

Instruction Manual
Flat Platen Pneumatic Assembly Press
Order No. 62201-3800

- Description
- Operation
- Maintenance

WARNING

- NEVER** OPERATE, SERVICE, INSTALL, OR ADJUST THIS TOOL WITHOUT PROPER INSTRUCTION AND WITHOUT FIRST READING AND UNDERSTANDING THE INSTRUCTIONS IN THIS MANUAL.

- NEVER** INSTALL TOOLING OR SERVICE THIS PRESS WHILE THERE IS AIR UNDER PRESSURE IN THE CYLINDER. MAKE SURE AIR IS OFF AND PRESSURE HAS BEEN RELIEVED.

- NEVER** INSTALL TOOLING OR SERVICE THIS PRESS WHILE IT IS INTO ANY ELECTRICAL POWER SOURCE. DISCONNECT THE POWER BY UNPLUGGING THE PRESS FROM ITS POWER SOURCE.

- NEVER** LIFT THIS PRESS WITHOUT THE AID OF MECHANICAL LIFTING DEVICES. **SEVERE BACK OR OTHER INJURIES CAN RESULT.**

WORK SAFELY AT ALL TIMES

**For Service, Contact Your
Local Molex Sales Office**

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Fax: 630-505-0049**

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Section 1

General Description

- 1.1 Description
- 1.2 Features
- 1.3 Technical Specifications
- 1.4 Delivery Check
- 1.5 Tools

General Description

1.1 Description

The 62201-3800 is the Complete Flat Platen Pneumatic Press (also called Flat Rock), with the 62201-3700 Flat Platen Tooling Kit installed. It is used in the Molex Standard Pneumatic Press (8 Ton) Press 62200-8200.

It is designed to assemble a wide variety of Molex connectors into printed circuit boards. See ATS-62201-3700 for products chart. The tooling is set in position under the ram then the operator presses the two (2) palm buttons simultaneously and holds until the press cycle is complete. This press is ideally suited for low to medium volume users.

1.2 Features

- Two-hand no tie-down operation for operator safety
- The ram has a fast approach until it meets a resistance at which time it automatically switches to a power stroke
- A four (4) position switch allows setting of different power stroke trip forces

1.3 Technical Specifications

Dimensions

Depth	1067mm (42.0in)
Width	635mm (25.0 in)
Height	1930mm (76.0 in)

Weight

427kg (940lb) unpacked

Electrical

120 VAC at 5A

Pneumatic Requirements

Clean dry air at 6.2 Bar (90psi) and 56Lm (2cfm)

WARNING: Do not attempt to operate this press at air pressures above 6.2 Bar (90psi).

1.4 Delivery Check

Carefully remove the machine from its shipping container and check to determine if the following articles are included in the package.

Description	Order No.	Quantity
Pneumatic Press	62201-3800	1
Instruction Manual	ATS-622013800	1
Specification Sheet	ATS-622013700	1
Instruction Manual	ATS-622008200	1

1.5 Tools

The following tools may be needed to operate and adjust this tooling:

