10

Product History and
Service Notes

Introduction

This chapter describes the differences between earlier versions of the plotters and the latest version documented in this manual.

Serial-Number Format

The plotter serial number is composed of 10 letters and digits, for example ESA5900248.

- In the first two positions is the code for the country of manufacture of the plotter. In the example above, this is ES, which is the code for Spain.

- In the third position is the revision letter of the plotter. The letter A identifies the original version of the plotter. The next revision would have the letter B and so on.

- In the fourth position is the last digit of the year of manufacture. In the example above, this is 5 for plotters made in 1995.

- In the fifth position is the month of the year. (October is represented by the letter A, November by B, and December by C.) In the example above, the digit is 9, which is September.

- The remaining five digits distinguish the plotter from others manufactured in the same country in the same month. In the example above, these are 00248.

Identifying a Printed Circuit Assembly

The plotters have the following major identification features:

Part Number

PCAs having the same part number are directly interchangeable. If a PCA is revised in any way that makes it non-interchangeable with previously issued PCAs of a particular part number, a new part number is assigned to the revised PCA.

Revision Letter

This letter identifies the most recent revision to the etched circuit pattern. The original issue is identified with the letter A. If the master artwork for a printed circuit board is revised in order to alter performance or manufacture, the revision letter is changed to the next letter in the alphabet.

Firmware Revision Level

To find out which firmware revision the plotter is using:

1 At the "Status / Ready" message press the **Enter** button.

2 Use the **Arrow** buttons to scroll to the "Utilities" menu display and press the **Enter** button.

3 Use the **Arrow** buttons to scroll to the "Statistics" menu display and press the **Enter** button.

4 Use the **Arrow** buttons to scroll to the "Code rev ="

Plotter Support Information on the World Wide Web

A special World Wide Web site has been produced to aid Service Engineers and inform them on latest developments. This site can be found at the following address:

http://plotter-support.bpo.hp.com/

You can access this site from a PC or UNIX workstation to obtain the following information:

- General Information.
- Documentation (latest versions of the Service Manuals and User Guides).
- Training.
- Service Notes.
- Newsletters.
- Diagnostics (Information ◗ page 8-54).
- Connectivity.

Firmware History for HP DesignJets 750C and 755CM (Model A)

Date:	1 April 1996
Service Note:	C3195A-06
	C3196A-08
	C3198A-06
Supersedes:	C3195A-08
Products:	HP DesignJet 750C (C3195A)
	HP DesignJet 750C (C3196A)
	HP DesignJet 755CM (C3198A)
Serial Numbers:	C3195A ESA0000000/ESA6207614
	C3196A ESA0000000/ESA6231908
	C3198A ESA0000000/ESA6206073

To be performed by: Customer

Parts Required:

Part Number	Description	Qty
C3195-60135	FWM. SIMM A.02.10	1

Situation

This Service Note contains the following information:

1 A list of problems solved in each one of the firmware releases.

2 The serial numbers of the units shipped with each release.

3 The known problems of the latest release.

Problems Solved in Each Firmware Release

Note: By default, the problems solved are affecting all the previous releases.

Firmware A.02.10

- HP-GL2 files hangs the unit, sometimes showing a system error 0000D8.
- Varware problem: Now black dot replication can be done according to Varware specifications.
- Varware problem 2: Dry time was accepted in "tics" and it should be in seconds.

Firmware A.02.09

- The print modes with Glossy media and Print Quality Best are printed in 6 passes.
- Provides a significant improvement in paper advance error compensation, which is optimized when we add a line on the mark encoder (Refer to Service Note ◗ page 10-18).
- Possible media jam when powering on the unit (3% or less). This problem is only present in firmware revision A.02.08.
- Corner case when it does not find mark encoder, it ejects media continuously. This problem is only present in firmware revision A.02.08.
- The I/O time-out was applied when sending PostScript jobs to the MIO port using all protocols but EtherTalk (so, TCP/IP, Novell and DLC/LLC) in previous versions. Since the front panel I/O time-out was 30 minutes by default, the symptom was having blocked the I/O during this amount of time. The workaround was to manually set the front-panel time-out to 30 seconds.
- When printing through a Centronics (not Bi-tronics) port the plotter hangs after printing around 30 PostScript plots. The problem can also occur with HP-GL2 files but with less severity. This problem only occurs in firmware revision A.02.08.
- Plotter hangs after sending several files with small margins. This bug is present in firmware revision A.02.08.

