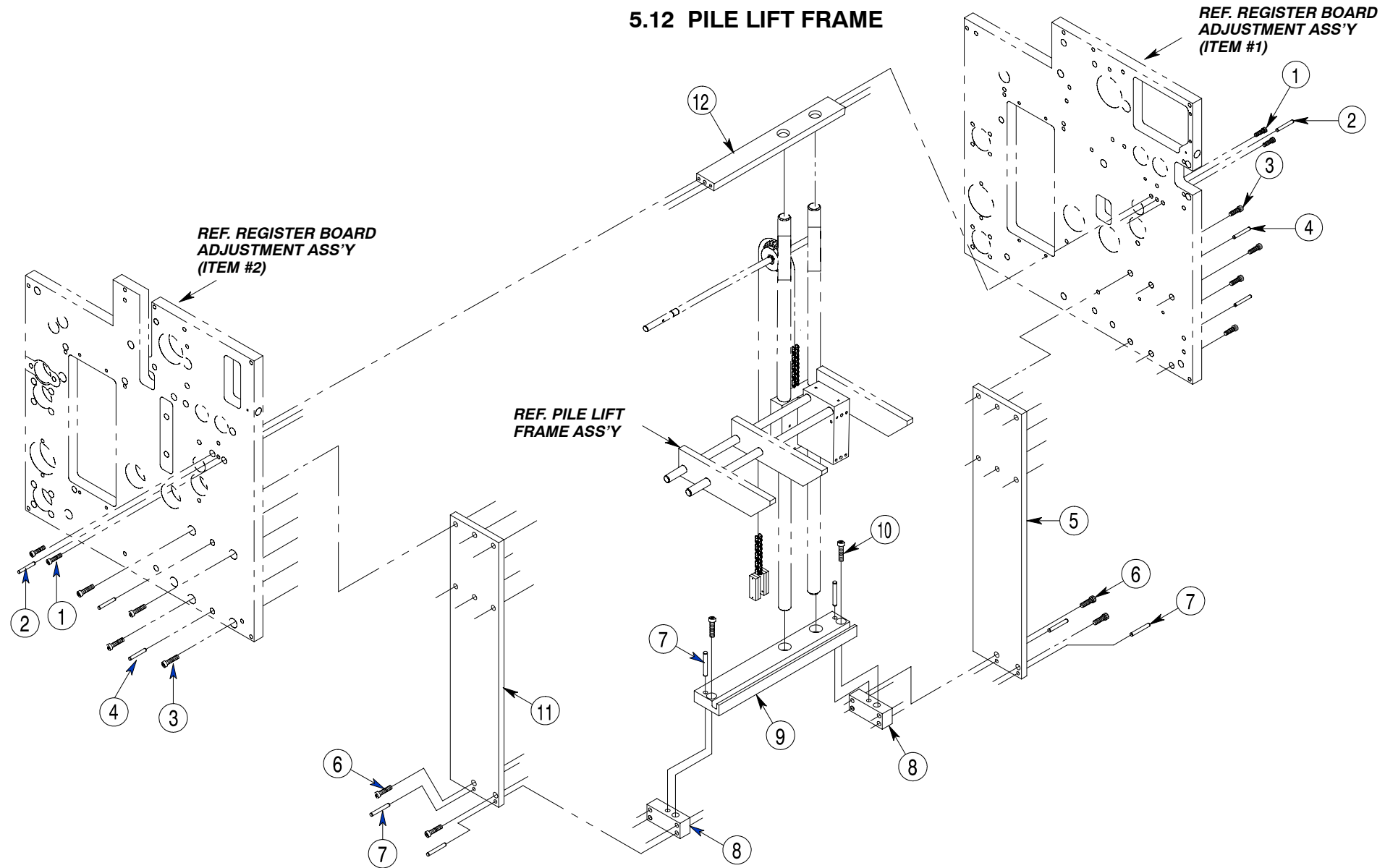


## 5 SCOTTY 5000 PARTS

ITEM #	PART #	DESCRIPTION	# REQ
1	PF-0193	SUPPORT, PAPER (STANDARD)	3
	PF-0246	SUPPORT, PAPER (LONG SHT. OPTION)	4
2	PF-0155	HORN, PAPER LIFT	1
	HW-84020	BALL, NYLON	2
	HW-52090	SCREW, SET	2
3	PF-7802	SHAFT, GUIDE	2
4	PF-0199	BAR, STACK SUPPORT	2
5	PF-0154	SLIDE, PAPER LIFT	1
	HW-51410	SCREW, SHC	4
6	HW-57260	PIN, SPRING	2
7	PF-0236	SCREW, CHAIN	1

ITEM #	PART #	DESCRIPTION	# REQ
8	HW-77010	ROLLER, CHAIN	1
	HW-77020	CONNECTING, LINK	1
9	HW-87060	SPROCKET,	1
10	HW-59030	KEY, SQUARE	1
11	HW-61050	RING, RETAINING	1
12	PF-0230	WEIGHT, CHAIN STACK	4
13	HW-57060	PIN, SPRING	1
14	HW-73020	SEAL	4
15	HW-65030	BUSHING, BALL	4
16	PF-0105	SHAFT, PILE LIFT	1
17	HW-57030	PIN, SPRING	2

## 5.12 PILE LIFT FRAME





## 5 SCOTTY 5000 PARTS

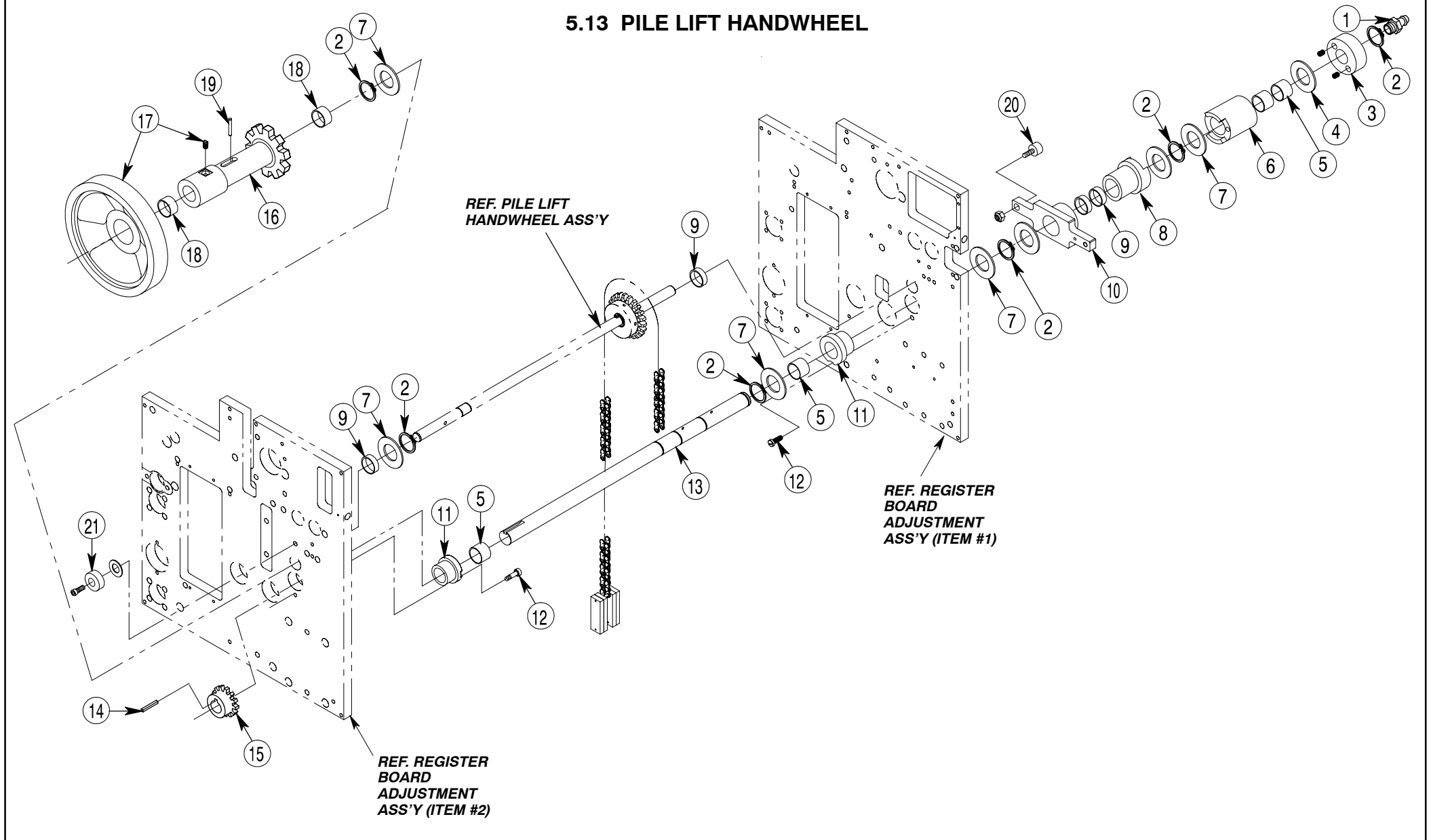
ITEM #	PART #	DESCRIPTION	# REQ
1	HW-51230	SCREW, SHC	4
2	HW-56160	DOWEL, PULL	2
3	HW-51470	SCREW, SHC	8
4	HW-57300	PIN, SPRING	4
5	PF-0190	EXTENSION, STACK RH	1
6	HW-51210	SCREW, SHC	4

ITEM #	PART #	DESCRIPTION	# REQ
7	HW-57190	PIN, SPRING	6
8	PF-0187	BLOCK, BOTTOM RAIL	2
9	PF-0188	RAIL, BOTTOM	1
10	HW-51460	SCREW, SHC	2
11	PF-0186	EXTENSION, STACK LH	1
12	PF-0129	BAR, UPPER SLIDE SUPPORT	1

## 5 SCOTTY 5000 PARTS

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### 5.13 PILE LIFT HANDWHEEL





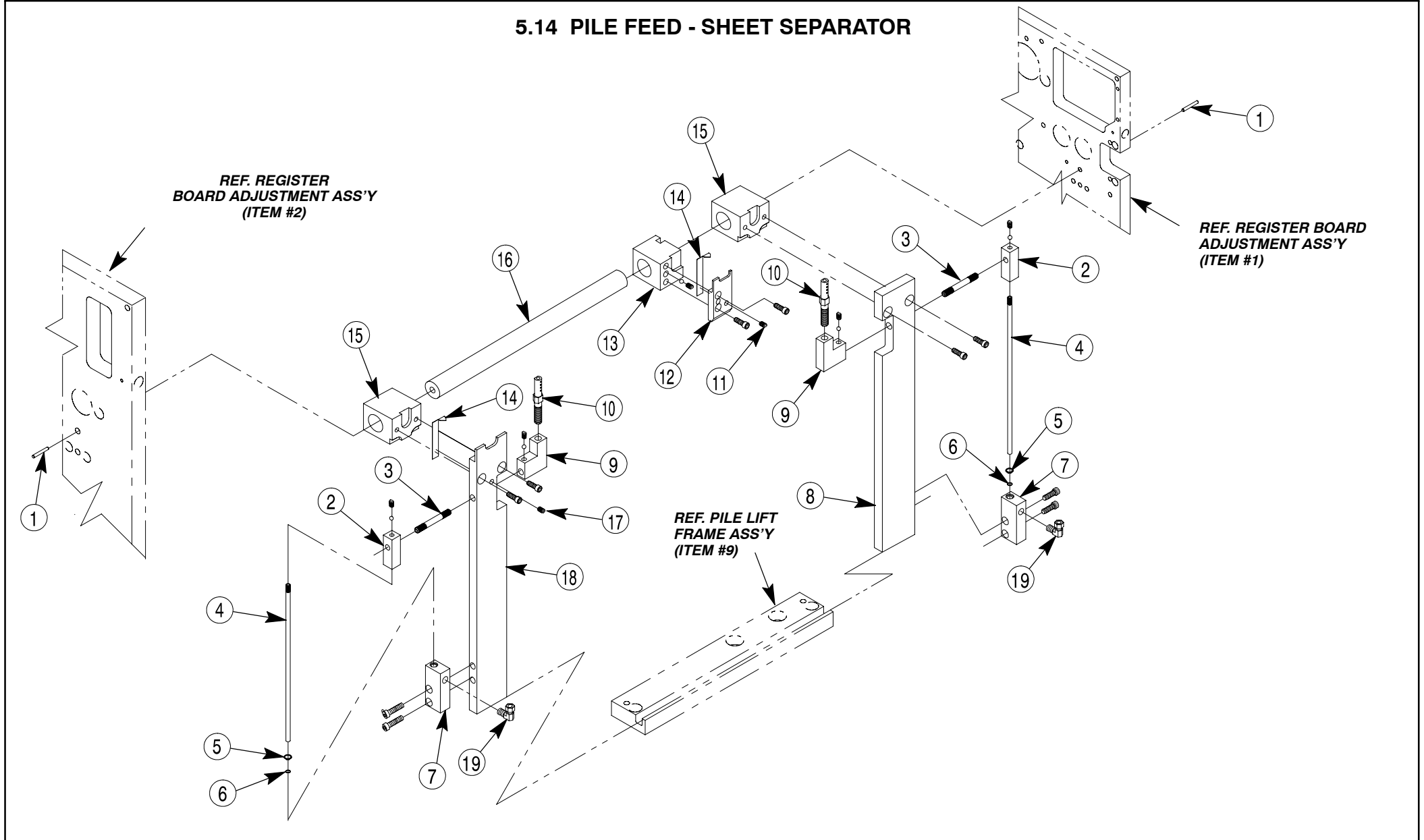


## 5 SCOTTY 5000 PARTS

ITEM #	PART #	DESCRIPTION	# REQ
1	HW-63100	FITTING, GREASE,	1
2	HW-61050	RING, RETAINING	6
3	PF-9801-A	COLLAR	1
	HW-79030	SPRING, COMP.	2
4	HW-69110	THRUST, RACE	1
5	HW-72030	ROLLER, CLUTCH	4
6	PF-0103	HOUSING, PILE LIFT	1
7	HW-69080	THRUST, RACE	7
8	PF-0102	HOUSING, ROCKER ARM	1
9	HW-67120	BEARING, NEEDLE	4
10	PF-0106	ROCKER, ARM	1
11	PF-8301	BUSHING	2
12	HW-82040	SCREW, LOCK	2

ITEM #	PART #	DESCRIPTION	# REQ
13	PF-0101	SHAFT, PILE LIFT	1
14	HW-59030	KEY, SQUARE	1
15	HW-88010	GEAR, BROWNING	1
16	PF-0104	GEAR, PILE LIFT, HANDWHEEL	1
17	PF-8101	HANDWHEEL	1
	HW-52280	SCREW, SET CONEPOINT	1
18	HW-64010	BUSHING, BRONZE	2
19	HW-57200	PIN, SPRING	1
20	HW-71040	CAM, FOLLOWER	1
	HW-60240	NUT, NYLON INSERT	1
21	HW-71060	ROLLER, YOKE	1
	HW-51480	SCREW, SHC	1
	HW-49110	WASHER,	1

## 5.14 PILE FEED - SHEET SEPARATOR



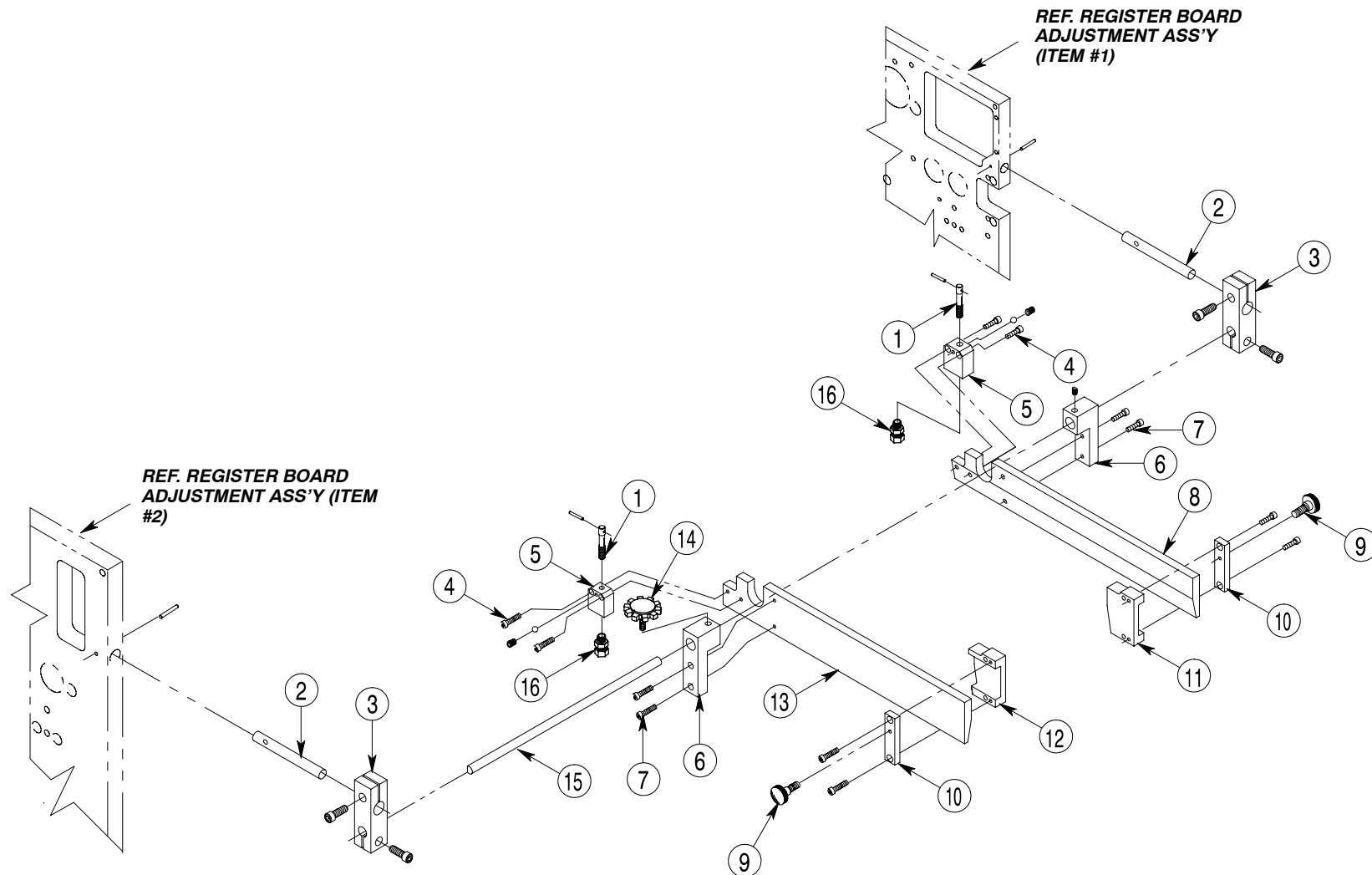


## 5 SCOTTY 5000 PARTS

ITEM #	PART #	DESCRIPTION	# REQ
1	HW-56160	DOWEL, PULL	2
2	PF-0200	FITTING, BLOW AIR	2
	HW-52010	SCREW, SET	2
	HW-84010	BALL, NYLON	2
3	PF-0201	TUBE, BLOW AIR	2
4	PF-0204	TUBE, BLOW AIR	2
5	HW-61200	RING, RETAINING	2
6	HW-74010	O-RING, PARKER	2
7	PF-0211	FITTING BLOW AIR	2
	HW-51230	SCREW, SHC	4
8	PF-0131	GUIDE, SHEET STACK RH	1
	HW-51200	SCREW, SHC	2
9	PF-0203	FITTING, BLOW AIR	2
	HW-52010	SCREW, SET	2
	HW-84010	BALL, NYLON	2

ITEM #	PART #	DESCRIPTION	# REQ
10	PF-0202	NOZZLE, FRONT BLOW AIR	2
11	HW-52080	SCREW, SET	1
12	PF-0225	PLATE, HOLDER	1
	HW-51200	SCREW, SHC	2
13	PF-0226	BLOCK, SEPARATOR FINGER	1
	HW-52080	SCREW, SET	1
	HW-84020	BALL, NYLON	1
14	PF-0132-1	FINGER, SHEET SEPARATOR	2
15	PF-0133	BLOCK, STACK GUIDE MTG.	2
16	PF-0128	BAR, LIFT GUIDE MTG.	1
17	HW-52080	SCREW, SET	1
18	PF-0130	GUIDE, SHEET STACK LH	1
	HW-51200	SCREW, SHC	2
19	HW-63360	ELBOW, MALE	2

## 5.15 PILE FEED - STACK GUIDE



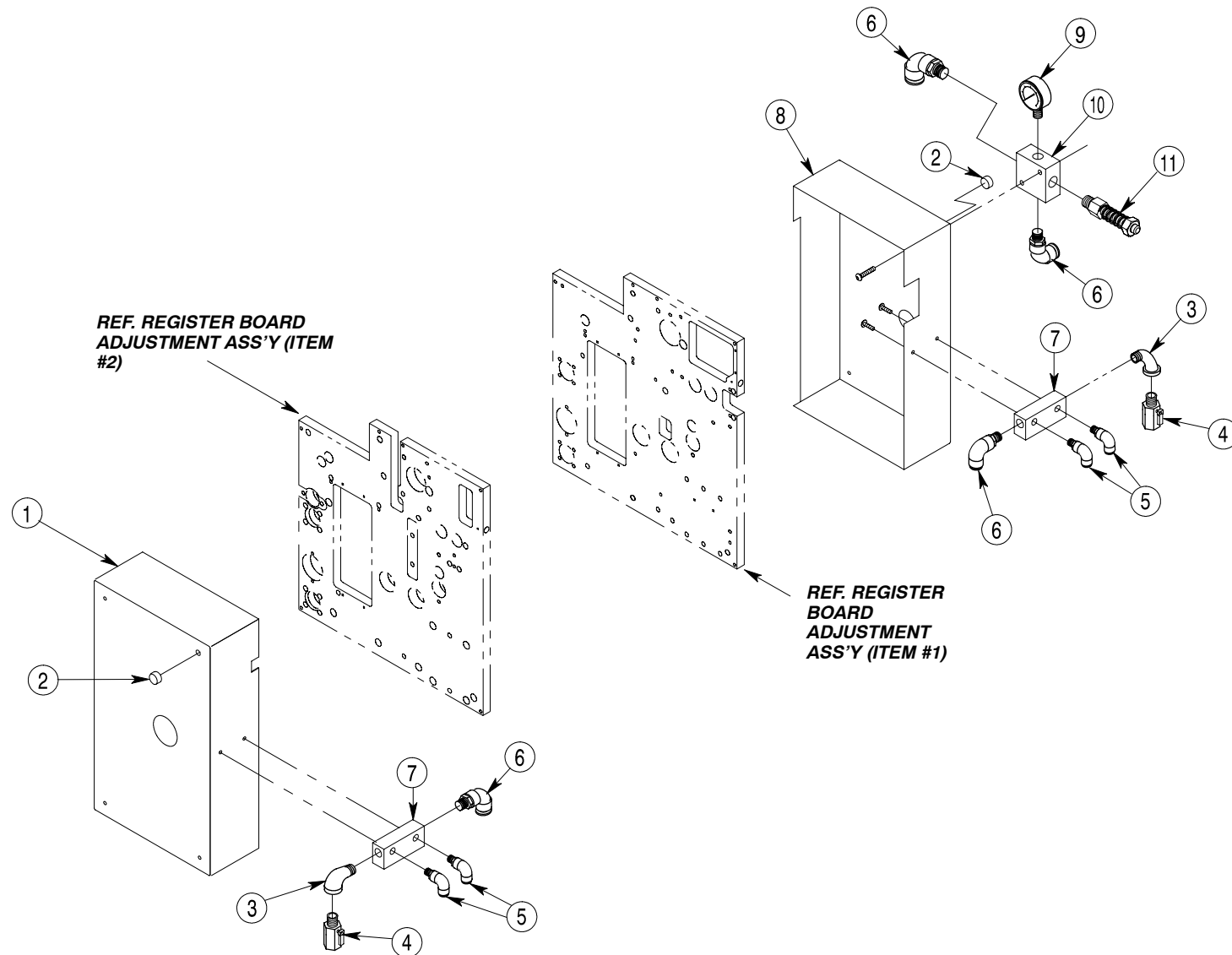


## 5 SCOTTY 5000 PARTS

ITEM #	PART #	DESCRIPTION	# REQ
1	PF-0172	NOZZLE, SIDE BLOW	2
	HW-57050	PIN, SPRING,	2
2	PF-0173	BAR, STACK GUIDE MTG.	2
	HW-57030	PIN, SPRING,	2
3	PF-0185	BLOCK, FEED GUIDE	2
	HW-51210	SCREW, SHC,	4
4	HW-51100	SCREW, SHC,	4
5	PF-0174	BLOCK, NOZZLE MTG.	2
	HW-84020	BALL, NYLON,	2
	HW-52080	SCREW, SET,	2
6	PF-0175	BLOCK, CLAMP	2
	HW-52220	SCREW, SET,	1
7	HW-51090	SCREW, SHC,	4

ITEM #	PART #	DESCRIPTION	# REQ
8	PF-0180	GUIDE, STACK RH (STANDARD)	1
	PF-0244	GUIDE, STACK RH (LONG SHT. OPTION)	1
9	HW-81020	KNOB,	2
10	PF-0176	BAR, STACK GUIDE	2
	HW-51210	SCREW, SHC,	4
11	PF-0179	GUIDE, STACK RH	1
12	PF-0178	GUIDE, STACK LH	1
13	PF-0181	GUIDE, STACK LH (STANDARD)	1
	PF-0245	GUIDE, STACK LH (LONG SHT. OPTION)	1
14	HW-81080	KNOB,	1
15	PF-0177	BAR, PAPER GUIDE, SUPPORT	1
16	HW-63050	CONNECTOR,	2

## 5.16 PILE FEED - PNEUMATIC FITTINGS



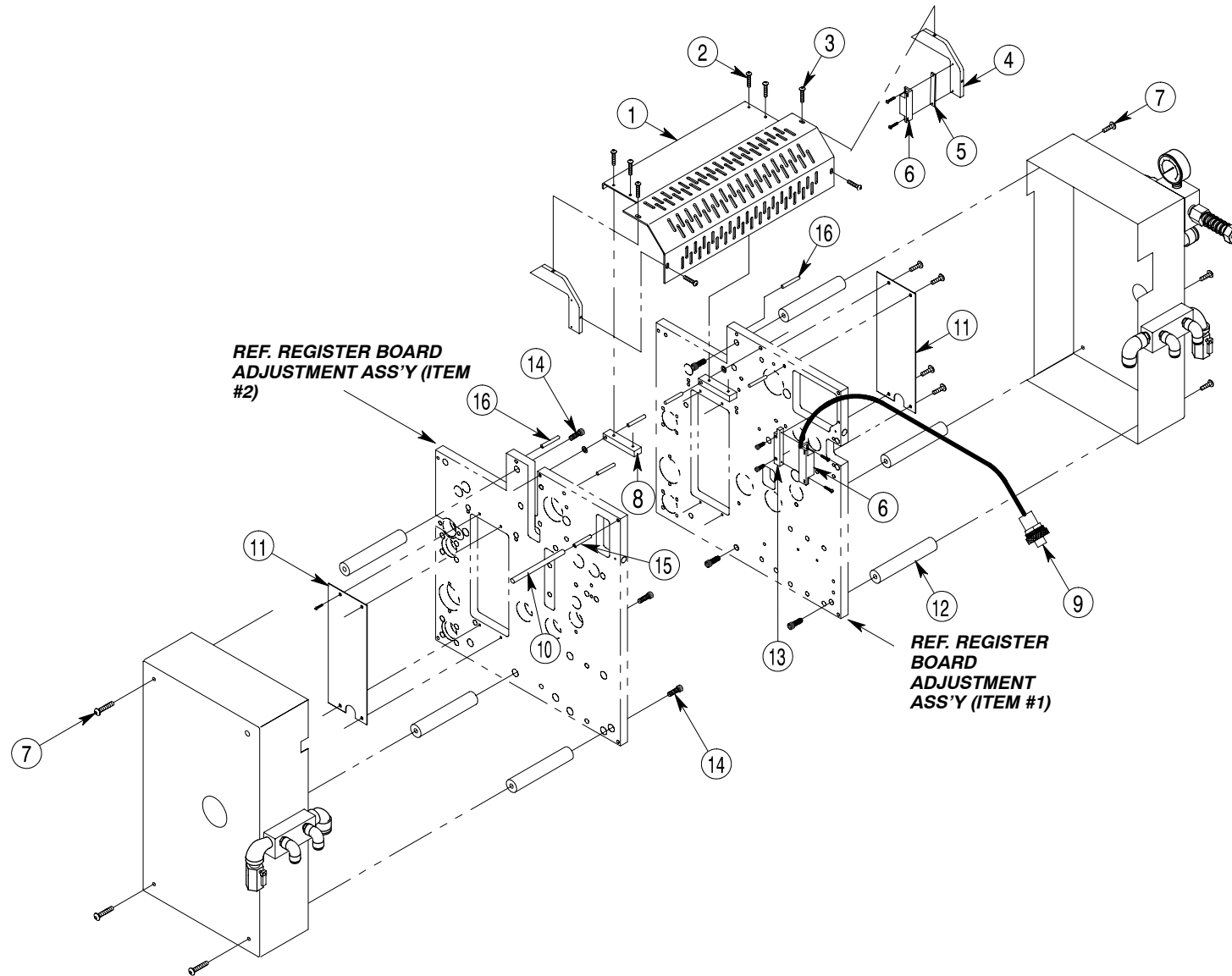


## 5 SCOTTY 5000 PARTS

ITEM #	PART #	DESCRIPTION	# REQ
1	PF-0220-1	COVER, FEEDER L.H.	1
2	PF-9906	PLUG, COVER, PLASTIC	2
3	HW-63260	ELBOW, STREET,	2
4	HW-47045	VALVE, BALL,	2
5	HW-63370	ELBOW, MALE,	4
6	HW-63310	CONNECTOR, MALE,	4