- ✓ Metric Hex Wrench Set
- ✓ Inch Hex Wrench Set
- ✓ Needle Nose Pliers

PRINCIPAL MECHANICAL PARTS OF THE 62201-3800 PRESS

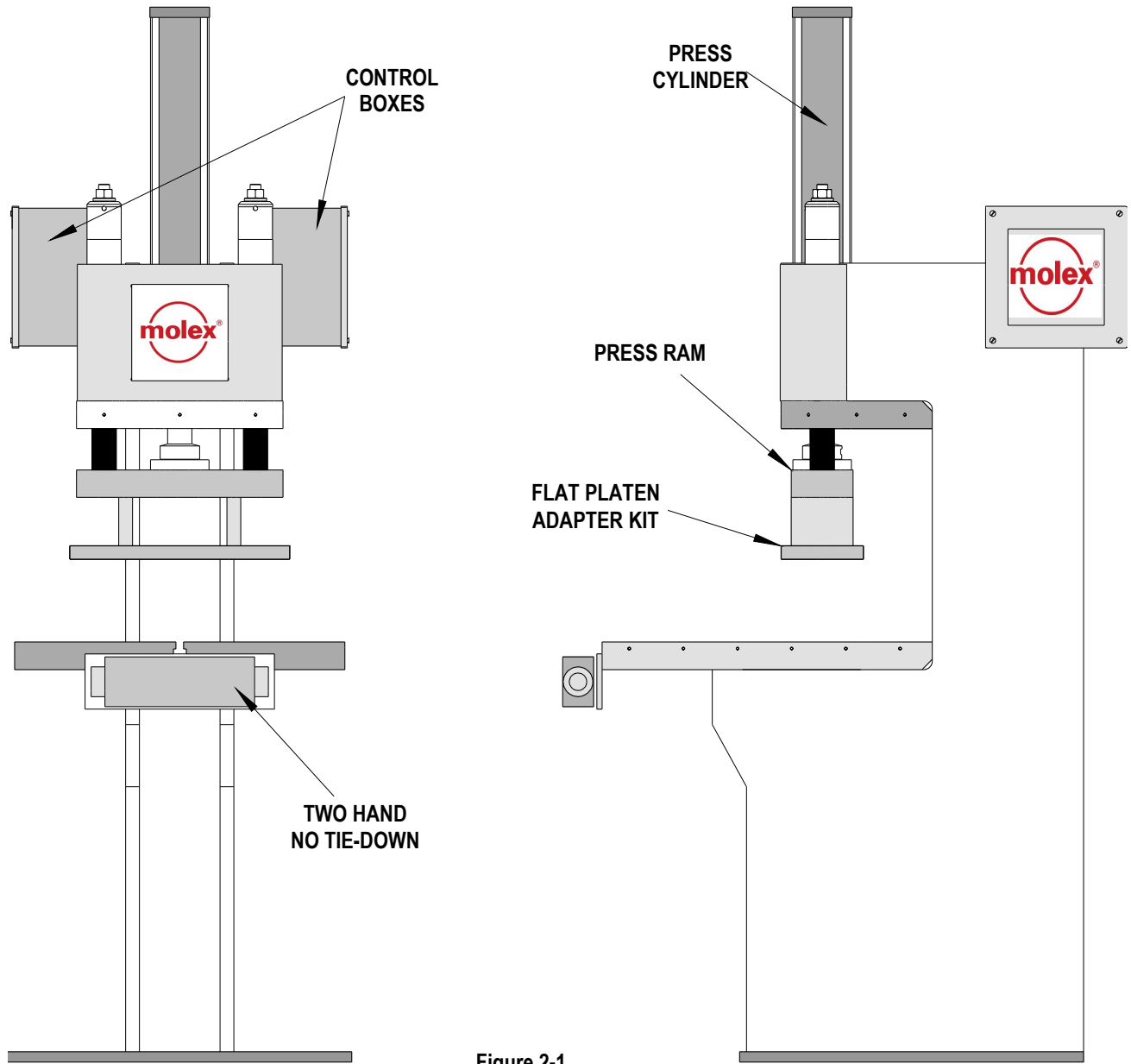


Figure 2-1

Section 2

Installation

2.1 Installation

2.2 Set-Up

2.3 Operation

2.1 Installation

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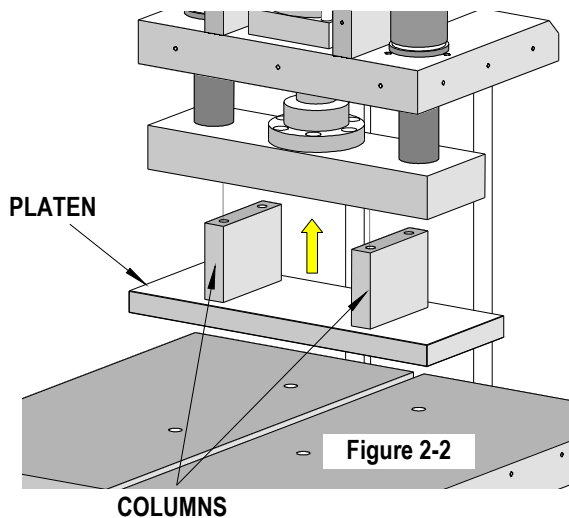
This Press weighs approximately 427kg (940lbs) and is NOT intended to be lifted by a single individual. An electric, hydraulic, or mechanical lifting device should be used from below the unit.

