NOKIA

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BSC3i S10.5

Replacing Damaged Pins in Cartridges

Site Documents

BSC3018_P

Contents

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Summary of changes

Changes between document issues are cumulative. Therefore, the latest document issue contains all changes made to previous issues.

Changes for Issue 2-0

Updated to include tool information from AMP.

Changes for Issue 1-1

Minor corrections.

Changes for Issue 1-0

First issue.

1 About this manual

This document describes how to change bent or damaged pins in PCI cartridges equipped with Z-PACK connectors.

1.1 How to use this manual

This manual provides the following information:

- Introduction to the procedure (chapter 2)
- Types of pins used and connector maps (chapter 3)
- Instructions on how to change damaged pins (Appendix A).

1.2 Typographic conventions

The following table presents the conventions used in the manual.

Table 1. Typographic conventions.

Italic font	Indicates a reference to a manual, chapter or section, for example: See chapter 3 *Installation*
	Indicates a word or phrase that is emphasized, for example: term referring to *both* versions

1.3 Your comments

We are always interested to know whether our manuals provide the information you need. If you have any comments about this document or any other Nokia manual, please pass them on to your local Nokia sales representative.

2 Introduction

2.1 Tools and materials

The damaged signal pins (2HM) in the PCI cartridges accommodating Z-PACK connectors can be replaced using the proper tools. The AMP* Pin Repair Kit 354687-1 is available and it is used to insert and extract signal pin contacts from Z-PACK connectors.

The kit features a basic contact replacement tool with a spring-loaded adapter tip, an extraction tool assembly, a single-pin insertion tool assembly, a replacement pin assembly, a pusher, and a spacer.

The Instruction Sheet (408-9979) provided with the tool kit covers the AMP* Pin Repair Kit 354687-1, -2, -3 , and it is also included in the Site Documents binder.

Nokia code for the AMP* Pin Repair Kit 354687-1 is *10690 0096*.

Nokia code for the special connector for replacement pins is *10541 8342*. The connector is included in the installation equipment set.

2.2 Replacement procedure

To replace the damaged pin(s), do the following:

- demount all plug-in units from the cartridge
- place a piece of paper on the floor of the cartridge to prevent any of the pins from falling down to the cartridge below.
- replace the damaged pin(s) according to instructions in the Instruction Sheet.

After you have finished with the replacement procedure, check that the new pin is properly installed:

- check the pin visually
- insert the plug-in unit which connects to the connector with the new pin to its slot taking utmost care
- pull the plug-in unit again out of the cartridge and check the pin. If it is still properly in its place, the installation has been successful. You can install all plug-in units back into the cartridge starting with the power supply unit, followed by the other units.
- If the pin is bent or out of place, repeat the replacement procedure with a new pin.

3 Types of pins used

The figure below shows the different kinds of pins used in the various connectors of the PCI cartridges. The pintype letter symbol (A, B, C, L, T) represents the length of the new pin to be used, both at the front and back of the connector plate. The pintype corresponds to the letters used in the tables below.

Note

The tables represent the connectors as seen from the front.

It is not necessary to change the damaged pins in columns Z and F if the pin type is marked in parentheses.