Firmware A.02.08

- Banding Reference Localization of the mark encoder during the initialization: Firmware revisions A.02.03 and A.02.04 have a certain variability detecting the reference of the paper advance correction (mark encoder) during the initialization at the power up. If the error is too high, the paper advance correction will not be efficient. This problem affects only the units that require the paper advance correction (approximately about 30% of our units).
- The accuracy calibration changed to improve the performance of the calibration.
- Banding and pattern when printing with the following configuration:
    - Monochrome.
    - Coated, Heavyweight and Bond.
    - Best and Normal.
- When the plotter is set to SMALL MARGINS, the black pen is not serviced after cutting the print. As a result, the black pen dries and may have start-up problems. The new code applies servicing to this pen after cutting.
- Japanese/Portuguese/Spanish/German localizations corrected.
- Service Configuration plot improvements :
    - Mono not grayscaling colors.
    - Showing all K pen drop detect infos.
- Plotter hangs after 20 plots when "Maintenance Advised" message shows up on the front panel display.
- MIO & JETADMIN: "Out of memory" when receiving PML requests. JetAdmin polls the printer every 2 seconds, and the PML requests sent to it remain in its memory. That means that the memory is filled with PML packets. This fact can fill the memory (DesignJet 750C with no extra memory: only 4 MB) after 55 minutes if only one device has JetAdmin opened during all that time. If there are two, the time to obtain an "Out of memory" message is reduced to a half, and so on.

- MIO 5.0 support: The plotter officially only supports MIO cards which provide MIO 6.0 functionalities. With MIO cards that do not provide MIO 6.0, the plotter reports a System Error 040601. But if it is an MIO 5.1 HP JetDirect card, this error is cleared after pressing "Enter". The plotter will work normally, but it will not be able to use any PML functionality. This is not a problem for HP JetDirect cards, as long as they have FLASH to be re-programmed. The MIO 6.0 version A.03.15 works perfectly. Because the plotter does not officially support MIO 5.0, problems could be the same with 3rd party cards.
- JetDirect EX family: When the plotter uses a JetDirect EX, JetAdmin (Windows /Unix) always report "Status: online" even if the Cover is Open (same result with Lever Up and Out of Media). If you continue asking the printer status, the error event (e.g. Cover Open) is seen once every 10 times.
- Fixed corner case problems in HP-GL / HP-GL2 instructions. Dashed lines printed with LTO are printed continuously.
- PostScript: When printing in an area which is located between two white areas (e.g it is non-printed areas), some swaths can be lost. This could occur, for example, when printing a line. The result would be a lighter color than expected. Or, if printing two separated lines with the same color, one of them could be lighter than the other. The occurrence of the problem depends on the position on the page and on the width of the printed areas. This means that you can obtain the correct color by moving the line. There is a workaround: If printing in color, the problem never appears if the line width is 5.5 mm(0.22 inches) or more. If printing in monochrome, the line should be 6.8 mm (0.27 inches) or more in width to be sure that no swaths are lost.
- PostScript: When canceling a Postscript print, the Front Panel is reports a "Ready" message when in fact it is canceling.
- DISPLAY DATA doesn't not work after sending HP-GL2 files. The files received afterwards are printed.
- Plotter hangs when sending files with many bitmap fonts.
- Printing in small margins, after canceling one file, it can be printed attached with the following file.

Firmware A.02.05

Release uniquely used in the Japanese Market.

- Corrects some localization errors
- Smart Area fill problem (in some cases, one pass not done).

Firmware A.02.04

- Dry times on semi-gloss and high-gloss photo medias (the dry times in A.02.03 were too short, which led to ink coalescence problems)
- In Varware, the dot replication control had a problem.

