

S E R V I C E M A N U A L



COMPACT PAGE PRINTER

FS-400/A

FS-400/A Service Manual
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Export Edition
Revision 0.0 (94/12)
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Notice

The information in this manual is subject to change without notification. Additional pages may be inserted in future editions. The user is asked to excuse any technical inaccuracies or typographical errors in the present edition.

No responsibility is assumed if accidents occur while the user is following the instructions in this manual. No responsibility is assumed for defects in the printer's firmware.

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Trademark Notice

PRESCRIBE is a registered trademark of KYOCERA CORPORATION. PRESCRIBE II, KIR, Kyocera Image Refinement, Ecosys, and Ecotone are trademarks of KYOCERA CORPORATION.

Diablo 630 is a product of Xerox Corporation. IBM Proprinter X-24E is a product of International Business Machine Corporation. Epson LQ-850 is a product of Seiko Epson Corporation. HP LaserJet III and HP-7475A are product of Hewlett-Packard Company. Hewlett-Packard, PCL, and HP-GL are registered trademarks of Hewlett-Packard Company. Centronics is a trade name of Centronics Data Computer Corp.

This Kyocera printer uses PeerlessPrint5 to provide the HP LaserJet III compatible PCL5 language emulation. PeerlessPrint5 is a trademark of the Peerless Group, Redondo Beach, CA 90278, U.S.A.

FCC statement

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- ❖ Reorient or relocate the receiving antenna.
- ❖ Increase the separation between the equipment and receiver.
- ❖ Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- ❖ Consult the dealer or an experienced radio/TV technician for help.

Changes or modifications not expressly approved by the manufacturer for compliance could void the user's authority to operate the equipment.

Interface cable to the computer shall be used with shielded circular cable.

Caution to user

Any modification without prior permission may cause harmful interference.

If any modification/change is introduced to this equipment without prior permission, Kyocera as a manufacturer can not guarantee the compliance with FCC rule.

To use the equipment which does not comply with FCC rule is prohibited.

The printer may be optionally installed with the following units:

Conforming to the Class A limits

- ❖ IB-4/5/6 Network printer interface boards

Conforming to the Class B limits

- ❖ PF-8 Paper feeder
- ❖ IB-3 AppleTalk Interface Board

Interface cable

The following interface cables meet the FCC requirements:

- ❖ Parallel interface: IBM Printer Cable type 1525612

Important note on the interface connectors

Be sure to turn off printer power before connecting or disconnecting an interface cable to the printer. For protection against static discharge which may be applied to the printer's internal electronics through the interface connector(s), keep the interface connector which is not in use capped using the protective cap (supplied).

Ozone concentration

The printers generate ozone gas (O₃) which may concentrate in the place of installation and cause an unpleasant smell. To minimize concentration of ozone gas (to less than 0.1 ppm), we recommend you not to install the printer in a confined area where ventilation is blocked.

IMPORTANT SAFEGUARDS

1. Read all of these instructions and save these instructions for later use.
2. Unplug this product from the wall outlet before cleaning.
3. Do not use this product near water.
4. Do not place this product on an unstable cart, stand, or table. The product may fall, causing serious damage to the product.
5. Slots and openings in the cabinet and the back are provided for ventilation to ensure reliable operation of the product and to protect it from overheating, these openings must not be blocked or covered. The openings should never be blocked by placing the product on a bed, sofa, rug, or other similar surface. This product should never be placed near or over a radiator or heat register. This product should not be placed in a built-in installation unless proper ventilation is provided.
6. This product is equipped with a 3-wire grounding type plug, a plug having a third (grounding) pin. This plug will only fit into a grounding-type power outlet. This is a safety feature. If you are unable to insert the plug into the outlet, contact your electrician to replace your obsolete outlet. Do not defeat the purpose of the grounding-type plug.
7. Do not allow anything to rest on the power cord. Do not locate this product where persons will walk on the cord.
8. If an extension cord is used with this product, make sure that the total of the ampere ratings on the products plugged into the extension cord do not exceed the extension cord ampere rating.

9. Never push objects of any kind into this product through cabinet slots as they may touch dangerous voltage points or short out parts that could result in a risk of fire or electric shock. Never spill liquid of any kind on the product.
10. Except as explained elsewhere in *User's Manual*, do not attempt to service this product yourself. Removing covers may expose you to dangerous voltage points or other risks. Refer all servicing in those compartments to service personnel.
11. Unplug this product from the wall outlet and refer servicing to qualified service personnel under the following conditions:
 - A. When the power cord or plug is damaged or frayed.
 - B. If liquid has been spilled into the product.
 - C. If the product has been exposed to rain or water.
 - D. If the product does not operate normally when the operating instructions are followed. Adjust only those controls that are covered by the operating instructions since improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the product to normal operation.
 - E. If the product has been dropped or the cabinet has been damaged.

Canadian Department of Communications compliance statement

This equipment does not exceed Class B limits per radio noise emissions for digital apparatus, set out in the Radio Interference Regulation of the Canadian Department of Communications. Operation in a residential area may cause unacceptable interference to radio and TV reception requiring the owner or operator to take whatever steps are necessary to correct the interference.

