RICOH

RICOH Pro VC80000

VC80000 Planning Guide

Original Instructions

For information not in this manual, refer to the Help System in your product.

Preface

This publication introduces and summarizes requirements for installing and operating the RICOH Pro VC80000. It is intended for all new RICOH Pro VC80000 installations.

For safe and correct use, be sure to read the Safety Information in the *Read This First* before using the machine.

Required Publications

Additional information about the RICOH Pro VC80000 is available in other publications.

RICOH Pro VC80000 publications include:

- English PDFs:
  - *RICOH Pro VC80000: Read This First*, M0EY7530, contains safety messages and describes each regulation and environmental conformance.
  - *RICOH Pro VC80000: Planning Guide*, M0EY7520, describes the requirements for installing and operating the RICOH Pro VC80000.
  - *RICOH Pro VC80000: Forms Design Guide*, M0EY7510, describes considerations for selecting and using paper on the printer. This book provides a basic overview of how the primary components of RICOH Pro VC80000 ink, the printing process, and the type of paper used can affect the quality of the printed output.
  - *RICOH Pro VC80000: User Guide*, M0EY7500, describes operator tasks such as loading paper, starting and stopping the printer, replacing supplies, maintaining the printer, and using the operator's console.
  - *RICOH Pro VC80000: Ink Estimator User Guide*, M0EY7540, describes how to configure and use the RICOH Ink Estimation Tool.
  - *RICOH Pro VC80000: SmartStart User Guide*, M0EY7550, describes how to configure settings for SmartStart processes.
- Dutch PDF:
  - *RICOH Pro VC80000: Read This First*, M0EY7536.
- French PDF:
  - *RICOH Pro VC80000: Read This First*, M0EY7532.
- German PDF:
  - *RICOH Pro VC80000: Read This First*, M0EY7534.
- Italian PDF:
  - *RICOH Pro VC80000: Read This First*, M0EY7533.
- Japanese PDF:
  - *RICOH Pro VC80000: Read This First*, M0EY7531.
- Spanish PDF:
  - *RICOH Pro VC80000: Read This First*, M0EY7535.

Related Product Information

You might need to refer to information written about related products that are used with the RICOH Pro VC80000.

RICOH InfoPrint Manager™ Publications

- *RICOH InfoPrint Manager for AIX: Planning Guide*, G550-1060
- *RICOH InfoPrint Manager for AIX: Getting Started*, G550-1061
- *RICOH InfoPrint Manager for AIX: Procedures*, G550-1066
- *RICOH InfoPrint Manager for AIX and Linux: Configuring and Tuning Guide*, S550-1062
- *RICOH InfoPrint Manager for AIX and Linux: High Availability Guidelines*, G550-20261
- *RICOH InfoPrint Manager for AIX: Release Notes*
- *RICOH InfoPrint Manager for Linux: Planning Guide*, G550-20262
- *RICOH InfoPrint Manager for Linux: Getting Started*, G550-20263
- *RICOH InfoPrint Manager for Linux: Procedures*, G550-20264
- *RICOH InfoPrint Manager for Linux: Release Notes*
- *RICOH InfoPrint Manager for Windows: Planning Guide*, G550-1071
- *RICOH InfoPrint Manager for Windows: Getting Started*, G550-1072-09
- *RICOH InfoPrint Manager for Windows: Procedures*, G550-1073-09
- *RICOH InfoPrint Manager for Windows: Release Notes*
- *RICOH InfoPrint Manager: Reference*, S550-1052
- *RICOH InfoPrint Manager: PSF, Server, and Transform Messages*, G550-1053
- *RICOH InfoPrint Manager: Dictionary of Keywords*, S550-1188
- *RICOH InfoPrint Manager Pull Print Feature: Installing and Configuring*, G550-20129
- *RICOH InfoPrint Manager: SAP R/3 Planning and Configuring Guide*, S550-1051
- *RICOH InfoPrint Manager Print-on-Demand Feature: Using Submit Express and Job Ticketer*, G550-20271
- *Page Printer Formatting Aid: User's Guide and Reference*, S550-0801
- *AFP Conversion and Indexing Facility: User's Guide*, G550-1342

RICOH ProcessDirector™ Publications

- *RICOH ProcessDirector for AIX: Planning and Installing*, G550-1045
- *RICOH ProcessDirector for Linux: Planning and Installing*, G550-1042
- *RICOH ProcessDirector for Windows Planning and Installing*, G550-1365

RICOH InfoPrint Font Collection Publication

- *RICOH InfoPrint Font Collection: Font Summary*, G550-20001

PSF for z/OS Publications

- *PSF for z/OS: Introduction*, G550-0430
- *PSF for z/OS: User's Guide*, S550-0435

RICOH Pro Scanner Option Publications

- *RICOH Pro Scanner Option: Operator Guide*, M5676610
- *RICOH Pro Scanner Option: User Guide*, M5676607

Symbols Used in the Manual

This manual uses the following symbols:

Important	This symbol indicates points that you must pay attention to when using the printer. Be sure to read these explanations.
Note	This symbol indicates supplementary explanations of the printer functions, and instructions on resolving user errors.
[Bold]	**Bold type** inside square brackets indicates the names of keys, menus, menu items, field labels, settings, and buttons.
[]	Square brackets indicate the names of keys on the operator control panel or buttons, fields, and menu items on the remote or local console.
Monospace	Monospace type indicates computer input and output and file names.

Abbreviations Used in this Manual

A

Ampere

AC

Alternating Current

ACGIH

American Conference of Governmental Industrial Hygienists

AFP

Advanced Function Presentation

AIX

Advanced Interactive EXecutive

AMPS

Amperes

ANSI

American National Standards Institution

°C

°Celsius

CD-ROM

Compact Disk - Read-Only Memory

cm

Centimeter

CMR

Color Management Resource

CPU

Central Processor Unit

D

Depth

dBA

Decibels

DOD

Drop on Demand

dpi

Dots per Inch

EDP

Electronic Data Processing

EIA

Electronic Industries Association

EMEA

Europe, Middle East, and Africa

EMI

ElectroMagnetic Interference

EN

Europäische Norm (European Standard)

°F

°Fahrenheit

FET

Field-Effect Transistor

FTP

File Transfer Protocol

g

Gram

H

Height

HVAC

Heating, Ventilation, and Air Conditioning

Hz

Hertz

IBM

International Business Machines Corporation

ICC

International Color Consortium

IEC

International Electrotechnical Commission

IEEE

Institute of Electrical and Electronics Engineers

IPDS

Intelligent Printer Data Stream

kBTU/hr

Kilo British Thermal Units/Hour

kg

Kilogram

kgf

Kilogram-Force

kVA

Kilo-Volt-Ampère

LAN

Local Area Network

lb

Pound

L

Line

LPR

Line Printer Remote

m

Meter

mg

Milligram

min

Minute

mm

Millimeter

N

Neutral

N

Newton

p

Page

PDF

Portable Document Format

PE

Protective Earth

PMPC

Printer Management PC

PPFA

Page Printer Formatting Aid

PTFE

Polytetrafluoraethylen

Rsce

Short-Circuit Ratio

SDS

Safety Data Sheet

SFTP

Secure Shell File Transfer Protocol

SMB

Server Message Block

Scc

Short-Circuit Current

UPS

Uninterruptible Power Supply

US

United States

UTP

Unshielded Twisted Pair

V

Volt

VA

Volt-Ampere

VAC

Volt Alternating Current

W

Width

XMFR

Transformer

Disclaimer

To the maximum extent permitted by applicable laws, in no event will the manufacturer be liable for any damages whatsoever arising out of failures of this machine, losses of the registered data, or the use or non-use of this product and operation manuals provided with it.

Make sure that you always copy or have backups of the data registered in this machine. Documents or data might be erased due to your operational errors or malfunctions of the machine.

In no event will the manufacturer be responsible for any documents created by you using this machine or any results from the data executed by you.

Notes

Contents of this manual are subject to change without prior notice.

The manufacturer shall not be responsible for any damage or expense that might result from the use of parts other than genuine parts from the manufacturer with your office products.

Some illustrations in this manual might be slightly different from the machine.

Contact us

If you have any comments or corrections about the information in this book, please send an e-mail to printpublication@ricoh-usa.com. Make sure your e-mail contains the following information:

- Book title
- Printer name
- Chapter or section to which you refer
- Any other information you consider relevant

Trademarks

Microsoft, Windows, Windows NT, and the Windows logo are trademarks of Microsoft Corporation in the United States, other countries, or both.

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Copyrights for Software

This section explains copyrights for software used on the machine.

Note

- We have obtained each author's permission for the use of applications including open-source software applications.

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10. Air Requirements

11. Chiller System

12. Other Facility

1. Overview

- **Introduction**
- **Configuration Details**

Introduction

The RICOH Pro VC80000 is a full process color, continuous-form, variable-data, drop-on-demand inkjet printer.

Images and text can be printed in high quality and at high speed.

Modular Design

The RICOH Pro VC80000 supports various pre- and post-processing equipment, including unwinders, rewinders, and cutters.

Each printing system can be customized for specific production needs by adding different modules.

Note

- The publications and help system include information about the printer and all the optional modules and features. If your configuration does not include some modules or features, disregard information about those items.

Fast Print Speeds

High Print Quality

Reliability

The printer uses self-diagnosing and self-correcting technology that can self-adjust if needed and can also alert the operator if further action is needed.

Ease of Use

The printer includes a powerful and easy to use digital front end called the TotalFlow Print Server. The TotalFlow Print Server can be accessed on the local console or through a remote console. You can customize this user interface to suit your needs.

Other Features

Other features of the printer include:

- AFP/IPDS, PDF Level 1.7, and PostScript Level 3 processing.
- An integrated 10/100/1000 Ethernet attachment.

Speed and Resolution

The printer supports these speed ranges:

Speed and Resolution Table

Printhead Resolutions Available	Printing Speed
1200 x 1200	93 m/min (305.11 ft/min)
1200 x 600	150 m/min (492.12 ft/min)

Software Requirements

AFP/IPDS Support

1

Advanced Function Presentation (AFP) is a set of industry-standard architectures published by the AFP Consortium (www.afpconsortium.org).

AFP lets you combine data and resource objects produced by many different applications into page-mode documents. These documents can be exchanged among operating systems and applications for viewing, archiving, or printing on page printers like the .

AFP Data Streams

A **data stream** is a continuous ordered stream of data elements and objects conforming to a given format. AFP defines these data streams:

- Mixed Object Document Content (MO:DCA) defines the data stream used by applications to describe documents and object envelopes for interchange with other applications and application services. For more information, see *Mixed Object Document Content (MO:DCA) Reference* at AFP Consortium: Publications (www.afpconsortium.org/publications.html).
- Intelligent Printer Data Stream (IPDS) defines the data stream used by print server programs and device drivers to manage all-points-addressable page printing. It also provides interfaces for document finishing operations provided by pre-processing and post-processing devices attached to IPDS printers. The MO:DCA data stream can be converted to IPDS. For more information, see *Intelligent Printer Data Stream (IPDS) Reference* at AFP Consortium: Publications (www.afpconsortium.org/publications.html).

AFP also supports line data. Line data can be converted to MO:DCA and enhanced to use AFP objects, then converted to IPDS.

Objects

Documents can be made up of different kinds of data, such as text, graphics, image, and bar code. Object content architectures describe the structure and content of each type of data format that can exist in a document or appear in a data stream. Objects can be either data objects or resource objects.

Data objects contain a single type of presentation data and all the controls required to present the data.

AFP defines these data objects:

- **Presentation text objects** are text objects that have been formatted for all-points-addressable presentations. They can refer to font objects and color management objects, and can define other visual attributes. For more information, see *Presentation Text Object Content (PTOCA) Reference* at AFP Consortium: Publications (www.afpconsortium.org/publications.html).
- **Image objects** are resolution-independent image objects captured from various sources. They can include recording formats, data compression, color, and grayscale encoding. For more information, see *Image Object Content (IOCA) Reference* at AFP Consortium: Publications (www.afpconsortium.org/publications.html).
- **Graphics objects** are vector graphics picture objects and line art drawings for various applications. They can include drawing primitives, such as lines, arcs, areas, and their visual attributes. For more information, see *Graphics Object Content Architecture for Advanced Function Presentation (AFP GOCA) Reference* at AFP Consortium: Publications (www.afpconsortium.org/publications.html).
- **Bar code objects** can be described using several different symbologies. They include the data to be encoded and the symbology attributes to be used. For more information, see *Bar Code Object Content Architecture (BCOCA) Reference* at AFP Consortium: Publications (www.afpconsortium.org/publications.html).

The MO:DCA and IPDS architectures also support data objects that are not defined by object content architectures. Examples of such objects are Tag Image File Format (TIFF), Encapsulated PostScript (EPS), and Portable Document Format (PDF). Such objects can be carried in a MO:DCA envelope called an **object container**, or they can be referenced without being enveloped in MO:DCA structures.

Resource objects are collections of presentation instructions and data. They are referenced by name in the presentation data stream. They can be stored in system libraries so that multiple applications and the print server can use them.

AFP defines these resource objects:

- **Font objects** are referenced by presentation data objects in the document. For more information, see *Font Object Content Architecture (FOCA) Reference* at AFP Consortium: Publications (www.afpconsortium.org/publications.html).
- **Color management objects** carry the color management information required to render presentation data. For more information, see *Color Management Object Content Architecture (CMOCA)* at AFP Consortium: Publications (www.afpconsortium.org/publications.html).
- **Metadata objects** carry metadata in an AFP environment. For more information, see *Metadata Object Content Architecture (MOCA) Reference* at AFP Consortium: Publications (www.afpconsortium.org/publications.html).

The MO:DCA architecture defines envelope architectures for resource objects that are not defined by object content architectures, for example:

- **Form Definition** objects manage the production of pages on the physical media.
- **Overlay objects** accommodate electronic storage of forms data.
- **Index objects** support indexing and tagging of pages in a document.

Converting Other AFP Data Streams to IPDS

To print MO:DCA or line data jobs using the printer, you need a print server to convert these data streams to IPDS.

InfoPrint print servers receive print jobs from various sources and prepare them to be sent to a printer. This preparation includes conversion from AFP or line data format to IPDS. After print jobs have been prepared, the print server interacts with the printer to make sure that all the required resources are Introduction available. Then it sends the print job data to be printed. Several different print servers are available. Although they provide much of the same function, they are appropriate for different environments.

- RICOH InfoPrint Manager is a print management solution for AIX, Linux, or Windows. It can process print jobs that contain references to color management resources. It can also search the resource libraries you create with the AFP Resource Installer to find data objects and CMRs when print jobs request them. Page Printer Formatting Aid (PPFA) is a feature of RICOH InfoPrint Manager that lets you create form definitions and page definitions for use with AFP print jobs. You can use PPFA to associate CMRs with form definitions and page definitions for your color print jobs. The form definitions and page definitions that you create using PPFA can be used in print jobs that are sent to RICOH InfoPrint Manager and RICOH ProcessDirector.
- RICOH ProcessDirector is a database-driven print workflow system that lets you manage all aspects of your printing process. The server runs on an AIX, Linux, or Windows system and is accessed using a Web browser-based interface. RICOH ProcessDirector can receive and process AFP print jobs that include AFP color management objects. RICOH ProcessDirector can also receive line data print jobs that refer to CMRs and data objects and convert them into AFP.

Managing AFP Resources

To print IPDS documents, you might also need a product that manages AFP resources.

RICOH AFP Resource Installer lets you create, install, and manage color management resources (CMRs), fonts, and data objects for use in your system. CMRs are AFP resources that provide color management

information, such as ICC profiles and halftones. An AFP system uses CMRs to process a print job and maintain consistent color from one device to another. Data objects contain a single type of data. They can be placed directly in a page or overlay or can be defined as resources and included in pages or overlays. Using a data object as a resource is more efficient when that object appears more than once in a print job. Resources are downloaded once and referenced as needed.

AFP Color Management

Ricoh provides various products that support AFP color printing on the printer.

RICOH AFP Resource Installer lets you create, install, and manage CMRs, fonts, and data objects for use in your system. CMRs are AFP resources that provide all the color management information, such as ICC profiles and halftones. AFP system requires that information to process a print job and maintain consistent color from one device to another. Data objects contain a single type of data. They can be placed directly in a page or overlay or can be defined as resources and included in pages or overlays. Using a data object as a resource is more efficient when that object appears more than once in a print job. Resources are downloaded to the printer once and referenced as required.

Print servers receive print jobs from various sources and prepare them for printing. After print jobs have been prepared, the print server interacts with the printer to make sure that all the required resources are available. It then sends the print job data to be printed. Several different print servers are available. Although they provide much of the same function, they are appropriate for different environments:

- **RICOH InfoPrint Manager** is a print management solution for AIX, Linux, or Windows. It can process print jobs that contain references to CMRs. It can also search the resource libraries you create with the AFP Resource Installer to find data objects and CMRs when print jobs request them.

  PPFA is a feature of RICOH InfoPrint Manager that lets you create form definitions and page definitions for use with your AFP print jobs. You can use PPFA to associate CMRs with form definitions and page definitions for your color print jobs. The form definitions and page definitions that you create using PPFA can be used in print jobs that are sent to RICOH InfoPrint Manager and RICOH ProcessDirector.

- **RICOH ProcessDirector** is a database-driven print workflow system that lets you manage all aspects of your printing process. The server runs on an AIX, Linux, or Windows system. It is accessed using a Web browser-based interface. RICOH ProcessDirector can receive and process AFP print jobs that include AFP color management objects. RICOH ProcessDirector can also receive line data print jobs that refer to CMRs and data objects and convert them into AFP.

PDF and PostScript Support

The printer supports PDF Level 1.7 and PostScript Level 3 print jobs.

The Control Unit supports multiple methods for submitting PDF and PostScript files for printing. These methods include:

- Microsoft Shared Directories or hot folders
- LPR
- FTP
- SFTP

You can also use RICOH InfoPrint Manager or RICOH ProcessDirector to print PDF and PostScript jobs.

Print Servers and More

Although RICOH print servers are not required to print PostScript Level 3 jobs and PDF Level 1.7 or 2.0 jobs on the printer, these jobs can be printed with RICOH InfoPrint Manager or RICOH ProcessDirector. If one of these print servers is used, the following software levels are recommended:

RICOH InfoPrint Manager for AIX or Linux

Version 4.9 or higher with the SMB protocol installed

RICOH InfoPrint Manager for Windows

Version 4.9 or higher

RICOH ProcessDirector for AIX, Linux, or Windows

Version 3.8 or higher

System Fonts Shipped with the Printer

The fonts shipped with the printer are categorized as system fonts.

