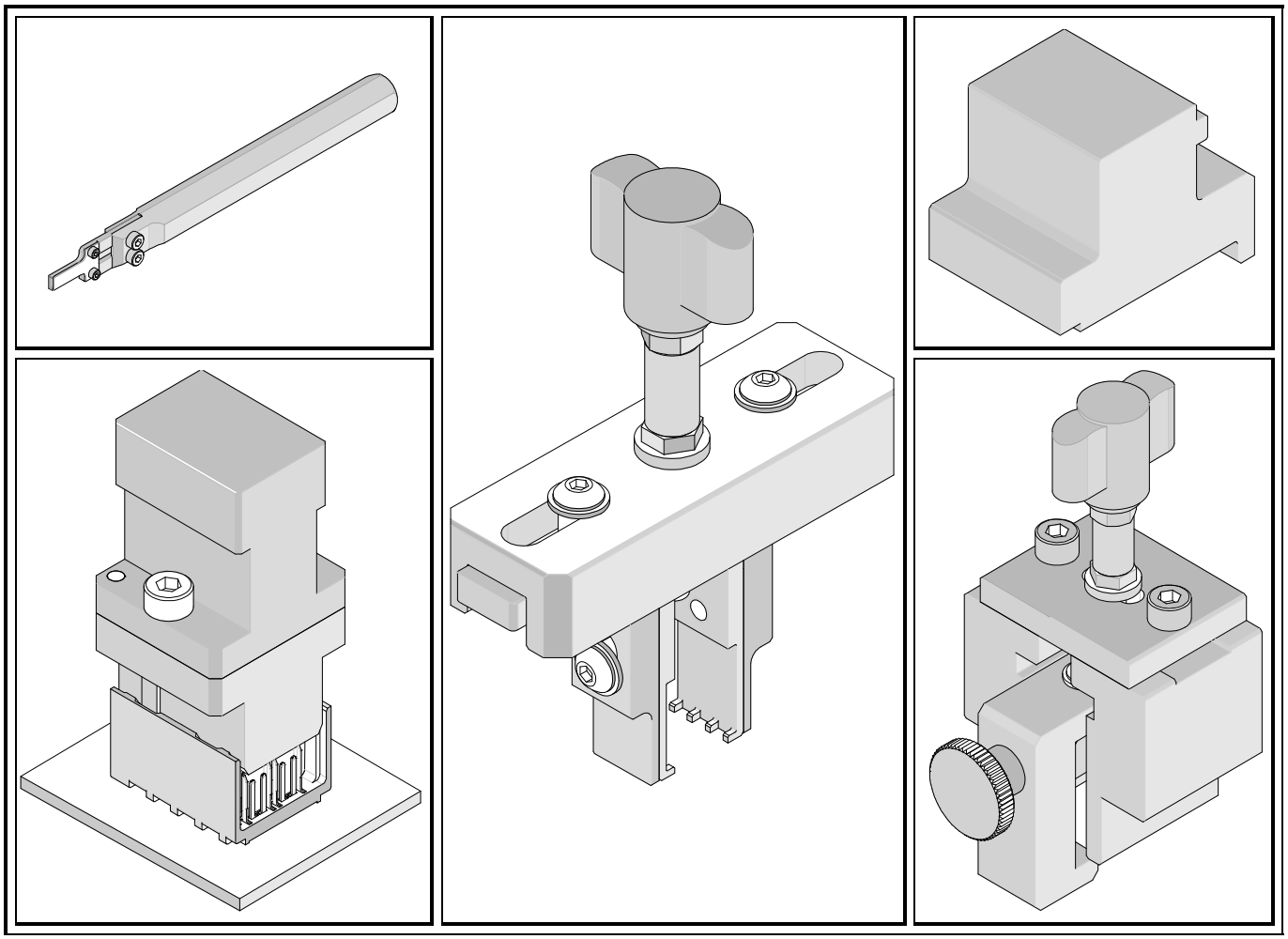


Impel™ Backplane and Daughtercard Installation and Repair Tooling Operation Manual Document No. 62201-8899

- Description
- Operation
- Maintenance

Safety Warnings and Information

	**Read** and **understand** all of the instructions and safety information in this manual before operating or servicing this tool. Keep this manual available when using this tool. Replacement manuals are available for download at no charge at www.molex.com.

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	**DANGER:** Indicates an imminently hazardous situation which, if not avoided, could result in death or serious injury.
 WARNING	**WARNING:** Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.
 CAUTION	**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.

	**WARNING** **Always** wear proper eye protection when Operating or servicing these tools. Failure to wear eye protection could result in serious eye injury from flying debris.		**WARNING** **Never** use a press without guards or safety devices that are intended to prevent hands from remaining in the die space. Failure to observe this warning could result in severe injury or death.
	**WARNING** **Never** wear clothing or jewelery that is loose or That Could potentially hang into the equipement And get caught. Failure to observe this warning could result in Severe Injury or death.		**WARNING** **Never** install or service these tool while connected to any electrical power source. Disconnect power by unplugging the press from its power source. Failure to observe this warning could result In severe injury or death.
	**WARNING** **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.		**WARNING** **Use extreme caution** when using compressed air to clean the equipment. The forces created by compressed air can force debris into the tool. Failure to observe these precautions may result in injury or property damage.

CAUTION

Never perform any service or maintenance other than as described in this manual.
Never modify, alter or misuse the equipment

Failure to observe this precaution may result in injury and property damage.

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 Tools tool. 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 these tools it is recommended to have the following: a copy of the *Operation Manual*, the Specific *Application Specification Sheet* and a person familiar with the tools 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. Tools 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

Section 1

Press Requirements for Impel™ Connectors

General Description

1.1 Description

This manual covers the tooling available to press Molex Impel™ Backplane Headers and Daughtercard Modules into printed circuit boards. Repair tools and custom tools are also covered. All insertion tooling is designed for use in a flat platen press.