Firmware A.02.03

Original release

Serial Numbers

The serial number ranges of the units that have been shipped with each firmware release are listed as follows:

- Firmware A.02.10
  - C3195A ESA0000000/ESA6207615
  - C3196A ESA0000000/ESA6231909
  - C3198A ESA0000000/ESA6206074

- Firmware A.02.09
  - C3195A ESA6106789/ESA6207614
  - C3196A ESA6125903/ESA6231908
  - C3198A ESA5B02307/ESA6206073

  The following units requested the improved paper advance error compensation algorithm (around 20%):
  - C3195A ESA5B05605/ESA6106789
  - C3196A ESA5B22102/ESA6125903

- Firmware A.02.08
  - C3198A ESA5A00000/ESA5B02306
  - Some codes were also shipped with C3195A/C3196A.

- Firmware A.02.05
  - Release uniquely used in the Japanese Market.

- Firmware A.02.04
  - C3195A ESA5804374/ESA6106788
  - C3196A ESA5804374/ESA6125902
  - C3198A ESA0000000/ESA5A00000

- Firmware A.02.03 (original release)
  - C3195A ESA0000000/ESA5804373
  - C3196A ESA0000000/ESA5804373

Known Problems in the Last Firmware Revision A.02.10

This problem will be solved in the following firmware releases.

- None of the HP JetDirect EX cards work with the DesignJet 755CM in a MAC environment.

Solution

- Install firmware revision A.02.10 (pn C3195-60135).
- Verify if the mark encoder has a black line or a notch in the middle. This is needed to optimize the performance of the paper advance calibration. In case this line or the notch is not present, you should install it (Refer to Service Note ◗ page 10-18). The following units were shipped without the mark (even though some of them were reworked in the Distribution Centers).
  Serial Numbers:
  - C3195A ESA0000000/ESA5B05350
  - C3196A ESA0000000/ESA5B20304
  - C3198A ESA0000000/ESA5B02306

- Perform the accuracy calibration (details ◗ page 7-6) when you are upgrading from firmware revision A.02.08 or lower. To get the best performance use HP Matte Film media.

Administrative Information

Classification:	Modification Recommended
Standards:	0.1 Hour
Action Category:	On Failure
Location Category:	Customer Infallible
Service Inventory:	N/A
Used Parts:	N/A
HP Responsible Until:	1 April 1998
Author Entity:	EV/F900

Problems with the Entry Platen

Date:	1 November 1995
Service Note:	C3195A-01
	C3196A-01
Supersedes:	None
Products:	HP DesignJet 750C (C3195A)
	HP DesignJet 750C (C3196A)
Serial Numbers:	C3195A ESA0000000/ESA5700335
	C3196A ESA0000000/ESA5700644

To be performed by: HP-Qualified Personnel

Parts Required:

Part Number	Description	Qty
C3195-00002	Entry Platen - D-size	1
C3196-00002	Entry Platen - E-size	1

Situation

The entry platen, under certain circumstances (bent), can:

- Cause the media sensor not to detect the presence of media.
- Damage the media sensor.

If this happens, the media fails to load.

Solution

A new entry-platen has been introduced to avoid this problem.

Removing and Installing the New Entry Platen :

1 Remove the window ▶ page 6-13.

2 Remove the center cover ▶ page 6-14.

3 Remove the left and right endcovers ▶ pages 6-16 and 6-17.

4 Disengage the media sensor cable from the clamps and remove the media sensor from the entry platen.

5 Lower the rollfeed cover to the open position.

6 Use a Torx T-15 screwdriver to loosen the wedge screws that attach the entry platen to the left and right sideplates.

7 Pull the entry platen down, forward and clear of the plotter.

8 Install the new platen following the above instructions in the reverse order.

Administrative Information

Classification:	Modification Recommended
Standards:	0.5 Hour Labor
Action Category:	On Failure
Location Category:	On-Site
Service Inventory:	N/A
Used Parts:	Scrap
HP Responsible Until:	1 Nov 1997
Author Entity:	HV/F900