For a comprehensive list of system fonts, see System Fonts, p. 65.

Configuration Details

Base Model and Full Configurations Model

No.	EDP Code	Product Name	Base Model	Full Configuration Model
1	719797	RICOH Pro VC80000 Print Unit 1	✓	✓
2	719798	RICOH Pro VC80000 Print Unit 2	✓	✓
3	719802	Ink Station Type V10	✓	✓
4	719804	Control Box for Entrance Type V10	✓	✓
5	719805	Control Box for Middle Type V10	✓	✓
6	719803	Control Box for Exit Type V10	✓	✓
7	719806	Control Box for Dryer Type V10	✓	✓
8	719808	Box for Air Booster Type V10	✓	✓
9	719809	Feed Unit for Entrance Type V10	✓	✓
10	719851	Feed Unit for Exit Type V10	✓	✓
11	719810	Turnbar I Type V10	✓	✓
12	719813	Accessory Kit Type V10	✓	✓
13	719811	Walkover Unit Type V10	✓	✓
14	719836	Control Box for RICOH Pro Scanner Option Type V10	✓	✓
15	719848	Inline Spectrophotometer for RICOH Pro Scanner Option Type V10	✓	✓
16	719829/ 719830	TotalFlow Print Server R900A (High voltage / Low voltage)	✓	✓
17	719799	Unwinder Type V10	✓	✓

No.	EDP Code	Product Name	Base Model	Full Configuration Model
18	719800	Rewinder Type V10*	✓	✓
19	719899	Rewinder Type V10*	✓	✓
20	719900	Standard Cable Kit for Rewinder Type V10*		✓
21	719901	Extended Cable Kit for Rewinder +3.5m Type V10*		✓
22	719787	RICOH Pro Heavy Paper Option Type V10		✓
23	719788	RICOH Pro Premium PQ Option Type V10		✓
24	719789	RICOH Pro Automation Suite Option Subscription Type V10		✓
25	719892	RICOH Pro Automation Suite Option Unlimited Type V10		✓
26	719786	RICOH Pro Undercoat Unit UC8800		✓
27	719801	Feed Unit for Undercoat Unit Type V10		✓
28	719847	Out Feed Option Type V10 (If 3rd Vender Post-system are used)		✓
29	719839	Air Booster Option Type V10		✓
30	719487	Production Archiving Type V8 for Scanner Option		✓
31	719489	User Oriented Graphics Type V8 for Scanner Option		✓
32	719490	Full Page Image Verification Type V8 for Scanner Option		✓
33	719492	OCR and MICR Verification Type V8 for Scanner Option		✓
34	719493	Label Verification Type V8 for Scanner Option		✓
35	719850	Optional Server Type V10		✓
36	719893	Safety Relay Option Type V10		✓

* For more information on the Rewinder and Cable Kit, see Ordering Options, p. 61.

2. Preparing for Installation

- **Pre-Installation Tasks**
- **Installation Planning Worksheet**

Pre-Installation Tasks

- Verify that the environmental and space requirements specified in Site Requirements, p. 21 and the electrical requirements specified in Electrical Requirements, p. 39 are met. Use the Installation Planning Worksheet, p. 19 to complete this step.
- Verify that the correct attachment cables and hardware are available.
- Verify that the pre- and post-processor equipment is available when you install the printer. To make sure that the equipment supports the printer and its correct paper web, work with your pre- and post-processor vendor or Ricoh.

Note

- It is recommended that you obtain service contracts and support for the pre- and post-processor equipment from their vendors or Ricoh.

- To prevent the unwinder from moving during roll changes, bolt the unwinder to the floor when possible. To perform this operation, contact your pre- and post-processor vendor or Ricoh.

Installation Planning Worksheet

Before the printer is delivered, prepare a site installation plan. To make sure that all the pre-installation requirements are met, use this worksheet and the information in Delivery Requirements, p. 53.

Installation Planning Worksheet

Item	Task	Links	Customer Notes
Delivery			
Floor conditions	Make sure that the floor is hard and level.	Floor, p. 21	
Forklift capacity	Determine the forklift or hoist type required to move the crated and uncrated units.	Forklift Specifications, p. 56	
Unloading (crate size)	Plan how to unload the crates from the delivery truck.	Weight and Dimensions, p. 29	
Delivery path	Verify that the equipment can fit through hallways and turn corners.	Delivery Path, p. 53	
Headroom	Verify that there is sufficient overhead clearance while moving the units and in their final location.	Clearance Requirements, p. 29	
Electrical			
Voltage limits	Determine if the voltage at your location meets the requirements of the printer.	Allowable Voltage Ranges, p. 39	

Item	Task	Links	Customer Notes
Amperage	Determine that sufficient current is available to power the printer and accessories.		
Circuit protection	Plan the breakers or fuses that are required to handle the peak inrush current.		
Termination	Plan which power cables an electrician must connect and which ring terminals or connectors must be purchased.		
Power cord locations	Plan where to drop the power cables from above the printer.	Electrical Power-Drop Diagrams, p. 50	
Grounding	Ensure the appropriate grounding for the print system.	Wiring Requirements, p. 39	
Ventilation			
Humidity	Determine if the facility can maintain the recommended humidity.	Temperature and Relative Humidity, p. 21	
Temperature	Determine if the facility can maintain the recommended temperature.	Temperature and Relative Humidity, p. 21, and Heat Dissipation, p. 23	
Other			
Pre-and Post-Processing equipment	Consult with your pre-and post-processing supplier for the equipment requirements.	—	
Network Cables	Order the correct network cables.	Network Cabling Requirements, p. 51	
Ordering Supplies	Order all the supplies.	Ordering Supplies, p. 59	
Plan for Supplies Storage	To store the supplies, prepare the space and environmental controls.	Storing and Transporting Ink, p. 60	
Plan for Supplies Disposal	Plan for the proper equipment and methods to handle and dispose of supplies.	Disposing of Supplies, p. 60	
Unpack the shipping crates	Removed the protective packaging.	Unpacking Sequence for Crated Units, p. 53	

3. Site Requirements

- **Environmental Requirements**
- **Environmental Impact**
- **Ventilation**

Environmental Requirements

Floor

Install on a horizontal and non-slanted floor (within ±10mm/10m horizontality).

Temperature and Relative Humidity

Print quality depends on temperature and relative humidity. For the best print quality, operate the printer within the “Recommended” range for both temperature and relative humidity. If you cannot maintain the print room within the “Recommended” range, the RICOH Pro VC80000 might not be able to produce documents with the desired print quality.

Temperature and Relative Humidity Ranges

	Recommended	Operating	
Temperature	18–24°C (64.4–75.2°F)	10–28°C (50–82.4°F)	28–32°C (82.4–89.6°F)
Relative Humidity	40–60%	20–80%	20–57%

Important

- Do not block the flow of air through or around the printer or pre- and post-processing devices.
- Ricoh recommends that a consistent room environment is always maintained.
  The room environment might be inconsistent if:
  - The humidity from the room generates condensation. No condensation is allowed in the room environment.
  - The external doors of the room are frequently used. It is recommended that the printer should not be located near frequently used external doors. Temperature and humidity from the outside might cause undesirable condensation and static.
  - The air conditioning does not operate during the night in hot seasons.
  - The heating facilities do not operate during the night in cold seasons.
  - The printer is shut down for extended periods of time.

  To provide sufficient air circulation in the room and inside the printer and the pre- and post-processing devices:
  - Power on the printer and pre- and post-processing devices one or two hours before starting to print.
  - During cold seasons, turn on the heating facilities one or two hours before starting to print.
  - During hot seasons, turn on the air conditioning one or two hours before starting to print.

The printer generates heat. See Ventilation, p. 23 for more information.

Altitude

2000 meters(6561.7 feet) or less

Consult with your service representative for installations 1000 meters (3280.3 feet) or more above sea level.

Improper Installation Sites

Installing the printer in an improper installation area might damage the printer and reduce the print quality.

Do not install the printer in the following areas:

- Outdoor locations.
- Locations exposed to direct sunlight or strong light.
- Locations with a high level of dust in the air.
- Locations with corrosive gas.
- Locations with substantial temperature changes.
- Locations exposed to organic solvents.
- Locations where the unit is subjected to vibration or impact.
- Locations exposed to water, oil, and chemicals.
- Locations with unstable or uneven floors that cannot withstand the weight of the unit.
- Locations close to machines that generate strong high frequency noise.
- Locations where there is metal debris.
- Locations with high humidity.
- Locations where there is a risk of condensation.

Environmental Impact

Building Load

Verify that the load tolerance of the building can handle the weight of the printer.

The printer places a load of more than 5283.8 N/m² (641.2 kgf/m²) on the installation location. RICOH highly recommends printer installation on a concrete slab on the ground floor.

To avoid cracking the floor, use the leveling plates supplied with the printer.

The floor load differs depending on the relationship of the floor strength and the printer layout combined with other heavy objects placed around it. Consult the architectural specialist for your building to make sure that the floor load tolerance is not jeopardized.

Acoustics

Sound pressure level 85 or less 85 dB measured according to ISO 11204.

[Condition]

Do not include Pre-/Post-

Others is compliant with;

- Sound power level: ISO3744

- Radiated sound pressure: ISO11204
- Printing condition at noise measurement :ISO11204

Preventive of the flooded

Do not install it in areas that handle a lot of water, such as cleaning equipment or sprinklers.

If the device becomes submerged in water for any reason, it may become unusable.

Also, It may also lead to major accidents such as electrical leakage.

Heat Dissipation

Because the RICOH Pro VC80000 generates heat, adjust the ventilation based on the Heat Dissipation tables. For more information about ventilation, see Ventilation Specification, p. 24.

Unit	kWh	kBTU/hr
Printer Electronics*1	40	136
Dryer Unit (Base Model)	62	211
Dryer Unit (Base Model + Heavy Paper Option)	95	324

Other Units

Unit	kWh	kBTU/hr
Control Unit	5.4	18.4

Ventilation

All models of the RICOH Pro VC80000 require venting to the outside of the building. The exhaust duct must be connected to the exhaust system.

Customers prepare the ducts.

The RICOH Pro VC80000 produces heat and water vapor during printing. The amount of heat and humidity produced varies based on the dryer temperature and the ink coverage. Ventilating the system outside the building reduces the load on your HVAC system. This configuration also reduces odors produced by printing. Alternately, the system may be ventilated into the print room. If the system is not vented externally, the heat and water vapor is vented directly into the room.

Internal Ventilation

For full color pigment printers:

- Ensure that there is an airflow rate of at least twice the exhaust flow of the printer, equivalent to 112m^3/min, circulating across and around the printer space. It is essential that you ensure that your HVAC system is capable of maintaining this airflow rate for the printing room. If the HVAC system cannot maintain this environment, operators might be exposed to potentially hazardous gases above the limits set by occupational exposure guidelines. Also, the recommended heat and humidity levels could also be exceeded and negatively impact print quality as well as the comfort of the user.

Ventilation Specification

	W, W/O Air Booster Option	Connection status with the machine	Exhaust Flow	Duct Diameter		Vent Temp
				Connection Diameter of the Box for Air Booster	Facility duct	
Box for Air Booster for Print Unit 1	With Air Booster Option	Duct not connected (no load)*5	75-85 m^3/min*2 (2648.6-3001.7ft^3)/ min	325 mm (12.8inches)	250-325mm*1 (9.8-12.8inches)	55°C (131°F)
		Duct connection status*6	-0.19 to -0.31 kPa for Φ325 duct*3 *4	325 mm (12.8inches)	250-325mm*1 (9.8-12.8inches)	55°C (131°F)
	Without Air Booster Option	Duct not connected (no load)*5	120-130 m^3/min*2 (4237.8-4590.9ft^3)/ min	325 mm (12.8inches)	250-325mm*1 (9.8-12.8inches)	55°C (131°F)
		Duct connection status*6	-1.40 to -2.00 kPa for Φ325 duct*3 *4	325 mm (12.8inches)	250-325mm*1 (9.8-12.8inches)	55°C (131°F)
Box for Air Booster for Print Unit 2	With Air Booster Option	Duct not connected (no load)*5	75-85 m^3/min*2 (2648.6-3001.7ft^3)/ min	325 mm (12.8inches)	250-325mm*1 (9.8-12.8inches)	55°C (131°F)
		Duct connection status*6	-0.19 to -0.31 kPa for Φ325 duct*3 *4	325 mm (12.8inches)	250-325mm*1 (9.8-12.8inches)	55°C (131°F)
	Without Air Booster Option	Duct not connected (no load)*5	120-130 m^3/min*2 (4237.8-4590.9ft^3)/ min	325 mm (12.8inches)	250-325mm*1 (9.8-12.8inches)	55°C (131°F)
		Duct connection status*6	-1.40 to -2.00 kPa for Φ325 duct*3 *4	325 mm (12.8inches)	250-325mm*1 (9.8-12.8inches)	55°C (131°F)
Total	With Air Booster Option	Duct not connected (no load)	150-170 m^3/min (5297.2-6003.5ft^3)/ min	—	—	—
	Without Air Booster Option	Duct not connected (no load)	240-260 m^3/min (5297.2-6003.5ft^3)/ min	—	—	—

*1 If there is an existing duct, please prepare a joint etc. so that it can be connected to the duct inlet of the Box for Air Booster (325mm).

*2 Please prepare means to adjust the airflow volume in the required range such as control valves.

*3 If it is out of the specified range, adjust the airflow volume of the equipment.

*4 If you are using ducts other than Φ 325, refer to the attached table for static pressure targets.

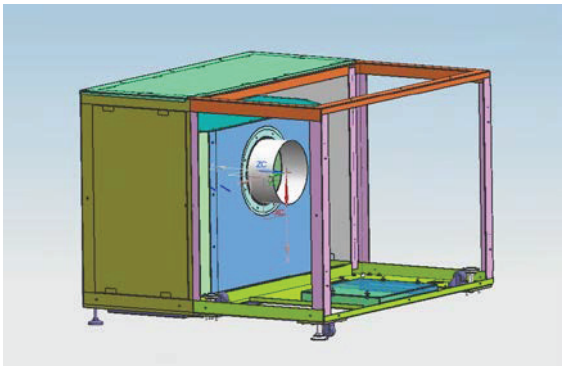
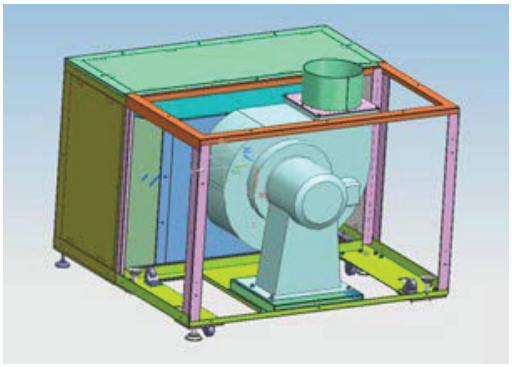
*5 This measurement and adjustment is done by the contractor.

*6 This measurement and adjustment is done by Ricoh Service.

Air Booster Option

The Box for Air Booster is a unit that collects steam containing high-temperature, high-humidity ink mist generated in the Printer during printing and exhausts it via the Ventilation Duct.

There are two types of Box for Air Boosters, and Air Booster Option can be installed as an option.

Without Air Booster Option	With Air Booster Option
	

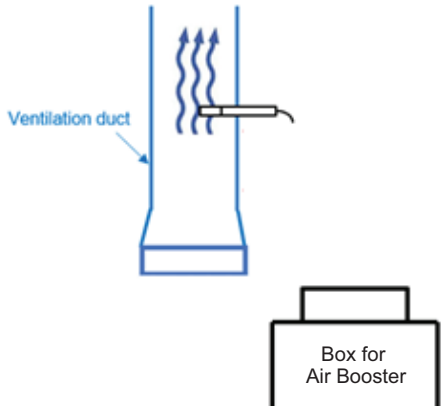
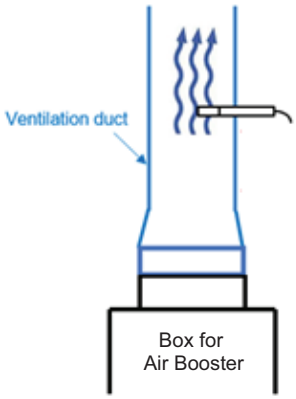
As stated in the Ventilation Specification list above, if an Air Booster Option is not installed, high exhaust equipment with a rate of 120-130 m^3/min is required.

By installing the Air Booster Option, you can reduce your exhaust equipment to 75-85 m^3/min.

Duct not connected / Duct connected

The meaning of Duct not connected (no load) and Duct connection status is as follows.

Under these two measurement conditions each Box for Air Booster must meet the ventilation specifications listed on Page 24.

Duct not connected (no load)	Duct connection status
	
Run the customer's ventilation system without connection to the Box for Air Booster (no load) and measure the air flow at the duct entrance (where it connects to the Box for Air Booster). Measurement is performed by creating a measurement hole in the middle of the duct and inserting the air volume measurement probe. See Page 26 for details. Measurements are taken by the contractor.	After connecting the ventilation duct to the Box for Air Booster the by the construction contractor, measure the air pressure while the printer operating situation. At that time, fine-tune the valve as necessary to keep the pressure within the specified range. Measurement and adjustment will be performed by Ricoh Service.

Requirements of ventilation duct

First, check your configuration: with Air Booster Option or without Air Booster Option.

For each case, please construct the equipment so that the air volume falls within the following range.

Also, install a means (adjusting valve, etc.) that allows the air volume to be adjusted within the required range.