1.2 Features

The press-in tooling is designed so that one module will press in one connector, or several modules can be mounted in a tool holder and be used to press in any combination of connectors in one operation. See Section 4-2 (Ordering Instructions) for details.

1.3 Technical Specifications

Dimensions and Weight

The dimensions and weight depend on the size of the tooling used.

1.4 Delivery Check

Carefully remove the tooling from its shipping container and check to be sure what was received matches the purchase order and no damage has occurred.

1.5 Tools

A metric hex wrench set will be required to assemble or disassemble tooling mounted in the optional tooling holder.

Molex Presses

Molex does not offer a press that is suitable for this application. The customer is encouraged to use one of the many industry-standard presses to install the Impel™ connectors.

1.6 Press Requirements

All Impel™ insertion tools are designed for use in a flat platen (or flat rock) press.

The press must have sufficient working area to accept the size of the printed circuit board.

The press frame and base must withstand the insertion force requirements for the Impel™ products.

Insertion Force Requirements

Backplane assemblies: 2.7kgf (6 lb.) per pin

Daughtercard assemblies: 1.8kgf (4 lb.) per pin

Press Operation Characteristics

- The capability to detect force variations as low as 4.5kg (10 lb.) during the press-in cycle; excessive force measurement should stop the press-in cycle.
- The rate of pressing can be regulated as low as 0.13mm (0.005 in) per second.
- Press stroke control to within ±0.25mm (0.010 in.).
- Total press stroke must be at least 19mm (0.75 in.).

Section 2

Installation and Operation

Installation and Operation

2.1 Printed Circuit Board Support

Due to the high forces required to press in compliant-pin connectors, a backup or support plate is suggested to prevent damage to the printed circuit board. The support fixture should have clearance for the connector terminals if they protrude through the underside of the printed circuit board. The support fixture should have some method of locating the PCB consistently. Due to the custom nature of each application, Molex does not supply support and locating fixtures. The customer normally fabricates the fixture to fit their application.

The following is one way of making a printed circuit board support and locating fixture:

1. Locate a suitable piece of material for the backup. It should be approximately 20mm thick and the same size or slightly larger than the printed circuit board to be used. While aluminum could be used, a rigid nonconductive material such as a phenolic is preferred. (A stack of scrap printed circuit boards of suitable size can also be fastened together.)
2. Obtain a scrap printed circuit board like the ones to be assembled. Attach this board to the material from step 1.
3. Using an oversize drill bit, drill through each hole where a pin from the connector will go. Drill deep enough into the lower material to be certain the pins do not bottom out when inserted (at least 5.0mm (0.20") deep).
4. Locate two (2) holes on the printed circuit board to use as locating points. Mount suitably sized dowel pins in these two locations on the support fixture.
5. Clear out the support for any components mounted on the underside of the printed circuit board.
6 Place a printed circuit board on top of the support, located by the two pins, and check that the holes for the connector pins are aligned.
7. By hand, pre-insert a connector in the printed circuit board.
8. Load the insertion tool into the connector.
9. Place the support with the printed circuit board under the press ram.
10. Press the connector into the printed circuit board and observe for any deflection of the board when the ram is at the bottom of its stroke.

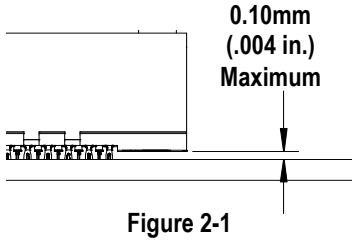


Figure 2-1
MAXIMUM CLEARANCE WHEN CONNECTOR FULLY SEATED

2.2 Press Stroke Adjustment

Most presses have some means of adjusting the stroke; please refer to the press manual for press stroke adjustments. The stroke should be adjusted so that when the press ram stops in the down position, the bottom of the connector is flush to 0.10mm (.004") above the surface of the printed circuit board. See Figure 2-1.

2.3 Installation

To install insertion modules into a tooling holder (see Table 4-2), use the following procedure:

1. Along the lower edge of the tooling holder is a row of M3 set screws. (See Figure 2-2) Loosen these a few turns so that they do not protrude into the inside of the holder.
2. Slide the insertion modules into the tooling holder in the proper order. See Figure 2-3. The modules are keyed so that they cannot be installed backwards.

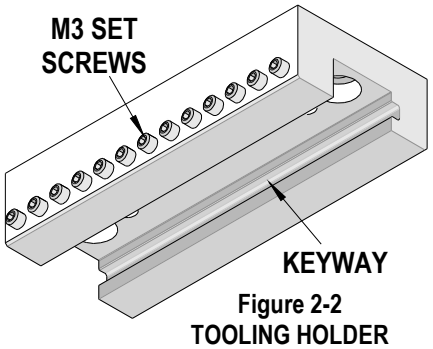


Figure 2-2
TOOLING HOLDER

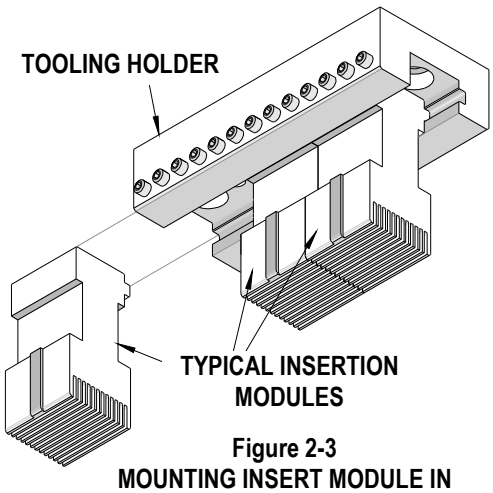


Figure 2-3
MOUNTING INSERT MODULE IN A MOUNTING BLOCK

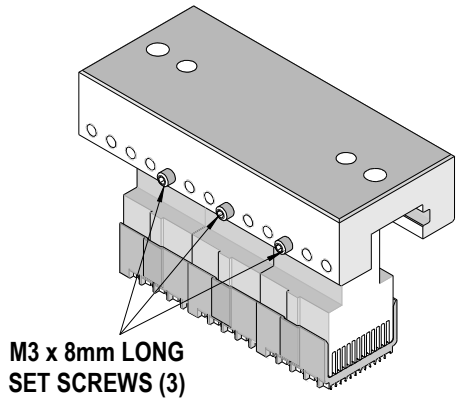


Figure 2-4
TYPICAL INSERTION TOOL ASSEMBLY

3. Tighten the M3 set screws against the modules with two (2) set screws evenly spaced on a 10mm wide insertion tool and at least three (3) set screws evenly spaced on a 25mm wide insertion tool. Figure 2-4 shows a typical completed assembly.