ITEM #	PART #	DESCRIPTION	# REQ
7	PF-0222	MANIFOLD, BLOW AIR	2
	HW-53140	SCREW, BUTTON HD.,	4
8	PF-0221-1	COVER, FEEDER R.H.	1
9	HW-47080	GAGE, VACUUM,	1
10	PF-0214	MANIFOLD, VACUUM	1
	HW-53140	SCREW, BUTTON HD.,	2
11	HW-47090	VALVE, RELIEF	1
12	RP-08035	PLATE, PAPER LIFT	1

## 5.17 PILE FEED - GUARDS, COVERS





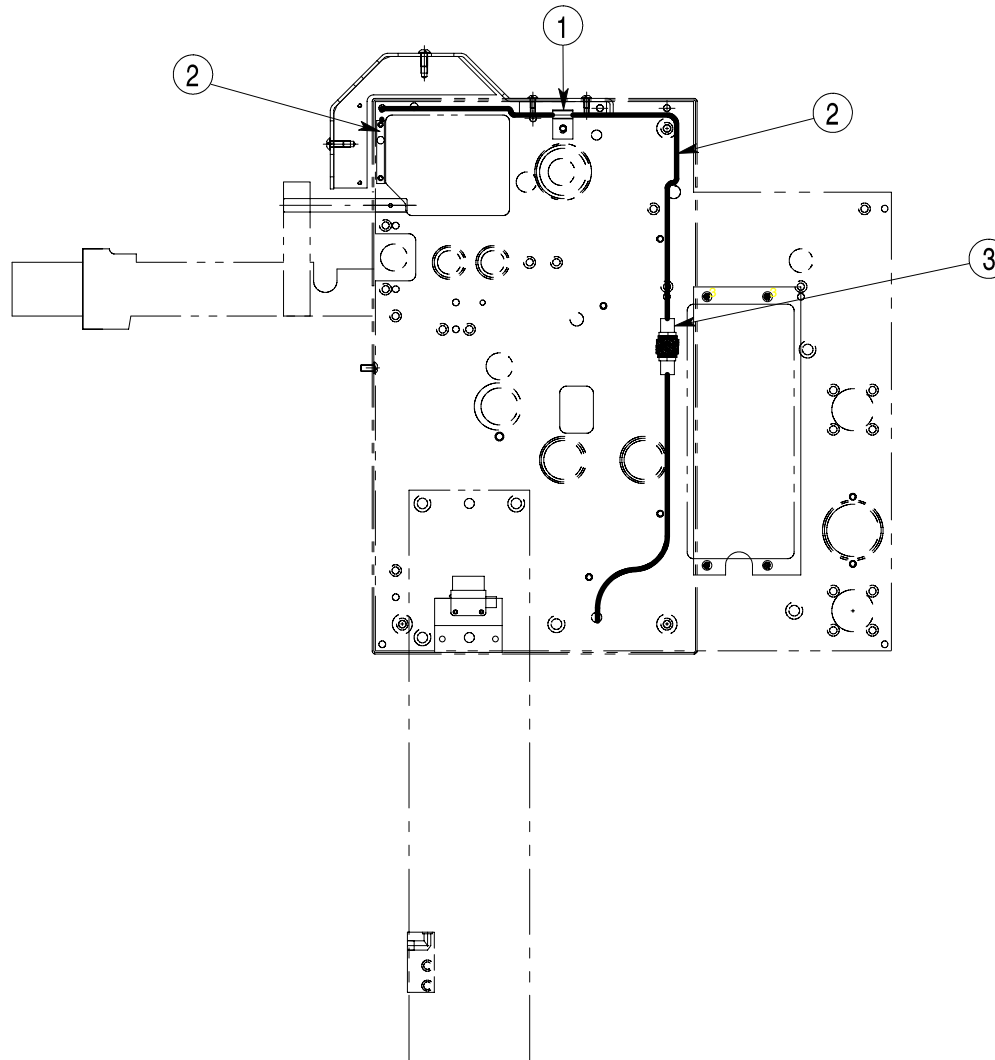


## 5 SCOTTY 5000 PARTS

ITEM #	PART #	DESCRIPTION	# REQ
1	PF-0218-1	TOP GUARD	1
2	HW-53060	SCREW, BUTTON HD.,	4
3	HW-53150	SCREW, BUTTON HD,	4
4	PF-0240	SIDE SHIELD	2
5	PF-0238	PLATE SPACER	1
6	HW-97050-SA	SENSOR & ACTUATOR,	1
	HW-53030	SCREW, BUTTON HD.,	4
7	HW-53140	SCREW, BUTTON HD.,	6
8	PF-0219	BLOCK, GUARD MTG.	2
	HW-49090	WASHER, FLAT,	2
	HW-56120	DOWEL PIN,	2

ITEM #	PART #	DESCRIPTION	# REQ
9	HW-97054	RECEPTACLE, MALE	1
10	PF-0241	POST, GUARD HOLD	1
11	PF-0235	COVER	2
	HW-53060	SCREW, BUTTON HD.,	8
12	PF-0215	POST, SIDE GUARD MTG.	6
13	PF-0237	BLOCK, SENSOR	1
	HW-51100	SCREW, SHC,	2
14	HW-51210	SCREW, SHC,	6
15	HW-57190	PIN, SPRING,	1
16	HW-57190	PIN SPRING,	4

### 5.18 PILE FEED - OPTIC MOUNTING



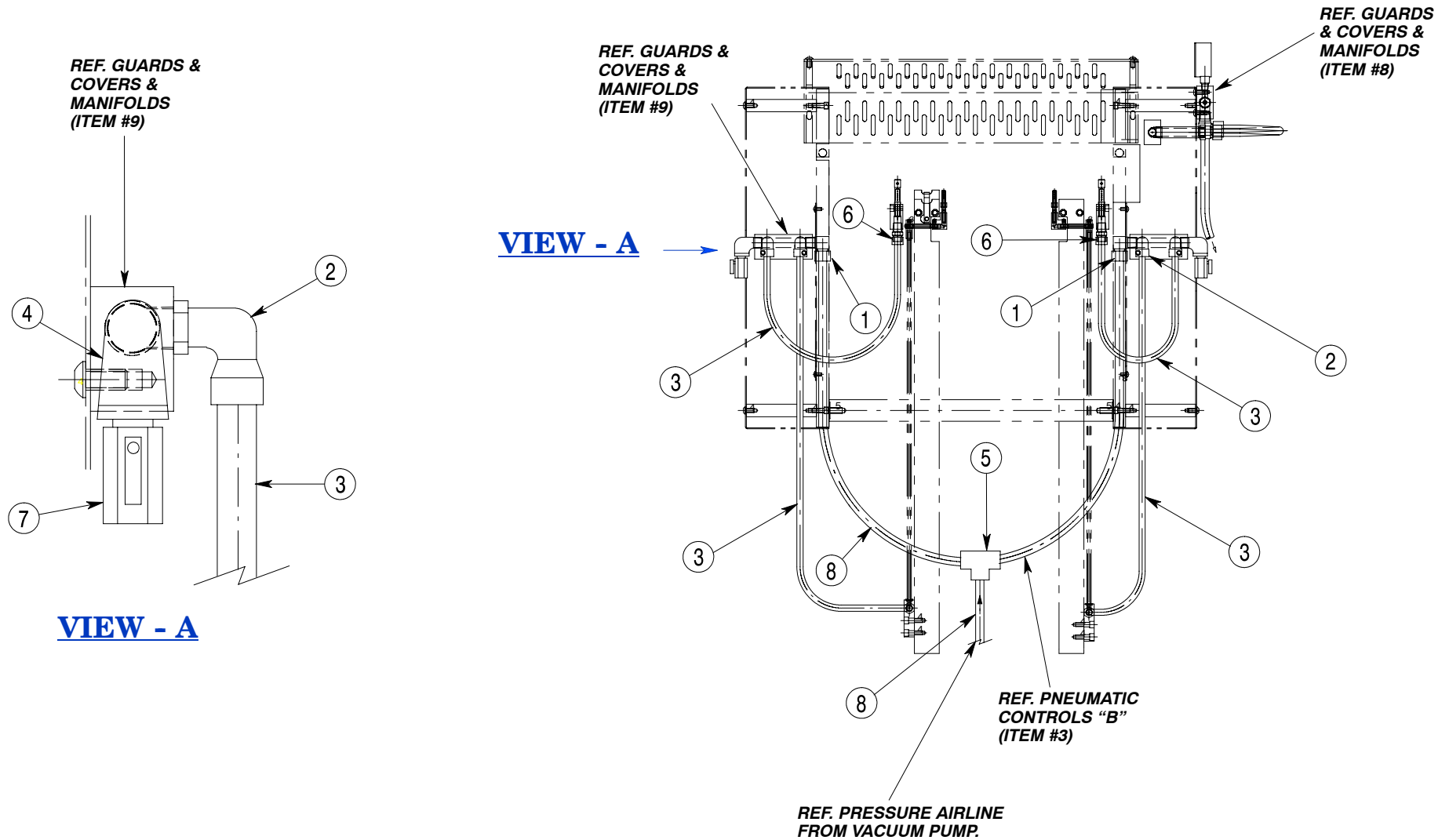


## 5 SCOTTY 5000 PARTS

ITEM #	PART #	DESCRIPTION	# REQ
1	HW-95088	CHANNEL, TRAC	1
	HW-53140	SCREW, BUTTON HD.,	1
2	HW-97050-SA	SENSOR & ACTUATOR	1

ITEM #	PART #	DESCRIPTION	# REQ
3	HW-97054	RECEPTACLE, MALE	1

## 5.19 PILE FEED - PNEUMATIC CONTROLS "A"



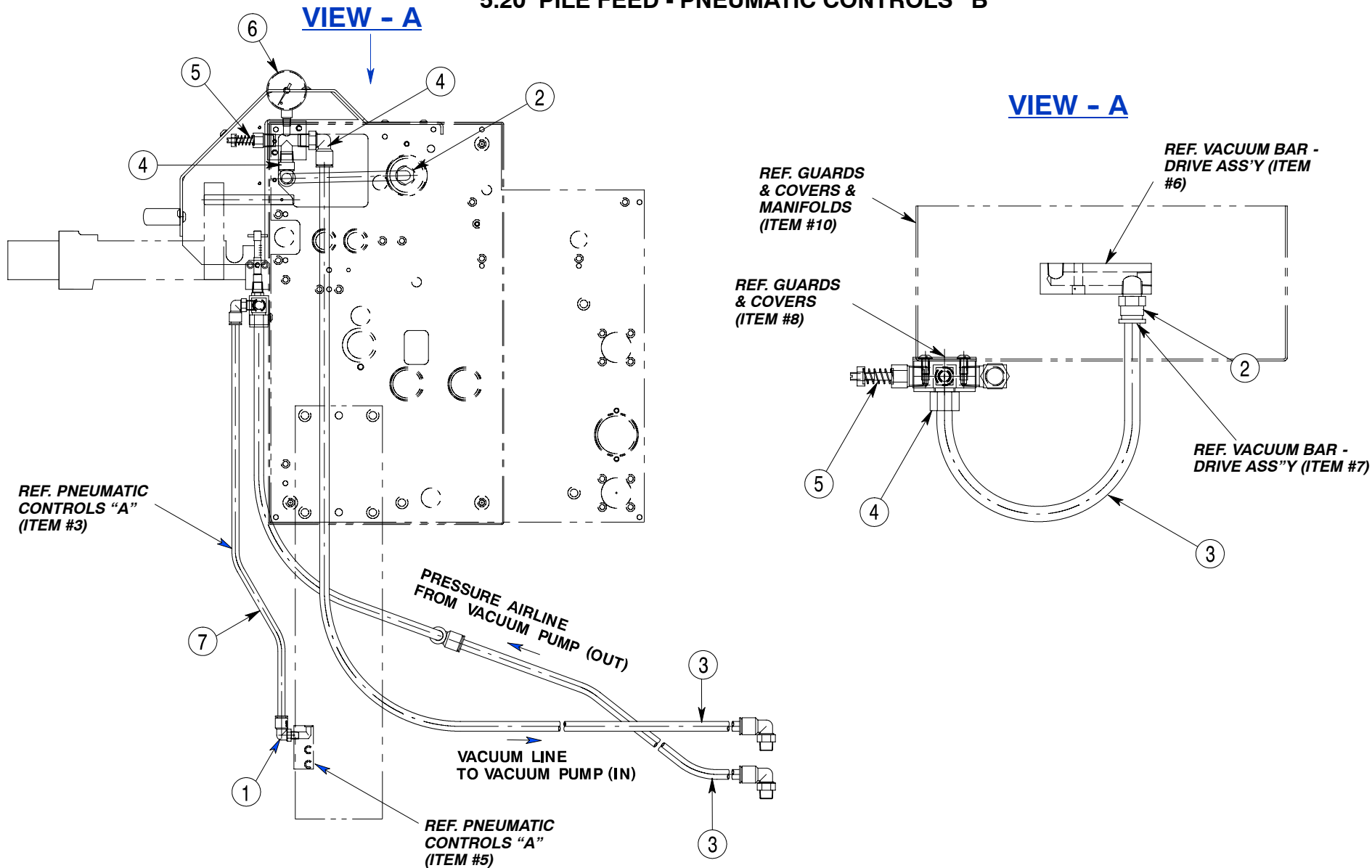


## 5 SCOTTY 5000 PARTS

ITEM #	PART #	DESCRIPTION	# REQ
1	HW-63310	ELBOW, MALE,	2
2	HW-63370	ELBOW, MALE,	4
3	HW-63150	TUBING,	10 FT.
4	HW-63260	ELBOW, STREET,	2

ITEM #	PART #	DESCRIPTION	# REQ
5	HW-63350	TEE, UNION,	1
6	HW-63050	CONNECTOR, MALE,	2
7	HW-47045	VALVE, BALL,	2
8	HW-63210	TUBING,	REF.

## 5.20 PILE FEED - PNEUMATIC CONTROLS "B"



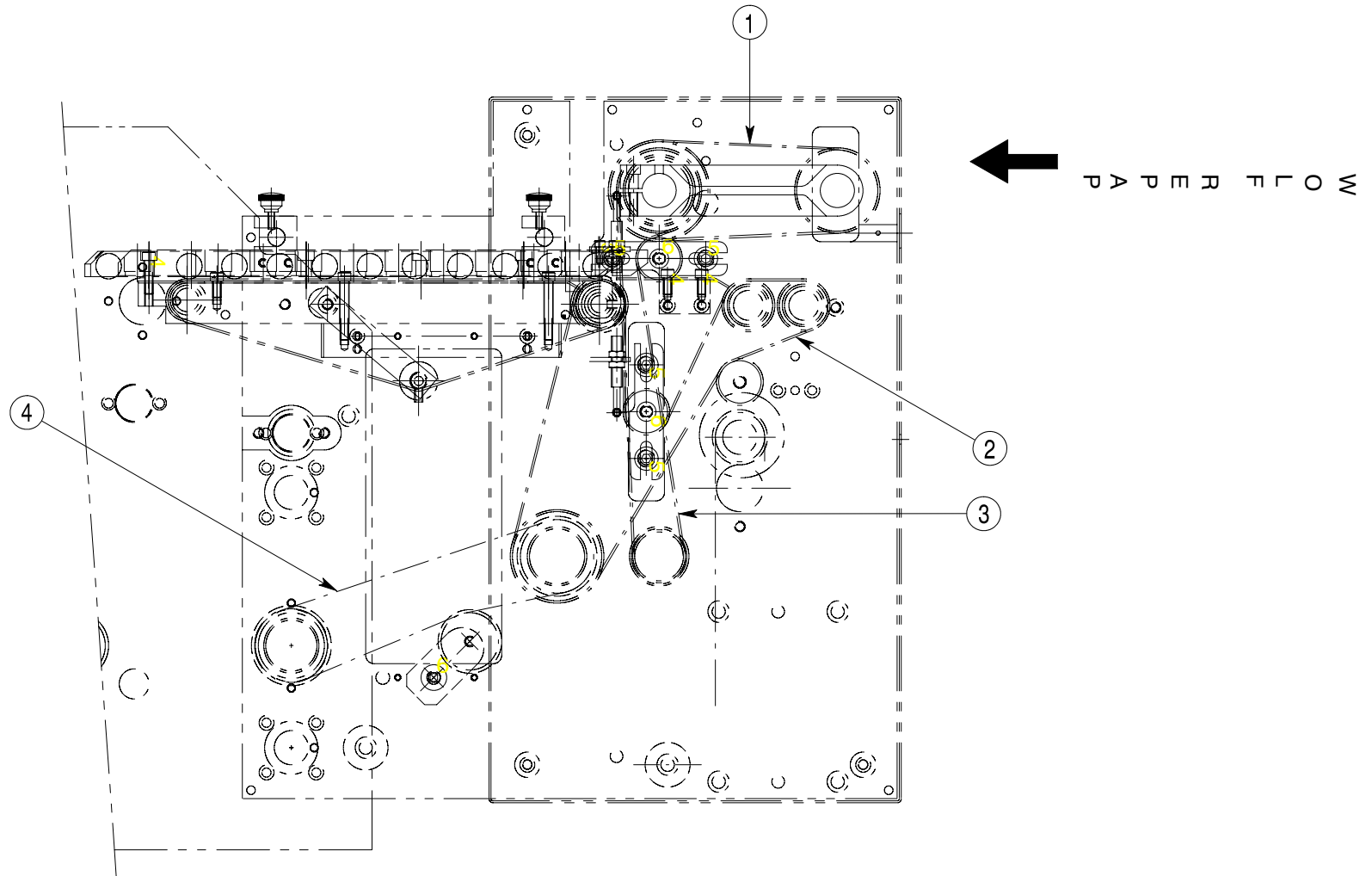


## 5 SCOTTY 5000 PARTS

ITEM #	PART #	DESCRIPTION	# REQ
1	HW-63360	ELBOW, MALE	2
2	HW-63300	CONNECTOR, MALE,	1
3	HW-63155	TUBING,	16 FT.

ITEM #	PART #	DESCRIPTION	# REQ
4	HW-63310	ELBOW, MALE,	2
5	HW-47090	VALVE, RELIEF	1
6	HW-47080	GAGE, VACUUM	1
7	HW-63150	TUBING,	REF.

## 5.21 PILE FEED - BELT & CHAIN LAYOUT





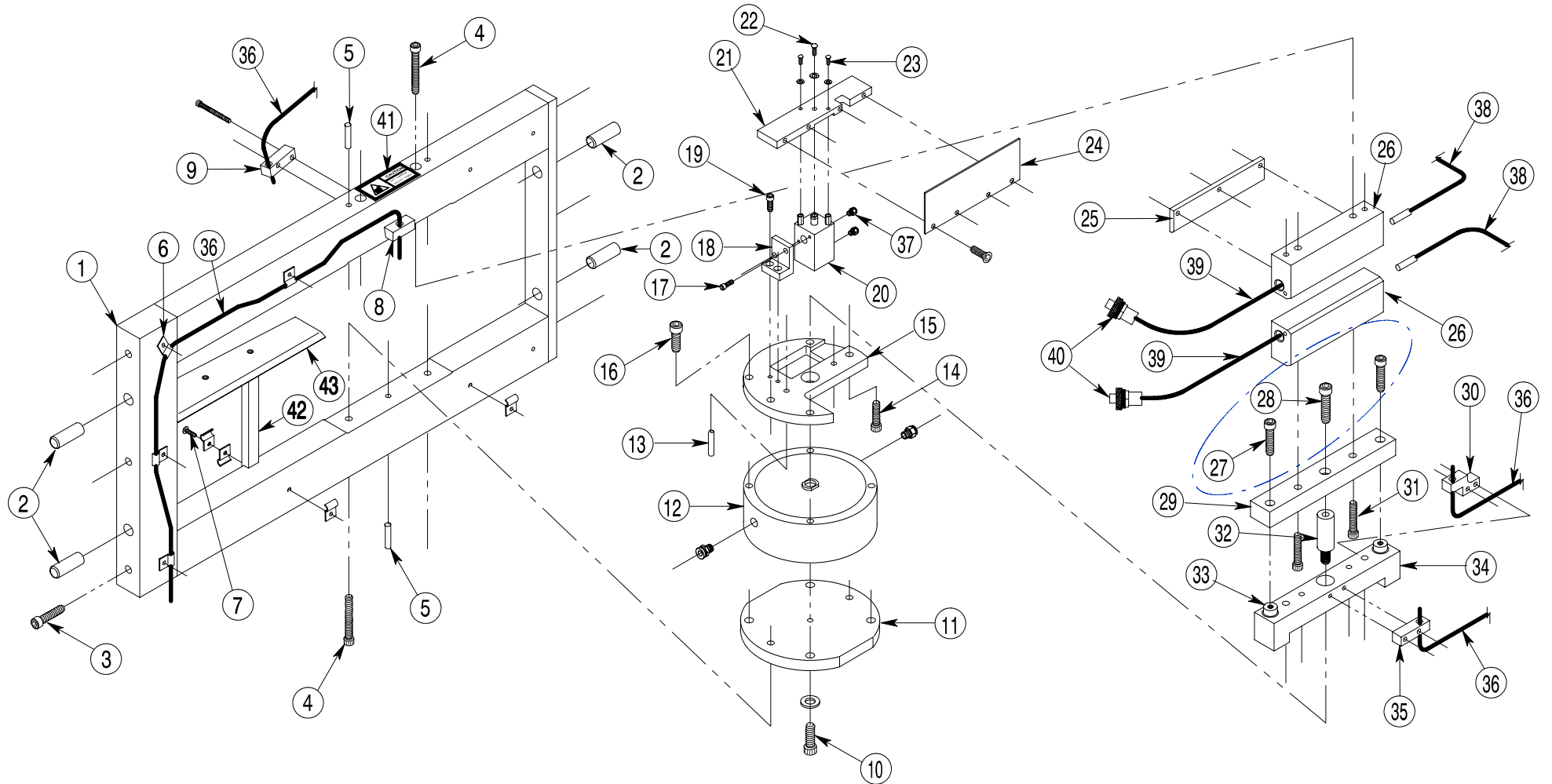


## 5 SCOTTY 5000 PARTS

ITEM #	PART #	DESCRIPTION	# REQ
1	HW-76010	GEARBELT	1
2	HW-76050	GEARBELT,	1

ITEM #	PART #	DESCRIPTION	# REQ
3	HW-76030	GEARBELT,	1
4	HW-77010	ROLLER, CHAIN,	1
	HW-77020	CONNECTOR, LINK,	1

## 5.22 PLATEN UNIT



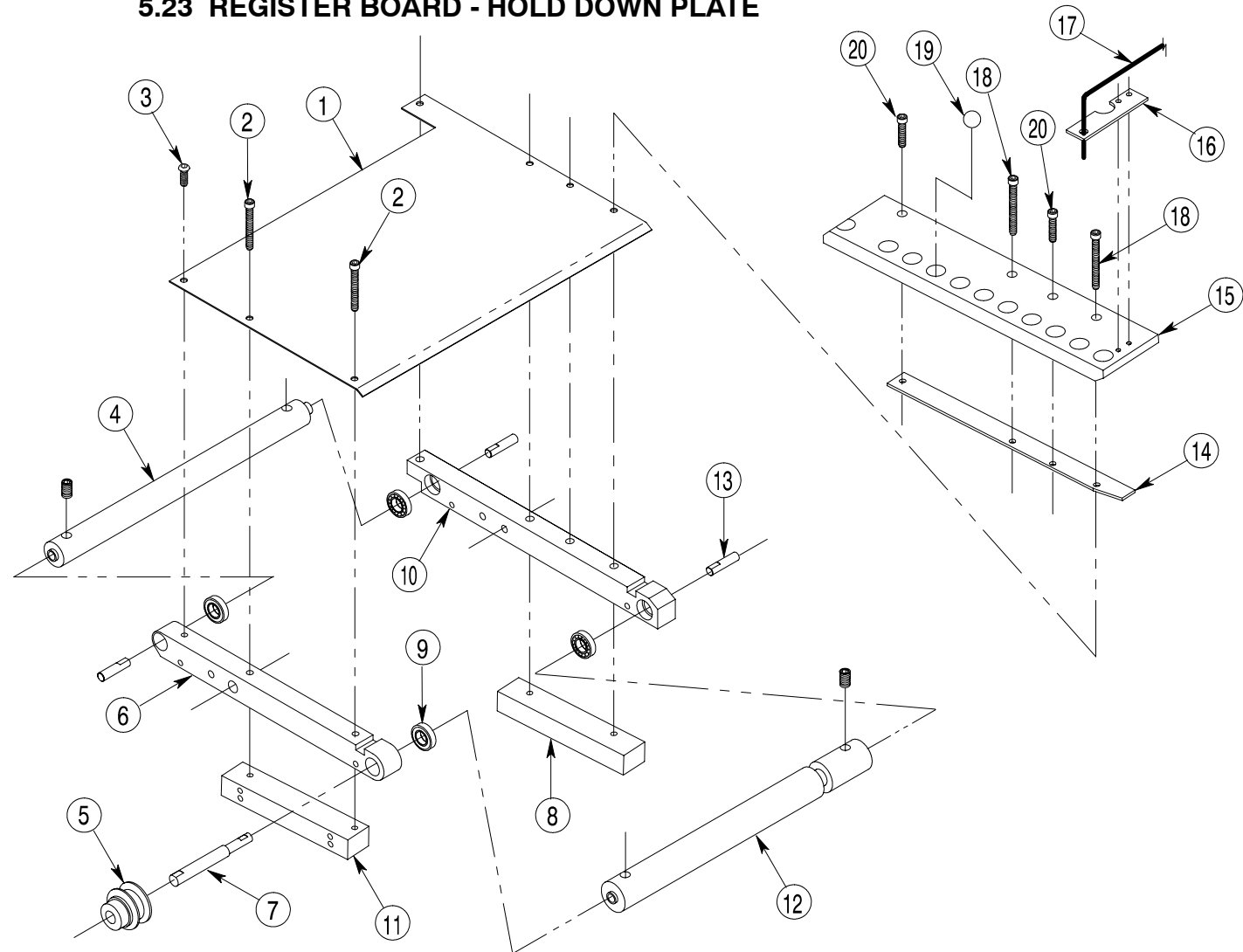


## 5 SCOTTY 5000 PARTS

ITEM #	PART #	DESCRIPTION	# REQ
1	F-0801	FRAME, PLATEN	1
2	HW-56250	DOWEL, PIN,	4
3	HW-51470	SCREW, SOC. HD. CAP, STEEL BLACK OXIDE	6
4	HW-51440	SCREW, SOC. HD. CAP, STEEL BLACK OXIDE	4
5	HW-56150	DOWEL, PIN PULL,	3
6	HW-95010	CHANNEL TRAC,	16
	HW-53060	SCREW, BUTTON HD.,	14
7	HW-53070	SCREW, BUTTON HD.,	1
8	F-0813	BRACKET, SWITCH	1
9	F-0814-1	BRACKET, SWITCH	1
	HW-51170	SCREW, SOC. HD. CAP, STEEL BLACK OXIDE	2
10	HW-51390	SCREW, SOC. HD. CAP, STEEL BLACK OXIDE	4
	HW-49100	WASHER, FLAT	4
11	F-0802	PLATE, CYLINDER MOUNTING	1
12	F-0817	AIR CYLINDER, COMPACT	1
	HW-63020	CONNECTOR,	2
13	HW-56150	DOWEL, PIN PULL,	2
14	HW-51370	SCREW, SOC. HD. CAP, STEEL BLACK OXIDE	2
15	F-0806	PLATE, MOUNTING	1
16	HW-51380	SCREW, SOC. HD. CAP, STEEL BLACK OXIDE	3
17	HW-51028	SCREW, SOC. HD. CAP STEEL BLACK OXIDE	2
18	F-0809	BRACKET, CYLINDER	1
19	HW-51080	SCREW, SOC. HD. CAP, STEEL BLACK OXIDE	2
20	F-0818	AIR CYLINDER, COMPACT	1
21	F-0811	BRACKET, STOP	1
22	HW-53110	SCREW, BUTTON HD.,	1
	HW-49030	WASHER, FLAT, #10 STEEL	1
23	HW-53030	SCREW, BUTTON HD.,	2
	HW-49200	WASHER, STARWHEEL, (INTERNAL TOOTH)	2

ITEM #	PART #	DESCRIPTION	# REQ
24	F-0804	PLATE, STOP	1
	HW-54020	SCREW, SOC. FLAT HD.,	4
25	F-0812	PLATE, RETAINING	1
	HW-51080	SCREW, SOC. HD. CAP, STEEL BLACK OXIDE	3
26	F-0803	PLATEN	2
27	HW-51230	SCREW, SOC. HD. CAP, STEEL BLACK OXIDE	2
28	HW-51380	SCREW, SOC. HD. CAP STEEL BLACK OXIDE	1
29	F-0807	SUPPORT, PLATEN	1
30	F-0816	BRACKET, SWITCH	1
	HW-51110	SCREW, SOC. HD. CAP, STEEL BLACK OXIDE	2
31	HW-51380	SCREW, SOC. HD. CAP, STEEL BLACK OXIDE	2
32	F-0808	STUD, PLATEN	1
33	F-0810	SHAFT, GUIDE	2
34	F-0805	BLOCK, GUIDE	1
35	F-0815	BRACKET, SWITCH	1
	HW-51110	SCREW, SOC. HD. CAP, STEEL BLACK OXIDE	2
36	HW-97010	FIBER PHOTOS	4
37	HW-63010	CONNECTOR, LEGRIS,	2
38	HW-94020	THERMOCOUPLE,	2
39	HW-93010	HEAT ELEMENT, 450 WATT	2
40	HW-97054	RECEPTACLE, MALE	2
41	F-0819	LABEL, CAUTION HOT	1
42	F-0821	BRACKET, SHIELD	1
43	F-0820	SHIELD, PAPER	1
	HW-54010	SCREW, FLAT HD.,	3