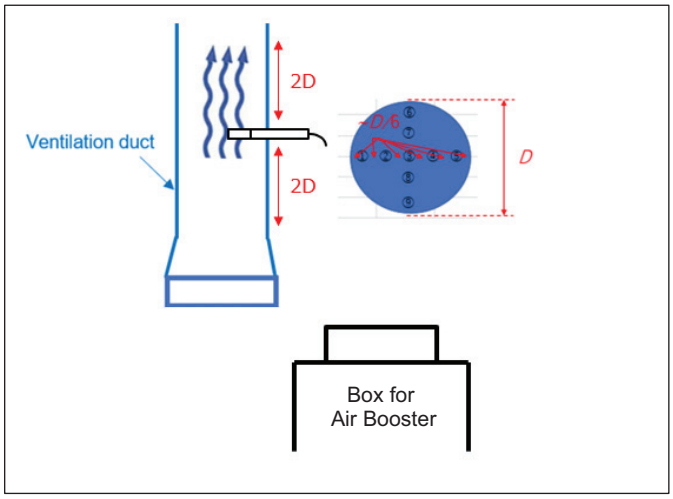
- with Air Booster Option:75-85 m^3/min
- without Air Booster Option:120-130 m^3/min

If the diameter of the duct is D, construct the duct so that the length of 4D is constant and straight as shown in the picture below.

Then, prepare a measurement hole (duct eye, etc.) at a location 2D away from the tip.

After that, without connecting the duct to the Box for Air Booster, measure the air volume using the measurement hole (duct eye, etc.) and install it so that it fits within the range.

In addition, the air volume should be calculated as the average wind speed at 9 points in the duct x cross-sectional area.



After that, without connecting the duct to the Box for Air Booster, measure the air volume using the measurement hole (duct eye, etc.) and install it so that it fits within the range.

Once the air volume is set within the specified range, connect the Ventilation Duct to the Box for Air Booster.

After that, the Printer measures the air pressure inside the Duct while it is in operation. The measurement is done by Ricoh Service.

Important

Regarding duct construction, as mentioned above, there are equipment requirements regarding the shape.

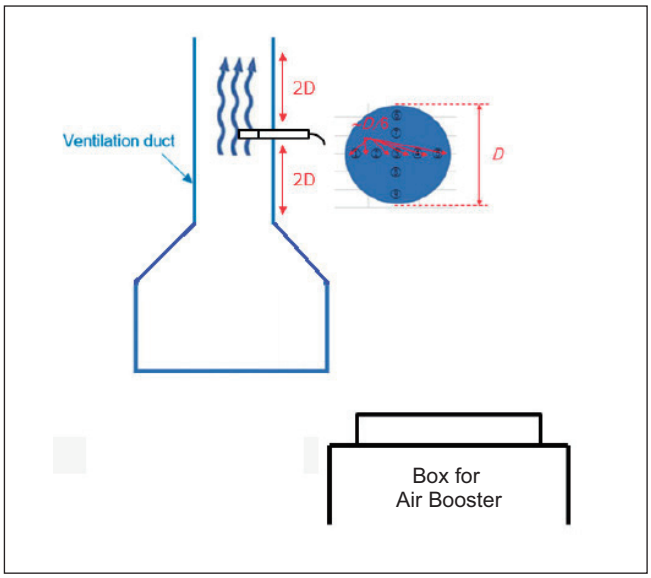
This is to measure airflow more accurately. Air Flow is prone to errors depending on the shape of the duct and the measurement location.

Therefore, by creating a situation where the duct diameter is constant and the wind flows in a straight line, it is possible to adjust the air volume to an appropriate level.

If the diameter of the duct changes as shown below, please measure the air volume of the entire duct including the different diameter duct.

The air volume is measured by operating the customer's ventilation without connecting it to the Box for Air Booster, including the different diameter duct.

Even if ducts with different diameters are included, the ducts at a distance of 2D from the measurement point must be straight and have a constant diameter as shown below.



For the Ventilation Duct, select a material that can withstand the following negative pressures.

With Air Booster Option : -0.31 kPa

Without Air Booster Option : -2.00 kPa

For example, the wire aluminum duct shown below cannot withstand negative pressure and collapses.

Negative pressure resistant steel ducts, such as zinc or stainless steel, are recommended.

If the air volume is not appropriate, there are the following concerns.

Too weak Air flow: Solvent condensation inside the dryer unit. Solvent vapor leak

Too strong Air flow: Deterioration of drying performance

4. Space Requirements

- **Clearance Requirements**
- **Physical Specifications**

Clearance Requirements

As you plan your physical layout, be sure to:

- Install the printer away from the main traffic pattern. Make sure there is ample work space around the printer for printer operation, inspection and maintenance. Do not use this space as a walkway.
- Install the printer in a location that the operator can conveniently work in. For example, consider whether the planned location is close to printer supply storage areas and to output distribution areas.
- Allow 45.72 cm (18 inches) between the top part of the printer and the lowest permanently attached object above the printer, such as a light or a cable rail. This layout gives printer operators and service representatives space to work in.
- To prevent overheating, allow 82.5 cm (32.4 inches) between the front door side of the printer and an adjacent surface. At the same time, allow 90 cm (35.4 inches) between the rear door side of the printer and an adjacent surface.

Important

- Consider the post-processing equipment that you use in this measurement.
- The customer installs the waste heat exhaust duct. When planning the physical layout, also consider the installation and operation space necessary for the exhaust duct.

Physical Specifications

Delivery Path Dimensions

The following list contains the minimum required dimensions for the uncrated printer delivery path:

Weight and Dimensions

The table contains the uncrated dimensions and weights of the units.

Unit	Uncrated Dimensions (W x D x H)	Uncrated Weight
Print Unit 1	3100 x 2450 x 2190 mm (122.0 x 96.4 x 86.2 inches)	4850kg (10,692.4 lb)
Print Unit 2	3100 x 2450 x 2190 mm (122.0 x 96.4 x 86.2 inches)	4850kg (10,692.4 lb)
Unwinder Type V10	1300 x 1670 x 1105 mm (51.1 x 65.7 x 43.5 inches)	810kg (1,785.7 lb)
Rewinder Type V10	1300 x 1670 x 1105 mm (51.1 x 65.7 x 43.5 inches)	1030kg (2,270.7 lb)
Feed Unit for Entrance Type V10	857 x 1155 x 300 mm (33.7 x 45.5 x 11.8 inches)	190kg (418.9 lb)
Turnbar I Type V10	857 x 1155 x 300 mm (33.7 x 45.5 x 11.8 inches)	190kg (418.9 lb)
Feed Unit for Exit Type V10	857 x 1155 x 300 mm (33.7 x 45.5 x 11.8 inches)	190kg (418.9 lb)

Unit	Uncrated Dimensions (W x D x H)	Uncrated Weight
Ink Station Type V10	1850 x 860 x 1300 mm (72.8 x 33.8 x 51.2 inches)	340kg (749.6 lb)
Control Box for Entrance Type V10	792 x 937 x 2190 mm (31.1 x 36.9 x 86.2 inches)	460kg (1,104.1 lb)
Control Box for Middle Type V10	792 x 937 x 2190 mm (31.1 x 36.9 x 86.2 inches)	480kg (1,058.2 lb)
Control Box for Exit Type V10	792 x 937 x 2190 mm (31.1 x 36.9 x 86.2 inches)	470kg (1,036.2 lb)
Control Box for Dryer Type V10	1200 x 800 x 2100 mm (47.2 x 31.4 x 82.6 inches)	710kg (1,565.3 lb)
Box for Air Booster Type V10	1250 x 1150 x 950 mm (49.2 x 45.2 x 37.4 inches)	230kg (505.1 lb)
Feed Unit for Undercoat Unit Type V10 + Feed Control Box	396 x 1650 x 500 mm (15.6 x 64.9 x 19.7 inches)	230kg (505.1 lb)
Out Feed Option Type V10	396 x 1400 x 500 mm (15.6 x 55.1 x 19.7 inches)	175kg (385.8 lb)
TotalFlow Print Server R900A	609 x 1003 x 1245 mm (23.9 x 39.4 x 49.0 inches)	300kg (661.0 lb)

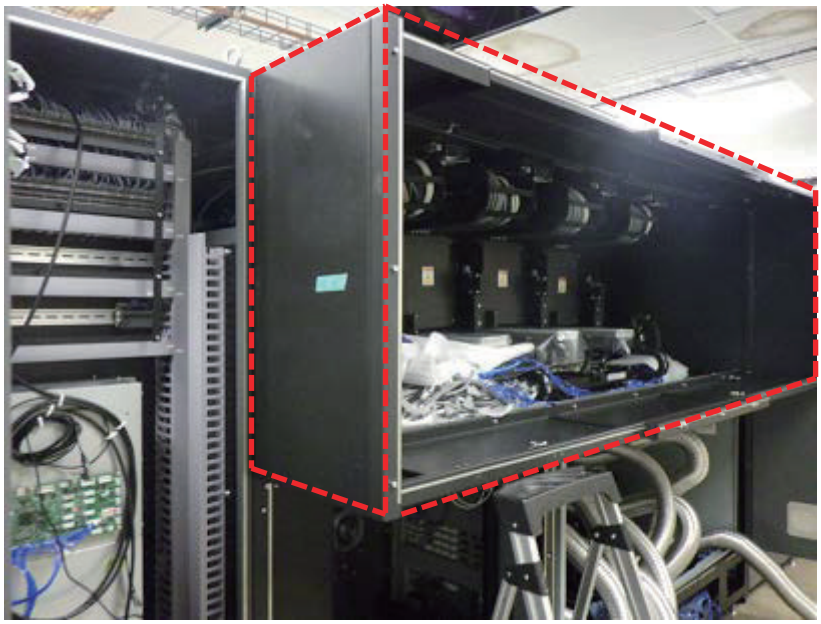
Weight and Dimensions

The table contains the crated dimensions and weights of the units.

Unit	Crated Dimensions (W x D x H)	Crated Weight
Print Unit 1 (Note)	3770 x 2290 x 2540 mm (148.4 x 90.2 x 100 inches)	5410kg (11,927.0 lb)
Print Unit 2 (Note)	3770 x 2290 x 2540 mm (148.4 x 90.2 x 100 inches)	5363kg (11,823.4 lb)
Unwinder Type V10	1630 x 1940 x 1530 mm (64.2 x 76.4 x 60.2 inches)	970kg (2,138.5 lb)
Rewinder Type V10	1630 x 1940 x 1530 mm (64.2 x 76.4 x 60.2 inches)	1183kg (2,608.1 lb)
Feed Unit for Entrance Type V10 + Feed Unit for Exit Type V10	1120 x 1420 x 940 mm (44.1 x 55.9 x 37.0 inches)	452kg (937.0 lb)
Turnbar I Type V10	1420 x 1420 x 640 mm (55.9 x 55.9 x 25.2 inches)	291kg (641.5 lb)
Ink Station Type V10	2110 x 1070 x 1720 mm (83.1 x 42.1 x 67.7 inches)	525kg (1,157.4 lb)
Control Box for Entrance Type V10	1050 x 1230 x 2540 mm (41.3 x 48.4 x 100 inches)	617kg (1,360.3 lb)
Control Box for Middle Type V10	1050 x 1230 x 2540 mm (41.3 x 48.4 x 100 inches)	606kg (1,336.0 lb)
Control Box for Exit Type V10	1050 x 1230 x 2540 mm (41.3 x 48.4 x 100 inches)	604kg (1,331.6 lb)

Unit	Crated Dimensions (W x D x H)	Crated Weight
Control Box for Dryer Type V10	1960 x 1460 x 2460 mm (77.2 x 57.5 x 96.9 inches)	926kg (2,041.5 lb)
Box for Air Booster Type V10	1490 x 1390 x 1320 mm (58.7 x 54.7 x 52.0 inches)	360kg (793.7 lb)
Feed Unit for Undercoat Unit Type V10 + Feed Control Box	660 x 2000 x 1460 mm (26.0 x 78.7 x 57.5 inches)	346kg (762.8 lb)
Out Feed Option Type V10	660 x 1660 x 820 mm (26.0 x 65.6 x 32.3 inches)	254kg (560.0 lb)
TotalFlow Print Server R900A	1320 x 830 x 1500 mm (52.0 x 32.7 x 59.1 inches)	401kg (884.0 lb)

Note;
For Print Unit 1 and Print Unit 2, the rear cover (red dotted line in the figure below) was removed before packing.
The removed cover is packed separately.

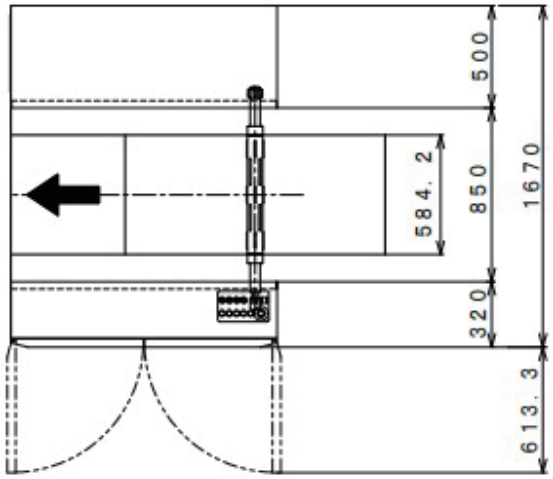


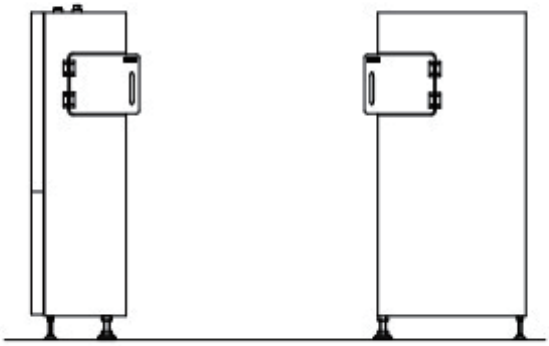
Cable and Hose Length

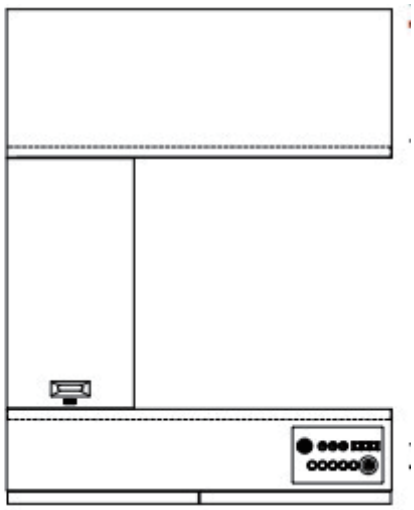
The available lengths limit where you can locate these units.

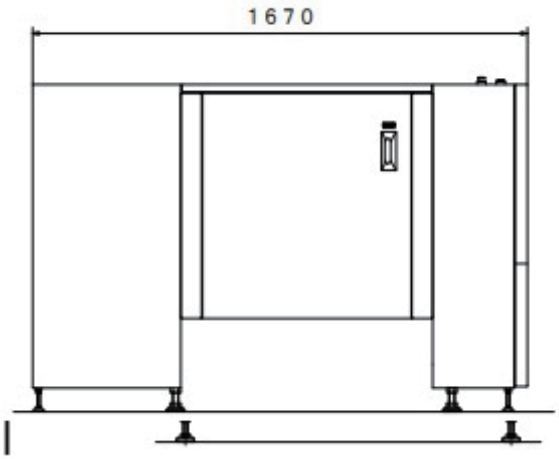
Product	Maximum distance from the printer
Hose for Chiller Unit	4.5 m (14.7 feet)