Problems that Cause Paper Advance Errors

Date:	1 February 1996
Service Note:	C3195A-02A
	C3196A-02A
	C3198A-01A
Supersedes:	C3195A-02
	C3196A-02
	C3198A-01
Products:	HP DesignJet 750C (C3195A)
	HP DesignJet 750C (C3196A)
	HP DesignJet 755CM (C3198A)
Serial Numbers:	C3195A ESA0000000/ESA5B05350
	C3196A ESA0000000/ESA5B20304
	C3198A ESA0000000/ESA5B02306

To be performed by: HP-Qualified Personnel

Parts Required:

Part Number	Description	Qty
C3195-60142	Paper Advance Kit	1

Situation

There are two main problems that generate paper advance errors:

Problem 1 - "AVION" - Back tension

One problem has been found when the plotter finishes a plot, advances the paper, cuts it and then rewinds to plot the next one. In this process, the paper roll itself is not rewound and thus there is a portion of paper which has been unrolled for cutting.

The high paper back tension produced by the brake of the roll-feed module causes the X-axis motor worm to bend slightly just at the moment when it starts to pull the paper from the roll and thus resulting in a one off swath error. This phenomena is called "AVION" and looks very similar to a "Banding" phenomena.

This phenomena occurs only once at the beginning of the print. This band is normally located between 65 and 75 mm from the top border of the paper.

Problem 2 - Rollcover screws / spindle interaction

The spindle spacer or the spindle itself can interfere with the screws of the roll-feed covers. This can cause some paper advance errors which appear as bands on the image prints.

Solution to Problem 1: "AVION" - Back tension

Replace the small spring of the roll-feed by a new one that applies the correct force (spring included in the kit).

Procedure

1 Remove the center window ◗ page 6-14.

2 Remove the right end-cover ◗ page 6-17.

3 Use a pair of pliers to remove the small spring from the rollfeed module

4 Install the new spring.

Solution to Problem 2: Rollcover screws / spindle interaction

Replace the screws with flat-head ones so that they do not interfere with the spindle or the spindle spacer.

Procedure

1 Open the rollfeed cover.

2 Identify the three screws (at each side) that hold the cover with the hinge.

3 Replace the screw that is in the lowest position (only one per side).

Administrative Information

Classification:	Modification Recommended
Standards:	0.5 Hour Labor
Action Category:	On Failure
Location Category:	On-Site
Service Inventory:	N/A
Used Parts:	N/A
HP Responsible Until:	1 Feb 1998
Author Entity:	EV/F900

The Aerosol Phenomena Causing a Servo Shutdown Error

Date: 15 December 1995

Service Note: C3195A-03
C3196A-03

Supersedes: None

Products: HP DesignJet 750C (C3195A)
HP DesignJet 750C (C3196A)

Serial Numbers: C3195A ESA0000000/ESA5700250
C3196A ESA0000000/ESA5700400

To be performed by: HP-Qualified Personnel

Parts Required:

Part Number	Description	Qty
C3195-60140	Pen Carriage Assembly	1

Situation

During very intensive plot workload (high duty cycle), the aerosol phenomena may appear inside the plotter as the ink particles are stacking on the carriage rails causing high friction. This happens with the old type of carriage (with carbon bushings). The result is a Servo Shutdown error.

Solution

The pen carriage has been reworked to avoid this problem. It now has the new type of bushings (Aramide type bushings).

Removing and Installing the New Pen Carriage

1 Remove the window ◢ page 6-13.

2 Remove the center cover ◢ page 6-14.

3 Remove the left and right endcovers ◢ pages 6-16 and 6-17.

4 Remove the encoder strip ◢ page 6-27.

5 Remove the trailing cable ◢ page 6-36.

6 Slide the carriage to the right side of the plotter.

7 Grasp the carriage rear preload bushing and move the carriage to the right side, free from the slider rods.

8 Separate the rear bushing and preload spring from the carriage and carefully remove the carriage and main drive belt from the plotter.