## 5.23 REGISTER BOARD - HOLD DOWN PLATE



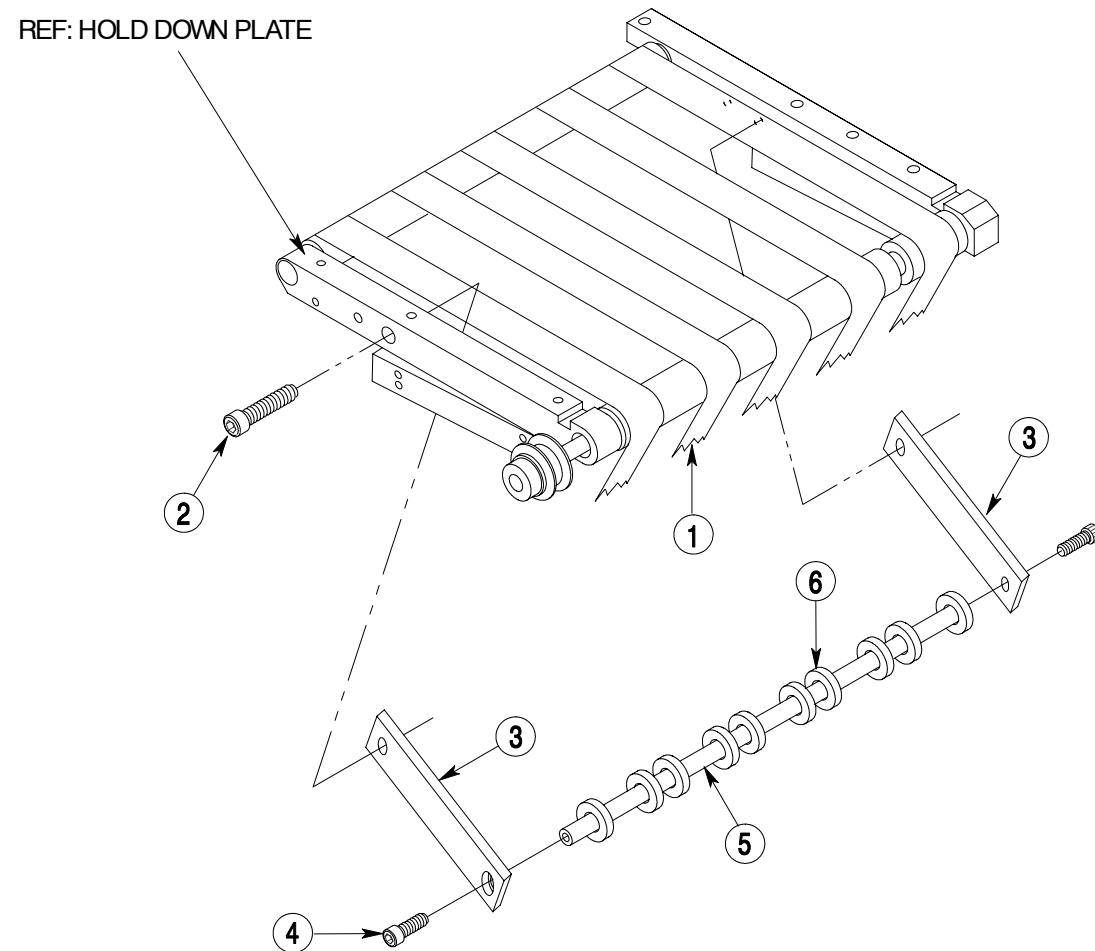


## 5 SCOTTY 5000 PARTS

ITEM #	PART #	DESCRIPTION	# REQ
1	RB-0102	COVER, FEED BOARD	1
2	HW-51260	SCREW, SOC. HD. CAP, STEEL BLACK OXIDE	2
3	HW-53150	SCREW, BUTTON HD.,	1
4	RB-0109	ROLLER, BELT BACK	1
	HW-52080	SCREW, CUP POINT SOC. SET,	2
5	HW-86030	PULLEY, MARTIN W/ SET SCREW	1
6	RB-0103-1	BAR, L.H. SIDE FRAME	1
7	RB-0110	SHAFT, PULLEY	1
8	RB-0101	BAR, L.H. MOUNTING	1
	HW-51230	SCREW, SOC. HD. CAP	2
	HW-57190	SPRING, PIN	2
9	HW-66010	BALL BEARING	4
10	RB-0106-1	BAR, R.H. SIDE FRAME	1

ITEM #	PART #	DESCRIPTION	# REQ
11	RB-0107	BAR, R.H. MOUNTING	1
	HW-51230	SCREW, SOC. HD. CAP	2
	HW-57190	SPRING, PIN	2
12	RB-0111	ROLLER, BELT FRONT	1
	HW-52080	SCREW, CUP POINT SOC. SET,	2
13	RB-0108	SHAFT ROLLER	3
14	RB-0105-1	BAR, PAPER REGISTER	1
	FB-0106	BAR, PAPER REGISTER	1
15	RB-0105-2	PLATE, HOLD DOWN	1
	FB-0105	PLATE, HOLD DOWN	1
16	FB-0103	PLATE, PHOTO SWITCH	1
	HW-51080	SCREW, SOC. HD. CAP, STEEL BLACK OXIDE	2
17	HW-97010	FIBER OPTICS	2
18	HW-51280	SCREW, SOC. HD. CAP, STEEL BLACK OXIDE	2
19	HW-84080	BALL, STEEL,	11
20	HW-51230	SCREW, SOC. HD. CAP, STEEL BLACK OXIDE	2

## 5.24 REGISTER BOARD - CONVEYOR



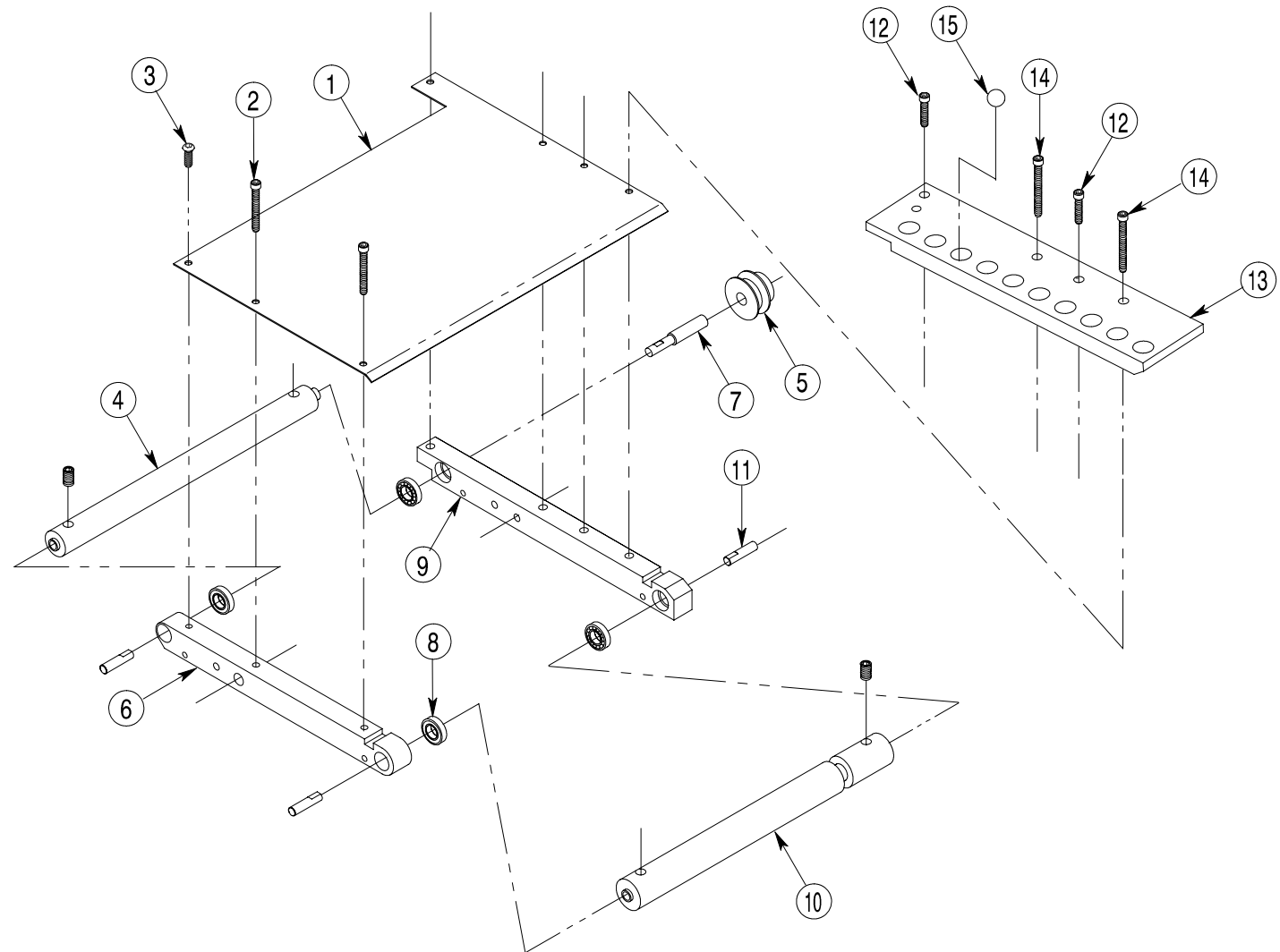


## 5 SCOTTY 5000 PARTS

ITEM #	PART #	DESCRIPTION	# REQ
1	HW-99010	BELT,	5
2	HW-51380	SCREW, SOC. HD. CAP, STEEL BLACK OXIDE	2
3	RB-0112	ARM, BELT TENSION	2
4	HW-51200	SCREW, SOC. HD. CAP, STEEL BLACK OXIDE	2

ITEM #	PART #	DESCRIPTION	# REQ
5	RB-0113	BAR, BELT TAKE-UP	1
6	HW-98030	COLLAR, 1-PIECE,	10
	HW-84010	BALL, NYLON,	10
	HW-52130	SCREW, CUP POINT SET,	10

## 5.25 MIDDLE REGISTER - HOLD DOWN PLATE





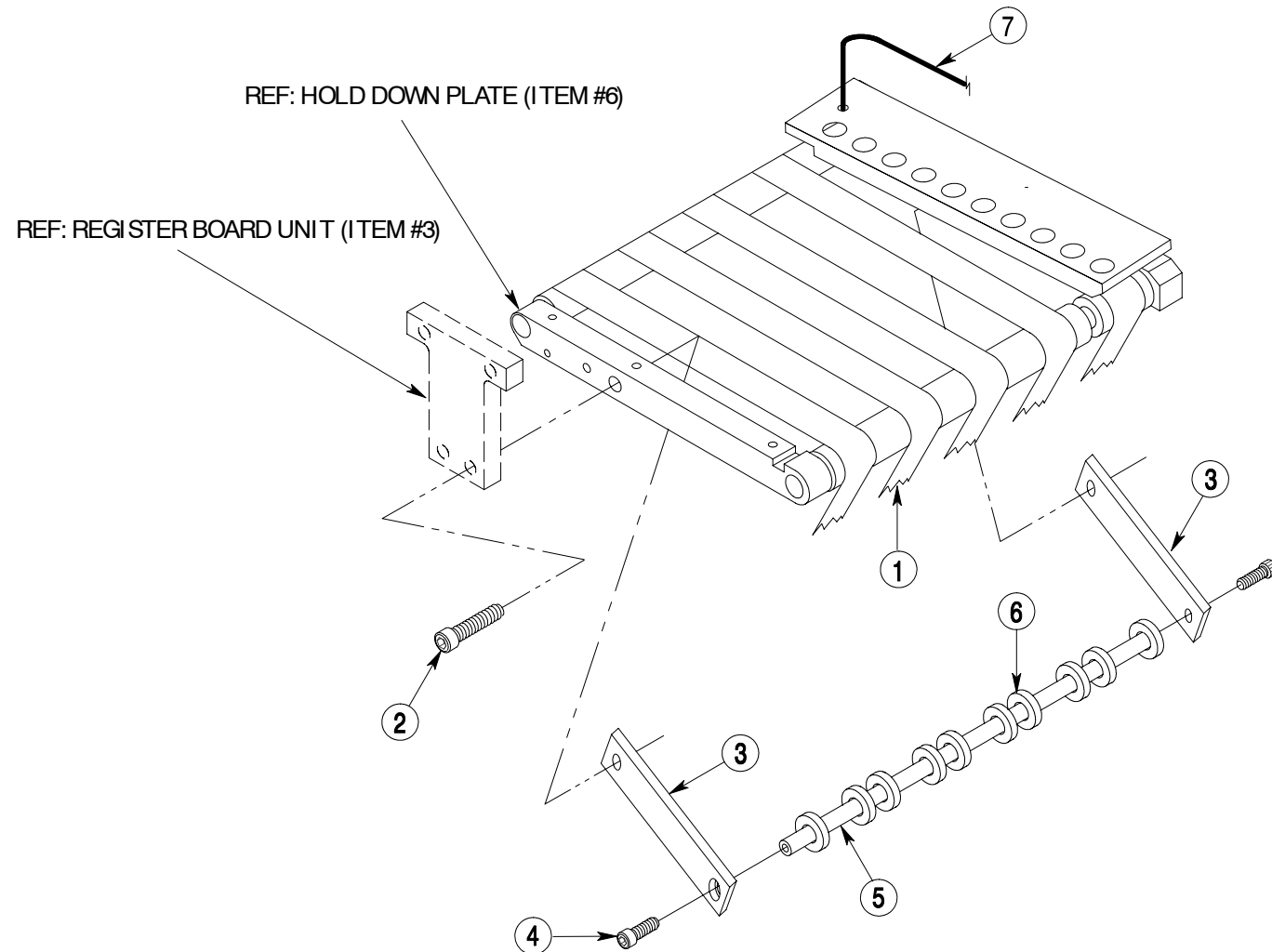


## 5 SCOTTY 5000 PARTS

ITEM #	PART #	DESCRIPTION	# REQ
1	RB-0102	COVER, FEED BOARD	1
2	HW-51260	SCREW, SOC. HD. CAP, STEEL BLACK OXIDE	2
3	HW-53150	SCREW, BUTTON HD.,	1
4	RB-0109	ROLLER, BELT BACK	1
	HW-52080	SCREW, CUP POINT SOC. SET,	2
5	HW-86030	PULLEY, MARTIN W/ SET SCREW	1
6	RB-0103-1	BAR, L.H. SIDE FRAME	1
7	F-2102	SHAFT, DRIVE	1
8	HW-66010	BALL BEARING	4

ITEM #	PART #	DESCRIPTION	# REQ
9	RB-0106-1	BAR, R.H. SIDE FRAME	1
10	RB-0111	ROLLER, BELT FRONT	1
	HW-52080	SCREW, CUP POINT SOC. SET,	2
11	RB-0108	SHAFT ROLLER	3
12	HW-51230	SCREW, SOC. HD. CAP, STEEL BLACK OXIDE	2
13	F-2122	PLATE, HOLD DOWN	1
14	HW-51280	SCREW, SOC. HD. CAP, STEEL BLACK OXIDE	2
15	HW-84080	BALL, STEEL,	10

## 5.26 MIDDLE REGISTER - CONVEYOR



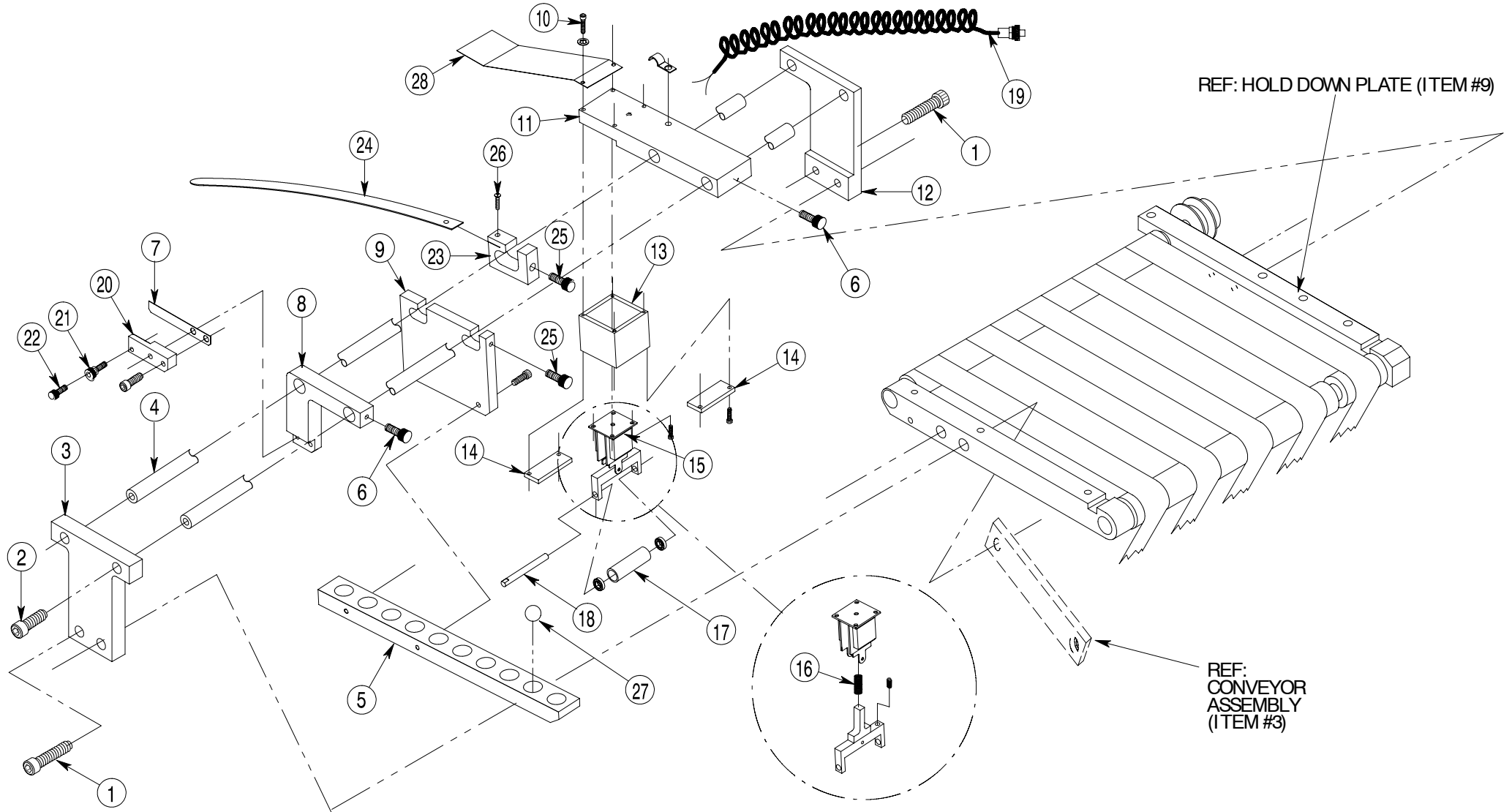


## 5 SCOTTY 5000 PARTS

ITEM #	PART #	DESCRIPTION	# REQ
1	HW-99020	BELT,	5
2	HW-51410	SCREW, SOC. HD. CAP,	2
3	RB-0112	ARM, BELT TENSION	2
4	HW-51200	SCREW, SOC. HD. CAP, STEEL BLACK OXIDE	2

ITEM #	PART #	DESCRIPTION	# REQ
5	RB-0113	BAR, BELT TAKE-UP	1
6	HW-98030	COLLAR, 1-PIECE,	10
	HW-84010	BALL, NYLON,	10
	HW-52130	SCREW, CUP POINT SET,	10
7	HW-97010	FIBER OPTICS	1

## 5.27 MIDDLE REGISTER BOARD UNIT



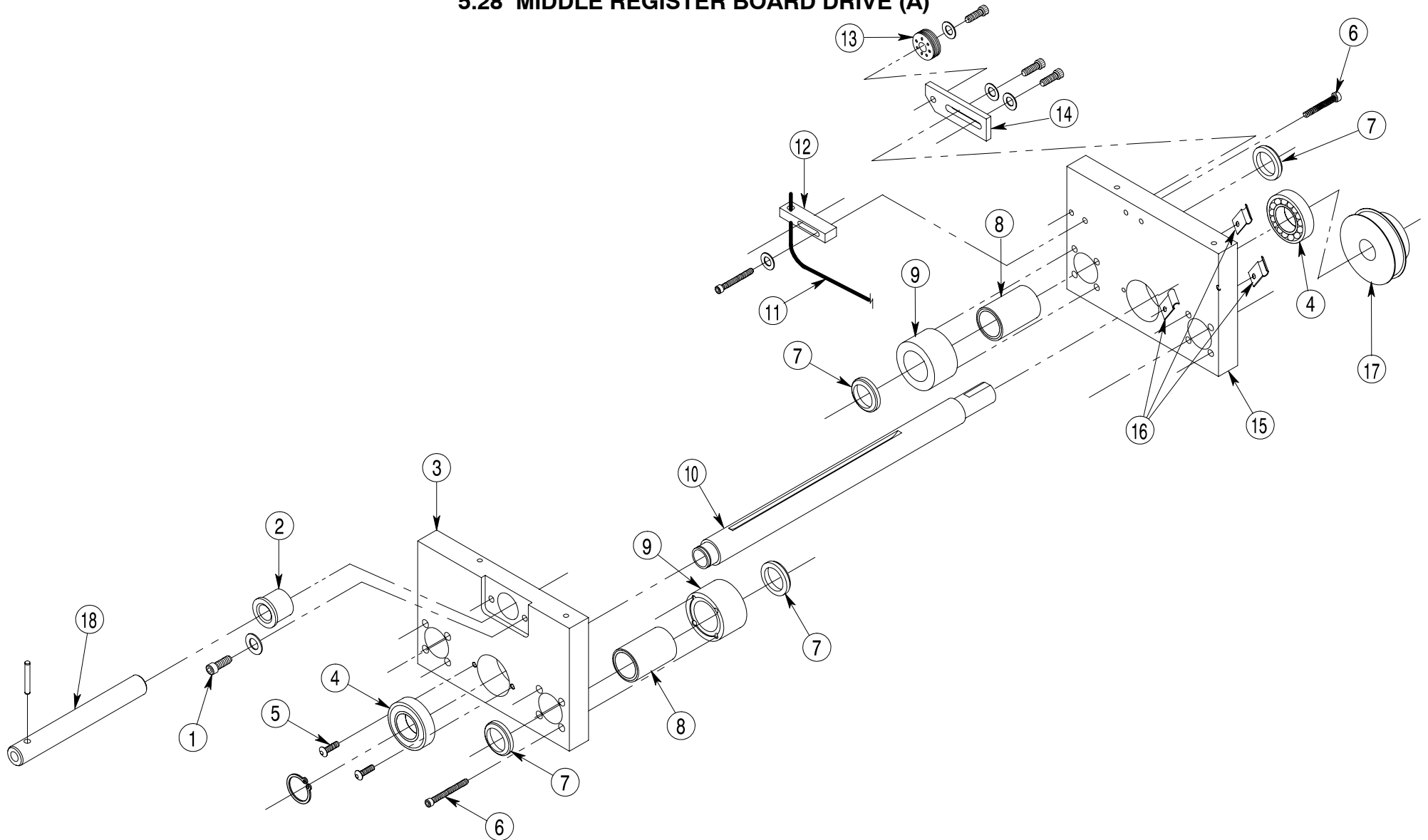


## 5 SCOTTY 5000 PARTS

ITEM #	PART #	DESCRIPTION	# REQ
1	HW-51380	SCREW, SOC. HD. CAP,	2
2	HW-51200	SCREW, SOC. HD. CAP,	2
3	F-2105	BLOCK, MOUNTING L.H.	1
4	F-2107	BAR, MOUNTING	2
5	F-2103	PLATE, HOLD DOWN	1
6	HW-55460	SCREW, THUMB,	2
7	F-2118	FINGER	1
8	F-2115	BAR, REGISTER	1
9	F-2104	BAR, PAPER REGISTER	1
	HW-51100	SCREW, SOC. HD. CAP,	2
10	HW-51027	SCREW, SOC. HD. CAP,	4
	HW-49199	WASHER, INT. TOOTH,	4
11	F-2108	PLATE, MOUNTING	1
	HW-95088	CLAMP,	1
	HW-53140	SCREW, BUTTON HEAD,	1
12	F-2106	BLOCK, MOUNTING R.H.	1
13	F-2109	HOUSING, COIL	1
14	F-2110	PLATE, COVER	2
	HW-51025	SCREW, SOC. HD. CAP,	4
15	F-2160	SOLENOID ASSEMBLY	1
	HW-51028	SCREW, SOC. HD. CAP,	4
	HW-57020	PIN, SPRING,	1
	HW-52269	SCREW, SOC SET	1
	HW-95180	CONNECTOR, BUTT	2

ITEM #	PART #	DESCRIPTION	# REQ
16	HW-79005	SPRING, COMPRESSION,	1
17	F-2114	ROLLER, IDLER	1
	HW-66070	BEARING, BALL	2
18	F-2113	PIN, ROLLER	1
19	HW-95084	CORD, COIL	1
	HW-95190	CONNECTOR, CABLE END	2
	HW-97054	RECEPTACLE, MALE	1
20	F-2117	CLAMP, REGISTER	1
	HW-51100	SCREW, SOC. HD. CAP,	2
21	HW-60330	NUT, THUMB,	1
22	HW-55010	SCREW, THUMB,	1
23	F-2119	BAR, PAPER REGISTER	2
24	F-2120	STRAP, PAPER	2
25	HW-55470	SCREW, THUMB,	3
26	HW-51041	SCREW, SOC HD.,	2
27	HW-84080	BALL, STEEL,	10
28	F-2124	GUIDE, PAPER	1

## 5.28 MIDDLE REGISTER BOARD DRIVE (A)





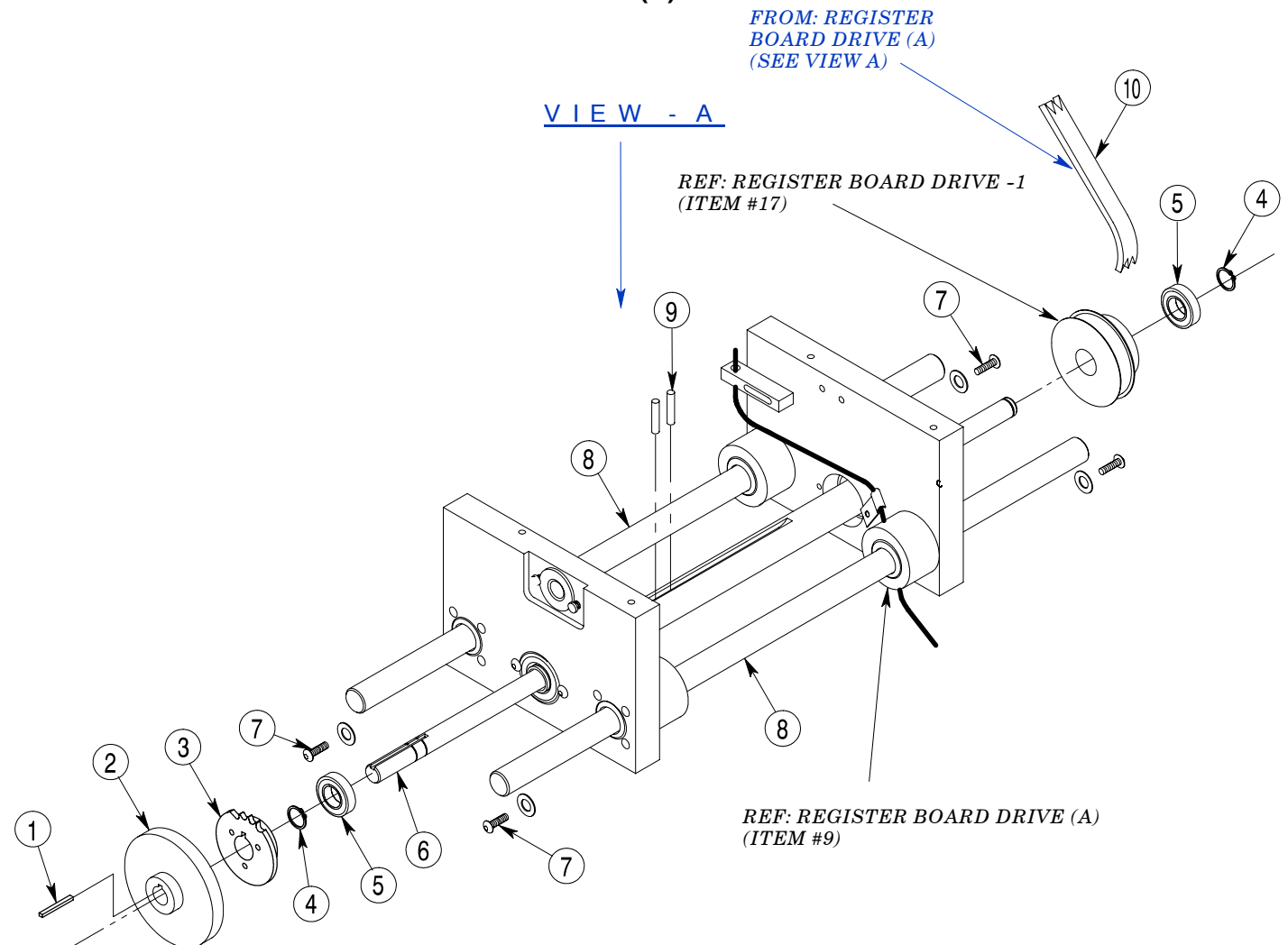
## 5 SCOTTY 5000 PARTS

ITEM #	PART #	DESCRIPTION	# REQ
1	HW-82030	SCREW, LOCK,	1
	HW-49130	WASHER, D-SHAPE,	1
2	PF-0184	NUT, ACME	1
3	F-2151	PLATE, L.H. CENTER	1
4	HW-66060	BALL, BEARING	2
5	HW-53150	SCREW, BUTTON HD.,	4
6	HW-51250	SCREW, SOC. HD. CAP,	16
7	HW-73030	SEAL	8
8	HW-65040	BUSHING, BALL	4
9	F-2155	BLOCK, BUSHING MOUNTING	4
10	F-2157	TUBE, DRIVE	1
	HW-61080	RING, RETAINING	1
11	HW-97010	FIBER OPTICS	1
12	F-2159	BRACKET, SWITCH	1
	HW-51230	SCREW, SOC. HD. CAP,	2
	HW-49040	WASHER, FLAT,	2

