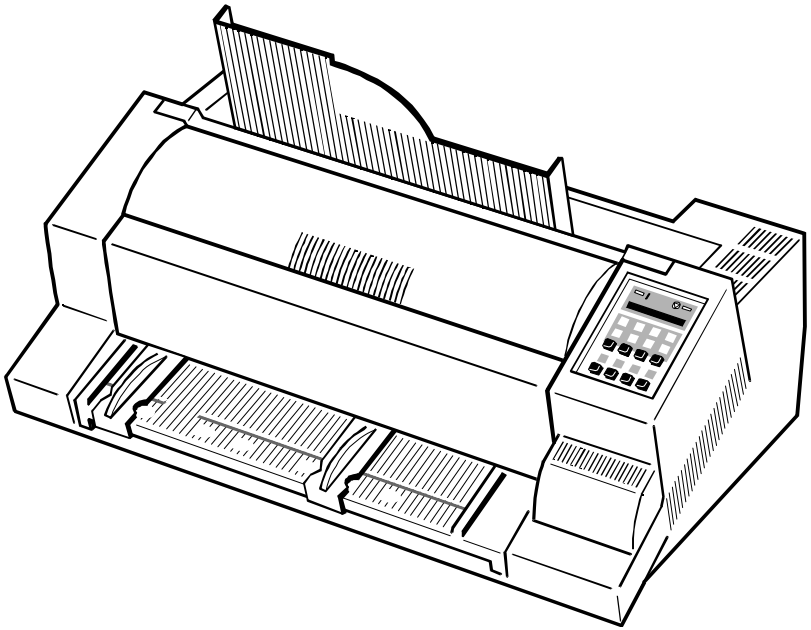
LA600 MultiPrinter

digital

Field Service Manual



Order No.: ER-LA600-SV

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1. Introduction

The manual is divided into the following chapters:

1 Introduction
This chapter gives an overview about the manual and some basic informations.

2 Safety Precautions
This chapter contains all the important instructions a service technician should obey during a service action.

3 Keeping the Printer Running
This chapter instructs the user about preventive meassures for troublefree operation of the printer.

4 Specific Printer Functions
This chapter describes some basic functions of the printer, which should be known by persons who are performing the technical support for this product.

5 Printer Subassemblies
This chapter comprises diagrams, depicturing the printer´s subassemlies, the internal wiring scheme and arrangement of the collective connectors.

6 Built In Diagnostics and Trouble Shouting
This chapter gives a description of some problem symptoms and how to isolate the failures with regard to spare parts and field replaceable units concerned.

7 Procedures for Removal and Reassembly of Subassemblies and Spare Parts
This chapter contains all removal and reassembly procedures for an on-site- or workshop-repair of the printer.

8 Wearings Parts
This chapter describes the removal procedures which are necessary for proper handling of the wearing parts of the printer.

9 List of Spares and Repairs
This chapter lists all actually defined Spare Parts and Wearing Parts and contains the relevant reference to the different chapters of this manual as far as requested.

2. Safety Precautions

- Some of the maintenance procedures described in this section require that the printers top housing is removed. This exposes the internal working parts of the printer. During operating touching some of these parts may be potentially dangerous.

- All replacement and cleaning procedures should be performed with the printer switched OFF and the mains connector disconnected.

- Only recommended parts should be used to replace defective parts. Details of field exchangeable parts, including part number and order number are listed in Chapter 9.

- Switch the printer OFF while connecting or disconnecting a Personality Module.

- Don´t touch the print head after long peroids of printing, because it can be very hot.

3. Keeping the Printer Running

3.1 Basic Rules

– Never print over the area of pin holes nor the edges of the fanfold paper. Otherwise the print head can be damaged.

– Never print with no papaer loaded or no ribbon cartridge is installed in the printer.

– Put the printer in stop mode immediately a paper jam occurs, using the ⊽ [START/STOP] key at the operator pannel.

The following points should be additionally checked on a service call.

Item	Problem	Remedial Action
Platen	Paper feeding problems	Remove platen and clean surface thoroughly using platen cleaner S/CP 09.
Paper input transport rollers	Paper feeding problems	Disconnect mains cable, remove the ribbon, and remove housing (see chapter 3, Part: Housing). Also remove the paper guide secured with two green screws. Clean all transport rollers using platen cleaner S/CP 09.

ASF [1)]	Paper insertion problems	Remove ASF cassette. Clean pick-up rollers using platen cleaner S/CP 09, and check the paper handling of the ASF cassette using a few sheets of paper which have to be transported properly by manually rotating the pick-up wheel of the ASF-cassette.

3.2 Cleaning

Preferred Materials

The following materials and cleaning lubricants are recommended for use in the maintenance procedure:

– Lint-free cloth
– Platen Cleaner C/CP09, commercial no: 8709 004 10931
– Vacuum cleaner
– Silicon Oil for resolving of glue.

3.2.1 Cleaning the Platen and Surrounding Areas

The user should clean the printer every six months or after 50,000 prints, whichever occurs first. If you experience paper feed problems, or if the print head carriage movement becomes restricted, cleaning should be carried out more often.

Note: The Page Counter (**PGCNT**) in the **PRINT-TEST 3** will inform you about the actual number of printed pages.

[1)] Refer to Chapter 4 to check a necessary exchange of platen or pick-up rollers.

PRINT TEST3

```
CONFIGURATION

PM1   208xxxxx   PM2    00000000   PM3   208079xx   PBC      20807xxx
SPC   2080740x   MC     00000000   CUR          4   PMR             0
MCR           0

NFQ         1800   DSF         100   GSF          70   NTF          240
TNA1         230   TNA2        260   TNA3        260   CAC         3.10
PTC1        2.75   PTC2       2.85   PTDT           5   PHCS1       2.20
PHCS2       1.00   PGC           30   PGCNT         25   SBP           38

C020 DEC NCR SETS       C021 DEC SUPPLEMENT      C022 DEC SPEC GRAP
C023 DEC TECHNICAL      C024 DEC 7 HEBREW        .... ... ....
```

Note: The number following **PM1** identifies the micro program and the number following **PM3** identifies the character set.

3.2.2 Cleaning Procedure

1. Power the printer ON and remove the top cover.
2. Remove the ribbon cassette.
3. Thoroughly brush and vacuum all accessible areas to remove any paper flock and dust.
4. Clean the platen's surface, the paper pressure rollers and the transport rollers using the platen cleaner. In order to access the transport rollers loosen the green screws and remove the metal bar with the metal rollers.
5. Clean the covers and the operator panel with a damp, lint-free cloth. Do not use cleaning solvents or excessive amounts of water.
6. Insert the ribbon cassette.
7. Remount the top cover.

3.3 Status and Error Messages

The following messages are displayed if a condition exists which prevents normal operation of the printer.

LOCAL
Entered when [START/STOP] was pressed. The STOP indicator is lit.

COVER OPEN
Displayed when the top cover is open and the printer is in the **READY** or **BUSY** mode.

LOAD BIN
Displayed whenever a form feed command or print command is given by the host to an empty ASF cassette. The printer enters the STOP mode.

LOAD TRACTOR
Displayed when the host sends a form feed or print command to an empty tractor cassette. The printer enters the STOP mode.

LOAD MANUAL
Same as LOAD TRACTOR except that the machine does **not** enter the **STOP** mode! Paper should be fed manually; after a short delay the printer will accept paper and starts printing.

PAPER JAM TRF
PAPER JAM ASF
PAPER JAM MANUAL
Displayed if a form jams in the ASF or if successive line feeds fail to move fanfold paper correctly when tractor feed is used.

TEAR OFF PAPER
Displayed when a switch has been initiated from currently tractor to a different paper source and the fanfold paper could not retreat into the parking position. The operator must "tear off" the paper along the tear off edge which is located directly above the fanfold paper output (paper should be torn off from left to right). Press to enable the fanfold paper to be fed backwards to a park position so that the newly selected paper source can be used.

REMOVE PAPER
This message will be displayed if the output for cut sheets (Bin or Manual) is selected to **FRONT SIDE/KEY**. After printing and moving out at the front side the printer enters the STOP mode and displays **REMOVE PAPER.** Remove paper and press .

During normal operation the following error messages may occur also:

Display	That means...	Cause / Action
AGC ERROR	AGC ADJUST procedure fault	- Distance print head and platen faulty - Print head loose - Platen incorrectly installed - Ribbon not inserted - Horizontal drive without function - Platen got dirty

Display	That means...	Cause / Action
HOR. DRIVE ERROR	Horizontal drive without function	- Horizontal drive blocked - Paper jam - Distance of platen gap too narrow - AGC procedure on not workable position - Platen incorrectly installed - No AGC ADJUST after print head or platen replacement - Device electronic fault - Encoder strip missing - Horizontal drive fault
BUFFER OVERFLOW	Handshake protocol error	- Check CTR - CTS or XON - XOFF protocol - Repeat data transfer
FORMAT ERROR	Protocol error	- Check protocol setting of printer and host - Repeat data transfer
PARITY ERROR	Protocol error	- Check protocol setting of printer and host - Repeat data transfer
FRAMING ERROR	Protocol error	- Check protocol setting of printer and host - Repeat data transfer

For mesages during power up refer to Section **6.2 Error Messages during Power Up**.

4. Specific Printer Functions

4.1 Print Gap Adjustment

4.1.1 Principle

The print head carriage is mounted on two parallel guide rails which provide for a precise movement over the whole print range in horizontal direction. The lower rail is built up as an excentric shaft. The excentre arrangement is driven by a stepper motor (AGC-Motor). Those both elements are responsible for the precise adjustment of the print gap, that is the distance between the print head top and the the paper respectively the platen assembly.
In conjunction with print gap adjustment the following three different procedures have to be distinguished:

- Calibration of the print gap adjustment mechanics, called **A**utomatic **G**ap **C**ontrol **Adjust**ment (**AGC Adjust**)
- Automatic print gap adjustment, called **A**utomatic **G**ap **C**ontrol (**AGC**)
- Programmed print gap adjustment, called **P**rogrammed **C**opy **C**ontrol (**PCC**)

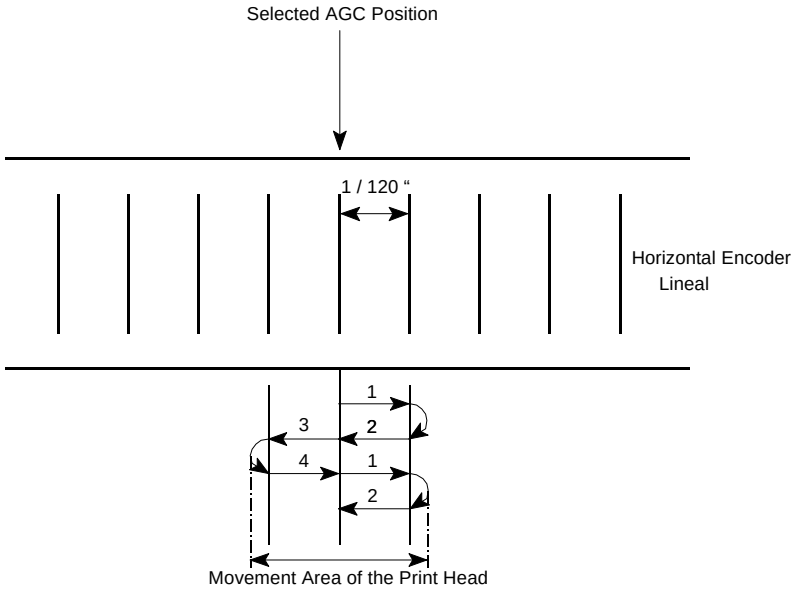
AGC Adjust and AGC are performed by means of the **AGC Procedure.**

AGC Adjust can be called up via the operator panel and is performed after installation of a Personality Module with a new firmware revision.

AGC is automatically performed after changing from online - offline – online, and after changing of the paper path.

PCC is performed if the command PCC is sent to the printer. For refernce see “Quick Reference” of the printer control commands in the appendix of the user manual.

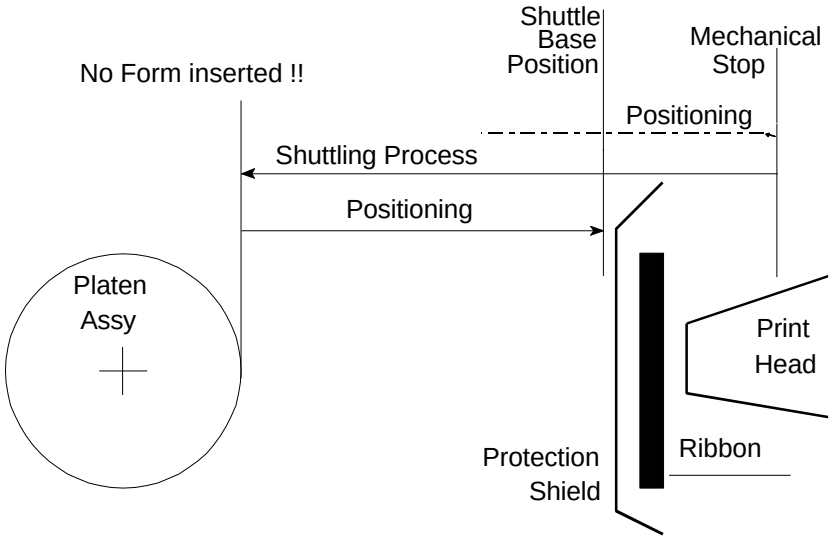
4.1.2 AGC Procedure



- At the start the printhead/carriage is horizontally positioned at the AGC Position
- The carriage is permanently moved in horizontal direction by a distance of 1/120” to the left and right hand side of the AGC Position.
- The time period for horizontal movement is permanently recognized by the firmware and checked against a reference value.
- Simultanously to the above shuttling the printhead / carriage is moved towards the platen assembly by means of the AGC drive until the print head top gets in contact with the platen assembly or the surface of the paper.
- The contact of the printhead top with the surface of the paper or the platen assembly is recognized by the firmware by checking the time interval for positioning within the shuttling process.

Note: Horizontal Drive Error will not be checked by this procedure. If the movement of the print head is to hard the printer use 0.5 A more.

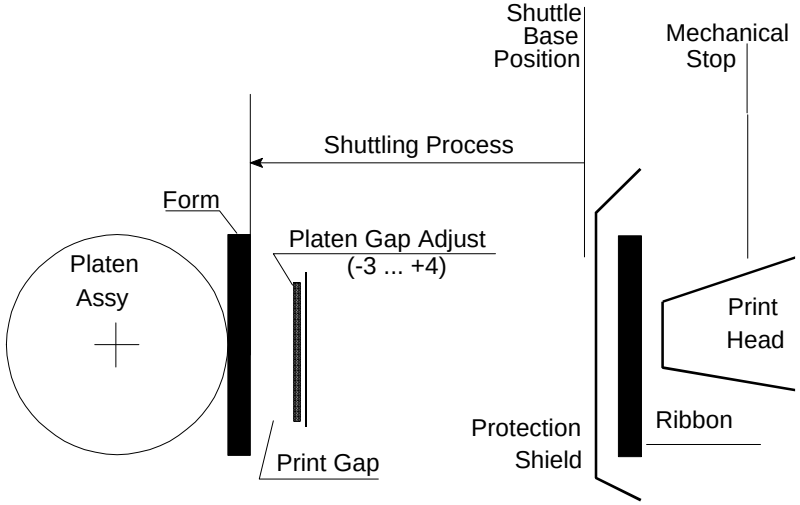
4.1.3 AGC Adjust



- The print head/carriage is positioned at the AGC Position
- The AGC procedure is started. It can be started from any value of the print gap.
- The print head/carriage is positioned against the mechanical stop
- As soon as the mechanical stop has been reached the so called “AGC procedure” is started
- After finishing the **AGC Procedure** the carriage is positioned according to the **S**huttle **B**asis **P**osisition (see **SBP** in Print Test 3).

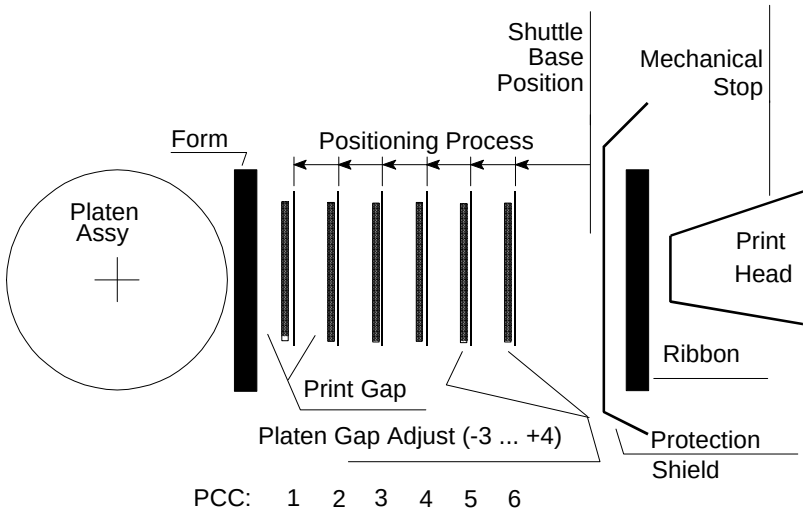
Note: No form, but ribbon to be inserted.
Tolerance range for SBP: -12 ... +72.

4.1.4 Automatic Gap Control (AGC)



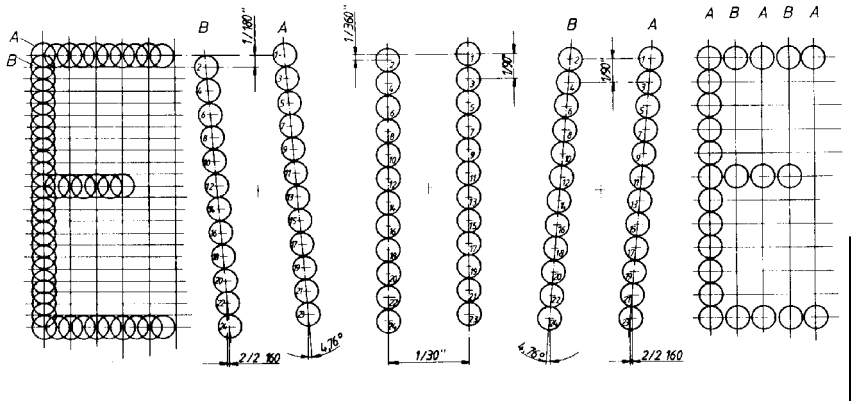
- AGC can be started from any value of the print gap.
- The print head/carriage is positioned at the Shuttle Basis Position
- As soon as the the SBP has been reached, the so called “AGC Procedure” is started
- After finishing the shuttling process the carriage is positioned according to the proper print gap value

4.1.5 Programmed Copy Control (PCC)



– The print gap is set according to the value commanded by the PCC command.

4.2 Print Head - Tilting Principle and related Print Speed



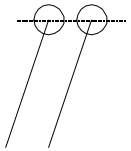
Inclination Position for LQ mode

no print position

Inclination Position for DATA or NLQ mode

– The nose of the print head can be tilted according to the scheme above. The different tilting positions are used for realizing of the different print speeds and print resolutions.
– Switching between both print head tilting positions is accomplished by positioning of the carriage to ist most right hand side position.

4.2.1 Printing Speed in DATA mode



Inclination Position
of the Print Head Lug

Needle frequency **1.800** Hz

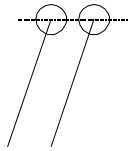
Number of columns per character: 12, 2x 12 needles in use
Number of needles per character: 3, each other needle activated

● = needle activated ○ = needle not activated

1	2	3	4	5	6	7	8	9	10	11	12
●	○	●	○	●	○	●	○	●	○	●	○

$$\textit{Print Speed} = \frac{\textit{Needle Strokes per Second}}{\textit{Number of Needles per Character}} = \frac{1800}{3} = 600\ \textit{cps}$$

4.2.2 Printing Speed in NLQ mode



Inclination Position
of the Print Head Lug

Needle frequency **1.800** Hz

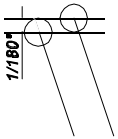
Number of columns per character: 36, 2x 12 needles in use
Number of needles per character: 6, each 3rd needle activated

● = needle activated ○ = needle not activated

1	2	3	4	5	6	..	..	..	34	35	36
●	○	○	●	○	○	●	○	○	●	○	○

$$\textit{Print Speed} = \frac{\textit{Needle Strokes per Second}}{\textit{Number of Needles per Character}} = \frac{1800}{6} = 300\ \textit{cps}$$

4.2.3 Printing Speed in LQ mode 1 [3)]



Inclination Position
of the Print Head Lug

Needle frequency **1.800** Hz

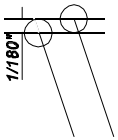
Number of columns per character: 36
Number of needles per character: 12, each 3rd needle activated

● = needle activated ○ = needle not activated

1	2	3	4	5	6	..	..	..	24	35	36
●	○	○	●	○	○	●	○	○	●	○	○

$$\textit{Print Speed} = \frac{\textit{Needle Strokes per Second}}{\textit{Number of Needles per Character}} = \frac{1800}{12} = 150\ \textit{cps}$$

4.2.4 Printing Speed in LQ mode 2 [3)]



Inclination Position
of the Print Head Lug

Needle frequency **1.800** Hz
Number of columns per character: 36
Number of needles per character: 18, each other needle activated

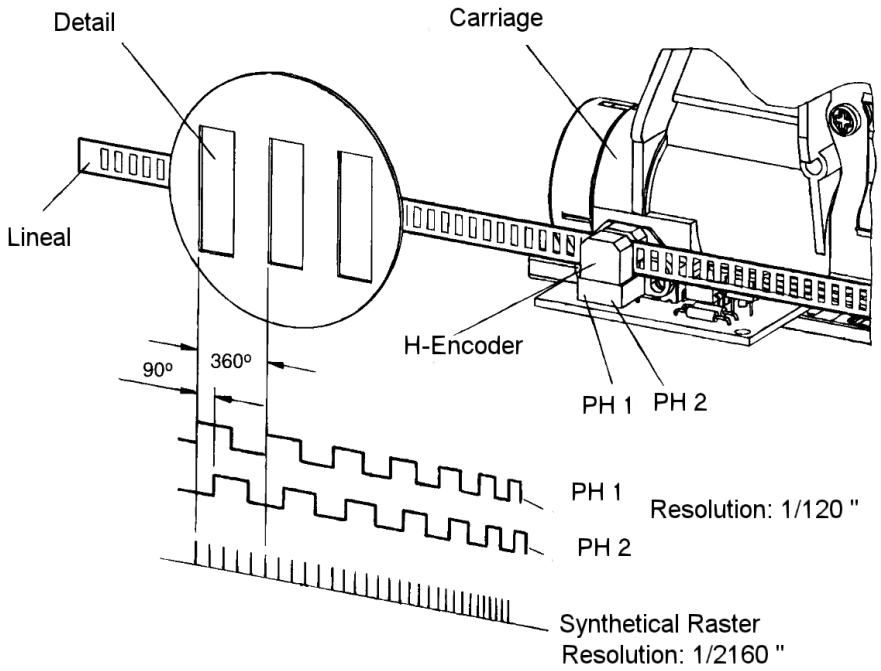
● = needle activated ○ = needle not activated

