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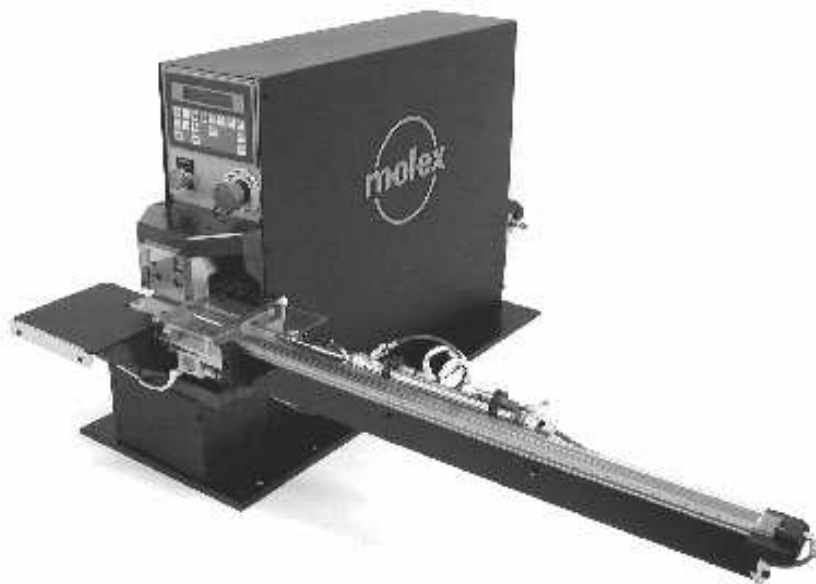
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molex[®]


“HAWK” FLAT CABLE TERMINATION MACHINE
Operation Manual




62300-2900 "Hawk" F.F.C. Terminator
62300-2950 "Hawk" F.F.C. Terminator
62300-3000 "Hawk" Ribbon Cable Term.
62300-5200 " Hawk" F.F.C. Terminator W/Breakoff
62300-5300 "Hawk" R.C. Terminator W/Breakoff













For C-Grid[®] SL IDT Connector, 70400 Series






- Description
- Operation
- Maintenance

Safety Warnings and Information

	<p>Read and understand all of the instructions and safety information in this manual before operating or servicing this tool.</p> <p style="text-align: center;"><u>Keep this manual available when using this tool.</u></p> <p style="text-align: center;">Replacement manuals are available for download at no charge at www.molex.com.</p>
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SAFETY ALERT SYMBOL	
This symbol is used to call your attention to hazards or unsafe practices which could result in an injury or property damage. The signal word, defined below, indicates the severity of the hazard. The message after the signal word provides information for preventing or avoiding the hazard.	
 DANGER	<p>DANGER: Indicates an imminently hazardous situation which, if not avoided, could result in death or serious injury.</p>
 WARNING	<p>WARNING: Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.</p>
 CAUTION	<p>CAUTION: Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. CAUTION may also be used to alert against unsafe practices associated with events that could lead to personal injury.</p>

	<p> WARNING</p> <p>Always wear proper eye protection when Operating or servicing this machine.</p> <p>Failure to wear eye protection could result in serious eye injury from flying debris.</p>		<p> WARNING</p> <p>Excessive noise levels.</p> <p>Always wear proper ear protection when Operating or servicing this machine.</p>
	<p> WARNING</p> <p>Never wear clothing or jewelry that is loose or That Could potentially hang into the equipment And get caught.</p> <p>Failure to observe this warning could result in Severe Injury or death.</p>		<p> WARNING</p> <p>Never install or service this machine while connected to any electrical power source. Disconnect power by unplugging the machine from its power source.</p> <p>Failure to observe this warning could result In severe injury or death.</p>
	<p> WARNING</p> <p>Never operate, service, install, or adjust this Machine without proper instruction and without first reading and understanding the instructions in this manual and all applicable press and/or wire processing machine manuals.</p>		<p> WARNING</p> <p>Never lift this machine without the aid of mechanical lifting devices.</p> <p>Failure to observe these precautions may result in severe back, other injuries, or property damage.</p>

	 WARNING	 WARNING
	<p>Never use this machine without guards or safety devices that are intended to prevent hands from remaining in the termination or feed areas.</p> <p>Failure to observe this warning could result in Severe injury or death.</p>	
 CAUTION		
<p>Never perform any service or maintenance other than as described in this manual.</p> <p>Never modify, alter or misuse the equipment</p> <p>Molex crimp specifications are valid only when used with Molex terminals and tooling.</p> <p>Failure to observe this precaution may result in injury and property damage.</p>		

Tooling Technical Assistance

Molex offers tooling technical assistance for customers who may need some guidance for tooling adjustments. This support can be obtained by calling either of the two numbers listed below and asking for the Molex Tooling Group.
Call Toll Free 1-800-786-6539 (US) 1-630-969-4550 (Global).

This assistance is limited to the operation and set-up of a customer's Molex Terminator Machine. Questions with regard to Molex connector products or how to identify the proper tooling and/ or tooling documentation should be directed to your local Molex personnel or Customer Service Representative.

When calling for service on the machine it is recommended to have the following: a copy of the *Tooling Manual*, the Specific *Specification Sheet* and a person familiar with the machine should be present. The following information is also recommended to supply:

- 1.Customer name
- 2.Customer address
- 3.Person to contact such as (name, title, e-mail, and telephone number)
- 4.Machine order number (Lease number also if applicable)
- 5.Serial number (Lease number also if applicable)
- 6.Molex Connector product order number
- 7.Urgency of request
- 8.Nature of problem

Molex Application Tooling Group
 2200 Wellington Court
 Lisle, IL 60532, USA
 Tel: +1 (630) 969-4550
 Fax:+1 (630) 505-0049

Visit our Web site at <http://www.molex.com>

Table of Contents

Contents

“HAWK” FLAT CABLE TERMINATION MACHINE	1
Safety Warnings and Information	2
Tooling Technical Assistance	3
Table of Contents	4
Section 1.....	6
General Description.....	6
Principal Mechanical Parts of the Flat Cable Termination Machine	7
1.1 Description	8
1.2 Features	8
1.3 Technical Specification	8
1.4 Delivery Check.....	8
1.5 Tools	9
1.6 Installation.....	9
1.7 Changing Tooling.....	10
Section 2.....	11
Set-Up and Operation	11
2.1 Setting Up	12
2.2 Setting Batch Size.....	14
2.3 Setting Breakoff Strokes	14
2.4 Operation	14
Section 3.....	17
3.1 Maintenance.....	18
3.2 Perishable Parts.....	19
3.3 Spare Parts	19
3.4 Troubleshooting	19
3.5 Fault Message Procedure	20
Section 4.....	21
4.1 Description	22
4.2 Technical Specifications.....	22
4.3 Installation and Removal.....	22
4.4 Operation	23

Section 5.....	24
5.1 62300-2900 Parts List and Assembly Drawings.....	26
62300-2950 Parts List and Assembly Drawings.....	27
62300-3000 Parts List and Assembly Drawings.....	28
62300-5200 and 62300-5300 Parts List and Assembly Drawings.....	29
62300-2600 Parts List and Assembly Drawings.....	30
62300-3400 Parts List and Assembly Drawings.....	32
62300-3500 Parts List and Assembly Drawings.....	34
62300-4700 Parts List and Assembly Drawings.....	36
62300-5000 and 62300-5100 Parts List and Assembly Drawings.....	37
5.2. Electric Controls.....	38
5.3 Pneumatic Diagram.....	43
Section 6.....	44
Glossary of Terms.....	44
Section 7.....	45
7.1 I.D.T. Termination Process Control.....	46
7.2 Process Capability.....	46
7.3 Production.....	47