Avis de conformité aux normes du ministre des Communications du Canada

Cet équipement ne dépasse pas les limites de Classe B d'émission de bruits radioélectriques pour les appareils numériques, telles que prescrites par le Règlement sur le brouillage radioélectrique établi par le ministre des Communications du Canada. L'exploitation faite en milieu résidentiel peut entraîner le brouillage des réceptions radio et TV, ce qui obligerait le propriétaire ou l'utilisateur à prendre les dispositions nécessaires pour en éliminer les causes.

ISO 7779

Maschinenlärminformationsverordnung 3. GSGV, 18.01.1991: Der höchste Schalldruckpegel beträgt 70 dB(A) oder weniger gem ISO 7779.

Declaration of Conformity

according to 89/336/EEC

Manufacturer's name: Kyocera Corporation, Printer Division
Manufacturer's address: 2-14-9 Tamagawadai, Setagaya Ward, Tokyo 158 Japan

declares that the product

Product name: Page printer
Model number: FS-400/A

conforms to the following product specifications.

EMC/EMI EN50081-1:1992
 (EN55022:1987 Class B)
 EN50082-1:1992
 EN60801-2:1993
 IEC 801-3: 1984 3V/m
 IEC 801-4: 1988 1kV
 EN60555-2:1987

For EN50081-1 and EN50082-1; the manufacturer and its merchandising companies retain the following technical documentation in anticipation of the inspection that may be conducted by the authorities concerned.

User's instruction that conforms to the applicable specifications
 Technical drawings
 Descriptions of the procedures that guarantee the conformity
 Other technical information

FS-400/A:

Safety for European countries EN 60950: 1991
 UL 1950: 1993
 CSA CSA C22.2-950: 1989

**EMI for U.S.A.
F C C**

Rules 47 CFR, Parts 2 and 15, subpart B, Class B

EG-Konformitätserklärung des Importeurs

Hiermit wird erklärt, da der Drucker

FS-400

mit den Anforderungen der EG-Richtlinie 89/336/EEC bereinstimmt.
 Das Gert stimmt mit folgenden Normen berein.

EN 50081-1 (EN 55022 Grenzwert Klasse B)
 EN 50082-1

Name und Anschrift des Herstellers/Importeurs
Kyocera Electronics Europe GmbH
Mollsfeld 1240670 Meerbusch
Postfach 225240645 Meerbusch

Schallemission: 70 db (A) nach ISO 7779

T. Okada

Disclaimer

We shall have no liability or responsibility to customers or any other person or entity with respect to any liability, loss or damage caused or alleged to be caused directly or indirectly by equipment sold or furnished by us, including but not limited to, any interruption of service, loss of business or anticipatory profits, or consequential damages resulting from the use or operation of the equipment or software.

Resoldering an IBM Cable

- 1 Unscrew the plastic cover from the printer end of the cable.
- 2 Next to each of the wires inside the cable is a bare shield wire. Solder all these shield wires together into a single bundle.
- 3 Using a section of flat wire about 3mm wide and 15mm long, connect the bundle of shield wires to the metal facing of the connector. Check that the solder connectors are secure.
- 4 Desolder wires 2 and 3, then resolder them in crossed configuration: Solder wire 2 to pin 3 and wire 3 to pin 2. Cover the solder joints with thermofit tube.
- 5 Cut wires 4, 5, 6, and 20.
- 6 Solder wires 5 and 6 together and connect them to pin 20. Cover the solder joints with thermofit tube.
- 7 Tape all remaining loose ends, or seal them with thermofit tube.
- 8 Screw the plastic cover back on.

Safety Information

On Battery Replacement: Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the equipment manufacturer. Discard used batteries according to manufacturer's instructions.

Important Notice To Service Person: Before attempting service on the printer, including disassembling, re-assembling, troubleshooting, and adjustment, read this manual carefully. During performing service, use extreme care to avoid possible electric shock hazard, burn, and human injuries. Make sure the printer is not provided with any safety facilities other than those primarily intended for the safety of users.

Preface

This manual contains information pertaining to service and maintenance of Kyocera printer model FS-400/A. This manual is comprised of the following chapters:

Chapter 1 GENERAL INFORMATION: Includes precautions on servicing, requirements for selection of paper, maintenance, schedule (toner supply), and jigs and tools required for servicing (of all previous lineup of Kyocera printers). Information about the feature of the printer is also included in the end of this chapter, including the detailed printer specifications.

Chapter 2 PRINTER OPERATION: Explains the theory of printer operation—electrophotography, hardware, and electrical—in detail.

Chapter 3 DISASSEMBLY: Provides procedures for removing and installing components in the printed.

Chapter 4 TROUBLESHOOTING: Describes how to respond to the troubles arisen with the printer using a plenty of easy-to-follow flowcharts.

Chapter 5 PARTS CATALOG: Includes lists of parts and exploded views of the component used with the printer. The ordering instruction is also provided.

Appendix SCHEMATIC DIAGRAMS

Legend

Throughout the chapters, **Warning** denotes the precaution which, if ignored, could result in personal injury, and/or irrevocable damage to the printer. **Note** denotes precautions which, if ignored, could result in damage to the printer.