A PERSON LIFTING THIS MACHINE COULD SUSTAIN SEVERE BACK OR OTHER INJURIES.

Care should be taken at all times.

Installing the Press

1. Place the press on a level surface with enough room around it to allow for safe operation and easy loading and unloading of fixtures.
2. Make sure there is plenty of light.
3. Four (4) holes are provided in the base plate for bolting the press to the floor or for leveling pads if required.
4. Due to the wide variety of air fittings available, Molex does not supply a fitting for connecting the air. The user must supply a fitting applicable to his system. The port in the shutoff valve on the filter-regulator-lubricator unit is a female 1/2 NPT. Obtain the correct fitting and connect the press to a suitable air supply. The supply line should not be less than 9.5mm (3/8") I.D.
5. Plug the no tie-down box power cord into a properly grounded 120VAC outlet.



NOTE: It is not necessary to put oil in the F-R-L unit, as the valves and cylinder do not need lubrication.

Installing the Tool Kit in the Press

The 62201-3800 Manual Press comes with the tooling kit already installed. See Figure 2-1. If the 62201-3700 Tooling Kit is not installed in the Press, follow the steps below:

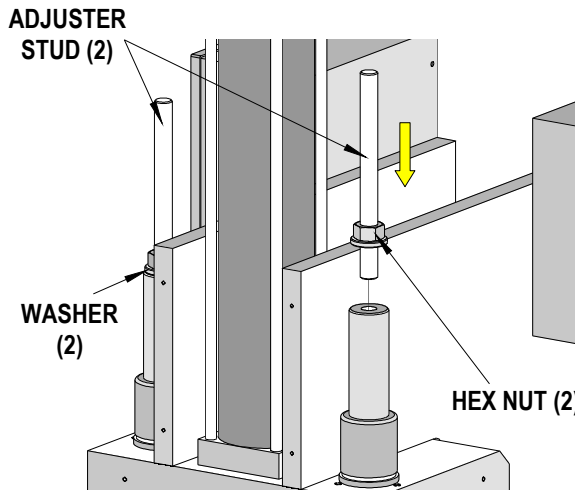


Figure 2-3

1. Remove any tooling that is currently in the press.
2. Attach the 2 platen columns to the press plate with four (4) M10 SHCS. See Figure 2-2.
3. Attach the platen to the (2) platen columns with two (2) M10 SHCS.

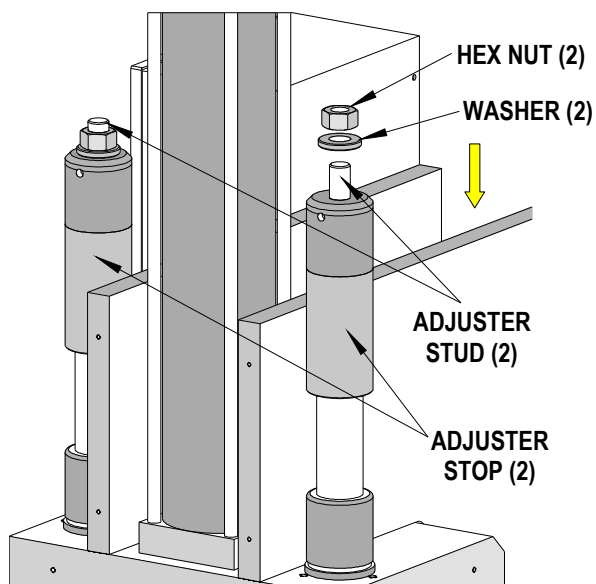


Figure 2-4

4. Screw the two (2) adjuster studs with two washers and two hex nuts into the press ram guide posts as shown in Figure 2-3.