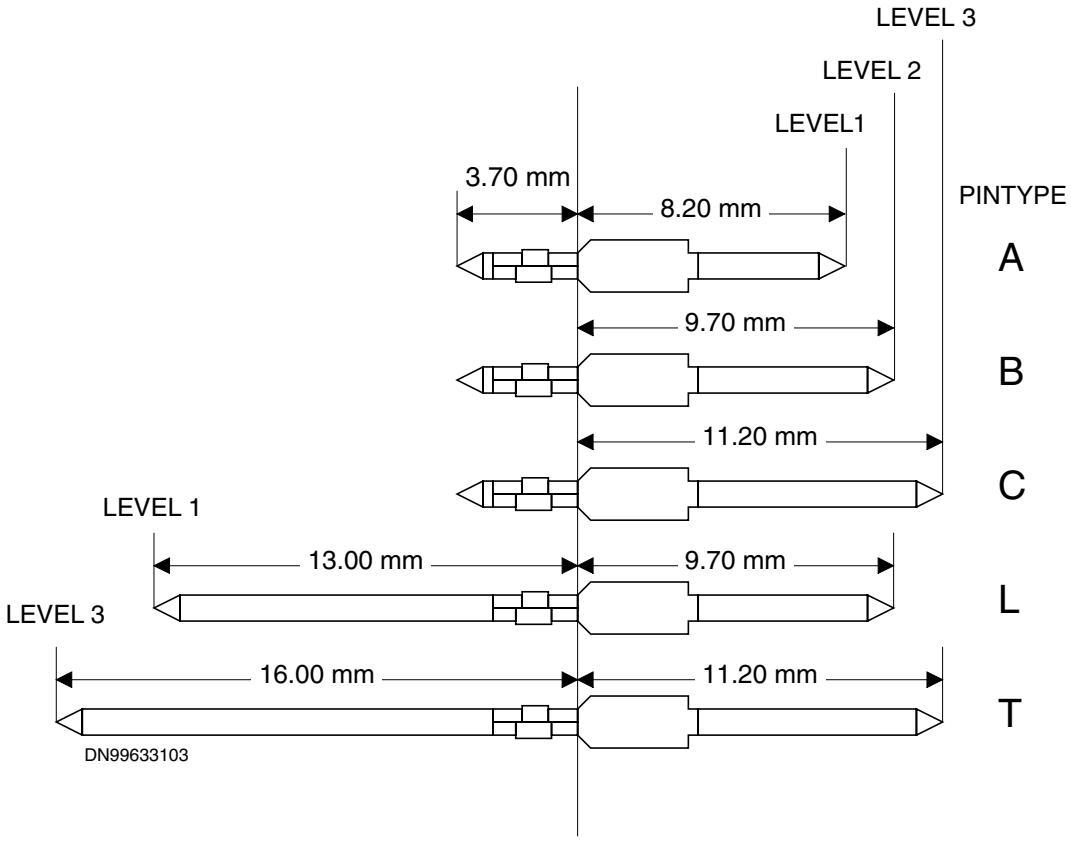


Figure 1. Types of pins by length

3.1 PSC6-A plug-in unit connector

Position 1 in CC3C-A and CC4C-A cartridges.

Table 2. Connector P5 B(25) type male, for cabling only

	Z	A	B	C	D	E	F	
1	(T)	L	L	L	L	L	(T)	1
2	(T)	L	L	L	L	L	(T)	2
3	(T)	L	L	L	L	L	(T)	3
4	(T)	L	L	L	L	L	(T)	4
5	(T)	L	L	L	L	L	(T)	5
6	(T)	L	L	L	L	L	(T)	6
7	(T)	L	L	L	L	L	(T)	7
8	(T)	L	L	L	L	L	(T)	8
9	(T)	L	L	L	L	L	(T)	9
10	(T)	L	L	L	L	L	(T)	10
11	(T)	L	L	L	L	L	(T)	11
12	(T)	L	L	L	L	L	(T)	12
13	(T)	L	L	L	L	L	(T)	13
14	(T)	L	L	L	L	L	(T)	14
15	(T)	L	L	L	L	L	(T)	15
16	(T)	L	L	L	L	L	(T)	16
17	(T)	L	L	L	L	L	(T)	17
18	(T)	L	L	L	L	L	(T)	18
19	(T)	L	L	L	L	L	(T)	19
20	(T)	L	L	L	L	L	(T)	20
21	(T)	L	L	L	L	L	(T)	21
22	(T)	L	L	L	L	L	(T)	22
23	(T)	L	L	L	L	L	(T)	23
24	(T)	L	L	L	L	L	(T)	24
25	(T)	L	L	L	L	L	(T)	25
	Z	A	B	C	D	E	F	

