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Roland DG Corporation

Product Guide

RT-640



Version 1.3 March 29, 2016
Roland DG Corporation

Version	Date	Description of Changes
1.0	December 9, 2014	First release
1.1	January 28, 2015	p. 28: Correction of erroneous description Incorrect: REPLACE SUBTANK/User Menu Correct: REPLACE SUBTANK/Service Menu
1.2	August 7, 2015	p. 20: The information on the expiration date has been deleted.
1.3	March 29, 2016	p. 12: Correction of erroneous description Incorrect: refer to the setup guide and the service note. Correct: refer to Chapter 5 of the service note. p. 17: Added 1 pass print mode

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1. Product Information
2. Printing Theory
3. Ink
4. Ink Lines
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1. Product Information

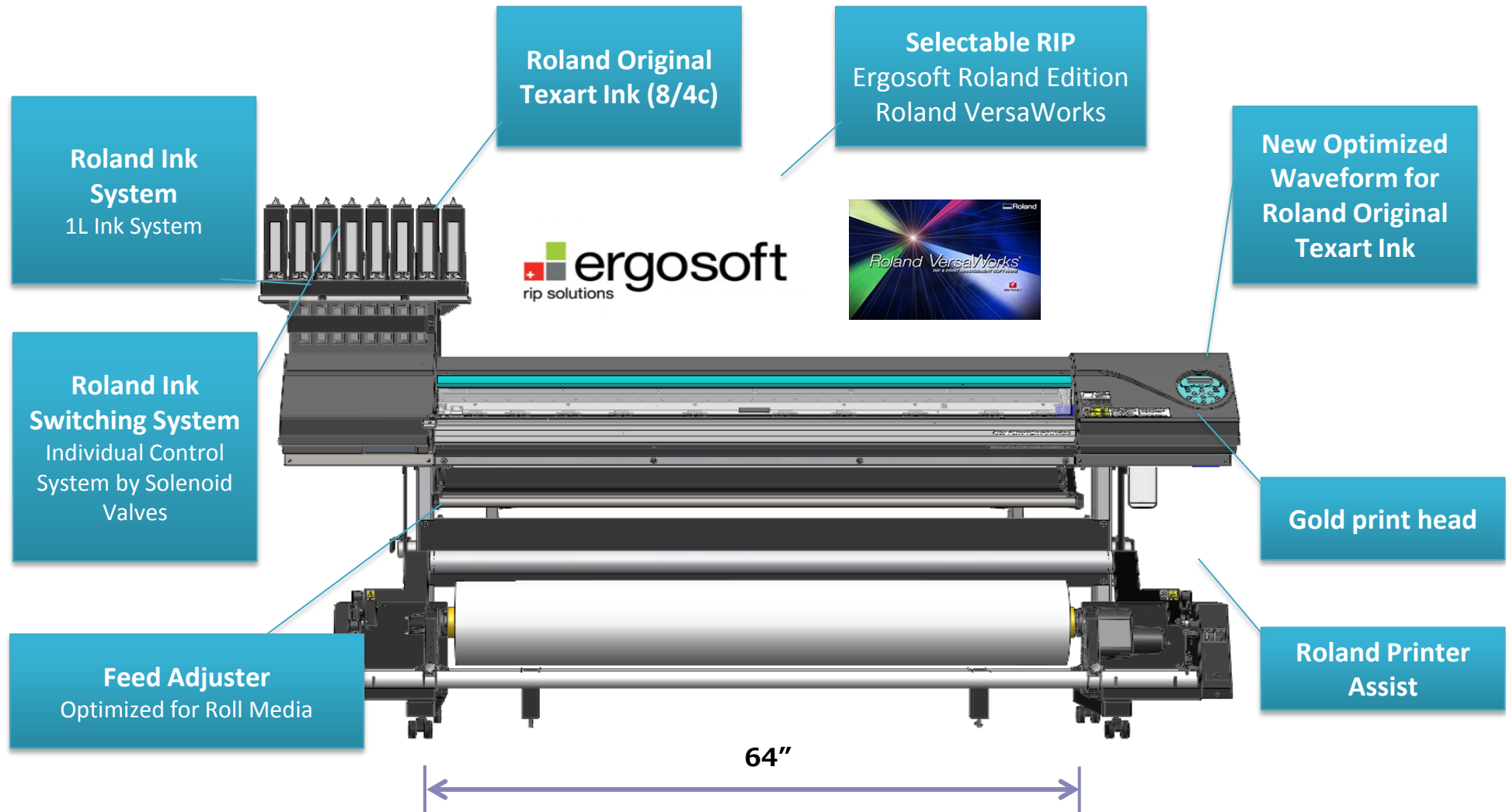
● RT-640

RT-640 is a dye-sublimation printer developed based on RF-640.