5. Screw the two (2) adjuster stops onto the two adjuster studs as shown in Figure 2-4.
6. Place the last two (2) washers and hex nuts on the adjuster studs. See Figure 2-4.
7. Bring the adjusters cover down over the ram stroke adjusting assemblies and attach with four (4) M4 BHCS. See Figure 2-5.

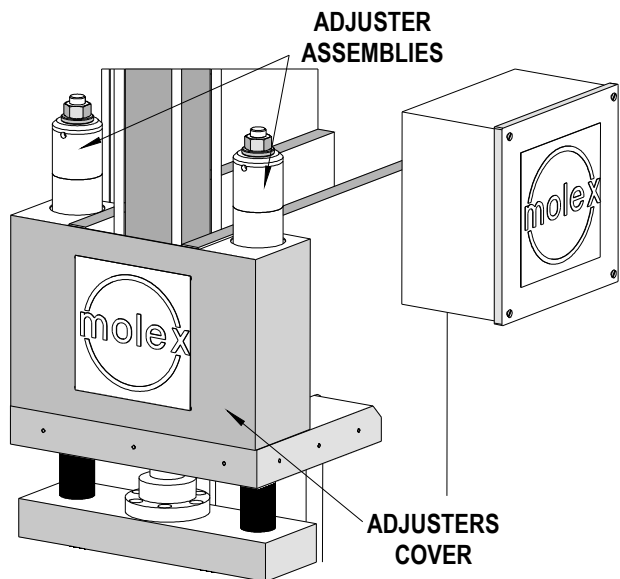


Figure 2-5

2.2 Setup

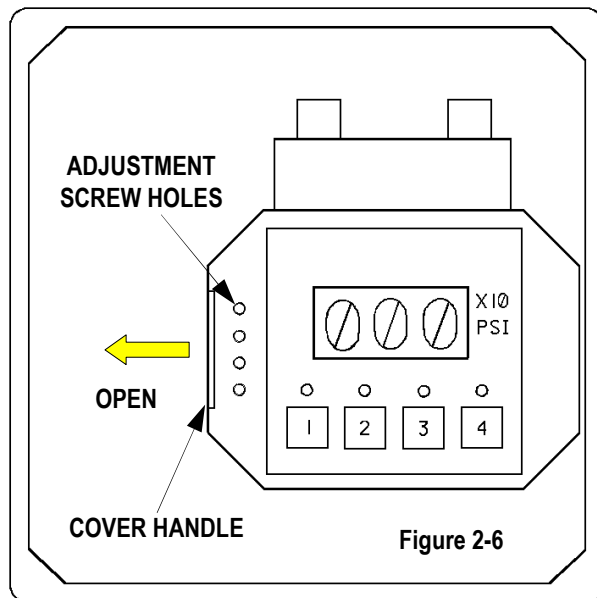
Dropout Force Adjustment

On the right side of the control box is a four (4) position selector switch that allows a preprogrammed dropout pressure to be selected. This is the hydraulic pressure (in the cylinder) at which the cylinder automatically reverses and returns to the up position. This assures enough pressure is applied to do the job but not enough to damage the connectors, printed circuit board, or tooling. Up to four (4) different job settings can be preset and then selected during setup simply by turning the switch to the position that was programmed to the desired value.