Section 1

General Description

- 1.1. Description
- 1.2. Features
- 1.3. Technical Specifications
- 1.4. Delivery Check
- 1.5. Tools
- 1.6. Installation
- 1.7. Changing Tooling

Principal Mechanical Parts of the Flat Cable Termination Machine

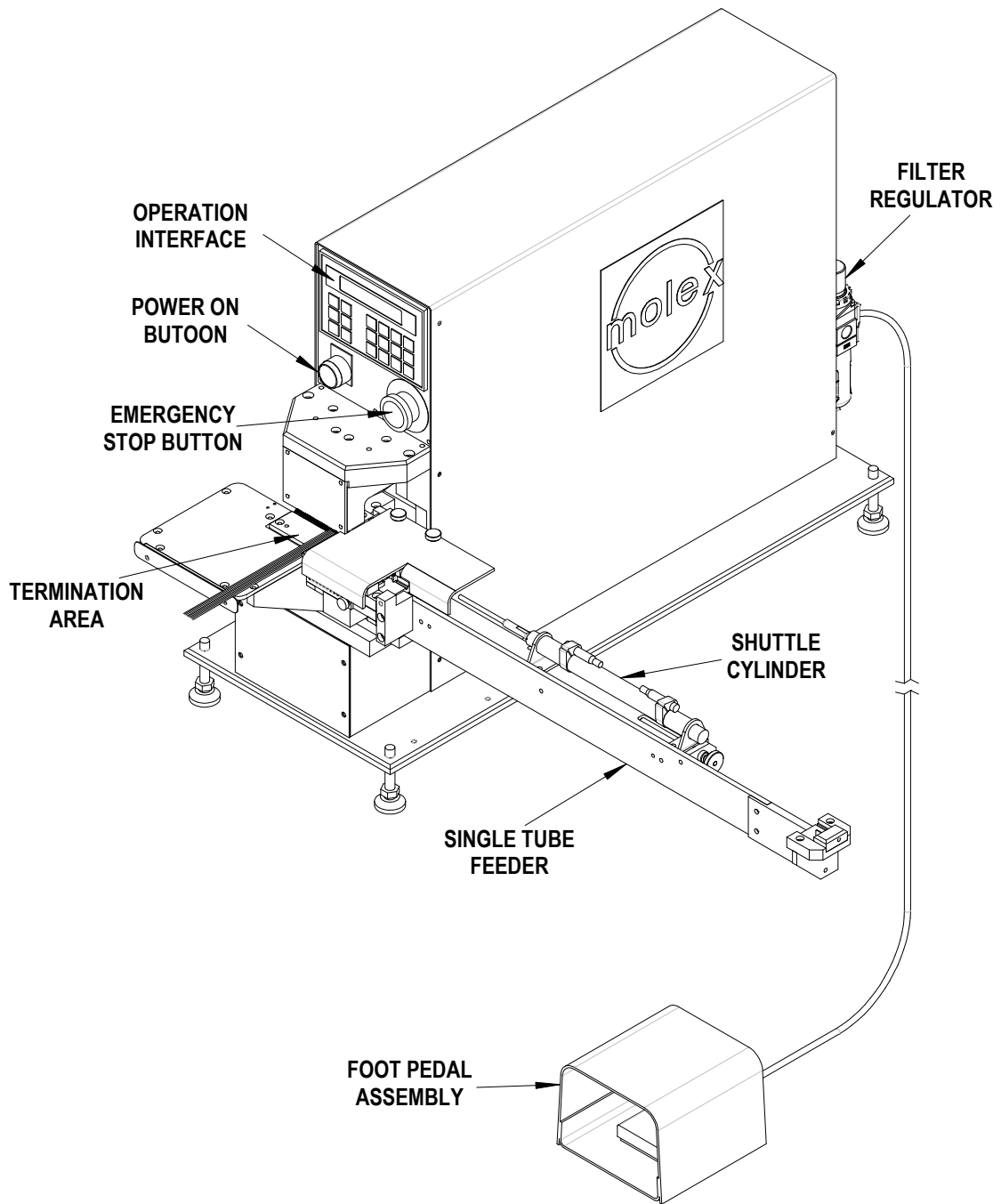


Figure 1-1

General Description

1.1 Description

The 62300-2900 flat flex cable termination machine was developed to assemble .100 S.L. flat flex cable harnesses.

- ◆ The 62300-2950 is the same as the 62300-2900 except no electrical or pneumatic controls are installed.
- ◆ The 62300-3000 ribbon cable termination machine was developed to assemble .100 S.L. IDT ribbon cable assemblies.
- ◆ The 62300-5200 and the 62300-5300 are the same as the 62300-2900 and the 62300-3000 respectively except these have the carrier breakoff option.

An operator loads a tube containing preloaded connectors (70430,70431 or 40556 series for FFC, or 70400 and 70475 for SL) from 2 - 25 circuits (See note below). As each connector assembly is terminated, the terminals are inserted, then the machine automatically loads a new connector into the terminating nest, pushing out the previously loaded connector. The operator then removes the harness from the termination area and inserts the carrier strip into the strip breakoff slot and bends the carrier strip down to break it off. To process another harness, the operator loads a cable, then depresses the foot pedal. The machine then terminates that cable and indexes another connector into position, and so on. This machine is ideally suited for mid- volume, semiautomatic applications.

NOTE: 2 circuit connectors may be processed in these machines but only in chains of two (2) or more. It is also recommended that 3 circuit connectors be run in chains of two (2) or more to avoid feed jams.

An option is available that automatically breaks off the carrier strip as it comes out of the termination head. This option is available factory installed or it can be easily installed or removed in the field.

1.2 Features

- % Automatic loading of termination nest.
- % Automatic insertion of terminals.

- % A rugged, sealed operator interface with a 24-key tactile feedback keypad for data entry, and a 20-character 2-line display for displaying batch count, fault messages, etc.
- % Operator setable batch counter.
- % Totally enclosed for operator safety.
- % Easily attached option available for automatic carrier strip breakoff.
- % Accepts 25 in. (635 mm) and 564 mm (22.2 in.) tubes.
- % "CE" Certified.

1.3 Technical Specification

Dimensions

Width: 945 mm (37.25 in.)
 Depth: 914 mm (36.0 in.)
 Height: 494 mm (19.5 in.) (without feet)

Weight

48.1kg (103lbs) Unpacked

Power Requirements

Voltage: 110 VAC or 220 VAC 50/60 Hz
 Current: 1 A @ 110 V or 220 V

Pneumatics

Pressure: 5 BAR (80psig) min.
 Consumption: 14L/min (.5 SCFM)

Rate

Up to 750 connectors per hour depending on operator skill

1.4 Delivery Check

Remove the top and sides of the crate. Then remove the screws that mount the machine to the skid. Check to see that following items are included in this package:

	Qty.
62300-XX00 Termination Machine	1
63800-8394 Foot Pedal Assembly	1
11-32-1659 Power Cord	1
11-31-5302 Nest Cleaning Tool	1
63600-0785 Leveling Feet	4
62300-2999 Instruction Manual	1

1.5 Tools

The following tools will be needed for setup and adjustment of the Hawk termination machine.