- Texart Series
 - ◆ 64 inches, Print only
- Gold print head
- Roland Original Dye-Sublimation Ink
 - ◆ Texart Ink SBL3-xx
- Ink Configuration:
 - ◆ 4 colors C M Y K
 - ◆ 8 colors C M Y K Lc Lm Or Vi
- Electrical Driven Auto-Choke System
- Roland Ink Switching System (4 colors)
- Roland Ink System: 1L ink system
- Feed Adjuster: Optimized for roll media
- Take-Up Unit: TUC-3 (Optional)
- Bundled Software (Selectable RIP)
 - ◆ Roland VersaWorks (4 colors)
 - ◆ Ergosoft Roland Edition (4 colors, 8 colors)



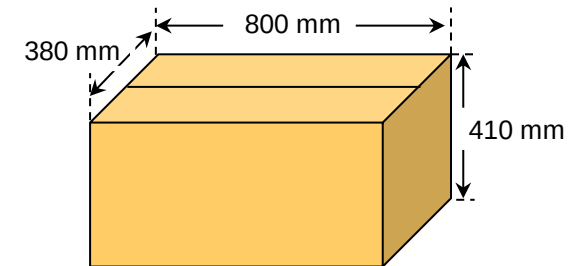
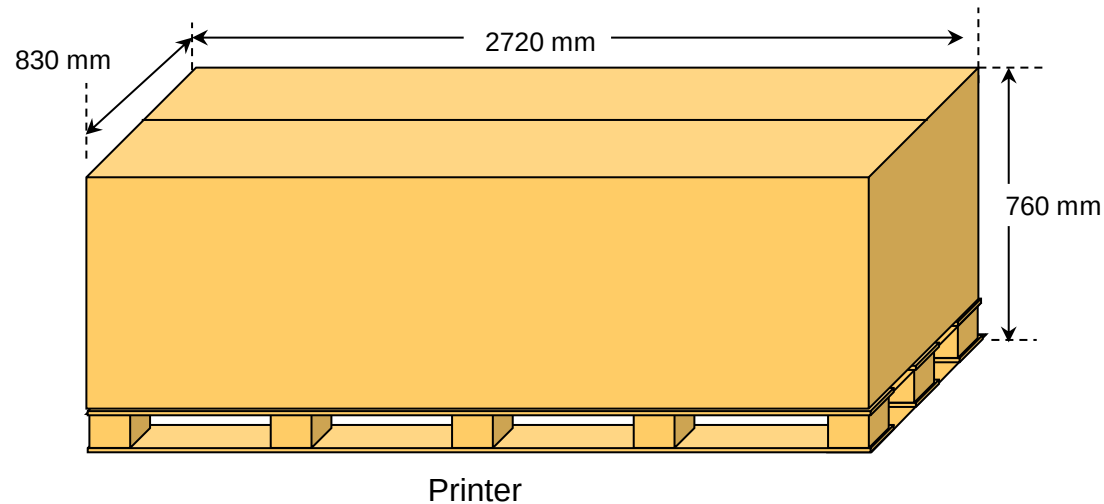
● RT-640



● Difference from RF Series

Item	Specification	RF-640	RT-640
Preventive Measure against Cockling (When feeding roll media)	Built-In Heater	✓	—
	Feed Adjuster	—	✓
	Vacuum FAN (default setting)	Change depending on the media width	100%
Improved Take-Up	Feed Adjuster	—	✓
Firing Stability	New Optimized Waveform for Roland Original Texart Ink	—	✓
	Cap Valve	—	✓
Ink Supply	Roland Ink System 1L Ink System	—	✓
RIP	Bundled RIP Software	RVW	RVW Ergosoft
Colors	Number of Colors	4	4/8

● Package Size



1L Ink System

*1L Ink System is packed
in a separate box.