1	2	3	4	5	6	..	..	..	34	35	36
●	○	●	○	●	○	●	○	●	○	●	○

$$\textit{Print Speed} = \frac{\textit{Needle Strokes per Second}}{\textit{Number of Needles per Character}} = \frac{1800}{18} = 100\ \textit{cps}$$

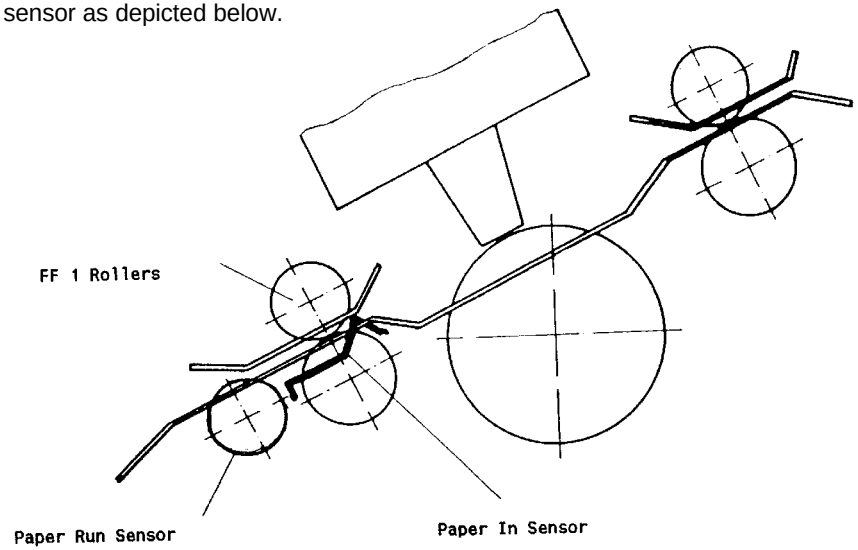
[3] depending on the selected font

4.3 Positioning System - Horizontal Positioner



4.4 Paper Run / Paper In Control

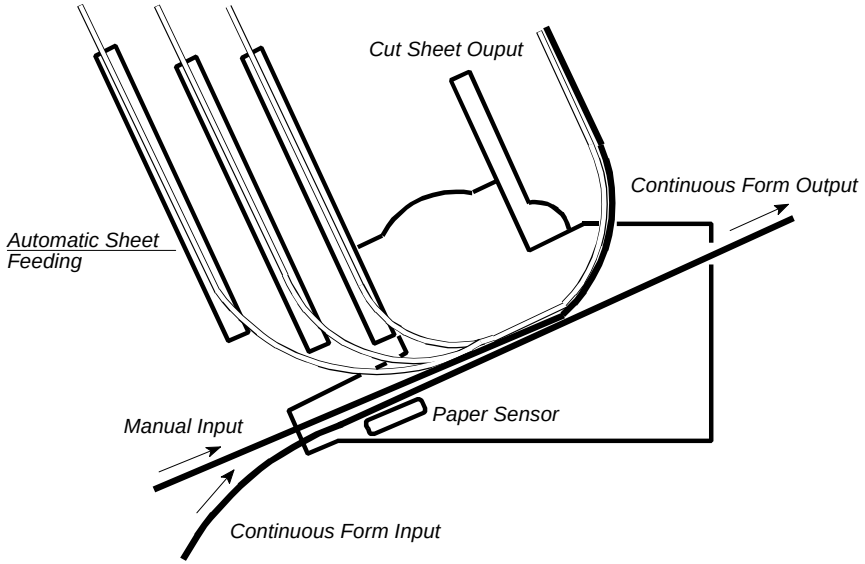
The printer is equipped with a combined paper run/in feature realized by the sensor as depicted below.



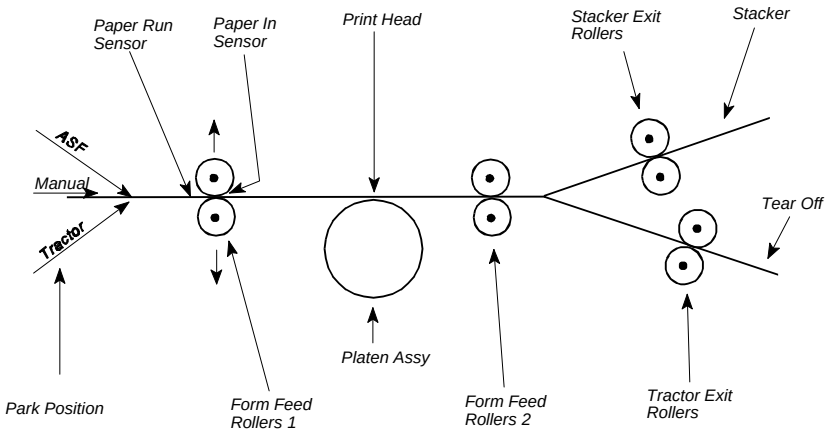
Following functions are realized:

- **Cut Sheet Processing**
  - Paper In Detection
    Detection of the upper edge of the form by means of the “Paper In” feature
- **Continuous Forms Processing**
  - Paper In Detection
    Detection of the upper edge of the form by means of the “Paper In” feature
- **Paper Movement Detection**
  - Detection of paper movement by means of the “Paper Run” feature
    - Check on missing paper run pulses by time out
    - Tolerance range is in between 10,5 mm up to 19 mm
  - Counting of paper run pulses and comparison with the equivalent value according to the internal positioning command
  - Evaluation of both criterions after each positiong process

4.5 Paper Path



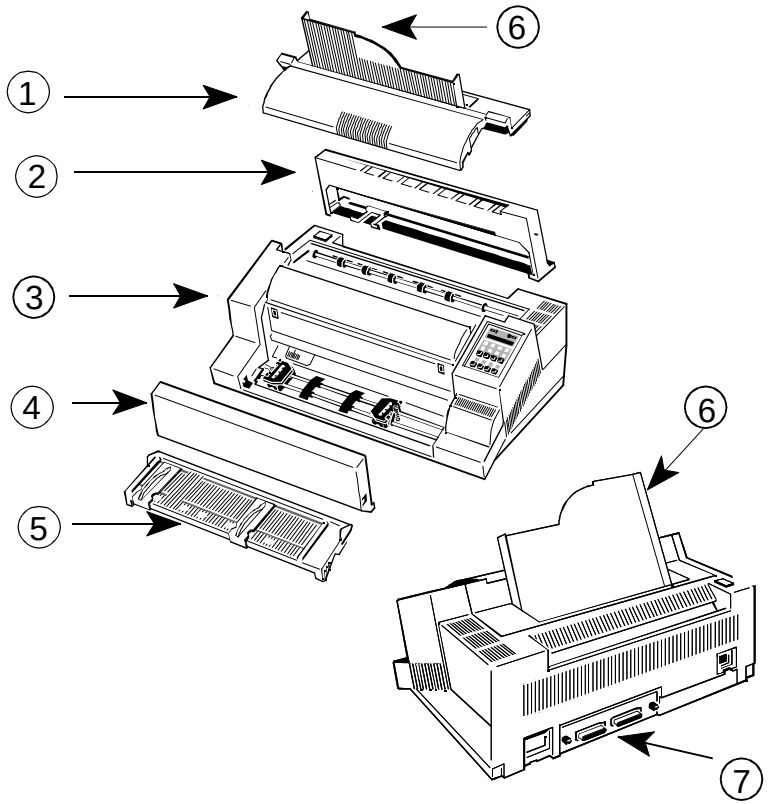
4.7.1 Paper Transportation Principle



5. Printer Subassemblies

5.1 Basic Elements of the Printer

The printer contains of the following use accessable parts:



- Top Cover (1)
- Printer Engine including Electronic Subassembly (3)
- Manual Front Insertion Guide (5)
- Personality Module (likewise named **PM**) (7)
- Ribbon Cassette (2)
- Front Cover (4)
- Output Stacker (6)

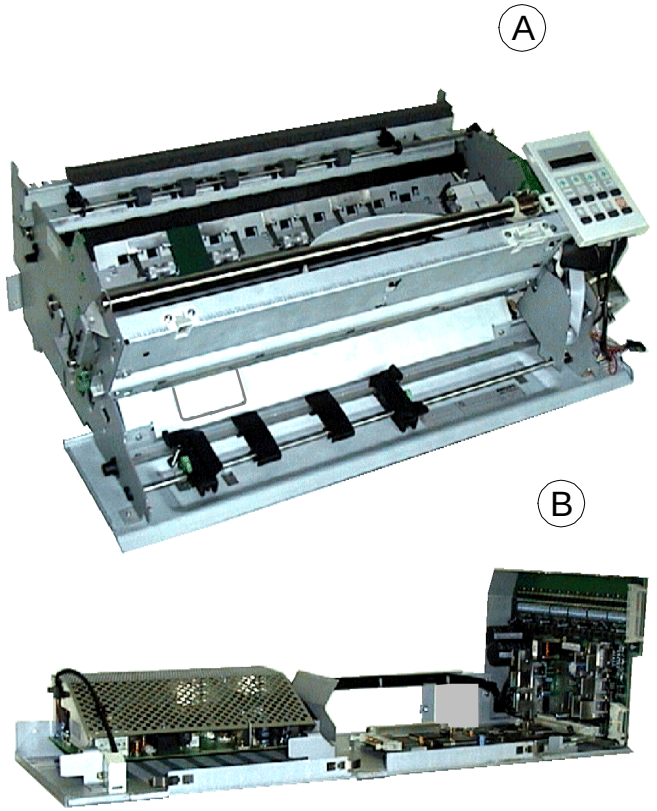
You are able to disassembly each part without any tools.

5.2 Main Subassemblies

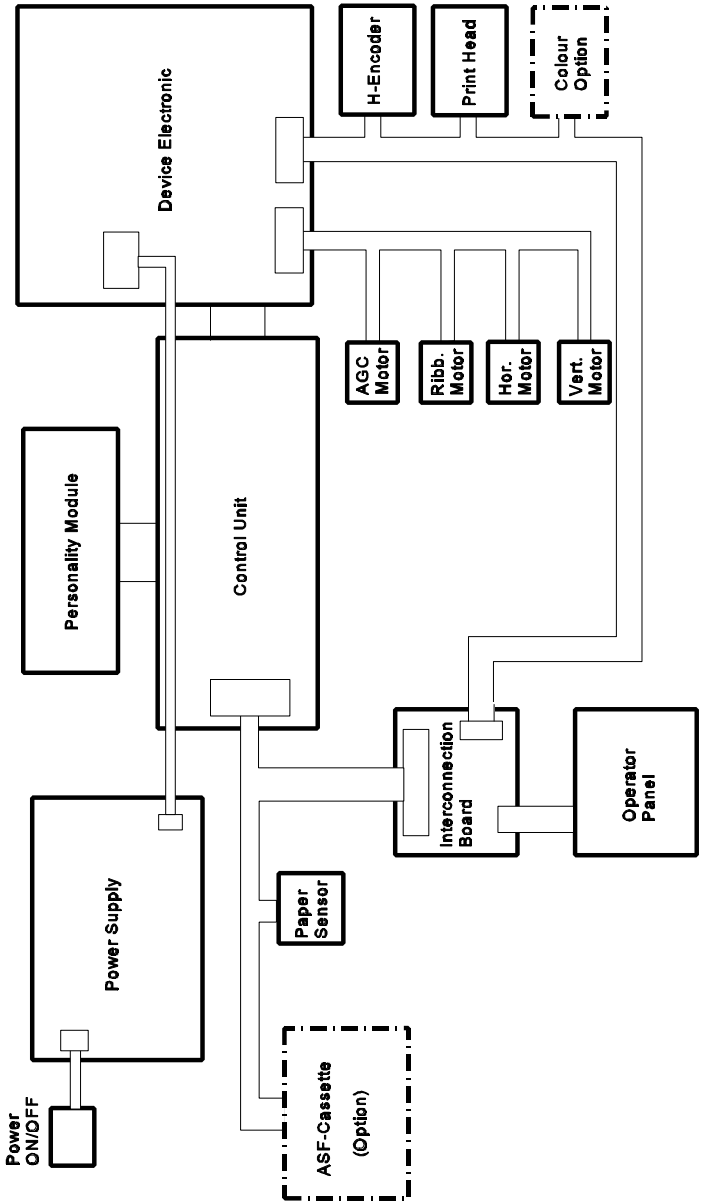
The main subassemblies are:

- Mechanical Subassembly (A)

- Electronic Subassembly (B)
  - Power Supply Unit (PSU-40A)
  - Control Unit (Print CU-40L)
  - Device Electronics (DEV-40AE)



5.3 Internal Wiring Scheme



6 Troubleshooting and Diagnostics

How to Use This Section

1. Find the category in which your problem occurs. The problem categories are:
   - Power-related Problems
   - Error Messages
   - No Printout
   - Operation-related Problems
   - Print-related Problems
   - Ribbon or Carriage-related Problems

For example, if the print appears very light on the paper, look at Section "**Print-related Problems**".

2. Find the symptom description that most closely matches the printer symptom. In this example you would look at the symptom **"Print faint or of poor quality."**
3. Try the first suggestion under that heading.
4. If the suggestion does not cure the problem, try the next suggestion.
5. If none of the suggestions enable you to continue printing, or if the fault is not listed, contact your service office.

Each time the printer is switched ON the display indicates TEST while the internal self-tests are run. If the test is completed successfully **READY 4 ELQ** will be displayed. If an error message is displayed please refer to the following section. All other messages on the display are described in section 2.4 **Status and Error Messages.**

6.1 Power-related Problems

- Power indicator does not come On when power is switched On
- Check that the power cord and plug are securely fitted to the printer and to an electrical outlet.
- Ask for the power connector connections (and fuse, if fitted) to be verified.
- Ask for the building electrical supply to be verified.

6.2 Error Messages

After switching the power ON the printer runs a self test. During the test the following messages may be shown on the display:

Display	That means ...	Cause / Action
No information, POWER ON indicator not lit.	No power	- Mains cable not connected - Mains switch cable not connected
green and yellow LED give light but no reaction	hang up in reset after power on	- Print PSU defective - Print CU-DEV defective
########	Firmware does not work	- PM not inserted - PM not correctly inserted - no firmware on PM - PROMs not correctly installed
TEST.... (flashing)	Initializing of the EEPROM	- After first POWER ON with new firmware (different code number - Contents of the EEPROM faulty
I/O OK	EEPROM located on the Control Unit not addressable	EEPROM - not installed - not correctly installed - defective

Display	That means ...	Cause / Action
NV RAM OK	Error on the RAM of the Control Unit	- Control Unit defective
RAM OK	Checksum error	- (P)ROM defective
ROM 1 OK	No Fonts available	- Character generator P(ROM) on PM damaged or missing
ROM 2 OK	IC damaged	- IC on 3. socket defective
MC OK	Fault on Control Unit	- Control Unit defective - false firmware release - PBC (Printer Base Controller) on Control Unit damaged - SPC (Speed Controller) on Control Unit damaged

If all tests have been passed successfully the following message will be displayed:

Display	That means...	Cause / Action
READY/BUSY	The Printer is OK	- Printer ready for operation

During normal operation the following error messages may occur (for further operator panel messages please refer to section 3.3 **Status and Error Messages**):

Display	That means...	Cause / Action
AGC ERROR	AGC ADJUST procedure fault	- Distance print head and platen faulty - Print head loose - Platen incorrectly installed - Ribbon not inserted - Horizontal drive without function - Platen got dirty
HOR. DRIVE ERROR	Horizontal drive without function	- Transport lock not removed - Horizontal drive blocked - Paper jam - Distance of platen gap too narrow - AGC procedure on not workable position - Platen incorrectly installed - No AGC ADJUST after print head or platen replacement - Device electronic fault - Encoder strip missing - Horizontal drive fault
BUFFER OVERFLOW	Handshake protocol error	- Check protocol setting of printer and host - Repeat data transfer
PARITY ERROR	Protocol error	- Check protocol setting of printer and host - Repeat data transfer

FRAMING ERROR	Protocol error	- Check protocol setting of printer and host - Repeat data transfer

6.3 No Printout

- **Self-test printout does not start**
  - Make sure that you have closed the cover.
  - Check if paper is loaded in the printer.

- **Printing does not start**
  - Make sure that the **READY** or **BUSY** message is displayed. If there is a different message displayed please refer to the above error message table or to section **3.3 Status and Error Messages**.
  - Make sure that the printer is connected to the host computer. Make sure that connectors are properly fixed at both ends.
  - Make sure that the printer is receiving data from the host computer.
  - Make sure that the correct protocol is enabled.
  - Make sure that you have selected the correct port (if the automatic feature has not been selected).
  - Make sure that paper is loaded.
  - Make sure that the ribbon is installed.
  - Examine the ribbon path. Does the ribbon pass in front of the whole printhead? Adjust the ribbon if necessary.

- **Fanfold paper does not advance**
  - Make sure that the fanfold paper source tractor is selected.

- **Single sheet paper does not advance**
  - Make sure that the paper source **MANUAL** or **BIN x** (x = 1 up to 3) is selected.

6.4 Operation-related Problems

- **Paper is not positioned at perforation for tear-off feature**
  - Select the correct form length using the Set-up feature.
  - Reset top of form by performing a Parking function.
  - Refer to User´s Manual section 3.4 **Vertical Positioning Adjustment**

- **Paper tears or jams**
  - Examine the paper path; remove any obstructions
  - Is the paper too loose or too taut between the tractors?
    If the holes in the paper are deformed at their outer edges, the paper is too taut.
    If the paper rises between the tractors, it is too loose.
    Readjust the tractor spacing so that the paper lies smoothly but without any tension.
    Ensure that the paper is horizontally aligned on the pins.
  - Open the printer's top cover. If necessary, loosen the two green screws and remove the paper guide plate to gain access to the paper.

- **Parking paper and resetting top of form**
  - Tear off the paper at the perforation line.
  - Press .
  - Press until the paper is in the park position.
  - Press . Printing will resume at the top of the next form.

- **Print head carriage does not move smoothly/does not move at all**
  - Examine the paper pathway. Remove any obstructions.
  - Examine the carriage area for obstructions. Remove, where necessary. Press the key when the paper pathway is cleared.
  - Make sure that the transport lock has been removed.

- **Single sheets are skewed**
  - Adjust manual paer insertion guide.
  - Adjust ASF cassette paper guides.

6.5 Print-related Problems

- **Print faint or of poor quality.**
  - Have you used the correct paper? See User´s Manual Chapter **7 Technical Data** which contains a full specification of the paper you can use. Replace the paper if it does not match the specification.
  - Make sure that the ribbon is stretched correctly.
  - Does the ribbon need changing? Replace it with a new ribbon if necessary.
  - Is the ribbon cartridge properly installed? Adjust as necessary.

- **Characters do not print evenly or are not uniform in pitch**
  - Examine the paper pathway for dirt or other obstruction that may cause the gap between print head and platen to vary. Remove the obstruction.

- **Print lines overlap**
  - Examine the paper pathway for dirt or other obstructions that may prevent the platen from rotating freely. Remove the obstruction.

- **On preprinted forms, the printing on the copies is not aligned with the preprinted matter**
  - Refer to User´s Manual section **3.4. Vertical Positioning (VERT.POS.ADJ.)**

- **Part of printed text is missing (loss of data)**
  - If you are using Serial communications check the buffer control setting in Set-up.
  - Check the data flow control setting on the host computer.

If the printout or the character set is not ok, the following procedure can help to clear the situation.

Action	Result	Check
Select and start PRINT TEST 1	Print not OK?	- PAPER SOURCE selection - Ribbon tension and condition - Print head condition
Stop SELF TEST and start external printing	No printing starts	- Printer ONLINE READY - Interface cable for proper connection - Interface selection
	Some characters not correct	- Emulation - Character set - National version - Word length - Baud rate - Parity bit - Protocol
	Font and pitch quality fault	- Font - Pitch - Line space

6.6 Ribbon or Carriage-related Problems

- **Ribbon Problems**
  - Make sure that the ribbon is:
    - Stretched correctly
    - Not worn thin or dry
    - Not torn or damaged in any other way
    - Not jammed

- **Carriage does not move smoothly**
  - Examine the paper pathway. Remove any obstructions. Check that all packing material is removed.
  - Examine the carriage area for obstructions. Remove where necessary.

6.7 Print Tests

There are three different print tests as well as one interface test built into the printer.

- **I/F TEST** is used to test the serial interface. It initiates data to be sent from the printer and be returned by means of a closed loop connector plugged into the serial interface connector. The test data used consists of **PRINT TEST 1** .

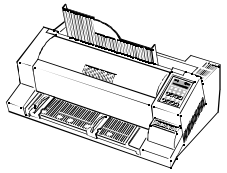
7. Procedures for Removal and Reassembly

This chapter describes the removal procedures which are necessary for proper handling of the spare parts and subunits of the printer.

For detailed order information and description of the spare parts please refer to the Spare Part Catalog (5112 991 1030x).

Note: All removal procedures consists of several steps indicated with a:

- ○ to show preparation and
- ⇒ ● to indicate the main removal steps.