Table 3. Connector P4 B(25) type male, for cabling only

	Z	**A**	**B**	**C**	**D**	**E**	**F**	
1	(T)	L	L	L	L	L	(T)	1
2	(T)	L	L	L	L	L	(T)	2
3	(T)	L	L	L	L	L	(T)	3
4	(T)	L	L	L	L	L	(T)	4
5	(T)	L	L	L	L	L	(T)	5
6	(T)	L	L	L	L	L	(T)	6
7	(T)	L	L	L	L	L	(T)	7
8	(T)	L	L	L	L	L	(T)	8
9	(T)	L	L	L	L	L	(T)	9
10	(T)	L	L	L	L	L	(T)	10
11	(T)	L	L	L	L	L	(T)	11
12	(T)	L	L	L	L	L	(T)	12
13	(T)	L	L	L	L	L	(T)	13
14	(T)	L	L	L	L	L	(T)	14
15	(T)	L	L	L	L	L	(T)	15
16	(T)	L	L	L	L	L	(T)	16
17	(T)	L	L	L	L	L	(T)	17
18	(T)	L	L	L	L	L	(T)	18
19	(T)	L	L	L	L	L	(T)	19
20	(T)	L	L	L	L	L	(T)	20
21	(T)	L	L	L	L	L	(T)	21
22	(T)	L	L	L	L	L	(T)	22
23	(T)	L	L	L	L	L	(T)	23
24	(T)	L	L	L	L	L	(T)	24
25	(T)	L	L	L	L	L	(T)	25
	Z	A	B	C	D	E	F	

Table 4. Connector P3 L type male

	Z	A	B	C	D	E	F	
2								2
6								6
10								10
				CODING AREA				
				CODING AREA				
				CODING AREA				
16								16
20								20
24								24
	Z	A	B	C	D	E	F	

Table 5. Connector P2 L type male

	Z	**A**	**B**	**C**	**D**	**E**	**F**	
2								2
6								6
10				CODING AREA CODING AREA CODING AREA				10
16								16
20								20
24								24
	Z	A	B	C	D	E	F	

Table 6. Connector P1 C type male

	Z	A	B	C	D	E	F	
1	C	C	B	C	C	C	C	1
2	C	C	B	C	C	C	C	2
3	C	C	B	C	C	C	C	3
4	C	C	B	C	C	C	C	4
5	C	C	B	C	C	C	C	5
6	C	C	B	C	C	C	C	6
7	C	C	B	C	C	C	C	7
8	C	C	B	C	C	C	C	8
9	C	C	B	C	C	C	C	9
10	C	C	B	C	C	C	C	10
11	C	C	B	C	C	C	C	11
12	CODING AREA							12
	Z	A	B	C	D	E	F	

3.2 Other plug-in unit connectors

CC4C-A cartridge, positions 2–7. CC3C-A cartridge, positions 2–10.

Table 7. Connector P5 B(25) type male for cabling only

	Z	A	B	C	D	E	F	
1	(C)	B	B	B	B	B	(C)	1
2	(C)	B	B	B	B	B	(C)	2
3	(C)	B	B	B	B	B	(C)	3
4	(C)	B	B	B	B	B	(C)	4
5	(C)	B	B	B	B	B	(C)	5
6	(C)	B	B	B	B	B	(C)	6
7	(C)	B	B	B	B	B	(C)	7
8	(C)	B	B	B	B	B	(C)	8

Table 7. Connector P5 B(25) type male for cabling only (Continued)

	Z	A	B	C	D	E	F	
9	(C)	B	B	B	B	B	(C)	9
10	(T)	L	L	L	L	L	(T)	10
11	(T)	L	L	L	L	L	(T)	11
12	(T)	L	L	L	L	L	(T)	12
13	(T)	L	L	L	L	L	(T)	13
14	(T)	L	L	L	L	L	(T)	14
15	(T)	L	L	L	L	L	(T)	15
16	(T)	L	L	L	L	L	(T)	16
17	(T)	L	L	L	L	L	(T)	17
18	(T)	L	L	L	L	L	(T)	18
19	(T)	L	L	L	L	L	(T)	19
20	(T)	L	L	L	L	L	(T)	20
21	(T)	L	L	L	L	L	(T)	21
22	(T)	L	L	L	L	L	(T)	22
23	(T)	L	L	L	L	L	(T)	23
24	(T)	L	L	L	L	L	(T)	24
25	(T)	L	L	L	L	L	(T)	25
	Z	A	B	C	D	E	F	