- E Hex Wrench Set (inch)
- E Large and small straight screwdriver
- E Small Crescent Wrench
- E Pliers (Needle nose)
- E Eye Loupe 5X

1.6 Installation



WARNING: The Molex Hawk terminator weights 48kg (103 lbs.) and is NOT intended to be lifted by an individual. The guarding or connector load assemblies are not attached to provide support for lifting purposes. Mechanical lifting devices should be used from below the unit. A person lifting this machine could sustain severe back or other injuries. Care should be taken at all times. An electrical, hydraulic or mechanical lift should be used to lift this terminator.

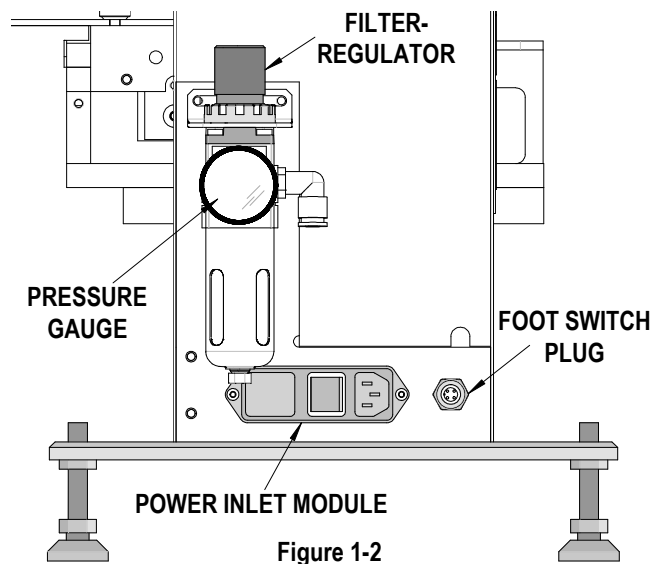


Figure 1-2

Foot Pedal

Connect the 4-pin Molex plug on the foot pedal to the 4-pin socket in the back right side of the terminator control assembly. Note the locking action of the plug. See Figure 1-2.

Power Connection

110VAC Hookup

This terminator normally comes from the factory set for 110VAC. A power cord is supplied for 110VAC service. To use terminator for 110VAC, plug the power cord into the socket in the power inlet module in the back of the control enclosure (See Figure 1-2), then plug the other end into a grounded outlet.

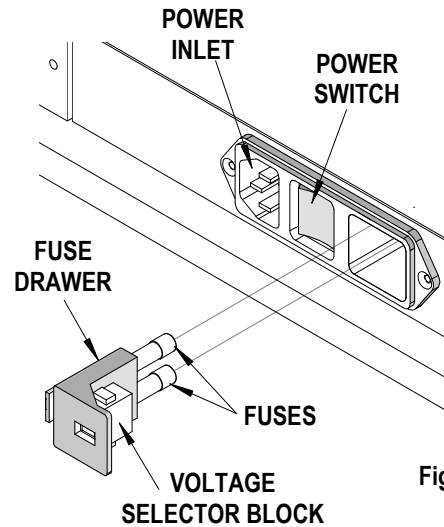


Figure 1-2

220VAC Hookup

The Hawk terminator will operate on 110VAC or 220VAC, 50 or 60 Hz. To change from one service to the other, do the following: (Refer to Figure 1-2 and 1-3)

1. Locate the power inlet module on the back of the control enclosure.
2. With a small screwdriver, remove the fuse drawer.
3. Remove the voltage selector block.
4. Rotate the voltage selector block until the correct voltage will show in the window.
5. Reinsert the voltage selector block.
6. 1 Amp fuses are recommended for either 110 or 220VAC so a fuse change is not required.
7. Replace the fuse drawer.
8. Install the proper power cord.

NOTE: When servicing this machine, disconnect this power cord and the air to insure complete safety to service person.

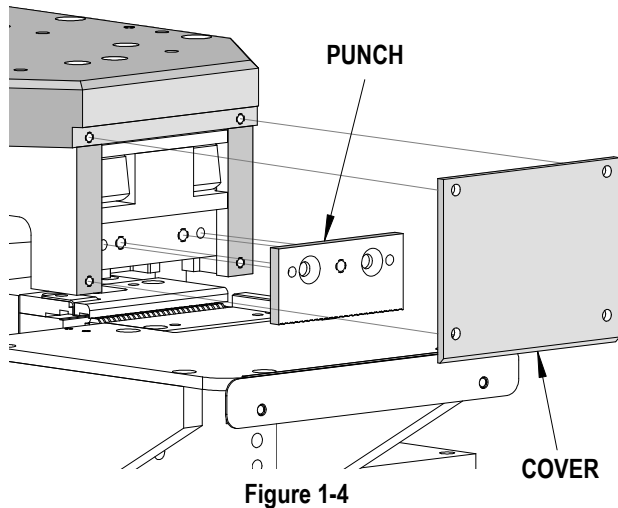
Air Connection

Because there are so many variations in air connections, Molex does not supply any type of fitting for air installation. Thus the user must supply a fitting of his choice to attach air of the correct pressure and volume to the 1/4 NPT port on the F-R unit. Use 1/4in. line minimum. Once attached, adjust the regulator on the F-R to 80-85psig (See Section 1.7.1. Air will not flow into the machine proper until power is on and the "POWER ON" button is pressed.

New Molex Global Packaging Systems Tube versus Molex Current Tube

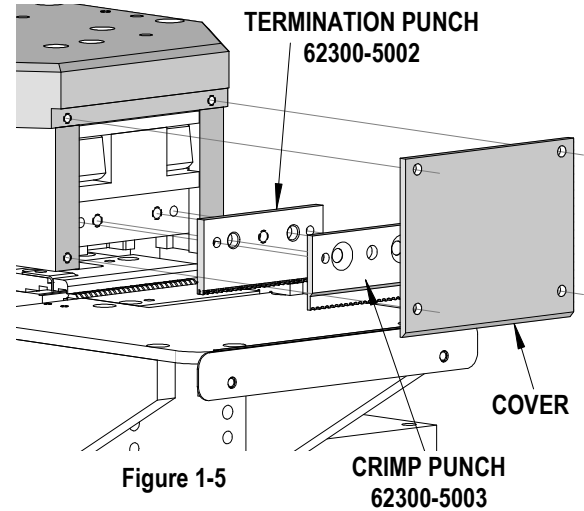
In 2001 Molex changed from a 25 inch tube to our new Global Packaging Standard Tube which is 564 mm long (22.2 in.) These machines are easily adjusted to run either. See Section 2.1 for method.

1.7 Changing Tooling



These terminators are easily changed from running FFC to running ribbon cable and visa-versa. To replace a worn punch or to change from one type of tooling to the other, do the following:

1. Remove the four (4) M4 screws holding the tooling cover. See Figure 1-4 and 1-5.
2. Remove the cover.
3. Remove the two (2) M5 flat head screws that hold the punches.