9 Remove the drive belt from the carriage.

10 Install the new pen carriage following the above instructions in the reverse order.

Administrative Information

Classification: Modification Recommended

Standards: 1 Hour Labor

Action Category: On Failure

Location Category: On-Site

Service Inventory: N/A

Used Parts: Returned to SME/HP Grenoble

HP Responsible Until: 15 Dec 1997

Author Entity: HV/F900

Longer Screws Make Legs More Stable

Date:	1 February 1996
Service Note:	C3195A-04
	C3196A-06
	C3198A-04
Supersedes:	None
Products:	HP DesignJet 750C (C3195A)
	HP DesignJet 750C (C3196A)
	HP DesignJet 750CM (C3198A)
Serial Numbers:	C3195A ESA0000000/ESA5C05877
	C3196A ESA0000000/ESA5C23782
	C3198A ESA0000000/ESA5C02835

To be performed by: HP-Qualified Personnel

Parts Required:

Part Number	Description	Qty
C4696-60002	Legs Hardware Kit	1

Situation

In the initial hardware kit for the legs assembly we had the following problems:

1 The screws of the legs get loose when moving the plotter. This makes the unit sway, giving a perception of weakness.

2 When the units are shipped without disassembling the legs, the screws may come out and the legs collapse due to the vibration. This problem is affecting mainly dealers and the trade show units used in the Marketing Centers.

Solution

The screws have been replaced by longer ones and washers have been added. This solution has been tested and the results show that the sway problem has been solved in customers' units. However, it is not a good solution for units that are constantly moved or shipped mounted, like the ones in marketing centers.

To install the new hardware kit (C4696-60002) follow this procedure:

1 Verify that the screws of the legs do not have washers installed. If they already have washers, do not proceed with the following steps.

2 Without turning the plotter upside down, remove the old screws that attach the legs to the plotter.

3 Separate the unit from the legs.

4 Replace the old screws with the new ones. The new screws have the washers.

Administrative Information

Classification:	Modification Recommended
Standards:	0.5 Hour Labor
Action Category:	On Failure
Location Category:	On-Site
Service Inventory:	N/A
Used Parts:	Scrap
HP Responsible Until:	1 February 1998
Author Entity:	EV/F900

Install a Line on the Mark Encoder

Date: 1 February 1996

Service Note: C3195A-05
C3196A-07
C3198A-05

Supersedes: None

Products: HP DesignJet 750C (C3195A)
HP DesignJet 750C (C3196A)
HP DesignJet 750CM (C3198A)

Serial Numbers: C3195A ESA0000000/ESA5B05350
C3196A ESA0000000/ESA5B20304
C3198A ESA0000000/ESA5B02306

To be performed by: HP-Qualified Personnel

Parts Required:

Part Number	Description	Qty
N/A	D-size Matte Film Media	1
C3195-60141	Mark Label Kit	1

Situation

In firmware revisions A.02.09 or higher, the paper advance calibration algorithm was improved. In order to optimize its performance, modify the mark encoder so that the reference for the paper advance error compensation is more accurate.

Solution

A line or a notch is included in the middle of the mark encoder. In units that are in the range of serial numbers listed above, follow this procedure to add a line on the mark encoder.

Please, verify that your unit is within the serial number ranges that are quoted above. The units produced after these ranges will have a notch in the middle of the mark encoder, so the line will not be required.

Procedure to Install the Line on the Mark Encoder

After installing firmware revision A.02.09 or higher:

1 Switch-off the device.

2 Remove the media.

3 Switch-on the device.

4 Open the window cover and verify that the mark encoder is in the upper position on the right side of the roller platen. If the mark encoder is not in the upper position, then perform the Mark Position test ▶ page 8-44.

5 Clean the mark encoder using the cleaning wipes - HP 92193N. These wipes contain isopropyl alcohol. Allow a few seconds to ensure that the mark is dry.

6 Get a sheet containing the black adhesives lines. Identify the adhesive side (you may test it on a piece of paper).

7 Trim a piece of the sheet containing one black line.

8 Place the line in the center of the mark encoder, positioning it parallel to the platen roller.

9 Using a pen, softly rub on the back of the line.

10 Make sure that the:

- Line is properly stuck on the contact surface of the mark encoder
- Line is continuous and not broken.

11 If this is not the case, remove the line with a tool that can not damage the mark encoder and clean it again using the cleaning wipes. Then repeat the procedure from step 6.