Table 8. Connector P4 A type male

	Z	A	B	C	D	E	F	
1	(T)	L	L	L	L	L	(T)	1
2	(T)	L	L	L	L	L	(T)	2
3	(T)	L	L	L	L	L	(T)	3
4	(T)	L	L	L	L	L	(T)	4
5	(T)	L	L	L	L	L	(T)	5
6	(T)	L	L	L	L	L	(T)	6
7	(T)	L	L	L	L	L	(T)	7
8	(T)	L	L	L	L	L	(T)	8

Table 8. Connector P4 A type male (Continued)

	Z	A	B	C	D	E	F	
9	(T)	L	L	L	L	L	(T)	9
10	(T)	L	L	L	L	L	(T)	10
11	(T)	L	L	L	L	L	(T)	11
12	CODING							12
13	-							13
14	AREA							14
15	(T)	L	L	L	L	L	(T)	15
16	(T)	L	L	L	L	L	(T)	16
17	(T)	L	L	L	L	L	(T)	17
18	(T)	L	L	L	L	L	(T)	18
19	(T)	L	L	L	L	L	(T)	19
20	(T)	L	L	L	L	L	(T)	20
21	(T)	L	L	L	L	L	(T)	21
22	(T)	L	L	L	L	L	(T)	22
23	(T)	L	L	L	L	L	(T)	23
24	(T)	L	L	L	L	L	(T)	24
25	(T)	L	L	L	L	L	(T)	25
	Z	A	B	C	D	E	F	

Table 9. Connector P3 B(19) type male

	Z	A	B	C	D	E	F	
1	(T)	L	L	L	L	L	(T)	1
2	(T)	L	L	L	L	L	(T)	2
3	(T)	L	L	L	L	L	(T)	3
4	(T)	L	L	L	L	L	(T)	4
5	(T)	L	L	L	L	L	(T)	5
6	(T)	L	L	L	L	L	(T)	6
7	(T)	L	L	L	L	L	(T)	7
8	(T)	L	L	L	L	L	(T)	8

Table 9. Connector P3 B(19) type male (Continued)

	Z	A	B	C	D	E	F	
9	(T)	L	L	L	L	L	(T)	9
10	(T)	L	L	L	L	L	(T)	10
11	(T)	L	L	L	L	L	(T)	11
12	(T)	L	L	L	L	L	(T)	12
13	(T)	L	L	L	L	L	(T)	13
14	(C)	B	B	B	B	B	(C)	14
15	(C)	B	B	B	B	B	(C)	15
16	(C)	B	B	B	B	B	(C)	16
17	(C)	B	B	B	B	B	(C)	17
18	(C)	B	B	B	B	B	(C)	18
19	(C)	B	B	B	B	B	(C)	19
	Z	A	B	C	D	E	F	

Table 10. Connector P2 B(22) type male

	Z	A	B	C	D	E	F	
1	(C)	B	B	B	B	B	(C)	1
2	(C)	B	B	B	B	B	(C)	2
3	(C)	B	B	B	B	B	(C)	3
4	(C)	B	B	B	B	B	(C)	4
5	(C)	B	B	B	B	B	(C)	5
6	(C)	B	B	B	B	B	(C)	6
7	(C)	B	B	B	B	B	(C)	7
8	(C)	B	B	B	B	B	(C)	8
9	(C)	B	B	B	B	B	(C)	9
10	(C)	B	B	B	B	B	(C)	10
11	(C)	B	B	B	B	B	(C)	11
12	(C)	B	B	B	B	B	(C)	12
13	(C)	B	B	B	B	B	(C)	13
14	(C)	B	B	B	B	B	(C)	14