4. Remove the punch(s) that are there. There is a M5 tapped hole in the center of all the punches that a screw can be screwed into to push the punch out, if necessary.
5. Position the new punch(s) on the dowel pins.
6. Replace the holding screws and tighten.
7. Replace the cover.

Section 2

Set-Up and Operation

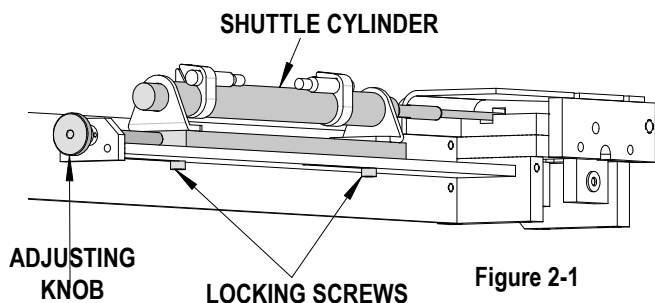
- 2.1 Setup
- 2.2 Setting Batch Size
- 2.3 Setting Break off Strokes
- 2.4 Operation

2.1 Setting Up

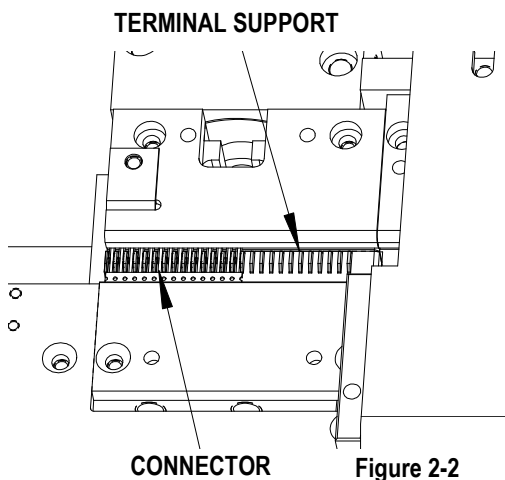
Air Pressure

Set the air pressure regulator on the F-R (filter-regulator) to 5 - 6 BAR (80 - 90 psi). This is done by pulling out the adjustment knob and setting to the proper pressure, then pushing in the knob.

Shuttle Adjustment (See Figure 2-1 and 2-2)



The shuttle is adjustable from 3 to 25 circuits. To adjust the stop following the steps below:



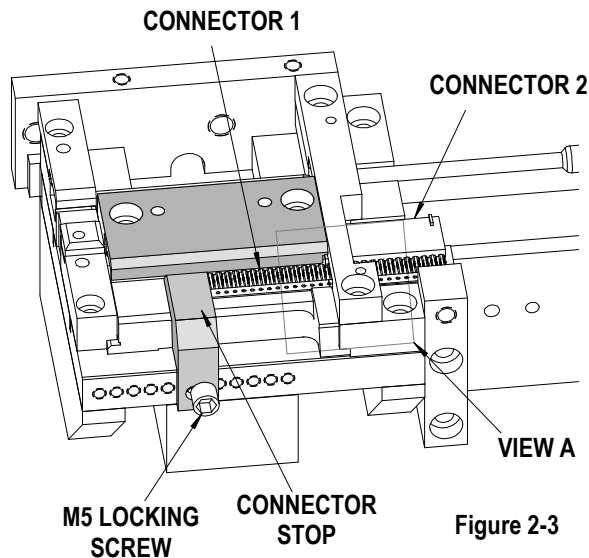
1. Place a connector in the termination nest all the way to the left. See Figure 2-2.
2. Bring the terminal support up. See *Manual Operations* in Section 2.
3. Extend the shuttle cylinder full out.
4. Loosen the two (2) locking screws under the shuttle cylinder.
5. Turn the adjusting knob clockwise to move the cylinder to the right (looking from the front) and counterclockwise to move it to the left.
6. Move the cylinder until the end of the shuttle rod just touches the connector.
7. Tighten the locking screws.

Note: 2 circuit connectors are loaded in pairs thus stop is set for 4 circuits

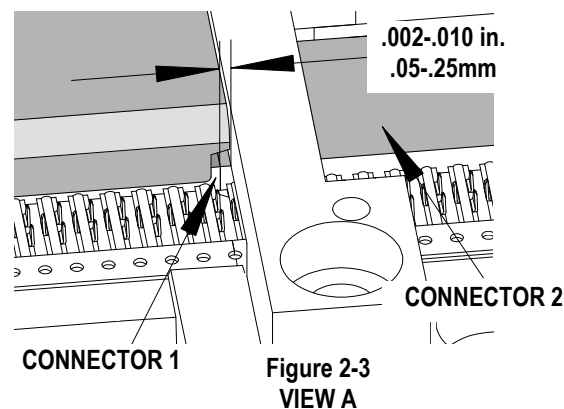
Connector Feed Stop

This stop is also adjustable from 3 to 25 circuits. To adjust the stop do the following:

1. Remove the nest guard.
2. Loosen the M5 locking screw on the connector feed stop located in front of the shift nest.
3. Starting from "3" circuits to the right, stop locates on every circuit position to 25 circuits. Adjust so that only 1 connector (except a pair of 2 circuits) at a time can enter the shift nest from the cartridge feed. Back edge of connector 1 must be just inside right edge of nest (.002 to .010in./05 to .25mm). See Figure 2-3.



4. When adjustment is set, tighten lock screw.
5. Replace guard.



Termination Depth Adjustment (See Figure 2-4)

Termination depth is set as follows:



WARNING: Make sure power is disconnected before doing steps 1 through 3.

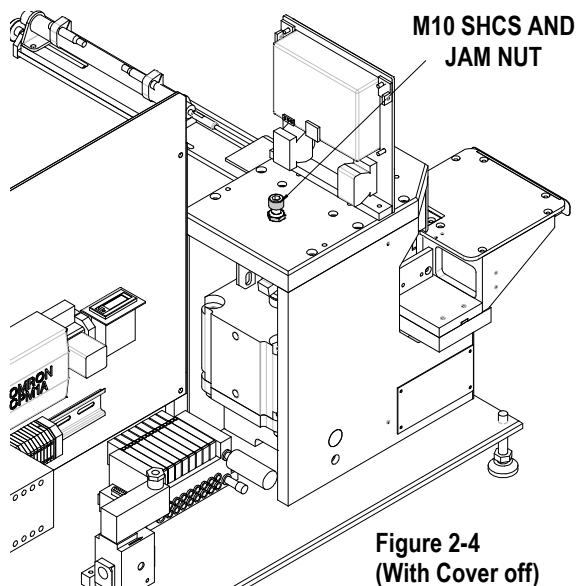


Figure 2-4
(With Cover off)

1. Remove the control assembly cover.
2. Loosen the jam nut located on top of the termination head.
3. To raise the punch depth, turn the M10 screw clockwise. To lower, turn the M10 screw counterclockwise. The punch depth should be adjusted so that a terminated wire touches the lower surface of the terminal but is not crushed and the crimp tongs are securely gripping the wire without cutting into the insulation. See termination specifications on product drawings.

