



# RAPID-AIR

## OPERATING INSTRUCTIONS FOR AIR FEED CUT-TO-LENGTH

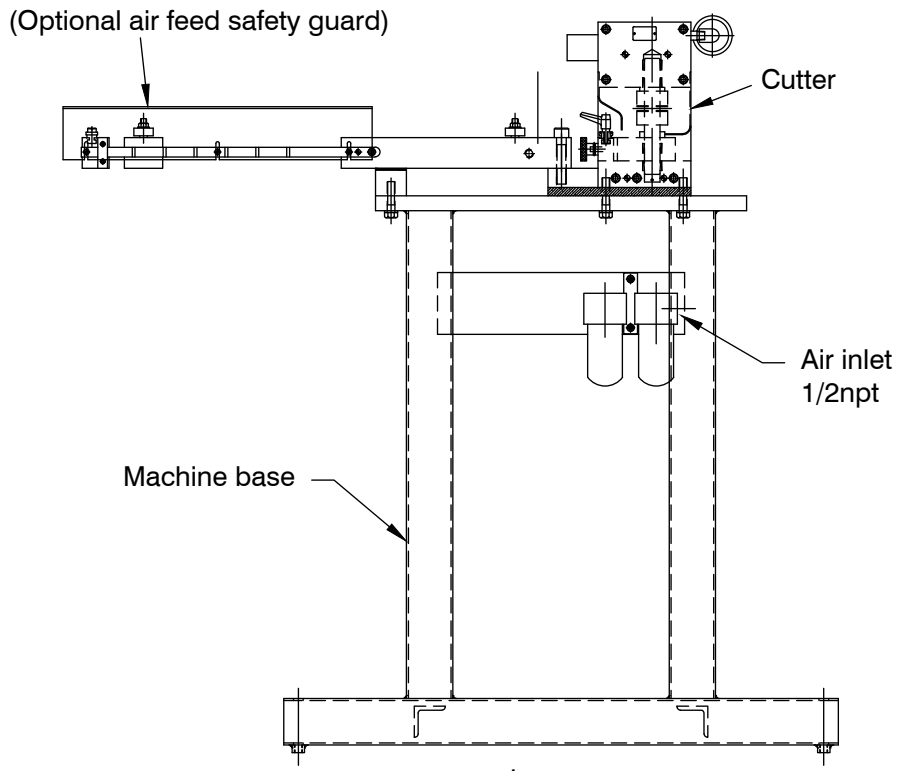
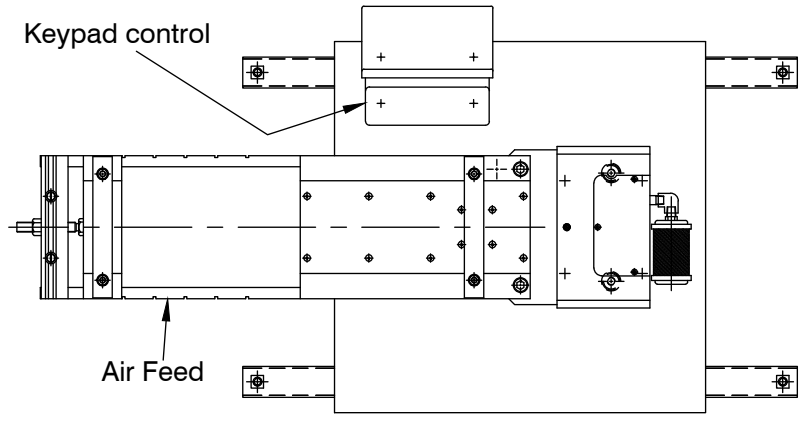
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# TYPICAL AIR FEED CUT-TO-LENGTH



## INSTALLATION

The Cut-to-length (CTL) that you have just received is fully assembled and ready to be put into production. Due to shipment vibration and handling, the machine should be checked to ensure all screws and bolts are tight. Open the cover to the electrical controls and visually inspect that all parts are in place and secure. If the machine was damaged in shipment, contact the carrier first to report the damage and then Rapid-Air.

**CAUTION!** - The CTL machine is top heavy when not sitting on its base legs. Use extreme caution when moving this machine.