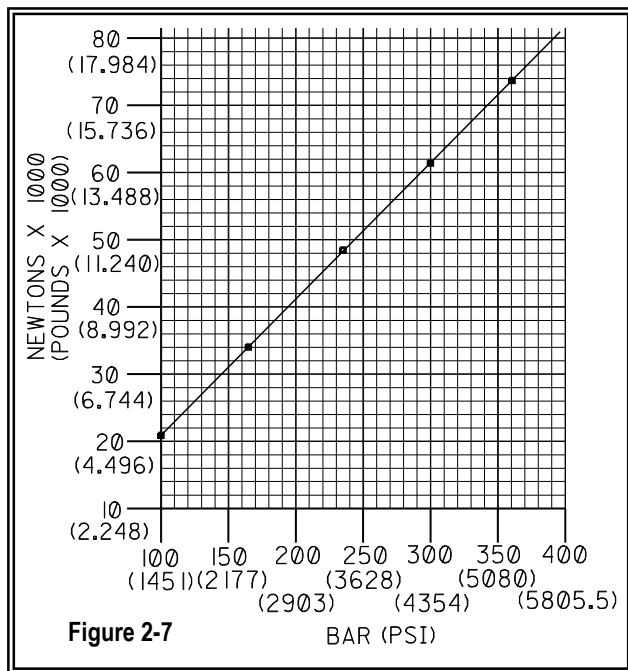
To check the programmed setting or to change a setting, follow the steps below:

1. Remove the cover on the right control box. Inside there is a unit with a membrane switch and digital display. See Figure 2-6.

2. Press the key that matches the proper number of the selector switch position and the pressure setting for that position will appear in the display.



3. If a setting needs to change, push the cover on the left side of the unit to the left. See Figure 2-6.



4. Press and hold the key for the position to be reset.
5. There are four (4) small holes just to the right of the cover handle. Use a very small straight screwdriver to turn the screw at the back of the hole that corresponds to the key being pressed. Turning the screw clockwise (CW) raises the

setting, while turning it counter-clockwise (CCW) lowers the pressure setting. The graph in Figure 2-7 shows the relation between the hydraulic pressure setting and the applied force.

6. Observe the setting on the display, when the desired setting is reached. Remove the screwdriver.
7. Push the cover all the way back to the right.
8. Replace the cabinet cover.

Press Ram Force

The maximum force the press will generate can be adjusted by adjusting the air pressure to the ram cylinder. Towards the back of the right side frame is a filter-regulator-lubricator unit. On top of the unit there is a knob.

1. Lift up the outer sleeve of this knob.
2. Turn the knob clockwise (CW) to increase the pressure, or counterclockwise (CCW) to decrease the pressure. See Figure 2-8 for approximating the pressure required for the desired ram force.

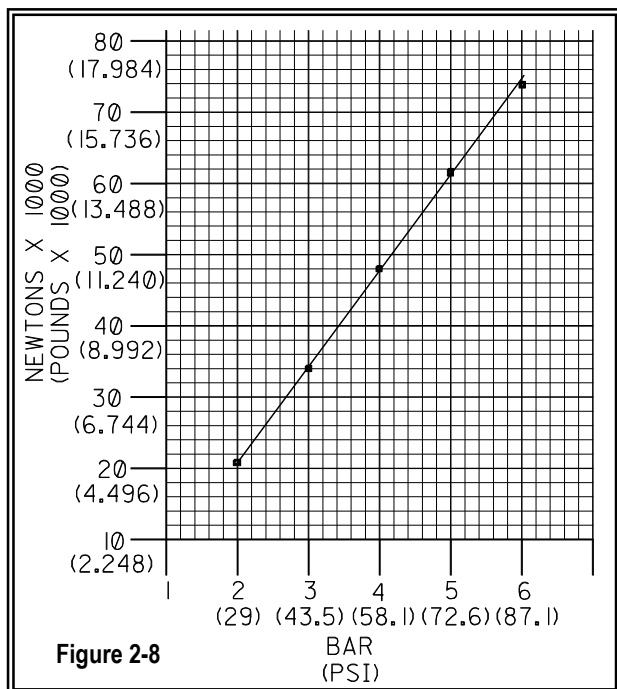


Figure 2-8

3. When the desired pressure is reached, push the outer sleeve down.

Changeover from Fast Approach to Power Stroke

Refer to Section 5.1 page 9, in the 62200-8200 manual, Appendix A under (PowerPackage operating manual) for an explanation of this function, and then to page 14, Section 6.5.1, for an explanation of how to adjust the time delay for changeover.