Table 10. Connector P2 B(22) type male (Continued)

	Z	A	B	C	D	E	F	
15	(C)	B	B	B	B	B	(C)	15
16	(C)	B	B	B	B	B	(C)	16
17	(C)	B	B	B	B	B	(C)	17
18	(C)	B	B	B	B	B	(C)	18
19	(C)	B	B	B	B	B	(C)	19
20	(C)	B	B	B	B	B	(C)	20
21	(C)	B	B	B	B	B	(C)	21
22	(C)	B	B	B	B	B	(C)	22
23	(C)	B	B	B	B	B	(C)	23
24	(C)	B	B	B	B	B	(C)	24
25	(C)	B	B	B	B	B	(C)	25
	Z	A	B	C	D	E	F	

Table 11. Connector P1 A type male

	Z	A	B	C	D	E	F	
1	(C)	B	B	B	B	B	(C)	1
2	(C)	B	B	B	B	B	(C)	2
3	(C)	B	B	B	B	B	(C)	3
4	(C)	B	B	B	B	B	(C)	4
5	(C)	B	B	B	B	B	(C)	5
6	(C)	B	B	B	B	B	(C)	6
7	(C)	B	B	B	B	B	(C)	7
8	(C)	B	B	B	B	B	(C)	8
9	(C)	B	B	B	B	B	(C)	9
10	(C)	B	B	C	B	B	(C)	10
11	(C)	B	B	B	A	B	(C)	11
12	CODING							12
13	-							13
14	AREA							14

Table 11. Connector P1 A type male (Continued)

	Z	A	B	C	D	E	F	
15	(C)	B	B	B	B	B	(C)	15
16	(C)	B	B	B	B	B	(C)	16
17	(C)	B	B	B	B	B	(C)	17
18	(C)	B	B	B	B	B	(C)	18
19	(C)	B	B	B	B	B	(C)	19
20	(C)	B	B	B	B	B	(C)	20
21	(C)	B	B	B	B	B	(C)	21
22	(C)	B	B	B	B	B	(C)	22
23	(C)	B	B	B	B	B	(C)	23
24	(C)	B	B	B	B	B	(C)	24
25	(C)	B	B	B	B	B	(C)	25
	Z	A	B	C	D	E	F	

3.3 Clock, changeover and alarm cabling connectors

CC4C-A cartridge, position 8. CC3C-A cartridge, position 11.

Table 12. Connector P5 B(25) type male for cabling only

	Z	A	B	C	D	E	F	
1	(T)	L	L	L	L	L	(T)	1
2	(T)	L	L	L	L	L	(T)	2
3	(T)	L	L	L	L	L	(T)	3
4	(T)	L	L	L	L	L	(T)	4
5	(T)	L	L	L	L	L	(T)	5
6	(T)	L	L	L	L	L	(T)	6
7	(T)	L	L	L	L	L	(T)	7
8	(T)	L	L	L	L	L	(T)	8
9	(T)	L	L	L	L	L	(T)	9
10	(T)	L	L	L	L	L	(T)	10

Table 12. Connector P5 B(25) type male for cabling only (Continued)

	Z	A	B	C	D	E	F	
11	(T)	L	L	L	L	L	(T)	11
12	(T)	L	L	L	L	L	(T)	12
13	(T)	L	L	L	L	L	(T)	13
14	(T)	L	L	L	L	L	(T)	14
15	(T)	L	L	L	L	L	(T)	15
16	(T)	L	L	L	L	L	(T)	16
17	(T)	L	L	L	L	L	(T)	17
18	(T)	L	L	L	L	L	(T)	18
19	(T)	L	L	L	L	L	(T)	19
20	(T)	L	L	L	L	L	(T)	20
21	(T)	L	L	L	L	L	(T)	21
22	(T)	L	L	L	L	L	(T)	22
23	(T)	L	L	L	L	L	(T)	23
24	(T)	L	L	L	L	L	(T)	24
25	(T)	L	L	L	L	L	(T)	25
	Z	A	B	C	D	E	F	

3.4 Peripheral cabling connectors

All peripheral connector positions in SD4C-A and SD3C-A cartridges.