Install machine on level surface with sufficient clearance for loading and unloading material. For safe operation, secure unit to the floor. Machine can also be installed with leveling pads. Tapped holes in the legs of the machine are 1/2-13 threads.


Pneumatic requirements: Your machine will require 75-120 PSI of air pressure for normal operation. Connect a minimum of 5/8" ID hose into the 1/2 npt female threaded port in the Filter/Lubricator. See page 1 for location of air inlet.

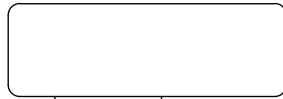
Electrical requirements:

120v, 20amp, 60 cycle

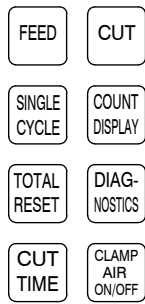
**CAUTION!** - Always disconnect air supply and power before performing any service to this machine.

## KEYPAD DISPLAY

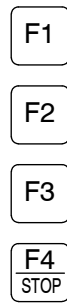
 *RAPID-AIR CORPORATION*



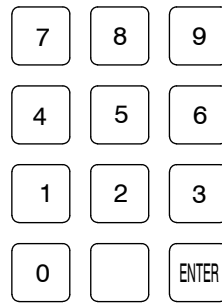
MANUAL/SETUP  
KEYS



MODE  
SELECT



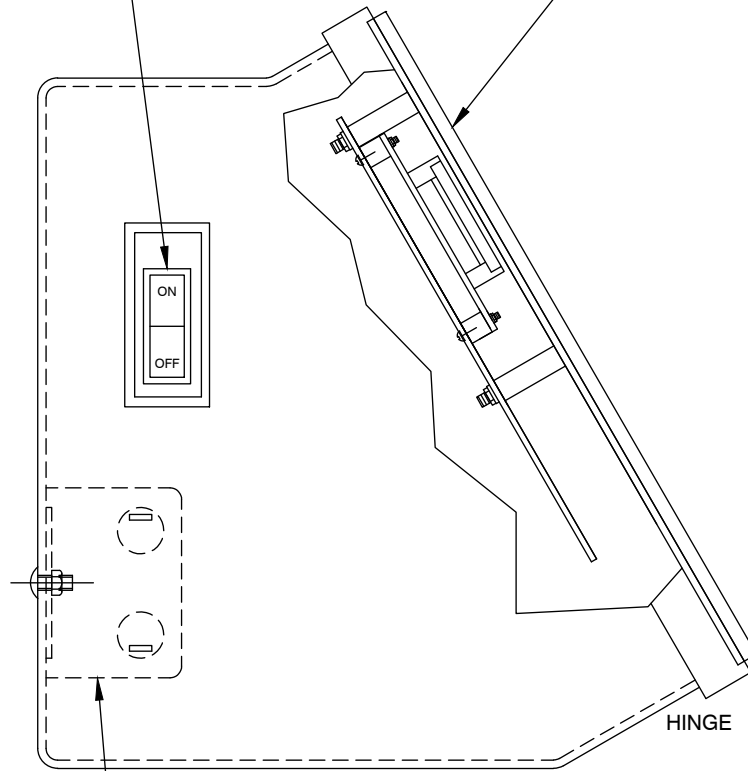
DATA ENTRY



CONTROL ASSEMBLY

MAIN POWER SWITCH  
ON/OFF

DISPLAY ASSEMBLY  
#28900389



ISOLATOR  
#69100432

## START-UP

The first step is to turn on the main power switch on the electrical enclosure. The switch should illuminate to indicate there is power to the system. See diagram page 4 for location of this switch.

If you are comfortable with programming a job, then continue. If not, please refer to "Programming Procedure" starting on page 9 of this manual.

Follow the programming sequence for the operators terminal to input feed parameters. Your unit has been fully tested before it was shipped to your facility and this procedure is merely a test to insure that all functions are still functional and the cables are properly seated.

Once you have programmed the required parameters, select the manual mode of operation.

After you have verified the the feed and cutter are operational, you can experiment with single cycle moves. This procedure is outlined in the programming section of this manual.

Now you can cycle the cutter and watch the air feed to verify that the signal from the cutter switch is functional and actuating at the proper time.