ITEM #	PART #	DESCRIPTION	# REQ
13	HW-71030	ROLLER, YOKE	1
	HW-51380	SCREW, SOC. HD. CAP,	1
	HW-49050	WASHER,	1
14	F-2158	BLOCK, TENSION	1
	HW-51380	SCREW, SOC. HD. CAP,	2
	HW-49100	WASHER, HARDENED,	2
15	F-2152	PLATE, R.H. CENTER	1
16	HW-95088	CHANNEL TRAC,	3
	HW-53140	SCREW, BUTTON HD.,	3
17	F-2154	PULLEY, TIMING,	1
	HW-52145	SCREW, SOC. SET,	1
18	PF-0183	SCREW, ADJUSTMENT	1
	HW-57090	PIN, SPRING,	1

19	F-2157	DRIVE TUBE	1
20	F-2156	DRIVE SHAPE	1

## 5.29 MIDDLE REGISTER BOARD DRIVE (B)





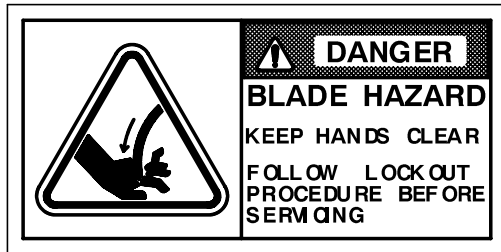


## 5 SCOTTY 5000 PARTS

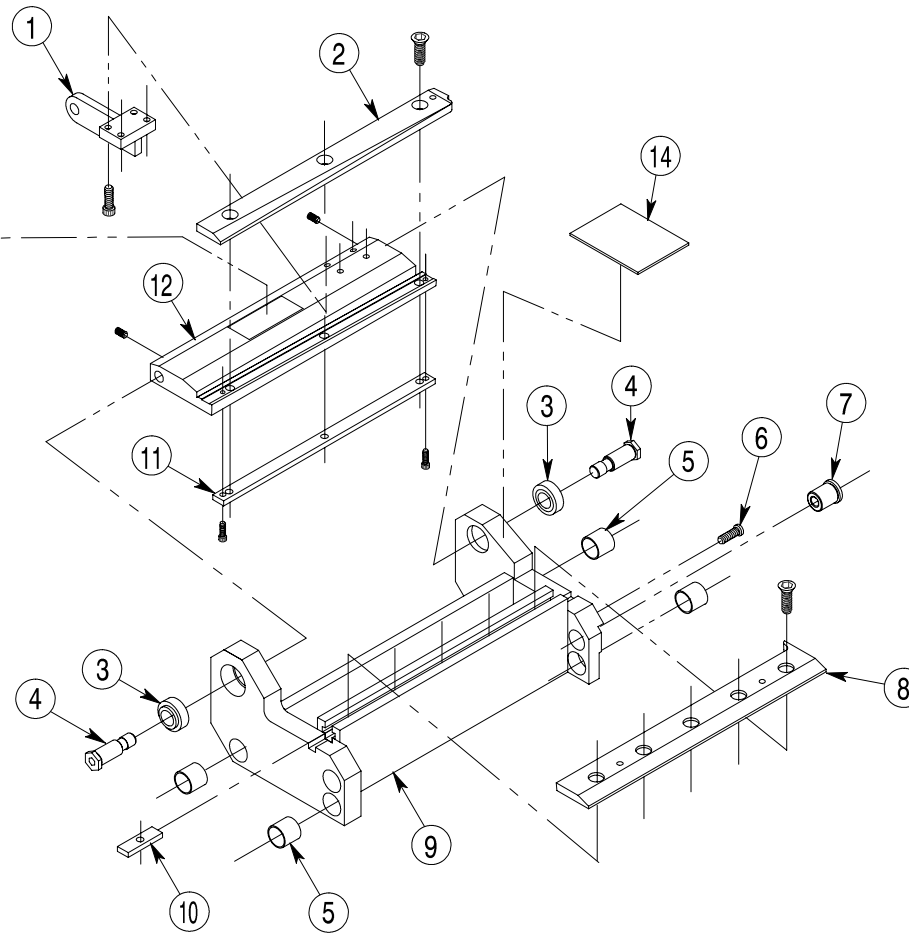
ITEM #	PART #	DESCRIPTION	# REQ
1	HW-59055	KEY, SQUARE,	1
2	F-2153-1	PULLEY, TIMING,	1
	HW-52130	SCREW, SOC. SET,	1
3	HW-87070	SPROCKET	1
	HW-52135	SCREW, SOC. SET,	1
4	HW-61050	RING, RETAINING	2

ITEM #	PART #	DESCRIPTION	# REQ
5	HW-66040	BALL BEARING	2
6	F-2156	SHAFT, DRIVE	1
7	HW-53150	SCREW, BUTTON HD.,	4
	HW-49040	WASHER, FLAT,	4
8	PF-7801	SHAFT, THOMSON,	2
9	HW-57190	PIN, SPRING,	2
10	HW-76020	GEARBELT	1

## 5.30 TAB CUTTER - KNIFE CARRIER (L.H.)



13



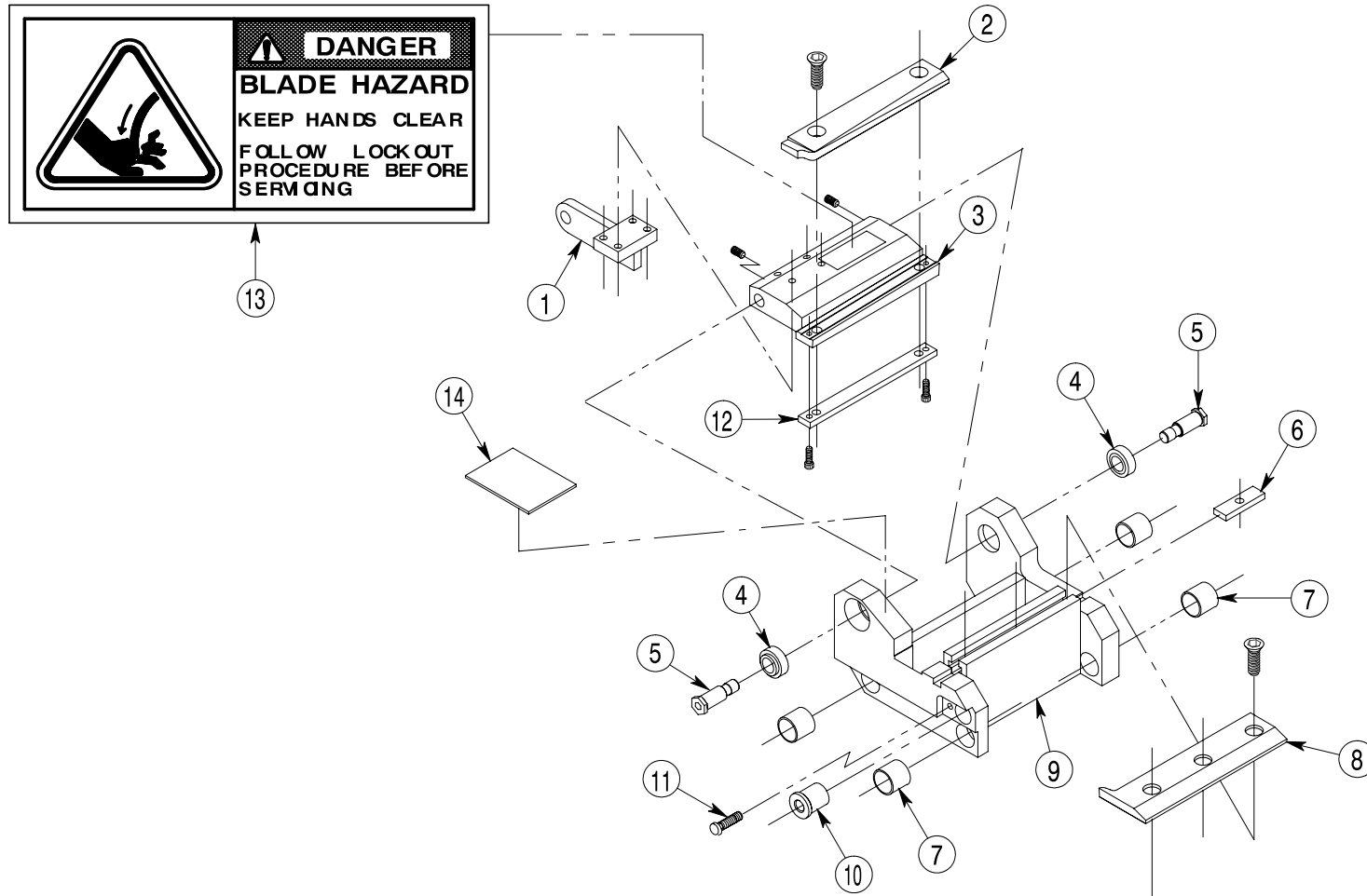


## 5 SCOTTY 5000 PARTS

ITEM #	PART #	DESCRIPTION	# REQ
1	F-0505	LEVER, KNIFE	1
	HW-51210	SCREW, SHC, 1/4-	3
2	C-0524	KNIFE, UPPER L.H.	1
	HW-54170	SCREW, FLAT HD.,	3
3	HW-66300	BEARING, ROLLER	2
	HW-66310	BEARING, ROLLER	2
4	F-0528	SCREW, SHOULDER	2
5	HW-64040	BEARING, BRONZE	4
6	HW-82030	SCREW, LOCKING	1

ITEM #	PART #	DESCRIPTION	# REQ
7	C-0507	NUT, ADJ. L.H. ACME THD.	1
8	C-0523	KNIFE, LOWER L.H	1
	HW-54150	SCREW, FLAT HD.,	5
9	F-0523	FRAME, KNIFE, L.H.	1
10	C-0527	PLATE, T - NUT	5
11	F-0515	PLATE, NUT LONG	1
	F-0520	SCREW, SHOULDER,	2
12	F-0526	KNIFE, CARRIER, L.H.	1
	HW-52020	SCREW, SOC SET,	2
13	C-0564	LABEL, CAUTION, BLADE HAZARD	1
14	F-0532	GUIDE, MAGNET	1

## 5.31 TAB CUTTER - KNIFE CARRIER (R.H.)



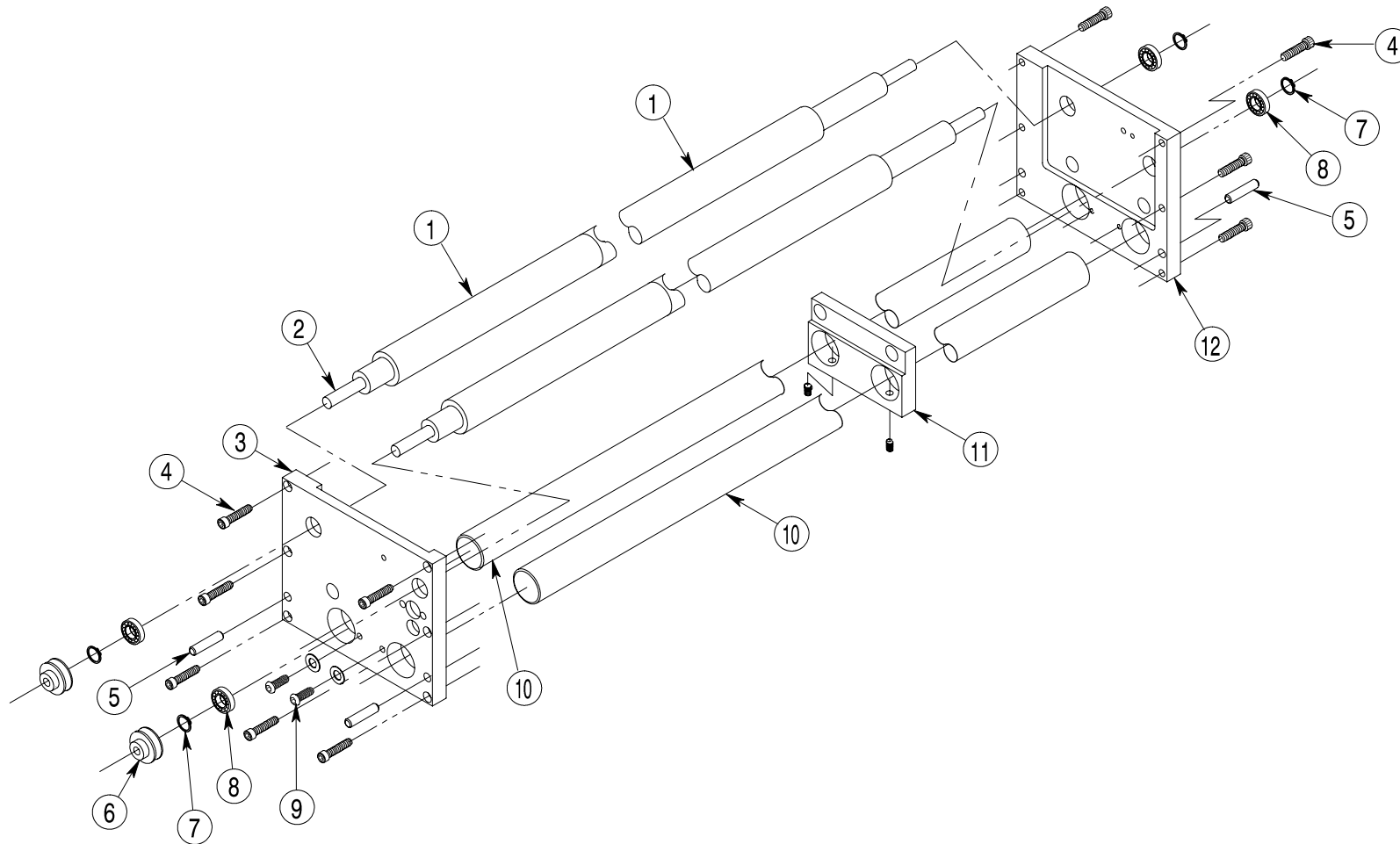


## 5 SCOTTY 5000 PARTS

ITEM #	PART #	DESCRIPTION	# REQ
1	F-0505	LEVER, KNIFE	1
	HW-51210	SCREW, SOC. SET,	3
2	C-0525	KNIFE, UPPER R.H.	1
	HW-54170	SCREW, FLAT HD.,	2
3	F-0527	KNIFE, CARRIER, R.H.	1
	HW-52020	SCREW, SOC SET,	2
4	HW-66300	BEARING, ROLLER	2
	HW-66310	BEARING, ROLLER	2
5	F-0528	SCREW, SHOULDER	2
6	C-0527	PLATE, T-NUT	3

ITEM #	PART #	DESCRIPTION	# REQ
7	HW-64040	BEARING, BRONZE	4
8	C-0526	KNIFE, LOWER R.H.	1
	HW-54150	SCREW, FLAT HD.,	3
9	F-0525	FRAME, KNIFE, R.H.	1
10	C-0215	NUT, ADJ. R.H. ACME THD.	1
11	HW-82030	SCREW, LOCKING	1
12	F-0516	PLATE, NUT SHORT	1
	F-0520	SCREW, SHOULDER,	2
13	C-0564	LABEL, CAUTION, BLADE HAZARD	1
14	F-0532	GUIDE, MAGNET	1

## 5.32 TAB CUTTER (A)



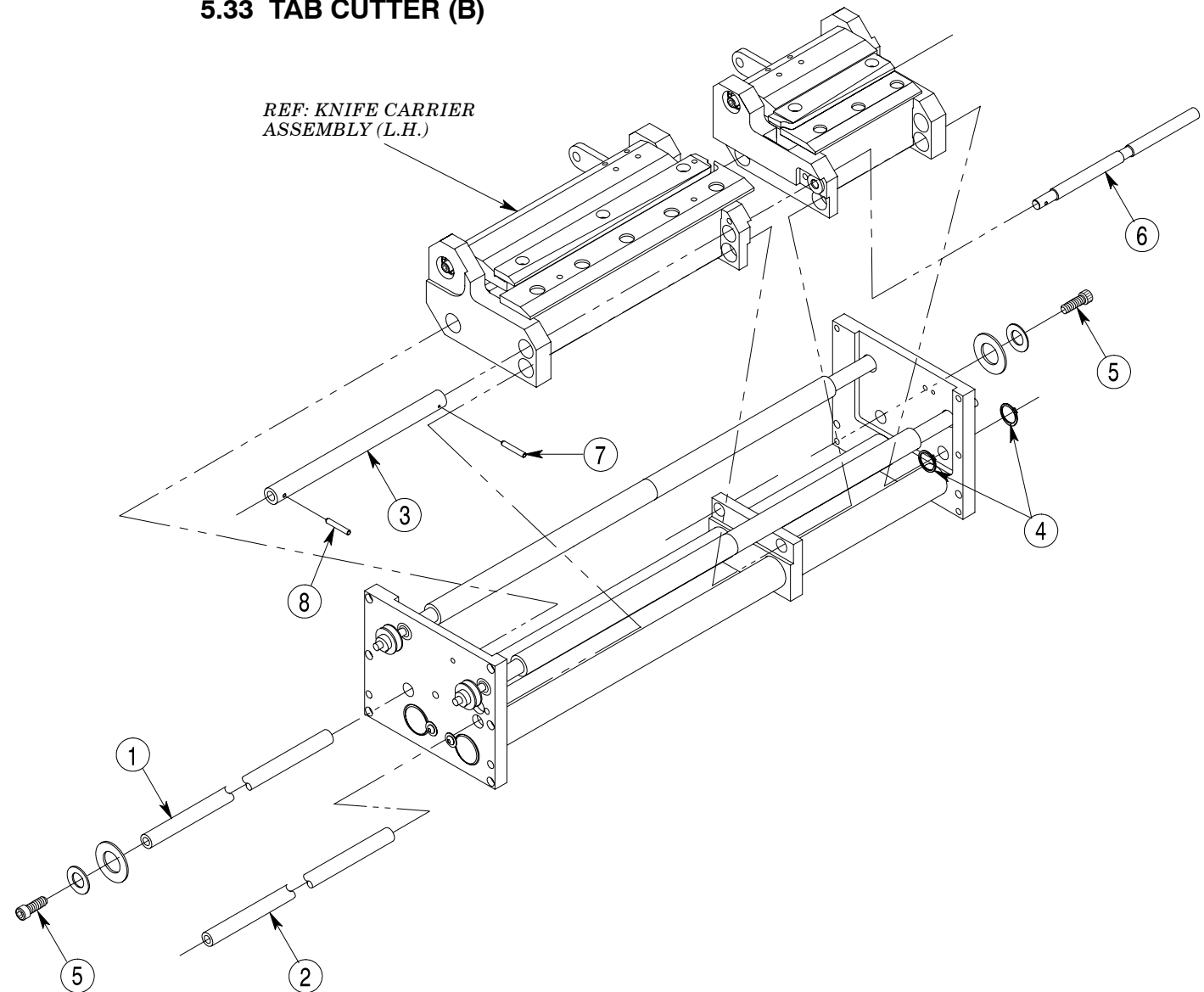


## 5 SCOTTY 5000 PARTS

ITEM #	PART #	DESCRIPTION	# REQ
1	F-0511	ROLLER, RUBBER	4
2	F-0512	SHAFT, ROLLER	2
3	F-0501	PLATE, REAR L.H.	1
4	HW-51480	SCREW, SOC. HD. CAP,	12
5	HW-56270	DOWEL, PIN,	4
6	F-0513	PULLEY, TIMING	2
7	HW-61040	RING, RETAINING	4
8	HW-66020	BEARING, BALL	4

ITEM #	PART #	DESCRIPTION	# REQ
9	HW-53140	SCREW, BUTTON HD.,	4
	HW-49040	WASHER, FLAT,	4
10	F-0510	SHAFT, BRACE	2
11	C-0553-C	PLATE, CENTER TIE	1
	HW-52100	SCREW, SOC. SET,	2
	HW-84020	BALL, NYLON,	2
12	F-0502	PLATE, REAR R.H.	1

## 5.33 TAB CUTTER (B)





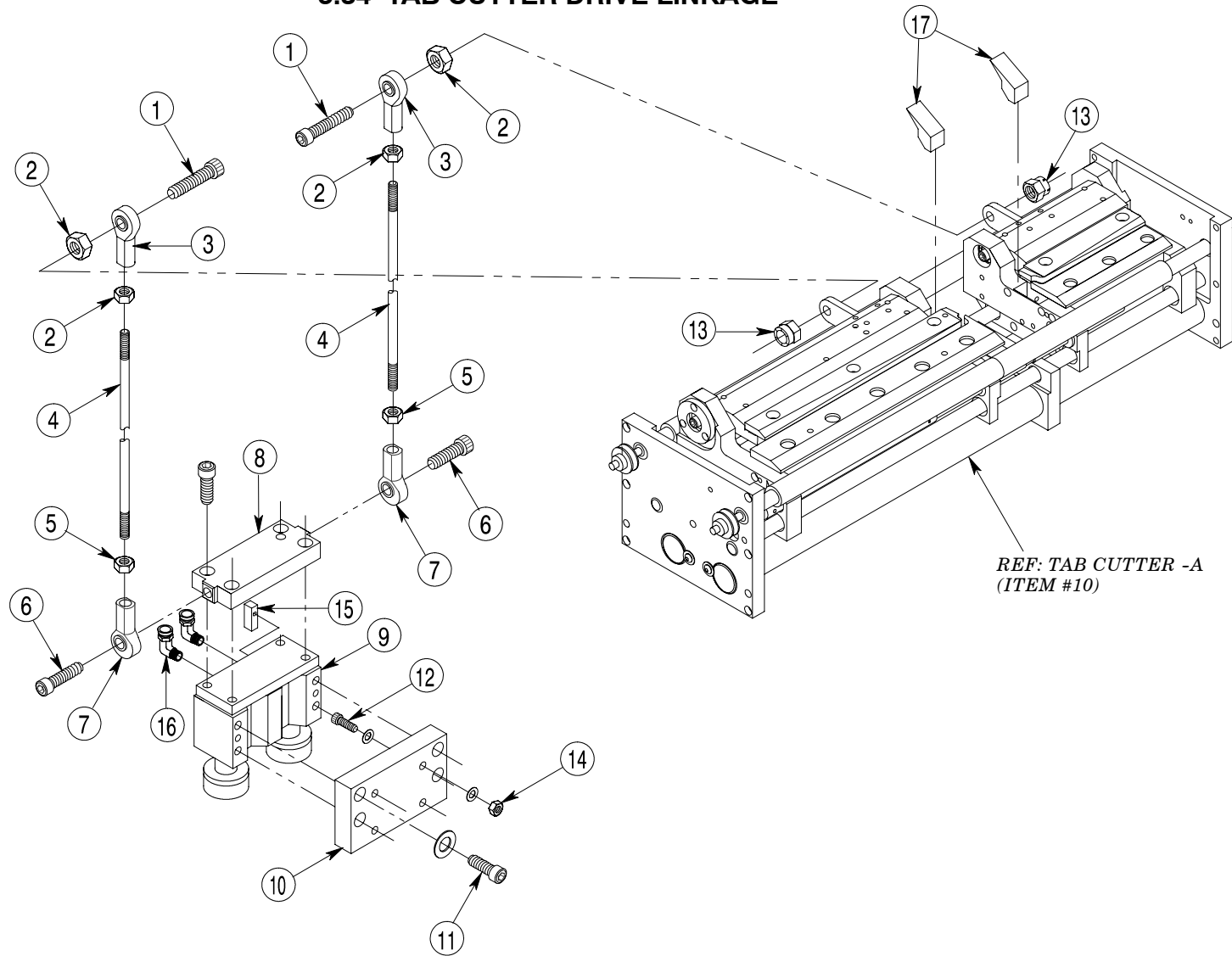


## 5 SCOTTY 5000 PARTS

ITEM #	PART #	DESCRIPTION	# REQ
1	F-0504	BAR, GUIDE REAR	1
2	F-0503	BAR, GUIDE FRONT	1
3	F-0514	COUPLING	1
4	HW-61060	RING, RETAINING	2
5	HW-51460	SCREW, SOC. HD. CAP,	2
	HW-49110	WASHER, FLAT,	2
	HW-49120	WASHER, FLAT	2

ITEM #	PART #	DESCRIPTION	# REQ
6	C-0508	SCREW, ACME	1
7	HW-57030	PIN, SPRING,	1
8	HW-57090	PIN, SPRING,	1

## 5.34 TAB CUTTER DRIVE LINKAGE



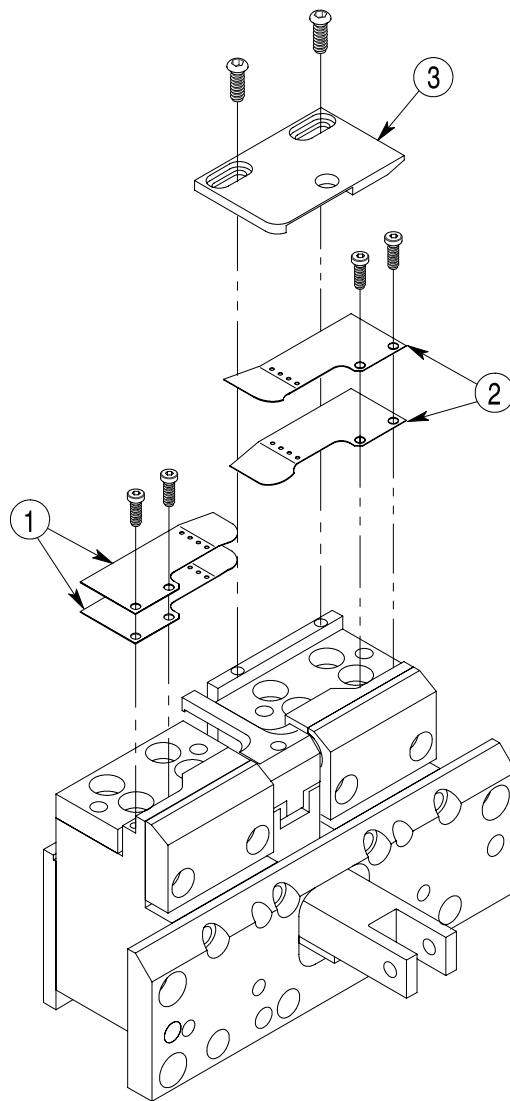


## 5 SCOTTY 5000 PARTS

ITEM #	PART #	DESCRIPTION	# REQ
1	HW-51570	SCREW, SOC. HD. CAP,	2
2	HW-60150	NUT, HEX HD. JAM,	4
3	HW-70050	ROD END, FEMALE	2
4	F-0508	ROD, TIE	2
5	HW-60160	NUT, HEX HD. JAM L.H.,	2
6	HW-51560	SCREW, SOC. HD. CAP,	2
7	HW-70060	ROD END, FEMALE L.H.	2
8	F-0509	BLOCK, MOUNTING	1
	HW-51580	SCREW, SOC. HD CAP,	4
9	F-0507	CYLINDER, AIR	1
10	F-0506-2	BLOCK, SPACER	1

ITEM #	PART #	DESCRIPTION	# REQ
11	HW-51590	SCREW, SOC. HD. CAP,	4
	HW-49072	WASHER, FLAT,	4
12	HW-51480	SCREW, SOC. HD. CAP,	4
	HW-49060	WASHER, FLAT,	4
13	HW-60260	NUT, LOCK,	2
14	HW-60220	NUT, LOCK,	4
	HW-49060	WASHER, FLAT,	4
15	HW-97040	REED SENSOR	1
16	HW-63040	ELBOW,	2
17	F-0521	INSERT	2