Table 13. Connector P2 B(25) type male for cabling only

	Z	A	B	C	D	E	F	
1	(C)	B	B	B	B	B	(C)	1
2	(C)	B	B	B	B	B	(C)	2
3	(C)	B	B	B	B	B	(C)	3
4	(C)	B	B	B	B	B	(C)	4
5	(C)	B	B	B	B	B	(C)	5
6	(C)	B	B	B	B	B	(C)	6

Table 13. Connector P2 B(25) type male for cabling only (Continued)

	Z	A	B	C	D	E	F	
7	(C)	B	B	B	B	B	(C)	7
8	(C)	B	B	B	B	B	(C)	8
9	(C)	B	B	B	B	B	(C)	9
10	(C)	B	B	B	B	B	(C)	10
11	(C)	B	B	B	B	B	(C)	11
12	(C)	B	B	B	B	B	(C)	12
13	(C)	B	B	B	B	B	(C)	13
14	(C)	B	B	B	B	B	(C)	14
15	(C)	B	B	B	B	B	(C)	15
16	(C)	B	B	B	B	B	(C)	16
17	(C)	B	B	B	B	B	(C)	17
18	(C)	B	B	B	B	B	(C)	18
19	(C)	B	B	B	B	B	(C)	19
20	(C)	B	B	B	B	B	(C)	20
21	(C)	B	B	B	B	B	(C)	21
22	(C)	B	B	B	B	B	(C)	22
23	(C)	B	B	B	B	B	(C)	23
24	(C)	B	B	B	B	B	(C)	24
25	(C)	B	B	B	B	B	(C)	25
	Z	A	B	C	D	E	F	

Table 14. Connector P1 A type male

	Z	A	B	C	D	E	F	
1	(C)	B	B	B	B	B	(C)	1
2	(C)	B	B	B	B	B	(C)	2
3	(C)	B	B	B	B	B	(C)	3
4	(C)	B	B	B	B	B	(C)	4
5	(C)	B	B	B	B	B	(C)	5
6	(C)	B	B	B	B	B	(C)	6

Table 14. Connector P1 A type male (Continued)

	Z	A	B	C	D	E	F	
7	(C)	B	B	B	B	B	(C)	7
8	(C)	B	B	B	B	B	(C)	8
9	(C)	B	B	B	B	B	(C)	9
10	(C)	B	B	C	B	B	(C)	10
11	(C)	B	B	B	A	B	(C)	11
12	CODING							12
13	-							13
14	AREA							14
15	(C)	B	B	B	B	B	(C)	15
16	(C)	B	B	B	B	B	(C)	16
17	(C)	B	B	B	B	B	(C)	17
18	(C)	B	B	B	B	B	(C)	18
19	(C)	B	B	B	B	B	(C)	19
20	(C)	B	B	B	B	B	(C)	20
21	(C)	B	B	B	B	B	(C)	21
22	(C)	B	B	B	B	B	(C)	22
23	(C)	B	B	B	B	B	(C)	23
24	(C)	B	B	B	B	B	(C)	24
25	(C)	B	B	B	B	B	(C)	25
	Z	A	B	C	D	E	F	

Appendix A.

