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FACSIMILE EQUIPMENT

SERVICE MANUAL

MODELS: **MFC3320CN/FAX1920CN**
MFC3220C/FAX1820C/FAX1815C

Preface

This Service Manual is intended for use by service personnel and details the specifications, construction, theory of operation, and maintenance for the Brother facsimile equipment noted on the front cover. It includes information required for troubleshooting and service--disassembly, reassembly, and lubrication--so that service personnel will be able to understand equipment function, repair the equipment in a timely manner and order spare parts as necessary.

To perform appropriate maintenance so that the facsimile equipment is always in the best possible condition for the customer, service personnel must adequately understand and apply this manual.

How this manual is organized

This manual is made up of eight chapters and appendices.

CHAPTER 1   PARTS NAMES AND FUNCTIONS

Contains external views and names of components and describes their functions. Information about the keys on the control panel is included to help you check operation or make adjustments.

CHAPTER 2   SPECIFICATIONS

Lists the specifications of each model, which enables you to make a comparison of different models.

CHAPTER 3   THEORY OF OPERATION

Summarizes the scanner and printing mechanisms and control electronics. It also provides information about sensors and their actuators. This chapter helps you to understand the operating principles and isolate the source of a problem (troubleshooting).

CHAPTER 4   DISASSEMBLY/REASSEMBLY AND LUBRICATION

Details procedures for disassembling and reassembling the machine together with related notes. The disassembly order flow provided enables you to see at a glance the quickest way to get to component(s) involved.

At the start of a disassembly job, you check a disassembly order flow that guides you through a shortcut to the object components.

This chapter also covers screw tightening torques and lubrication points to which the specified lubricants should be applied during reassembly jobs.

CHAPTER 5   ADJUSTMENTS AND UPDATING OF SETTINGS REQUIRED AFTER PARTS REPLACEMENT

Details adjustments and updating of settings, which are required if the print head unit, carriage, PCBs and some other parts have been replaced. Settings are stored in the EEPROM on the driver PCB.

CHAPTER 6   CLEANING

Provides cleaning procedures not covered by the User's Manual. Before starting any repair work, clean the machine as it may solve the problem concerned.

CHAPTER 7   MAINTENANCE MODE

Describes the maintenance mode which is exclusively designed for the purpose of checks, settings and adjustments using the keys on the control panel.

In the maintenance mode, you can update memory (EEPROM: electrically erasable programmable read-only memory) contents for optimizing the drive conditions of the print head unit, paper feed roller or paper ejection roller (if they have been replaced) or for setting the CIS scanner area, for example. You can also customize the EEPROM according to the shipment destination of the machine concerned. In addition, you can perform operational checks of the LCD, control panel PCB or sensors, perform a print test, display the log information or error codes, and modify firmware switches (WSW).

CHAPTER 8   ERROR INDICATION AND TROUBLESHOOTING

Details error messages and codes that the incorporated self-diagnostic functions display if any error or malfunction occurs. If any error message appears, refer to this chapter to find which components should be checked or replaced.

The latter half of this chapter provides sample problems that could occur in the main sections of the machine and related troubleshooting procedures. This will help service personnel pinpoint and repair defective components.

Appendix 1   Serial Numbering System

Shows the location of serial number labels put on some parts and lists the coding information pertaining to the serial numbers.

Appendix 2   Firmware Installation

Provides instructions on how to update firmware stored in the flash ROM on the main PCB of the facsimile machine from the host PC. No hardware replacement is required for updating.

Control programs of the facsimile machine are stored in the flash ROM on the main PCB. The updating procedure is required also if the main PCB has been replaced since a new PCB supplied has no firmware installed.

Appendix 3   Customizing Codes According to Shipping Destination

Lists the customizing codes for the various preferences exclusively designed for each destination (e.g. language). Those codes are stored in the memory (EEPROM) mounted on the driver PCB. If the driver PCB is replaced with a new one, therefore, you will need to set the proper customizing codes with the machine in the maintenance mode.