After all the checks have been made and you feel comfortable with the programming of the unit controller, place the unit in automatic mode. The air feed should react upon the closure of the cut signal and simulate a feed progression of material.

## LOADING MATERIAL

Upon satisfactory completion of all tests, you should be ready to load a strip of material into the air feed. Step one is to select the "Manual Mode" of operation on the keypad. You can now open the clamps manually by turning the air feed air off. Position the leading edge of the material near the center of the entry guide and adjust the edge guides on the air feed to the proper width setting. Hand feed the material through the air feed until it protrudes out of the feed and starts into the guides on the cutter. Turn the air feed air on to clamp the material.

You are now ready to begin testing the complete system under power. Cycle the unit in the "Single Cycle" mode to test for correct progression length. If the progression is correct, no further adjustments are necessary. If the progression is either short or long, go to troubleshooting portion of this manual and perform the sequences described there for inaccurate feeding. Once the feed progression has been accurately set and the repeatability is satisfactory, you are ready for fully automatic mode.



## PROGRAMMING PROCEDURE

The intent of the "programming procedure" section is to familiarize the operator with the program flow and what to expect with every key press. After turning on power to unit, the first screen displayed will look like this:

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Rockford, IL.

After a few seconds, the above screen will clear and the following screen should appear:

FEED CYCLES/CUT=  
F1=SET CYCLE PER CUT  
F2=MANUAL MODE  
F3=AUTOMATIC MODE

The first step in programming the Cut To Length feed is to input the correct cycles to achieve the desired feed length.

Select the "F1=Set Cycle Per Cut" key.

After selecting the "F1" key, the following screen should appear:

SET FEED CYCLES PER CUT  
\_\_\_\_\_ "ENTER"  
A NUMBER MUST BE  
ENTERED TO CONTINUE

When the "Enter" key is pushed, the screen reverts back to the main menu.

Select the "F2-Manual" key.

The following screen appears:

## PROGRAMMING PROCEDURE

MANUAL KEYS ARE  
NOW ACTIVE  
\*\*USE CAUTION\*\*  
F4=EXIT TO MAIN MENU

1. When pressing the "F4" key, the display reverts back to main menu.
2. All manual keys are now active. Pressing any labeled key will activate movement.  
CAUTION! Make sure there is air to the cutter before cycling or the system will lock up. To unlock, the main power has to be cycled.
3. Pressing the "Feed" key will cause the feed to move the number of cycles that was entered.
4. Pressing the "Cut" key will cause the cutter to cycle one time.
5. Pressing the "Single Cycle" key will cause the feed and cutter to perform one complete cycle.
6. Press the "Total Reset" key and the following display appears:

TOTAL COUNT=  
F1=RESET TO ZERO  
F4=EXIT DISPLAY

Pressing the "F1" key will cause the total count to be all zero's.  
Pressing the "F4" key will take you back to the main menu.

7. Press the "Cut Time" key and the following screen appears:

CUT DWELL TIME=  
F1=SET DWELL TIME  
F4=EXIT DISPLAY

Pressing the "F1" key will display a screen which will force you to enter dwell time before leaving the screen.  
Pressing the "F4" key will take you back to the main menu.

## PROGRAMMING PROCEDURE

8. Press the "Clamp Air" key and the following screen appears:

FEED AIR SELECTION  
F1=TURN FEED AIR ON  
F2=TURN FEED AIR OFF  
F4=EXIT

Use this feature when loading material into the air feed.

9. Press the "Diagnostics" key and the following screen appears:

FEED AT MAIN SW=OFF  
FEED AT STOP SW=OFF  
CUTTER RET'D. SW=ON  
F4=EXIT

Each time the switch changes state, the screen switches to off or on. If the switch is energized, the screen displays on. If the switch is de-energized, the screen displays off.

10. Press the "Count Display" key and the following screen appears:

PART COUNT DISPLAY  
TOTAL COUNT=  
BATCH COUNT=  
F4=EXIT

Press the "F4 Exit" key and the screen reverts back to the previous screen.

Press the "F4 Exit" key until the main menu screen appears.