● Specification

Media width	259 to 1625mm
Maximum printing width	1615mm
Media weight	40kg
Exterior dimensions (Including stand, Not including TU-3)	2650[W] x 795[D] x 1600[H]mm Weight: 160 Kg
Power requirements	AC 100 to 120 V $\pm 10\%$, 8.1 A, 50/60 Hz or AC 220 to 240 V $\pm 10\%$, 4.1 A, 50/60 Hz
Power consumption	During Operation: approx. 140 W Sleep Mode: approx. 31 W

● Roland Ink System

Original 1L Ink System

- ❑ Designed to prevent ink from being exposed to the air, which ensures stable printing
- ❑ Enables continuous printing for hours
- ❑ Roland Ink Switching System (4 colors only)
- ❑ Easy to install and remove an ink pouch
- ❑ The installation of the Ink System should be performed by service engineers.

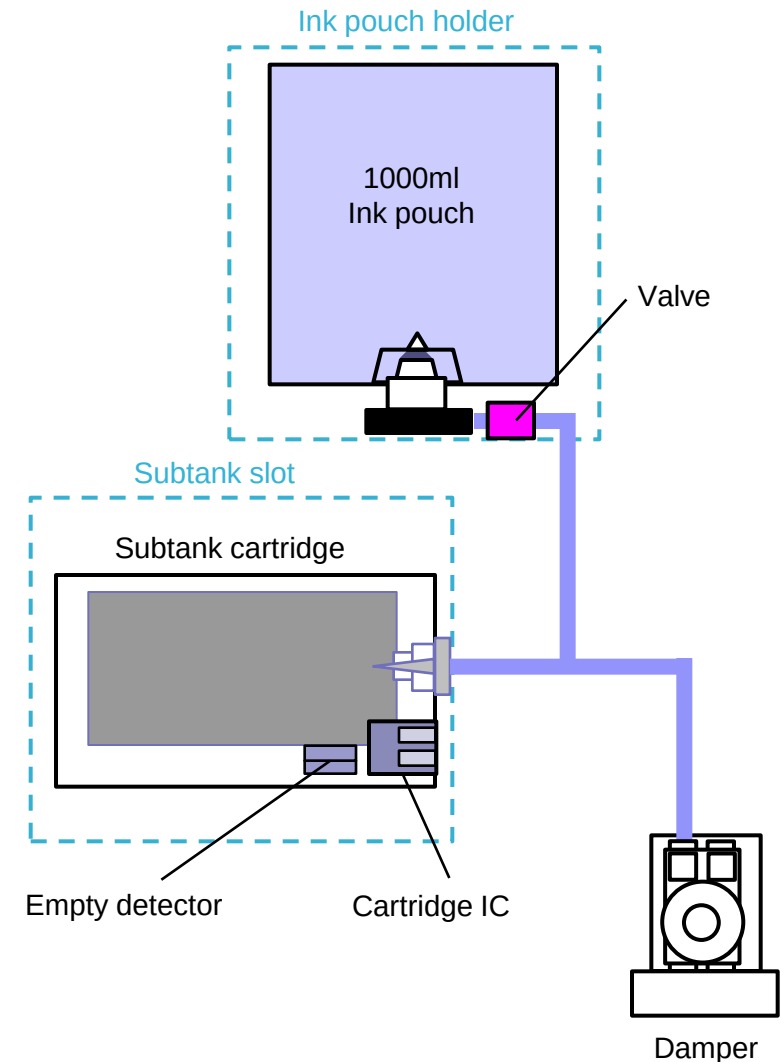


4C

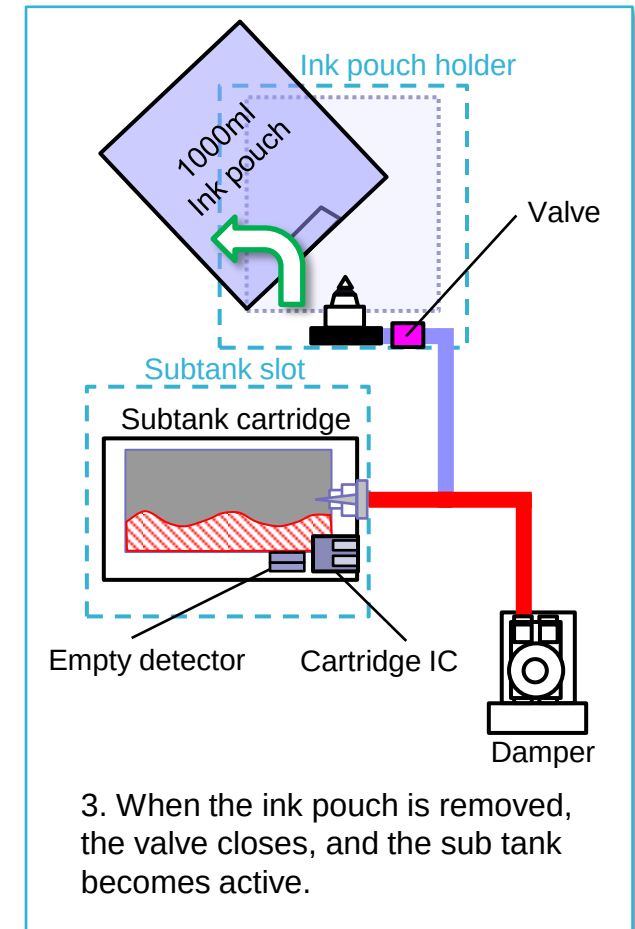
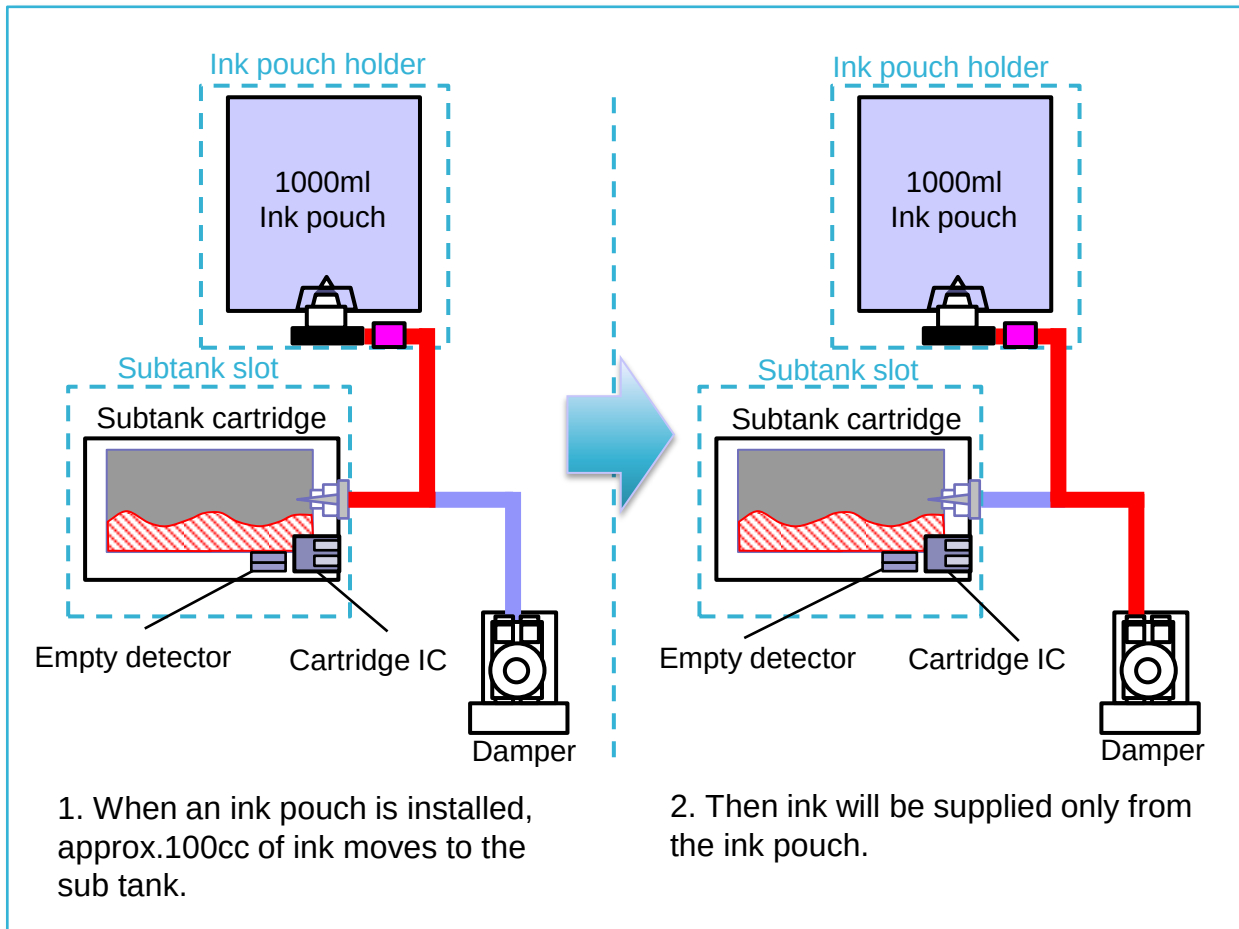