CAUTION: Do not over tighten the setscrews; this could damage the insertion tool.

NOTE: See Section 4 for details on selecting modules and Press-In tools combinations.

2.4 Operation

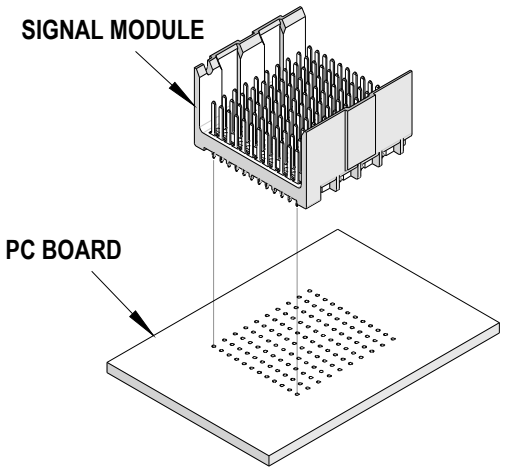


Figure 2-5
ALIGNING TERMINAL PINS TO HOLES

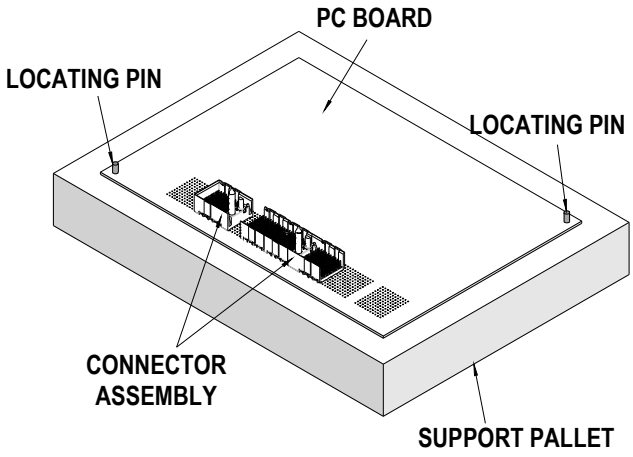


Figure 2-6
CONNECTOR ASSEMBLY
ON PC BOARD SUPPORT PALLET

Backplane Insertion Tooling

1. Carefully pre-insert, by hand, the backplane signal module(s) into the printed circuit board hole pattern. Make sure the connector(s) are oriented properly by confirming the location of the #1 circuit notch with respect to the printed circuit board layout. See Figure 2-5.
2. Place the pre-loaded board into the support pallet (Optional). See Figure 2-6.
3. Locate the tooling assembly in the connector assembly, carefully checking alignment. The orientation keys on the tool must engage with the groove on the connector housing. See Figure 2-7.
4. Position the pre-loaded support pallet under the press ram.

5. Cycle the insertion press.
6. Press the header assembly until there is less than 0.10mm (.004 in) clearance between the bottom of the plastic housing and the surface of the printed circuit board.
7. Remove the loaded support pallet.
8. Carefully remove the insertion tool assembly. Remove the printed circuit board from the pallet.

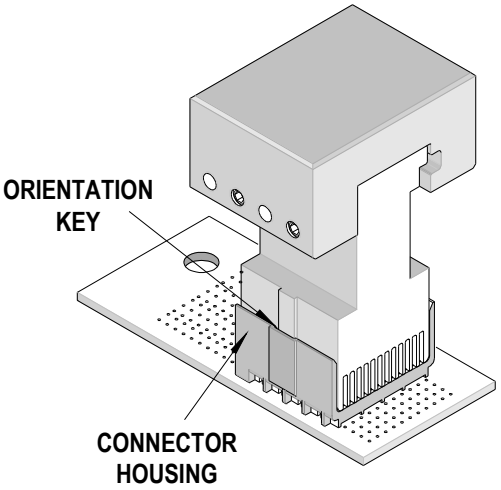


Figure 2-7
TOOLING LOCATED IN THE CONNECTOR ASSEMBLY

Daughtercard Insertion Tooling

Operation for inserting daughtercard assemblies is similar to backplanes and can be used alone or stacked in a tool holder for larger connector assemblies. See Figure 2-8.

1. Locate the daughtercard connector assembly on the printed circuit board.
2. Pre-insert the assembly into the board by hand. Check for proper seating, without contact pins bending under the assembly after pre loading on to the Printed circuit board. See Figure 2-9.