FEED CYCLES/CUT=  
F1=SET CYCLE PER CUT  
F2=MANUAL MODE  
F3=AUTOMATIC MODE

This covers all the set-up operations of the Air Cut To Length.

## PROGRAMMING PROCEDURE

The following will cover the automatic portion of the programming.

Press the "F3 Auto" key and the following screen appears:

```
**AUTOMATIC MODE**  
F1=AUTO TOTAL CYCLE  
F2=AUTO BATCH CYCLE  
F4=EXIT AUTO MODE
```

Pressing the "F1" key will put you in the auto total mode. In this mode, once started, the unit will feed on command until you stop it by pressing the "Stop" key.

Pressing the "F2" key will put you in the auto batch mode. In this mode you put in the quantity of cycles you want and the feed will stop when this count has been reached.

Press "F1-Auto Total Cycle" key and the following screen appears:

```
**AUTOMATIC MODE**  
TOTAL COUNTS=  
F1=RUN AUTO TOTAL  
F2=EXIT AUTO TOTAL
```

At this time the operator can choose to run "Auto Total" or "Exit". If "Exit" is chosen then the previous screen is displayed. If "Run" is chosen then the following screen is displayed:

```
**AUTO TOTAL MODE**  
FEED PER CYCLE=  
TOTAL COUNT=  
F4=STOP CYCLE
```

The unit is now in full automatic. Whenever an input for feed is received, the air feed will feed the cycles programmed and increment the counter by one count. If you press the "F4=Stop Cycle" key, the automatic cycle will drop out and the next screen will appear as follows:

## PROGRAMMING PROCEDURE

Note: The "F4=Stop Cycle" key has to be pressed and held until the sequence that is currently running is complete.

AUTO CYCLE  
WAS STOOPED  
F2=CONTINUE CYCLE  
F4=STOP AND EXIT

The decision now is whether to continue cycling or stop. If the "F2" key is pressed, the feed would continue where it left off. If the "F4" key is pressed the following screen will appear:

\*\*AUTOMATIC MODE\*\*  
F1=AUTO TOTAL CYCLE  
F2=AUTO BATCH CYCLE  
F4=EXIT AUTO MODE

At this time you can choose to go back into "F1=Auto Total". Select the "F2=Auto Batch" key or "F4=Exit" key to go back to the main menu.

Press the "F2=Auto Batch Cycle" key and the following screen appears:

BATCH SIZE=  
F1=ENTER NEW BATCH  
F2=RUN CURRENT BATCH  
F4=EXIT AUTO BATCH

If the current batch size is correct the press the "F2=Run Current Batch" key. If not, then press the "F1=Enter New Batch" key and the following screen appears:

BATCH SIZE  
\_\_\_\_\_ "ENTER"  
A NUMBER MUST BE  
ENTERED TO CONTINUE

## PROGRAMMING PROCEDURE

Once the number has been entered, the previous screen disappears. Press the "F2=Run Current Batch" key and the following screen appears and cycling begins.

```
AUTO BATCH  F4=STOP
FEED PER CYCLE=
BATCH COUNT=
TOTAL COUNT=
```

The batch count will decrement while the total count increments. Once the batch size gets to zero, the auto cycle stops. Pressing the "F4=Stop" key at any time stops the cycle and the following screen appears:

```
AUTO CYCLE
WAS STOPPED
F2=CONTINUE CYCLE
F4=STOP AND EXIT
```

The decision now is whether to continue cycling or stop. If the "F2=Continue Cycle" key is pressed then the feed would continue where it left off. If the "F4=Stop And Exit" key was pressed the following screen will appear:

```
**AUTOMATIC MODE**
F1=AUTO TOTAL CYCLE
F2=AUTO BATCH CYCLE
F4=EXIT AUTO MODE
```

Press the "F4=Exit Auto Mode" key and the main menu appears.

This completes the programming procedure section of the Air Cut to Length.