8C

*The Ink System in these photos is a prototype.



● Roland Ink System - Ink Flow -

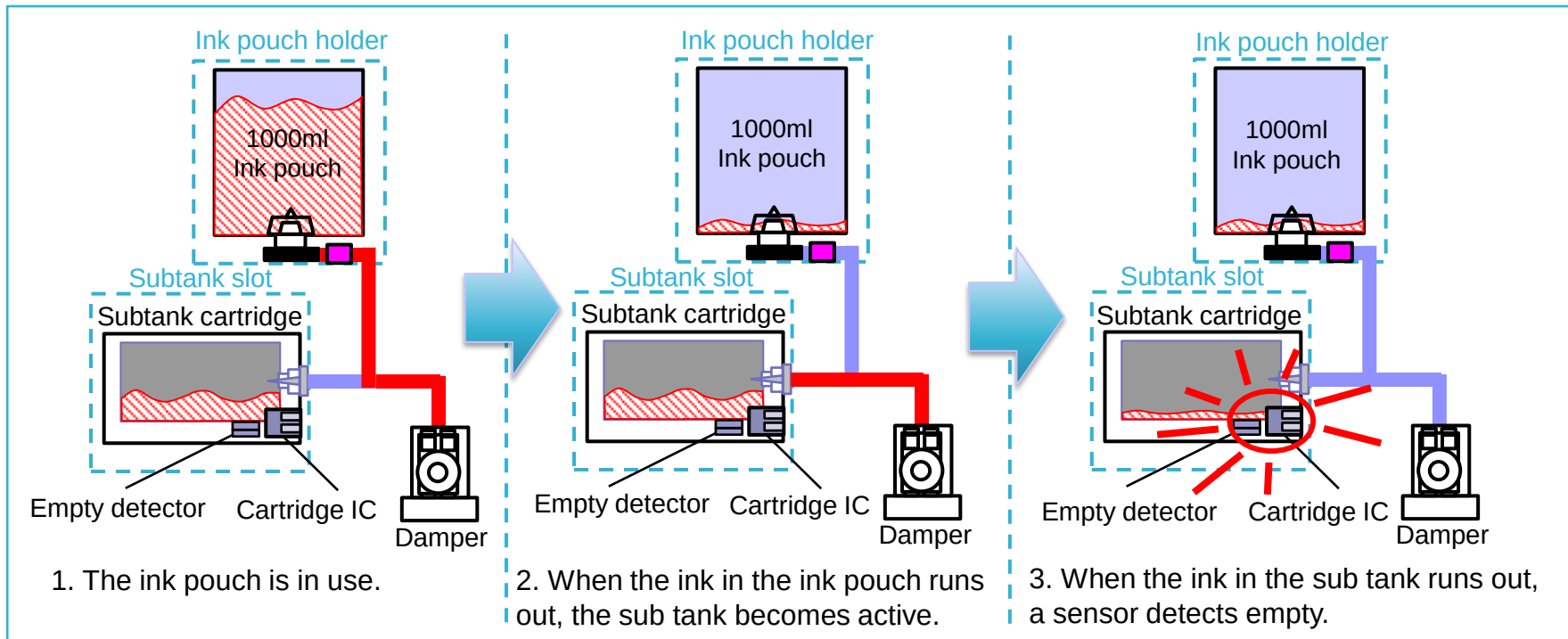


* The ink remaining amount in the ink pouch cannot be checked neither with RIP software nor in the Main Menu on the Operation Panel. In other words, there is no "INK REMAINING" menu in the Menu List.