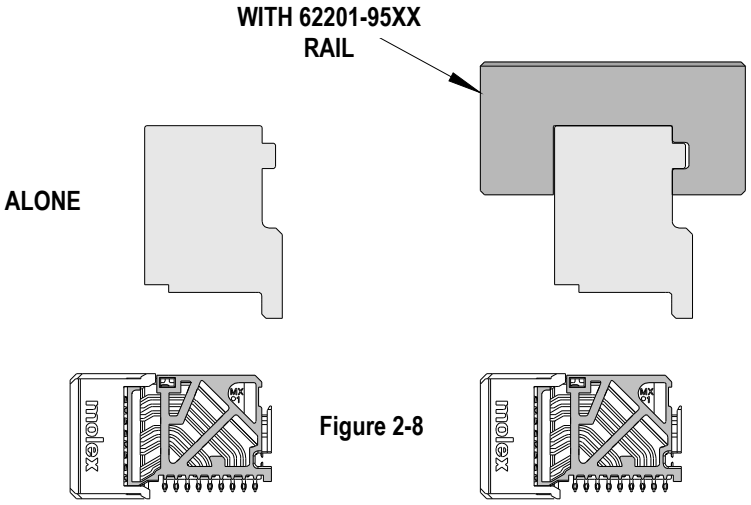


Figure 2-8

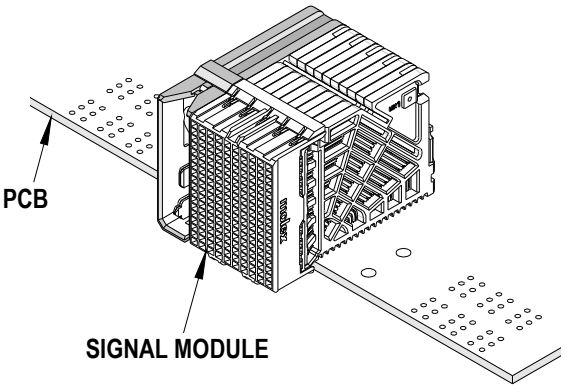


Figure 2-9
TYPICAL DAUGHTERCARD ASSEMBLY ON THE PC BOARD

3. Locate the printed circuit board with the connector assembly on the support pallet.
4. Position the insertion tooling on the connector assembly. See Figure 2-10.Position the printed circuit board under the press platen (Optional).

CAUTION: To prevent injury, never operate any press without the guards in place. Refer to the press manufacturer's instruction manual.

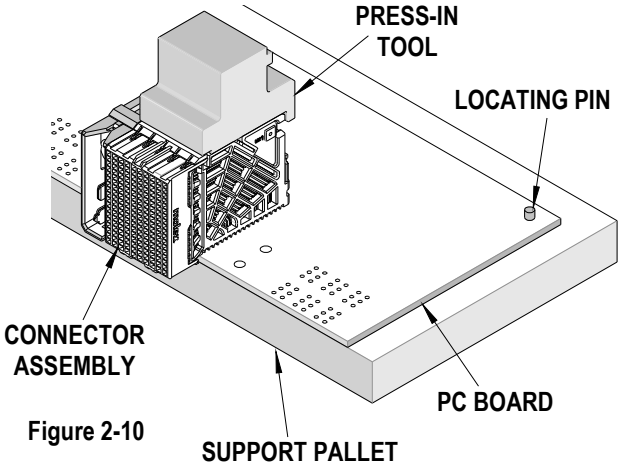


Figure 2-10

5. Press the daughtercard module until there is less than 0.10mm (.004 in) clearance between the bottom of the plastic housing and the surface of the printed circuit board.
6. Remove the loaded support pallet from the press.
7. Remove the insertion tool.
8. Carefully remove the assembled printed circuit board from the support pallet.

Section 3

Maintenance

3.1. Cleaning

Once a day, the support fixture should be cleaned of dust and plating particles and other debris. Compressed air may be necessary to remove debris from the pin clearance holes.

CAUTION: Use **extreme caution** when using compressed air for cleaning, it can cause debris to get lodged in the tooling or come flying out at the operator. Use of proper safety glasses by the operator and onlookers is required.

3.2 Lubrication

There is no lubrication required on any of the Impel™ tooling. However, presses may have their own requirements for lubrication and maintenance. The instruction manual for the specific press being used should be referred to.

3.3 Troubleshooting

Symptom	▪ Cause	Solution
Connector damage	▪ Press stroke set too low.	Refer to the appropriate press manual and adjust the stroke. See Section 2.2
	▪ Connector and/or tooling not properly aligned	Check Fixture and Repair as required.
		Check alignment of fixture in press
		Check to be sure the press platen is pressing squarely on the tooling block.
	▪ Tooling bent or damaged	Replace tool

Section 4

Available Tools

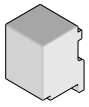
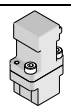
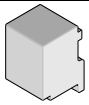
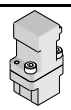
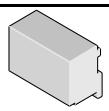
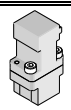
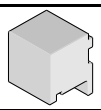
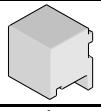
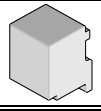
4.1 Standard Press-In-Tools

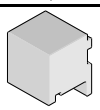
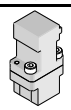
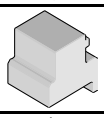
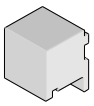
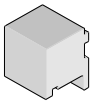
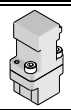
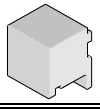
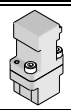
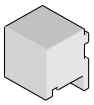
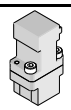
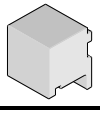
Standard Insertion Tools

All the applicable Impel™ connectors and the standard tooling required for each connector are located in these tables.

TABLE 4-1

Assembly Tooling (For use in standard tool holder)
Refer to the individual instruction sheets for more information on Individual tools.