12 Using matte film media, perform the accuracy calibration ▶ page 7-6.

Administrative Information

Classification:	Modification Recommended
Standards:	0.5 Hour Labor
Action Category:	On Failure
Location Category:	On-Site
Service Inventory:	N/A
Used Parts:	N/A
HP Responsible Until:	1 February 1998
Author Entity:	EV/F900

Problems with Pen Alignment

Date:	15 December 1995
Service Note:	C3196A-04
	C3198A-02
Supersedes:	None
Products:	HP DesignJet 750C (C3196A)
	HP DesignJet 750CM (C3198A)
Serial Numbers:	C3196A ESA0000000/ESA4508541 ESA5B21735
	C3198A ESA0000000/ESA4508541 ESA5B02844

To be performed by: HP-Qualified Personnel

Parts Required:

Part Number	Description	Qty
C3195-60140	Pen Carriage	1

Situation

In some cases, when inserting the Cyan and Magenta cartridges, the plotter will try to align the cartridges but fails. The message "Alignment Error" is displayed on the front panel. This is caused by the inserted cartridges which cannot be aligned in the X-axis because the mechanical distance from the nozzles to the media is too big.

The "Alignment Error" display explained in the "User Manual" doesn't refer to the insertion problem.

Solution

A new pen carriage has been introduced to enhance the pen insertion thus preventing the error.

Removing and Installing the New Pen Carriage

1 Remove the window ▶ page 6-13.

2 Remove the center cover ▶ page 6-14.

3 Remove the left and right endcovers ▶ pages 6-16 and 6-17.

4 Remove the encoder strip ▶ page 6-27.

5 Remove the trailing cable ▶ page 6-36.

6 Slide the carriage to the right side of the plotter.

7 Grasp the carriage rear preload bushing and move the carriage to the right side and free of the slider rods.

8 Separate the rear bushing and preload spring from the carriage and carefully remove the carriage and main drive belt from the plotter.

9 Remove the drive belt from the carriage.

10 Install the new pen carriage following the above instructions in the reverse order.

Administrative Information

Classification: Modification Recommended
Standards: 1 Hour Labor
Action Category: On Failure
Location Category: On-Site
Service Inventory: N/A
Used Parts: Returned to SME/HP Grenoble
HP Responsible Until: 15 December 1997
Author Entity: HV/F900

Air Flow from the Fan can Cause Spray and Misdirection

Date: 1 February 1996

Service Note: C3196A-05
                         C3198A-03

Supersedes: None

Products: HP DesignJet 750C (C3196A)
                         HP DesignJet 750CM (C3198A)

Serial Numbers: C3196A ESA0000000/ESA4508541
                         C3198A ESA0000000/ESA4508541

To be performed by: HP-Qualified Personnel

Parts Required:

Part Number	Description	Qty
C3195-40066	Fan Deflector	1

Situation

Air flow from the fan can cause spray and misdirection, generating a vertical band in certain prints on glossy media.

The band is on the left side and has a width of about 10 centimeters or 3.94 inches. It is only visible in certain area fills and shows up as:

- Hue change.
- Increase of the coalescence problem.
- Increasing the horizontal banding.

The problem affects only E-size plotters.

Solution

A new part has been designed to be installed in the Y-yoke. The Y-yoke is the metallic part mounted on the chassis between the two slider rods.

This part, called a fan deflector, deflects the air coming from the fan so that it does not affect the print quality.

The procedure to install the fan deflector is as follows:

1 Open the window.

2 Identify the Y-yoke, on the chassis, between the slider rods and behind the carriage belt.

3 Identify the cuts in the Y-yoke where the fan deflector is to be installed. These cuts are on the left side of the plotter.

4 Passing the fan deflector between the slider rods and the encoder strip, install the two front clips in the cut as shown in figures 1 and 2.
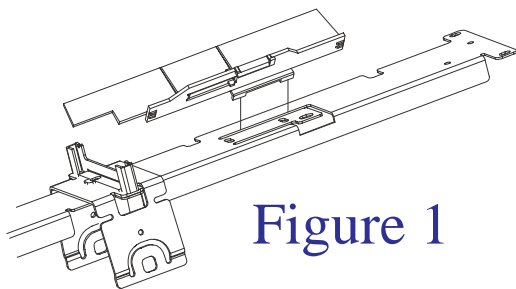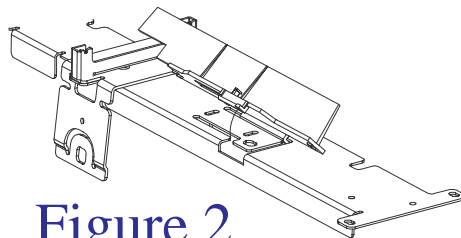
Figure 1

Figure 2

Take care not to cut yourself on the encoder strip inside the plotter.