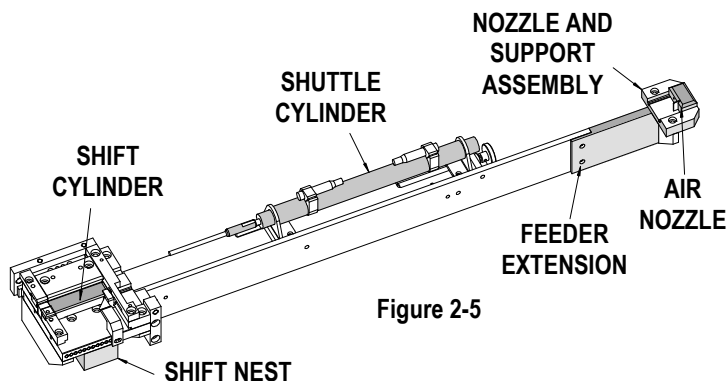


Figure 2-5

4. Terminate a wire and check the setting.

5. Repeat steps 2 and 3 until the termination depth is correct.
6. Tighten the lockout.
7. Replace the cover.

Changing From Molex 25 inch Tubes To New Global Packaging Systems (564 mm) Tubes and Back (See Figure 2-5)

1. Remove the two (2) M4 screws in the right end of the tube feeder that hold the nozzle and support assembly assembly. See Figure 2-6.

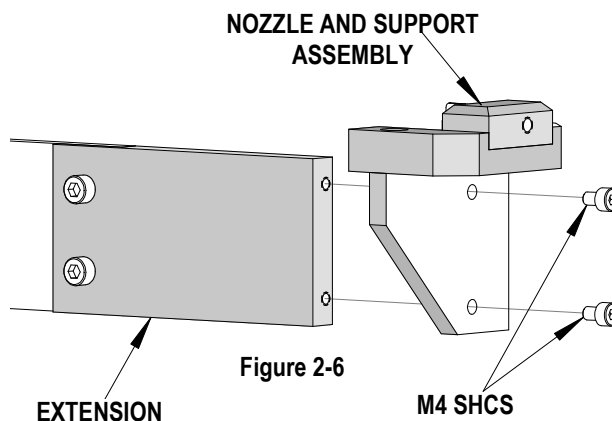


Figure 2-6

2. Set aside the nozzle and support assembly.
3. If GPS tubes will be used, remove the two (2) M5 screws that hold the extension. See Figure 2-7.

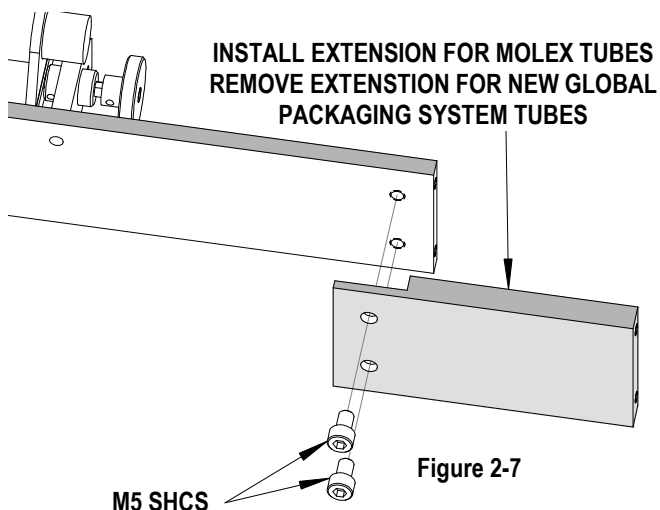


Figure 2-7

4. Store the extension and the two screws for future use.
5. If Molex standard tubes are to be used, install the extension using the (2) M5 SHCS.
6. Reinstall the nozzle and support assembly to the new end. See Figure 2-8B.

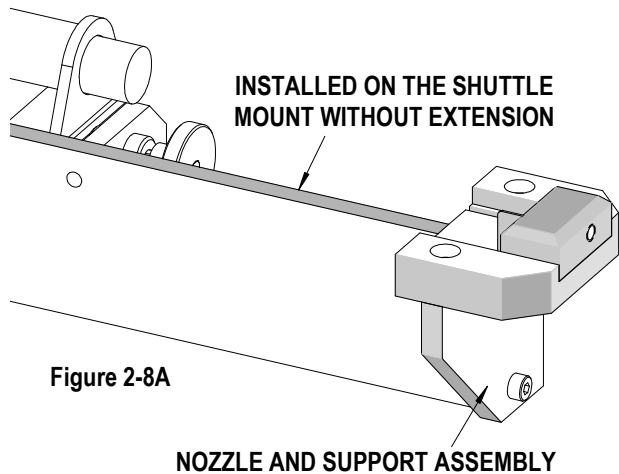


Figure 2-8A

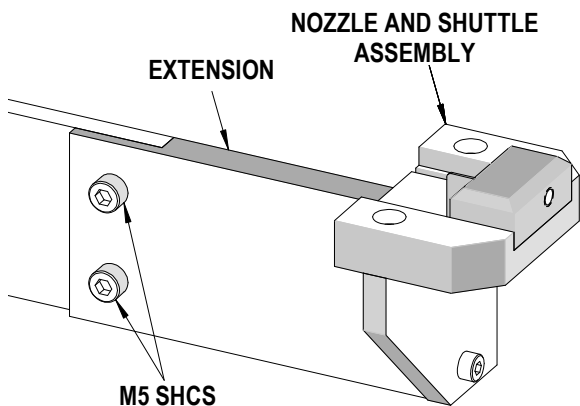


Figure 2-8B

2.2 Setting Batch Size

1. Press the blue **"BATCH"** button on the operator interface. The following display will appear:

BATCH COUNT = 0000
PRESS UP OR DOWN

2. Use the up and down arrows to set the desired value in the display.
NOTE: Holding the arrow button down causes the incrementing to go faster.
3. Press the **"MAN"** or the **"RUN"** button to exit Batch mode.

2.3 Setting Breakoff Strokes

If the carrier breakoff option is not installed, it is necessary to enter a "0" in the breakoff stroke counter. If the carrier breakoff option is installed there must be a positive value (from 1 to 9) entered into the counter.

The same procedure is used if the operator wants to increase or decrease the number of breakoff strokes.

1. Press the blue **"BK OFF"** button on the operator interface. The following display will appear:

BRKOFF STROKES = 0000
PRESS UP OR DOWN

2. Use the up and down arrows to set the desired value in the display (0 - 9).
3. Press the **"MAN"** or the **"RUN"** button to exit Batch mode.

2.4 Operation

This machine operates in two (2) modes; Manual and Run. Manual mode is used during setup and trouble shooting. It allows most machine functions to be operated independently, allowing adjustment, testing and repair of that function. here are built in interlocks to prevent collisions of machine parts and possible damage to same.

Run mode sets the control to run a complete termination cycle when the foot pedal is pressed. This includes terminating the cable and connector, inserting terminals, and loading another connector automatically.