Impel™ 1.9mm Broad-Edge Coupled Products – Insertion Tools						
Pair	**Column**	**Product**	**Series**	**Tool Number**	**Width**	**Illustration**
2	10	Backplane Header	171745	62201-8984	21.3mm (0.84in)	
		Daughtercard Module	171750	62201-8987	19.6mm (0.77in)	
	12	Backplane Header	171745	62201-8988	23.5mm (0.93in)	
		Daughtercard Module	171750	62201-8991	23.4mm (0.92in)	
	16	Backplane Header	171745	62201-8992	31.1mm (1.22in)	
		Daughtercard Module	171750	62201-8995	31mm (1.22in)	
3	8	Backplane Header	171335	62100-9630	15.3 (0.60in)	
		Daughtercard Module	171340	62201-8903	15.8mm (0.62in)	
	10	Backplane Header	171335	62201-8908	19.7mm (0.77in)	
		Daughtercard Module	171340	62201-8907	19.6mm (0.77in)	
	16	Backplane Header	171335	62201-8912	31.1mm (1.22in)	
		Daughtercard Module	171340	62201-8911	31mm (1.22in)	

Impel™ 1.9mm Broad-Edge Coupled Products – Insertion Tools						
Pair	**Column**	**Product**	**Series**	**Tool Number**	**Width**	**Illustration**
4	4	Backplane Header	171315	62201-8981	8.3mm (0.33in)	
		Daughtercard Module	171320	62201-8980	12mm (0.47in)	
	8	Backplane Header	171315	62201-8946	15.9mm (0.62in)	
		Daughtercard Module	171320	62201-8959	15mm (0.59in)	
	10	Backplane Header	171315	62201-8952	19.7mm (0.77in)	
		Daughtercard Module	171320	62201-8963	19mm (0.75in)	
	16	Backplane Header	171315	62201-8955	31.1mm (1.22in)	
		Daughtercard Module	171320	62201-8964	31mm (1.22in)	
5	10	Backplane Header	172005	62201-8965	19.7mm (0.77in)	
		Daughtercard Module	172010	62201-8966	19.6mm (0.77in)	
6	8	Backplane Header	171395	62201-8949	15.8mm (0.62in)	
		Daughtercard Module	171400	62201-8960	15mm (0.59in)	
	10	Backplane Header	171395	62201-8920	19.7mm (0.77in)	
		Daughtercard Module	171400	62201-8919	19.6mm (0.77in)	

Impel™ 1.9mm Broad-Edge Coupled Products – Insertion Tools						
Pair	Column	Product	Series	Tool Number	Width	Illustration
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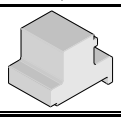
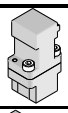
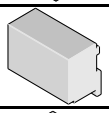
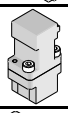
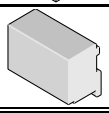
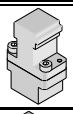
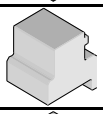
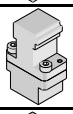
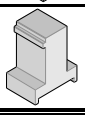
		Daughtercard Module	171400	62201-8923	31mm (1.22in)	

Impel™ 3mm Quad-Route Products – Insertion Tools						
Pair	Column	Product	Series	Tool Number	Width	Illustration
4	6	Backplane Header	171325	62100-9640	17.8mm (0.70in)	
		Daughtercard Module	171330	62201-8915	17.8mm (0.70in)	
	8	Backplane Header	171325	62201-8943	23.8mm (0.94in)	
		Daughtercard Module	171330	62201-8962	22.8mm (0.90in)	
6	8	Backplane Header	171755	62201-8969	23.8mm (0.94in)	
		Daughtercard Module	171760	62201-8975	23mm (0.91in)	
	12	Backplane Header	171755	62201-8972	32.6mm (1.28in)	
		Daughtercard Module	171760	62201-8976	35.8mm (1.41in)	

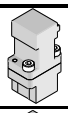
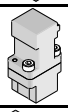
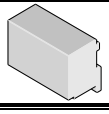
Impel™ 2.35mm Orthogonal Products – Insertion Tools						
Pair	Column	Product	Series	Tool Number	Width	Illustration
6	12	Backplane Header A	171495	62201-8933	29.8mm (1.17in)	
		Backplane Header B	171495	62201-8936	29.8mm (1.17in)	
		Daughtercard Module	171500	62201-8961	28mm (1.10in)	

TABLE 4-2
Standard Tool Holders for Molex Press Fit Insertion Tools

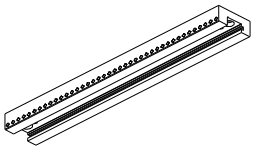
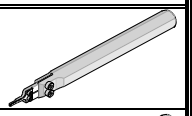
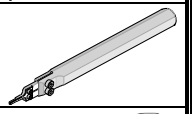
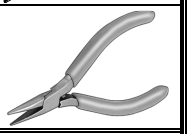
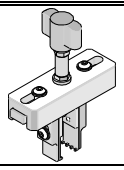
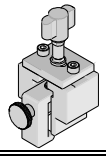
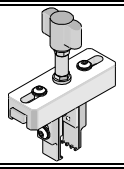
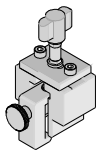
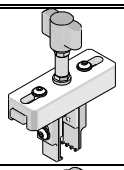
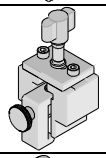
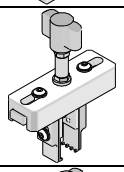
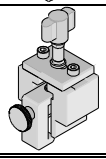
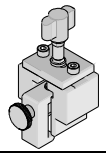
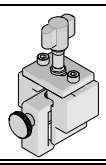
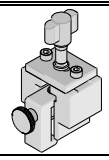
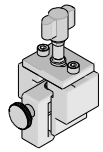
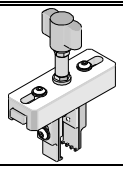
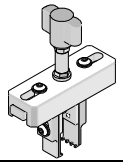
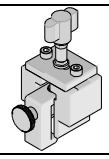
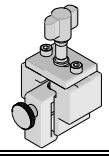
Tool Description	Holder Length	Illustration
Tool Holder 62201-9501	24.0mm (0.94 In.)	
Tool Holder 62201-9502	72.0mm (2.83 In.)	
Tool Holder 62201-9503	156.0mm (6.14 In.)	
Tool Holder 62201-9504	216.0mm (8.50 In.)	
Tool Holder 62201-9509	254.0mm (10.0 In.)	
Tool Holder 62201-9511	304.8mm (12.0 In.)	
Tool Holder 62201-9512	406.4mm (16.0 In.)	