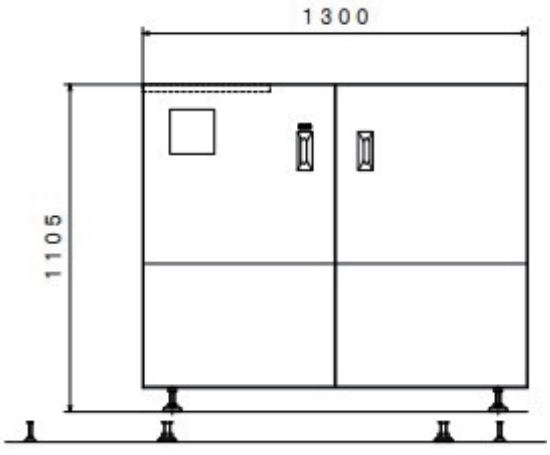
Unwinder



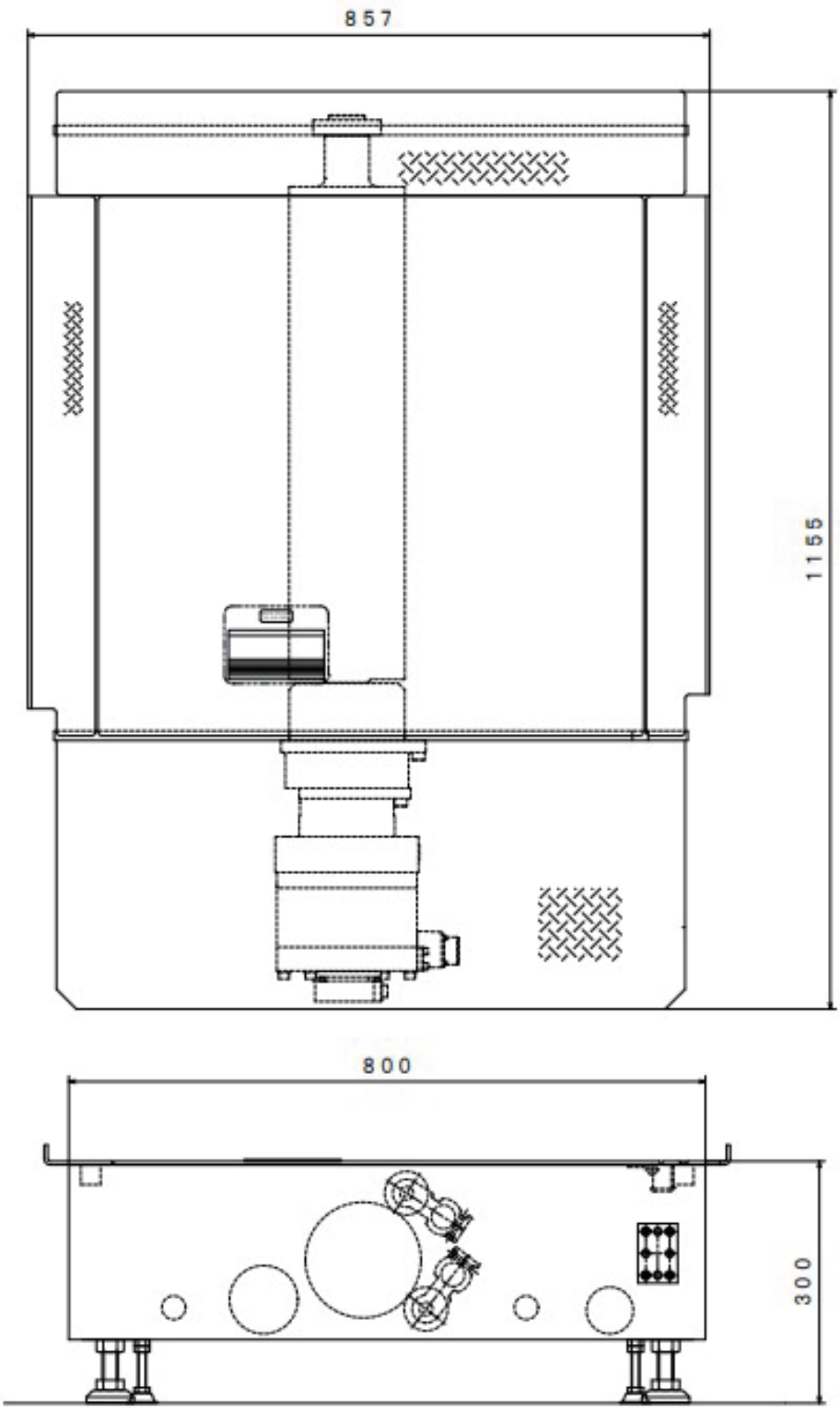




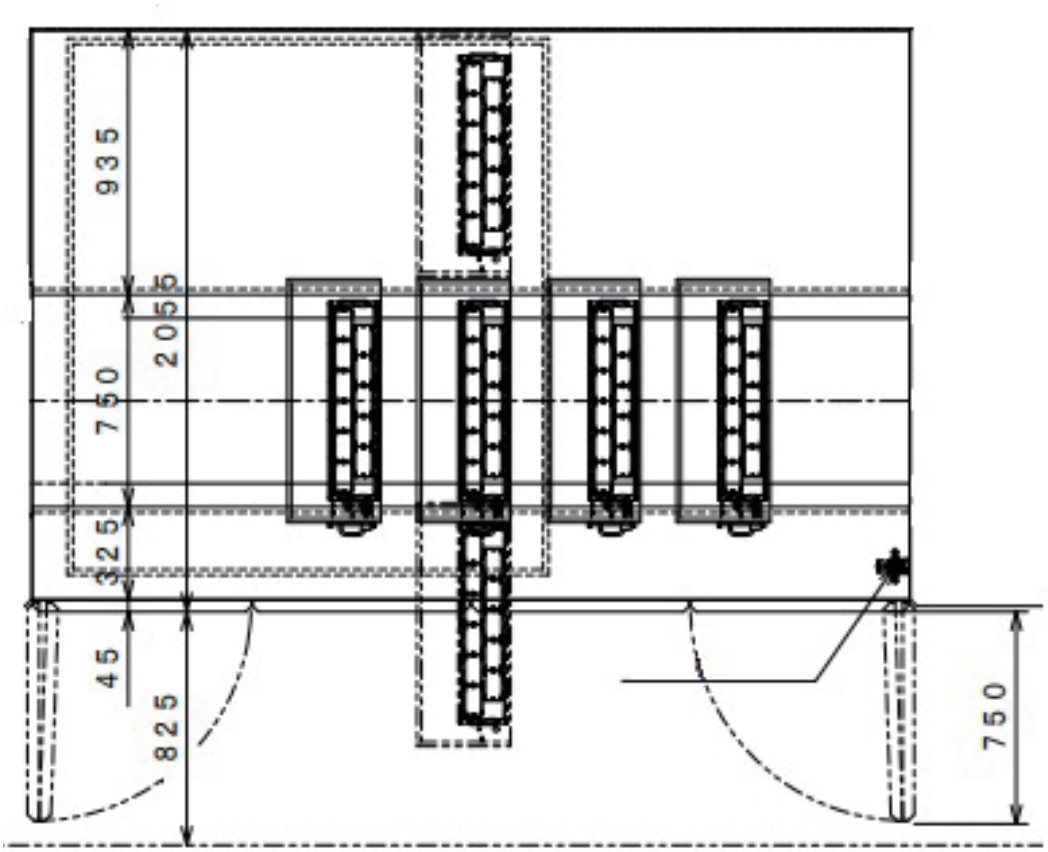


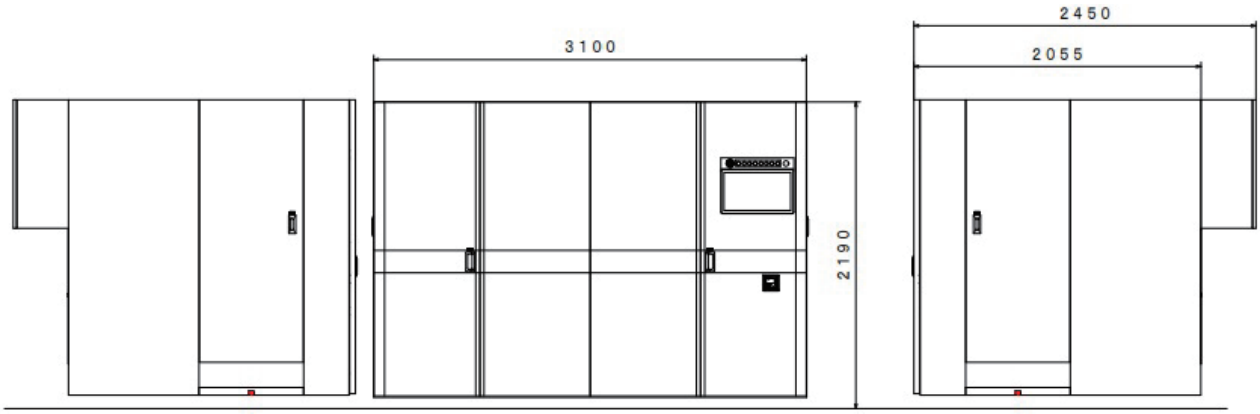


Feed Unit for Entrance / Feed Unit for Exit

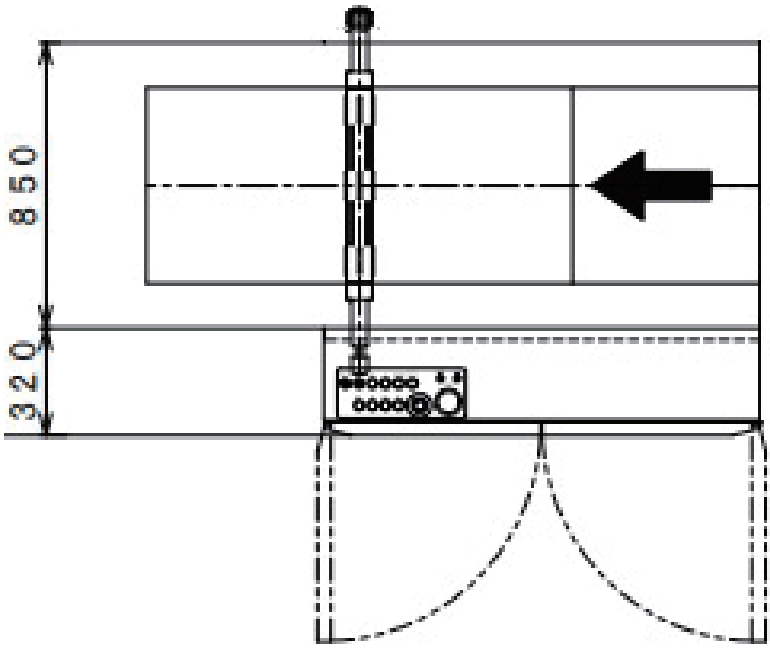


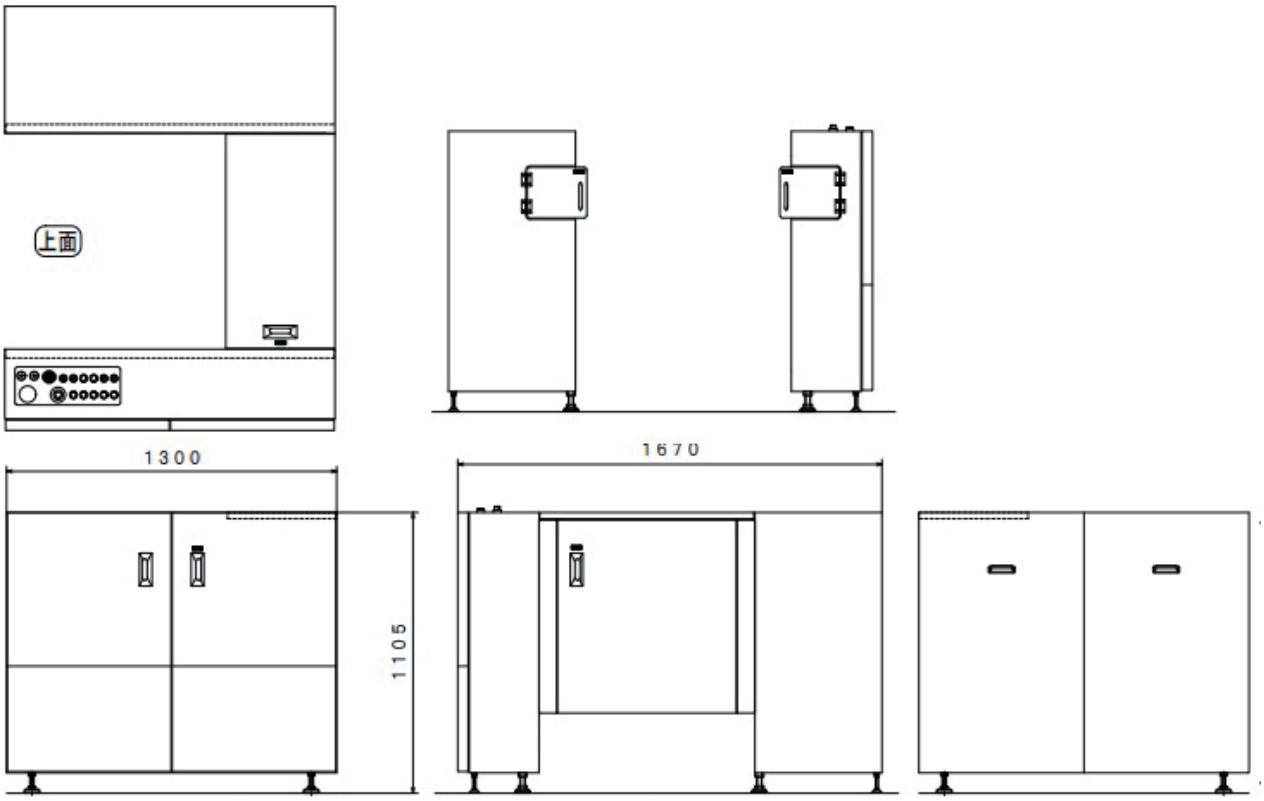
Print Unit 1 / Print Unit 2



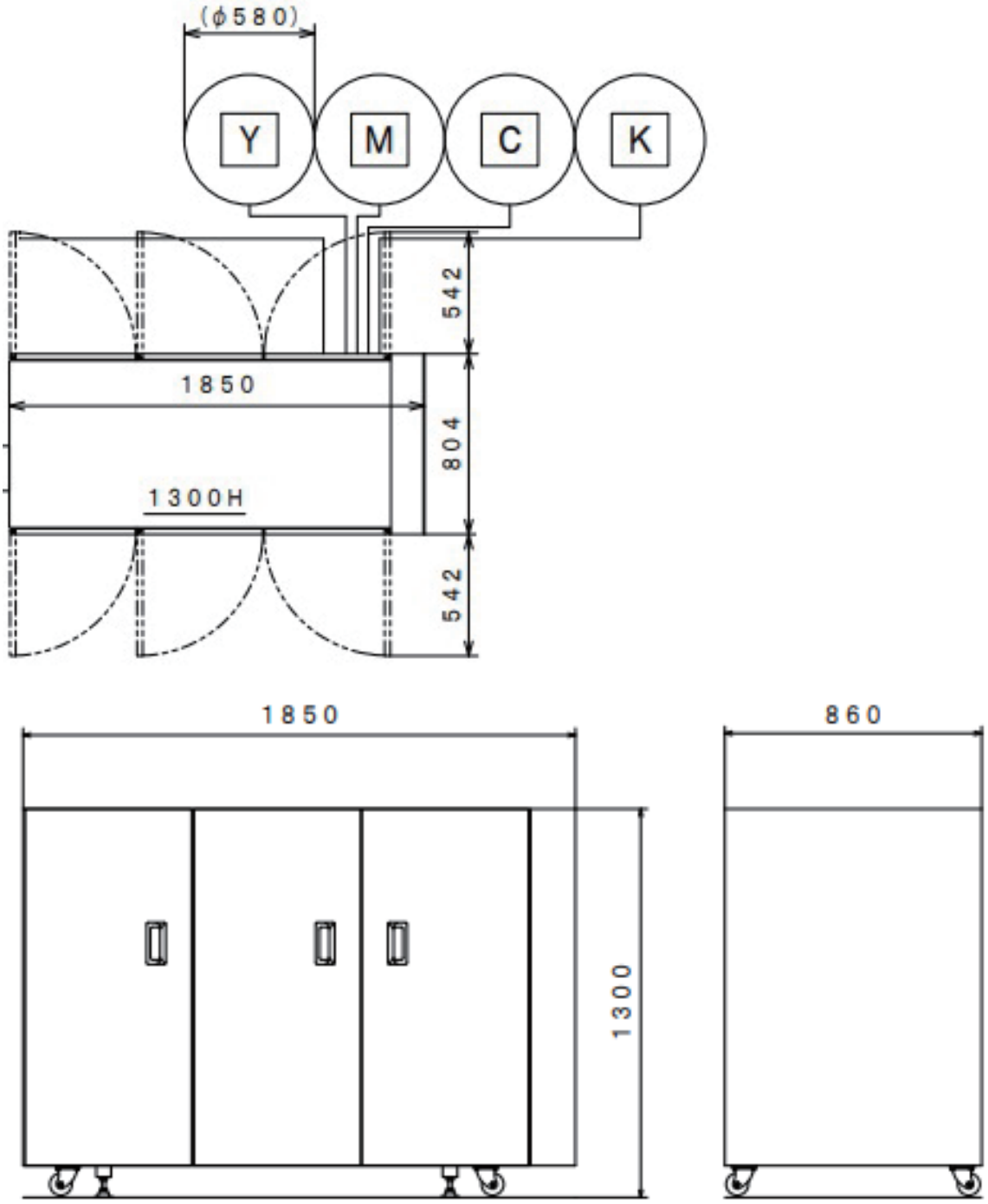


Rewinder

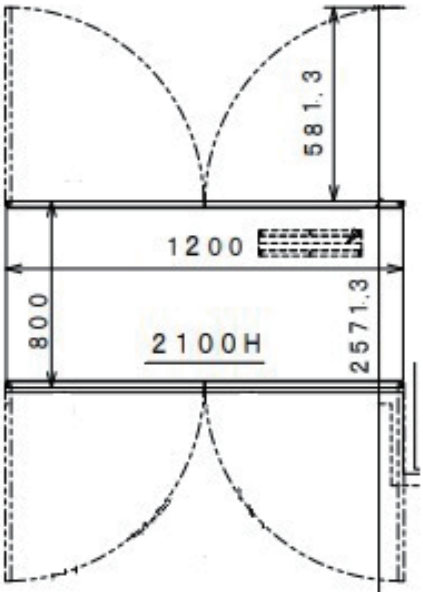


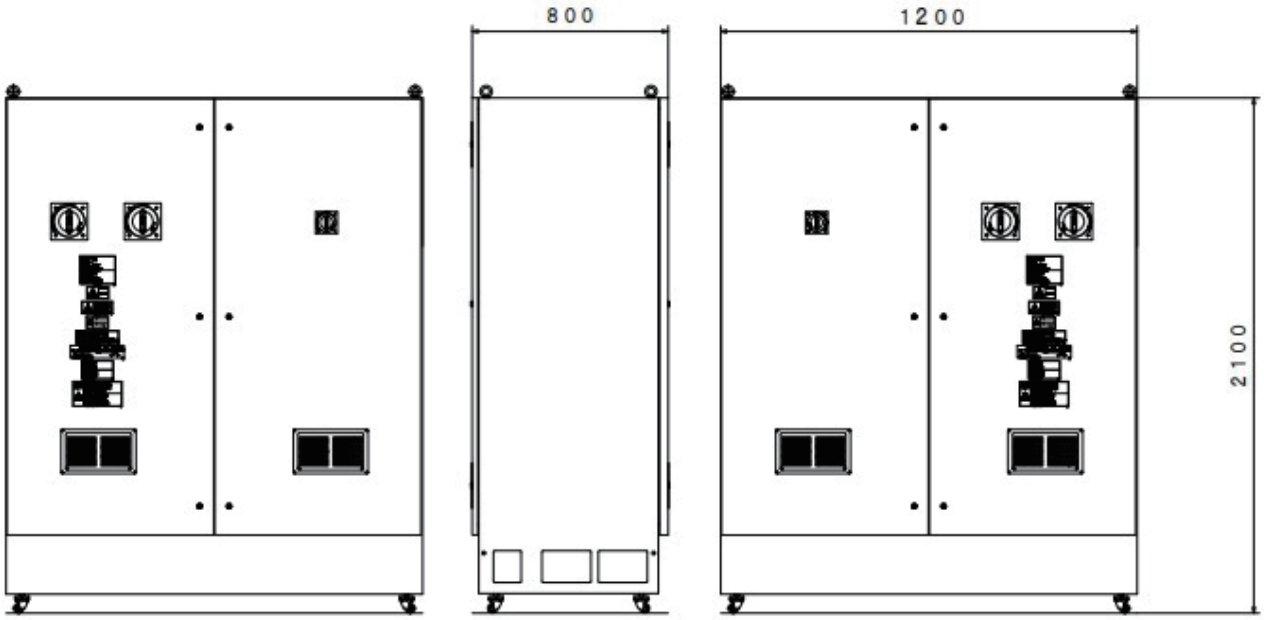


Ink Station



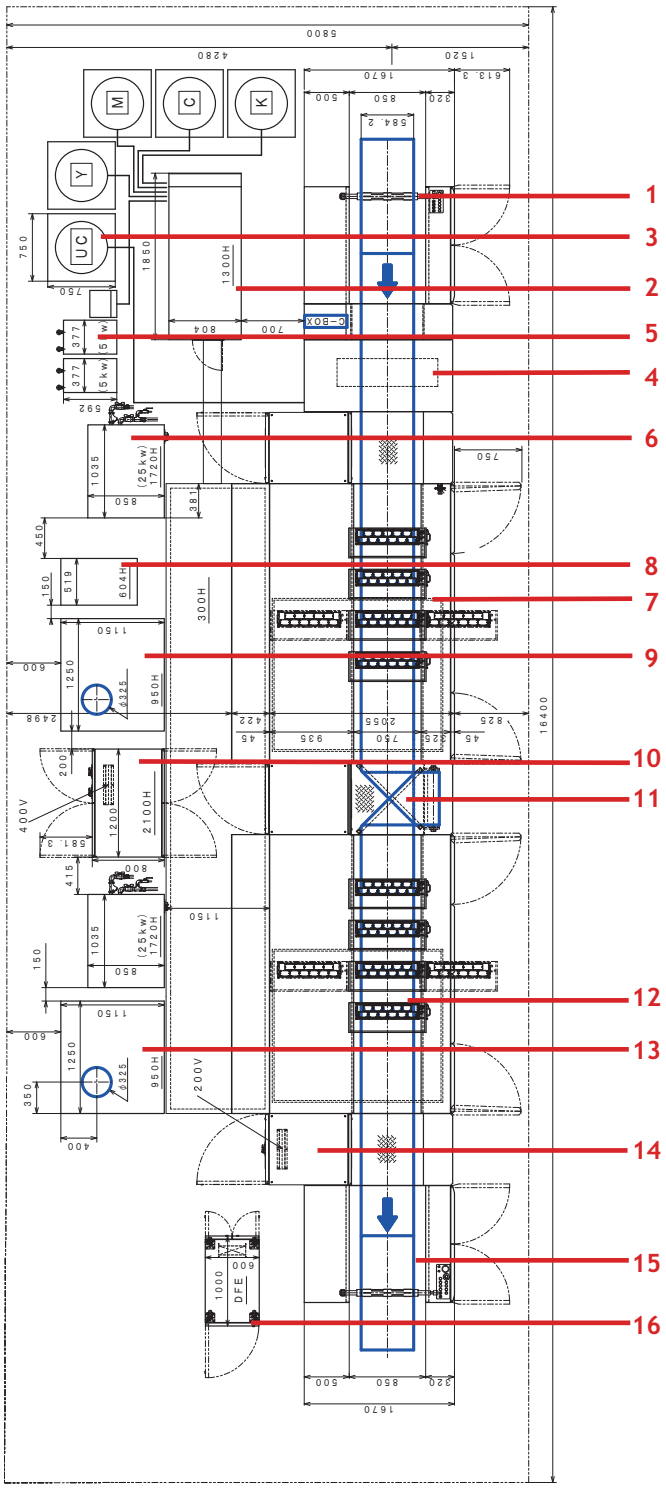
Control Box for Dryer





Inline Configurations

Inline Full Configuration with UC8800



1. Unwinder
2. Ink Station
3. Ink Container
4. Undercoat Unit UC8800
5. Head Chiller Unit
6. Roller Chiller Unit
7. Print Unit 1
8. Control Box for RICOH Pro Scanner Option
9. Box for Air Booster (for Print Unit 1)
10. Control Box for Dryer
11. Turnbar I
12. Print Unit 2
13. Box for Air Booster (for Print Unit 2)
14. Control Box for Exit
15. Rewinder
16. TotalFlow Print Server R900A

5. Electrical Requirements

- **Power Requirements**
- **Power Cable Requirements**
- **Electrical Power-Drop Diagrams**
- **Electrical Power Distribution**

Power Requirements

The requires a relatively large electrical capacity. Study the tables in this section for more details.

Allowable Voltage Ranges

Make sure that your voltage ranges meet the power requirements of the printer.

Since supply voltage depends on the facility, confirm the actual voltage at the customer's facility. In general, facilities in Asia, Europe, and Australia use 400 V systems. However, there are exceptions.

Voltage Service	AC Voltages		
	Nominal	Minimum	Maximum
200 V	200	180	212
400 V 50 Hz	400	376	424

Wiring Requirements

All wiring and electrical work must follow the standards that apply in the country of installation.

Important

- Verify that the breaker at the power distribution board (input power source) is switched to the **OFF** position before connecting the power cable.
- When the insulator deteriorates or breaks, leakage current occurs. Risk of electric shock.

Make sure that the wiring and electrical work follows the requirements listed below:

- A licensed electrician must hard-wire the power cable to each unit.
- Install a step-up transformer to meet the power supply voltage requirements, if the country of installation does not meet the power supply voltage specifications.
- Use electric wires with a thickness and standard that match the electric capacity of the printer. If the ground wire is thin, it is not grounded sufficiently.
- Verify that the power cables to the printer and Control Unit are connected to the same circuit breaker box.
- Verify that the ground wire and the neutral wire between the circuit breaker box and the source (building ground) are separate wires.
- Do not connect any devices to the printer that are not specified for connection to it.
- Only a licensed electrician can complete the electrical connections to any branch circuits or feeder circuits.
- A qualified service representative or a licensed electrician can complete the electrical connections to Ricoh equipment.

Dedicated Power and Distribution Panel

The units must be directly wired into their own dedicated power supply with its own power distribution panel for the building that it is installed in.

Service technicians need to turn off the power and follow a Lockout-tagout procedure to make sure that the printer is not turned back on by someone else when service is being performed.

See Electrical Power-Drop Diagrams, p. 50 for the power drop locations.

Uninterruptible Power Supply

Powering the control unit and the engine PCs from an uninterruptible power supply (UPS) reduces the risk of damage from an AC power surge or other power event. The recovery time after the event is also reduced.

Work with a UPS vendor to determine your specific needs. A 6kVA UPS with a 30-minute run time would be sufficient to sustain power until the operator is able to perform an orderly shutdown.

System Power Requirements

The machine requires a dedicated power supply. Verify that the power supply voltage fluctuations are moderate; for example, there are no spikes or noise. An electricity voltage stabilizer is required where voltage fluctuations exceed the tolerable range.