A.1 Instruction Sheet for Pin Repair Kit

Enclosed Document: Instruction Sheet 408-9979

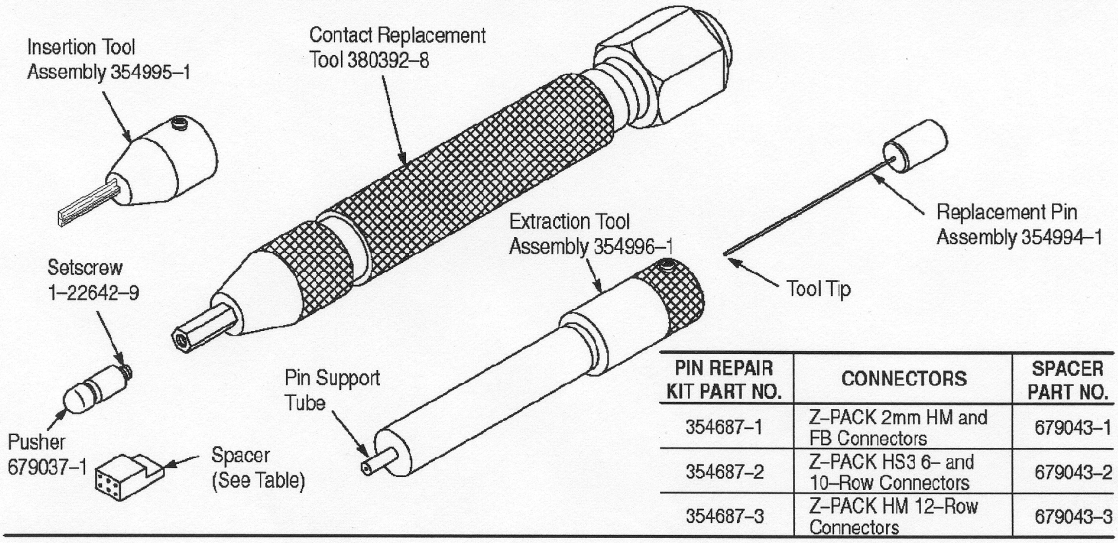
Nokia code for the AMP* Pin Repair Kit 354687-1 is *10690 0096*.

Nokia code for the special connector for replacement pins is *10541 8342*.

AMP

Pin Repair Kits 354687–1, –2, and –3 for Z–PACK* Signal Pin Contacts

Instruction Sheet
408–9979
08 MAR 99 Rev B



PIN REPAIR KIT PART NO.	CONNECTORS	SPACER PART NO.
354687–1	Z–PACK 2mm HM and FB Connectors	679043–1
354687–2	Z–PACK HS3 6– and 10–Row Connectors	679043–2
354687–3	Z–PACK HM 12–Row Connectors	679043–3

Figure 1

1. INTRODUCTION

This instruction sheet covers AMP* Pin Repair Kits 354687–1, –2, and –3, which are used to insert and extract signal pin contacts from Z–PACK connectors. See Figure 1.

Reasons for reissue are provided in Section 5, REVISION SUMMARY.

2. DESCRIPTION

The kits feature a basic contact replacement tool with a spring–loaded adapter tip, an extraction tool assembly, a single–pin insertion tool assembly, a replacement pin assembly, a pusher, and a spacer.

NOTE *Parts shown in Figure 1 are available separately.*

The spacer, which is used to accommodate long tail signal pin contacts, is a block that fits over the signal pin contact tail and reinforces it while the tool pushes the signal pin contact out.

The extraction tool assembly has two positions for the signal pin contact tip; BACK or INSIDE the pin support tube, and FORWARD or BEYOND the pin support tube. The tool pin tip has a concave surface to aid in positioning the tool over the contact and to maintain its location during the removal process.

3. CONTACT REMOVAL

The tip of the insertion tool assembly is a T–shaped steel section. It has a larger, flat back section, a narrow, ribbed front section, and a slot between the ribs.

1. Snap the extraction tool assembly into the contact replacement tool.

2. Locate the rear of the signal pin contact to be removed.

3. Place the spacer over the signal pin contact tail (for mid–plane/long–tail product).

NOTE *If the repair is being made prior to assembling the connector housing, use the higher surface of the spacer. If the repair is being made after assembling the rear housing, use the lower surface of the spacer.*

4. Depending on the location of the tip of the signal pin contact in relation to the board (or spacer) surface, position the tool tip as follows:

- If the tip of the signal pin contact is flush with the board (or spacer) surface, position the tool tip in the FORWARD position (refer to Figure 2) and place the tool tip on the signal pin contact tip. The signal pin contact tip should be located in the concave tip of the tool.