Appendix 4   Firmware Switches (WSW)

Describes the functions of the firmware switches, which may be divided into two groups: one is for customizing preferences designed for the shipping destination (as described in Appendix 3) and the other is for modifying preferences that match the machine to the environmental conditions. Use the latter group if the machine malfunctions due to mismatching.

Appendix 5   Wiring Diagrams

Provides the wiring diagrams that help you understand the connections between PCBs.

Appendix 6   Circuit Diagrams

Provides the circuit diagrams of the MJ PCB (MFC3320CN), NCU PCB (MFC3220C/ FAX1920CN/FAX1820C/FAX1815C) and power supply PCB.
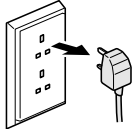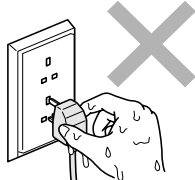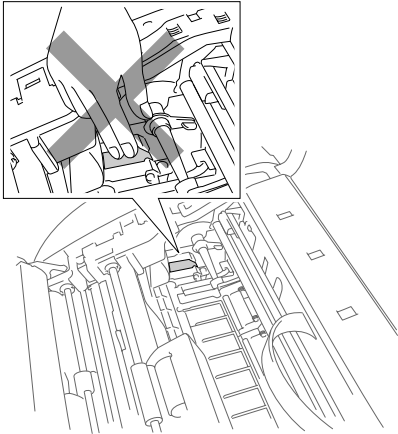
This manual describes the models and their versions destined for major countries. The specifications and functions are subject to change depending upon each destination.

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SAFETY PRECAUTIONS

To Use the Machine Safely

Please refer to these instructions for later reference and before attempting any maintenance.

⚠ WARNING

⚡	There are high voltage electrodes inside the machine. Before you clean the machine or clear a paper jam, make sure you have unplugged the power cord from the AC power outlet.	⚡	Do not handle the plug with wet hands. Doing this might cause an electrical shock.
🚫	After you use the MFC, the area shown in the illustrations is extremely HOT! To prevent injuries, be careful not to put your fingers.		

- Use caution when installing or modifying telephone lines. Never touch telephone wires or terminals that are not insulated unless the telephone line has been disconnected at the wall jack. Never install telephone wiring during a lightning storm. Never install a telephone wall jack in a wet location.

- This product must be installed near an AC power outlet that is easily accessible. In case of emergencies, you must disconnect the power cord from the AC power outlet in order to shut off power completely.

- To reduce the risk of shock or fire, use only a No. 26 AWG or larger telecommunication line cord.

⚠ Caution

■ Lightning and power surges can damage this product! We recommend that you use a quality surge protection device on the AC power line and on the telephone line, or unplug the lines during a lightning storm

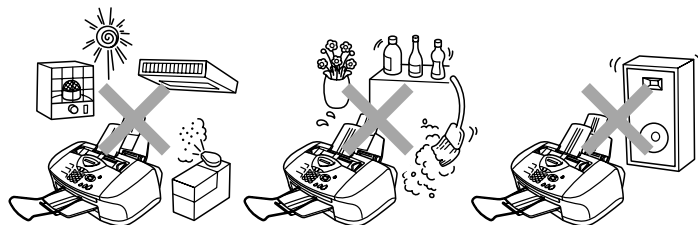|	**IMPORTANT SAFETY INSTRUCTIONS**
🚫	When using your telephone equipment, basic safety precautions should always be followed to reduce the risk of fire, electric shock and injury to persons, including the following:
	1. Do not use this product near water, for example, near a bathtub, wash bowl, kitchen sink or laundry tub, in a wet basement or near a swimming pool.
	2. Avoid using a telephone (other than a cordless type) during an electrical storm. There may be a remote risk of electric shock from lightning.
	3. Do not use the telephone to report a gas leak in the vicinity of the leak.
	SAVE THESE INSTRUCTIONS

Choosing a Location

Place your machine on a flat, stable surface that is free of vibration and shocks, such as a desk. Put the machine near a telephone wall jack and a standard, grounded AC power outlet. Choose a location where the temperature remains between 50ºF and 95ºF (10ºC and 35ºC).