Part:	**Housing 405 (1)**	Part No.: 5112 292 3840x DEC P/N.: **FD-W03RF-01**
Part:	**Top Cover LA600 (2)**	Part No.: 5112 292 6826x DEC P/N.: **29-31800-01**
Part:	**Top Cover 40A (2)** (PP 405)	Part No.: 5112 292 6827x DEC P/N.: **FD-W03RH-01**
Part:	**Front Cover 405 (3)**	Part No.: 5112 212 5490x DEC P/N.: **FD-W03RC-01**
Part:	**Front Insertion 405 (4)**	Part No.: 5112 292 3842x DEC P/N.: **FD-W03RJ-01**
Part:	**Stacker Support 405 (5)**	Part No.: 5112 212 5500x DEC P/N.: **FD-W03RD-01**

REMOVAL

○ Disconnect mains cable

○ Remove the manual front insertion (4)

⇒ ● Remove the front cover (3) resp. the ASF cassette(s) out of the mounting slots

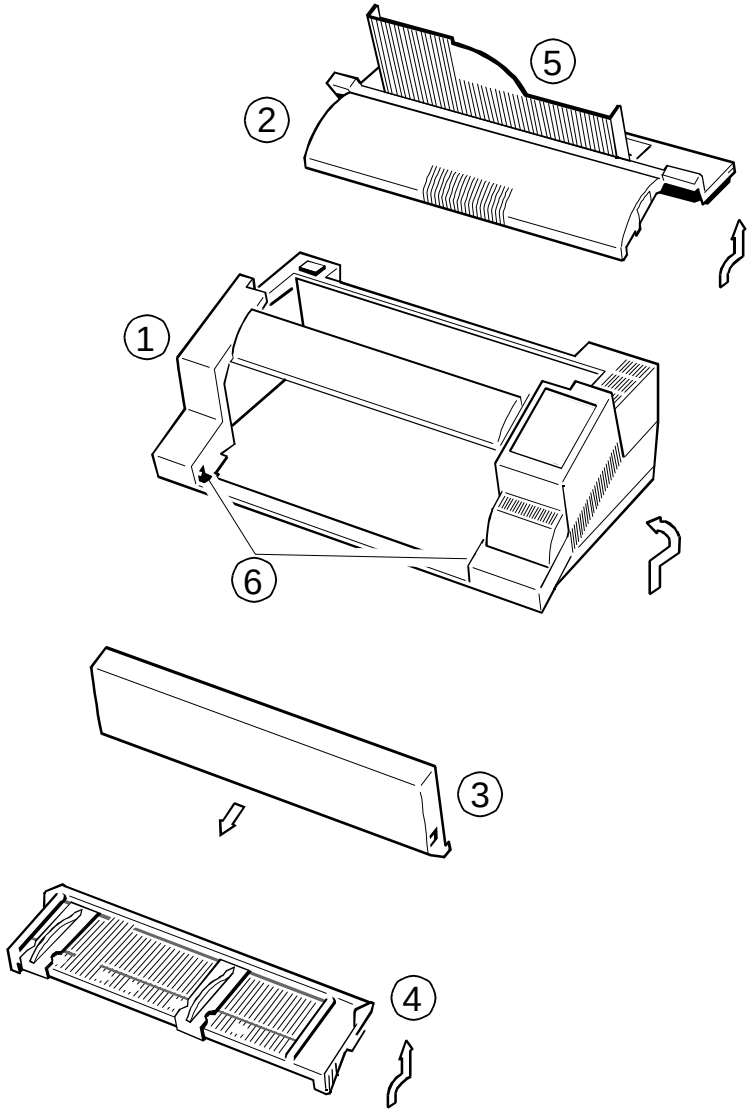
⇒ ● Swing the top cover (2) to its nearly upright position and remove it

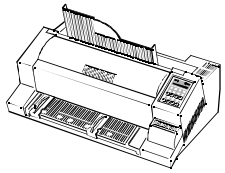
⇒ ● a) Remove the housing (1) by releasing the cover snap locks (6) with a flat bladed screwdriver

b) To remove the housing (1) grasp it by the sides, raise the front slightly, push the housing back until the metal snaps are out of the slots at the rear of the printer and then lift the housing

REASSEMBLY

Execute the REMOVAL procedure in reverse sequence





Part: **Print Engine LA600**

Part No.: 5112 292 6475x
DEC P/N.: **29-31790-01**

REMOVAL

- ○ Set the printer into "LOCAL MODE"
- ○ Disconnect the system interface cable
- ○ Remove the ribbon cartridge
- ○ Switch the printer off and disconnect the mains cable
  - ⇒ ● Remove all encasing parts
  - ⇒ ● Remove the personality module (1)
  - ⇒ ● If present remove the plastic insert of the memory card interface (2)
  - ⇒ ● Loosen screw (3)
  - ⇒ ● Remove screws (4)
  - ⇒ ● Disconnect the Device Electronic (5)
  - ⇒ ● Disconnect the Control Unit (6)
  - ⇒ ● Loosen the fixation screws of the power on switch and remove it (7)
  - ⇒ ● Swivel the printer as shown in figure 2.
  - ⇒ ● Remove the safety angle by removing srew (8).

Note: For protection of the operator panel please use a part of the packaging material of the new printer engine as support.

  - ⇒ ● Shift the entire Electronic Subassembly to the left. (Step 1)
  - ⇒ ● Swivel it in the direction towards you and remove it from the printer engine. (Step 2)

REASSEMBLING

- ○ Unpack the new printer engine
- ○ Execute the REMOVAL procedure with the new printer engine in reverse direction.
  - ⇒ ● Change the print head from the "old" printer engine into the "new" one.
  - ⇒ ● Perform an AGC Adjust procedure
  - ⇒ ● Adjust the parameter "Paper In Adj." to the value indicated on the field service instruction attached to the new printer engine.
  - ⇒ ● Perform "PRINT TEST 3" and check for proper operation of the printer.

Note: Take a note of the value of the page counter (PGCNT) on the FRU-label of the new printer engine.

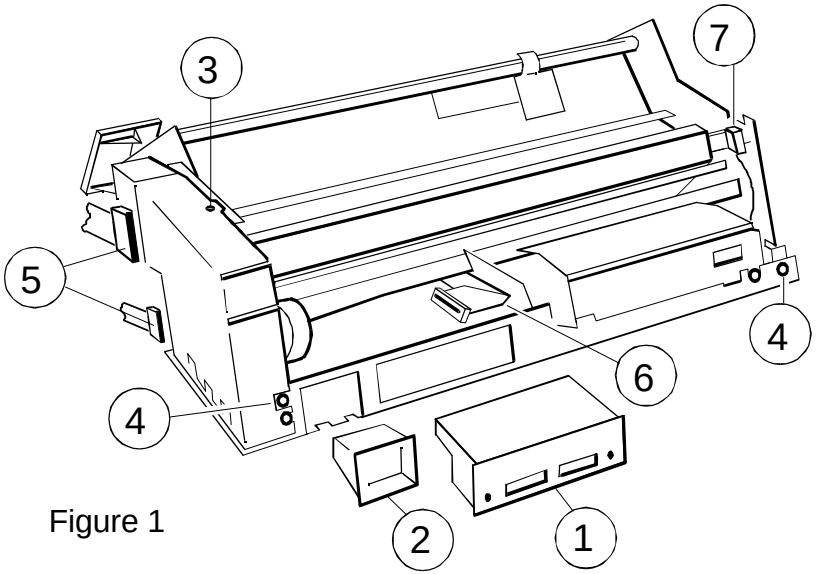


Figure 1

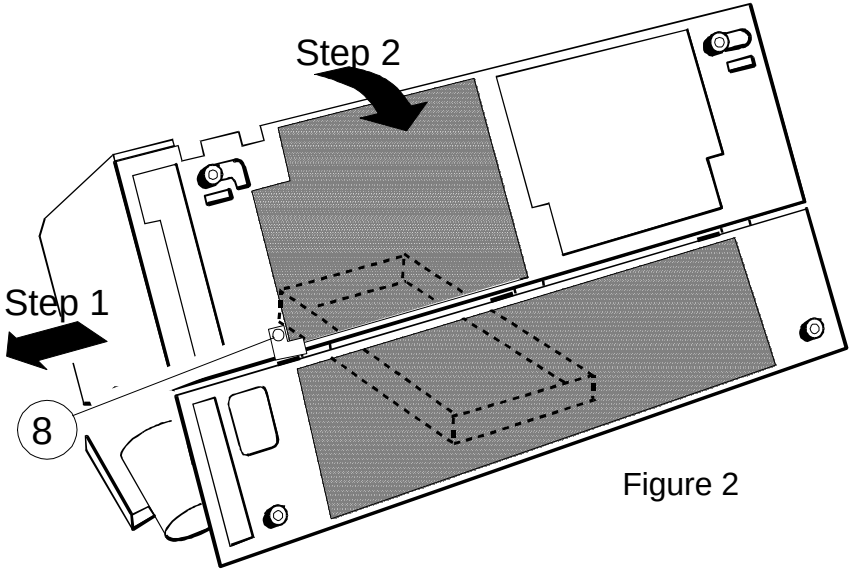
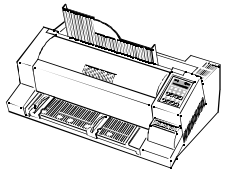


Figure 2



Part: **PSU-40A** Part No.: 5112 292 3811x
DEC P/N.: **FD-W028Y-01-A01**

Part: **PSU-40D** Part No.: 5112 292 7627x
DEC P/N.: **FD-W028Y-01-A02**

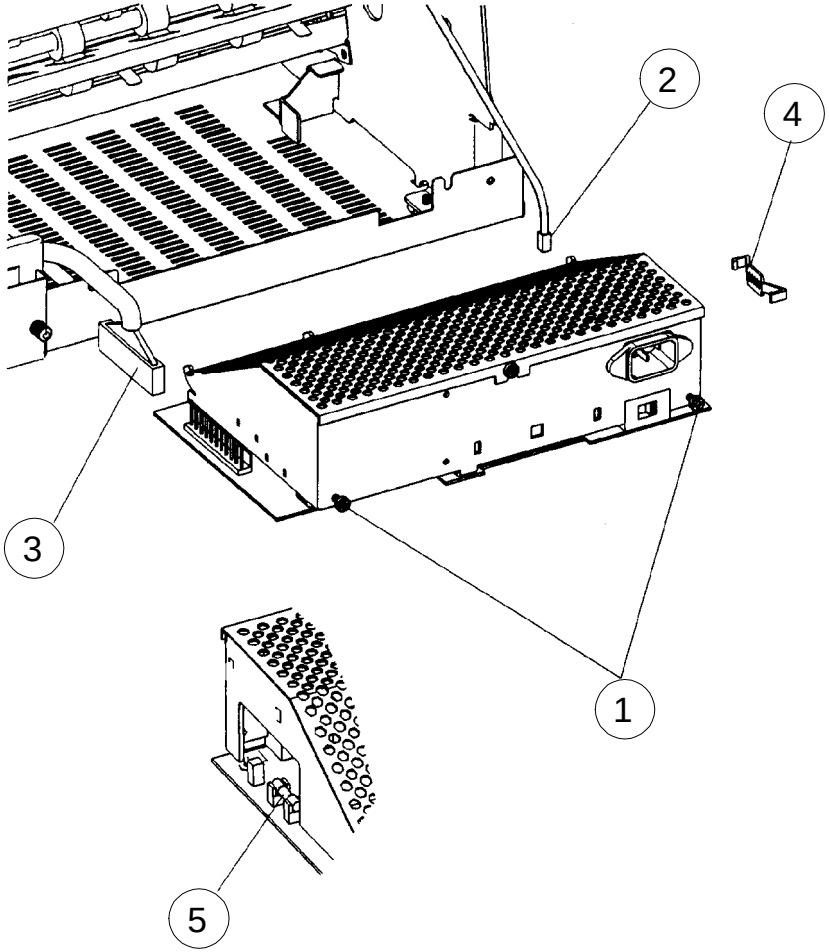
Part: **PSU-40DS** Part No.: 5112 292 7628x
DEC P/N.: **n. a.**

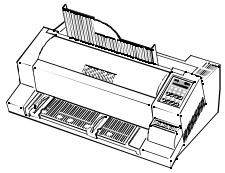
REMOVAL

- ○ Disconnect mains cable
- ○ Remove all encasing parts (see Part: **Housing**)
- ○ Loosen the two screws (1) securing the PSU-40A
  - ⇒ ● Lift the complete Power Supply Unit (PSU), using a screw driver
  - ⇒ ● Disconnect plug (3)
  - ⇒ ● Remove clamp (4) and disconnect plug (2)

REASSEMBLING
Execute the REMOVAL procedure in reverse sequence

Attention: Do not touch the PSU board within min. 2 minutes after power OFF before exchanging the PSU, please check the fuse (5)





Part: **DEV-40AE** Part No.: 5112 292 7159x
DEC P/N.: **29-31791-01-A02**

Part: **DEV-40A** (PP 405) *) Part No.: 5112 292 3810x
DEC P/N.: **FD-W00CS-01**

Part: **DEV-40LA600** *) Part No.: 5112 292 6292x
DEC P/N.: **29-31791-01-A01**

REMOVAL

○ Disconnect mains cable

○ Remove all encasing parts (see Part: **Housing**)

⇒ ● Loosen the two screws (1) and remove screw (2)

⇒ ● Remove the DEV-40

a) while removing, DEV-40 (3) is automatically disconnected from CU-40 (4)

b) disconnect all plug connections from the DEV-board:
- plug (5)
- plug (6)
- plug (7)

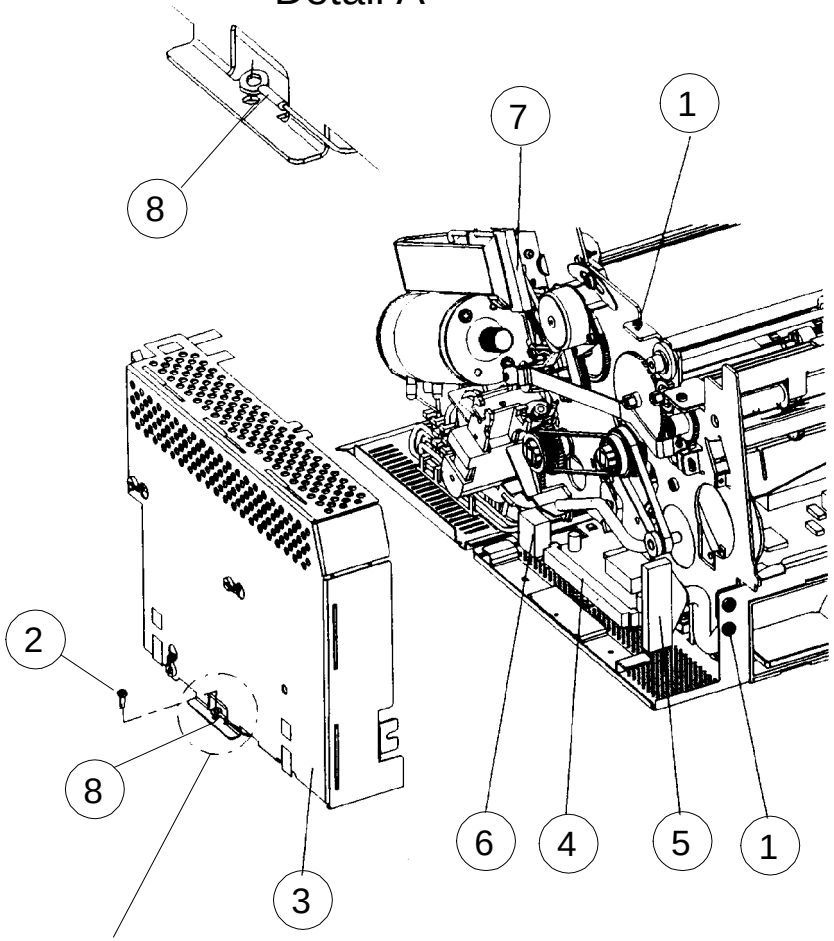
REASSEMBLING

○ Execute the REMOVAL procedure in reverse sequence

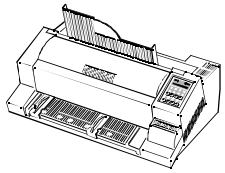
Attention: Wire (8) has to be fastened by screw (2) as shown in **Detail A**

*) End of Life, repair only

Detail A



see Detail A



Part: **CU-40K** (repair only) Part No.: 5112 292 3885x
(With Memory Card interface) DEC P/N.:**FD-W00CW-01**
Part: **CU-40LA600** (repair only) Part No.: 5112 292 6299x
(With Memory Card interface) DEC P/N.:**29-31792-01-A1**

REMOVAL

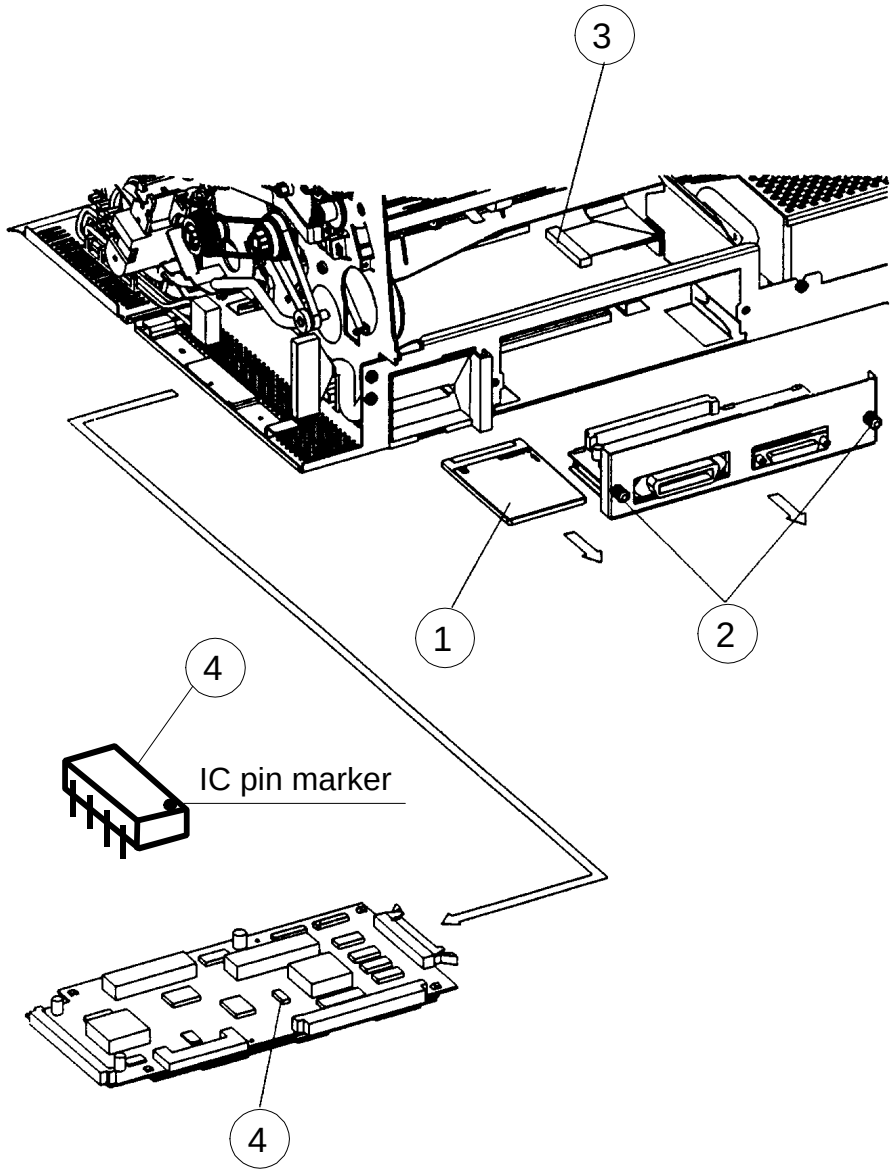
- ○ Disconnect mains cable
- ○ Remove all encasing parts (see Part: **Housing**)
- ○ Remove DEV-40 (see Part: **DEV-40**)
  - ⇒ ● Remove memory card if plugged in (1)
  - ⇒ ● Remove the Personality Module after loosening the two lockscrews (2)
  - ⇒ ● Disconnect plug (3) from CU-40-K and remove it
  - ⇒ ● Remove the EEPROM CU 40X (4) and plug it into the new CU-40.

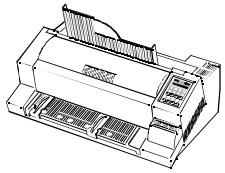
Note: **Pay attention, that EEPROM (4) is inserted correctly (see IC pin marker)**

REASSEMBLING

- ○ Execute the REMOVAL procedure in reverse sequence

Note: Start the function 'Print Out' and check 'Current Settings'





Part: **Print CU-40L** Part No.: 5112 292 7383x
(Without Memory Card interface) DEC P/N.: **29-31792-01-A2**

REMOVAL

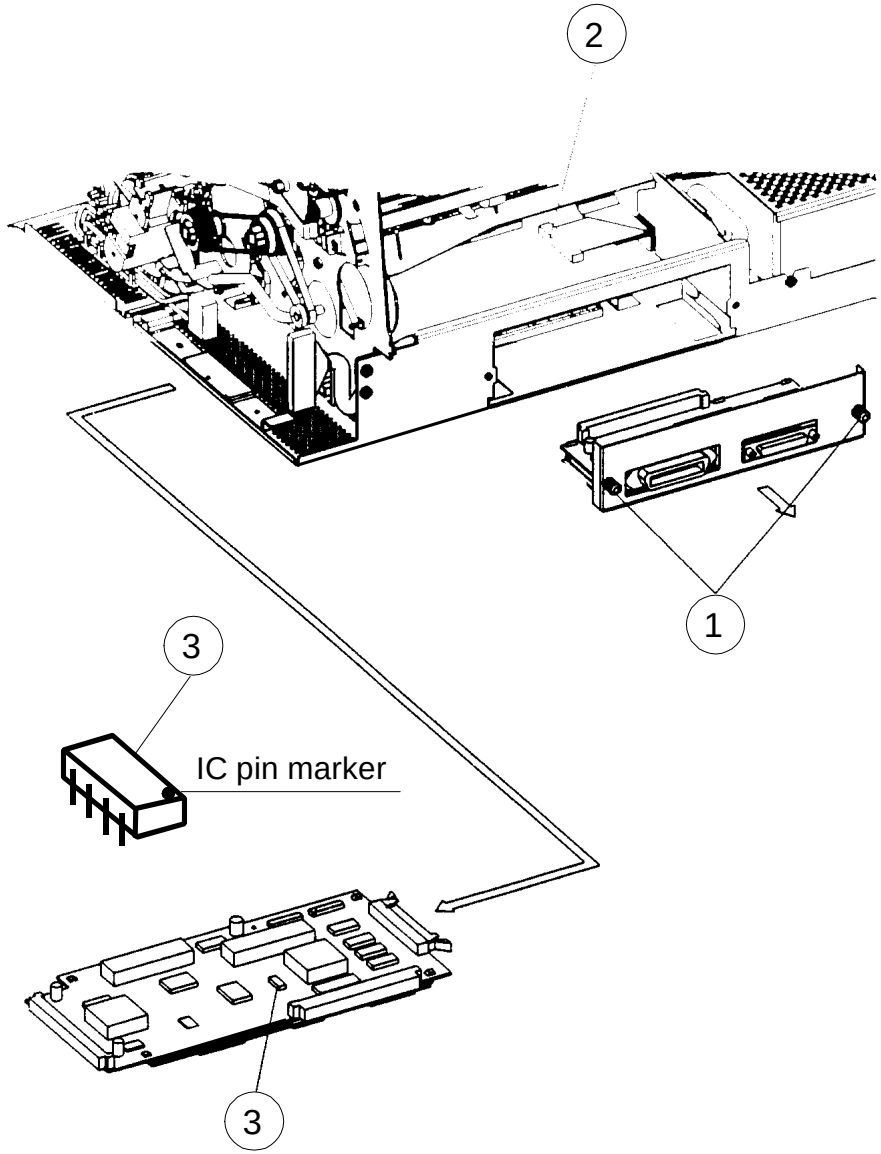
- ○ Disconnect mains cable
- ○ Remove all encasing parts (see Part: **Housing**)
- ○ Remove DEV-40 (see Part: **DEV-40AE**)
  - ⇒ ● Remove the Personality Module after loosening the two lockscrews (1)
  - ⇒ ● Disconnect plug (2) from CU-40 and remove CU-40
  - ⇒ ● Remove the EEPROM CU 40X (3) and plug it into the new CU-40 L.