See Wiring Requirements, p. 39 for more information.

Low Voltage Electrical Service: 100-120/200-240 VAC

The table contains information about the low voltage electrical service for each printer and possible accessories.

Accessories Low Voltage						
Control Unit	ECU	3Φ 220–240 VAC	4 Wire	3 L+PE	20 A	4.3 m cord with Hubbell 460P9V05 plug
Scanner Control Unit	EPS	1Φ 208–240 VAC	3 Wire	2 L+PE	3 A	Socket terminals

High Voltage Electrical Service: 220-240/380-415 VAC

The table contains information about the high voltage electrical service for each printer and possible accessories.

Accessories High Voltage						
Control Unit	ECU	3Φ 380–415 VAC	5 Wire	3 L+N+PE	15 A	Cord provided w/o plug
Scanner Control Unit	EPS	1Φ 208–240 VAC	3 Wire	2 L+PE	3 A	Socket terminals

Electrical Power Requirement

Circuit	Connection Code*1	Voltage	Cord Type	Wiring	Rated Current	Termination (Printer side)
Engine						
Electronics*2	EE	3Ø 200 VAC	4 Wire	3L+PE	120A	3L: M12(12mm) screw*3 FG: WAGO 285-637 terminal
Dryer (Print Unit 1)	ED1	3Ø 400 VAC	5 Wire	3L+N+PE	172A	3L,N: M12(12 mm) screw*3 FG: WAGO 285-157 terminal
Dryer (Print Unit 2)	ED2	3Ø 400 VAC	5 Wire	3L+N+PE	172A	3L,N: M12(12 mm) screw*3 FG: WAGO 285-157 terminal
Accessories						
Control Unit	ECU	3Ø 200 VAC	4 Wire	3L+PE	25 A	4.3 m cord with Hubbell 460P9V05 plug
Chiller Unit (for paper cooling of Print Unit 1)	ECH1	*4	*4	*4	*4	*4
Chiller Unit (for paper cooling of Print Unit 2)	ECH2	*4	*4	*4	*4	*4
Chiller Unit (for head cooling of Print Unit 1)	ECH3	*4	*4	*4	*4	*4
Chiller Unit (for head cooling of Print Unit 2)	ECH4	*4	*4	*4	*4	*4
Scanner Control Unit (optional)	EPS	1Ø 208 VAC	3 Wire	2L+PE	3A	Socket terminals

*1 See Electrical Power-Drop Diagrams, p. 48.

*2 A Power supply to print engines other than the Dryer section. The power inlet is the Control Box for Exit, which distributes it to each unit of the printer.

*3 Where ring terminals are required, see Power Cable Requirements, p. 43 and Terminal Specifications, p. 44.

*4 Specifications such as rated power/current consumption will vary depending on the chiller selected by the customer. Please prepare the power supply equipment according to the selected chiller.

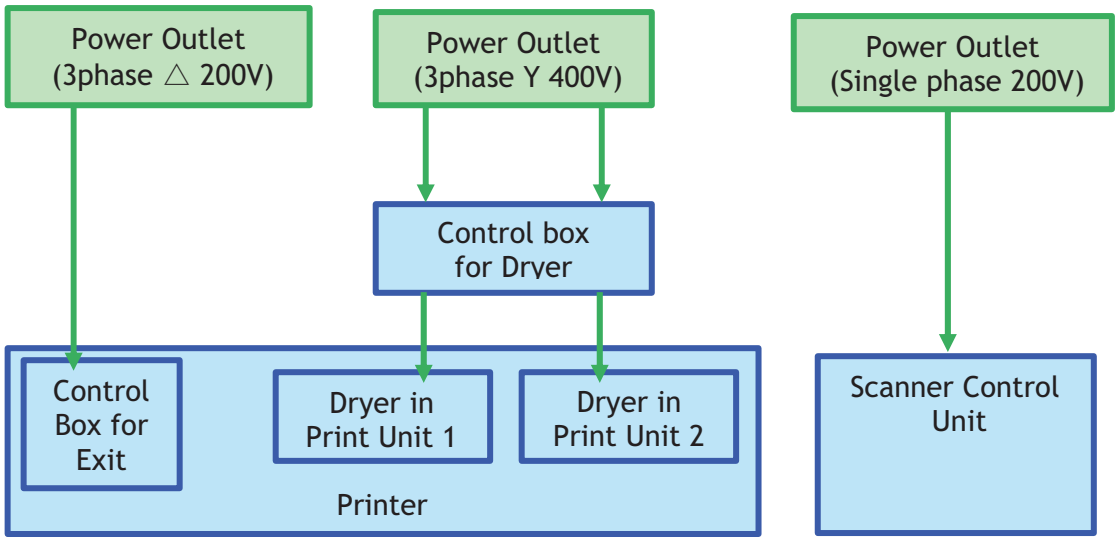
Power Distribution

Ricoh Pro VC8000 will require 200 V and 400 V power supplies.

If the customer's facility can supply 200 V and 400 V power in abundance, the wiring should be as shown below.

Note

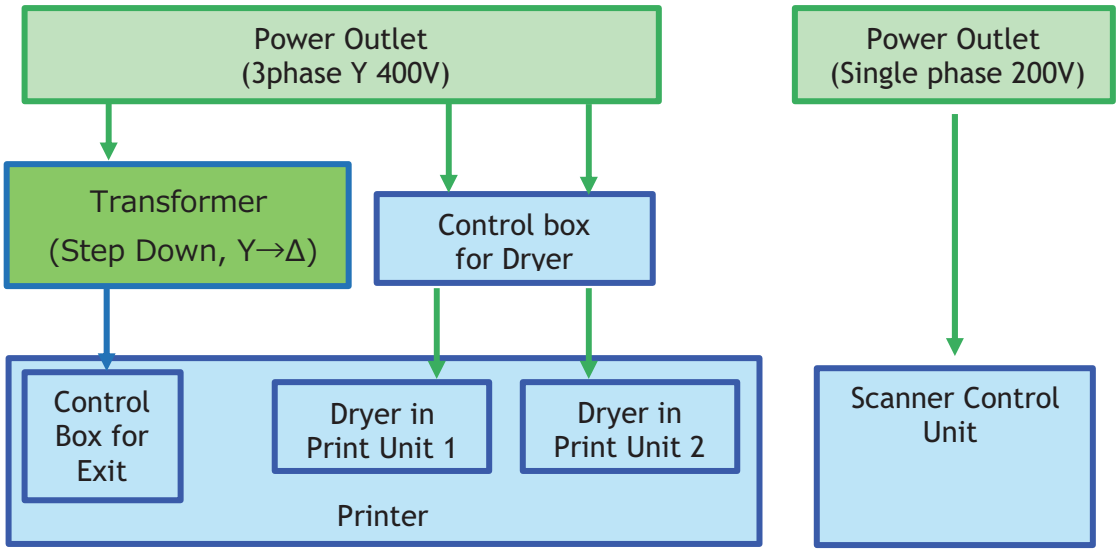
Chillers and DFE will be selected with voltage specifications based on customer's country.



If the customer's facility cannot supply both 200 V / 400 V, a transformer facility that steps down the voltage from 400 V to 200 V or step up the voltage from 200 V to 400 V will be required as additional depending Country.

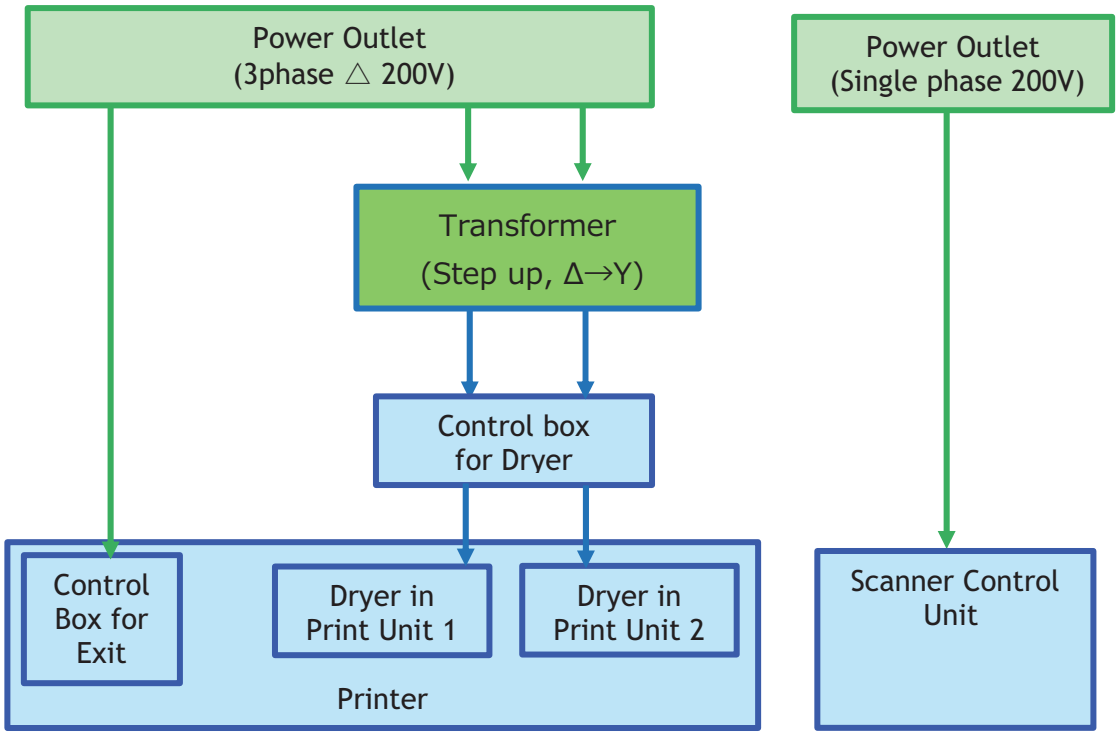
In 400 V countries

In order to supply 200 V to the Printer, it is necessary to prepare a step-down transformer from 400 V to 200 V.



In 200 V countries

In order to supply 400 V to the Control Box for Dryer, it is necessary to prepare a step-up transformer from 200 V to 400 V.



Power Cable Requirements

Each installation of the printer varies based on the electrical setup for the building. Therefore, no length specifications for the power cables are provided. Verify that approved electrical outlets with correct power are reserved for the printer, and that the power cables are long enough to reach them from the printer.

Cables to the electrical distribution panel need to be prepared by customer. The AC power cable needs to be purchased locally so that it complies with regional requirements. You need one AC power cable for each unit.

System Power Cable Specifications

Prepare the AC power cables described in this section.

- The Control Box for Exit does not include a power cable and plug.
- The Control Box for Dryer does not include power cable and plug.
- The Control Unit comes with a power cable.

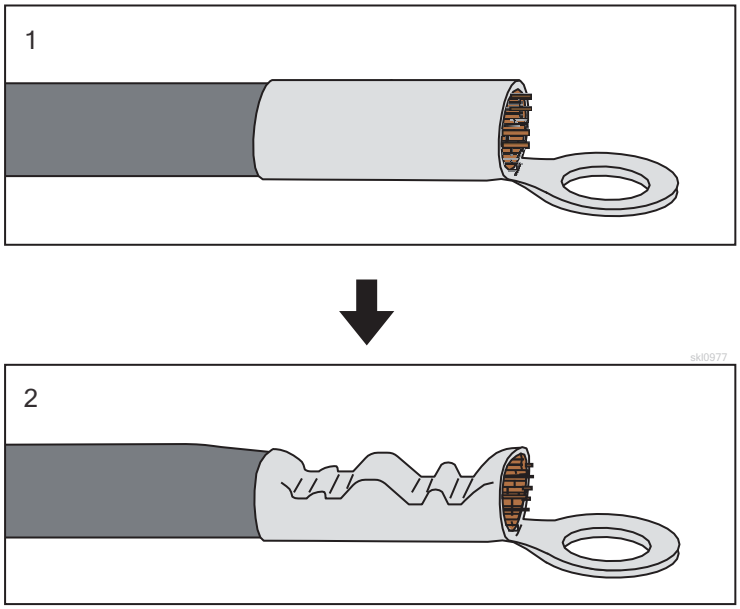
See Printer Control Unit Plugs, p. 45 for more information.