* The sensor detects empty only when the ink in the sub tank runs out.

● Roland Ink System - Ink Pouch Replacement -

- ❑ The Roland Ink System allows you to replace an ink pouch even during the printing. However, if you replace an ink pouch before the empty is detected, the ink will remain in the sub tank for a long time, resulting in the settlement of ink components.
- ❑ In order to avoid problems such as uneven colors, it is recommended to replace an ink pouch after the ink in the sub tank runs out and the empty is detected.
- ❑ In order to prevent the settlement of ink components, refresh sub tanks once every 6 months.

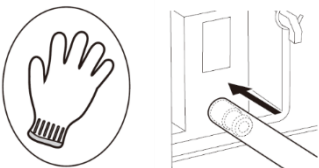


● Roland Ink System Installation

- ❑ The machine and Ink System are packed in separate boxes.
- ❑ Following items will be supplied by service engineers at the time of installation.

- 1

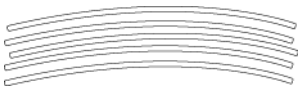
Gloves (anti-slip)



Tubes inserted to ink pouch holders need to be replaced with included Y-shaped tubes at the time of installation. Wear gloves when replacing, and be careful not to break them.

- 2

Spare tubes

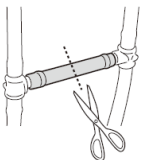


In case a tube breaks, use a spare tube.
A broken tube has low gas barrier capability to prevent ink from solidifying, causing missing dots.

P/N 1000002455 ASSY,TUBING 3*3080MM FP-740

- 3

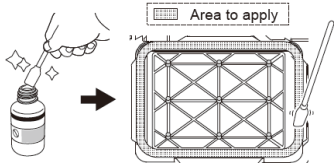
Scissors
to cut off ink tubes
(8 colors)



When using 8 colors, it is required to cut off ink tubes at the time of installation.

- 4

Cleaning liquid

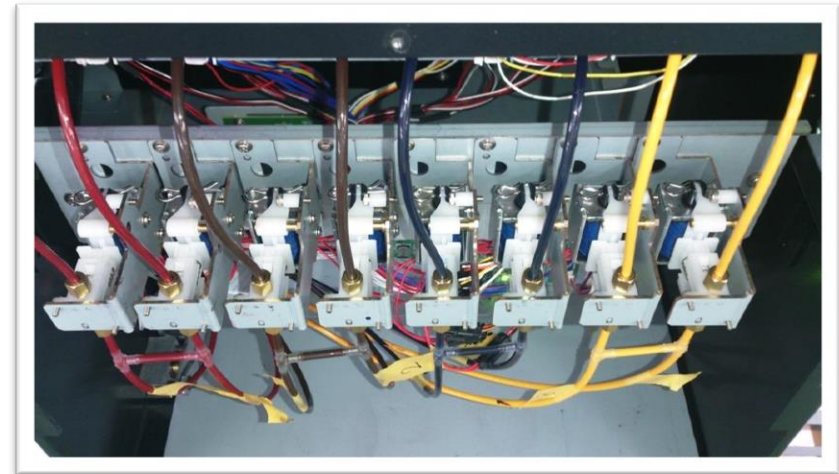


Apply cleaning liquid to the cap top before performing initial ink filling. Use water-based cleaning liquid.

● Roland Ink Switching System (Available only in 4 color-mode)

Individual Control System by Solenoid Valves

- When one of the sub tank cartridges becomes empty, it automatically switches the valves and activates the other ink pouch cartridge of the same color.
- When the sub power is turned off or the machine switches to the sleep mode, the valve of the ink cartridge in use remains open, and the valve of the ink cartridge that is not in use remains closed.
- Since it is electrically controlled by solenoid, all choke valves open automatically when the main power is turned off.

