

Figure 1

## 1. INTRODUCTION

QSFP cage assembly seating tool assemblies listed in Figure 1 are used to seat a QSFP cage assembly onto a pc board. The cage assemblies contain compliant pin contacts to allow solderless pc board installation. Read these instructions thoroughly before using the seating tool assembly.

**NOTE** *Dimensions on this sheet are in metric units [with U.S. customary units in brackets]. Figures are not drawn to scale.*

## 2. DESCRIPTION (See Figure 1)

Each seating tool assembly consists of a seating tool and a wall support. The seating tool and wall support are also available separately. The wall support must be installed into the ports of the cage assembly.

The top of the seating tool provides a surface to accept the force applied by the application tool to seat the cage assembly onto the pc board. During seating, the back and sides of the seating tool protect the cage assembly from damage. The wall support supports the individual ports of the cage assembly.

## 3. REQUIREMENTS

### 3.1. PC Board Support Fixture (Customer Supplied)


A pc board support must be used to provide proper support for the pc board and to protect the pc board and cage assembly from damage. The support fixture must be designed for specific needs using the following recommendations:

- it should be at least 25.4 mm [1 in.] longer and wider than the pc board
- it should have flat surfaces with holes or a channel large enough and deep enough to receive any protruding components of the cage assembly

### 3.2. Application Tool

Power for seating tools must be provided by an application tool (with a ram) capable of supplying a downward force of 66.72 N [15 lb-force] per contact.


Manual Electric Servo Press (MEP 6T) 2-1399500-5 and Bench Top Electric Servo Presses (BMEP 3T) 1-1399400-5 and (BMEP 5T) 2-1399401-4 are available for these seating tool assemblies. For information on the presses, visit the press-fit assembly equipment website at <http://tooling.tycoelectronics.com/pressfit.asp>.

**CAUTION**  *Over-driving of the cage assembly will deform parts critical to the quality of the connection. Maximum force occurs prior to the cage assembly bottoming on the pc board.*

**4. SETUP**


When setting up equipment to seat the cage assembly, pay particular attention to the following:

- the seating tool must be matched to the cage assembly

**CAUTION**  *If the seating tool and cage assembly are mismatched or are improperly aligned, damage could occur to the tooling, cage assembly, or both.*


- the wall support must be properly installed, and the seating tool, cage assembly, and application tool ram must be properly aligned before cycling the application tool

1. Set tool seating height to the dimension shown in Figure 2 (application tool *shut height* will equal the tool seating height PLUS the combined thicknesses of the pc board and support fixture). After seating, a gap of no more than 0.10 mm [.004 in.] between the cage assembly standoffs and the pc board is allowed.


**NOTE**  *Use the tool seating height as a reference starting point. This height may need to be adjusted to obtain the amount allowed (maximum of 0.10 mm [.004 in.]) between the standoffs of the cage assembly and the pc board.*

2. Slide the wall support (with the recessed surfaces facing the seating tool) into the ports of the cage assembly until the wall support is secure.

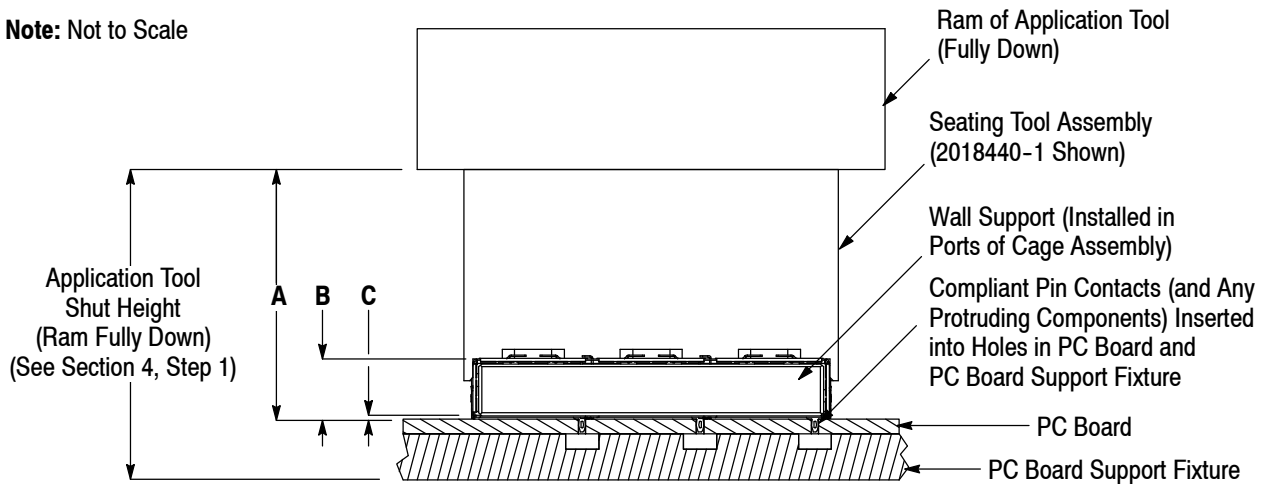
**5. SEATING** (Figure 2)

**NOTE**  *For a cage assembly using a surface mount connector, the connector must be mounted on the pc board BEFORE seating the cage assembly.*

1. Place the pc board on the support fixture.
2. Orient the seating tool over the cage assembly so that the raised surfaces face the front flange of the cage assembly and the back is aligned with the back of the cage assembly. Then lower the seating tool onto the cage assembly until the seating tool bottoms on the top of the cage assembly.
3. Place the cage assembly on the pc board so that the contacts and alignment posts are aligned and started into the matching holes in the pc board.
4. Center the seating tool (with the cage assembly) under the ram of the application tool. Slowly lower the ram until it just meets the seating tool. Verify alignment of pc board support, pc board, cage assembly, and seating tool.