⚠ Caution

■ Avoid placing your machine in a high-traffic area.

■ Do not place near heaters, air conditioners, water, chemicals, or refrigerators.

■ Do not expose the machine to direct sunlight, excessive heat, moisture, or dust.

■ Do not connect your machine to electrical outlets controlled by wall switches or automatic timers.

■ Disruption of power can wipe out information in the machine's memory.

■ Do not connect your machine to electrical outlets on the same circuit as large appliances or other equipment that might disrupt the power supply.

■ Avoid interference sources, such as speakers or the base units of cordless phones.

CHAPTER 1

PARTS NAMES & FUNCTIONS
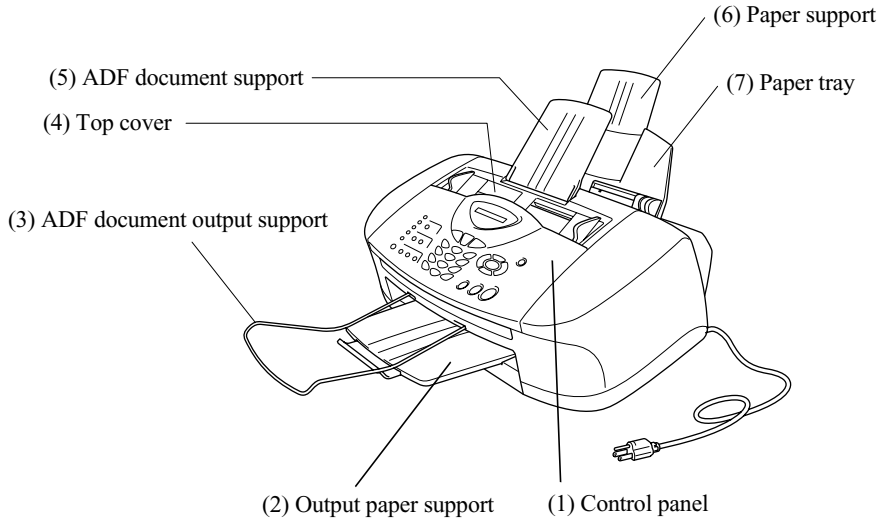
CHAPTER 1 PARTS NAMES & FUNCTIONS

This chapter contains external views and names of components and describes their functions. Information about the keys on the control panel is included to help you check operation or make adjustments.
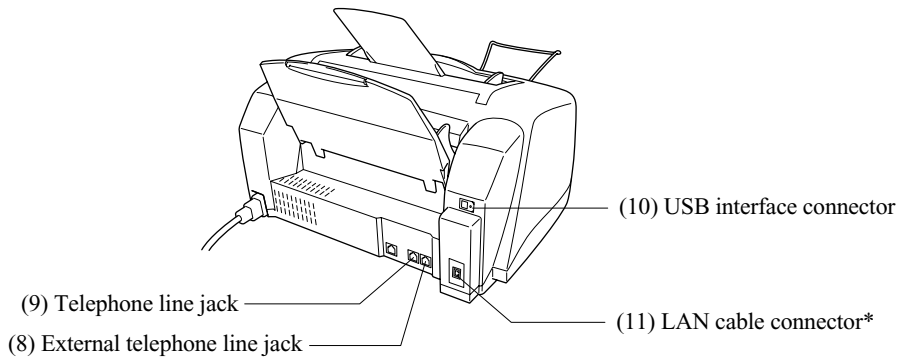
CONTENTS