## ELECTRICAL TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSE	REMEDY
Turn on main power switch but no lights illuminate	No power at source	Check building receptacle for voltage
	Machine not plugged into the source power	Plug cord into 120v 1ph receptacle
	Fuse blown on the control	Look for burn spots to see what caused blown fuse - replace fuse
	Loose wiring	Inspect wiring to terminals for loose wire or loose screws
	Defective main power switch	Disconnect all power check out switch
The attempt is made to cycle the machine but the slide block won't move	Check that there is air present on the machine	Air gauge should read 75-120 PSI
	Check that the "Feed Air" switch is in the "On" position	The "Feed Air" switch key is located on the keypad.
	Check valve	Manually test valve to see if it is functional
When commanded, the feed slide block moves to the stop block position but will not return to the main body	Proximity switches are not properly adjusted or defective	Readjust or replace proximity switches
	Wiring to and from the proximity switches are not properly connected or are incomplete	Check for loose wiring or screws

## ELECTRICAL TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSE	REMEDY
The attempt is made to cycle the cutter, but it won't cycle	Loose wiring or defective valve	Check wiring & manually test valve
The unit drops out of automatic at random times	Loose wiring	Check for loose wires or screws
The total count counter will not increment	Check that the auto total or auto batch has been selected	Select auto total or auto batch from keypad
The total batch counter will not increment	Check that the auto total or auto batch has been selected	Select auto total or auto batch from keypad

## MECHANICAL TROUBLESHOOTING

### CUTTERS

For a detailed summary of removing cutter blades for rotation, replacement or sharpening as well as operating instructions and maintenance for your cutter, consult cutter manual on Rapid-Air website.

### AIR FEEDS

For complete operating instructions and maintenance of your air feed, consult air feed manual on Rapid-Air website.

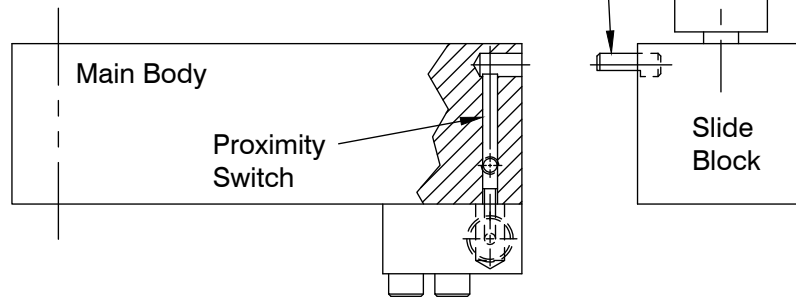


## AIR FEED PROXIMITY SWITCHES

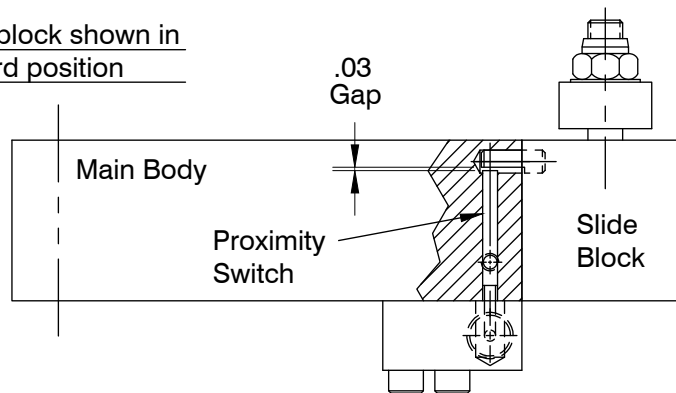
The main body proximity switch needs to be set so that there is an approx. gap of .03 between the sensing pin and the proximity switch when the slide block is forward.

Note: Sensing pin must be positioned so that the proximity switch is sensing on the flat of the pin.