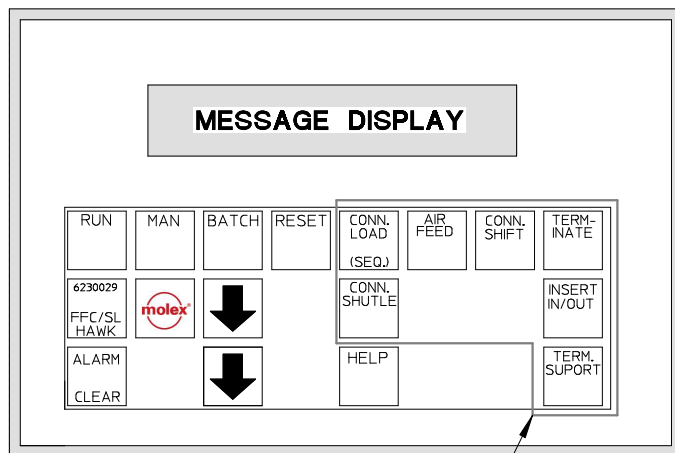


Figure 2-9

MANUAL BUTTONS

Manual Mode (See Figure 2-9)

1. **"MAN"** (yellow) Pressing this button puts the controller into "Manual Mode", and the display will show:

**MANUAL MODE
PRESS MANUAL BUTTON**

2. **"CONN. LOAD (SEQ)"** This button, when pressed, starts the sequence that loads another connector into the shuttle nest, then shuttles it forward, where the shuttle pushes the connector out of the slide nest into the termination nest. (Interlock: The terminal support must be down.)
3. **"CONN. SHUTL"** (See Figure 2-5 and 2-10) This button operates the shuttle cylinder. Pressing it once extends the cylinder rod forward pushing the connectors into the termination nest. Pressing it the second time, retracts the cylinder rod to the rest position. (Interlocks: Terminal support must be down and insert cylinder must be retracted.)
4. **"BREAK OFF"** If the carrier breakoff option is installed, pressing this button causes the carrier breakoff mechanism to go up and down. (No Interlocks.)
5. **"AIR FEED"** Pressing this button once turns on the air that blows the parts out of the tube into the shift nest. Pressing it a second time turns off the air.

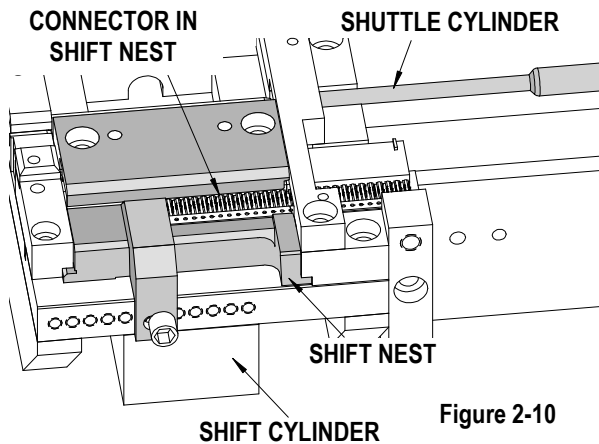


Figure 2-10

6. **"CONN. SHIFT"** (See Figure 2-10) Pressing this button causes the connector in the shift nest to move to the rear position. Pressing it a second time returns the nest to the forward or rest position. (Interlock: Shuttle must be retracted.)

7. **"TERM-INATE"** Pressing this button extends the termination cylinder which in turn brings down the termination die. Pressing it a second time retracts the cylinder, raising the termination die. (Interlock: Insert must be retracted.)
8. **"INSERT IN/OUT"** Pressing this button extends the insertion cylinder which pushes connector housing onto the terminals and cable. Pressing it a second time returns the guide to the rest position. (Interlocks: Termination die must be up and terminal support must be down.)
9. **"TERM. SUPRT"** (See Figure 2-2) In the termination nest there is a series of blades mounted on a block that locate and support the terminals when a connector is in the nest. This button raises and lowers the support. (No Interlocks.)
10. **"ALARM CLEAR"** (Red Button) As noted with each button above, there are interlocks to prevent damage to various parts of the machine. If one of these interlocks is violated, a warning message comes up on the display indicating which interlock is violated the action does not occur and the alarm goes off. The alarm cause must be corrected. Then the operator must press the **"ALARM CLEAR"** button to clear this message before proceeding. See Section 3.4 for more information.

NOTE: By pressing E-STOP, the air can be dumped for clearing jams.

Run Mode

1. The first connector must be manually loaded into the termination nest. Press the **"MAN"** button.
2. Press the **"CONN. LOAD"** button. This will put the terminator through all operations necessary to load the connector.
3. Press the **"RUN"** button. The operator is now ready to begin a run. The following display will appear.

**RUN MODE BATCH XXXX
PRESS FOOT SWITCH**

4. Place a length of flat cable against the cable guide and slide it forward until the leading edge of the cable touches the connector housing. See Figure 2-11.

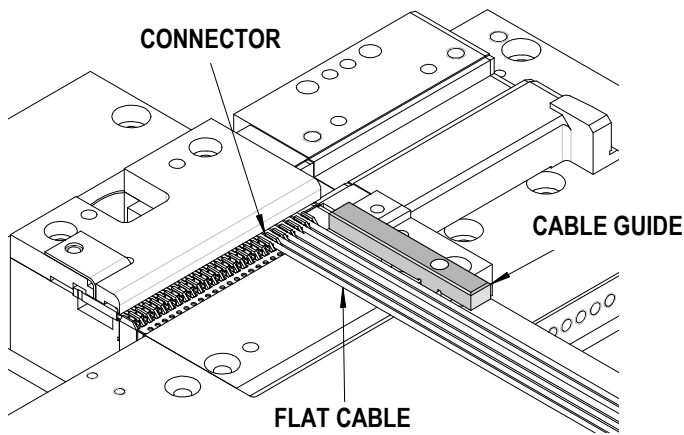


Figure 2-11

5. Press and release the foot pedal.
6. When the terminator has completed its cycle, the terminated cable and connector will be pushed out the left side of the termination nest and a new connector is loaded.
7. Break off the carrier strips by inserting them in the slot in the front of the cable support (See Figure 2-12) and bending back and forth once or twice.

NOTE: If the optional carrier breakoff assembly is installed the above step is not necessary.

8. Repeat steps 4 through 7 as often as required to reach the desired batch size. When the batch is completed, the following display will appear and the bottom line will flash:

**BATCH COMPLETED 0000
PRESS ALARM CLEAR**

9. Press the "ALARM CLEAR" button.
10. The operator can now go to Manual mode and set up for a new job or he can press the "RESET" button (which will reset the batch count to "0") and run another batch.

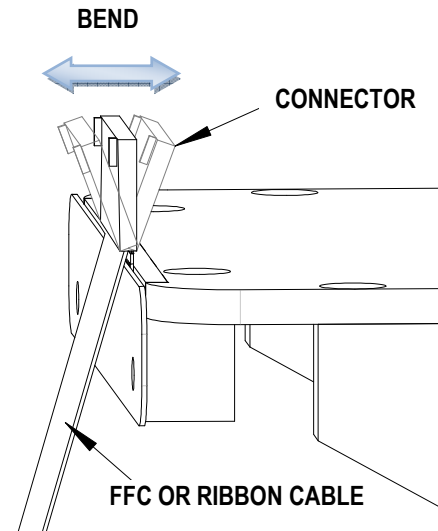


Figure 2-12

Section 3

- 3.1. Maintenance
- 3.2. Perishable Parts
- 3.3. Spare Parts
- 3.4. Troubleshooting
- 3.5. Fault Message Diagnostics

3.1 Maintenance



WARNING: Disconnect the compressed air line and the power cord from the power source during all maintenance operations.