1.1 EQUIPMENT OUTLINE

Front view

(6) Paper support

(5) ADF document support

(7) Paper tray

(4) Top cover

(3) ADF document output support

(2) Output paper support

(1) Control panel

Rear view

(10) USB interface connector

(9) Telephone line jack

(11) LAN cable connector*

(8) External telephone line jack
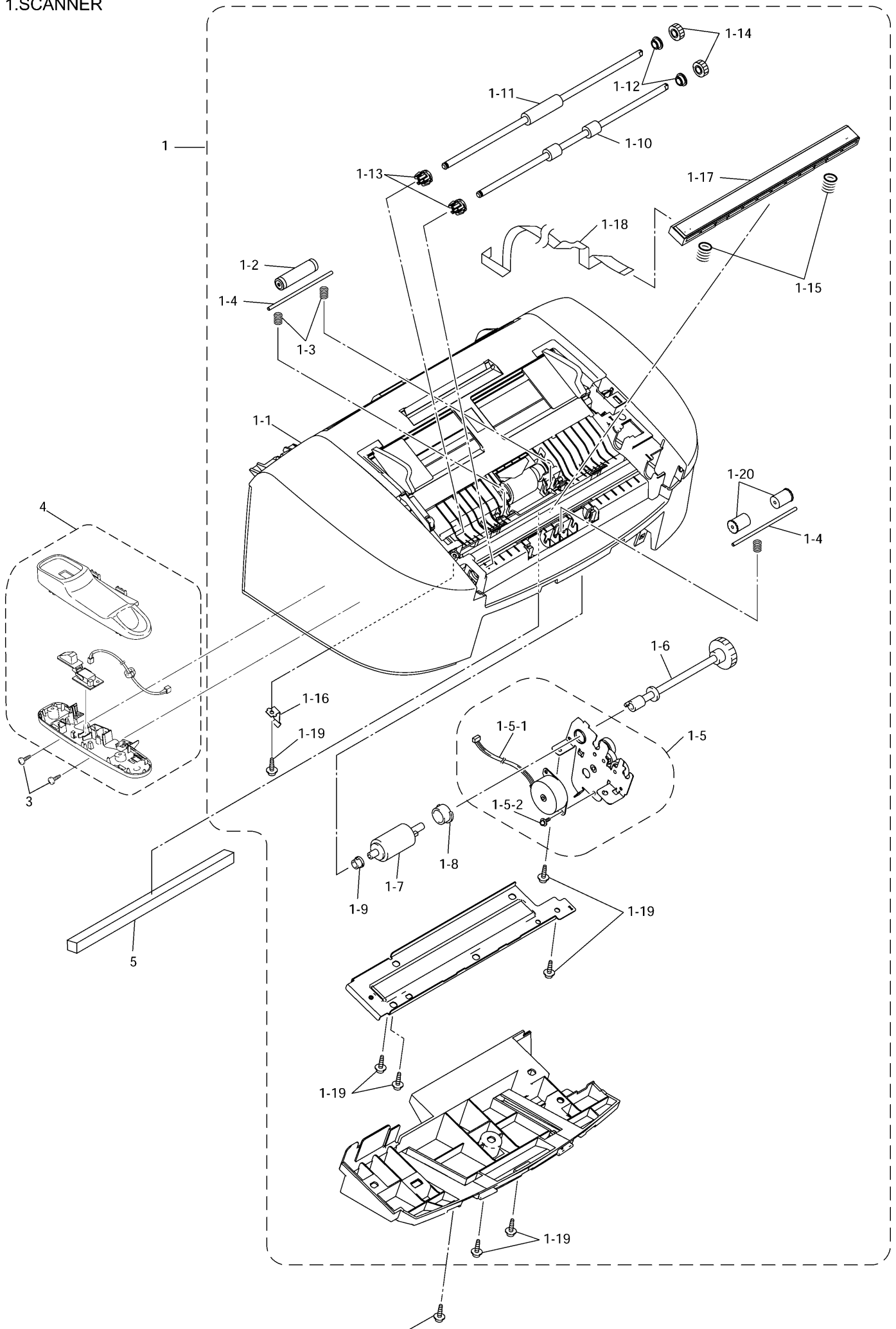
*MFC3320CN/FAX1920CN only