TABLE 4-3
Field Repair Tooling for Impel™ Backplane Headers and Daughtercard Modules

Impel™ Products – Repair Tools					
Pair	**Column**	**Product**	**Series**	**Tool Number**	**Illustration**
ALL	ALL	Impel™ Backplane Headers	171745 171335 171315 172005 171395 171325 171755 171495	62201-8940 Ground Pin Inserter	
				62201-8930 Signal Pin Inserter	
				Pliers for Pin Removal: Newark 96F8903 MSC 00321885	
2	12	Backplane Header 1.9mm	171745	62201-8904 Backplane Extractor	
	12	Daughtercard Module 1.9mm	171750	62100-9790 Daughtercard Extractor	
3	8	Backplane Header 1.9mm	171335	62201-8904 Backplane Extractor	
		Daughtercard Module 1.9mm	171340	621009710 Daughtercard Extractor	

Impel™ Products – Repair Tools					
Pair	**Column**	**Product**	**Series**	**Tool Number**	**Illustration**
3	10	Backplane Header 1.9mm	171335	62201-8904 Backplane Extractor	
		Daughtercard Module 1.9mm	171340	621009720 Daughtercard Extractor	
	16	Backplane Header 1.9mm	171335	62201-8904 Backplane Extractor	
		Daughtercard Module 1.9mm	171340	621009730 Daughtercard Extractor	
4	4	Backplane Header 1.9mm	171315	TBD Backplane Extractor	TBD
		Daughtercard Module 1.9mm	171320	TBD Daughtercard Extractor	TBD
	8	Backplane Header 1.9mm	171315	TBD Backplane Extractor	TBD
		Daughtercard Module 1.9mm	171320	621009770 Daughtercard Extractor	
	10	Backplane Header 1.9mm	171315	TBD Backplane Extractor	TBD
		Daughtercard Module 1.9mm	171320	TBD Daughtercard Extractor	TBD
	16	Backplane Header 1.9mm	171315	TBD Backplane Extractor	TBD
		Daughtercard Module 1.9mm	171320	621009780 Daughtercard Extractor	
5	10	Backplane Header 1.9mm	172005	TBD Backplane Extractor	TBD
		Daughtercard Module 1.9mm	172010	TBD Daughtercard Extractor	TBD
6	8	Backplane Header 1.9mm	171395	TBD Backplane Extractor	TBD
		Daughtercard Module 1.9mm	171400	TBD Daughtercard Extractor	TBD
	10	Backplane Header 1.9mm	171395	TBD Backplane Extractor	TBD

Impel™ Products – Repair Tools					
Pair	**Column**	**Product**	**Series**	**Tool Number**	**Illustration**
6	10	Daughtercard Module 1.9mm	171400	62100-9750 Daughtercard Extractor	
	16	Backplane Header 1.9mm	171395	TBD Backplane Extractor	TBD
		Daughtercard Module 1.9mm	171400	62100-9760 Daughtercard Extractor	
4	6	Backplane Header 3mm	171325	62201-8916 Backplane Extractor	
		Daughtercard Module 3mm	171330	TBD Daughtercard Extractor	TBD
	8	Backplane Header 3mm	171325	62100-9740 Backplane Extractor	
		Daughtercard Module 3mm	171330	TBD Daughtercard Extractor	TBD
6	8	Backplane Header 3mm	171755	TBD Backplane Extractor	TBD
		Daughtercard Module 3mm	171760	62100-9810 Daughtercard Extractor	
	12	Backplane Header 3mm	171755	TBD Backplane Extractor	TBD
		Daughtercard Module 3mm	171760	62100-9820 Daughtercard Extractor	
6	12	Backplane Header A 2.35mm Orthogonal	171495	TBD Backplane Extractor	TBD
		Backplane Header B 2.35mm Orthogonal	171495	TBD Backplane Extractor	TBD
		Daughtercard Module 2.35mm Orthogonal	171500	TBD Daughtercard Extractor	TBD

4.2 Standard Tool Ordering Procedure

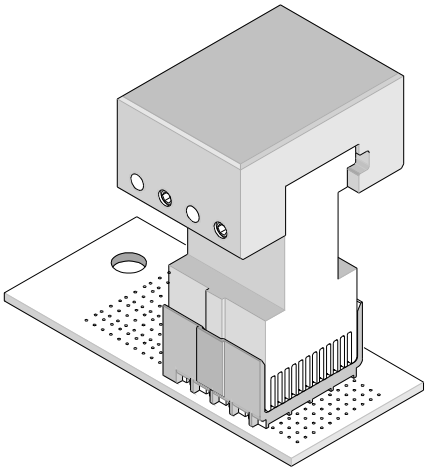


Figure 4-1
TYPICAL INSERTION TOOL ASSEMBLY

Stacking Tooling

All the insertion tooling listed in Table 4-1 can be stacked in any combination to be able to simultaneously press in any arrangement of stacked connectors. Tooling holders are available in various lengths. Figure 4-1 shows a typical setup for a 4 pair by 8 column backplane signal module in a standard tool holder.

Ordering Insertion Tooling for Backplane Connectors

In order to insert a typical row of backplane connectors, it is necessary to select the individual insertion tools and then pick the appropriate tooling holder (See example).

Basic Procedure

1. Determine the combination of signal modules to be inserted.
2. Select the proper press-in tools from Table 4-1 and Table 4-2.
3. Table 4-1 and Table 4-2 shows the tool widths. Record the width of each tool selected.

   NOTE: Make sure that if you require four of a particular tool, write down its length 4 times.

4. Total the tool widths.
5. Using the width just calculated, select the next largest tooling holder from Table 4-3. The tooling holder can be shorter than the total tooling but not by more than 0.5 mm per side.
6. The insertion tools and tooling holder selected above must be ordered separately.