Common Power Cable Specifications

It is recommended that you meet all the common power cable specifications below:

- The power cables conform to IEC 60950-1 3.2.5.1 and IEC 62368-1 Annex G.7.1, 2.
- The primary power cord set or its components (cord, connector, plug, etc.) are approved for instance by UL, IEC/EN standards, the Electrical Appliance and Material Safety Law applicable in the country of sale, etc.
- For equipment requiring protective earth, include protective earth conductors with green and yellow striped insulating coatings.

- The cross-sectional area of the conductors of the power cord are not less than the nominal cross-sectional area based on the rated current of the equipment.
- The voltage/current rating of the primary power cord is at or above the maximum rating of the components.
- The primary power cord has a flame retardant coating.
- Use a double insulated primary power cord, for instance a cabtire cord.
- When wire terminals are required, use insulated, double-crimp terminals. A double-crimp terminal is crimped on both the cable insulation and the core wire.



1. Before crimping
2. After double-crimping

Power Cable Specifications

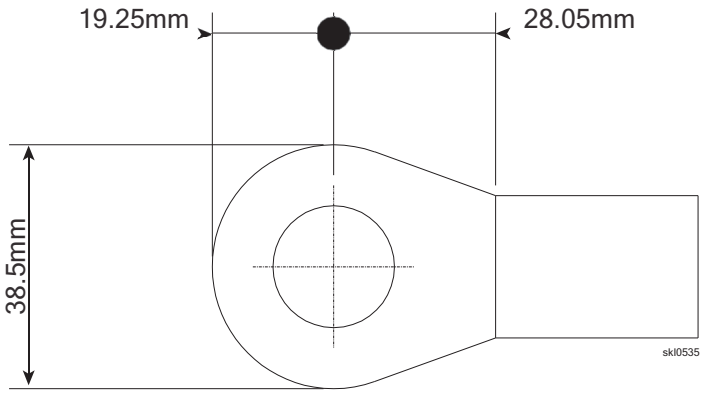
Unit	Power Cable Type	Number of Cores
Printer Electronics	600 V Flexible Cable Type ST/ STO/ TC conform to NFPA70	4
Dryer Unit	600 V Flexible Cable Type ST/ STO/ TC conform to NFPA70	5
Control Unit	Supplied (2 m)	4

Terminal Specifications

Printer Terminal Specifications

Choose the ring terminal size to match the wire size used.

Ring Terminal R180-12 (200 V 3L)

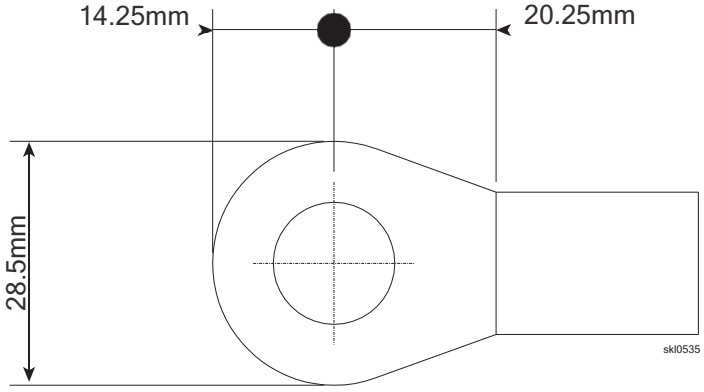


R180-12

Dryer Unit Terminal Specifications

Choose the ring terminal to match the wire size used.

Ring Terminal R100-12 (400 V 3L,N)



R100-12

Power Plugs and Receptacles

Printer Control Unit Plugs

Control unit plug and receptacle information

Prepare the following plugs that match your local voltage specifications.

In case of 400 V condition

Brand	Vertiv
Model	FSC3U002
Model Number	CSU-S02A3-43000-3PS56B-S
Voltage Rating	200-240 / 346-415 V

Current Rating	30 A (230 V AC) 32 A (415 V AC)
Plug Type	IEC60309 3P + N + E, 30 / 32 A, 230 / 400 V, Splashproof IP44
Wiring	3P + N + E
MAX Load	22 kW
Cord Length	10 ft / 3 m
Image	

In case of 200 V condition

Brand	Vertiv
Model	FSC3U006
Model Number	CSN-S02A8-03000-6PS15B-S
Voltage Rating	200-240
Current Rating	60 A
Plug Type	IEC60309 3P + E, 60 A, Splashproof IP44
Wiring	3P + E
MAX Load	17.2 kW
Cord Length	10 ft / 3 m
Image	

Please prepare a receptacle / inline connector that matches the plug.

In case of 400 V condition

Brand	Walther
Product Code	330
Product name	400v 32amp Commando Socket
Voltage Rating	400 V
Current Rating	32 A
IP Rating	IP44 Rated

Wiring	3P + N + E
Image	

In case of 200 V condition

Brand	Hubbell
Catalog Number	HBL460C9V05
Product name	HBL460C9V05 Connector-3P4W60A250V
Voltage Rating	250 V
Current Rating	60 A
Number Of Poles	4-Pole
Image	

Plug rating is greater than Control Unit load rating because the same Control Unit is manufactured in other configurations.

PMPC and Web Cleaner Power Cords

The power cord includes an integral plug chosen specifically for North America or Europe.

China, Taiwan, Korea, and Australia must buy these power cords:

- CHN: 11500456
- TWN: 11500478
- KOR: 11500473
- AUS: 11500425

If your country is not listed, buy the appropriate power cord that meets your local requirements.

Electrical Power-Drop Diagrams

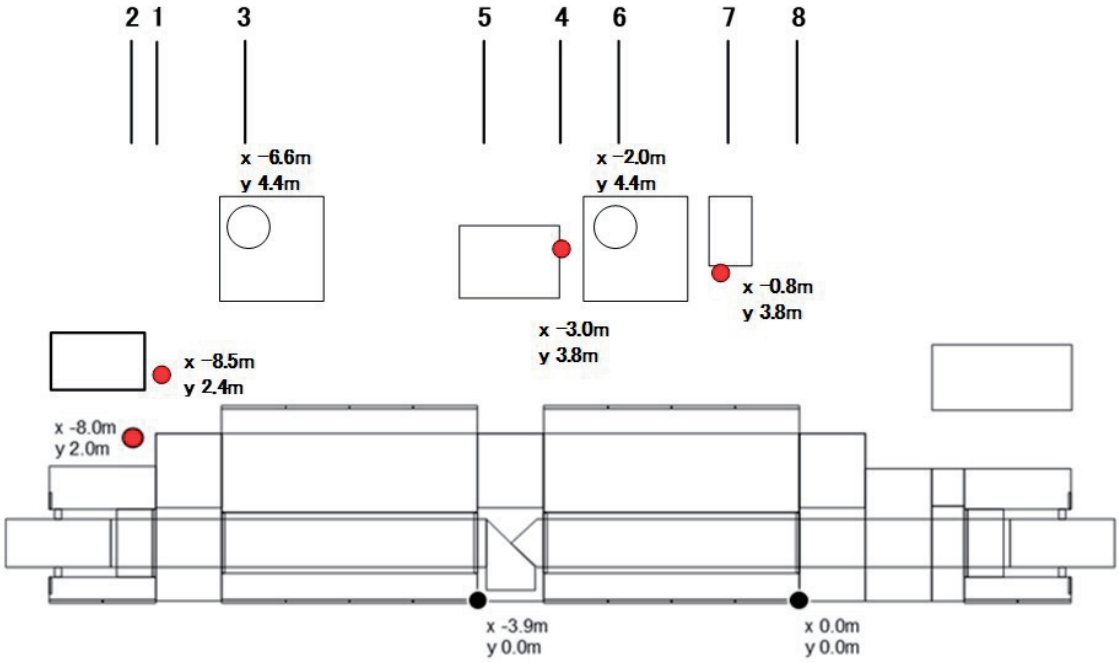
This section contains electrical power-drop diagrams for the printer with no pre- or post-processing equipment. Share these diagrams with your electrician.

Note

- The power-drop diagrams contain representations of the printers for orientation. Use the configuration drawings for specific printer measurements.

Electrical Power-Drop Diagrams

Electrical Power

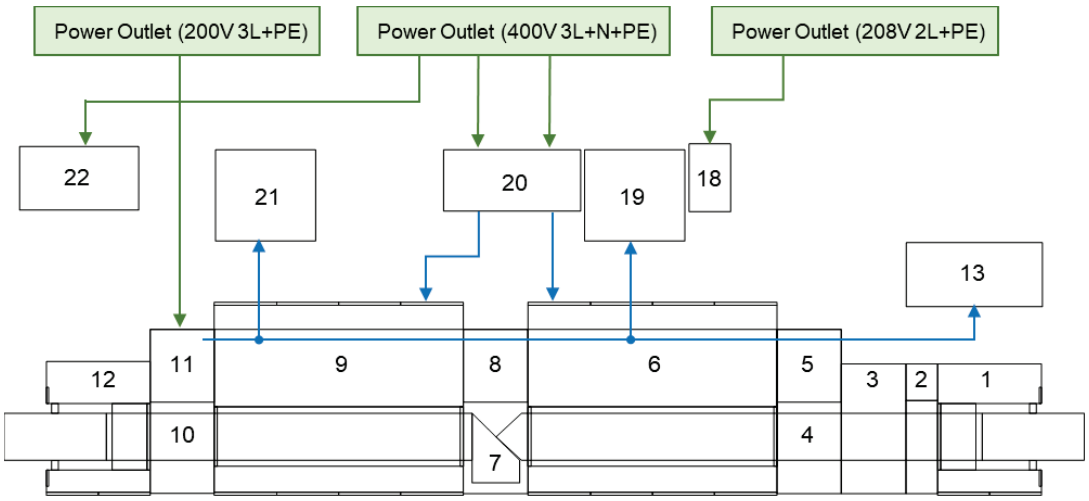


1	TotalFlow Print Server R900A	○	Air Duct Drop
2	Printer Electronics	●	Power Drop
3	Print Unit 2 Dryer Unit Vent	●	Front right corner of Print Unit 1/Print Unit 2
4	Control Box for Dryer		
5	Front right corner of Print Unit 2		
6	Print Unit 1 Dryer Unit Vent		
7	Control Box for RICOH Pro Scanner Option		
8	Front right corner of Print Unit 1		

Electrical Power Distribution

This section contains electrical power-drop diagrams for the printer with no pre- or post-processing equipment. Share these diagrams with your electrician.

Electrical Power Distribution (for EU)

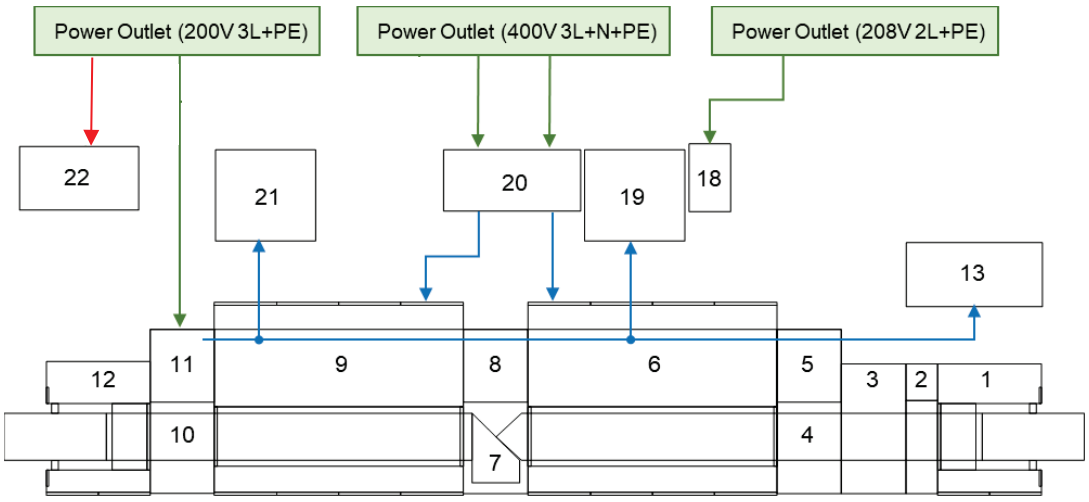


Legend

- Customer facilities
- Ricoh's responsibility
- Customer's responsibility

1	Unwinder
2	Feed Unit for Undercoat Unit
3	Undercoat Unit
4	Feed Unit for Entrance
5	Control Box for Entrance
6	Print Unit 1
7	Turnbar I
8	Control Box for Middle
9	Print Unit 2
10	Feed Unit for Exit
11	Control Box for Exit
12	Rewinder
13	Ink Station
18	Control Box for RICOH Pro Scanner Option
19	Box for Air Booster for Print Unit 1
20	Control Box for Dryer
21	Box for Air Booster for Print Unit 2
22	TotalFlow Print Server R900A

Electrical Power Distribution (for US/JP)



Legend

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12	Rewinder
13	Ink Station
18	Control Box for RICOH Pro Scanner Option
19	Box for Air Booster for Print Unit 1
20	Control Box for Dryer
21	Box for Air Booster for Print Unit 2
22	TotalFlow Print Server R900A

6. Networking Requirements

- **Network Cabling Requirements**

Network Cabling Requirements

The system programmer, the service representative, and the physical planner plan the cable route between the controlling computers and the printer.

The customer must prepare the cables for the Ethernet. Verify with your planning coordinator that the correct attachment cables are ordered.

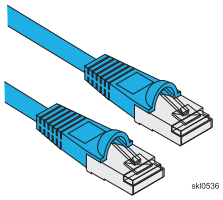
Gigabit Ethernet

The Control Unit comes standard with an Ethernet 1000BaseT port for printing.

Ricoh strongly recommends the use of a point-to-point 1000BaseT full duplex Ethernet connection from the job source to the printer.

You must use shielded Ethernet cables to connect from the customer's computer to the Control Unit.

Shielded Ethernet cables



Note

- Ricoh does not supply the communication cable between the Scanner Control Unit and the printer Control Unit. Use a standard 1000BaseT Ethernet cable suitable for gigabit speeds.

ANSI/IEEE Standards

Copper cabling must meet the specifications in ANSI/IEEE 802.3 Standards:

- Ethernet Twisted Pair: We recommend 1000BaseT LAN using category 6 or higher shielded twisted pair (STP) cabling with an RJ45 connector.
- The building cabling must conform to the EIA-569 standard, which includes setting the cable away from an EMI source. Some excerpts from the standard show the minimum distance from:
  - Transformers and electric motors: 1016 mm (40 inches).
  - Power Source at 480 V or less. Unshielded power lines or electrical equipment near open or non-metal pathways: 609.6 mm (24 inches).
  - Unshielded power lines or electrical equipment in proximity to grounded metal conduit pathway.
  - Power lines enclosed in a grounded metal conduit near grounded metal conduit pathway: 304.8 mm (12 inches).
  - Fluorescent lighting: 609.6 mm (24 inches).

7. Delivery Requirements

- **Preparing for Delivery**
- **Delivery Path**
- **Unpacking Sequence for Crated Units**
- **Forklift Specifications**

Preparing for Delivery

Verify that the receiving area has either a loading dock or a side loading truck and a crane. If it does not, contact the shipping contractor and your service representative. Work with your service representative to make sure that a forklift and forklift operator are available at delivery to remove the printer from its shipping pallet.

Most units do not have casters.

That's because the unit is heavy.

Therefore, after the printer is removed from the shipping pallet, the unit must be transported using a forklift or hand lift.

Delivery Path

Inspect the receiving area and the delivery route. Verify that no obstacles interfere with moving the printer to its planned location. Consider the following:

- The forklift needs space in which to operate. See Required Forks for unpacking, p. 55 for more information.
- Halls and doorways must be large enough for the printer to pass through.
- Hall corners and angles must be large enough to permit the printer to turn.
- If possible, avoid the use of ramps. If necessary, ramps must have no more than a 7-degree incline.
- Elevators and elevator doorways must be able to accommodate the size and weight of the printer and the people who are moving it.
- Door sills, floor gaps, and carpeting can make it impossible to roll the printer. When moving the printer across bumpy surfaces, use a pallet jack or forklift to prevent the casters and leveling pads from hitting bumps. If obstacles exist, work with your service representative and your mover to determine solutions.

See Delivery Path Dimensions, p. 29 for the minimum required dimensions for the printer delivery path.

Unpacking Sequence for Crated Units

When the crated units arrive, promptly unpack it and check for external damage. If the covers are broken, bent, or scratched, work with the shipping contractor and your service representative to resolve the problem.

After the top and sides of the crate unit have been removed, the lifting points of the printer are marked and must be adhered to.

All units are crate packed and bolted together.

You can dismantle the crate by removing the bolts.

Crate dismantling must be done by a mover or transport company operator.




Transporting the unit to installation place

Print Unit 1 and Print Unit 2 are extremely heavy units weighing over 4000 kg and do not have casters. Therefore, please consider the following two methods with mover or transportation company to transport it to the installation place.

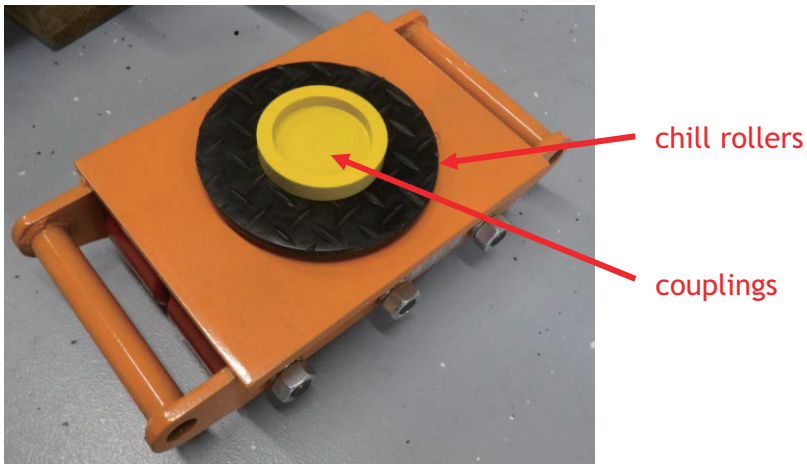
1. If there is a sufficient Delivery Path to the installation location, after the printer is removed from the shipping pallet, use a fork to transport the Print Unit to the installation place.

   Once transported to the installation place, the Print Unit must be removed from the fork.