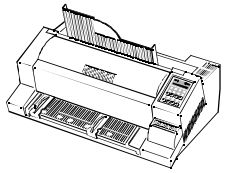
Note: Pay attention, that EEPROM (3) is inserted correctly (see IC pin marker)

REASSEMBLING

- ○ Execute the REMOVAL procedure in reverse sequence

Note: Start the function 'Print Out' and check 'Current Settings'





Part: **EEPROM CU-405**

Part No.: 5112 000 4164x
DEC P/N.: **29-31802-01**

REMOVAL

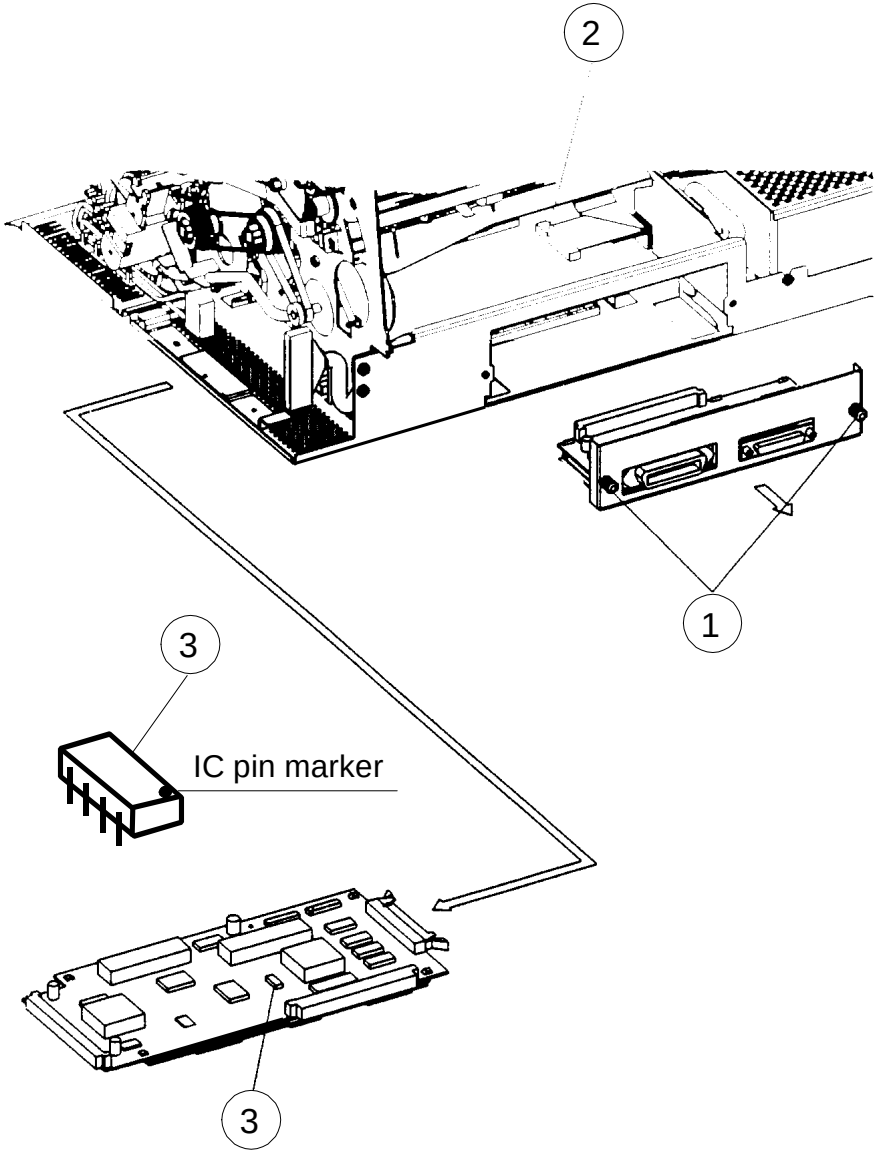
- ○ Disconnect mains cable
- ○ Remove all encasing parts (see Part: **Housing**)
- ○ Remove DEV-40 (see Part: **DEV-40**)
- ○ Remove CU-40 (see Part: **CU-40**)
  - ⇒ ● Exchange the EEPROM CU-40X (4)

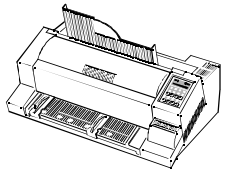
Note: **Pay attention, that EEPROM (4) is in correctly position (IC pin marker)**

REASSEMBLING

- ○ Execute the REMOVAL procedure in reverse sequence

Note: **Start the function 'Print Out' and check 'Current Settings'**





Part: **Operator Panel 40B**

Part No.: 5112 292 6418x
DEC P/N.: **FD-W00CU-01**

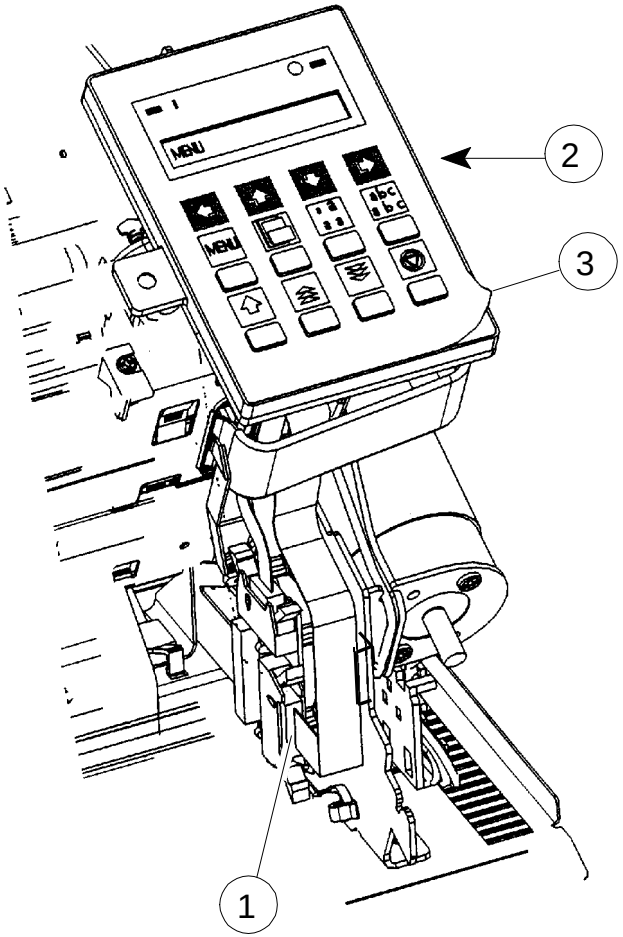
REMOVAL

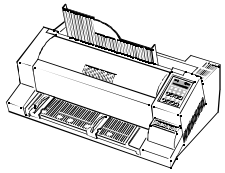
- ○ Disconnect mains cable
- ○ Remove all encasing parts (see Part: **Housing**)
  - ⇒ ● Disconnect the Operator Panel cable (1)
  - ⇒ ● Loosen the screw (2) located at the bottom of the Operating Panel
  - ⇒ ● Remove the Operator Panel

REASSEMBLING

- ○ Execute the Removal procedure in reverse sequence

Note: Remove the protection foil (3) from the Operator Panel installed before mounting the housing





Part: **Power Switch 40A**

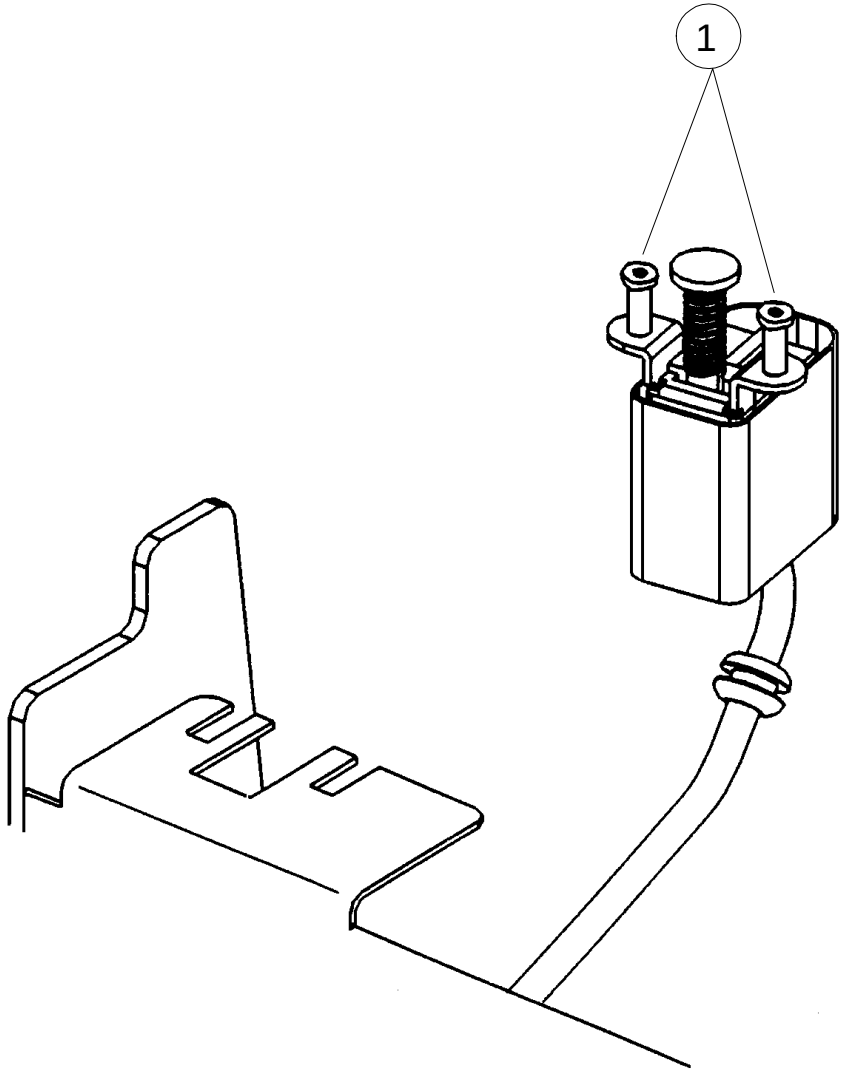
Part No.: 5112 292 3882x
DEC P/N.: **FD-W02H3-01**

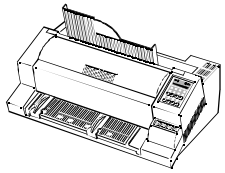
REMOVAL

- ○ Disconnect mains cable
- ○ Remove all encasing parts (see Part: **Housing**)
  - ⇒ ● Loosen the two screws (1)
- ○ Remove PSU-40x (see Part: **PSU-40**)
  - ⇒ ● Remove the power switch

REASSEMBLING

- ○ Execute the REMOVAL procedure in reverse sequence.





Part: **Print Head Cable 405**

Part No.: 5112 292 3880x
DEC P/N.: **FD-W02Y2-01**

REMOVAL

○ Disconnect mains cable

○ Remove all encasing parts (see Part: **Housing**)

⇒ ● Disconnect print head cable from the print head

⇒ ● Remove the noise reduction foam (1) from the cable channel

⇒ ● Clip the plastic support (2) from the print head carriage, by first releasing clamps (3)

⇒ ● Disconnect the wire-to-wire connection (4) of the H-Encoder

⇒ ● Disconnect the colour option, if installed, incl. connector

⇒ ● Disconnect cable (5) from the interface connection board

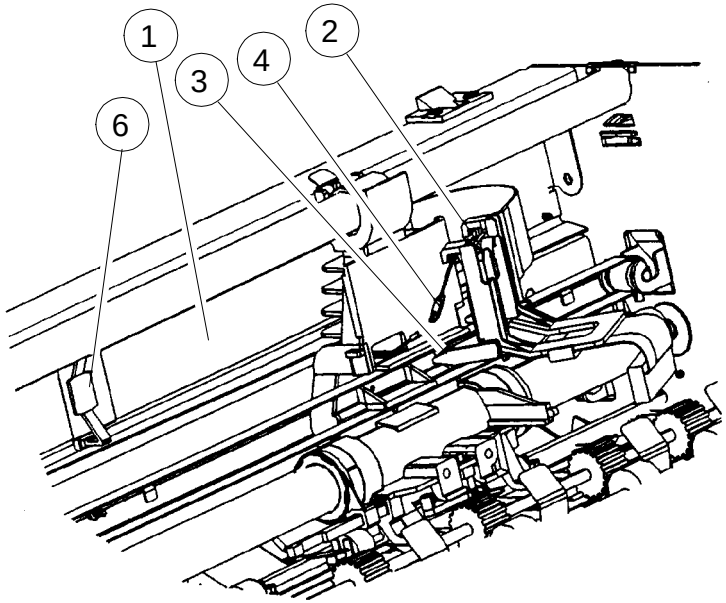
⇒ ● Disconnect the print head cable from DEV-40

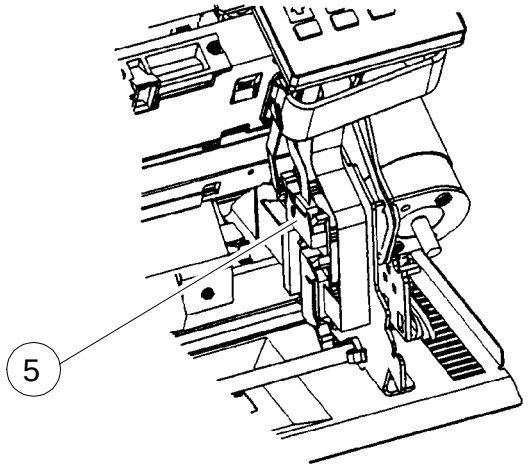
⇒ ● Remove the two plastic clips (6)

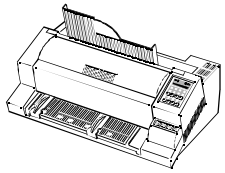
⇒ ● Remove the print head cable

REASSEMBLING

○ Execute the REMOVAL procedure in reverse sequence







Part: **Encoder Strip 2**

Part No.: 5112 292 7454x
DEC P/N.: **FD-W041701**

REMOVAL

○ Disconnect mains cable

○ Remove all encasing parts (see Part: **Housing**)

⇒ ● Remove the two screws (1)

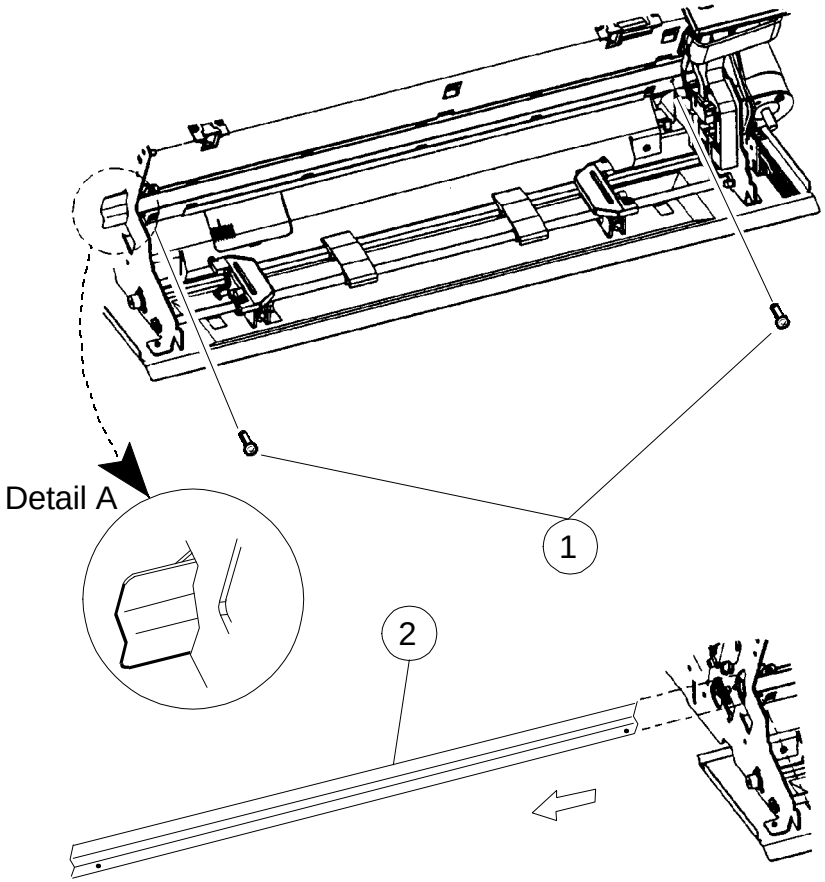
⇒ ● Remove the encoder strip (2)

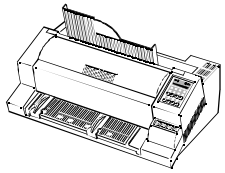
⇒ ● Move the carriage to the centre position

REASSEMBLING

○ Execute the REMOVAL procedure in reverse sequence

Caution: Pay attention, that the Encoder Strip is mounted in the correct pistion by (Detail A) and observe that the strip is slipping under the first two steel noses visible from the front side of the printer.





Part: **Kit Lubrication Felt**

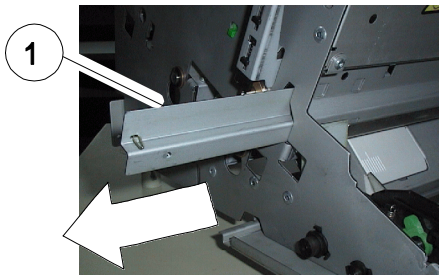
Part No.:5112 212 5589x
DEC P/N.: **29-31804-01**

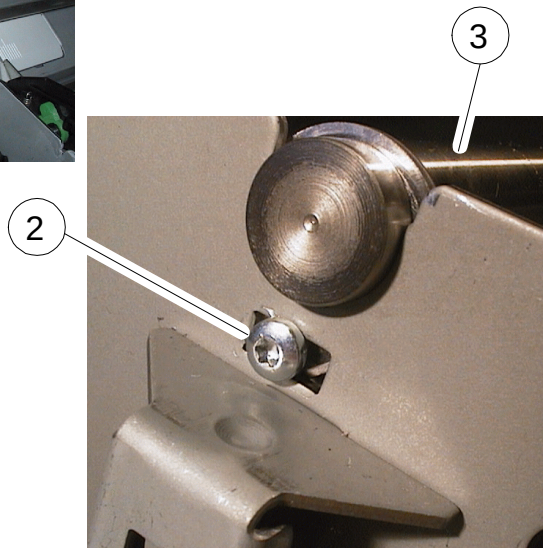
REMOVAL

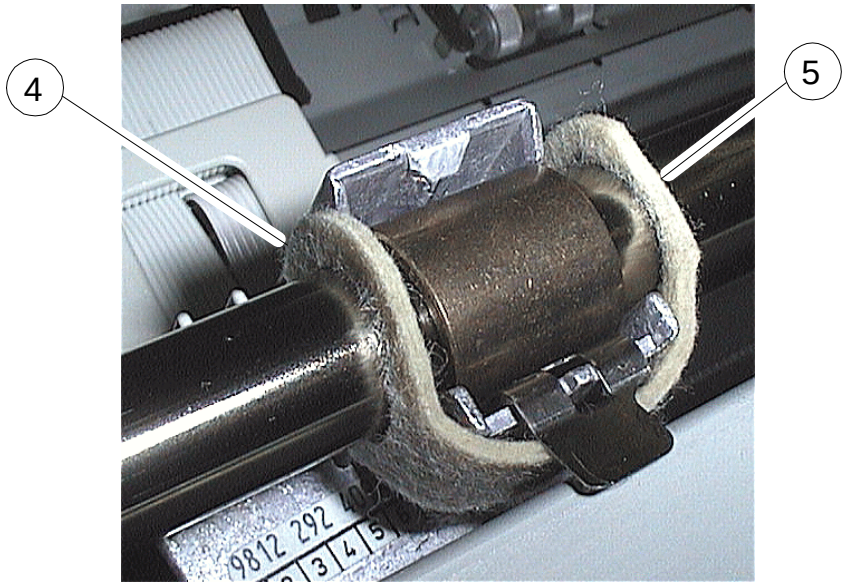
- ○ Disconnect mains cable
- ○ Remove all encasing parts (see Part: **Housing**)
- ○ Remove Encoder Strip (1) (see Part: **Encoder Strip**)
- ○ Remove operator panel, but leave the interface cable connected (see Part: **Operator Panel**)
  - ⇒ ● Remove srew (2) on both sides of the upper guide rail (3)
  - ⇒ ● Remove the upper guide rail (3)
  - ⇒ ● Exchange the lubrication felt (4). Insert the new felt with flatten ear (5) towards the operator panel