5.35 TIP DIE UNIT



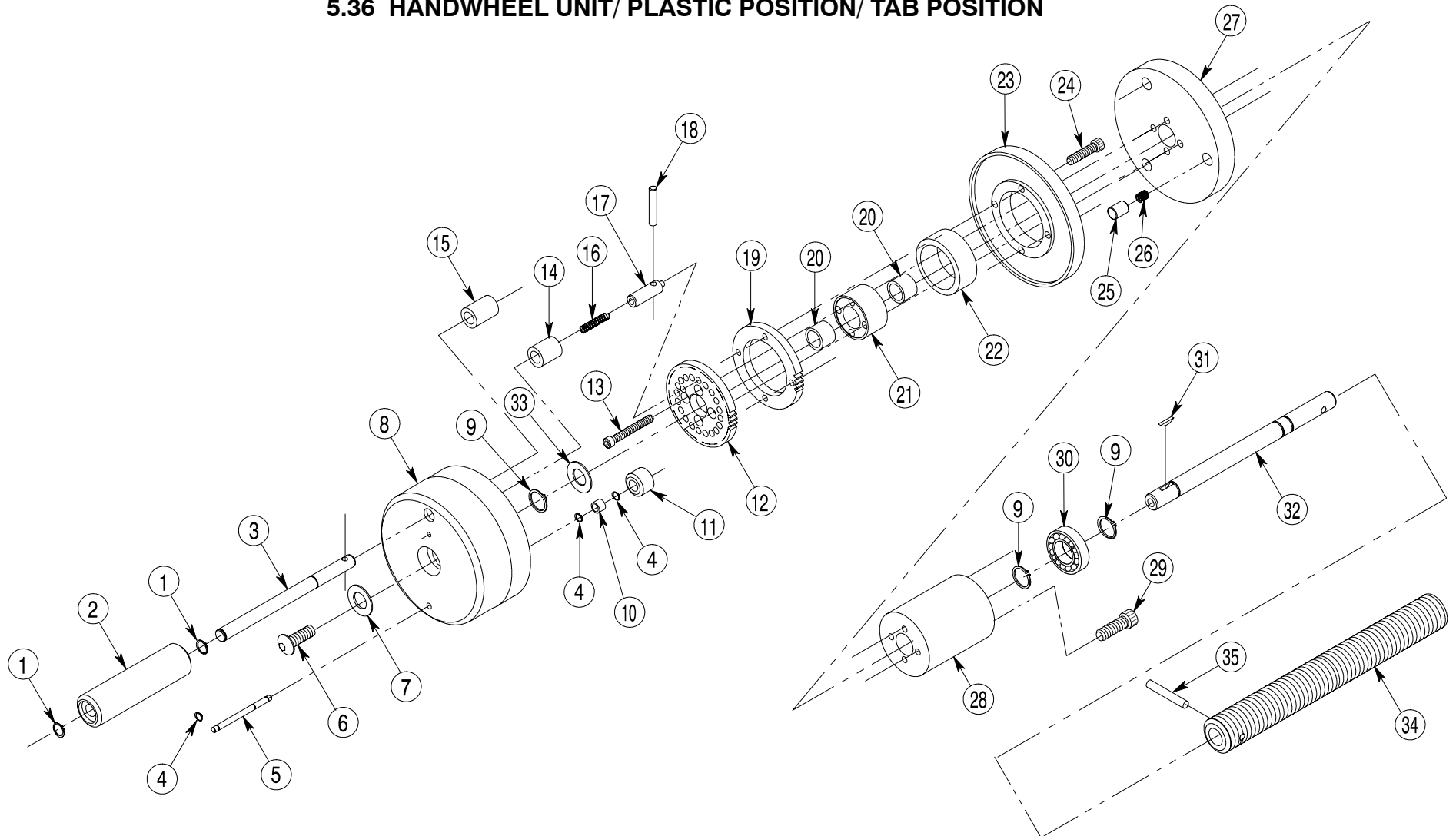


## 5 SCOTTY 5000 PARTS

ITEM #	PART #	DESCRIPTION	# REQ
1	C-0316	OPENER, PLASTIC, OUTER	2
	HW-51010	SCREW, SOC. HD. CAP,	2
2	C-0316-IS	OPENER, PLASTIC	2
	HW-51010	SCREW, SOC HD, CAP,	2

ITEM #	PART #	DESCRIPTION	# REQ
3	C-301	GUIDE, PLASTIC	1
	HW-53020	SCREW, BUTTON HD.,	2

## 5.36 HANDWHEEL UNIT/ PLASTIC POSITION/ TAB POSITION



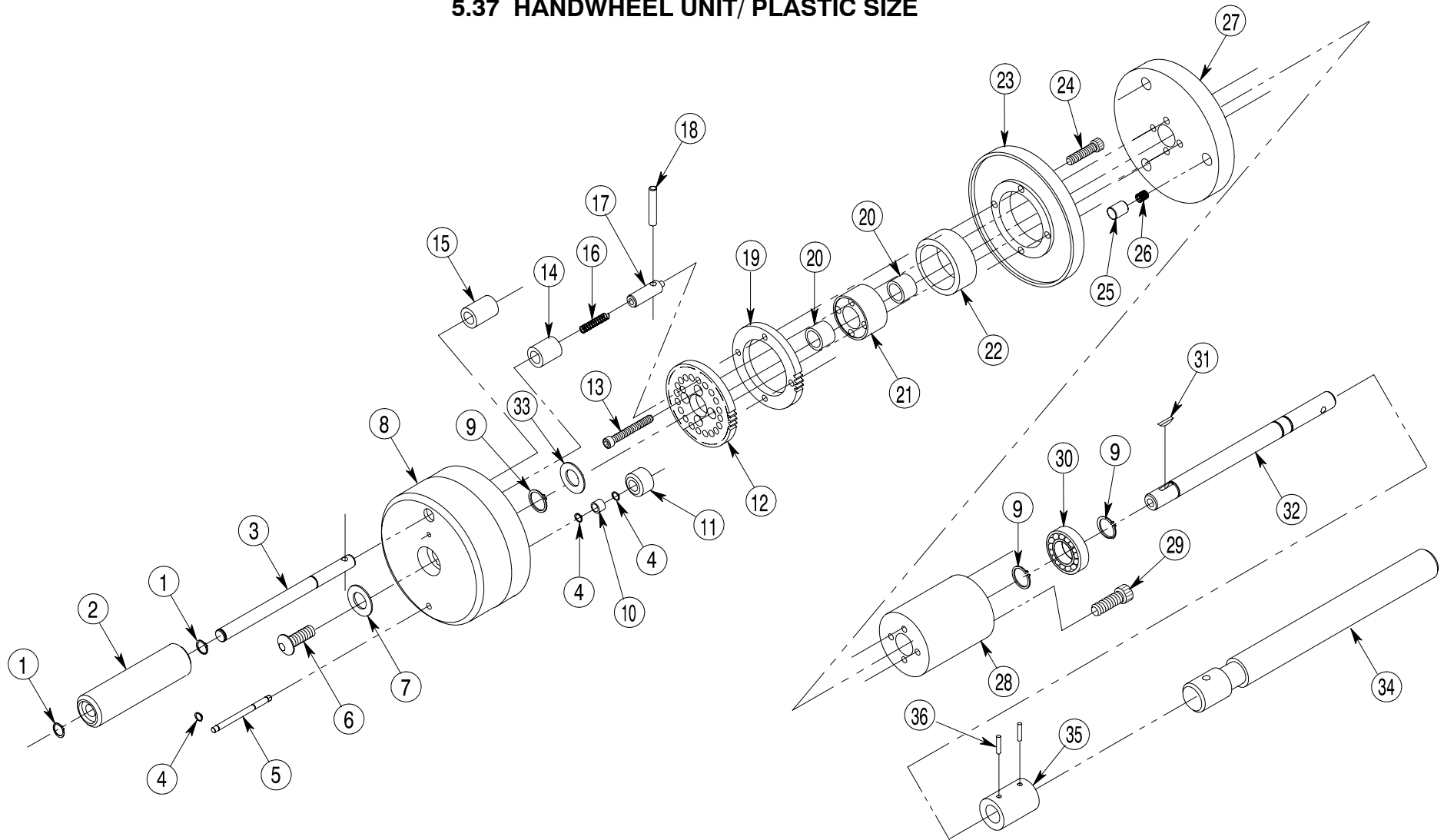


## 5 SCOTTY 5000 PARTS

ITEM #	PART #	DESCRIPTION	# REQ
1	HW-61030	RING, RETAINING,	4
2	C-0735	HANDLE	2
3	C-0733	ROD, HANDLE	2
4	HW-61010	RING, RETAINING,	6
5	C-0706	ROD, PINION	2
6	HW-53150	SCREW, BUTTON HD.,	2
7	HW-49040	WASHER, FLAT, SAE	2
8	C-0703	TURNCAP	2
	C-0748	TABLE, OUTER DIAL SCALE	2
9	HW-61040	RING, RETAINING,	6
10	HW-67010	BEARING, NEEDLE,	2
11	C-8808	GEAR, PINION	2
12	C-8802	GEAR, POSITIONING	2
13	HW-51150	SCREW, SOC. HD. CAP	8
14	HW-83010	BUSHING, STD.	2
15	HW-93020	BUSHING, STD.	2
16	HW-79110	SPRING,	2
17	C-0734	PLUNGER	2
18	HW-57110	PIN, SPRING	2
19	C-8803	VERNIER, RING SETTING	2

ITEM #	PART #	DESCRIPTION	# REQ
20	HW-67080	BEARING, NEEDLE,	4
21	C-0732	SPACER	2
22	HW-67140	BEARING, NEEDLE,	2
23	C-0707	RING, VERNIER	2
	C-0749	TABLE, INNER DIAL SCALE	2
24	HW-51080	SCREW, SOC. HD. CAP,	8
25	C-0702	PLUG, FRICTION	6
26	HW-79040	SPRING,	6
27	C-0704	PLATE, BACKING	2
28	C-0705	SPACER (REGISTER PLATE)	1
	C-0705	SPACER (MIDDLE REGISTER PLATE)	1
29	HW-51210	SCREW, SOC. HD. CAP,	4
30	HW-66020	BEARING. BALL.	2
31	HW-58010	KEY, WOODRUFF,	2
32	PF-0182	SHAFT, EXTENSION (REGISTER BOARD)	1
	PF-0182	SHAFT, EXTENSION (MIDDLE REGISTER BOARD)	1
33	HW-69175	THRUST RACE	2
34	PF-0183	SCREW, ADJUSTMENT	2
35	HW-57090	PIN, SPRING,	2

## 5.37 HANDWHEEL UNIT/ PLASTIC SIZE





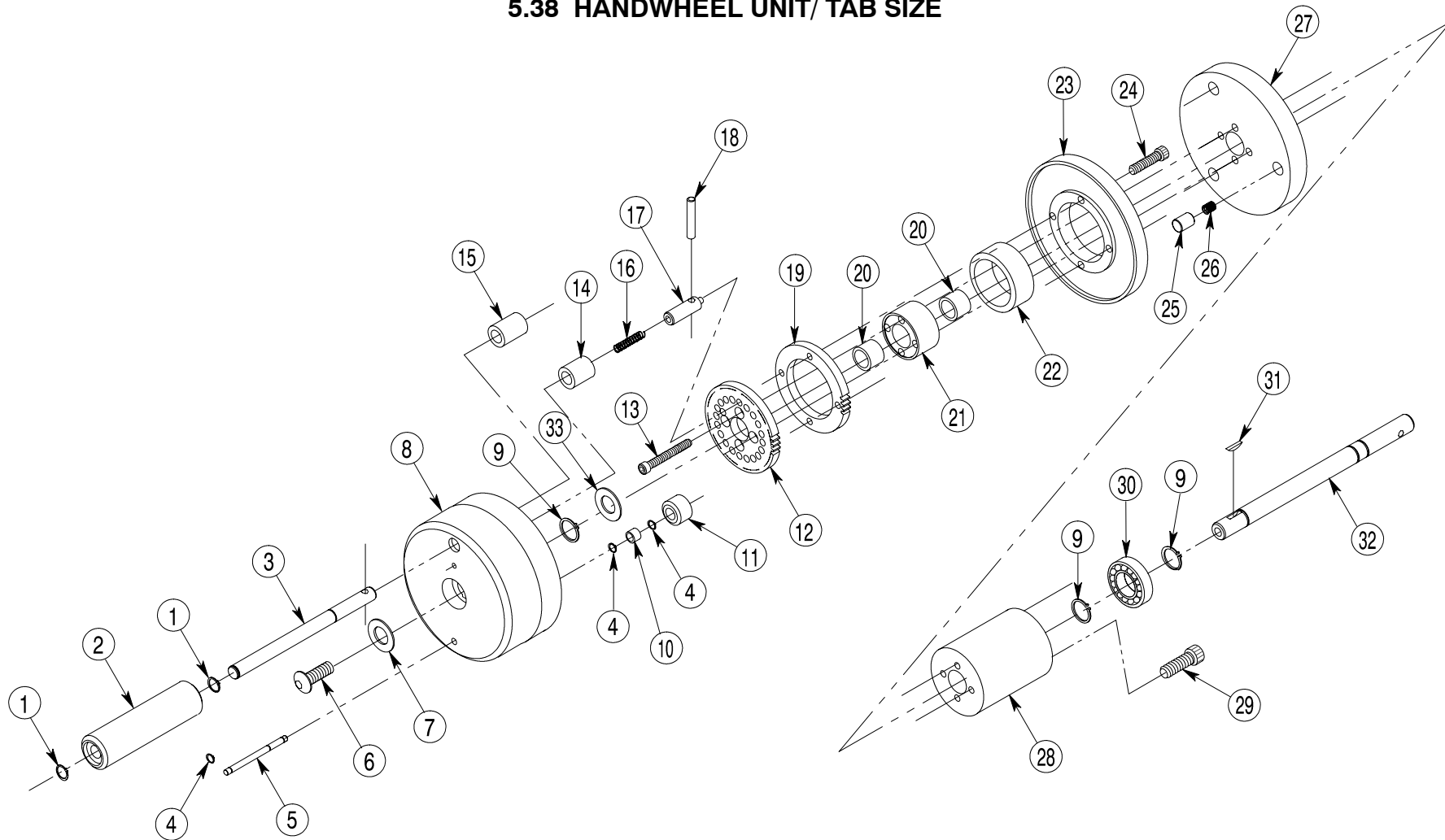


## 5 SCOTTY 5000 PARTS

ITEM #	PART #	DESCRIPTION	# REQ
1	HW-61030	RING, RETAINING,	2
2	C-0735	HANDLE	1
3	C-0733	ROD, HANDLE	1
4	HW-61010	RING, RETAINING,	3
5	C-0706	ROD, PINION	1
6	HW-53150	SCREW, BUTTON HD.,	1
7	HW-49040	WASHER, FLAT, SAE	1
8	C-0703	TURNCAP	1
	C-0748	LABLE, OUTER DIAL SCALE	1
9	HW-61110	RING, RETAINING,	3
10	HW-67010	BEARING, NEEDLE,	1
11	C-8808	GEAR, PINION	1
12	C-8802	GEAR, POSITIONING	1
13	HW-51150	SCREW, SOC. HD. CAP,	4
14	HW-83010	BUSHING, STD.	1
15	HW-83020	BUSHING, STD.	1
16	HW-79110	SPRING,	1
17	C-0734	PLUNGER	1
18	HW-57110	PIN, SPRING,	1

ITEM #	PART #	DESCRIPTION	# REQ
19	C-8803	VERNIER, RING SETTING	1
20	HW-67080	BEARING, NEEDLE,	2
21	C-0732	SPACER	1
22	HW-67140	BEARING, NEEDLE,	1
23	C-0707	RING, VERNIER	1
	C-0749	LABLE, INNER DIAL SCALE	1
24	HW-51080	SCREW, SOC. HD. CAP,	4
25	C-0702	PLUG, FRICTION	3
26	HW-79040	SPRING,	3
27	C-0704	PLATE, BACKING	1
28	C-0705	SPACER (PLASTIC DIAL)	1
29	HW-51210 *	SCREW, SOC. HD. CAP,	2
30	HW-66020	BEARING, BALL,	1
31	HW-58010	KEY, WOODRUFF,	1
32	C-0217	SHAFT, EXTENSION (PLASTIC DIAL)	1
33	HW-69175	THRUST RACE	1
34	C-0216	SCREW, ADJUSTMENT	1
35	C-0232	COUPLING	1
36	HW-57030	PIN, SPRING,	2

## 5.38 HANDWHEEL UNIT/ TAB SIZE





## 5 SCOTTY 5000 PARTS

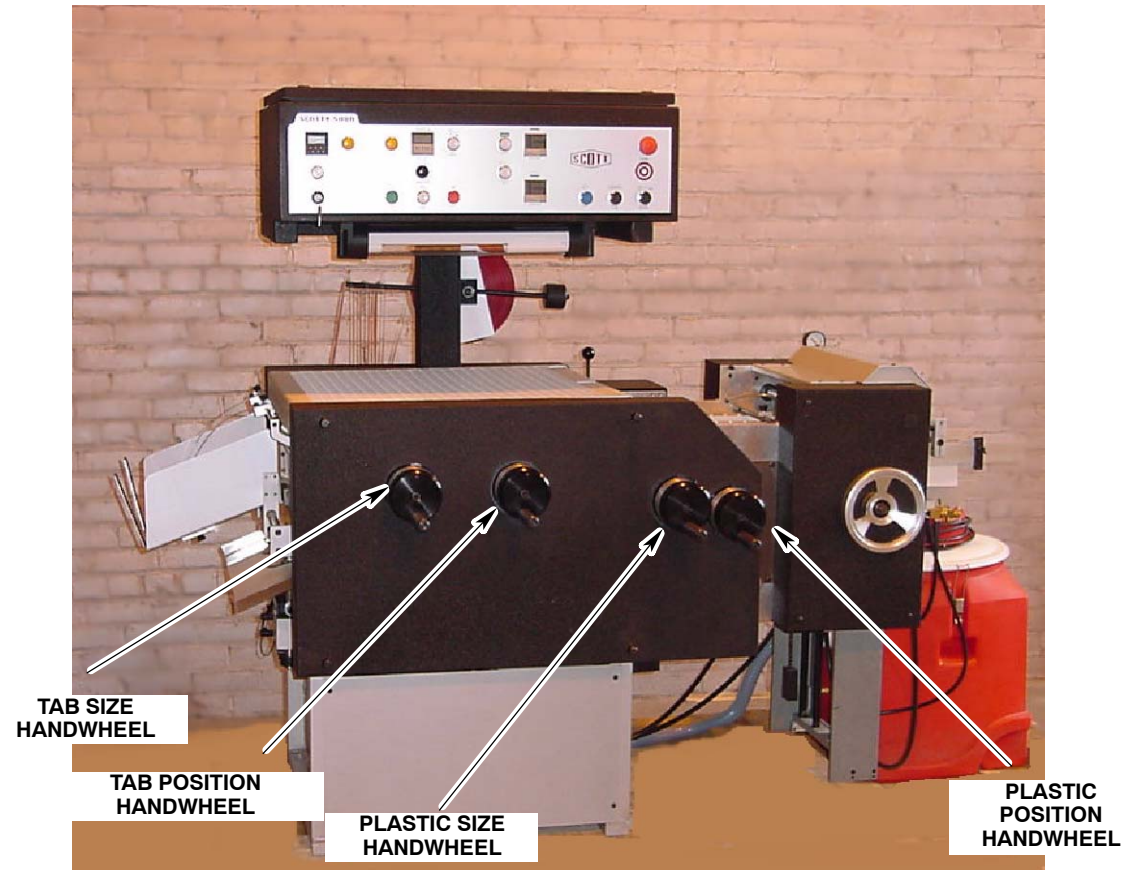
ITEM #	PART #	DESCRIPTION	# REQ
1	HW-61030	RING, RETAINING,	2
2	C-0735	HANDLE	1
3	C-0733	ROD, HANDLE	1
4	HW-61010	RING, RETAINING,	3
5	C-0706	ROD, PINION	1
6	HW-53150	SCREW, BUTTON HD.,	1
7	HW-49040	WASHER, FLAT, SAE	1
8	C-0703	TURNCAP	1
	C-0748	LABLE, OUTER DIAL SCALE	1
9	HW-61040	RING, RETAINING,	3
10	HW-67010	BEARING, NEEDLE,	1
11	C-8808	GEAR, PINION	1
12	C-8802	GEAR, POSITIONING	1
13	HW-51150	SCREW, SOC. HD. CAP,	4
14	HW-83010	BUSHING, STD.	1
15	HW-83020	BUSHING, STD.	1
16	HW-79110	SPRING,	1
17	C-0734	PLUNGER	1

ITEM #	PART #	DESCRIPTION	# REQ
18	HW-57110	PIN, SPRING,	1
19	C-8803	VERNIER, RING SETTING	1
20	HW-67080	BEARING, NEEDLE,	2
21	C-0732	SPACER	1
22	HW-67140	BEARING, NEEDLE,	1
23	C-0707	RING, VERNIER	1
	C-0749	LABLE, INNER DIAL SCALE	1
24	HW-51080	SCREW, SOC. HD. CAP,	4
25	C-0702	PLUG, FRICTION	3
26	HW-79040	SPRING	3
27	C-0704	PLATE, BACKING	1
28	F-0705	SPACER (TABCUTTER)	1
29	HW-51210	SCREW, SOC. HD. CAP,	4
30	HW-66020	BEARING. BALL,	1
32	F-0744	SHAFT, EXTENSION (TABCUTTER)	1
33	HW-69175	THRUST RACE	1

## 5 SCOTTY 5000 PARTS

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### 5.39 HANDWHEEL LOCATOR

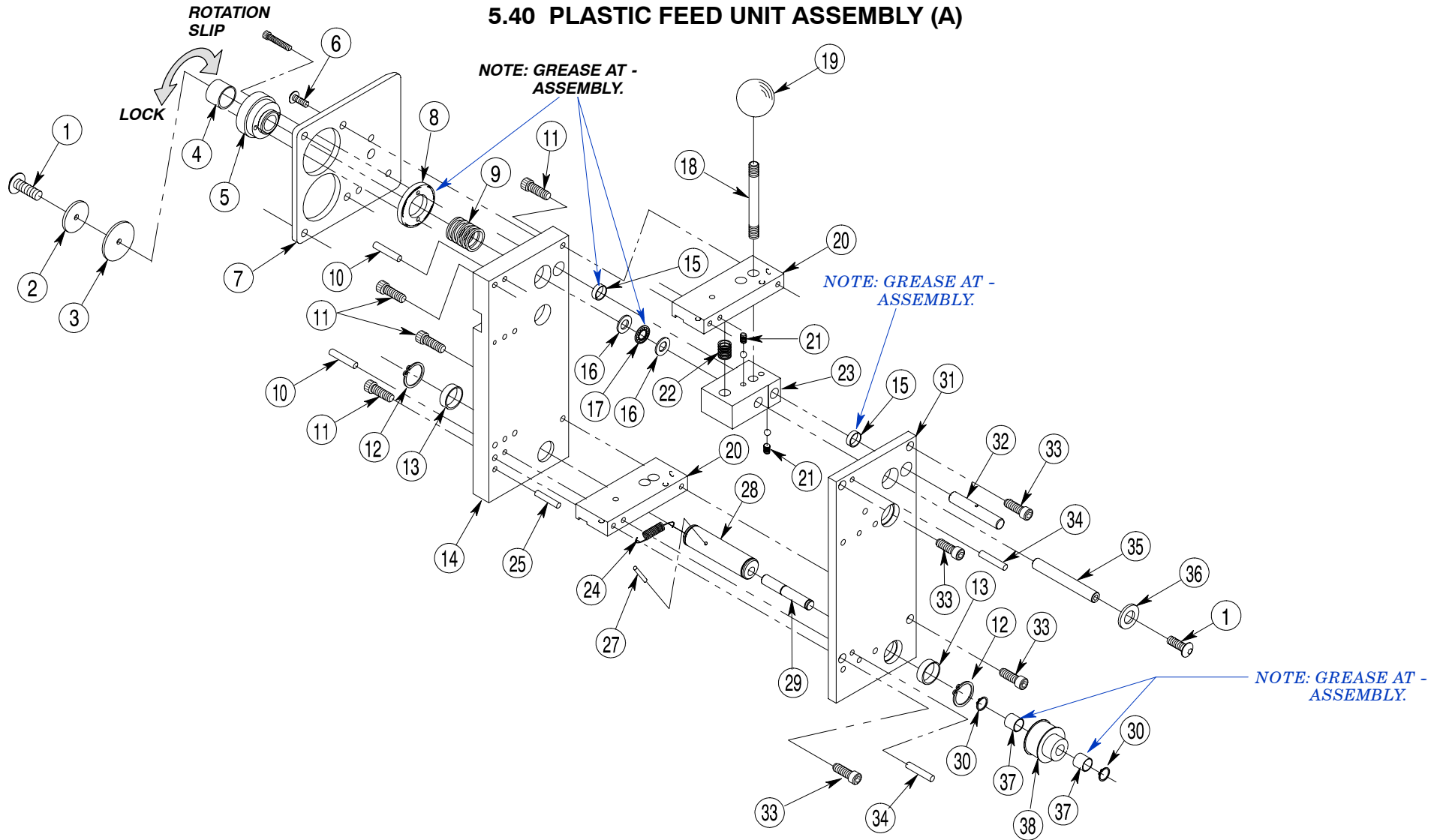




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## 5 SCOTTY 5000 PARTS

## 5.40 PLASTIC FEED UNIT ASSEMBLY (A)



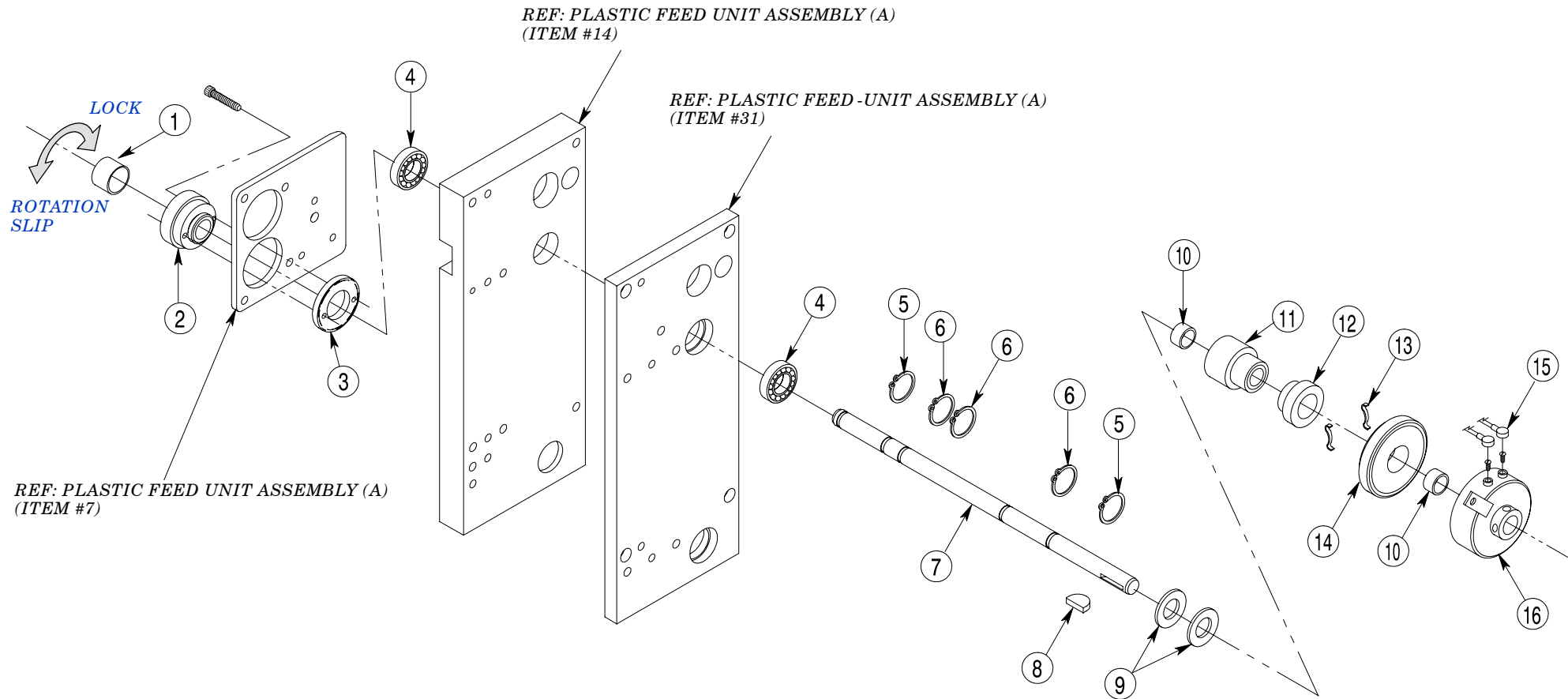


## 5 SCOTTY 5000 PARTS

ITEM #	PART #	DESCRIPTION	# REQ
1	HW-53150	SCREW, BUTTON HD.,	2
2	C-0136	PLATE, SLIP CLUTCH	1
3	C-0137	DISC, BRAKE	1
4	HW-72020	ROLLER, CLUTCH	1
5	C-0124-1	ROLLER	1
	HW-51120	SCREW, SOC. HD. CAP,	2
6	HW-53160	SCREW, BUTTON HD.,	4
7	C-0116	PLATE	1
8	C-8801-A	GEAR, FEED ROLLER	1
9	HW-79130	SPRING, COMPRESSED,	1
10	HW-57200	PIN, SPRING,	2
11	HW-51230	SCREW, SOC. HD. CAP,	4
12	HW-61060	RING, RETAINING	2
13	HW-67130	BEARING, NEEDLE	2
14	C-0129	PLATE, ROLLER MOUNTING	1
15	HW-67070	BEARING, NEEDLE	2
16	HW-69070	THRUST RACE,	2
17	HW-68010	THRUST BEARING,	1
18	HW-50010	STUD, THREADED	1
19	HW-81060	KNOB, PLASTIC BALL,	1

ITEM #	PART #	DESCRIPTION	# REQ
20	C-0122	BLOCK, SPACER	2
21	HW-52080	SCREW, SET,	2
	HW-84020	BALL, NYLON,	2
22	HW-79150	SPRING, COMPRESSED,	1
23	C-0123	BLOCK, UPPER FEED	1
24	HW-80100	SPRING,	1
25	HW-57210	PIN, SPRING,	1
26			
27	HW-57030	PIN, SPRING,	1
28	C-0130	SHAFT, BELT TENSION	1
29	C-0119	SHAFT	1
30	HW-61030	RING, RETAINING	2
31	C-0128	PLATE, SLIDE MOUNTING	1
32	C-0110	ROD, PIVOT	1
33	HW-51200	SCREW, SOC. HD. CAP,	4
34	HW-57170	PIN, SPRING	2
35	C-0121	SHAFT, UPPER	1
36	HW-69140	THRUST RACE	1
37	HW-67030	BEARING, NEEDLE	2
38	HW-86020	PULLEY, TIMING GEAR,	1