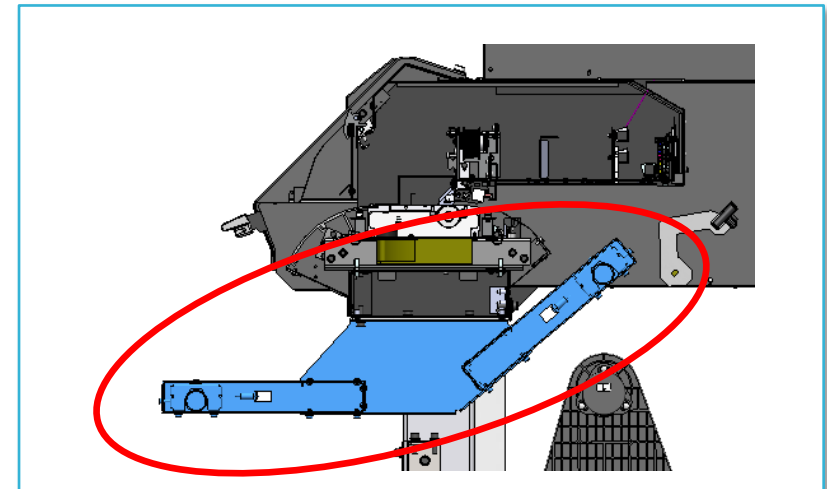
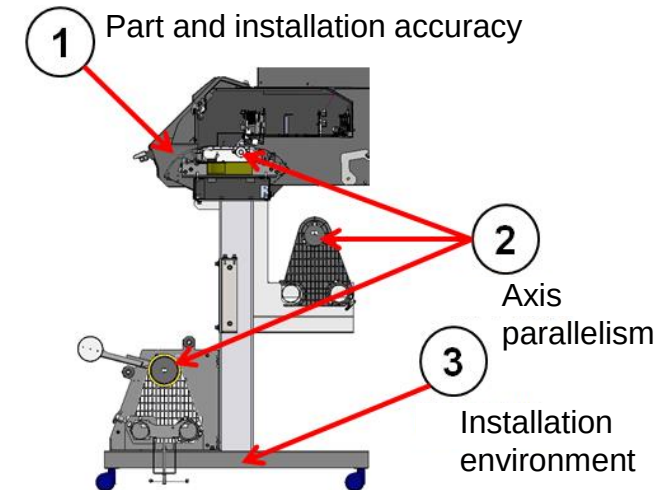
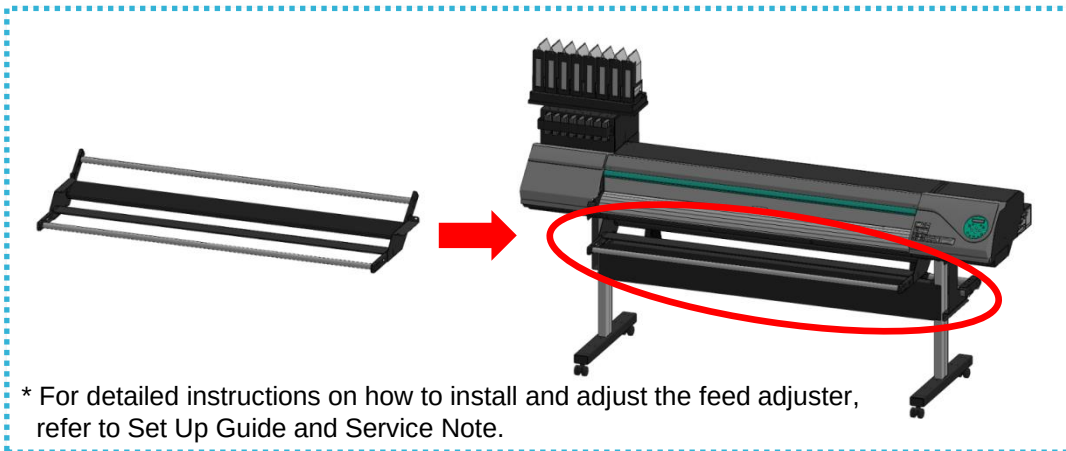


*The Ink Switching System in these photos is a prototype.