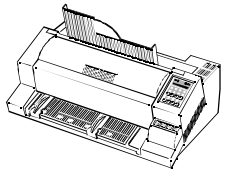
REASSEMBLING

- ○ Execute the REMOVAL procedure in reverse sequence









Part: **Print H-Encoder**

Part No.: 5112 292 4310x
DEC P/N.: **FD-W0290-01**

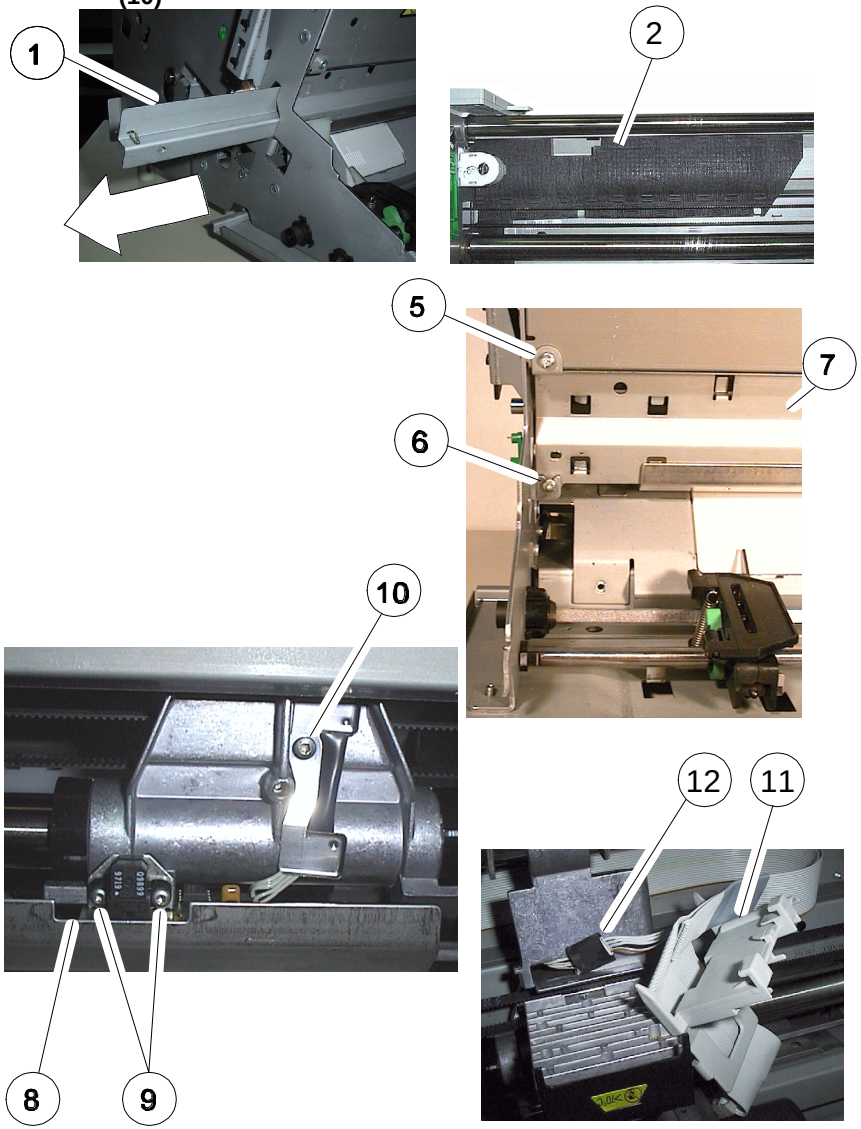
REMOVAL

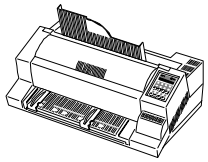
- ○ Disconnect mains cable
- ○ Remove all encasing parts (see Part: **Housing**)
- ○ Remove encoder strip (1) (see Part: **Encoder Strip**)
  - ⇒ ● Remove the noise reduction foam (2)
  - ⇒ ● Remove at the left and right side the upper screws (5)
  - ⇒ ● Loosen at the left and right side the screws (6) and remove the mounting plate (7)
  - ⇒ ● Move the carriage to the cutout (8)
  - ⇒ ● Remove the two screws (9) from the carriage
  - ⇒ ● Remove the screw (10) and the cable clamp from the carriage
  - ⇒ ● Disconnect the print head cable from the head
  - ⇒ ● Clip the plastic support (11) from the carriage and disconnect the wire-to-wire connector (12) H-Encoder/print head cable
  - ⇒ ● Remove the print head H-encoder

REASSEMBLING

- ○ Execute the REMOVAL procedure in reverse sequence

Note: **Pay attention that the logic cable is fixed correctly by clamp (10)**





Part: **H-Motor**

Part No.: 5112 292 3791x
DEC P/N.: **FD-W0396-01**

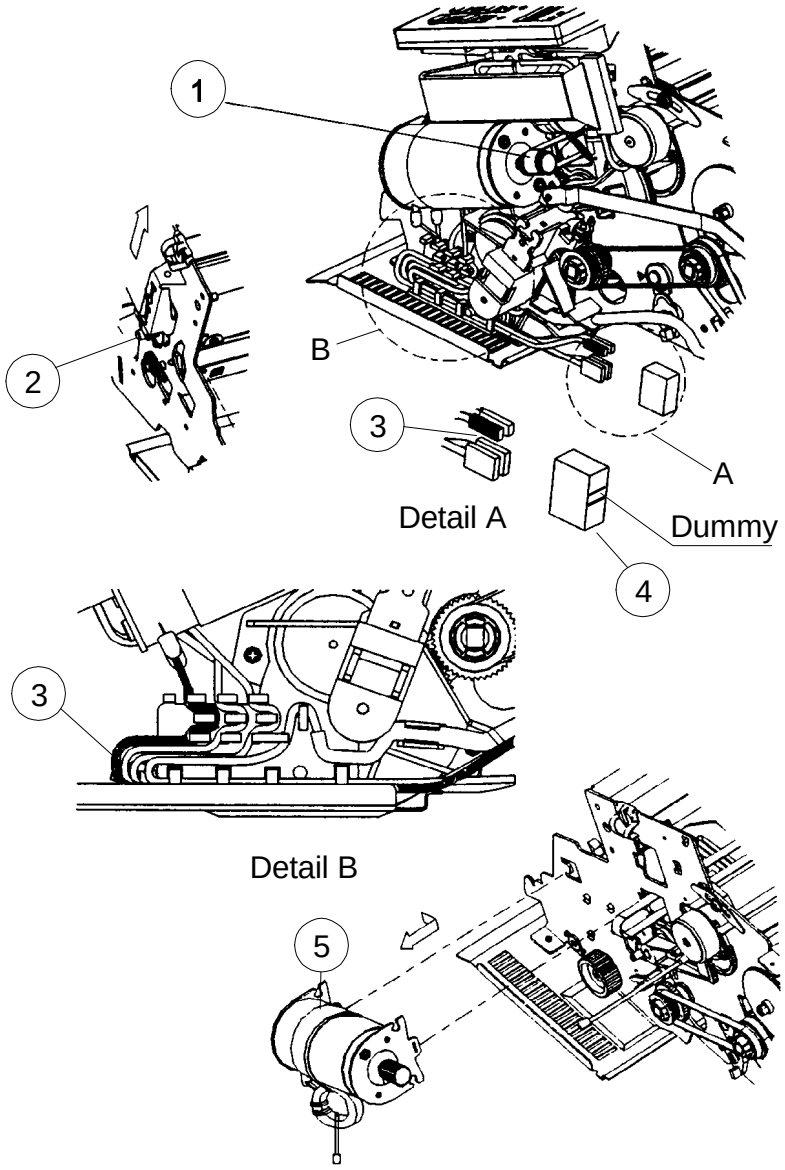
REMOVAL

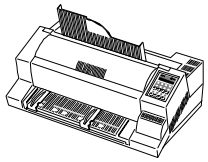
- ○ Disconnect mains cable
- ○ Remove all encasing parts (see Part: **Housing**)
- ○ Remove DEV-40 (see Part: **DEV-40AE**)
  - ⇒ ● Disengage the drive belt (1) from the drive wheel of the horizontal motor by pressing the belt tension element (2), which is located at the left side of the engine, upwards
  - ⇒ ● Pull off the belt from the wheel
  - ⇒ ● Disconnect the two pin motor cables (3) from the motors connector (4) (see Detail A)
  - ⇒ ● Remove the two cables from the motor fixing plate (5)
  - ⇒ ● Remove the horizontal motor

REASSEMBLING

- ○ Execute the REMOVAL procedure in reverse sequence

Note: **Pay attention that the cable installation is correct (Detail B)**





Part: **Carriage**

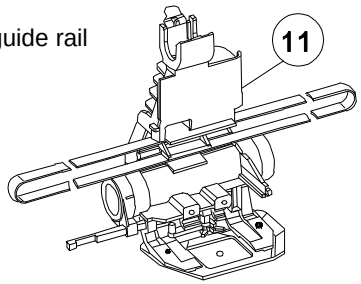
Part No.: 5112 292 4094x
DEC P/N.: **FD-W04JL-01**

REMOVAL

- Disconnect mains cable
- Remove all encasing parts (see Part: **Housing**)
- Remove DEV-40 (see Part: **DEV-40**)
- Remove the encoder strip (see Part **Encoder Strip**)
- Remove operator panel, but leave the interface cable connected (see Part: **Operator Panel**)
- Remove the cable print head from the print head carriage (see Part: **Cable Print Head**)
- Remove the horizontal motor (see Part **H-Motor**)**DEV-40**)
- Remove the tractor gear (see Part **Tractor Gear**)
  - ⇒ ● Remove the two screws (1) and the upper rail (2)
  - ⇒ ● Pull the lever (3) from the lock pin and remove the lever
  - ⇒ ● Release springs (4), (5), and remove lever (6) including spring (4)
  - ⇒ ● Remove the screws (7) and (8). Push the shaft (9) including the plastic segment (10) out towards the right hand side of the chassis

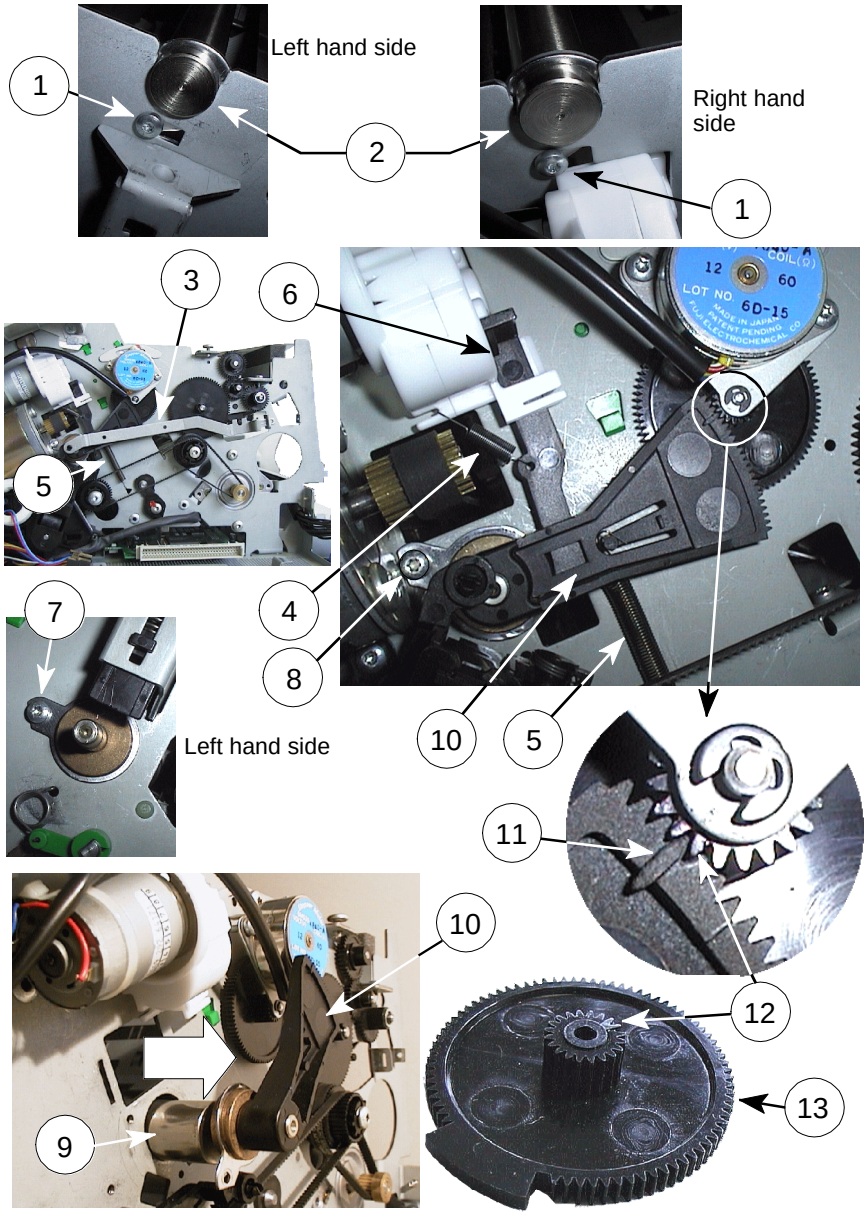
  Note: **The plastic segment (10) can not be removed**

  - ⇒ ● Slide the carriage (11) out of the guide rail

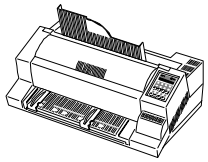


REASSEMBLING

- Execute the REMOVAL procedure in reverse sequence



Note: **Engage the plastic segment in that way, that the guide rail (10) with the marker (11) aligns with the marker (12) on the AGC gear (13)**



Part: **Protection Shield**

Part No.:5112 292 3839x
DEC P/N.:**FD-W041W-01**

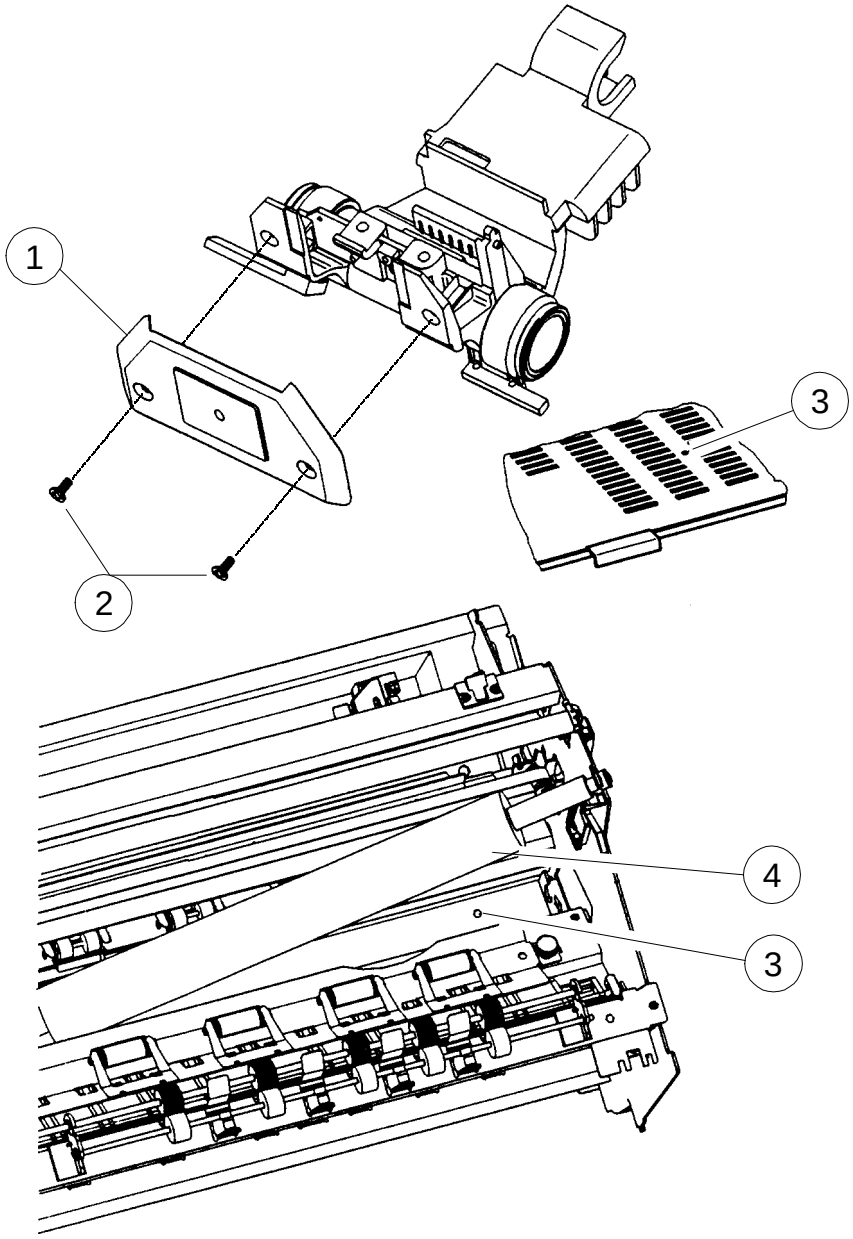
REMOVAL

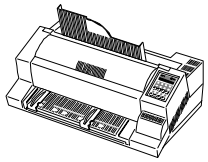
- ○ Disconnect mains cable
- ○ Open top cover
- ○ Remove Ink Ribbon
- ○ Remove Platen (4)

⇒ ● Disconnect protection shield (1) by loosening the two screws (2). This can easily be done by inserting of a torx screwdriver of at minimum 110 mm length through the holes (3) in the bottom plate and the platen channel

REASSEMBLING

- ○ Execute the REMOVAL procedure in reverse sequence





Part: **Ribbon Gear**

Part No.: 5112 292 6384x
DEC P/N.: **FD-W045M-01**

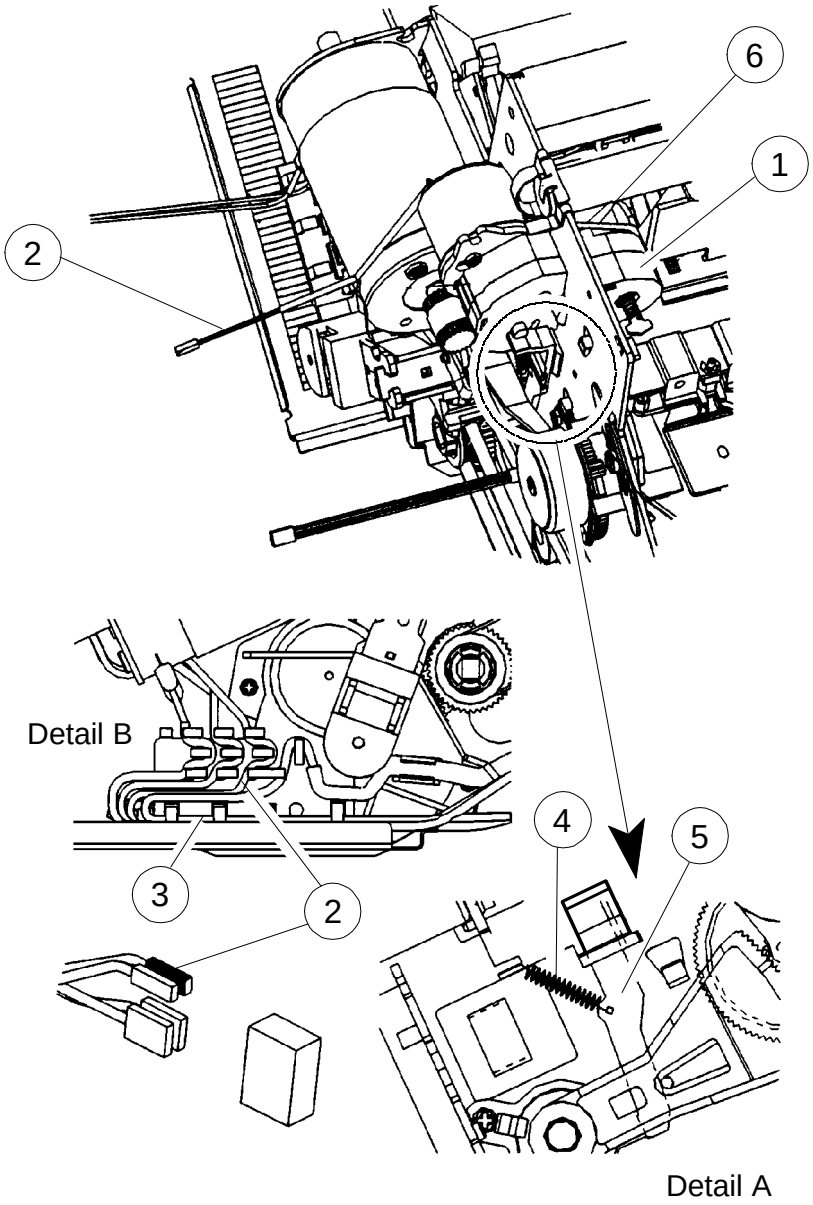
REMOVAL

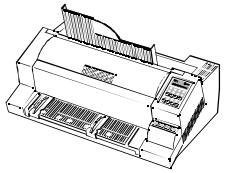
- ○ Disconnect mains cable
- ○ Remove all encasing parts (see Part: **Housing**)
- ○ Remove DEV-40 (see Part: **DEV-40**)
  - ⇒ ● Locate the Ribbon Gear (1)
  - ⇒ ● Loosen the cable (2) from the cable guide (3)
  - ⇒ ● Loosen the spring (4) and remove lever (5)
  - ⇒ ● Disconnect the 2 pin motor cable (2) from the motor connector
  - ⇒ ● Push the lock tab (6) and remove the Ribbon Gear

REASSEMBLING

- ○ Execute the REMOVAL procedure in reverse sequence

Note: **Pay attention that the cable installation is correct (Detail B)**





Part: **Stepper Motor 7.5 DEG (Platen gap control)**

Part No.: 5112 292 4106x
DEC P/N.: **FD-W0394-01**

REMOVAL

- ○ Disconnect mains cable
- ○ Remove all encasing parts (see Part: **Housing**)
- ○ Remove DEV-40A (see Part: **DEV-40**)
  - ⇒ ● Disconnect the four pin motor cables from the motors plug
  - ⇒ ● Remove the two screws (1) fixation of the stepper motor

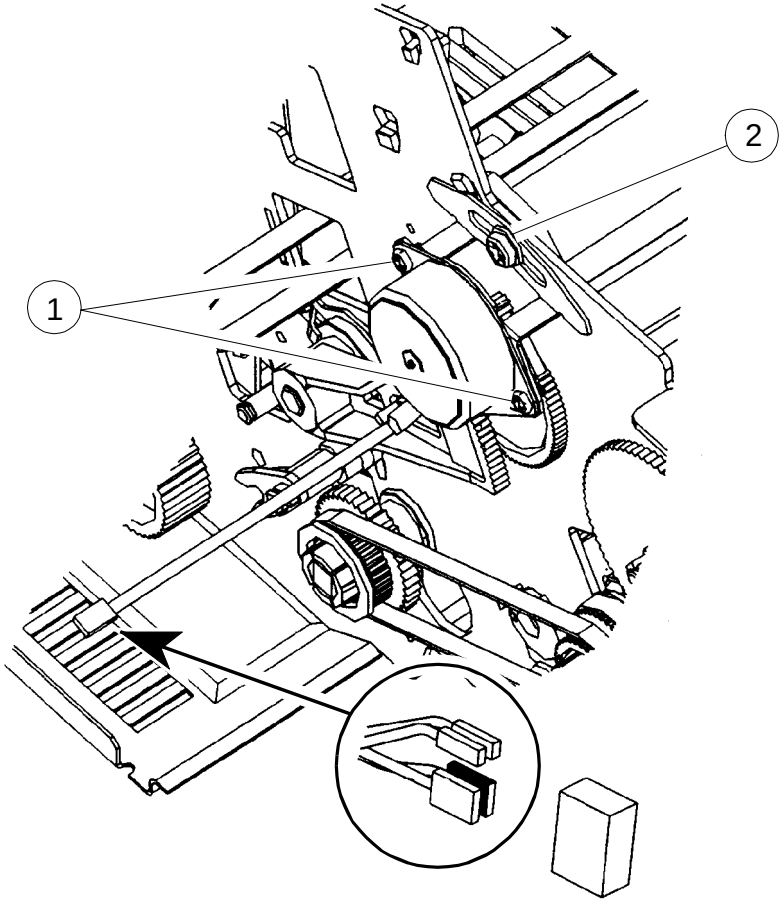
Warning: **Do not loosen the screw (2). This is a factory adjustment; field adjustment is impossible**