Power Package Cylinder Refill

Refer to Section 9, page 18, in the 62200-8200 manual, Appendix A under (PowerPackage operating manual).

Ram Stroke Adjustment

The ram down stop on the flat platen tooling must be set so that when the connector is pressed into the printed circuit board it is flush to 0.15mm (.006 in.) above the board .See Figure 2-9.

The procedure for adjusting the stop is as follows:

1. Loosen the two (2) hex nuts on top the adjusting studs. See Figure 2-4.
2. Turn the stops clockwise (CW) to increase the height at which the ram stops or counterclockwise to decrease it.
3. Following the procedure described in Section 2.3 (Operation), press a connector into a printed circuit board (preferably scrap pieces). Adjust as necessary to meet the proper requirement described in Figure 2-9.

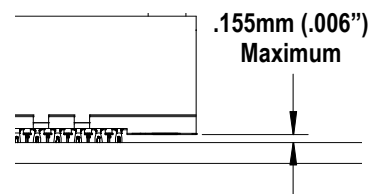


Figure 2-9
MAXIMUM CLEARANCE WHEN THE CONNECTOR IS FULLY SEATED

4. When this proper height is reached, adjust the two (2) adjuster stops using a customer supplied gage making sure that the stops are parallel.

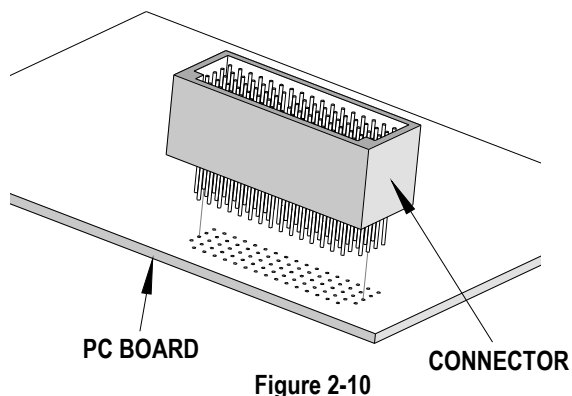
NOTE: It is very important that the two adjuster stops be parallel so the platen exerts an even force when pressing a connector into a board.

5. Repeat steps 4 and 5 until proper results are obtained.
6. When adjusting is complete, tighten the two hex nuts.

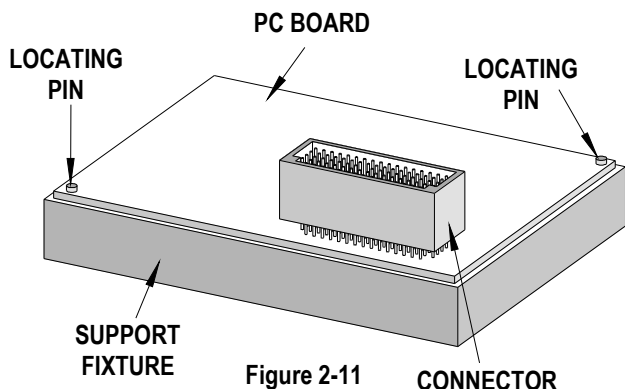
2.3 Operation

NOTE: The individual tool instruction manuals should be consulted for specific operating details. The following is a typical sequence of operations:

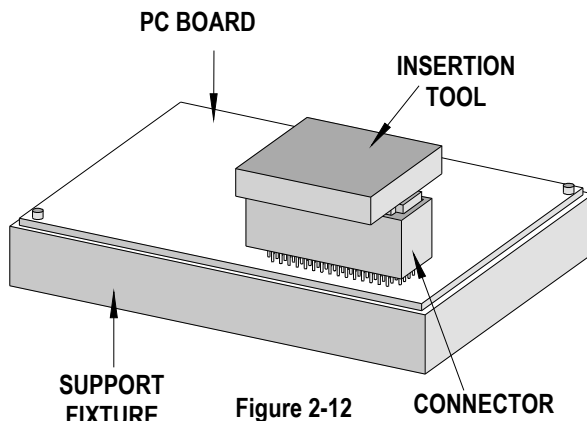
1. Carefully position the connector (header) on the printed circuit board and hand start it into the board. See Figure 2-10.