   If you lower it as is, you will not be able to remove the fork claws, so you need to ensure the height of the Print Unit. Ricoh Service will support this work.

2. If you cannot transport the Print Unit to the installation location using a forklift, you will need to use chill rollers to transport it.

   In this case chill rollers and couplings are required.



By holding the leveling bolt of the Print Unit with the coupling, the Print Unit can be transported by pulling the chill roller.

Please contact Ricoh Service for the preparation of the coupling and details on how to use.

Please consult your mover or transport company for chill roller preparation.

After transporting it to the installation location, you will need to lift the printer again to remove the chill roller and coupling. Therefore, multiple hand lifts (electric) that can lift over 2000 kg are required.

To remove chill roller and coupling, Ricoh Service will support this work.

Required Forks for unpacking

The forks/lifts needed for unpacking of Printer are as follows.

Required Tool	QTY	Description
6~8 ton Class Forklift 	1	It will use to lift the Print Unit from the pallet after unpacking. The weight of Print Unit is 4850 kg.

Required Tool	QTY	Description
Electric hand lift 2 ton Class 	2	Move the printer to the installation location using the chill roller. Because the printer doesn't have casters. After that, to remove the chill roller, three hand Lift is required.
Hand Lift as large a capacity as possible 	1	Move the printer to the installation place using the chill roller. Because the printer doesn't have casters. After that, to remove the chill roller, three hand Lift is required. Also, it needs to move other than Print Unit.

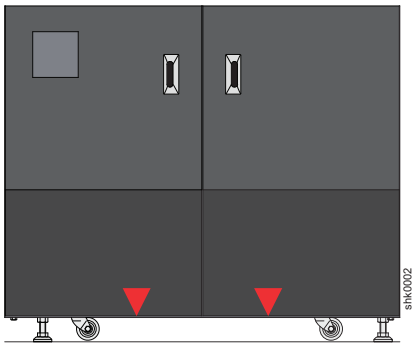
Forklift Specifications

You must provide a forklift to move the crated unit from the transportation vehicle to a secure position in an indoor receiving area. You also must provide a forklift to lift the printer during unpacking.

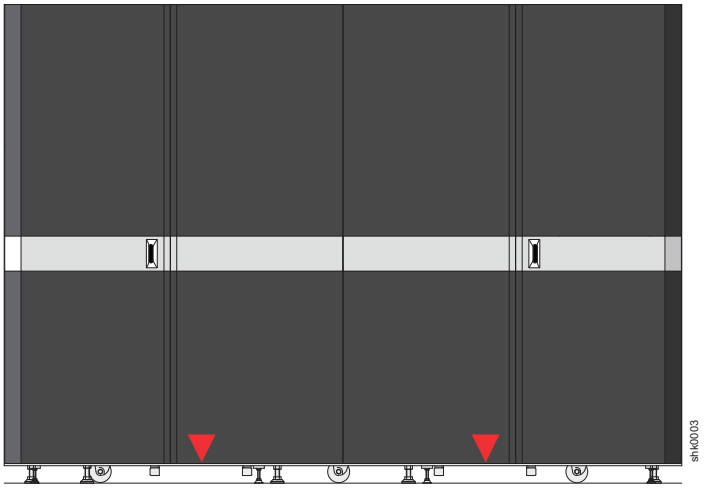
Fork Locations

Each unit of the printer has designated fork locations. Use the fork locations when moving or lifting the printers to prevent damage.

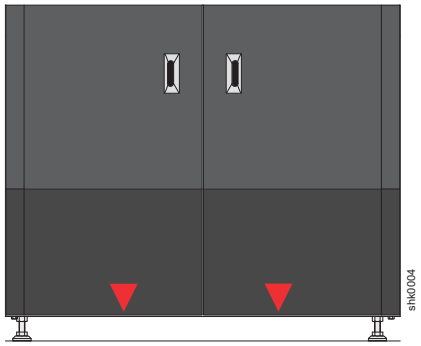
Fork locations for the Unwinder



Fork locations for the print unit (Print Unit 1, Print Unit 2)

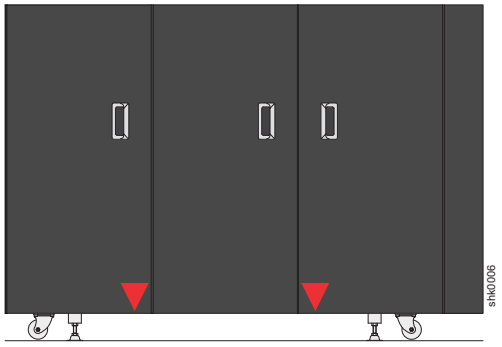


Fork locations for the Rewinder

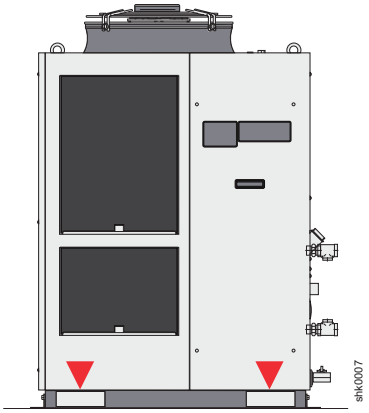


Fork locations for the Feed Unit for Entrance, Feed Unit for Exit

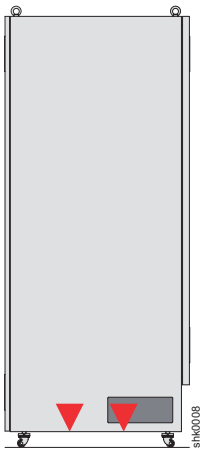
Fork locations for the Ink Station



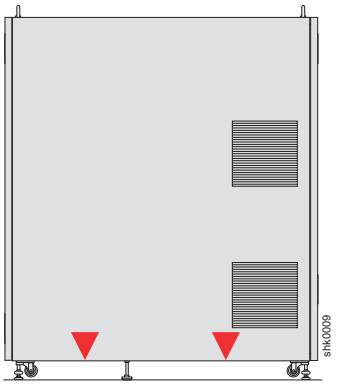
Fork locations for the chiller unit



Fork locations for the Control Box for Entrance, Control Box for Middle, Control Box for Exit



Fork locations for the Control Box for Dryer



Note

- When inserting the fork into the slot, make sure that the fork is fully inserted. If you lift it only in front of you, the frame of the unit may be deformed. Check the position of the fork before lifting the unit.

8. Supplies & Options

- **Ordering Supplies**
- **Storing and Transporting Ink**
- **Disposing of Supplies**
- **Ordering Options**

Ordering Supplies

This table lists supplies for the printer.

Product	EDP code	Description
RICOH Pro VC80000 Ink Container Black Type J	719790	Ink for VC80000 in 200kg container. (K)
RICOH Pro VC80000 Ink Container Cyan Type J	719791	Ink for VC80000 in 200kg container. (C)
RICOH Pro VC80000 Ink Container Magenta Type J	719792	Ink for VC80000 in 200kg container. (M)
RICOH Pro VC80000 Ink Container Yellow Type J	719793	Ink for VC80000 in 200kg container. (Y)
RICOH Pro VC80000 Undercoat Container Type J	719794	Undercoat for VC80000 in 200kg container.
Waste Fluid Bottle for Undercoat Type V1	719571	A bottle to receive waste UC fluid. Common item with VC60000/VC70000
1200 dpi Print Head Type V10	719846	Replacement printhead
Cleaning Fluid Type V1	828293	Cleaning fluid (0.5 L). Common item with VC60000/VC70000

Note

- It is recommended that customers maintain a one to two-month stock of supplies.

Storing and Transporting Ink

Store and transport ink in conditions that meet the following guidelines. Ink exposed to temperature or humidity outside the recommended guidelines should be used up as quickly as possible. The exception is ink exposed to temperatures higher than 50°C (122°F). Ink exposed to that temperature or higher cannot be used.

*1 Do not keep the ink at 40°C (104°F) for 1 month or more.

Precautions

- Always let the ink reach the print room temperature before loading the ink.
- Do not leave ink under direct sunlight.
- Do not shock or drop the ink container.
- Do not let any sharp edges touch the ink container.
- Use ink within six months of loading it.
- Store ink in the correct orientation as shown in the following figure. If they are stored incorrectly, the cartridges sometimes leak ink.

Correctly Stored Ink

Disposing of Supplies

⚠WARNING

- **Fluids or inks might cause an allergic skin reaction. Avoid prolonged or repeated contact with skin. Wash thoroughly after handling.**
- **Keep out of reach of children.**

⚠CAUTION

- **Wear gloves and goggles when handling ink and other fluids.**

Ordering Options

This table lists options for the printer.

Product	EDP code	Description
RICOH Pro Heavy Paper Option Type V10	719787	An option required for printing on heavy paper. This item contains 2x small heat roller and 2x small air knife unit.
RICOH Pro Premium PQ Option Type V10	719788	An option to improve color to color registration. This item contains 2 sets (for Print Unit 1 and Print Unit 2) of the following items. 2x control boards, 4x sensors, harnesses, 2x LED power supply
RICOH Pro Automation Suite Option Subscription Type V10	719789	Software license for real time PQ adjustment (1 year, subscription)
RICOH Pro Automation Suite Option Unlimited Type V10	719892	Software license for real time PQ adjustment (Unlimited, pay upfront). When a customer transfers its ownership, a new customer must purchase a new license. Release date: July 2024
RICOH Pro Undercoat Unit UC8800	719786	Undercoat unit
Feed Unit for Undercoat Unit Type V10	719801	Paper transport unit that needs to be installed in conjunction with the installation of the Undercoat Unit UC8800. This unit may be required when using a third party unwinder. Please test before purchase.
Out Feed Option Type V10	719847	Feeding unit when using 3rd party rewinder in I/L config or when using Ricoh rewinder in L config. This unit is installed between Print Unit 2 and rewinder.
Air Booster Option Type V10	719839	Air Booster for dryer provided by Ricoh
Production Archiving Type V8 for Scanner Option	719487	Optional software for RICOH Pro Scanner Option. Common with VC60000/VC70000. Allows real time recording of the inspected images for unlimited document archiving.
User Oriented Graphics Type V8 for Scanner Option	719489	Optional software for RICOH Pro Scanner Option. Common with VC60000/VC70000. Automatic image inspection.
Full Page Image Verification Type V8 for Scanner Option	719490	Optional software for RICOH Pro Scanner Option. Common with VC60000/VC70000. Automatic full page area verification.
OCR and MICR Verification Type V8 for Scanner Option	719492	Optional software for RICOH Pro Scanner Option. Common with VC60000/VC70000. Automatic decoding and grading of OCR/ MICR (Licence key is sent by post for financial processing.)

Product	EDP code	Description
Label Verification Type V8 for Scanner Option	719493	Optional software for RICOH Pro Scanner Option. Common with VC60000/VC70000. Automatic detection of multiple labels and replicating Label setup to whole frame.
Shaft for Winder 3.0inch Type V10	719840	Shaft for Ricoh brand Unwinder/Rewinder. 3.0 inch (76.2mm) core diameter
Shaft for Winder 2.7inch Type V10	719841	Shaft for Ricoh brand Unwinder/Rewinder. 2.7 inch (70mm) core diameter
Shaft for Winder 6.0inch Type V10	719842	Shaft for Ricoh brand Unwinder/Rewinder. 6.0 inch (152.4mm) core diameter
Safety Relay Option Type V10*1	719893	This option is to link the emergency stop signal of the engine with the peripheral units.
Standard Cable Kit for Rewinder Type V10*2	719900	Cables for 719899 (Standard length).
Extended Cable Kit for Rewinder +3.5m Type V10*2	719901	Cables for 719899 including anchor (3.5m longer than Standard Cable Kit).
Installation Paper Type V10	719845	Installation paper (OK Top 128gsm, Width: 23inch, Core: 3inch) For JP, procure this item locally.
Installation Paper 22.5 inch Type V10	719902	Installation paper (OK Top 128gsm, Width: 22.5inch, Core: 3inch) . This is for pre/post devices with a maximum support width of 22.5inch. For JP, procure this item locally.

*1 Safety Relay Option Type V10

The device is to connect the emergency stop signal of the peripheral machines to the print unit and enable emergency stop action as a system.

- This option is required when connecting the VC80000 to the following devices, regardless of the region.
  - Hunkeler devices
  - Tecnau devices
  - Contiweb devices (Auto Splicer, DFA)
- When using devices other than these, refer to the Type 1+ Interface specification and consult the vendors.
  If necessary, please consult RCL as well.
- In Europe, if there is a requirement to be CE compliant as a system, use this option and pre/post devices that are compliant with the Type 1+ interface specification.
- This option is not necessary when installing Unwinder Type V10 and Rewinder Type V10 only.

*2 Standard Cable Kit for Rewinder Type V10/ Extended Cable Kit for Rewinder +3.5m Type V10

- When installing a post device such as remoistening unit between Print Unit 2 and Rewinder Type V10, extended cables for Rewinder Type V10 are required.

- At the time of the initial launch, the cable for the rewinder was included in the rewinder, but a new products are set up in order to expand flexibility of machine configuration.

Example of configuration

- When installing 719899 Rewinder Type V10 without humidifier

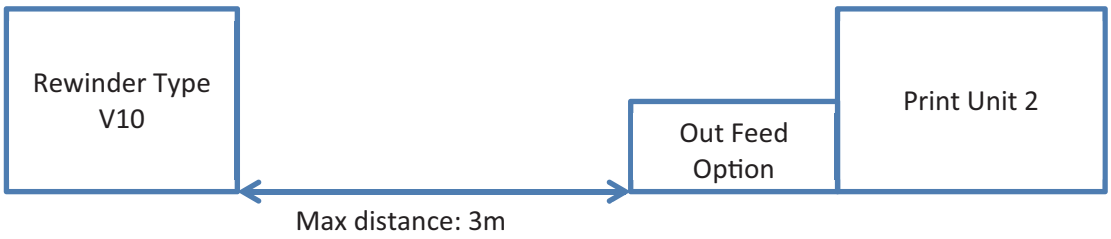
  Purchase 719900 Standard Cable Kit for Rewinder Type V10.

- When installing 719899 Rewinder Type V10 with remoistening unit (e.g. Contiweb DFA, WEKO)

  Purchase 719901 Extended Cable Kit for Rewinder +3.5m Type V10.

  In this case, 719847 Out Feed Option Type V10 must be purchased together. Also, please purchase cable protector locally.

Note:
EDP 719800 will be discontinued after the start of receiving POs for 719899.
The maximum distance between the Out Feed Option Type V10 and Rewinder Type V10 should be 3 m.



9. System Fonts

- **Fonts that Support PDF and PostScript**
- **Fonts that Support Only PDF**
- **Morisawa Fonts**

The following system fonts are shipped with the printer.

Fonts that Support PDF and PostScript

These fonts support the PDF and PostScript data streams. Use the full name of the font when working with PDF jobs. Use the PostScript name when working with PostScript jobs.

Full Name	PostScript Name
Adobe Heiti Standard OpenType Regular	AdobeHeitiStd-Regular
Adobe Ming Standard OpenType Light	AdobeMingStd-Light
Adobe Myungjo Standard OpenType Medium	AdobeMyungjoStd-Medium
Adobe Sans MM	AdobeSansMM
Adobe Serif MM	AdobeSerifMM
Adobe Song Standard OpenType Light	AdobeSongStd-Light
Albertus MT	AlbertusMT
Albertus MT Italic	AlbertusMT-Italic
Albertus MT Light	AlbertusMT-Light
Antique Olive Bold	AntiqueOlive-Bold
Antique Olive Compact	AntiqueOlive-Compact
Antique Olive Italic	AntiqueOlive-Italic
Antique Olive Roman	AntiqueOlive-Roman
Apple Chancery	Apple-Chancery
Arial	ArialMT
Arial Bold	Arial-BoldMT
Arial Bold Italic	Arial-BoldItalicMT
Arial Italic	Arial-ItalicMT
Bodoni Bold	Bodoni-Bold
Bodoni Bold Italic	Bodoni-BoldItalic
Bodoni Italic	Bodoni-Italic
Bodoni Poster	Bodoni-Poster
Bodoni Poster Compressed	Bodoni-PosterCompressed
Bodoni Roman	Bodoni
Carta	Carta
Chicago	Chicago
Clarendon Bold	Clarendon-Bold

Full Name	PostScript Name
Clarendon Light	Clarendon-Light
Clarendon Roman	Clarendon
Cooper Black	CooperBlack
Cooper Black Italic	CooperBlack-Italic
Copperplate Gothic Thirty-Three BC	Copperplate-ThirtyThreeBC
Copperplate Gothic Thirty-Two BC	Copperplate-ThirtyTwoBC
Coronet Regular	Coronet-Regular
Courier	Courier
Courier Bold	Courier-Bold
Courier Bold Oblique	Courier-BoldOblique
Courier Oblique	Courier-Oblique
Eurostile Bold	Eurostile-Bold
Eurostile Bold Extended #2	Eurostile-BoldExtendedTwo
Eurostile Extended #2	Eurostile-ExtendedTwo
Eurostile Medium	Eurostile
Geneva	Geneva
Gill Sans	GillSans
Gill Sans Bold	GillSans-Bold
Gill Sans Bold Condensed	GillSans-BoldCondensed
Gill Sans Bold Italic	GillSans-BoldItalic
Gill Sans Condensed	GillSans-Condensed
Gill Sans Extra Bold	GillSans-ExtraBold
Gill Sans Italic	GillSans-Italic
Gill Sans Light	GillSans-Light
Gill Sans Light Italic	GillSans-LightItalic
Goudy Bold	Goudy-Bold
Goudy Bold Italic	Goudy-BoldItalic
Goudy Extra Bold	Goudy-ExtraBold
Goudy Old Style	Goudy
Goudy Old Style Italic	Goudy-Italic
Helvetica	Helvetica
Helvetica Bold	Helvetica-Bold
Helvetica Bold Oblique	Helvetica-BoldOblique