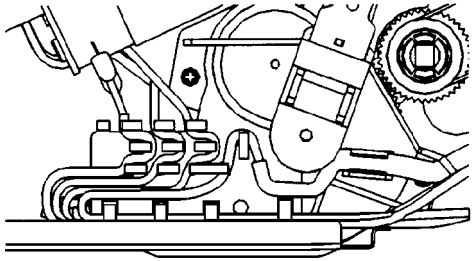
  - ⇒ ● Remove the stepper motor

REASSEMBLING

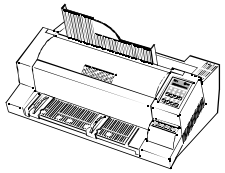
- ○ Execute the REMOVAL procedure in reverse sequence

Note: **Make sure that the cable installation is correct (Detail A)**





Detail A



Part: **Stepper Motor 1.8 DEG** Part No.: 5112 292 6241x
(Vertical Paper Transport) DEC P/N.: **29-31798-01**

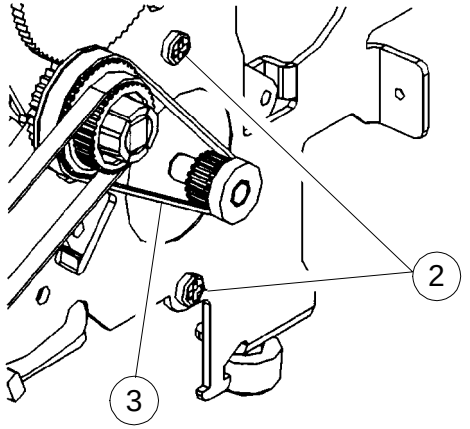
REMOVAL

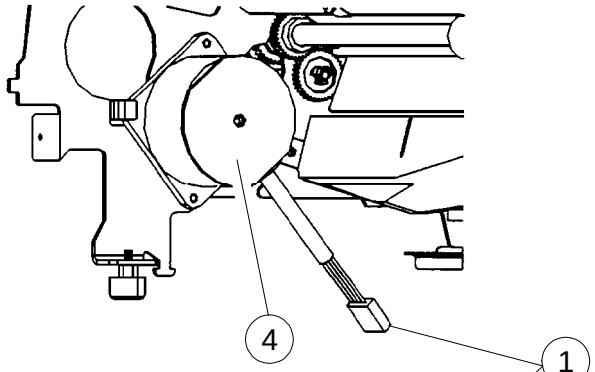
- ○ Disconnect mains cable
- ○ Remove all encasing parts (see Part: **Housing**)
- ○ Remove DEV-40 (see Part: **DEV-40**)
  - ⇒ ● Remove the motor cable guide from the DEV-40
  - ⇒ ● Remove the four pin motor cable (1) from the cable guide
  - ⇒ ● Remove the two screws (2), of the vertical drive motor
  - ⇒ ● Turn the motor anti-clockwise and remove it from the mounting clamp
  - ⇒ ● Disengage the drive belt (3) from the drive pinion
  - ⇒ ● Remove the motor (4)

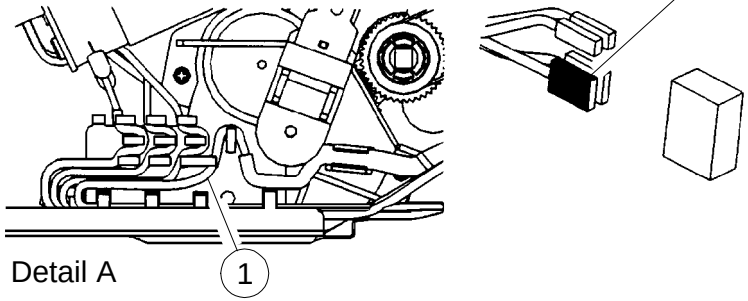
REASSEMBLING

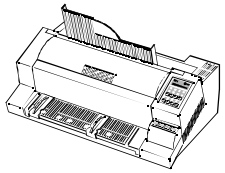
- ○ Execute the REMOVAL procedure in reverse sequence

Note: **Pay attention that the cable installation is correct (Detail A)**









Part: **Tractor Gear**

Part No.: 5112 292 3803x
DEC P/N.: **FD-W045N-01**

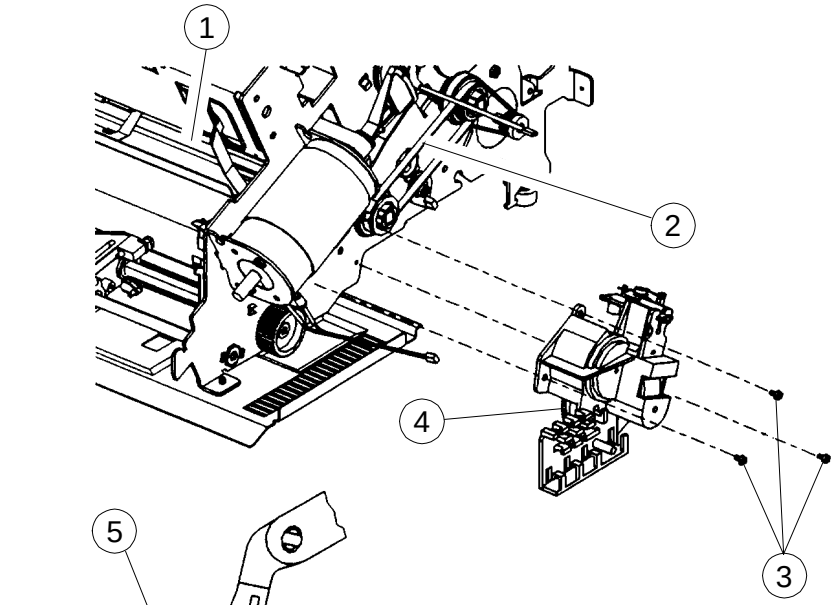
REMOVAL

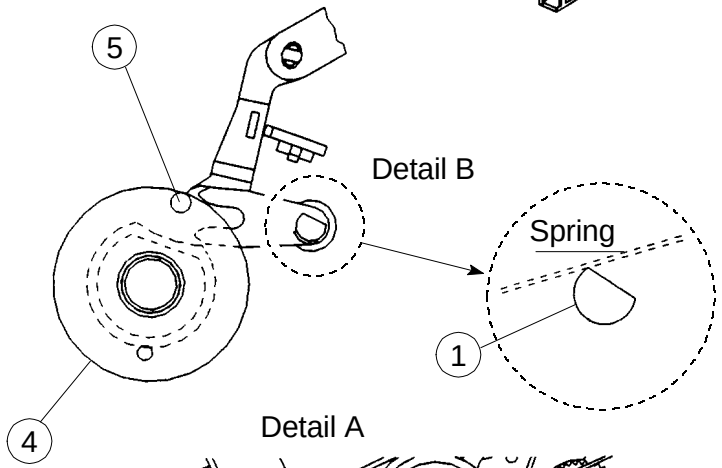
- ○ Disconnect mains cable
- ○ Remove all encasing parts (see Part: **Housing**)
- ○ Remove DEV-40 (see Part: **DEV-40**)
  - ⇒ ● The paper path for output must be set to tractor. By moving the carriage to the uppermost right position the paper path will be changed (an audible "click")
  - ⇒ ● The axle (1) must be turned to the position as shown in Detail B by turning on the minipitch belt (2) in clockwise direction
  - ⇒ ● Remove all cables from the cable guide
  - ⇒ ● Remove the three screws (3) and remove the Tractor Gear

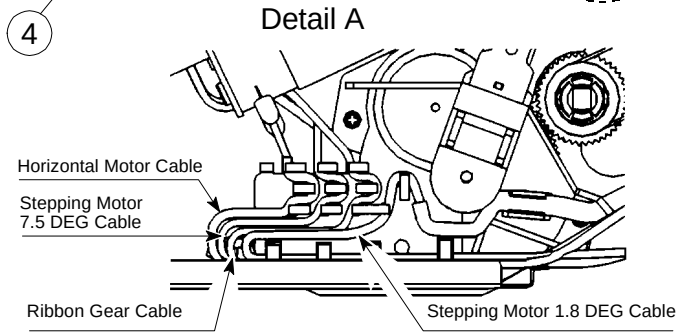
REASSEMBLING

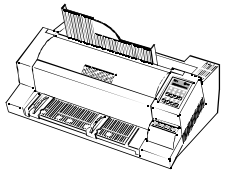
- ○ Execute the REMOVAL procedure in reverse sequence

Note: **- Before the new can be mounted, turn the gearwheel (4) in such a way that the bold (5) reaches the uppermost position**
- Observe that the cable installation is correct (Detail A)









Part: **Stacker Elements**

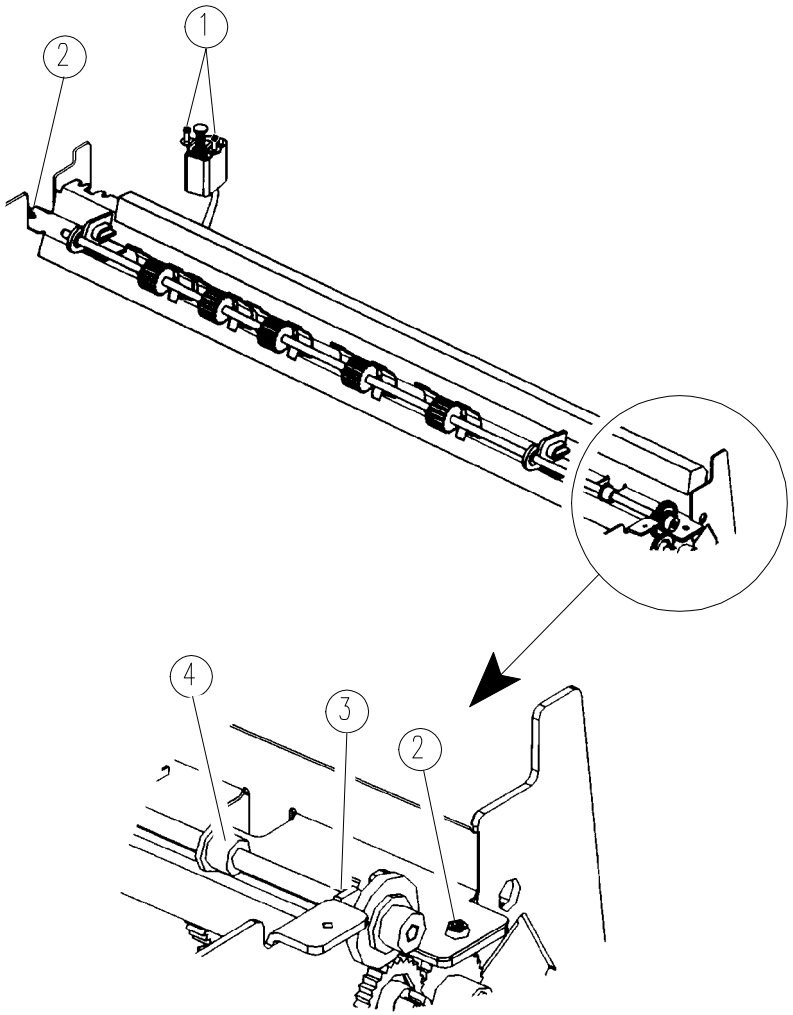
Part No.: 5112 292 4099x
DEC P/N.: **FD-W04KK-01**

REMOVAL

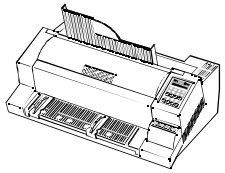
- ○ Disconnect mains cable
- ○ Remove all encasing parts (see Part: **Housing**)
- ○ Remove DEV-40 (see Part: **DEV-40**)
  - ⇒ ● Loosen the two screws (1) securing the Power ON/OFF switch
  - ⇒ ● Remove the two screws (2) which secure the stacker elements plate
  - ⇒ ● Remove the circlip (3) which secures the bearing (4)
  - ⇒ ● Slide the bearing (4) to the left and remove the Stacker Elements

REASSEMBLING

- ○ Execute the REMOVAL procedure in reverse sequence



DEC Field Service Instruction



Part: **Paper Sensor**

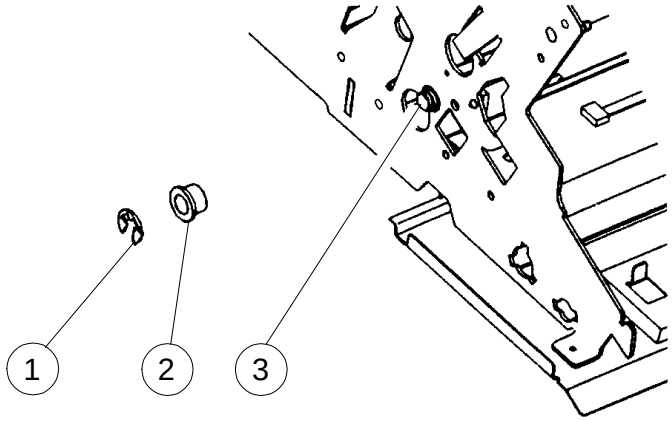
Part No.: 5112 292 3805x
DEC P/N.: **FD-W04JJ-01**

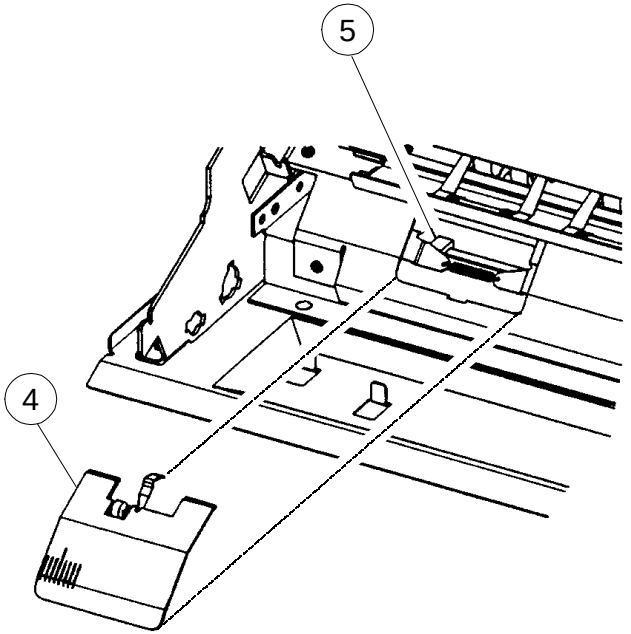
REMOVAL

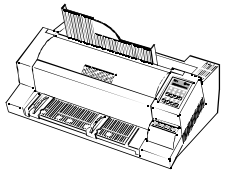
- ○ Disconnect mains cable
- ○ Remove all encasing parts (see Part: **Housing**)
  - ⇒ ● Remove circlip (1) and bearing (2). The axle (3) falls down
  - ⇒ ● Remove the Paper Sensor (4)
  - ⇒ ● Disconnect the cable (5)

REASSEMBLING

- ○ Execute the REMOVAL procedure in reverse sequence







Part: **Kit Pressure Rolls**

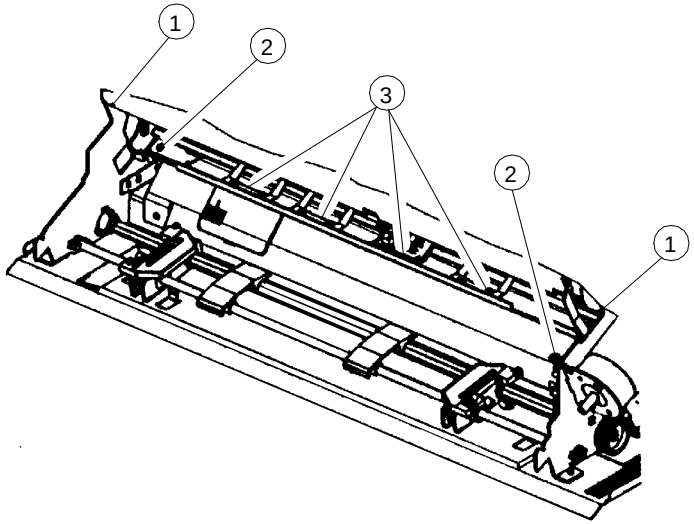
Part No: 5112 292 6655x
DEC P/N.: **29-31801-01**

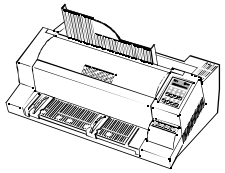
REMOVAL

- ○ Disconnect mains cable
- ○ Remove all encasing parts (see Part: **Housing**)
- ○ Remove the encoder strip (see Part: **Encoder Strip**)
  - ⇒ ● Remove the upper screws (1)
  - ⇒ ● Remove the foam under the neath of printhead cable
  - ⇒ ● Loosen the two screws (2) and remove the metal sheet coner
  - ⇒ ● Snap out the springs (3) using a knife
  - ⇒ ● Remove the pressure roller
  - ⇒ ● Grease the bearings of the pressure roller with Molykote DX or a similar type of grease
  - ⇒ ● Grease the arms of the new springs at the positions which are in contact with the FF1 roll with Molykote DX or a similar type of grease
  - ⇒ ● Insert the new springs by snap in

REASSEMBLING

- ○ Execute the REMOVAL procedure in reverse sequence





Part: **Kit V-Transport** Part No.: 5112 292 3845x
DEC P/N.. **FD-W02M6-01**

Part: **Belt Stepper** Part No.: 5112 200 0878x
DEC P/N.: **FD-W032Y-01**

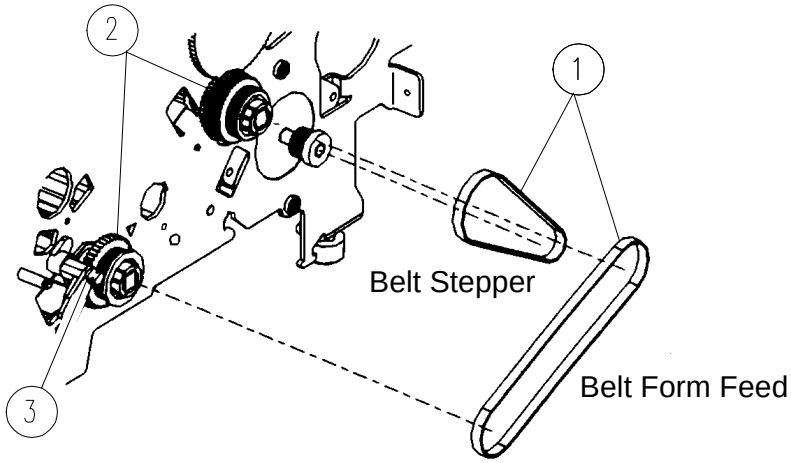
Part: **Belt Form Feed** Part No.: 5112 200 0879x
DEC P/N.: **FD-W0330-01**

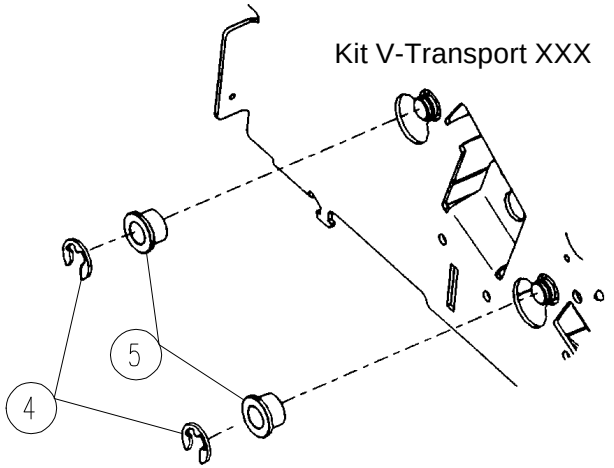
REMOVAL

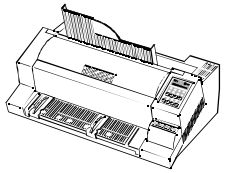
- ○ Disconnect mains cable
- ○ Remove all encasing parts (see Part: **Housing**)
- ○ Remove DEV-40 (see Part: **DEV-40**)
  - ⇒ ● Locate the right side of the form feed shaft for exchanging
  - ⇒ ● Remove both minipitch belts (1)
  - ⇒ ● Pull the belt pulley (2) from the wheel shaft for exchanging
  - ⇒ ● If the upper form feed shaft has to be exchanged remove the bearing (3)
  - ⇒ ● Remove circlip (4) and bearing (5) on the left side from the wheel shaft for exchanging
  - ⇒ ● Removing the bearings causes the wheel shaft to fall down into the larger holes, for removal slide the wheel shaft to the left side

REASSEMBLING

- ○ Execute the REMOVAL procedure in reverse sequence







Part: **Kit Belt Pulley 2**

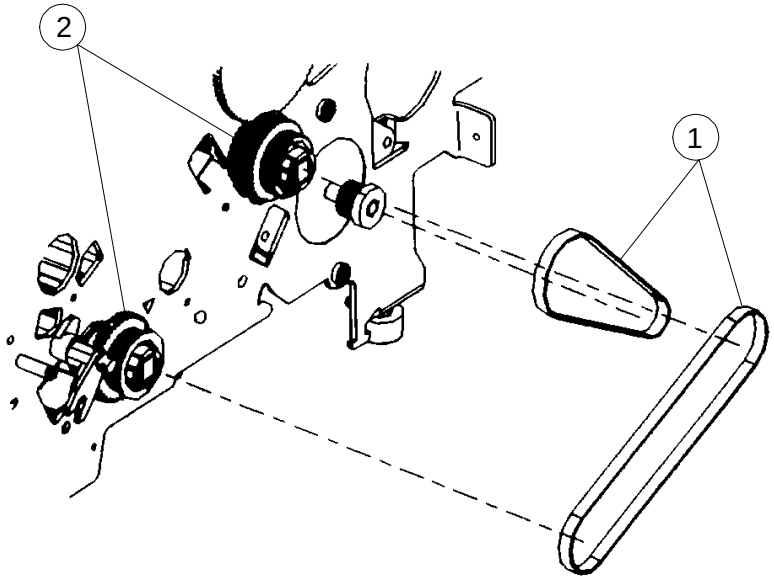
Part No.: 5112 292 7442x
DEC P/N.: **FD-W05RM-01**