Ordering Daughtercard Tooling

Daughtercard connectors only come in standard module sizes. The Daughtercard insertion modules lengths are based on the module size. Therefore, insertion tools can be used individually for a connector assembly or stacked in a tool holder for multiple connector assemblies. Select the specific tool for your connector from Table 4-3.

Section 5

Repair and Replacement

5.1 Impel™ Backplane Repair Procedure:

Removal and Replacement of Signal Pair Pins

The following tools are required:
- ✓ Signal Pin Replacement Tool 62201-8930
- ✓ Ground Pin Replacement Tool 62201-8940
- ✓Needle nose pliers (miniature) *
- ✓Tweezers *

*** Not supplied by Molex**

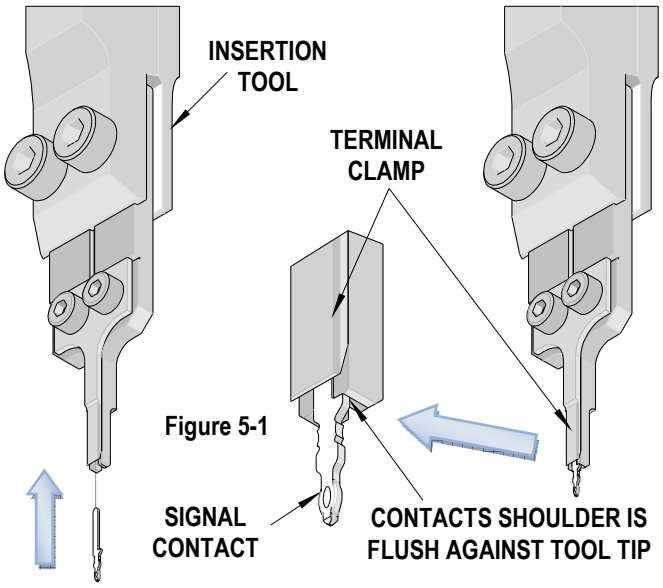


Figure 5-1

Removal

To remove damaged signal pins, grasp them with the needle nose pliers and pull straight up from the board.
In some cases it may be necessary to straighten a bent pin with the tweezers to allow access with the pliers.

NOTE: Never reuse a backplane signal pin once it has been removed. In addition, no more than three pins should be pressed into any plated through hole. Replacement pins should be removed from a spare virgin connector.

Replacement

1. Place the signal contact at the tip of the insertion tool and slide the contact so it rests underneath the terminal clamp.
2. The signal contact will be guided using the groove located on the insertion tool and should be pushed all the way underneath the terminal clamp.
3. The signal contact is completely seated in the insertion tool when, the contacts shoulder is resting against the insertion tool tip and can no longer be moved up. See Figure 5-1.
4. Make sure the signal contact is in the correct orientation. Check the column where the repair signal contact is being replaced and compare the column to the contact signal on the insertion tool. The two should be the same. The adjacent column is oriented in the opposite direction. See Figure 5-2.

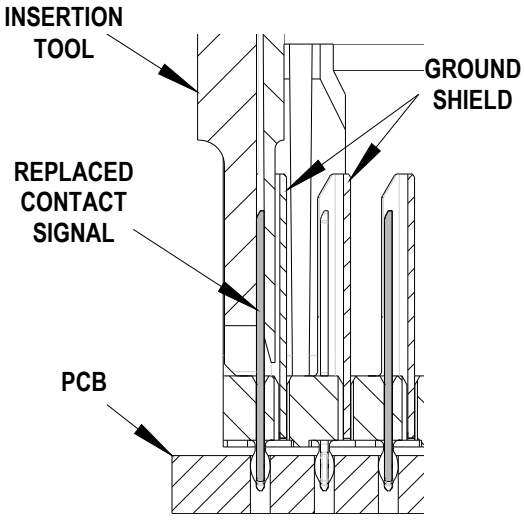


Figure 5-2

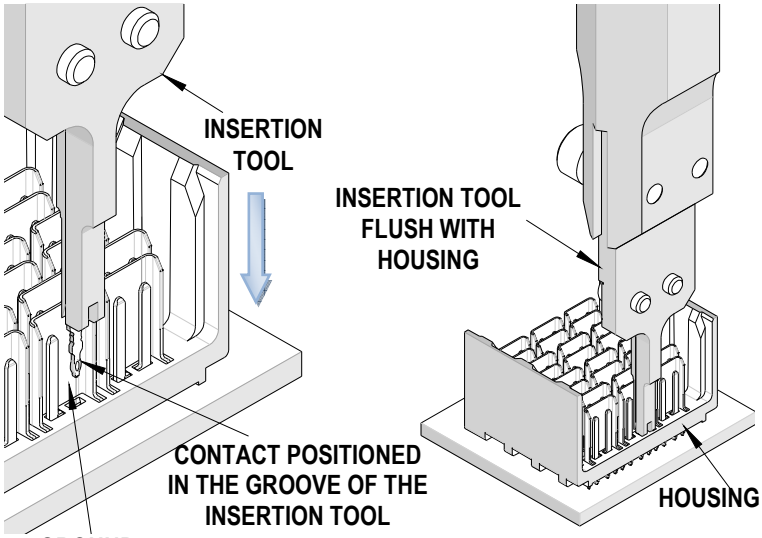


Figure 5-3

5. Line-up the pins tip on the signal contact, with the hole in the signal module and push the pin tip with the insertion tool through the housing and the PCB.
6. There is a clearance groove on the opposite side of the tool. When inserting the signal contact, make sure the tip of the tool is inside the sidewalls of the ground shield.
7. Continue pushing the signal contact until the insertion tool and terminal shoulder are seated securely to the inside housing surface. See Figure 5-3.
8. Pull the insertion tool straight up and remove. Check the final seating of the signal contact, the terminal shoulder should be seated flush with inside surface on housing.