Full Name	PostScript Name
Helvetica Condensed Bold	Helvetica-Condensed-Bold
Helvetica Condensed Bold Oblique	Helvetica-Condensed-BoldObl
Helvetica Condensed Medium	Helvetica-Condensed
Helvetica Condensed Oblique	Helvetica-Condensed-Oblique
Helvetica Narrow	Helvetica-Narrow
Helvetica Narrow Bold	Helvetica-Narrow-Bold
Helvetica Narrow Bold Oblique	Helvetica-Narrow-BoldOblique
Helvetica Narrow Oblique	Helvetica-Narrow-Oblique
Helvetica Oblique	Helvetica-Oblique
Hoefler Text	HoeflerText-Regular
Hoefler Text Black	HoeflerText-Black
Hoefler Text Black Italic	HoeflerText-BlackItalic
Hoefler Text Italic	HoeflerText-Italic
Hoefler Text Ornaments	HoeflerText-Ornaments
ITC Avant Garde Gothic Book	AvantGarde-Book
ITC Avant Garde Gothic Book Oblique	AvantGarde-BookOblique
ITC Avant Garde Gothic Demi	AvantGarde-Demi
ITC Avant Garde Gothic Demi Oblique	AvantGarde-DemiOblique
ITC Bookman Demi	Bookman-Demi
ITC Bookman Demi Italic	Bookman-DemiItalic
ITC Bookman Light	Bookman-Light
ITC Bookman Light Italic	Bookman-LightItalic
ITC Lubalin Graph Book	LubalinGraph-Book
ITC Lubalin Graph Demi	LubalinGraph-Demi
ITC LubalinGraph Book Oblique	LubalinGraph-BookOblique
ITC LubalinGraph Demi Oblique	LubalinGraph-DemiOblique
ITC Mona Lisa Recut	MonaLisa-Recut
ITC Zapf Chancery Medium Italic	ZapfChancery-MediumItalic
ITC Zapf Dingbats	ZapfDingbats
Joanna MT	JoannaMT
Joanna MT Bold	JoannaMT-Bold
Joanna MT Bold Italic	JoannaMT-BoldItalic
Joanna MT Italic	JoannaMT-Italic

Full Name	PostScript Name
Kozuka Gothic Pr6N AJ16 OpenType Medium	KozGoPr6N-Medium
Kozuka Mincho Pr6N AJ16 OpenType Regular	KozMinPr6N-Regular
Letter Gothic	LetterGothic
Letter Gothic Bold	LetterGothic-Bold
Letter Gothic Bold Slanted	LetterGothic-BoldSlanted
Letter Gothic Slanted	LetterGothic-Slanted
Marigold	Marigold
Monaco	Monaco
New Century Schoolbook Bold	NewCenturySchlbk-Bold
New Century Schoolbook Bold Italic	NewCenturySchlbk-BoldItalic
New Century Schoolbook Italic	NewCenturySchlbk-Italic
New Century Schoolbook Roman	NewCenturySchlbk-Roman
New York	NewYork
Optima Bold	Optima-Bold
Optima Bold Italic	Optima-BoldItalic
Optima Italic	Optima-Italic
Optima Roman	Optima
Oxford	Oxford
Palatino Bold	Palatino-Bold
Palatino Bold Italic	Palatino-BoldItalic
Palatino Italic	Palatino-Italic
Palatino Roman	Palatino-Roman
Stempel Garamond Bold	StempelGaramond-Bold
Stempel Garamond Bold Italic	StempelGaramond-BoldItalic
Stempel Garamond Italic	StempelGaramond-Italic
Stempel Garamond Roman	StempelGaramond-Roman
Symbol	Symbol
Tekton Regular	Tekton
Times Bold	Times-Bold
Times Bold Italic	Times-BoldItalic
Times Italic	Times-Italic
Times New Roman	TimesNewRomanPSMT
Times New Roman Bold	TimesNewRomanPS-BoldMT

Full Name	PostScript Name
Times New Roman Bold Italic	TimesNewRomanPS-BoldItalicMT
Times New Roman Italic	TimesNewRomanPS-ItalicMT
Times Roman	Times-Roman
Univers 45 Light	Univers-Light
Univers 45 Light Oblique	Univers-LightOblique
Univers 53 Extended	Univers-Extended
Univers 53 Extended Oblique	Univers-ExtendedObl
Univers 55 Oblique	Univers-Oblique
Univers 55 Roman	Univers
Univers 57 Condensed	Univers-Condensed
Univers 57 Condensed Oblique	Univers-CondensedOblique
Univers 63 Bold Extended	Univers-BoldExt
Univers 63 Bold Extended Oblique	Univers-BoldExtObl
Univers 65 Bold	Univers-Bold
Univers 65 Bold Oblique	Univers-BoldOblique
Univers 67 Condensed Bold	Univers-CondensedBold
Univers 67 Condensed Bold Oblique	Univers-CondensedBoldOblique
Wingdings	Wingdings

Fonts that Support Only PDF

These fonts support only the PDF data stream and cannot be used with PostScript jobs.

- Adobe Arabic Bold
- Adobe Arabic Bold Italic
- Adobe Arabic Italic
- Adobe Arabic Regular
- Adobe Fan Heiti Std B
- Adobe Gothic Std B
- Adobe Hebrew Bold
- Adobe Hebrew Bold Italic
- Adobe Hebrew Italic
- Adobe Hebrew Regular
- Adobe Heiti Std R
- Adobe Ming Std L
- Adobe Song Std L
- Adobe Thai Bold
- Adobe Thai Bold Italic
- Adobe Thai Italic
- Adobe Thai Regular
- Courier Std Bold
- Courier Std Bold Oblique
- Courier Std Medium
- Courier Std Medium Oblique
- Kozuka Gothic Pr6N M
- Kozuka Mincho Pr6N R
- Minion Pro

Adobe Myungjo Std M

Adobe Pi Std

Myriad Pro

Morisawa Fonts

The Morisawa fonts are an additional set of optional system fonts.

Full Name	PostScript Name
CGBM Proportional Roman	CGBM-PropRoman
Chu Gothic BBB Medium Proportional Roman	ChuGothicBBB-Medium-PropRoman
Futo Go B101	FutoGoB101–Bold
Gothic Medium BBB	GothicBBB-Medium
Heisei Kaku Gothic W5 Proportional Roman	HeiseiKakuGothic-W5-PropRoman
Heisei Mincho W3 Proportional Roman	HeiseiMincho-W3-PropRoman
Hon Mincho Medium Proportional Roman	HonMincho-M-PropRoman
JL Proportional Roman	JL-PropRoman
Jun OneZeroOne Light Proportional Roman	Jun101-Light-PropRoman
Maru Gothic Medium Proportional Roman	MaruGothic-M-PropRoman
Mincho PC Hiragana	Mincho-PC-Hiragana
Mincho PC Katakana	Mincho-PC-Katakana
MMMA PropRoman	MMMA-PropRoman
Osaka Monospaced Roman	Osaka-MonoRoman
Osaka Proportional Roman	Osaka-PropRoman
PC Century Bold	MidashiMin-MA31–PropRoman
PC Helvetica Bold	MidashiGo-MB31–PropRoman
PCCentury Old Style Regular	FutoMinA101–Bold-PropRoman
PCHelvetica 65 Medium	FutoGoB101–Bold-PropRoman
RL KL Proportional Roman	RLKL-PropRoman
Ryumin Light KL Proportional Roman	Ryumin-Light-KL-PropRoman

10.Air Requirements

- **Compressed air**

Compressed air

This machine requires compressed air (air) for the print engine and Control Box for RICOH Pro Scanner Option respectively. The air used for this machine should be supplied from a dedicated compressor (not attached to this machine) or from the customer's factory equipment.

Conditions for Print engine

Modular Design

1. Always use dry air.

   Please equip with oil filter and air dryer.
2. The air intake of this machine is located in the print section A tower unit OS.

   Connect with an air hose with an outer diameter of 10 mm.

   The air hose is not included in the main unit. Please prepare by the customer.
3. Be sure to install an open/close valve that can stop the air supply from the main air pipe on the primary air side.

   If trouble occurs in the air-driven device of this machine, it is necessary to stop the air supply.

   In preparation for such an emergency, please be sure to install an open/close valve.

   When connecting this machine and the primary air side, please work with the above valve closed.
4. Air supply pressure on the primary side: 0.7 to 0.85 MPa.

   Reduce the pressure to 0.7 MPa with the regulator of the air intake.

Air consumption for Print engine

Below are the recommended compressor specifications.

supply pressure	0.7–0.85 MPa
Working pressure	0.7 MPa (Maximum pressure used in the machine)
Air consumption	440 L / min
Capacity	3.7 kW

Note

Select the amount of air discharged from the compressor to be about 1.5 times the air consumption of the machine.

Detail of Air consumption for Print engine

Below are details of the air pressure and air consumption used within each unit of the VC80000.

Unit	Objective	Manufacturer: Model	Pressure [Mpa]	Air consumption per 1mm of stroke cm^3/ round trip {ml}	Stroke [mm]	Qty	Consumption [L] [L/ min]	Using when printing →○
Unwind	paper presser	SMC:CM2E32-25	0.7	12.72	25	1	0.318	
	Paper feed shaft lock	SMC: CDM2E32-85-M9B	0.7	12.72	85	2	2.162	
	Lift Arm	SMC: CS2C160-520	0.7	318.09	520	2	330.814	
	Impact wrench	Bessel: GT1600VPH	0.6	400		1	400.000	
Print Unit 1	Gripper Roller	SMC: CM2E32-25Z	0.2	4.78	25	2	0.239	○
	Static elimination bar	KEYENCE: SJ-C10U/SJ-H060A	0.1	70		1	70.000	○
	wiping cover	SMC: CM2C20-100Z-N	0.7	1.87	100	5	0.935	
	Wiping attach/ detach	KOGANEI: DA20×75-A	0.7	1.87	75	6	0.842	
Print Unit 2	Gripper Roller	SMC: CM2E32-25Z	0.2	4.78	25	2	0.239	○
	Static elimination bar	KEYENCE: SJ-C10U/SJ-H060A	0.1	70		1	70.000	○
	wiping cover	SMC: CM2C20-100Z-N	0.7	1.87	100	5	0.935	
	Wiping attach/ detach	KOGANEI: DA20×75-A	0.7	1.87	75	6	0.842	
Feed Unit for Entrance	Gripper Roller	SMC: CM2E32-25Z	0.2	4.78	25	2	0.239	○
Turnbar I	Gripper Roller	SMC: CM2E32-25Z	0.2	4.78	25	1	0.120	○
Feed Unit for Exit	Gripper Roller	SMC: CM2E32-25Z	0.2	4.78	25	2	0.239	○
Fluid Unit	pressure tank	Tank: TZB-3-K0087	0.3	0.22		1	0.220	

Unit	Objective	Manufacturer: Model	Pressure [Mpa]	Air consumption per 1mm of stroke cm^3/ round trip {ml}	Stroke [mm]	Qty	Consumption [L] [L/min]	Using when printing →○
Rewind	paper presser	SMC: CM2E32-25Z	0.7	12.72	25	1	0.318	
	Rewind Shaft lock	KOGANEI: DA32×85-Y-ZG530A2	0.7	12.72	85	2	2.162	
	Lift Arm	SMC: CS2C160-520	0.7	318.09	520	2	330.814	
	dancer	FUJIKURA: FCS-80-62-P	0.7	79.52	62	1	4.930	○
	Impact wrench	Bessel: GT1600VPH	0.6	400		1	400.000	

total usage	**[L]**	**1616**
Consumption during Printing	**[L/min]**	**146**

Conditions for Control Box for RICOH Pro Scanner Option

1. Always use dry air.

   Please equip with oil filter and air dryer.

2. The air intake of this machine is a push-in fitting on the back of the automation Md controller box.

   Connect by an air hose of an outer diameter of 6mm.

   The air hose is not included in the main unit. Please prepare by the customer.

3. Be sure to install an open/close valve that can stop the air supply from the main air pipe on the primary air side.

   If trouble occurs in the air-driven device of this machine, it is necessary to stop the air supply.

   In preparation for such an emergency, please be sure to install an open/close valve.

   When connecting this machine and the primary air side, please work with the above valve closed.

4. Air supply pressure on the primary side: 0.7 to 0.85 MPa [100-120 psi].

   Reduce the pressure to 0.07 MPa with the regulator inside the controller box of Automation Md.

   Note

   When supplying air, make sure that the regulator is set to the minimum setting, and starting the primary side supply, and adjust the regulator to 0.07Mpa [10psi].

   Do not exceed 0.07Mpa [10psi].

Air consumption for Print engine

supply pressure	0.7~0.85 MPa[100-120 psi]
Working pressure	0.06 to 0.07 MPa [9 to 10 psi] **Note** Do not exceed 0.07 MPa [10 psi]
Air consumption	170 L/min (ANR) [6.0 SCFM]

Note

Select the amount of air discharged from the compressor to be about 1.5 times the air consumption of the machine.

11.Chiller System

- **Chiller System Requirements**

Chiller System Requirements

The following specifications chillers are required for paper cooling and head module cooling.
Two units of each are required.
The printhead chiller must be able to connect with the printer communication network.

Required Specifications

Items	Paper Cooling	Head Module Cooling
Cooling capacity	25 kW	4.7 kW
Option specifications	ON/OFF control input Alarm output	ON/OFF control input Alarm output Temperature control input
Setting temperature range	5-35 °C(operating range) 20-30 °C(optimal range)	25-35 °C(operating range)
Fluid flow rate	125 L/min(0.5 MPa)	23 L/min(0.24 MPa)
Water supply side pressure range	0.1-0.8 MPa	0.05-0.24 MPa
Cooling fluid	Antifrogen L	Antifrogen L*
Length of hose from printer	6 m	5 m
Hose diameter	25 mm(inner diameter) 33 mm(outer diameter)	21.5 mm(inner diameter) 28.5 mm(outer diameter)

* Previously, it had been using Showbrine SLP-R13 for head cooling, but switched to Antifrogen L to improve the operational stability of the print head.

Regarding the harness for the ON/OFF and alarm interface, the Terminal on the printer side is AI 0,5-8 WH made by phoenixcontact.

If this sleeve terminal cannot be connected to the chiller, connect the signal line from the Chiller to another terminal block to which the sleeve terminal of the printer can be connected.

The Head Module Cooling temperature control uses the RS485 interface.

The connector on the printer side is DE-9PF-N made by JAE.

If this connector cannot be connected to the chiller, prepare an additional harness so that the signal wire from the chiller can be connected to the printer connector.

The pin assignment of the connector is as follows

pin1: SDA

pin5: SG

pin9: SDB

Note

For chillers other than SMC, software modification is required, so please consult with the design department in advance.

Requirement of the Water Pressure setting

The following settings are required for the water output pressure of the chiller.

If the pressure is low, sufficient cooling may not be obtained, and if the pressure is high, the following phenomena may occur, so please set the pressure to the following values.

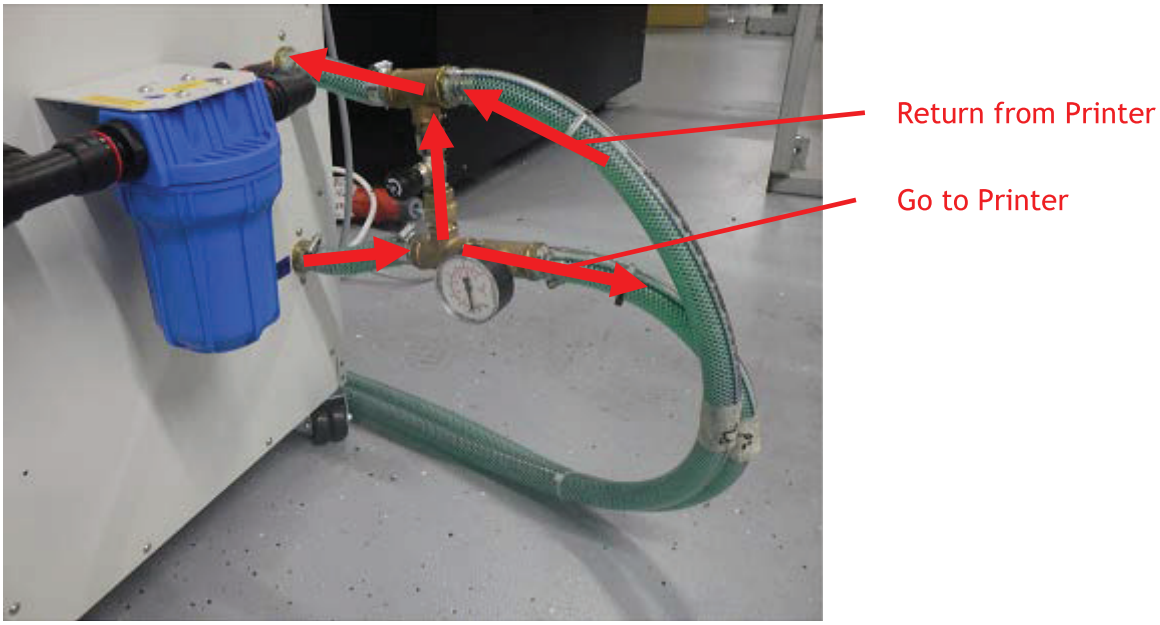
Paper Cooling Target pressure: 250 kpa

If the pressure is high, the cooling fluid may form bubbles and overflow.

Head Module Cooling Target pressure: 80 kpa

The tube coupler of the Head Module might disconnect, and the inside of the Head Array will be leaked with cooling fluid.

Some chillers themselves have a function to adjust the pressure, but if the pressure does not drop sufficiently, please install a bypass like the one below.



12.Other Facility

- **Type2 DI Water**

Type2 DI Water

Type2 DI Water (Type II Deionized Water) is produced through a cartridge filter, carbon filter, dual ion exchange units, UV Sterilizer, and final filtered at 0.2 µS/cm. The initial water source is not from distillation.

It is necessary a system that generates water such as the following, or purchasing it.

- This deionized water conforms to the following specifications: This water is considered Type II water.
- Ultraviolet (UV) sterilized.
- Resistivity is > 1 mega ohms.
- Conductivity is < 1 uS/cm.
- Total Organic Carbon (TOC) < 50 ppb.
- Sodium < 5 ppb.
- Chloride < 5 ppb.
- Silica < 3 ppb.
- The Shelf Life is 24 months (Dependent on storage conditions.)
- Not manufactured from distilled water.
- Intended for industrial applications.

In Ricoh Pro VC80000, water is mainly used for:

- Paper cooling and head cooling with chiller.
- Clean the cleaning blade.
- Clean Guide Roller.
- Moisturizing the head by pouring water into the cap absorbent sponge.

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RICOH Pro VC80000 VC80000 Planning Guide

EN US EN GB EN AU

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