Slide block shown in retracted position



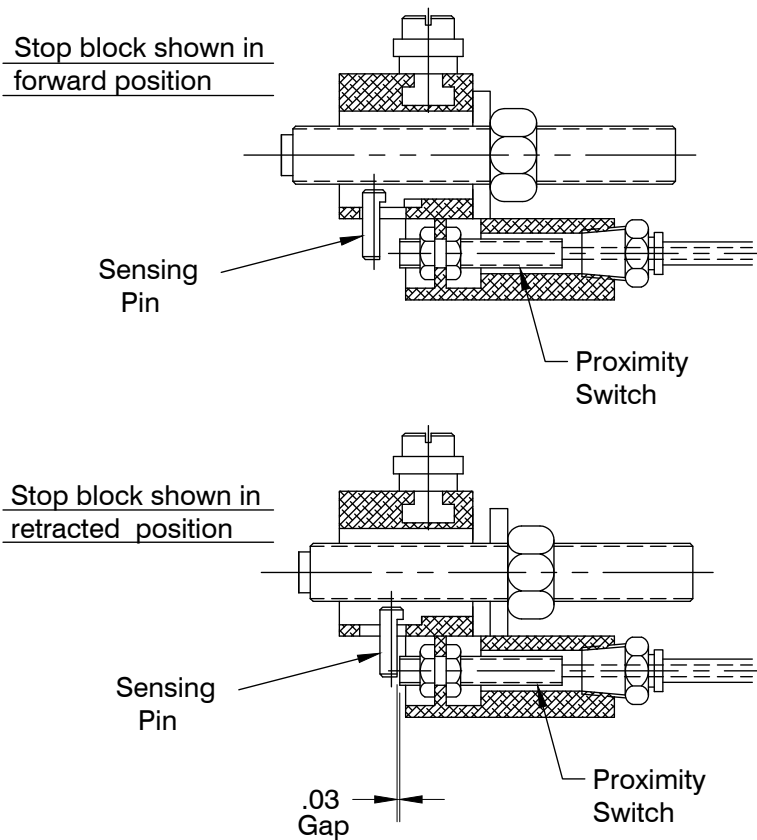
Slide block shown in forward position



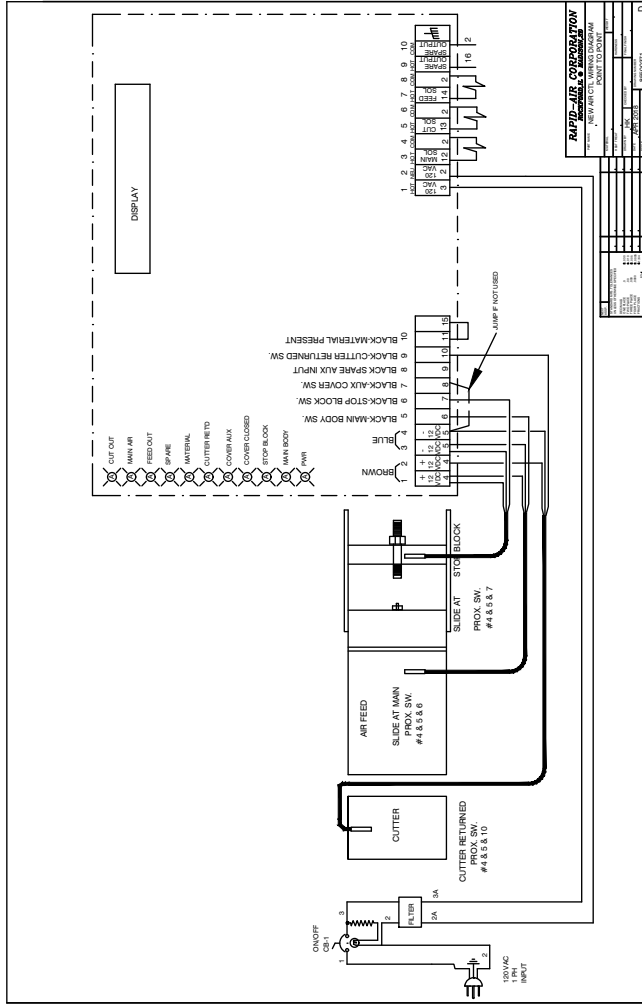
## AIR FEED PROXIMITY SWITCHES

The stop block proximity switch needs to be set so that there is an approx. gap of .03 between the sensing pin and the proximity switch when the stop block is retracted. Failing to set this gap will damage the proximity switch.

Note: Sensing pin must be positioned so that the proximity switch is sensing on the flat of the pin.



# WIRING DIAGRAM



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DATE: 10/10/00  
 DRAWN BY: J. H. HARRIS  
 CHECKED BY: J. H. HARRIS  
 APPROVED BY: J. H. HARRIS

# WIRING DIAGRAM