Ground Shield Replacement

1. Place the ground shield at the tip of the insertion tool and slide the shield so it rests underneath the terminal clamp.
2. The ground shield will be guided using the groove located on the insertion tool and should be pushed all the way underneath the ground shield clamp.
3. The ground shield is completely seated in the insertion tool when, the ground shield is resting against the insertion tool tip and can no longer be moved up. See Figure 5-4.
4. Make sure the ground shield is in the correct orientation. Check the column where the repair ground shield is being replaced and compare the column to the ground shield on the insertion tool. The two should be the same. The adjacent column is oriented in the same direction. See Figure 5-5.

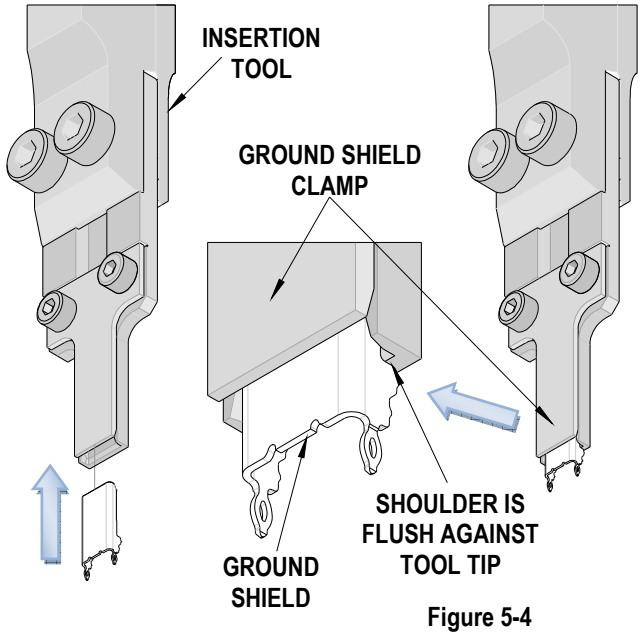


Figure 5-4

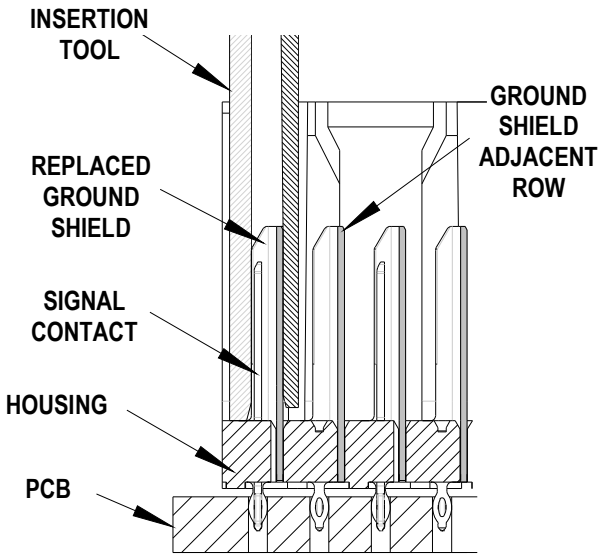


Figure 5-5

5. Line-up the pins tip on the ground shield, with the hole in the signal module and push the pin tip with the insertion tool through the housing and the PCB.
6. There is a clearance groove on the opposite side of the tool. When inserting the ground shield, make sure the tip of the tool is outside the (2) signal contacts at that location.

7. Continue pushing the ground shield until the insertion tool and the ground shield shoulder are seated securely to the inside housing surface. See Figure 5-6.
8. Pull the insertion tool straight up and remove. Check the final seating of the ground shield, the ground shield shoulder should be seated flush with inside surface on housing.

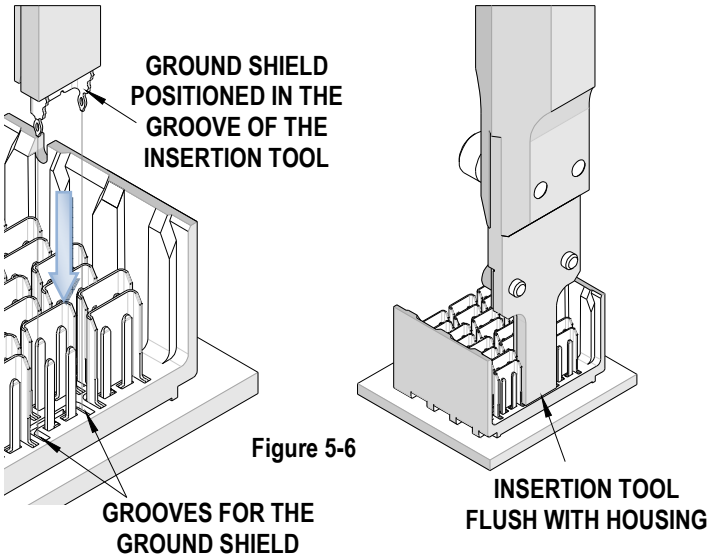


Figure 5-6

5.2 Glossary of Terms:

Backup (or Support) Pallet	A simple fixture used to locate and support a printed circuit while a compliant pin connector is being pressed into the pc board. Considerable force is required to press one of these connectors into a pc board, thus the pc board must be adequately supported to avoid being damaged. It must have adequate clearance for the terminals when they protrude through the pc board.
Compliant Pin Connector	A connector which has terminals that are designed to give slightly when pressed into a hole in a pc board so that the terminal (pin) makes solid electrical contact with the printed circuit board, alleviating the need for soldering.
Flat Platen Press	A press in which the upper tooling or die set is not attached to the press ram. The ram has a simple flat plate (or platen) attached to it. For this application, the upper tooling is positioned in the connector(s). The press ram comes down on top this tooling and presses on it. When the press ram goes back up, the upper tooling stays with the connector.
PCB	Abbreviation for printed circuit board
Upper Tooling	The tooling that goes on top of the connector. It contains the mounting block and dies (or tools) necessary to properly apply pressure where required to push the connector's compliant terminals and locking posts into the holes in the printed circuit board.