## 5.41 PLASTIC FEED UNIT ASSEMBLY (B)





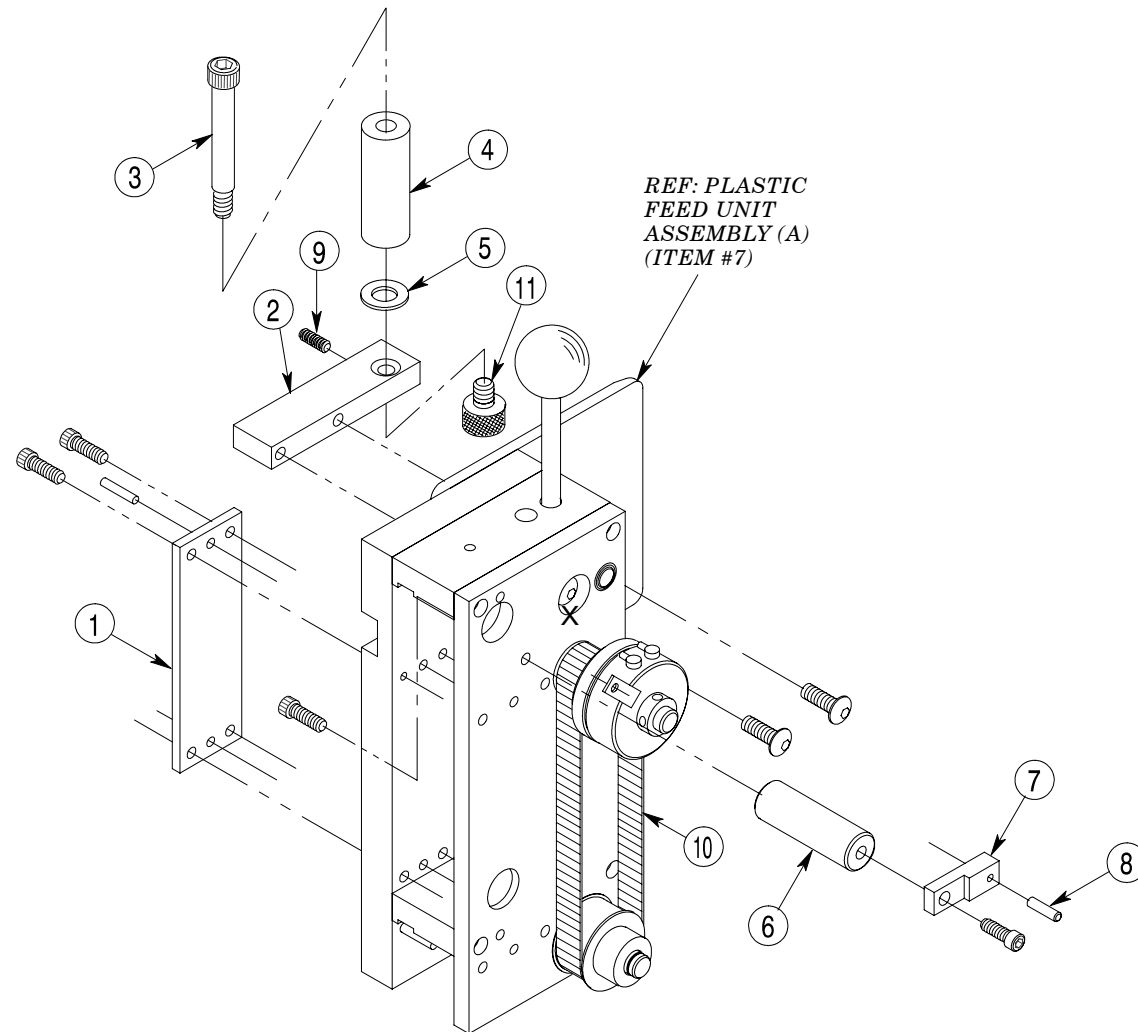


## 5 SCOTTY 5000 PARTS

ITEM #	PART #	DESCRIPTION	# REQ
1	HW-72020	ROLLER, CLUTCH	1
2	C-0124-1	ROLLER	1
	HW-51120	SCREW, SOC. HD. CAP,	2
3	C-8801-A	GEAR, FEED ROLLER	1
4	HW-66020	BEARING, BALL	2
5	HW-61040	RING, RETAINING	2
6	HW-61110	RING, RETAINING	3
7	C-0120	SHAFT, LOWER FEED	1
8	HW-58010	KEY, WOODRUFF	1
9	HW-69070	THRUST RACE	2

ITEM #	PART #	DESCRIPTION	# REQ
10	HW-67070	BEARING, NEEDLE	2
11	C-8608	PULLEY, GEARBELT	1
12	C-9104	ARMATURE, HUB	1
13	HW-91060	ARMATURE RELEASE, SPRING	2
14	HW-91020	ARMATURE DISC,	1
15	HW-91040	SCREW & INSULATORS	1 SET
16	HW91010	CLUTCH, ELECTRIC	1

## 5.42 PLASTIC FEED ASSEMBLY (C)



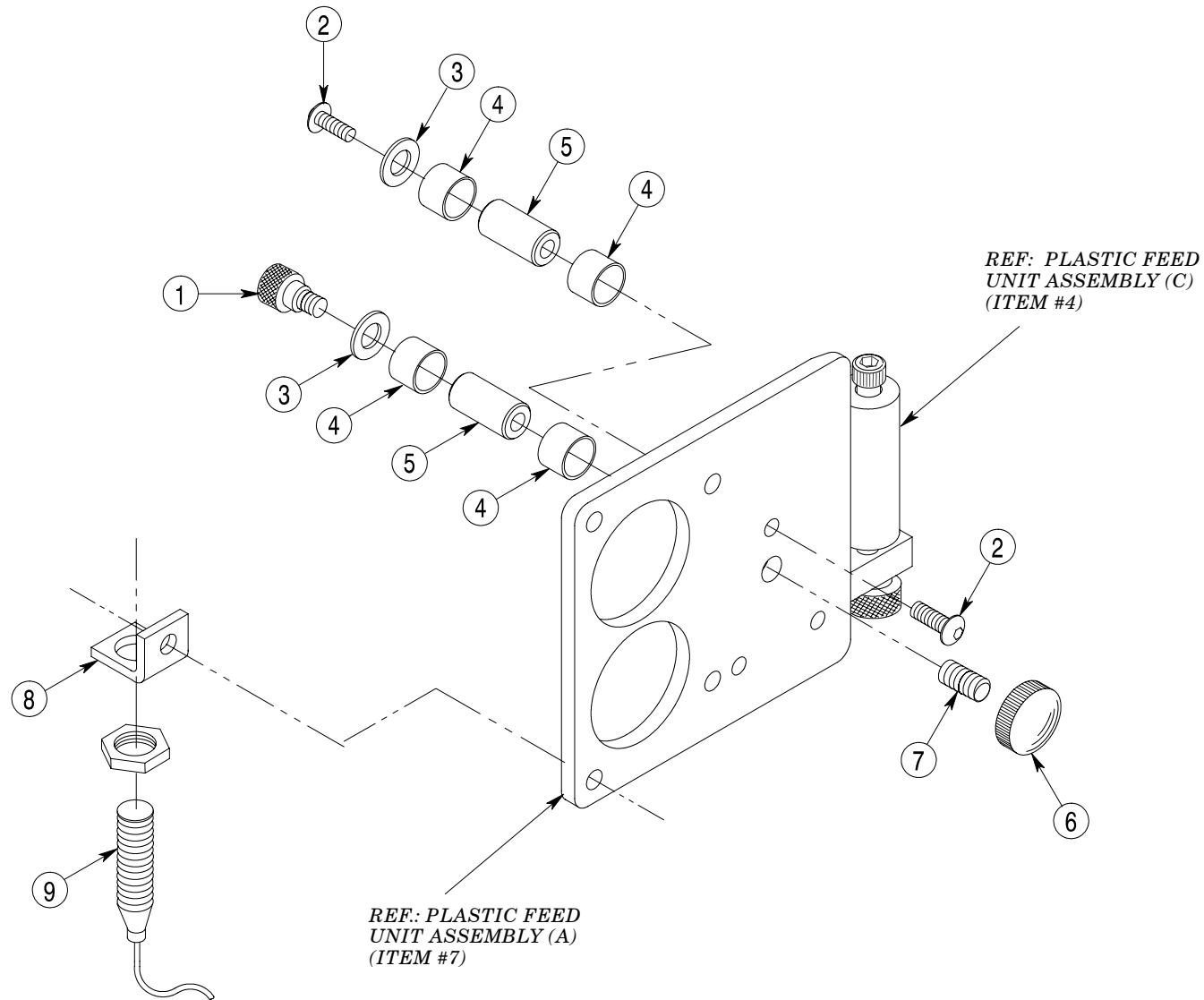


## 5 SCOTTY 5000 PARTS

ITEM #	PART #	DESCRIPTION	# REQ
1	C-0133	SPACER, PLASTIC FEED MOUNTING	1
	HW-51250	SCREW, SOC. HD. CAP,	4
	HW-57260	PIN, SPRING,	2
2	F-0102	BAR, PLASTIC TENSION ROLLER MTG.	1
	HW-53160	SCREW, BUTTON HD.,	2
3	HW-55090	SCREW, SHOULDER,	1
4	C-0125	ROLLER, DRAG	1
5	HW-69160	THRUST RACE	1

ITEM #	PART #	DESCRIPTION	# REQ
6	C-0113	POST, SPACER	1
	HW-51210	SCREW, SOC HD. CAP,	1
7	C-0114	LINK, CLUTCH	1
	HW-51200	SCREW, SOC. HD. CAP,	1
8	HW-57030	PIN, SPRING,	1
9	HW-52350	SCREW, SOC SET W/ NYLON TIP	1
10	HW-76010	BELT, GEAR	1
11	F-0101	KNOB, ADJUSTABLE	1

## 5.43 PLASTIC FEED UNIT - ROLLERS



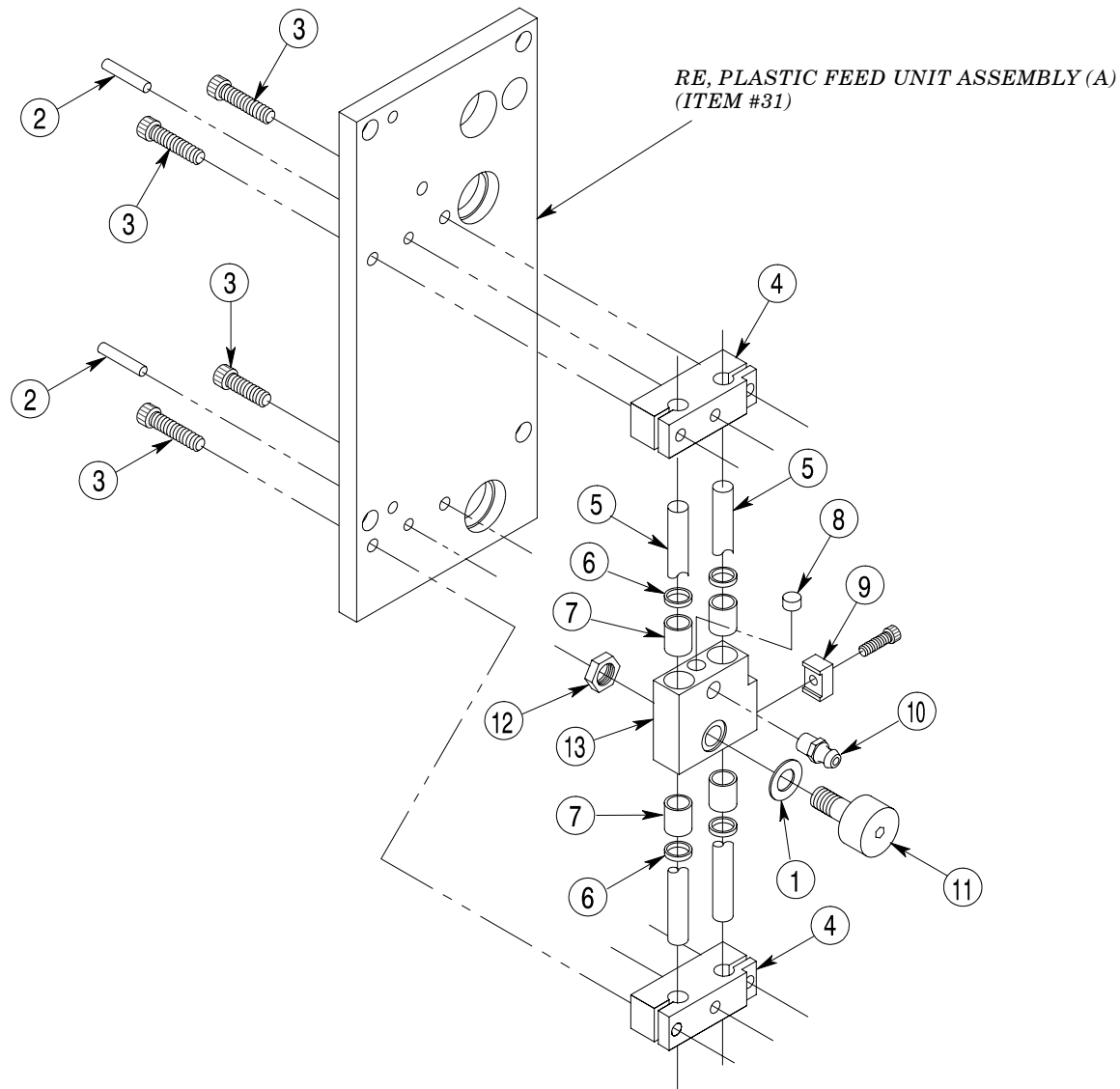


## 5 SCOTTY 5000 PARTS

ITEM #	PART #	DESCRIPTION	# REQ
1	HW-55200	KNOB, KNURLED,	1
2	HW-53180	SCREW, BUTTON HD.,	2
3	HW-69140	THRUST RACE	2
4	HW-67070	BEARING, NEEDLE	4
5	C-0117	SHAFT, FOLDING ROLLER	2

ITEM #	PART #	DESCRIPTION	# REQ
6	HW-81070	KNOB, KNURLED	1
7	HW-52150	SCREW, SOC SET,	1
8	C-0138	BRACKET, SENSOR	1
9	HW-97030	SENSOR, ULTRASONIC	1

### 5.44 PLASTIC FEED - SLIDE





## 5 SCOTTY 5000 PARTS

ITEM #	PART #	DESCRIPTION	# REQ
1	HW-69160	RACE, THRUST	1
2	HW-57170	PIN, SPRING,	2
3	HW-51240	SCREW, SOC. HD. CAP,	4
4	C-0109	BLOCK, PLASTIC FEED SLIDE	2
5	C-7801	ROD, SLIDE	2
6	HW-73010	SEAL, THOMSON	4
7	HW-65010	BUSHING, BALL	4

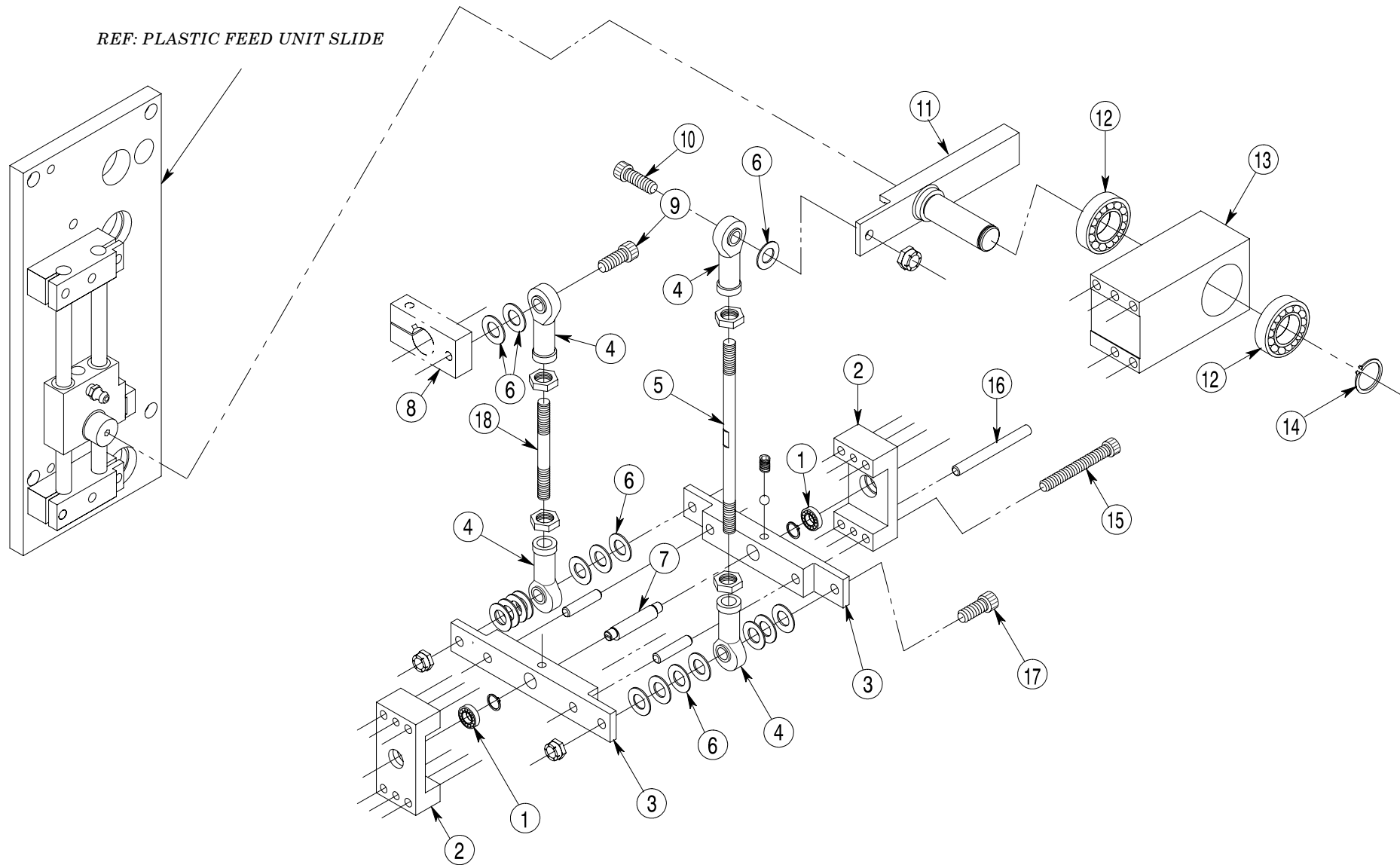
ITEM #	PART #	DESCRIPTION	# REQ
8	HW-63080	PLUG,	1
9	C-0112	CLAMP, TIMING BELT	1
	HW-51090	SCREW, SOC. HD., CAP,	1
10	HW-63100	FITTING, GREASE,	1
11	HW-71010	CAM, FOLLOWER	1
12	HW-60090	NUT, HEX HD.,	1
13	C-0111	SLIDE	1

## 5 SCOTTY 5000 PARTS

5-92

### 5.45 PLASTIC FEED - DRIVE

REF: PLASTIC FEED UNIT SLIDE





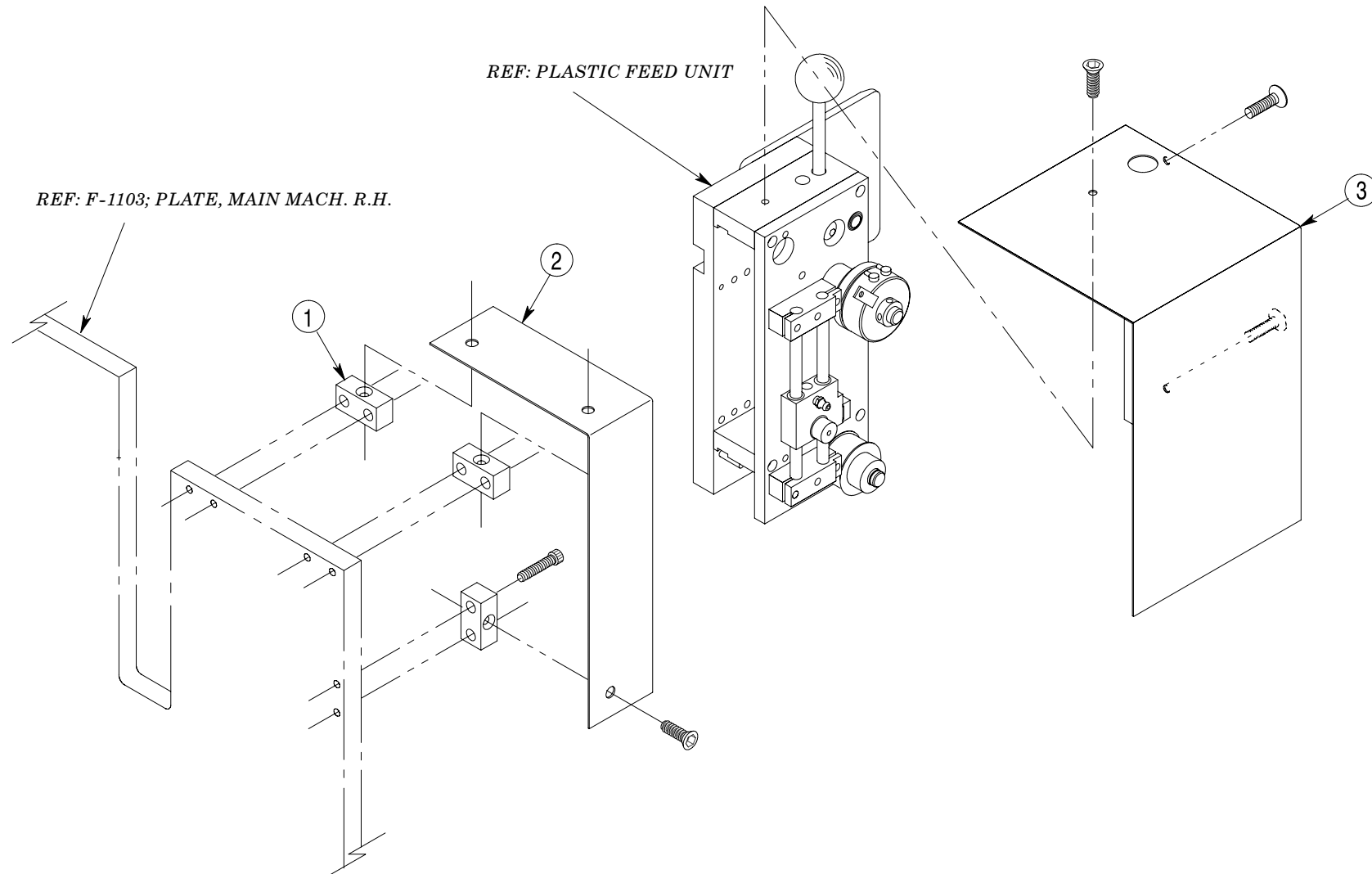


## 5 SCOTTY 5000 PARTS

ITEM #	PART #	DESCRIPTION	# REQ
1	HW-66010	BEARING, BALL	2
2	C-0104	BLOCK, ROCKER ARM MOUNTING	2
3	C-0103	ARM, ROCKER	2
	HW-57250	PIN, SPRING,	2
	HW-52080	SCREW, SET,	1
	HW-84020	BALL, NYLON,	1
4	HW-70030	ROD END, FEMALE	4
	HW-60070	NUT, HEX,	4
5	C-0106	ROD, CONNECTING	1
6	HW-49050	WASHER, FLAT, SAE	17
7	C-0134	PIN, ROCKER ARM PIVOT	1
	HW-69144	THRUST WASHER	2
8	C-0102	ARM	REF.
9	HW-51390	SCREW, SOC. HD., CAP,	1

ITEM #	PART #	DESCRIPTION	# REQ
10	HW-51380	SCREW, SOC. HD., CAP,	1
	HW-60200	NUT, NYLON INSERT,	1
11	C-0115-A	SLIDE, ARM WELDMENT	1
12	HW-66120	BEARING, BALL	2
13	C-0108	BLOCK, SLIDE ARM BEARING	1
	HW-51380	SCREW, SOC. HD. CAP,	3
	HW-57250	PIN, SPRING,	2
14	HW-61140	RING, RETAINING	1
15	HW-51450	SCREW, SOC. HD., CAP,	4
16	HW-57280	PIN, SPRING,	2
17	HW-51410	SCREW, SOC. HD. CAP,	2
	HW-60200	NUT, NYLON INSERT,	2
18	HW-52212	STUD, THREADED,	1

## 5.46 PLASTIC FEED - COVERS & GUARDS



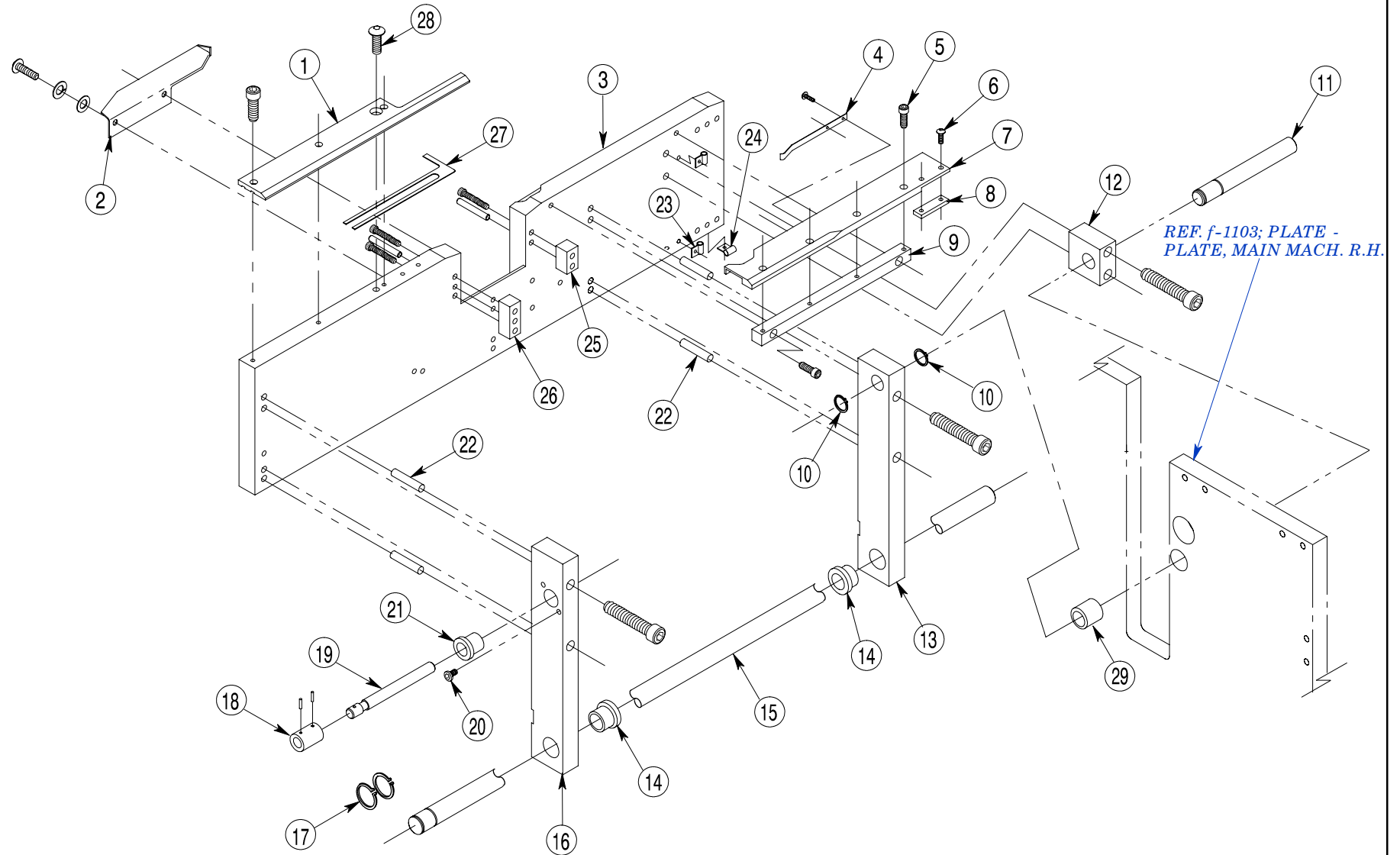


## 5 SCOTTY 5000 PARTS

ITEM #	PART #	DESCRIPTION	# REQ
1	C-1010	BLOCK, MOUNTING	3
	HW-51210	SCREW, SOC. HD. CAP,	6
2	C-1003	GUARD, PLASTIC FEED	1
	HW-54090	SCREW, FLAT HD.,	3