Cleaning



1. Using a small soft brush, clean all the debris and dust out of both nests and the tooling at least once a day, **NOTE:** The use of compressed air to clean the tooling is not recommended as it can cause debris to wedge into the tooling and/or come flying out at the operator.
2. When it is necessary to replace tooling, care should be taken to remove any debris from tapped holes or mounting surfaces. Debris can prevent tooling from being properly locked into position.
3. Keep the air filter clean. A visible coating of dirt in the bowl indicates that the unit needs cleaning. To clean, Remove the bowl and filter element and clean with denatured alcohol.

Lubrication

Springly lubricate the sliding parts approximately every month with S.A.E. 10W motor oil or equivalent.

Preventive Maintenance Chart

Daily: Clean. See Section 3.1.

Monthly: Check air filters and clean as necessary. See Section 3.1.
Lubricate sliding parts. See Section 3.2.

CHECK SHEET MONTH _____ YEAR _____

Week	Daily Use	Days of the Week							Solution
		MON	TUE	WED	THU	FRI	SAT	SUN	
1									
2									
3									
4									
Monthly									
Air Filters									
Lubricate									

Schedule should be adjusted up or down depending on usage. Molex recommends that a log of preventive maintenance be kept with the tool.

3.2 Perishable Parts

These parts make contact with the connector and can wear over time. The customer is responsible for maintaining a set of these parts and Molex recommends the customer keep at least one spare set on hand at all times.

NOTE: Perishable Parts are identified in the Parts Lists in Section 6.

3.3 Spare Parts

These are parts that are available to support the Hawk terminators in service. They are moving or otherwise functioning parts that could be damaged or malfunction. It is suggested that the customer may want to keep some or all of these parts on hand to reduce down time.

NOTE: Recommended Spare Parts are identified in the Parts List in Section 6.

3.4 Troubleshooting

Symptom	Cause	Solution
No Power	▪ No power at source	Make sure there is power at the power outlet.
	▪ Loose connection or damaged power cord.	Check both ends of the power cord to be sure they are firmly plugged in. Check the power cord and repair or replace as required
	▪ Terminator fuses blown.	See Section 1.6 for locating and removing fuses. Check and replace as required.
Connector over feeding or short feeding in termination nest.	▪ Shuttle feed improperly set.	See Section 2.2 and check the shuttle feed. Reset if required.
Cable not terminating correctly in connector.	▪ Cable guide not set correctly.	See Section 2.2 and check the cable guide Position and reset if necessary.
	▪ Termination punch height set too high or too low.	See Section 2.1 and readjust the termination Depth.
	▪ Air pressure too low.	Check and correct. See Section 2.1.
Machine stops and a fault message appears in the display.	▪ A machine function has failed to perform as expected.	See "Fault Message Procedure" on following page.

3.5 Fault Message Procedure

This terminator has built in fault diagnostics. When an action fails to occur properly, a fault message will appear in the display. This messages indicates what did not happen and what sensor the controller is expecting to see.

For Example: The following display appears:

<p>S5 HSG. SHUTTLE NOT FORWARD</p>

This message tells us the following:

The controller is looking to see sensor S5 on and either the shuttle did not move at all, it moved and jammed part way, or it went all the way but the sensor is not made.

The following example, while it uses the above message to explain the procedure, it is typical of the method for handling most fault messages.

1. Determine where the shuttle rod is: Is it all the way home, part way forward, or all the way forward (to the Left)?
2. If the shuttle rod is all the way forward jump to step 6.
3. If the rod did not move, check to see if the valve (SV5 in this case), is functioning correctly. See Pneumatic Diagram in Section 5. Replace if necessary.
4. If the rod did not move or moved part way, check for bent cylinder rod, loose mechanical joints or debris in the path of the rod. Also check the air pressure.
5. Repair, replace, clean or adjust as required.
6. Locate the appropriate sensor and determine if it is functioning properly by placing a piece of steel in front of sensor. If the LED on the back of the sensor goes on, the sensor is OK. If LED does not go on, check the plug. If this is OK, replace the sensor.
7. Make sure the sensor flag (if there is one) is positioned so that it activates the sensor when the shuttle is all the way forward.
8. From the electrical schematic (See Section 6) it is determined that Sensor 5 is wired to input 008. Find input 008 LED on the controller in the control cabinet. Check to see if this LED goes on when the sensor LED goes on. If not, check the wiring between the sensor and the controller.

Section 4

Optional Carrier Breakoff Station Order No. 62300-4700

- 4.1 Description
- 4.2 Technical Specifications
- 4.3 Installation
- 4.4 Operation

4.1 Description

(See Figure 4-1)

The optional 62300-4700 Carrier Breakoff Station is designed to mount on the left side of the basic terminator. It automatically breaks the carrier strip off the finished connector and cable assembly. The carrier strip then slides down the chute into a customer provided container.

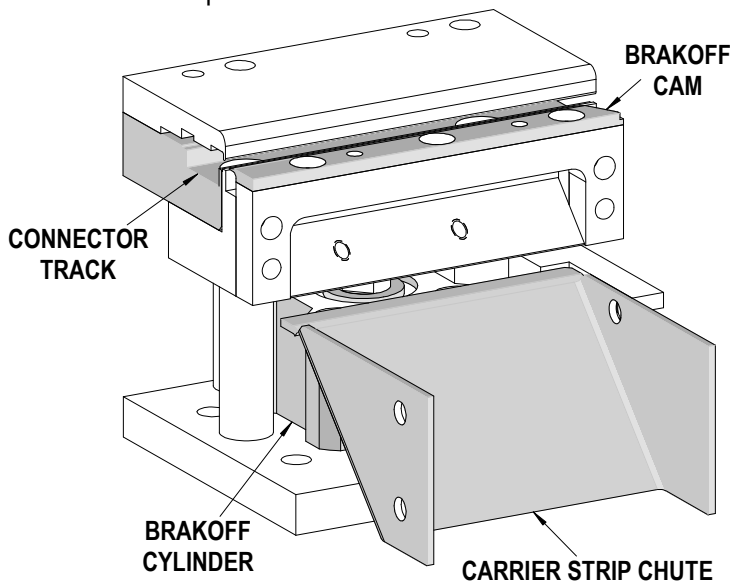


Figure 4-1

4.2 Technical Specifications

- Width:78.8 mm (3.1 in.)
- Depth:65.1 mm (2.56 in.)
- Height:70.5 mm (2.78 in.)
- Weight:0.9 kg (2 lbs.)

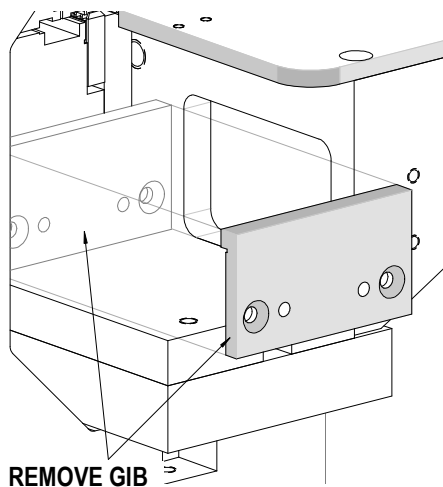


Figure 4-2

4.3 Installation and Removal

Installation

To install the optional Carrier Breakoff Assembly, do the following steps.