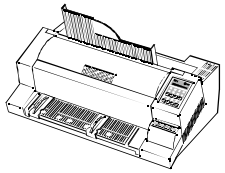
REMOVAL

- ○ Disconnect mains cable
- ○ Remove all encasing parts (see Part: **Housing**)
- ○ Remove DEV-40 (see Part: **DEV-40**)
  - ⇒ ● Locate the right side of the form feed shaft for exchanging
  - ⇒ ● Remove both minipitch belts (1)
  - ⇒ ● Pull the belt pulley (2) from the wheel shaft to be exchanged

REASSEMBLING

- ○ Execute the REMOVAL procedure in reverse sequence





Part: **Kit Cont. Forms Exit**

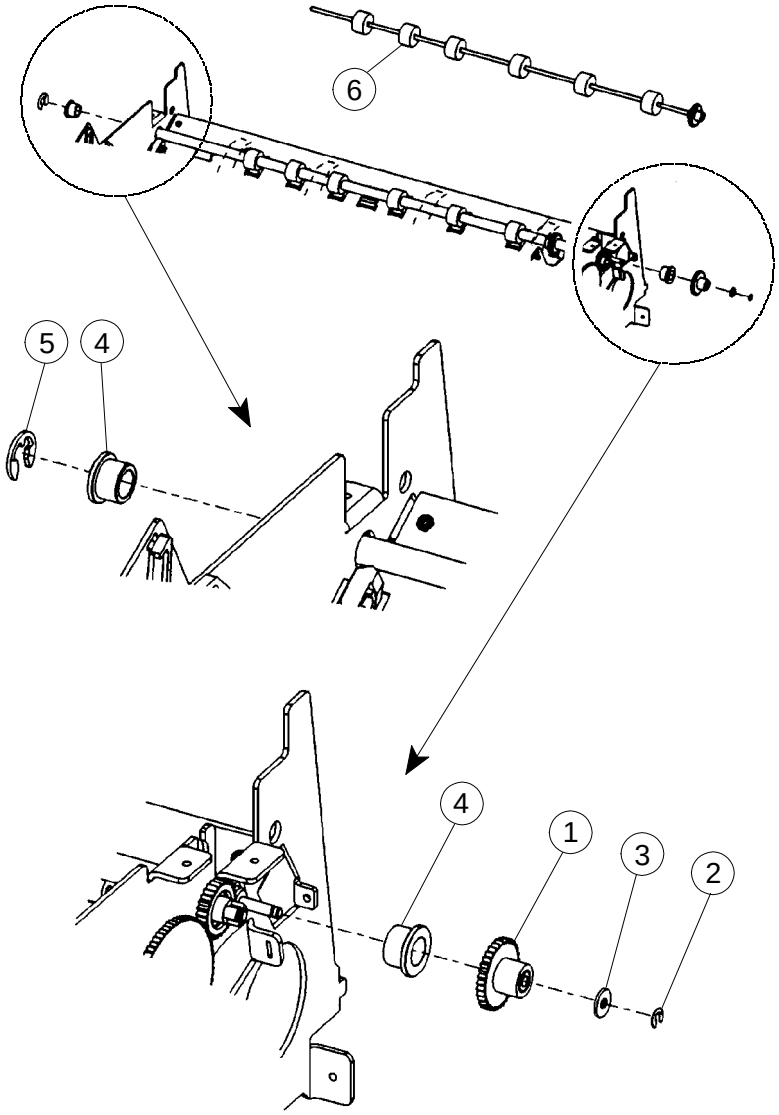
Part No.: 5112 292 3846x
DEC P/N.: **FD-W02M7-01**

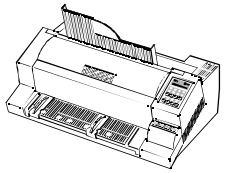
REMOVAL

- ○ Disconnect mains cable
- ○ Remove all encasing parts (see Part: **Housing**)
- ○ Remove DEV-40 (see Part: **DEV-40**)
- ○ Remove stacker elements (see Part:**Stacker Elements**)
  - ⇒ ● Locate the gearwheel (1), remove the circlip (2) and the washer (3), remove gearwheel (1) and bearing (4) from the wheel shaft
  - ⇒ ● Remove circlip (5) from the wheel shaft and move it to the left. Remove the shaft
  - ⇒ ● Prepare the left hand side bearing of the pressure roll (6) such that it can be removed
  - ⇒ ● Remove the pressure roll

REASSEMBLING

- ○ Execute the REMOVAL procedure in reverse sequence





Part: **Kit Tractor 2**

Part No.: 5112 292 7441x
DEC P/N.: **FD-W02M8-01**

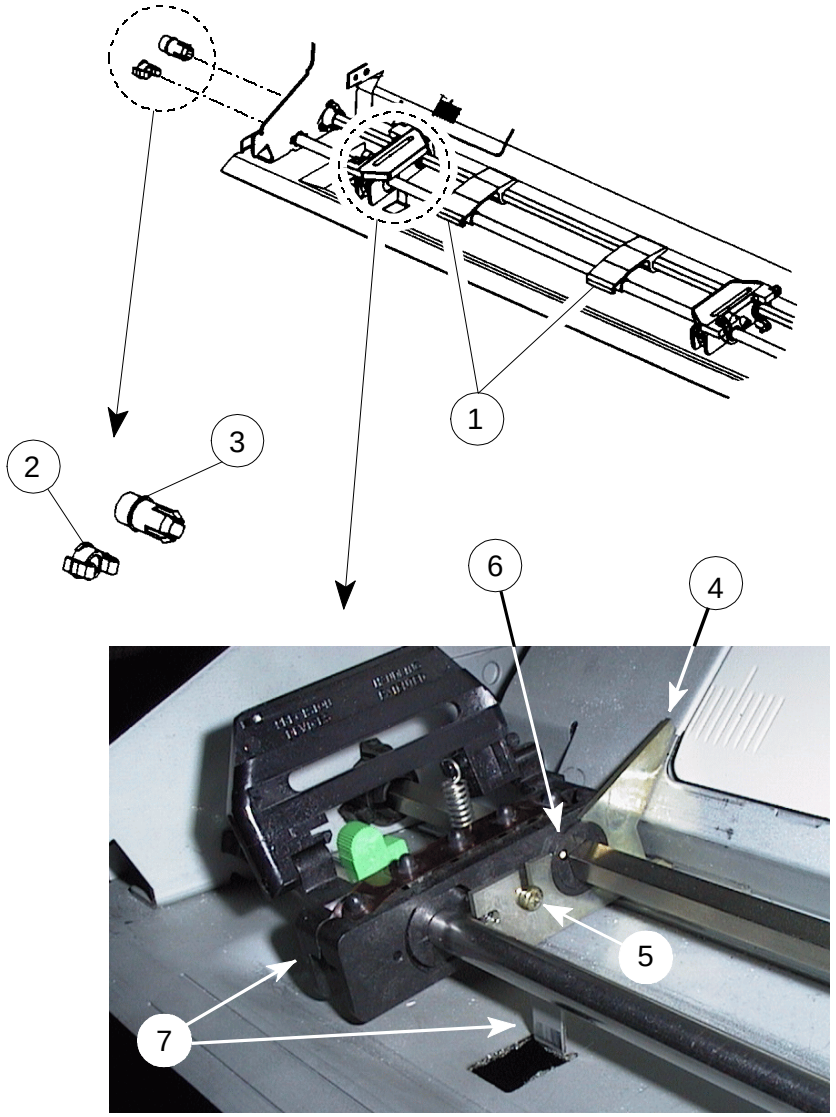
REMOVAL

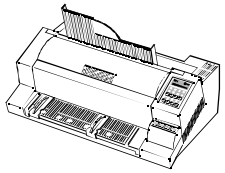
- Disconnect mains cable
- Remove all encasing parts (see Part: **Housing**)
- Snap out the paper supports (1)
  - ⇒ ● Locate the bearing (2) and (3) on the left side of the printer
  - ⇒ ● Press the two locking tabs on the bearing (2) and remove it
  - ⇒ ● Press the three locking tabs on the bearing (3) and remove it
  - ⇒ ● For removal, slide the entire tractor kit first to the left and then remove it by sliding out the right

Reassembly

- Execute the REMOVAL procedure in reverse sequence

Note: **Fix the metal plate (4) with the srew (5) on both tractor elements if not mounted.**
When you insert the square shaft, the white dot (6) on the left and right hand tractor must have the same position to ensure synchronous running of the tractor elements.
Pay attention that the mounting position of the left tractor is between the stoppers (7).





Part: **Kit H-Drive Belt**

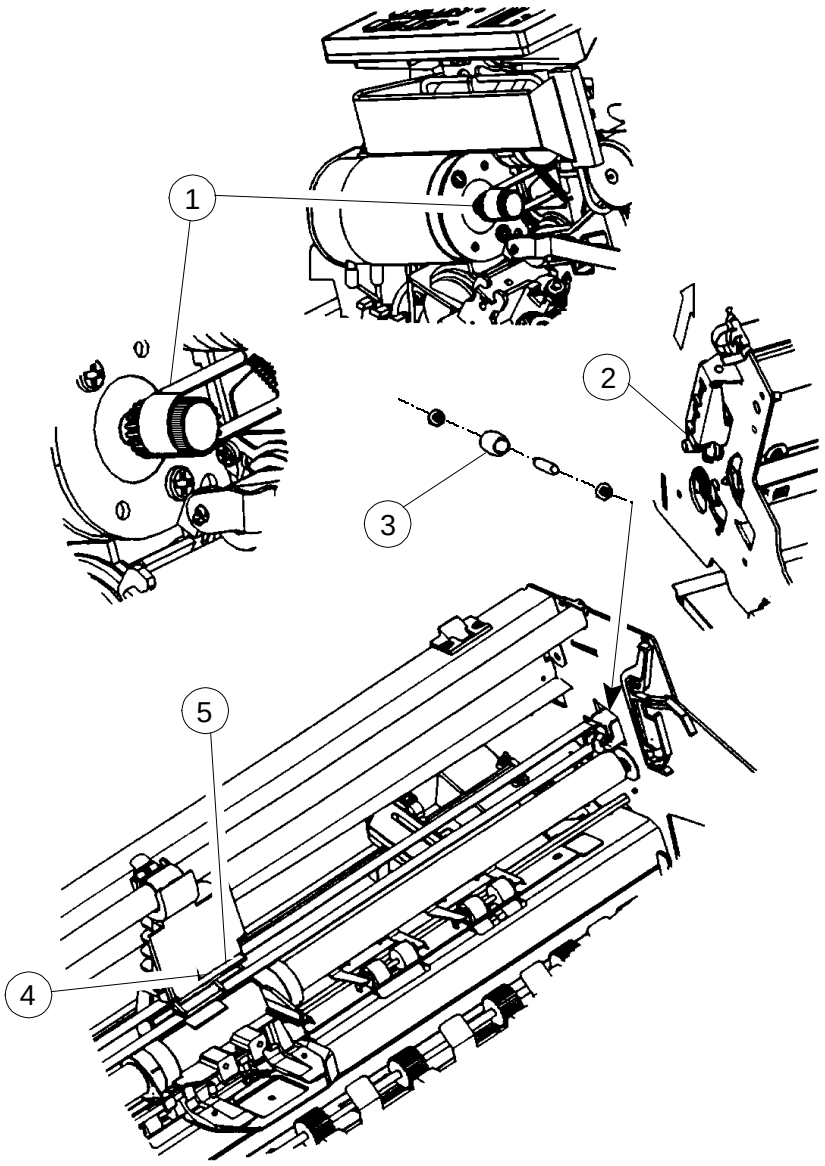
Part No.: 5112 292 3848x
DEC P/N.: **FD-W02M5-01**

REMOVAL

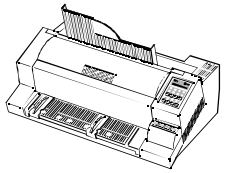
- ○ Disconnect mains cable
- ○ Remove all encasing parts (see Part: **Housing**)
- ○ Remove the print head
  - ⇒ ● Disengage the drive belt (1) from the drive wheel horizontal motor by pressing the belt tension elements on pos. (2)
  - ⇒ ● Slide the drive belt out of the drive wheel
  - ⇒ ● Remove the drive belt roller bearing (3) from its mounting bracket
  - ⇒ ● Remove the screw (4) and disengage the wedge (5) from the print head carriage

REASSEMBLING

- ○ Execute the REMOVAL procedure in reverse sequence



DEC Field Service Instruction



Part: **Kit ASF Lever 2**

Part No.: 5112 292 6875x
DEC P/N.: **FD-W0487-01**

REMOVAL of the Force Adjustment Levers (Figure 2)

- ○ Remove the ASF-Cassette from the printer and remove any paper loaded, and the paper support (if mounted).
  - ⇒ ● Remove the lever-side cover of the ASF Cassette by releasing of the four snaplocks (No. 1 - 4 in figure 1). Use a flat screw driver to do so and keep the sequence of figure 1.
  - ⇒ ● Remove the circlip (No. 4 in figure 2) of the lever bar.
  - ⇒ ● Slide out the bar to the direction of the connector and snap the lever out of the encasing.

REASSEMBLING of the Force Adjustment Levers (Figure 2)

- ⇒ ● Assemble the three levers together (figure 3). Lever 2 (upper paper release) onto lever 1 (paper pressure lever), and lever 3 (lower paper release) onto lever 2. Observe that the little plug of lever 2 is fitted in the hole provided in lever 3.
- ⇒ ● Execute now the REMOVAL procedure in reverse sequence.

REMOVAL of the Locking Levers (Figure 5)

- ⇒ ● Remove the ASF-Cassette from the printer and remove any paper loaded, and the paper support (if mounted).
- ⇒ ● Remove both side covers of the ASF Cassette by releasing of each snaplocks (No. 1 - 4 in figure 1).
- ⇒ ● Slide out the bar to the direction of the connector and release both paper guides to exchange the locking levers.

REASSEMBLING of the Locking Lever (Figure 5)

- ⇒ ● Insert the left and right locking lever into the paper guides.
- ⇒ ● Push the bar through the locking levers, the paper guides, and the support springs underneath the paper guides. Take care, that all parts are properly adjusted.
- ⇒ ● Execute now the REMOVAL procedure in reverse sequence.

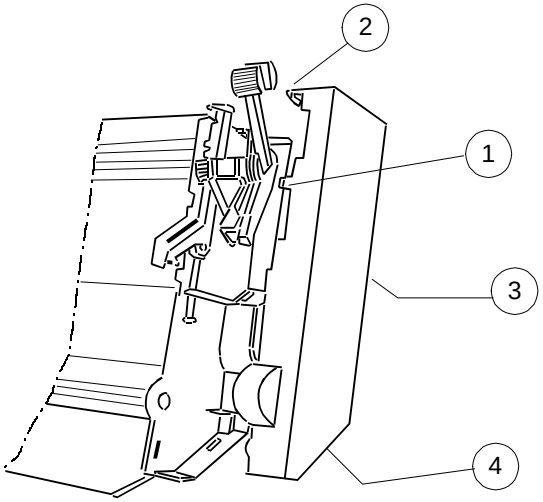
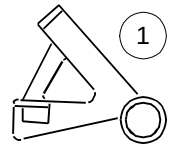
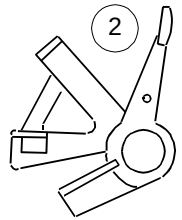


Figure 1





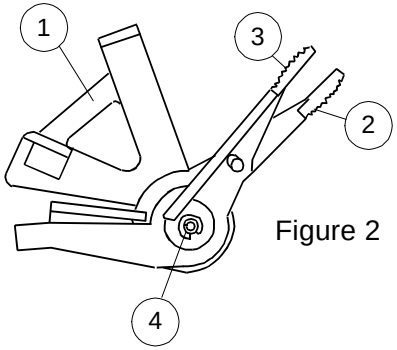


Figure 2

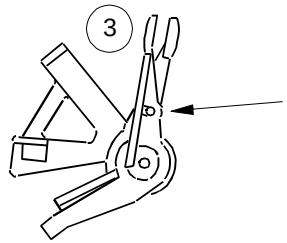


Figure 3

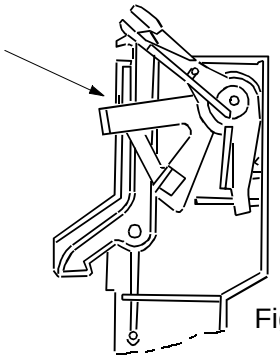
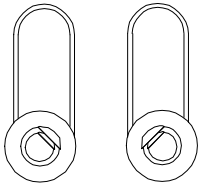


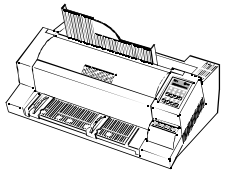
Figure 4



left right

Figure 5

DEC Field Service Instruction



Part: **Kit Spring D-Axis**

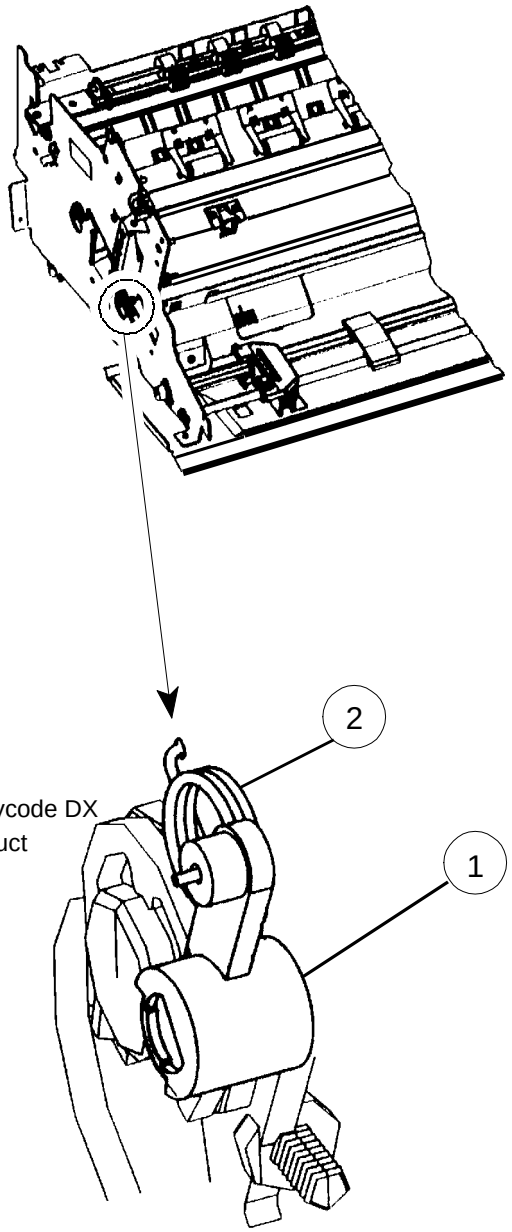
Part No.: 5112 292 4107x
DEC P/N.: **29-31803-01**

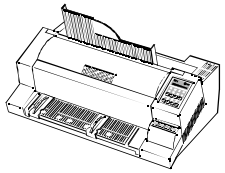
REMOVAL

- ○ Disconnect mains cable
- ○ Remove all encasing parts (see Part: **Housing**)
  - ⇒ ● Remove lever (1) from D-axis (the plastic snap-in will be destroyed)
  - ⇒ ● Remove the torsion spring (2)

REASSEMBLING

- ⇒ ● Insert the new spring and grease the hole in the engine plate and the surface of the spring gliding on the plate
- ⇒ ● Insert the lever (1) delivered with the spring until the snap-in

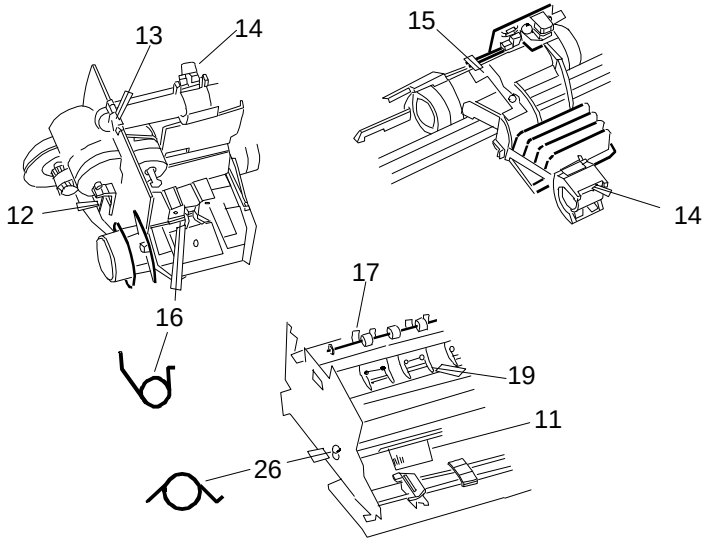


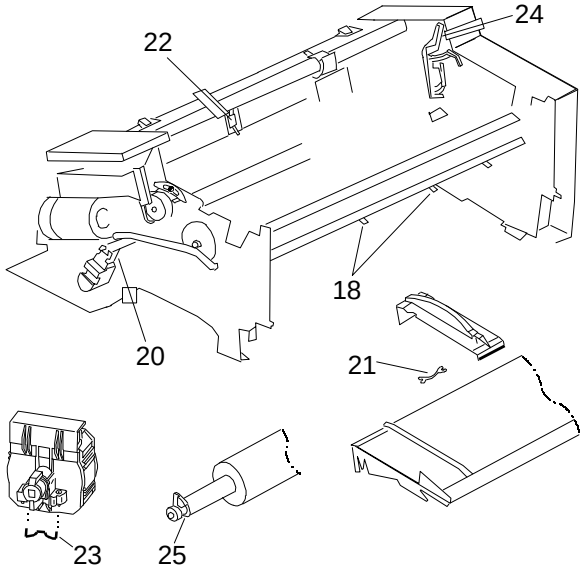


Part: **Kit Screws and Springs**

Part No.: 5112 292 3849x
DEC P/N.: **FD-W05RK-01**

Location of Screws and Springs

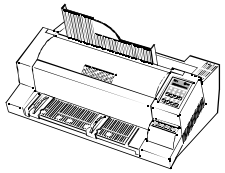




11 Spring 0.6x4x23 ST F. Paper Run
12 Spring 0.3x4.5x20 ST Ribbon Gear
13 Spring Carriage Axis
14 Spring Carriage Bearing
15 Spring Encoder Cable
16 Spring Print Head Shifter
17 Spring Paper Stacker Elements
19 Spring Paper Transport
26 Torsion Spring D Shaped Axis

18 Spring Tractor Exit
20 Torsion Spring Tractor Gear
21 Spring Manual Front Insertion
22 Cable clip
23 Springs for Print Head Fixation
24 Holder right/left (green)
25 Bearing Platen (green)

DEC Field Service Instruction



Part: **Noise Absorber**

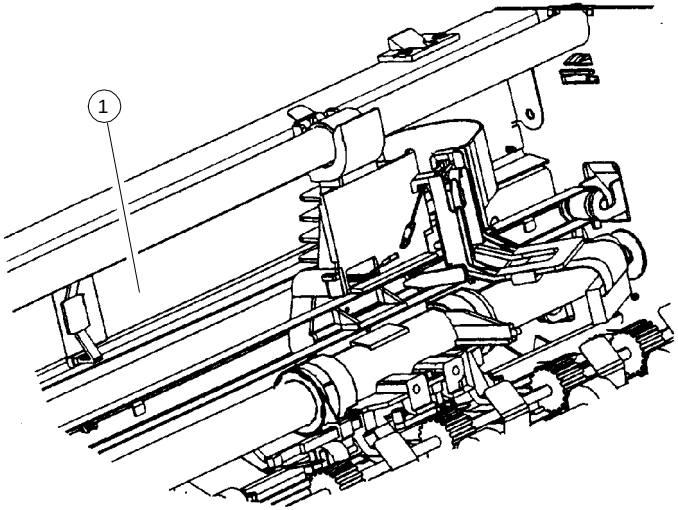
Part No.: 5112 212 7043x
DEC P/N.: _____

REMOVAL

○ Disconnect mains cable

○ Remove all encasing parts (see Part: **Housing**)

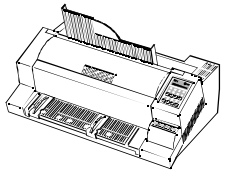
⇒ ● Remove the noise reduction foam (1) from the cable channel



REASSEMBLING

○ Execute the REMOVAL procedure in reverse sequence

Field Service Instruction



Part: **Rep Kit ASF-Cassette** Part No.: 5112 292 7235X
DEC P/N.:

REMOVAL

○ Remove the ASF-Cassette from the printer. Remove any paper loaded and the paper support (if mounted).