ITEM #	PART #	DESCRIPTION	# REQ
3	C-0135	GUARD	1
	HW-53150	SCREW, BUTTON HD.,	3

## 5.47 PLASTIC CUT - BASE



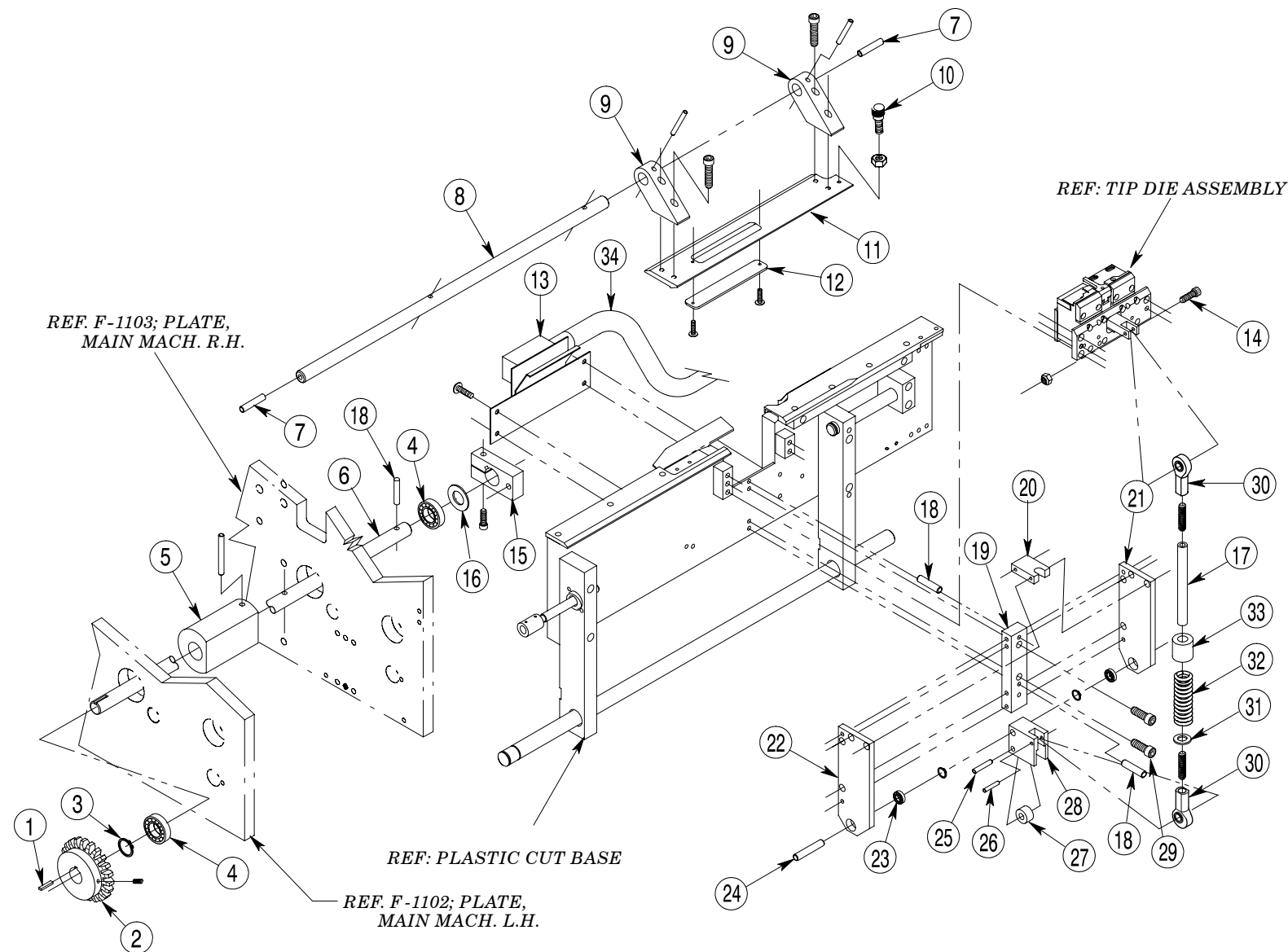


## 5 SCOTTY 5000 PARTS

ITEM #	PART #	DESCRIPTION	# REQ
1	C-0244	PLATE, GUIDE	1
	HW-51080	SCREW, SOC. HD. CAP,	3
2	C-0239	GUIDE, LOWER TIP	1
	HW-53060	SCREW, BUTTON HD.,	2
	HW-49220	WASHER, LOCK	2
	HW-49030	WASHER, FLAT	2
3	C-0243	PLATE, PLASTIC FEED & CUT	1
4	C-0211	SIDE GUIDE (FOR 1-5/8" MYLAR)	1
	C-0246	SIDE GUIDE (FOR 1" MYLAR)	1
	HW-53015	SCREW, BUTTON HD.,	2
5	HW-51080	SCREW, SOC. HD. CAP,	4
6	HW-53060	SCREW, BUTTON HD.,	2
7	C-0242	PLATE, PLASTIC RETAINER	1
8	C-0132	PLATE, TAPPING	1
9	C-0227	ADAPTER, PLASTIC RETAINER	1
	HW-51210	SCREW, SOC. HD. CAP,	2
10	HW-61130	RING, RETAINING	2
11	C-0229	SHAFT, RETAINER	1
12	C-0228	RETAINER, SHAFT	1
	HW-51430	SCREW, SOC. HD. CAP,	2
13	C-0224	GUIDE, BAR BRACKET, R.H.	1
	HW-51430	SCREW, SOC. HD. CAP	2
14	HW-64070	BUSHING, BRONZE	2

ITEM #	PART #	DESCRIPTION	# REQ
15	C-0219	SHAFT, BAR	1
16	C-0218	GUIDE, BAR BRACKET, L.H.	1
	HW-51430	SCREW, SOC. HD. CAP,	2
17	HW-61150	RING, RETAINING	2
18	C-0232	COUPLING	1
	HW-57030	PIN, SPRING,	2
19	C-0216	ACME SCREW, ADJ.	1
20	HW-82030	SCREW, LOCK	1
21	C-0215	NUT, ADJ. R.H. ACME THREAD	1
22	HW-57250	PIN, SPRING,	4
23	HW-95091	CLAMP- NYLON,	2
	HW-53060	SCREW, BUTTON HEAD,	2
24	HW-95090	CLAMP, NYLON,	1
	HW-53060	SCREW, BUTTON HD.,	1
25	C-0315	BLOCK, MOUNTING R/H	1
	HW-56140	PIN, DOWEL	1
	HW-51230	SCREW, SOC HD. CAP,	1
26	C-0307	BLOCK, MOUNTING L/H	1
	HW-56140	PIN, DOWEL,	1
	HW-51230	SCREW, SOC HD. CAP,	2
27	C-0245	STOP, PLASTIC	1
28	HW-53205	SCREW, BUTTON HD.,	1
29	HW-64010	BUSHING, BRONZE	1

## 5.48 PLASTIC CUT ASSEMBLY



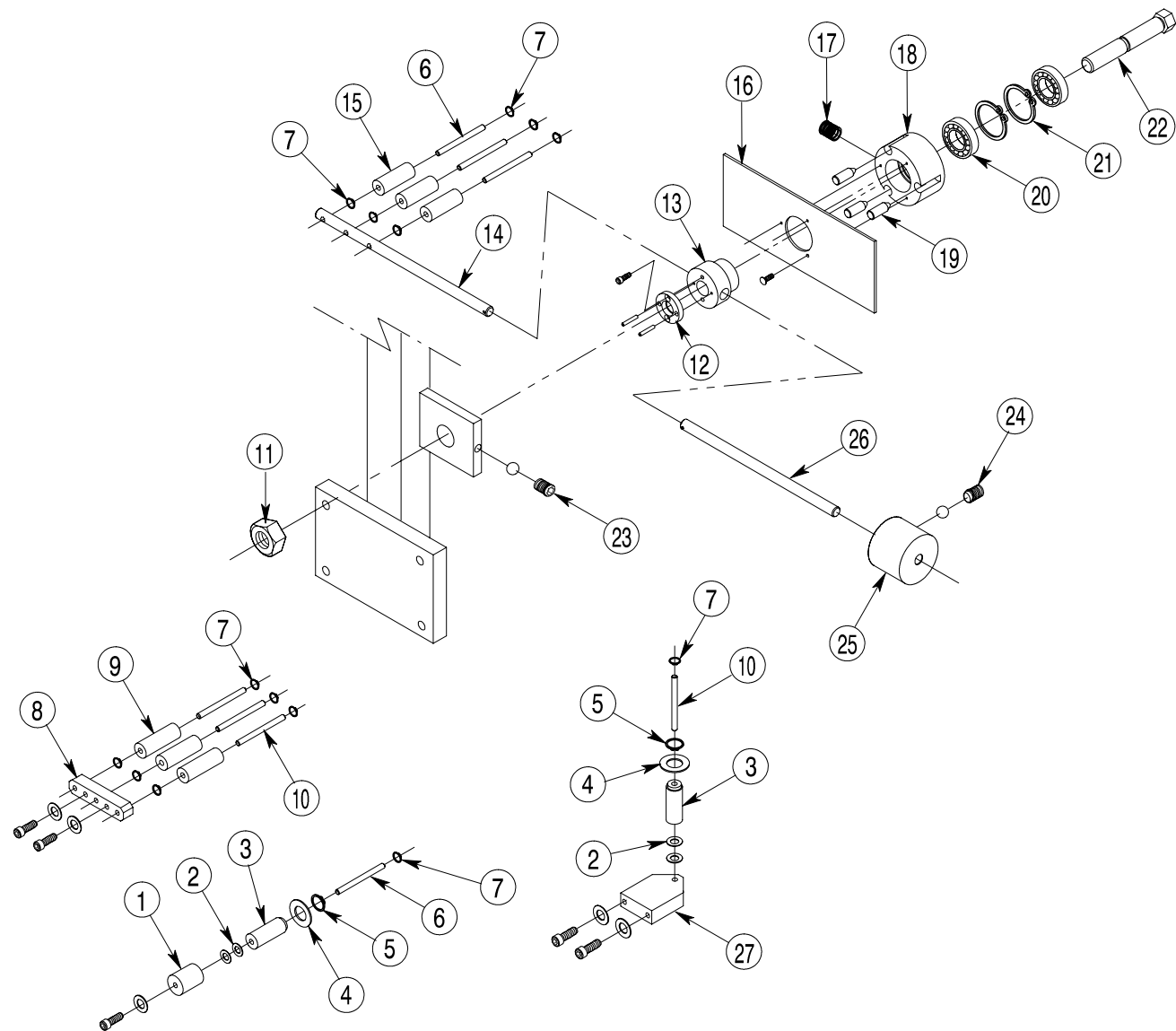


## 5 SCOTTY 5000 PARTS

ITEM #	PART #	DESCRIPTION	# REQ
1	HW-59060	KEY, SQUARE,	1
2	HW-87090	SPROCKET,	1
	HW-52179	SCREW, SOC. SET,	2
3	HW-61160	RING, RETAINING	1
4	HW-66050	BEARING, BALL	2
5	C-0222	CAM, PLASTIC CUT	1
	HW-57220	PIN, SPRING,	1
6	C-0101	SHAFT, PLASTIC FEED & CUT	1
7	HW-56186	DOWEL, PULL,	2
8	F-0201	SHAFT, PLASTIC TAB	1
9	F-0202	ARM, PLASTIC TAB	2
	HW-57200	PIN, SPRING,	2
	HW-51210	SCREW, SOC. HD. CAP,	4
10	HW-55005	SCREW, THUMB NYLON	1
	HW-60030	NUT, HEX	1
11	C-0202	PLASTIC, TAB RETAINER	1
12	C-0236	WINDOW	1
	HW-54010	SCREW, FLAT HD.,	2
13	F-0203	ADAPTER, VACUUM	1
	HW-53150	SCREW, BUTTON HD.,	4
14	HW-55015	SCREW, SHOULDER,	1
	HW-60165	NUT, NYLON INSERT,	1
15	C-0102	ARM	1
	HW-51480	SCREW, SOC HD. CAP,	1
16	HW-69220	THRUST RACE,	1

ITEM #	PART #	DESCRIPTION	# REQ
17	C-0204	ROD, CONNECTING	1
18	HW-57170	PIN, SPRING,	3
19	C-0203	BLOCK, ADAPTER	1
20	C-0220	PLATE, SPRING RETAINER	1
21	C-0226	PLATE, BEARING, R.H.	1
	HW-51200	SCREW, SOC. HD. CAP,	2
	HW-57160	PIN, SPRING,	2
22	C-0221	PLATE, BEARING, L.H.	1
	HW-51200	SCREW, SOC. HD. CAP,	2
	HW-57160	PIN, SPRING,	2
23	HW-66010	BEARING, BALL	2
24	HW-56220	PIN, DOWEL,	1
	HW-61210	RING, RETAINING	2
25	HW-57250	PIN, SPRING,	1
26	HW-57120	PIN, SPRING,	1
27	HW-71030	CAM, FOLLOWER	1
28	C-0205	CUT, CAM FOLLOWER	1
29	HW-51210	SCREW, SOC. HD. CAP,	2
30	HW-70070	ROD END, FEMALE	2
	HW-52120	SCREW, SOC.	2
31	HW-69030	THRUST RACE	1
32	HW-79180	SPRING	1
33	C-0235	SPACER, SPRING	1
34	HW-99030	HOSE, VACUUM,	1

### 5.49 PLASTIC REEL HOLDER





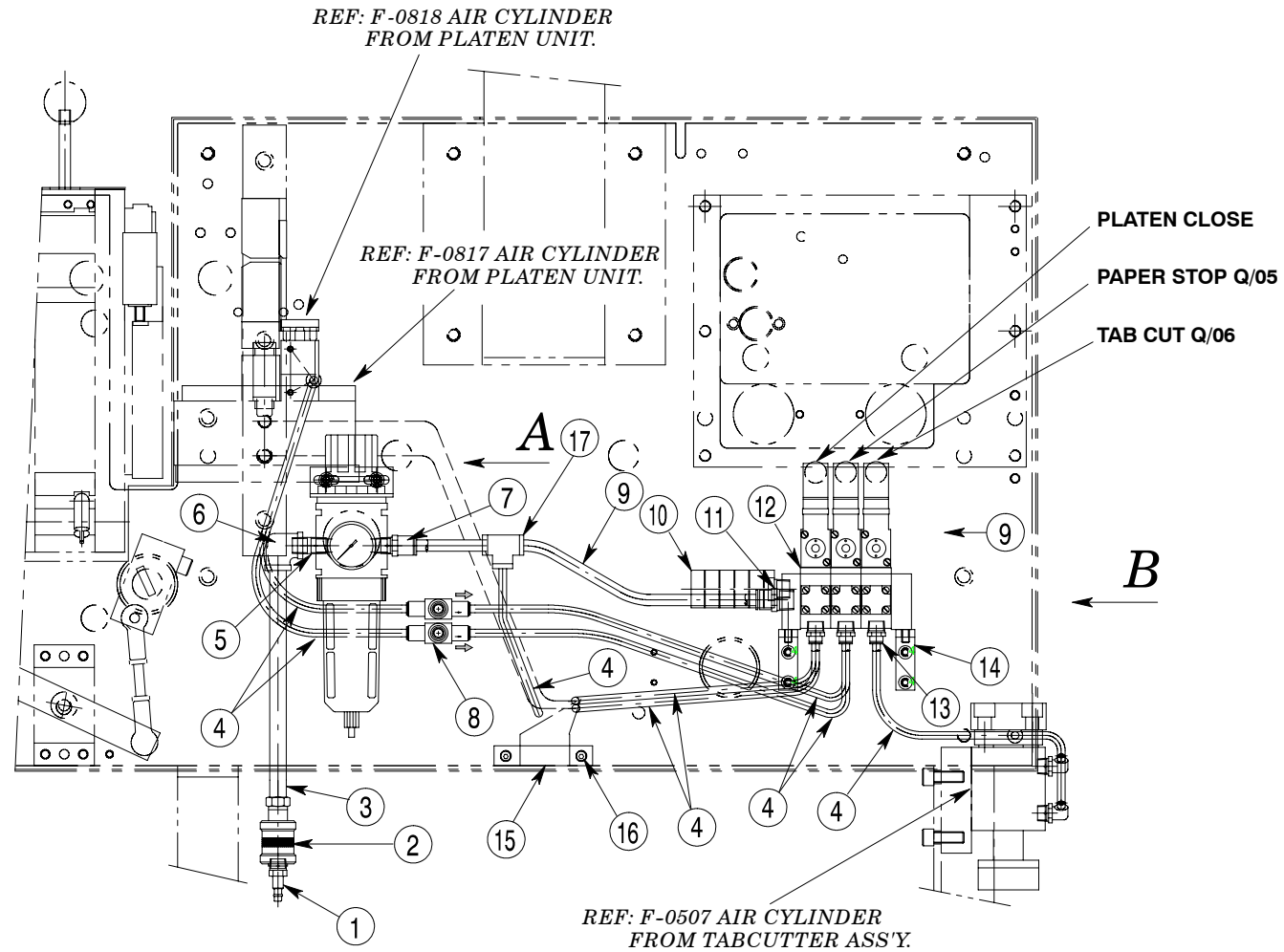


## 5 SCOTTY 5000 PARTS

ITEM #	PART #	DESCRIPTION	# REQ
1	F-1518	ROLLER, SPACER	1
	HW-51200	SCREW, SOC. HD. CAP,	1
	HW-49040	WASHER, FLAT,	1
2	HW-69140	THRUST RACE	4
3	C-1517	ROLLER, PLASTIC GUIDE	2
4	HW-69190	THRUST RACE	2
5	HW-61230	RING, RETAINING	2
6	C-1512	SHAFT, ROLLER	4
7	HW-61200	RING, RETAINING	14
8	F-1501	SHAFT, ROLLER	1
	HW-51200	SCREW, SOC. HD. CAP,	2
	HW-49040	WASHER, FLAT,	2
9	C-1516	ROLLER, PLASTIC GUIDE	3
10	C-1515	SHAFT, ROLLER	4
11	HW-60120	NUT, HEX,	1
12	C-1534	NUT, PLATE	1
	HW-57030	PIN, SPRING,	2
	HW-51070	SCREW, SOC. HD. CAP,	2
13	C-1535-A	HUB, UNWIND TENSION ARM	1

ITEM #	PART #	DESCRIPTION	# REQ
14	C-1508	SHAFT, RETAINER	1
15	C-1513	ROLLER, PLASTIC GUIDE	3
16	C-1505	PLATE, PLASTIC MTG. HUB	1
	HW-55360	SCREW, DRIVE P-K,	3
17	HW-79050	SPRING,	3
18	C-1509	HUB, PLASTIC MOUNTING	1
19	C-1511	PLUNGER, PLASTIC MOUNTING HUB	3
20	HW-66040	BEARING, BALL	2
21	HW-62050	RING, RETAINING	2
22	C-1533-1	SPINDLE, PLASTIC UNWIND	1
23	HW-52090	SCREW, SOC. SET,	1
	HW-84020	BALL, NYLON,	1
24	HW-52201	SCREW, SOC.	1
	HW-84030	BALL, NYLON,	1
25	C-1503	COUNTER WEIGHT	1
26	C-1504	ROD, COUNTER WEIGHT	1
27	C-1501	SUPPORT, ROLLER	1
	HW-51200	SCREW, SOC. HD. CAP,	2
	HW-49040	WASHER, FLAT,	2

## 5.50 PNEUMATIC CONTROLS -1



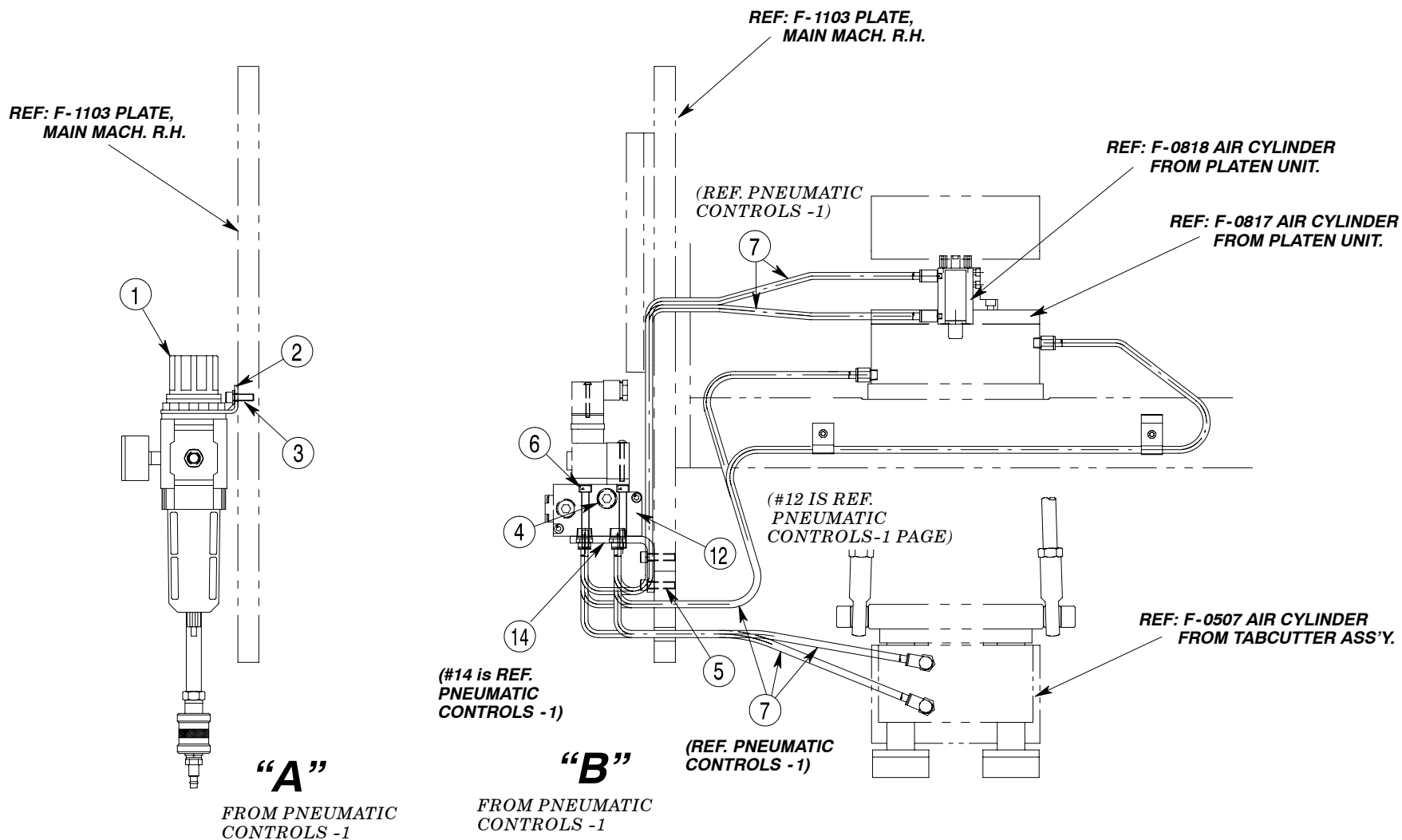


## 5 SCOTTY 5000 PARTS

ITEM #	PART #	DESCRIPTION	# REQ
1	HW-63190	PLUG, MALE,	1
2	HW-47040	VALVE, SLIDE,	1
3	HW-63170	NIPPLE,	1
4	HW-63140	TUBING,	22FT.
5	HW-63160	NIPPLE, CLOSE,	1
6	HW-63180	ELBOW,	1
7	HW-63050	FITTING,	1
8	HW-47010	F/C, IN-LINE,	2
9	HW-63150	TUBING,	2FT.

ITEM #	PART #	DESCRIPTION	# REQ
10	HW-47070	MUFFLER,	1
11	HW-63060	FITTING,	1
12	F-4702	MAC VALVE ASS'Y	1
13	HW-63030	FITTING,	6
14	F-4703	BRACKET, VALVE	2
15	F-1122	CLAMP	1
16	HW-51210	SCREW, SOC HD. CAP,	2
17	HW-63330	TEE, UNEQUAL,	1

## 5.51 PNEUMATIC CONTROLS -2



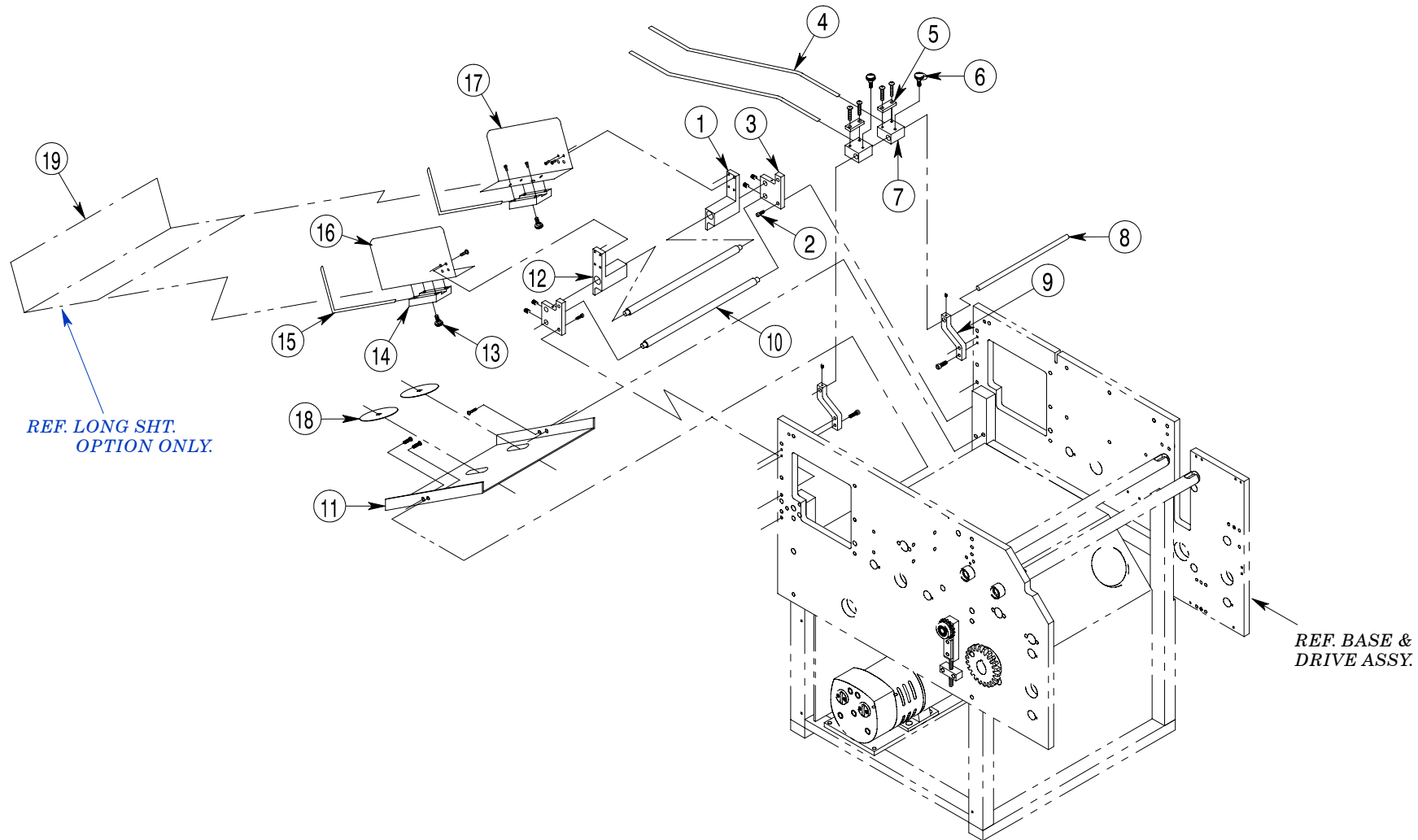


## 5 SCOTTY 5000 PARTS

ITEM #	PART #	DESCRIPTION	# REQ
1	HW-47050	FILTER, REGULATOR COMBO	1
2	HW-47060	BRACKET, C'MTG.	1
3	HW-51210	SCREW, SOC. HD. CAP	2
	HW-49040	WASHER, FLAT,	2

ITEM #	PART #	DESCRIPTION	# REQ
4	HW-63092	PLUG, PIPE,	2
5	HW51230	SCREW, SOC. HD. CAP,	4
6	HW-51270	SCREW, SOC. HD. CAP,	4
7	HW-63140	TUBING	22 FT

## 5.52 PAPER TRAY ASSEMBLY



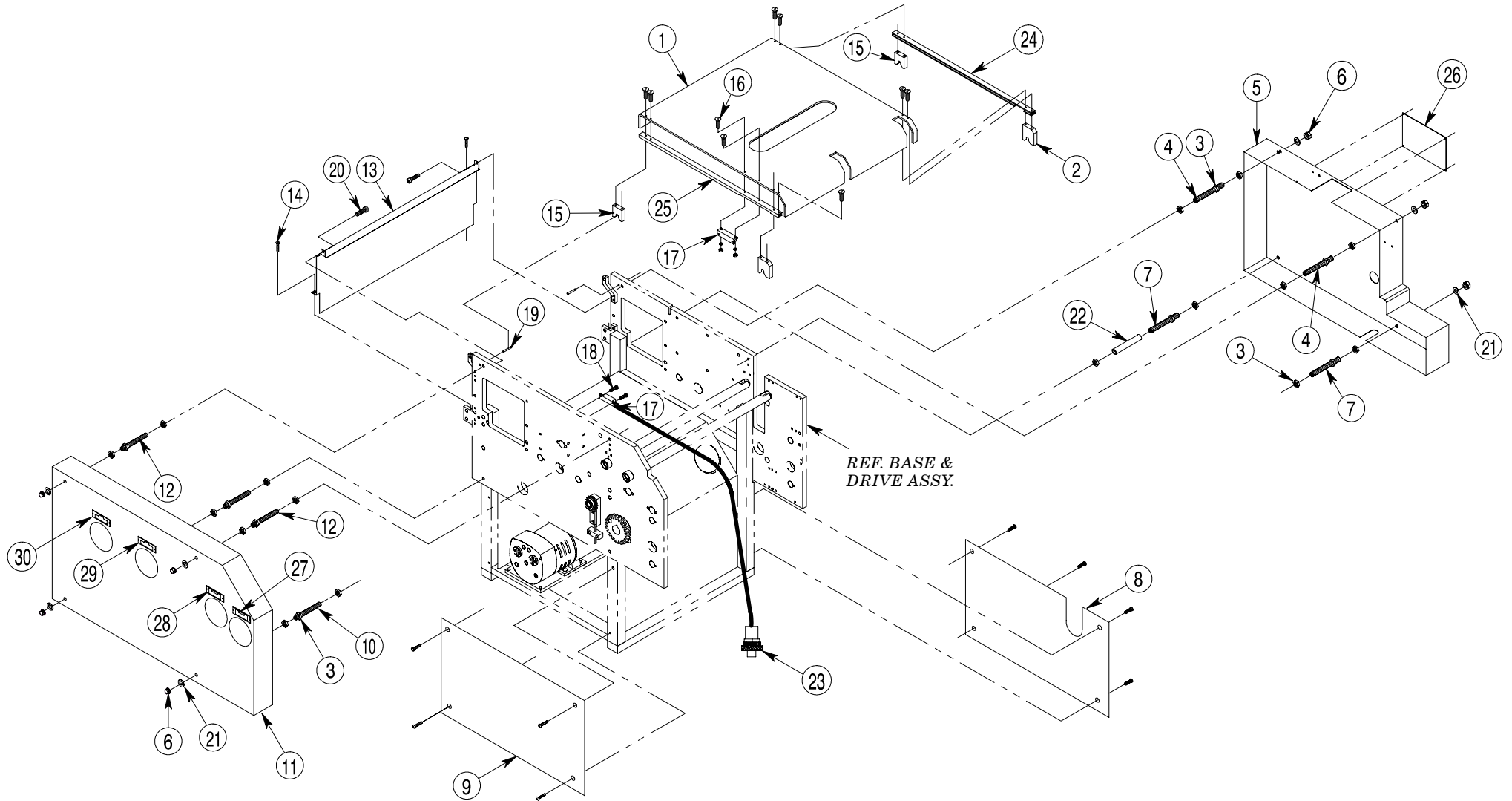


## 5 SCOTTY 5000 PARTS

ITEM #	PART #	DESCRIPTION	# REQ
1	F-1207	BLOCK, MTG. RH.	1
2	HW-51380	SCREW, SHC.,	4
3	F-1204	BLOCK, MTG.	2
	HW-52020	SCREW, SET,	4
4	F-1212	STRAP, PAPER	2
5	C-2146	PLATE, STRAP	2
	HW-53070	SCREW, BUTTON HD.,	4
6	HW-81010	KNOB,	2
7	F-1214	BLOCK, STRAP MTG.	2
8	F-1218	ROD, PAPER DEFLECTOR	1
9	F-1213	BRACKET, MTG.	2
	HW-51230	SCREW, SHC.,	4
	HW-52020	SCREW, SET,	2
10	F-1220	SHAFT, MTG.	2
11	F-1205	DEFLECTOR, PAPER	1
	HW-53150	SCREW, BUTTON HD.,	4