**CAUTION**  *Damage to the pc board, seating tool, or cage assembly may occur if the seating tool is not properly seated on the cage assembly before cycling the application tool.*

**Note:** Not to Scale



**DIMENSION (mm [in.])**

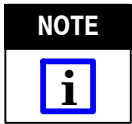
A — Tool Seating Height (With Cage Assembly Seated)	B — Seating Height	C — Maximum Gap Allowed
40.25 [1.585]	9.7 [.38]	0.10 [.0004]

Figure 2

5. Cycle the application tool to seat the cage assembly on the pc board. Then retract the ram, and carefully remove the seating tool by pulling it straight from the cage assembly.

6. Check the cage assembly for proper seating according to the following:

- a. the widest section of each compliant pin is inside its intended pc board hole
- b. the cage assembly is seated on the pc board with the seating height—measured from the top of the cage assembly (not including the front flange) to the top of the pc board—given in Figure 2
- c. if present, the gap between the standoffs and the pc board is no more than 0.10 mm [.004 in.]



For detailed application requirements of the cage assembly, refer to Application Specification 114-13218.

**6. MAINTENANCE AND INSPECTION**

The seating tool assembly is inspected before shipment; however, it is recommended that it be inspected immediately upon arrival at your facility to ensure that it has not been damaged during shipment, and that it conforms to the dimensions provided in Figure 3.

**6.1. Daily Maintenance**

It is recommended that each operator be made aware of, and responsible for, the following steps of daily maintenance.

- 1. Remove dust, moisture, and contaminants with a clean, soft brush or a lint-free cloth. DO NOT use objects that could damage the components.
- 2. When the seating tool and wall support are not in use, store them in a clean, dry area.

**6.2. Periodic Inspection**

Regular inspections should be performed by quality control personnel. A record of scheduled inspections should remain with the seating tool assembly. Inspection frequency should be based on amount of use, working conditions, operator training and skill, and established standards.

**7. REPLACEMENT AND REPAIR**

Customer-replaceable parts are listed in Figure 3. A complete inventory should be stocked and controlled to prevent lost time when replacement of parts is necessary. Parts other than those listed

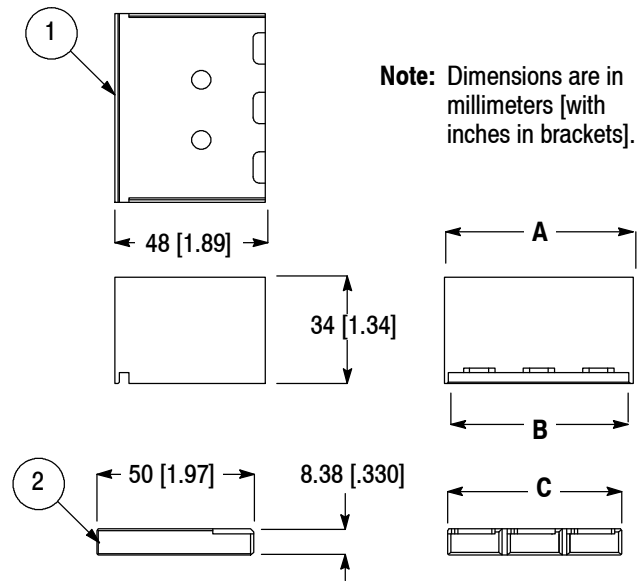
should be replaced by Tyco Electronics to ensure quality and reliability. Order replacement parts through your representative, or call 1-800-526-5142, or send a facsimile of your purchase order to 717-986-7605, or write to:

CUSTOMER SERVICE (038-035)  
 TYCO ELECTRONICS CORPORATION  
 PO BOX 3608  
 HARRISBURG PA 17105-3608

**8. REVISION SUMMARY**

- Initial release of instruction sheet

**Seating Tool Assembly 2018440-1 (1 × 3) Shown**



**REPLACEMENT PARTS**

ITEM	DESCRIPTION	PART NUMBER		QTY PER ASSY
		2018440-1 (1 × 3)	2018443-1 (1 × 4)	
1	SEATING TOOL	2018442-1	2018445-1	1
2	SUPPORT, Wall	2018441-1	2018444-1	1

ASSY	DIMENSION (mm [in.])		
	A	B	C
2018440-1 (1 × 3)	60.25 [2.372]	57.5 [2.264]	55.5 [2.185]
2018443-1 (1 × 4)	79.25 [3.120]	76.5 [3.012]	74.5 [2.933]

Figure 3