⇒ ● Remove the cover (1) of the ASF-Cassette by releasing the snaplocks (2). Use a flat screw driver to do so.

⇒ ● Release the connector (3) out of the cover (1).

⇒ ● Pull back the retaining parts (5) and remove the shaft (4).

⇒ ● Remove the belt from the pulley (6) and remove the pulley.

⇒ ● Cut the rest of the broken shaft (7) as well as the second (non broken) shaft. Use a side nippers to do so. The remaining rest of both shafts must not exceed 0.7 mm.

⇒ ● Remove the female screw (13) and the washer (12) from the screw (11).

⇒ ● Mount the metal part of the Rep. Kit ASF-Cassette (8) by inserting the screw (11) into the hole (9).

Note: Mount the Rep. Kit ASF-Cassette (8) in the same orientation as shown in the figure. Lift the metal part (8) up to the highest position, nearly to the edge (16).

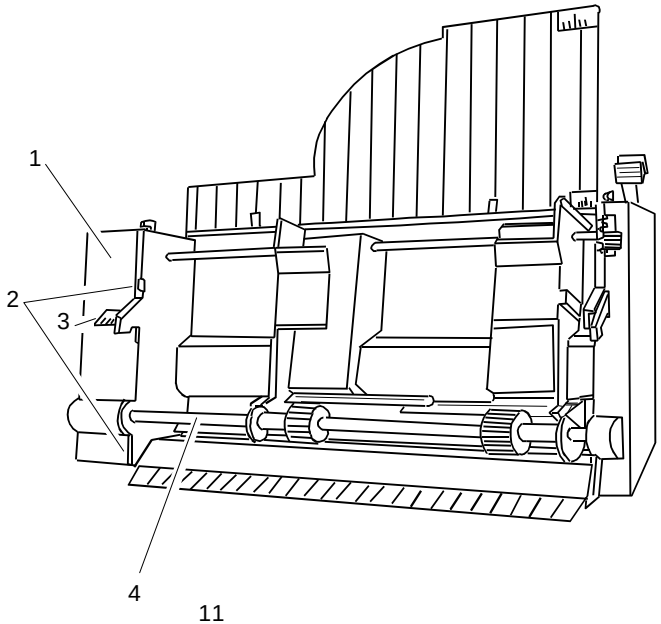
⇒ ● Put a washer (12) on the screw and tighten the female screw (13).

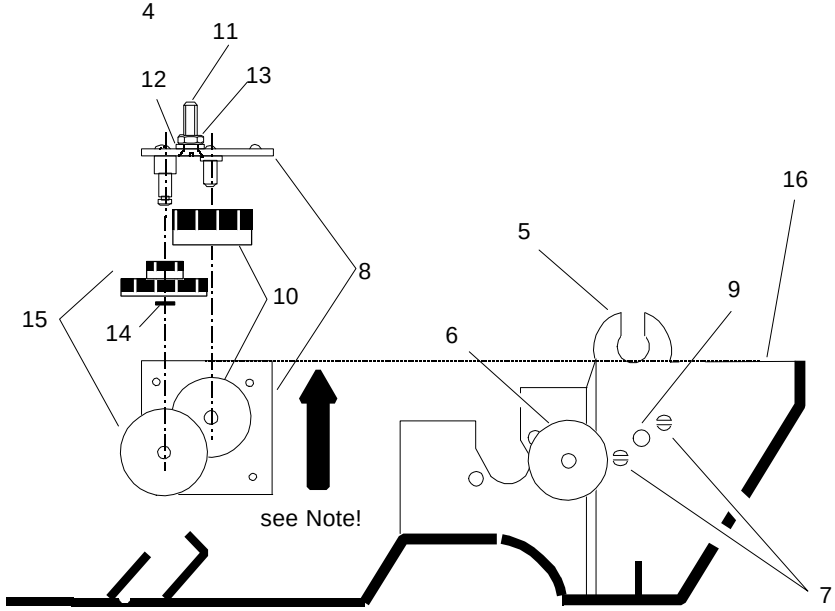
⇒ ● Mount the gears (10) and (15) as shwon in the figure and fix the gear (15) with the snap-ring (14).

REASSEMBLING

⇒ ● Assemble the pulley (6) and the belt.

⇒ ● Execute now the REMOVAL procedure in reverse sequence.





8 Wearing Parts

This chapter describes the removal procedures which are necessary for proper handling of the wearing parts of the printer.

Note: All removal procedures consists of several steps indicated with a:

- ○ to show preparation and
- ⇒ ● to indicate the main removal steps.

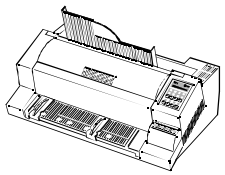
In terms of preventive actions for keeping the printer running, following operation for the life time of wearing parts is given:

- Ribbon Cartridge: 16 Mio characters (draft quality)
- Print Head: > 350,000 pages
- Platen Assy: > 800,000 pages
- Pick up Rolls: > 200,000 pages

Recommendation for cleaning:

- Transport Rolls, Platen Assy, and Pick up Rolls every 50,000 Pages

Note: Number of pages printed can be obtained from print out of '**PRINT TEST 3**', parameter '**PGCNT**' (see User's Manual, chapter 2)



Part: **Print Head DH3024/2**

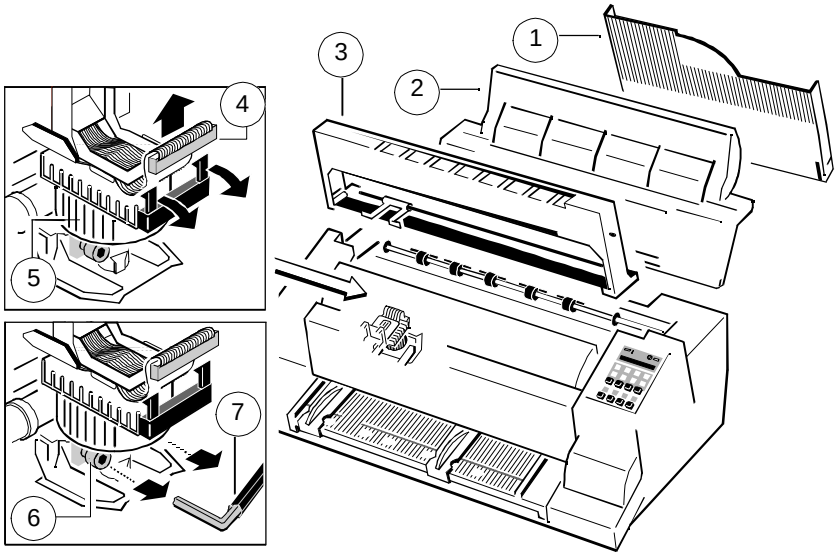
Part No.: 5112 292 6652x
DEC P/N.: **FD-52920-01**

Removal of the print head (5)

☞ **Caution:** print head may be very hot immediately after printing!

○ Lift and remove the output stacker (1)
○ Switch the printer ON, lift and remove the top cover (2), switch the printer OFF
○ Remove the ribbon cassette (3)

⇒ ● Disconnect the print head cable (4)
⇒ ● Using the supplied tool (7), loosen the two captive screws (6), retaining the print head (5)
⇒ ● Remove the print head (5)



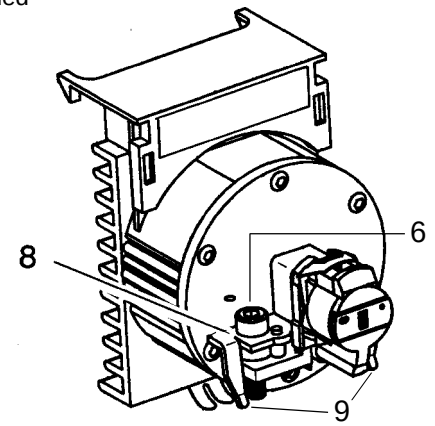
Installing the new print head (5)
Ensure that the printer is switched OFF. For print head installation, the carriage should be aligned with the cut-out on the paper guide plate (green insert). (Same position as for Removal procedure).

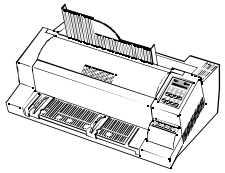
⇒ ● Hold the print head (5) in its mounting position and press it against its stop in direction of the platen. The two noses (9) of the adjustment guide (8) support this procedure.

Note: Older versions of the print head are mounted with clamps instead of the adjustment guide (8)

⇒ ● Now tighten the two captive screws (6) (first left, then right).
⇒ ● Reconnect the print head cable (4) and fasten it with the enclosed spring on the top of the print head.
⇒ ● Switch the printer ON and insert the ink ribbon cassette (3).
⇒ ● Refit the top cover (2) and the output stacker (1).

PM AGC: (s. User's Manual, Chapter 3)
Run the MENU-function AGC ADJUST with ribbon cassette installed but without paper loaded



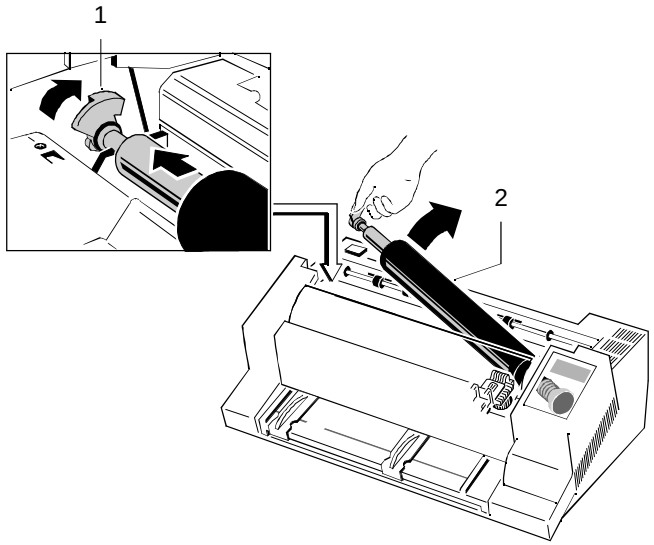


Part: **Platen Assembly**

Part No.: 5112 292 3801x
DEC P/N.: **LA60X-PN**

To Remove the Platen (2)

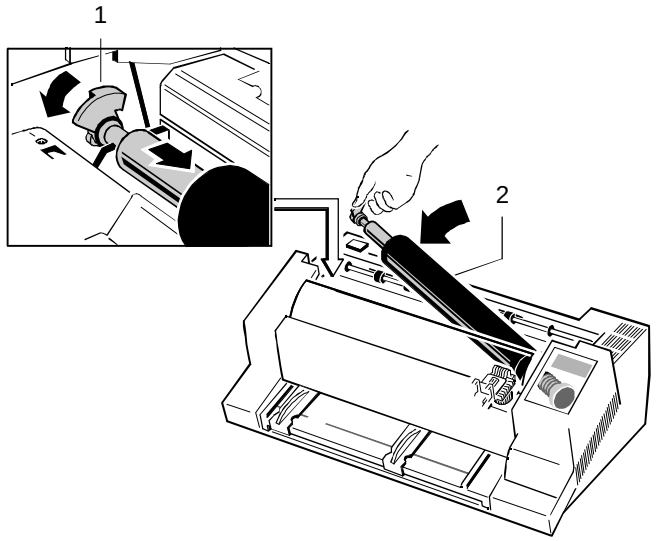
- ○ Switch the printer OFF.
- ○ Lift and remove the output stacker.
- ○ Lift and remove the top cover.
- ○ Remove the Ribbon cassette.
- ⇒ ● Position the print head to the very right.
- ⇒ ● Release the plastic platen clamp (1) on the left platen mounting.
- ⇒ ● Move platen (2) approximately 10 mm to the left, lift the left end of the platen free of its mounting and withdraw the platen from the right mounting.
- ⇒ ● Lift the platen to the left underneath the print head and take it out.

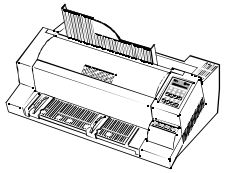


To install the Platen Assy (2)

- ☞ Ensure that the printer is switched OFF.
- ⇒ ● Place platen (2) in the vacant space between print head and metal bar.
- ⇒ ● Move print head from its right hand position into the centre.
- ⇒ ● Fit the gear wheel end of the platen into the right hand side mounting. Be careful not to damage the gear wheel.
- ⇒ ● Ensure that the plastic platen clamp (1) is in the upright position, push the platen into its mounting and lock in position by pushing the tag on the clamp to the rear.
- ○ Install the ribbon cassette.
- ○ Fit and close the top cover.
- ○ Fit the output stacker.

PM AGC: (s. User's Manual, Chapter 2)
Run the MENU-function AGC ADJUST with ink ribbon cassette installed but no paper inserted





Part: **ASF Pick-up Rollers**

Part No.: 5112 292 4100x
DEC P/N.: **LA60X-PR**

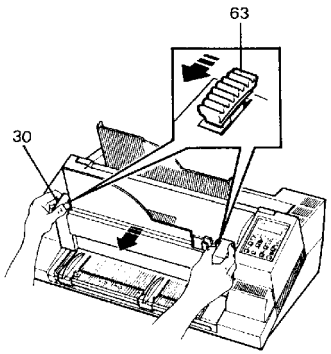
To Remove the ASF Pick-up Rollers (62)

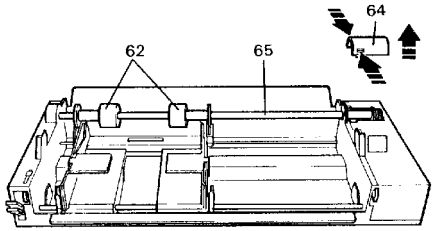
⇒ ● Remove the ASF cassette (30) from the printer by drawing back the release lever (63), releasing the mounting lugs.

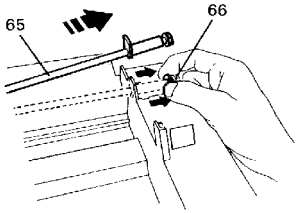
⇒ ● Remove the small access cover (64) by squeezing it together as shown.

⇒ ● Pull back the retainers (66) as shown and lift up the bar (65).

⇒ ● Pull the bar (65) out of the cassette and slide the pick-up rollers (62) off the bar.





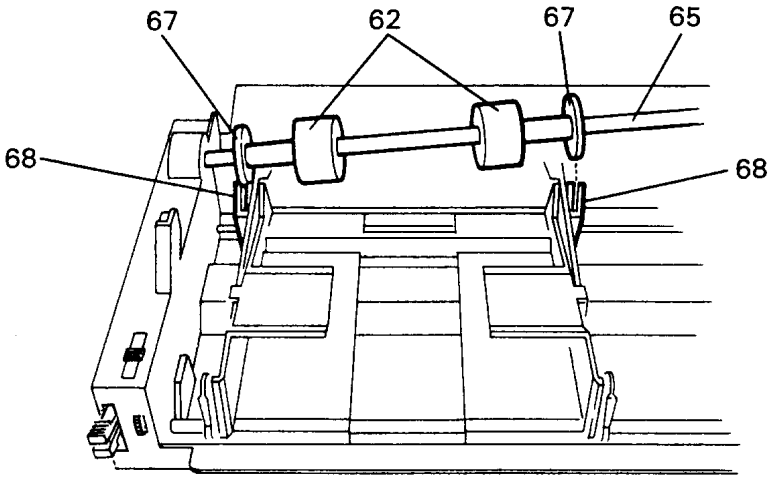


To install the Pick-up Rollers (62)

⇒ ● Slide the new pick-up rollers (62) onto the bar (65).

⇒ ● Insert the free end of the bar into its mounting, ensuring that each roller flange (67) is positioned so that they mate with the slots (68) in the paper sleeves.

⇒ ● Carefully snap the bar (65) into its mounting and fit the small access cover (64).



9 List of Spares and Repairs

9.1 List of Spare Parts

Item	Part No.	DEC P/N.	Page
Housing 405	5112 292 3840x	**FD-W03RF-01**	7-2
Top Cover LA600	5112 292 6826x	**29-31800-01**	7-2
Top Cover 40A	5112 292 6827x	**FD-W03RH-01**	7-2
Front Cover 405	5112 292 5490x	**FD-W03RC-01**	7-2
Stacker Support 405	5112 212 5500x	**FD-W03RD-01**	7-2
Front Insertion 405	5112 292 3842x	**FD-W03RJ-01**	7-2
Print Engine LA600	5112 292 6475x	**29-31790-01**	7-4
PSU-40A	5112 292 3811x	**FD-W028Y-01-A01**	7-6
PSU-40D	5112 292 7627x	**FD-W028Y-01-A02**	7-6
PSU-40DS	5112 292 7628x	**n. a.**	7-6
Fuse T 3A 250	5112 000 9302x	**n. a.**	7-7
DEV-40 AE	5112 292 7159x	**29-31791-01-A02**	7-8
DEV-40LA600	5112 292 6292	**29-31791-01-A01**	7-8
DEV-40 A	5112 292 3810x	**FD-W00CS-01**	7-8
CU-40K (Repair only; with MC)	5112 208 3885x	**FD-W00CW-01**	7-10
CU-40LA600 (Repair only; with MC)	5112 292 6299x	**29-31792-01-A1**	7-10
Print CU-40L (without MC interface)	5112 292 7384x	**29-31792-01**	7-12
EEPROM CU-40X	5112 000 4164x	**29-31802-01**	7-14
Operator Panel 40B	5112 292 6418x	**FD-W00CU-01**	7-16
Power Switch 40A	5112 292 3882x	**FD-W02H3-01**	7-18
Print Head Cable 405	5112 292 3880x	**FD-W02Y2-01**	7-20
Encoder Strip 2	5112 292 7454x	**FD-W041701**	7-22
Kit Lubrication Felt	5112 212 5589x	**29-31804-01**	7-24

Item	Part No.	DEC P/N.	Page
Print H-Encoder	5112 292 4310x	**FD-W0290-01**	7-26
H-Motor	5112 292 3791x	**FD-W0396-01**	7-28
Carriage	5112 292 4094x	**FD-W04JL-01**	7-30
Protection Shield	5112 292 3839x	**FD-W041W-01**	7-32
Ribbon Gear	5112 292 6384x	**FD-W045M-01**	7-34
Stepper Motor 7.5 DEG	5112 292 4106x	**FD-W0394-01**	7-36
Stepper Motor 1.8 DEG	5112 292 6241x	**29-31798-01**	7-38
Tractor Gear	5112 292 3803x	**FD-W045N-01**	7-40
Stacker Elements	5112 292 4099x	**FD-W04KK-01**	7-42
Paper Sensor	5112 292 3805x	**FD-W04JJ-01**	7-44
Kit Pressure Roll	5112 292 6655x	**29-31801-01**	7-46
Belt Stepper	5112 200 0878x	**FD-W032Y-01**	7-48
Belt Form Feed	5112 200 0879x	**FD-W0330-01**	7-48
Kit V-Transport	5112 292 3845x	**FD-W02M6-01**	7-48
Kit Belt Pulley 2 405	5112 292 7442x	**FD-W05RM-01**	7-50
Kit Cont. Forms Exit	5112 292 3846x	**FD-W02M7-01**	7-52
Kit Tractor 2	5112 292 7441x	**FD-W02M8-01**	7-54
Kit H-Drive Belt	5112 292 3848x	**FD-W02M5-01**	7-56
Kit ASF-Lever 2	5112 292 6875x	**FD-W0487-01**	7-58
Kit Spring D-Axis	5112 292 4107x	**29-31803-01**	7-60
Kit Screws and Springs	5112 292 3849x	**FD-W05RK-01**	7-62
Noise Absorber	5112 212 7034x	**n. a.**	7-64
Rep Kit ASF-Cassette	5112 292 7235x	**n. a.**	7-66
Paper Guide 4 405	5112 292 6286x	**n. a.**	---
ASF Support 405	5112 212 5320x	**FD-W03RE-01**	---

Item	Part No.	DEC P/N.	Page
9.2 List of Wearing Parts			
Item	**Part No.**	**DEC P/N.**	
Print Head DH3024 / 2	5112 292 6652x	**FD-52920-01**	8-2
Platen Assy	5112 292 3801x	**LA60X-PN**	8-4
Pick-up Rolls ASF A and B	5112 292 4100x	**LA60X-PR**	8-6