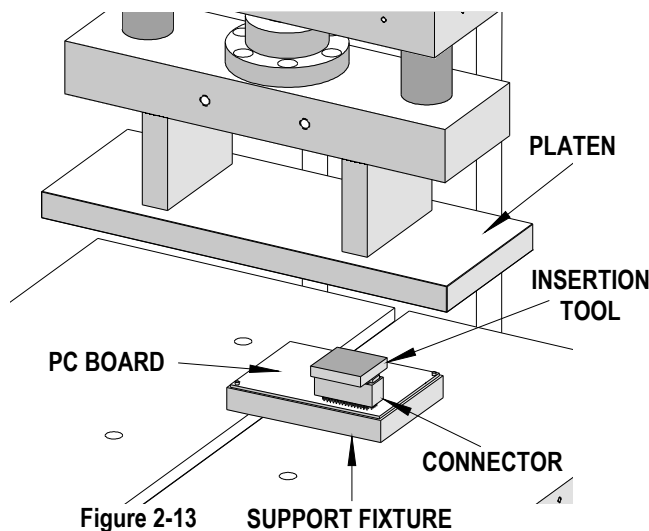
2. Position the assembled printed circuit board into the customer supplied support fixture. See Figure 2-11.



3. Carefully locate the connector insertion tool into the connector. See Fig. 2-12.



4. Position the loaded support fixture in the press centered under the press platen. See Figure 2-13.



5. Cycle the press by pressing the rubber covered sensors with each hand on the ends of the two hand no tie down. See Figure 2-1.
6. Remove the support fixture from under the press platen.
7. Remove the printed circuit board from the fixture.

Section 3

Maintenance

- 3.1. Cleaning
- 3.2. Lubrication
- 3.3. Perishable Parts
- 3.4. Spare Parts
- 3.5. Troubleshooting

3.1 Cleaning

See Chart for recommended Preventive Maintenance Schedule.

An example of a maintenance chart is shown below. Copy and use this chart to track the maintenance of your Press or use this as a template to create you own schedule or use your company's standard chart, if applicable.

For efficient operation, the tooling should be cleaned daily with a soft bristle brush to remove any debris from the tooling area.

CAUTION: Using compressed air to clean tooling is not recommended. Chips can wedge in the tooling and/or fly at an operator.

3.2 Lubrication

Press Lubrication

Sparingly lubricate the sliding parts such as the two ram guide rods approximately every month with a synthetic based lubricant with Teflon, such as Permatix "Super Lube".

Filter-Regulator-Lubricator

While this press has a pneumatic lubricator, the valves and cylinder do not require lubrication. However it will be necessary to check the filter bowl at least once a month, depending on how dirty the air supply is, and empty as required.

3.3 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 that they keep at least one spare set on hand at all times. There are no perishable parts for the Molex Flat Platen Pneumatic Press. The various tooling kits will have perishable parts but these will be covered in the individual tool kit instructions.

3.4 Spare Parts

These parts are available to support the pneumatic press 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 them on hand to reduce down time. See the individual tooling kit specification sheets for the recommended spare parts.

Preventive Maintenance Chart

Daily: Clean. See Section 3.1.

As Required: Lubricate. See Section 3.2.

CHECK SHEET MONTH _____ YEAR _____

Week	Daily Cycles	Daily Clean	Monthly	Days of the Week							Solution
				MON	TUE	WED	THU	FRI	SAT	SUN	
1											
2											
3											
4											
Cleaning Reapply grease Reapply oil		Yes									Soft Brush Industrial Degreaser
Lubricate			Yes								Teflon

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

3.5 Troubleshooting

Refer to Section 11, page 25, of the 62200-8200 manual, Appendix A under (PowerPackage operating manual).