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PARTS REFERENCE LIST

MODEL: FAX1815C / FAX1820C
MFC3220C / MFC3320CN

(For Germany / United Kingdom / France /
Belgium / Netherlands / Switzerland /
Ireland / Denmark / Austria / Spain / Italy /
Portugal / Hong Kong / Singapore /
Gulf / Euro Generic / Australia /
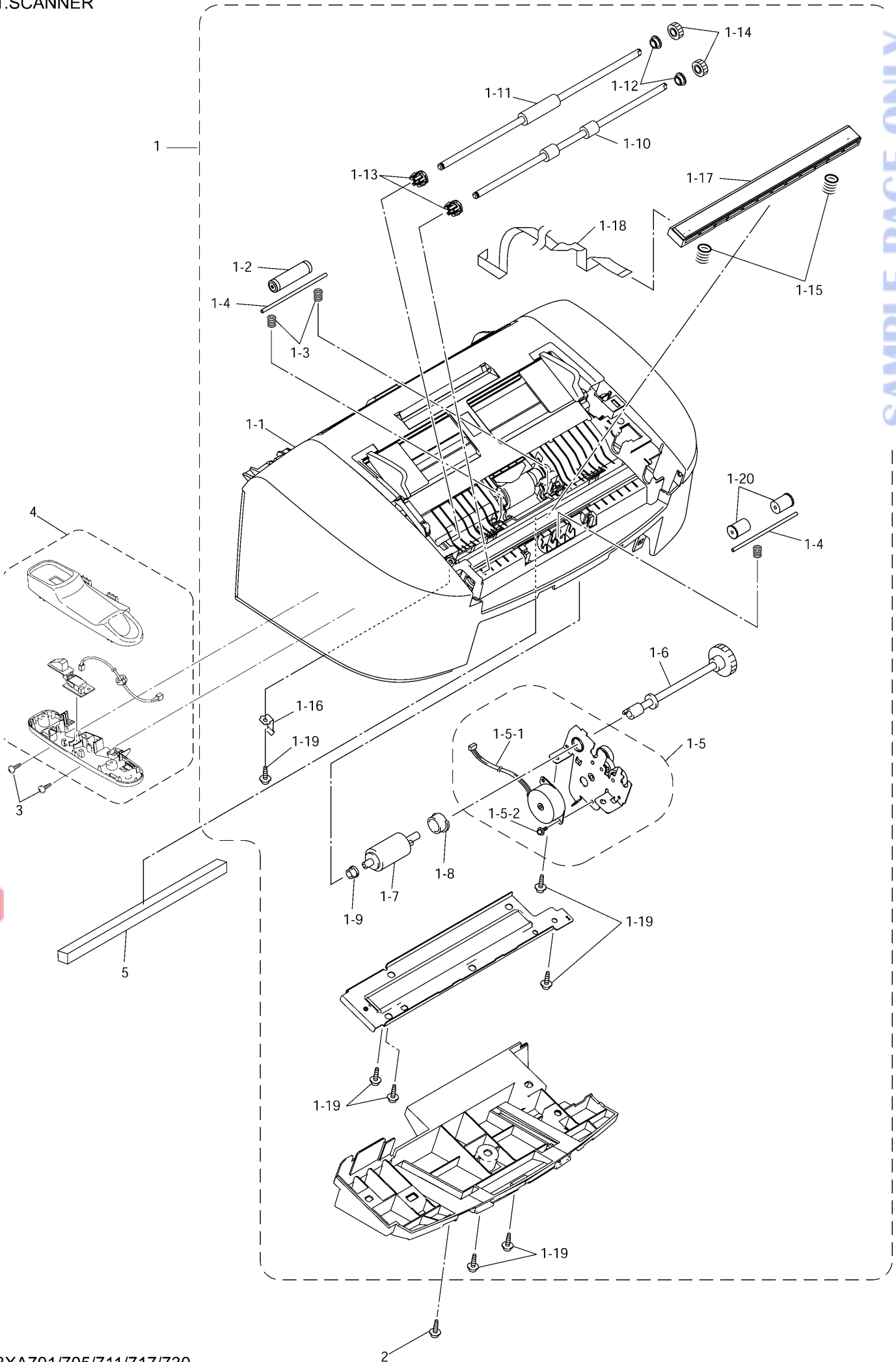New Zealand / Finland / Norway / Sweden)

1.SCANNER

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PARTS REFERENCE LIST

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FAX1820C / 1920CN

(For U.S.A / Canada /Chile / Argentina / Brazil)

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