1. Remove the gib from the left side of the termination nest as shown in Figure 4-2.
2. Install the breakoff assembly (without the strip chute) into the area where the gib was removed. The rear bolt hole and the two dowels will line up with the holes in the mating block. See Figure 4.3.

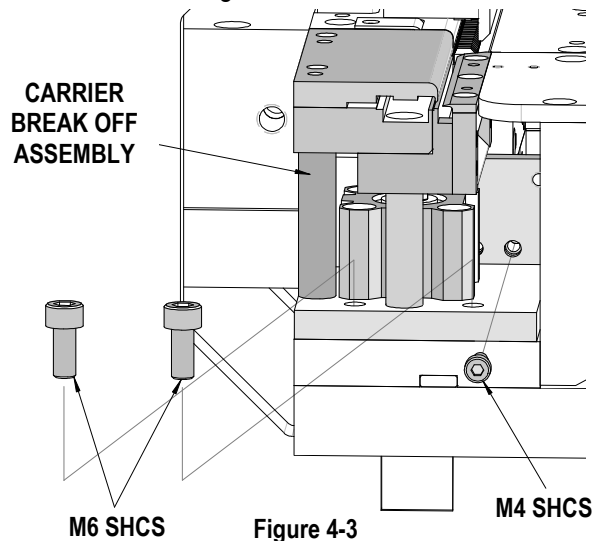


Figure 4-3

3. Install the two (2) M6 screws that hold the breakoff assembly down.
4. Remove the two (2) plugs from the A and B ports of the spare valve in the valve bank.
5. Connect two lengths of 4mm tubing from the valve assembly to the cylinder. Connect the "B" port to the top fitting on the cylinder and the "A" port to the bottom fitting. Reference the Pneumatic Schematic in Section 6.
6. Looking at Figure 4-4, locate the carrier strip chute and mount with two (2) M4 screws.

Removal

If for some reason you want to un-install the carrier breakoff assembly, simply reverse the installation procedure described above.



CAUTION: It is important to make sure the gib, removed in step 1 above, is reinstalled.

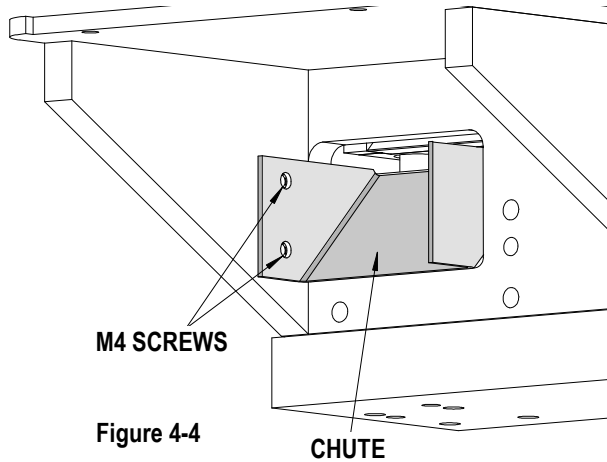


Figure 4-4

Tubing Hookup

No Breakoff

If the breakoff station is removed do the following:

1. Remove the two (2) tubes (that went to the breakoff station) from the valve bank.
2. Install two (2) plugs in the right hand ports as shown in Figure 4-5 (where the tubes were just removed).

With Breakoff

If the breakoff station is being installed, do the following:

1. Remove the two (2) plugs from the spare valve (#8).
2. Install two 6mm to 4mm reducers in these ports.
3. Cut the piece of tubing supplied with the breakoff kit into two suitable lengths to run as shown in Figure 4-6.
4. Insert the tubes into the reducers.
5. Connect the other ends of the tubes to the breakoff cylinder as shown in Figure 4-6. Tube "A" connects from the "A" (bottom) port on the valve manifold to the top port of the breakoff cylinder, and the "B" tube connects from the "B" (upper) valve manifold port to the bottom port of the breakoff cylinder. See also the Pneumatic Schematic at the end of Section 6.

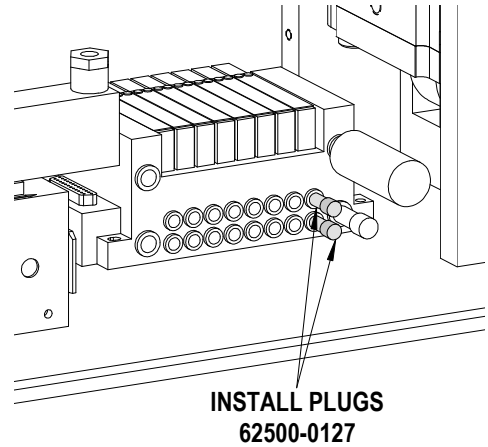


Figure 4-5 (With Cover removed)

4.4 Operation

Once the tubing is connected, the carrier breakoff assembly is ready to go. The control is preprogrammed to operate the breakoff cycle automatically.

NOTE: A value greater than "0" must be programmed into the breakoff stroke counter for the breakoff to function. See Section 2.3 for programming procedure.

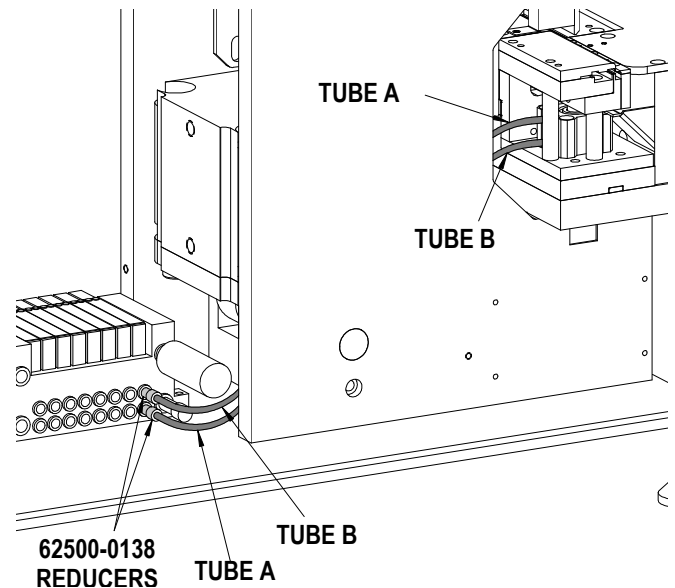


Figure 4-6 (With Cover removed)

Section 5

- 5.1. Parts Lists and Assembly Drawings
- 5.2. Electrical Controls and Schematics
- 5.3. Pneumatic Schematics

The following pages contain the parts lists and assembly drawings for the 62300-2900 and 62300-3000 Hawk Terminators.

Here is some information that will help you better understand and use the information contained in these documents.

1. The "**Item No**" in the left column of the parts lists matches the number in the bubble on the assembly drawings.
2. The "**Order No.**" in the next column is the number that should be used when ordering that particular part.
3. An "**RSP**" appearing at the end of the Description column designates this part as a Molex **Recommended Spare Part**.
4. A "**PP**" appearing at the end of the Description column designates this part as a **Perishable Part**.
5. The "**Req'd**" quantity is the number of pieces of that part required per assembly. It is also the quantity Molex recommends be kept on hand if that part is a Perishable Part or a Recommended Spare Part.