NOTE *To be sure of proper location, slowly spin the tool between your thumb and index finger. If the tool tip remains on the contact tip, the tool tip is properly located.*

- If the signal pin contact tip is below the board (or spacer) surface, position the tool tip in the FORWARD position and place into the hole.

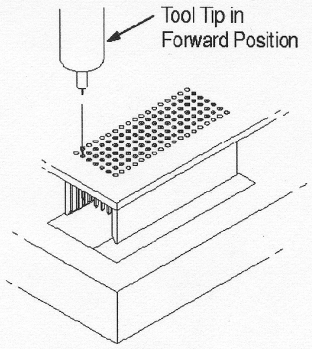


Figure 2

- If the signal pin contact tip is above the board (or spacer) surface, position the tool tip in the BACK position (refer to Figure 3) and place the tool over the contact tail, which will extend into the pin support tube.

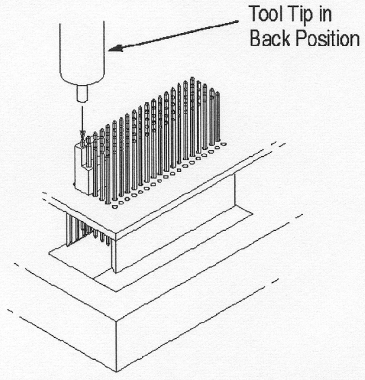


Figure 3

5. Make sure that the board is securely supported, with clearance for the signal pin contact to be pushed clear.

6. Position the tool perpendicular to the pc board surface. Use one hand to maintain the position of the tool, and use the other hand to exert the required force on the tool. Push the contact *straight* out of pc board and connector housing.

4. CONTACT INSERTION

1. Snap the insertion tool assembly onto the contact replacement tool.

2. Orient and insert the replacement contact into the tip of the insertion tool. The pin should fit *snugly* between the ribs in the front of the tip.

DANGER *Do NOT push the end of the contact with your finger —the contact will penetrate the skin. Pinch the pin between your thumb and index finger.*

3. The push shoulders on the sides of the signal pin contact should each be against the ribs on the tool tip. The axis of the pin should be the same as the axis of the tool tip, with the flat section of the pin parallel to the BACK of the tip. See Figure 4.

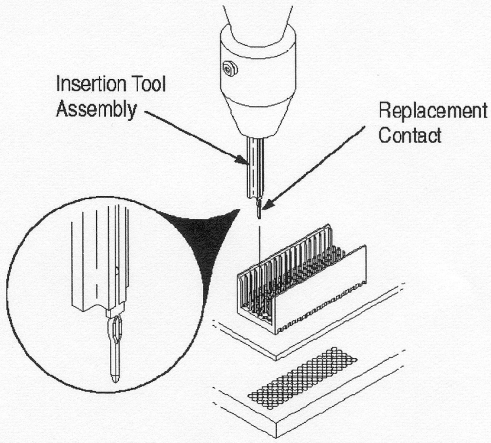


Figure 4

4. Orient and start the replacement contact through the top of the connector housing and into the appropriate cavity. The flat surface of the back of the tip should be parallel to the side walls of the connector housing. If replacing an outer row contact against the wall, the ribs in the front of the tool should fit between the plastic reinforcement ribs of the housing.

CAUTION *Before applying force to the replacement contact, make sure that the contact is aligned properly in the connector housing. The tool must be held perpendicular to the pc board.*

5. Apply force to the tool until the tool bottoms on the connector housing and the contact is fully seated.

NOTE *After the contact is fully seated, the push shoulders must be flush with the internal ribs on the floor of the connector housing.*

6. Remove the tool from the contact, making sure not to damage the other contacts.

5. REVISION SUMMARY

Since the previous release of this sheet, the following changes were made per EC 0990–0179–99:

- Added Pin Repair Kits 354687–2 and –3
- Updated text to reflect addition of –2 and –3 kits