Section 4

- 4.1 Parts Lists
- 4.2 Assembly Drawings

4.1 Parts List

62201-3800 Flat Platen Pneumatic Assembly Press Figure 4-1			
Item	Order No	Description	Quantity
1	62200-8200	Molex Standard Pneumatic Press8-Ton	1
2	62201-3700	Flat Platen Tooling	1

4.2 Assembly Drawings

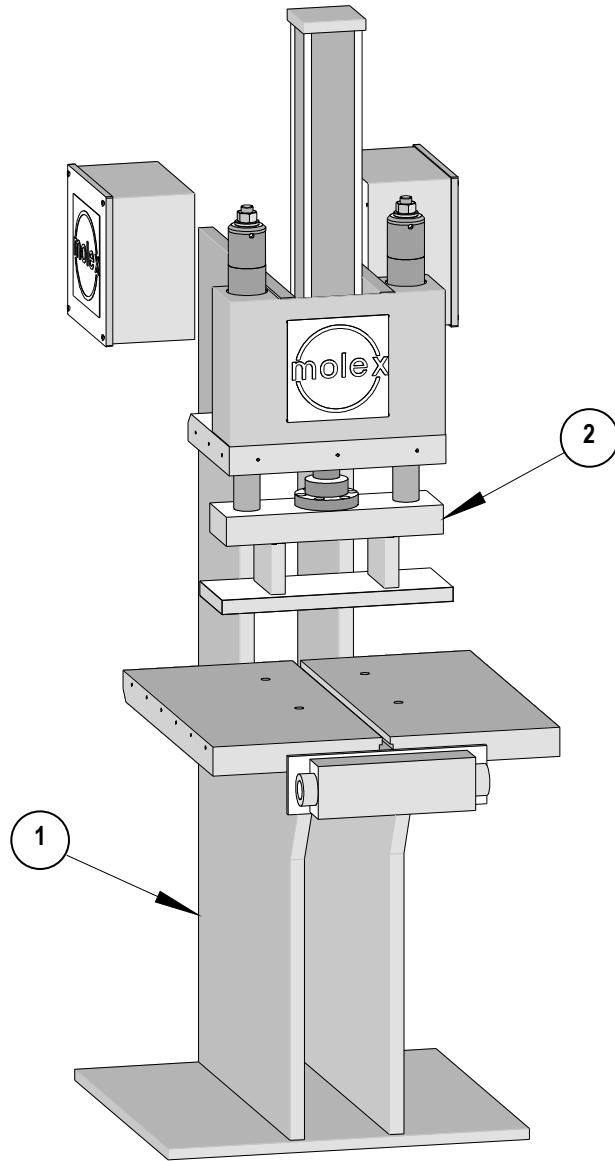


Figure 4-1

SECTION 5

GLOSSARY OF TERMS

- Flat Platen Press** Also know as a Flat Rock Press. The tooling that directly contacts the product insertion fixturing is a simple flat plate, or “platen” on this press. The upper portion of the insertion tooling is not attached to this platen. It rests on top of the part to be inserted.
- Press Ram** Also referred to just as “ram”, the means by which the force is transferred from the power source to the upper tooling. In the case of this press, it consists of the cylinder rod, the cylinder plate, and the two cylinder plate guides. Sometimes the cylinder rod alone is referred to as the ram.
- Fast Approach** The portion of the ram stroke starting at the up position and traveling until it ram starts to meet resistance. This is when the ram begins to do the work of pressing and crimping. The purpose is to reduce the stroke time if there is a large distance. This term is only relevant to presses that have a means of changing stroke speed mid-stroke. See also “Power Stroke”
- Power Stroke** This is the portion of the ram stroke where the force is being applied to the tooling to do the work. See also “Fast Approach”
- Two Hand No Tie-Down**
A device which activates the machine requiring both hands to be present at two points safely away from moving parts while they are in motion. It is designed so that an operator cannot activate one sensor and use only one hand to activate the machine. It must see both sensors activated within a very short time. Most of these devices require that the hands stay in place on the sensors until the cycle is complete, otherwise the cycle will abort.

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