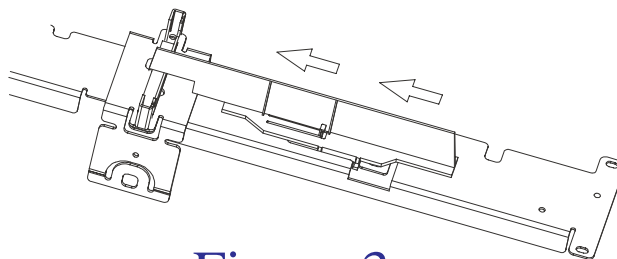**5** Install the third clip as shown in figure 3.

Figure 3

6 Move the fan deflector to the right of the plotter as shown in figures 4 & 5. You will hear a "click" sound when the deflector gets in its correct position.
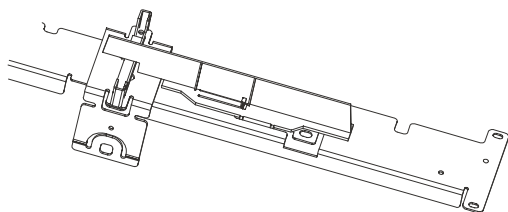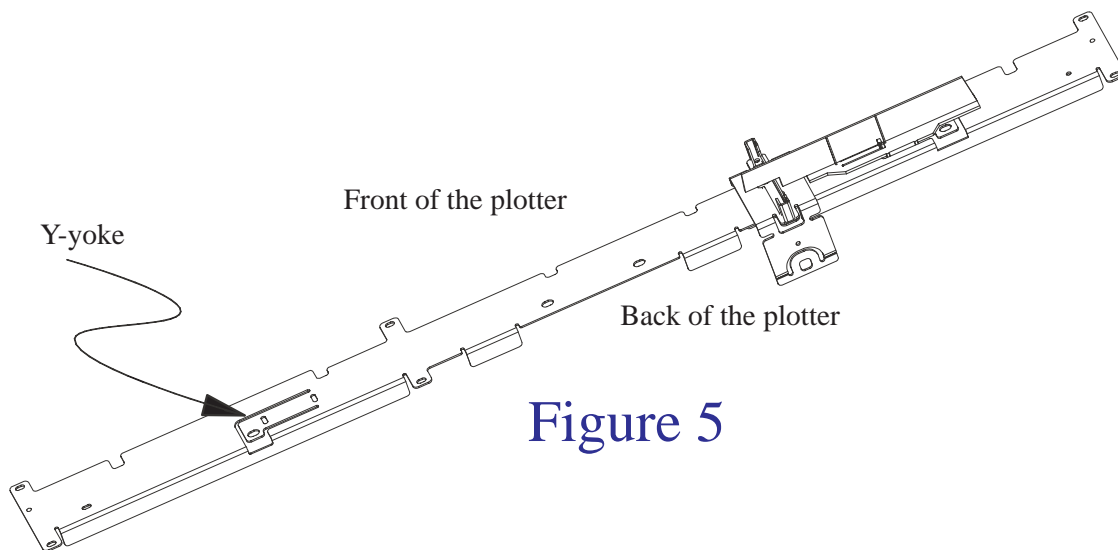
Figure 4

Front of the plotter

Y-yoke

Back of the plotter

Figure 5

Administrative Information

Classification:	Modification Recommended
Standards:	0.1 Hour Labor
Action Category:	On Failure
Location Category:	On-Site
Service Inventory:	N/A
Used Parts:	N/A
HP Responsible Until:	1 Feb 1998
Author Entity:	EV/F900