ITEM #	PART #	DESCRIPTION	# REQ
12	F-1206	BLOCK, MTG. LH.	1
13	HW-81010	KNOB (STANDARD)	2
	HW-55470	SCREW, THUMB, (LONG. SHT. OPTION)	2
14	F-1208	BLOCK, SLIDE (STANDARD)	2
	F-1231	BLOCK, SLIDE (LONG. SHT. OPTION)	
15	F-1209	STOP, PAPER TRAY (STANDARD)	2
	F-1232	STOP, PAPER TRAY (LONG. SHT. OPTION)	2
16	F-1210	TRAY, PAPER LH.	1
	HW-54090	SCREW, FLAT HD.,	8
17	F-1211	TRAY, PAPER RH.	1
	HW-54090	SCREW, FLAT HD.,	8
18	F-1221	COVER	2
19	F-1233	DEFLECTOR, TRAY, PAPER (LONG. SHT. OPTION)	1

## 5.53 GUARDS & COVERS





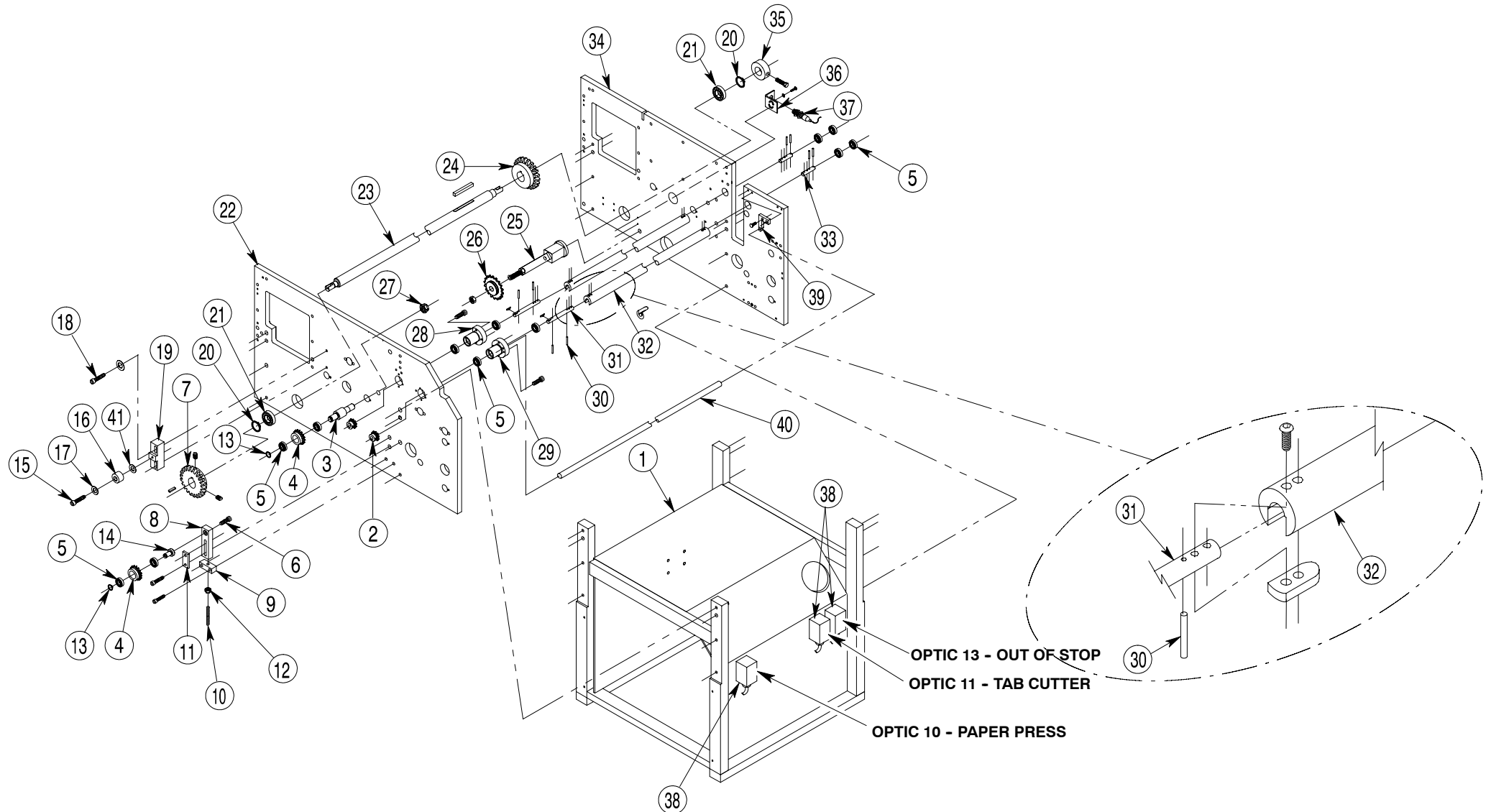


## 5 SCOTTY 5000 PARTS

ITEM #	PART #	DESCRIPTION	# REQ
1	F-1234	COVER, TOP, LEXAN CLEAR	1
	HW-54092	SCREW, FLAT HD,	8
2	F-1237	YOKE, FRONT	2
3	HW-60140	NUT, HEX JAM	24
4	F-1222	STUD, GUARD MTG.	2
5	F-1202	COVER, REAR	1
6	HW-60340	NUT, HIGH CROWN HEX	8
7	F-1223	STUD, GUARD MTG.	2
8	F-1225	COVER, DRIVE RH	1
	HW-53150	SCREW, BUT HD	4
9	F-1224	COVER, DRIVE-L.H.	1
	HW-53150	SCREW, BUT HD	4
10	C-0905	STUD, GUARD MTG.	2
11	F-1201	COVER, FRONT	1
12	C-0904	STUD GUARD MTG.	2
13	F-1219	COVER	1
14	HW-53060	SCREW, BUT HD	2
15	F-1238	YOKE, BACK	2
16	HW-54032	SCREW. FLAT HD	2
17	HW-97050-SA	SENSOR & ACTUATOR,	1
	HW-60010	NUT, HEX	2
	HW-49010	WASHER, FLAT	2

ITEM #	PART #	DESCRIPTION	# REQ
18	HW-53030	SCREW, BUT HD.	2
19	HW-57260	PIN, SPRING	2
20	HW-51230	SCREW, SHC	2
21	HW-49240	WASHER, NYLON	8
22	HW-99060	TUBING, SHRINKABLE,	1
23	HW-97054	RECEPTACLE, MALE	1
24	F-1236	SUPPORT, RAIL R.H.	1
25	F-1235	SUPPORT, RAIL L.H.	1
26	F-1226	LEGEND PLATE, REEL HOLDER	1
	HW-55353	DRIVE SCREW,	4
27	F-1227-1	LEGEND PLATE, PLASTIC POSITION	1
	HW-55353	DRIVE SCREW,	2
28	F-1228-1	LEGEND PLATE, PLASTIC SIZE	1
	HW-55353	DRIVE SCREW,	2
29	F-1229-1	LEGEND PLATE, TAB POSITION	1
	HW-55353	DRIVE SCREW,	2
30	F-1230-1	LEGEND PLATE, TAB SIZE	1
	HW-55353	DRIVE SCREW,	2

## 5.54 BASE & DRIVE



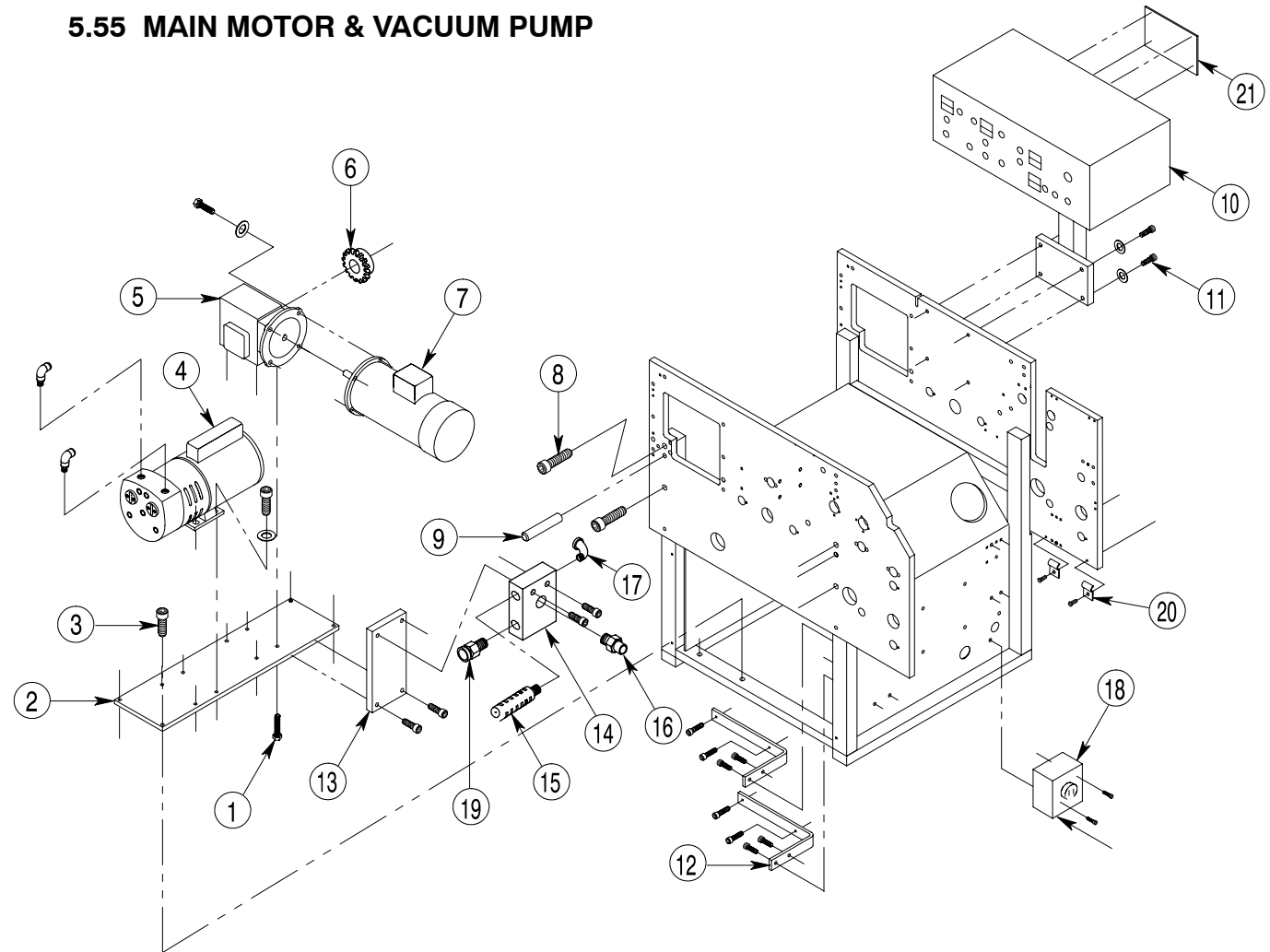


## 5 SCOTTY 5000 PARTS

ITEM #	PART #	DESCRIPTION	# REQ
1	F-1101	MACHINE BASE	1
2	C-8702	SPROCKET, CROSS SHF,	2
	HW-52080	SCREW, SOC. SET,	4
3	C-0907	PIN, IDLER	1
4	C-8706	SPROCKET, IDLER,	2
	HW-62030	RING, RETAINING	4
5	HW-66020	BEARING, BALL,	12
6	HW-51380	SCREW, SOC. HD. CAP,	1
7	HW-87090	SPROCKET DRIVE SHF,	1
	HW-52100	SCREW, SOC. SET,	2
	HW-59060	KEY, SQUARE,	1
8	C-0910	BLOCK, CHAIN TAKE UP	1
9	C-0906	BLOCK, ADJUSTMENT	1
	HW-51490	SCREW, SOC. HD. CAP,	2
10	HW-52250	SCREW, SOC. SET,	1
11	C-0909	RETAINER	1
	HW-51410	SCREW, SOC. HD. CAP,	2
12	HW-60140	NUT, HEX JAM,	1
13	HW-61110	RING, RETAINING	2
14	C-0908	PIN, SPROCKET	1
15	HW-51400	SCREW, SOC. HD. CAP,	1
16	HW-71030	YOKE, ROLLER	1
17	HW-49050	WASHER, FLAT	1
18	HW-51410	SCREW, SOC. HD. CAP,	2
	HW-49050	WASHER, FLAT,	2
19	F-1110-1	BLOCK, ROLLER	1
20	HW-61160	RING, RETAINING	2
21	HW-66050	BEARING, BALL	2
22	F-1102	PLATE, MAIN MACHINE L.H.	1
23	C-1102	SHAFT, DRIVE PLAIN	1
	HW-59070	KEY, SQUARE,	1

ITEM #	PART #	DESCRIPTION	# REQ
24	HW-87120	SPROCKET DRIVE SHF	1
25	HW-87170	TENSIONER	1
26	HW-87140	SPROCKET, IDLER	1
27	HW-60270	NUT W/ NYLON INSERT,	1
28	F-1108	HOUSING, BEARING	1
	HW-51230	SCREW, SOC. HD. CAP,	3
29	C-0210	HOUSING, BEARING	1
	HW-51230	SCREW, SOC. HD. CAP,	4
30	HW-57030	PIN, SPRING,	8
31	F-1125	ROD, DRIVE	2
	HW-58010	KEY, WOODRUFF,	2
32	F-1107	SHAFT, CROSS (REMOVABLE)	2
	F-1121	PLATE, NUT (PART OF SHAFT, CROSS)	4
	HW-53160	SCREW, BUTTON HD.,	8
33	F-1124	ROD, CROSS SHAFT	2
34	F-1103	PLATE, MAIN MACHINE R.H.	1
35	HW-98050	COLLAR,	1
	HW-55370	SCREW, HEX HD.,	1
36	HW-97080	BRACKET, SENSOR	1
	HW-53070	SCREW, BUTTON HD.,	2
	HW-49030	WASHER, FLAT,	2
37	HW-97099	SENSOR, PROX	1
38	HW-97017	AMPLIFIER	3
	HW-51080	SCREW, SOC HD. CAP,	6
	HW-49030	WASHER, FLAT,	6
	F-1604	BRACKET, SWITCH	3
	HW-97018	ADAPTER, CORD	3
	HW-51026	SCREW, SOC HD.,	6
39	F-1126	BLOCK, MOUNTING	1
	HW-53140	SCREW, BUTTON HD.	2
40	F-1127	ROD, GUARD	1
41	HW-49100	WASHER, FLAT HARDEN,	1

## 5.55 MAIN MOTOR & VACUUM PUMP



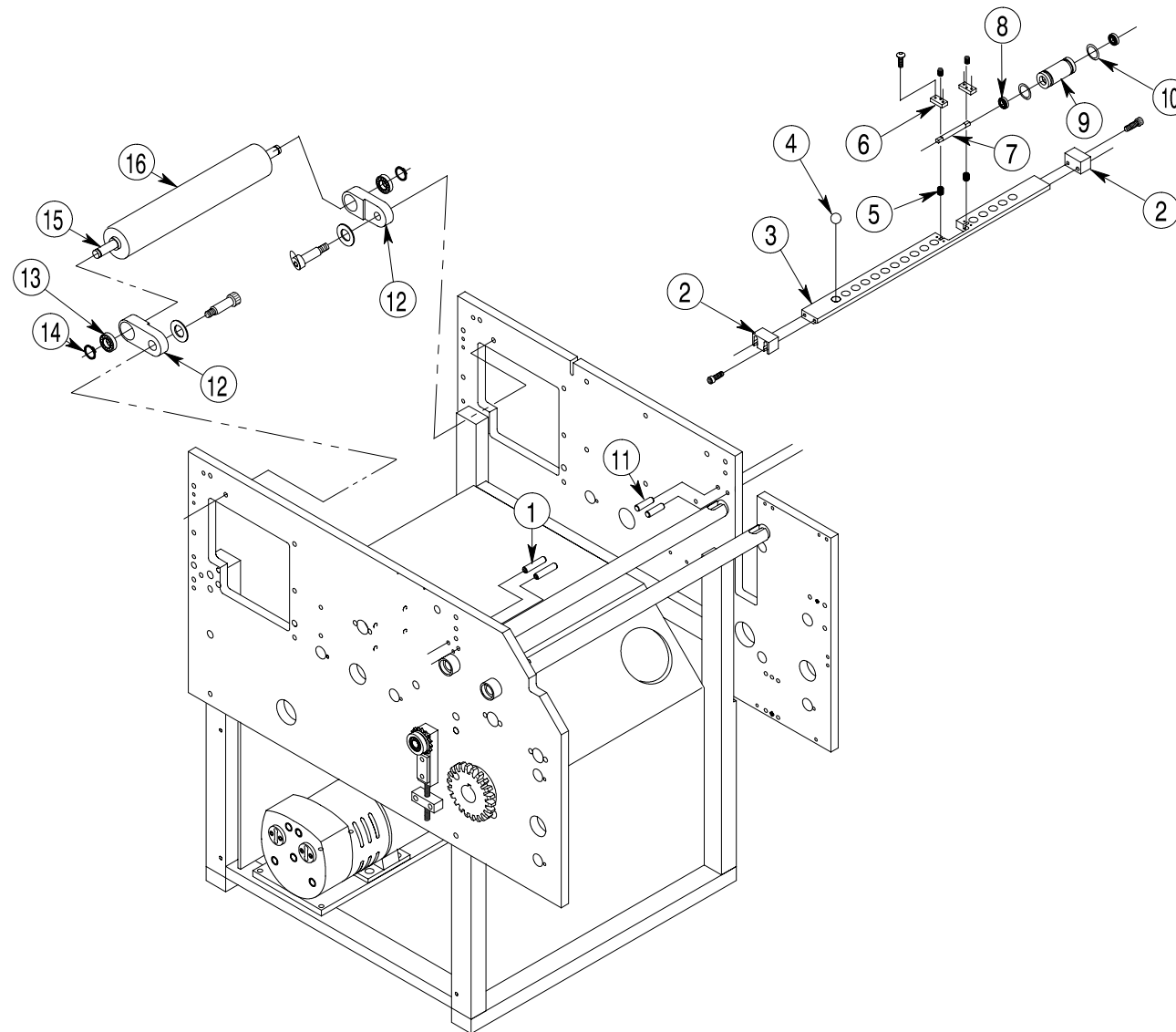


## 5 SCOTTY 5000 PARTS

ITEM #	PART #	DESCRIPTION	# REQ
1	HW-55380	SCREW, HEX HD.,	4
2	F-1105 -2	PLATE, MOTOR MOUNTING	1
3	HW-51380	SCREW, SOC. HD. CAP,	4
4	C-4701-1	VACUUM PUMP, GAST	1
	HW-95094	RECEPTACLE 3 PIN MALE	1
	HW-55370	SCREW, SOC. HD. CAP,	4
	HW-49050	WASHER, FLAT,	4
	HW-63310	ELBOW,	2
	HW-95215	TERMINAL, RING	1
	HW-95216	CONNECTOR, SLIP-ON	2
5	F-1106	REDUCER, RIGHT ANGLE/	1
		<b>SUPPLIED WITH:</b>	
		BOLT, HEX HD.,	4
		WASHER, LOCK.	4
6	HW-87150	KEY, SHAFT,	1
		SPROCKET. REDUCER	1
		SCREW, SOC. SET,	2
7	F-1104	DC MOTOR	1
	HW-95093	RECEPTACLE 4 PIN MALE,	1
	HW-95180	CONNECTOR, BUTT END	2
	HW-95215	TERMINAL, RING	1
8	HW-51470	SCREW, SOC. HD. CAP	8
9	HW-56250	DOWEL, PIN,	4

ITEM #	PART #	DESCRIPTION	# REQ
10	F-9700	ELECTRICAL PANEL ASS'Y	1
11	HW-51480	SCREW, SOC. HD. CAP,	4
	HW-49110	WASHER, FLAT HARDENED,	4
12	F-1601	BRACKET, J-BOX	2
	HW-51200	SCREW, SOC HD. CAP,	8
13	F-1120	BRACKET, VALVE	1
	HW-51210	SCREW, SOC HD. CAP,	2
14	F-1123-1	MAC VALVE	1
	HW-51250	SCREW, SOC HD. CAP,	2
15	HW-47180	MUFFLER	1
16	HW-63300	FITTING, MALE,	1
17	HW-63310	ELBOW,	1
18	HW-95074	RECEPTACLE BOX,	1
	HW-51200	SCREW, SOC HD. CAP,	2
	HW-95073	VACUUM RECPT.,	1
	HW-95092	RECEPTACLE 3 PIN MALE	1
19	HW-63320	FITTING, MALE,	1
20	HW-95010	CHANNEL,	2
	HW-53140	SCREW, BUTTON HD.,	2
21	F-1603	NAME PLATE, MAIN MACHINE	1

## 5.56 HOLD DOWN BAR





## 5 SCOTTY 5000 PARTS

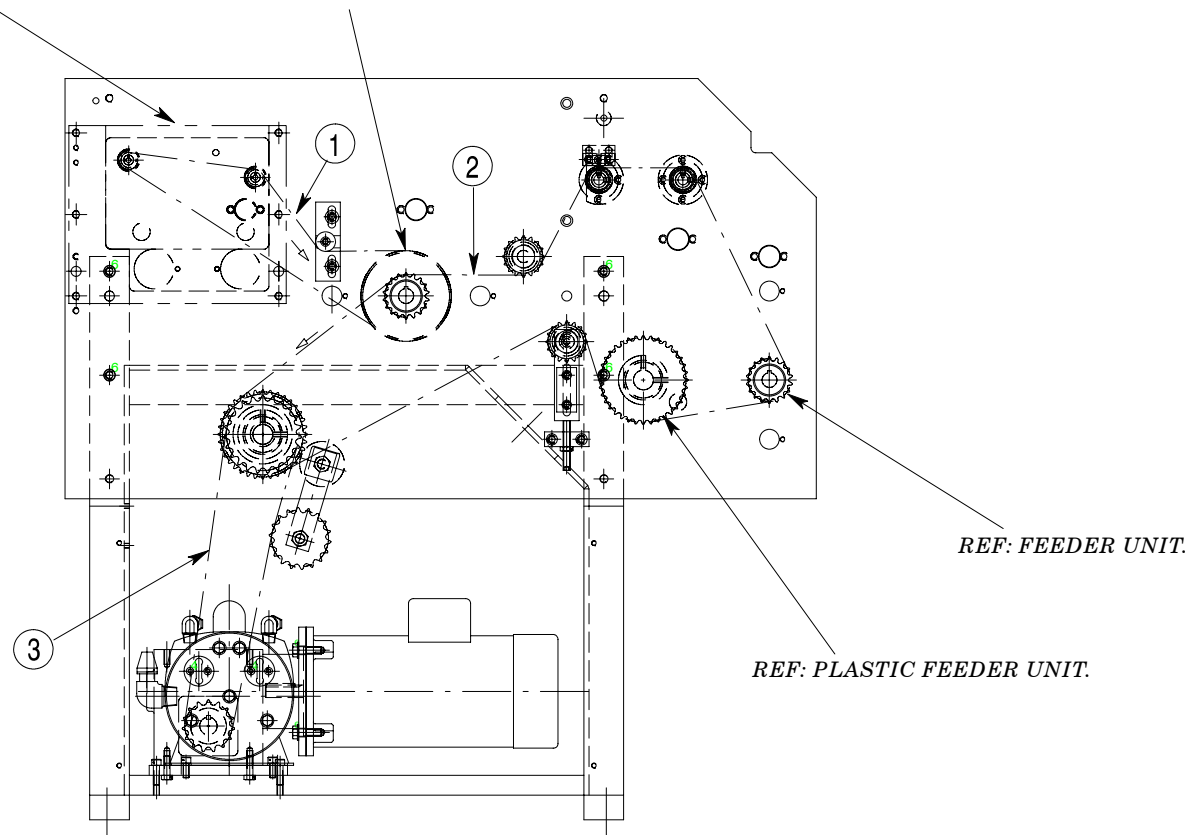
ITEM #	PART #	DESCRIPTION	# REQ
1	HW-56187	DOWEL, PIN PULL,	2
2	F-1112	BRACKET, MOUNTING	2
	HW-51210	SCREW, SOC. HD. CAP,	4
3	F-1113	BAR, HOLD DOWN	1
4	HW-84070	BALL, STEEL,	16
5	HW-79009	SPRING, JONES	2
6	F-1116	RETAINER, TAB	2
	HW-53030	SCREW, BUTTON HD.,	4
	HW-52269	SCREW, SOC. SET, W/ NYLON PATCH	2
7	F-1114	PIN, ROLLER	1

ITEM #	PART #	DESCRIPTION	# REQ
8	HW-66070	BEARING, BALL	2
9	F-1115	HUB, ROLLER	1
10	HW-74040	O-RING, PARKER	2
11	HW-56185	DOWEL, PIN PULL,	2
12	F-1117	ARM, PIVOT	2
	HW-55100	SCREW, SHOULDER,	2
	HW-64131	BUSHING, SHOLDER	2
13	HW-66020	BEARING, BALL	2
14	HW-61110	RING, RETAINING	2
15	F-1118	SHAFT, ROLLER	1
16	F-1119	ROLLER, RUBBER	2

## 5.57 DRIVE BELT & CHAIN ASSEMBLY

REF: TAB CUTTER ASS'Y.

REF: F-2153 PULLEY, TIMING  
FROM MIDDLE REGISTER UNIT.





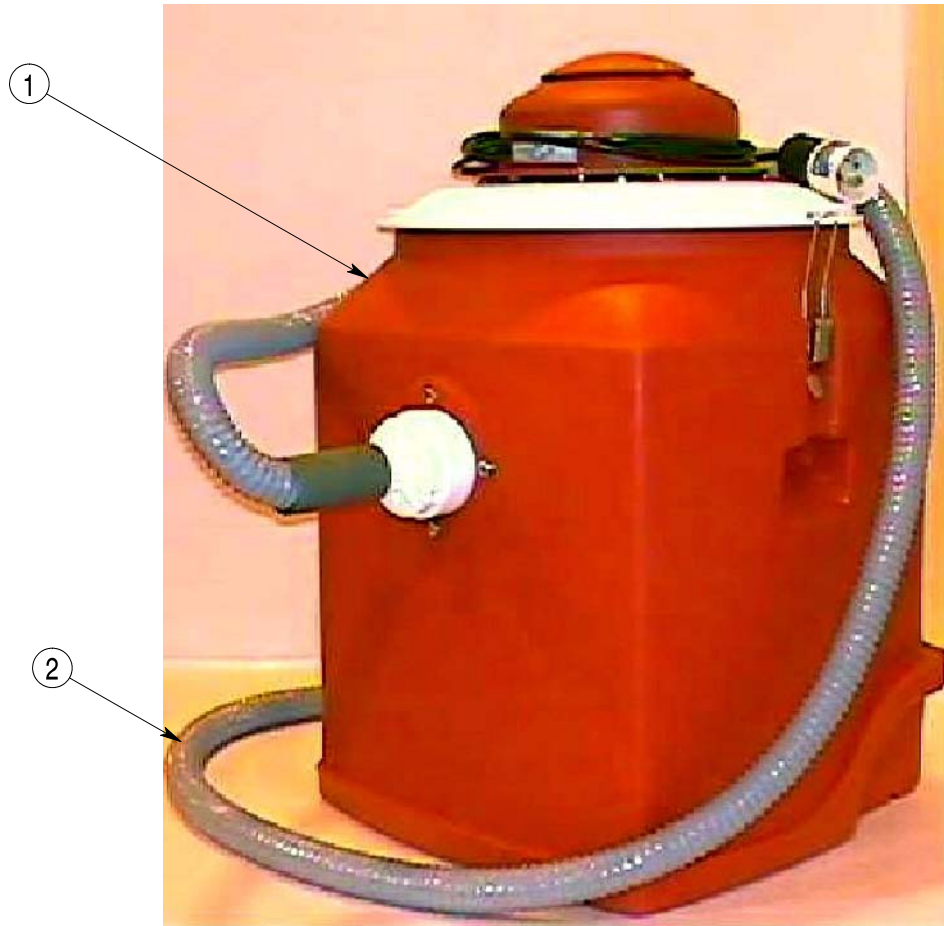


## 5 SCOTTY 5000 PARTS

ITEM #	PART #	DESCRIPTION	# REQ
1	HW-76060	GEARBELT,	1
2	HW-77010	ROLLER CHAIN	1
	HW-77020	CONNECTING LINK,	1

ITEM #	PART #	DESCRIPTION	# REQ
3	HW-77040	ROLLER, CHAIN	1
	HW-77050	CONNECTING LINK,	1
	HW-77060	LINK, OFFSET	1

5.58 CHIP REMOVAL VACUUM





## 5 SCOTTY 5000 PARTS

ITEM #	PART #	DESCRIPTION	# REQ
1	HW-99200	VACUUM	1
2	HW-99030	HOSE, VACUUM	1

ITEM #	PART #	DESCRIPTION	# REQ
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