● Feed Adjuster

Optimized for Roll Media

- ❑ Allows you to adjust parallelism of the media holder, grit rollers, and take-up unit
- ❑ Reduces banding caused by gap or overlap of printing by feeding media as straight as possible
- ❑ Prevents cockling by feeding media as straight as possible and prevents media from touching the print head
- ❑ Improved take-up
- ❑ The installation and adjustment of the feed adjuster should be performed by service engineers.



● Take-Up Unit: TUC-3/ TU3-64 (Optional) - Optimized for Roll Media -

The take-up unit can be installed for use with either INWARD or OUTWARD curl, and service engineers will adjust it so that it gives just the right tension to media.

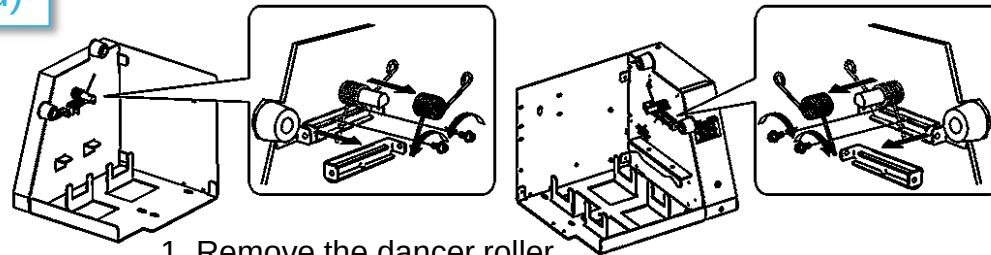
Take-up with INWARD curl is recommended in order to protect the printed side from being damaged, move on to the transfer process smoothly, and fully utilize the performance of the feed adjuster.

INWARD (Recommended)

Remove springs and screws from the TUC-3 control box and frame.

The take-up unit is adjusted for use with INWARD curl.

If you use it with OUTWARD curl, media will not be taken up properly.



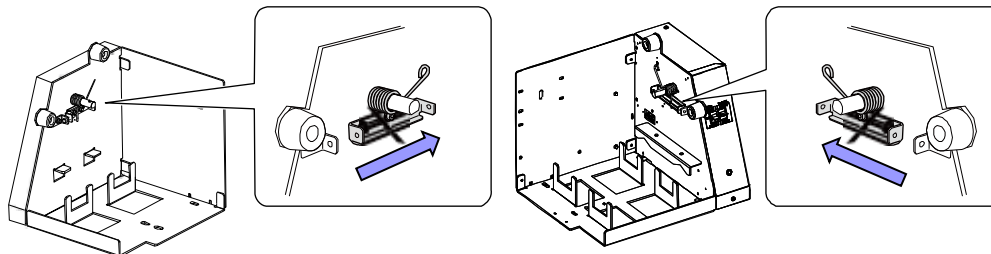
1. Remove the dancer roller
2. Remove the springs, screws, and brackets
3. Fix the dancer roller

OUTWARD

Adjust the position of springs and brackets of the TUC-3 control box and frame.

The take-up unit is adjusted for use with OUTWARD curl.

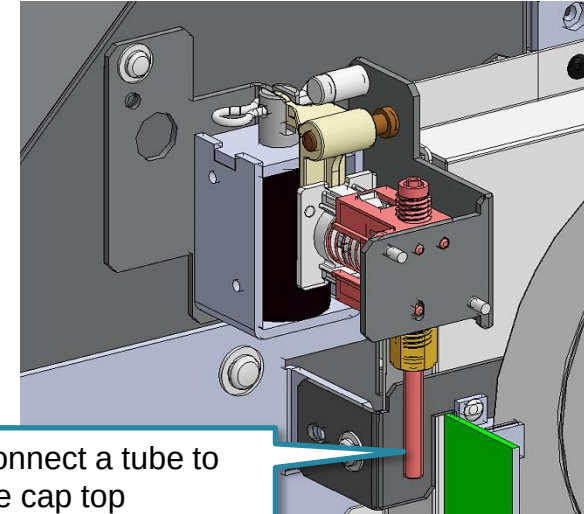
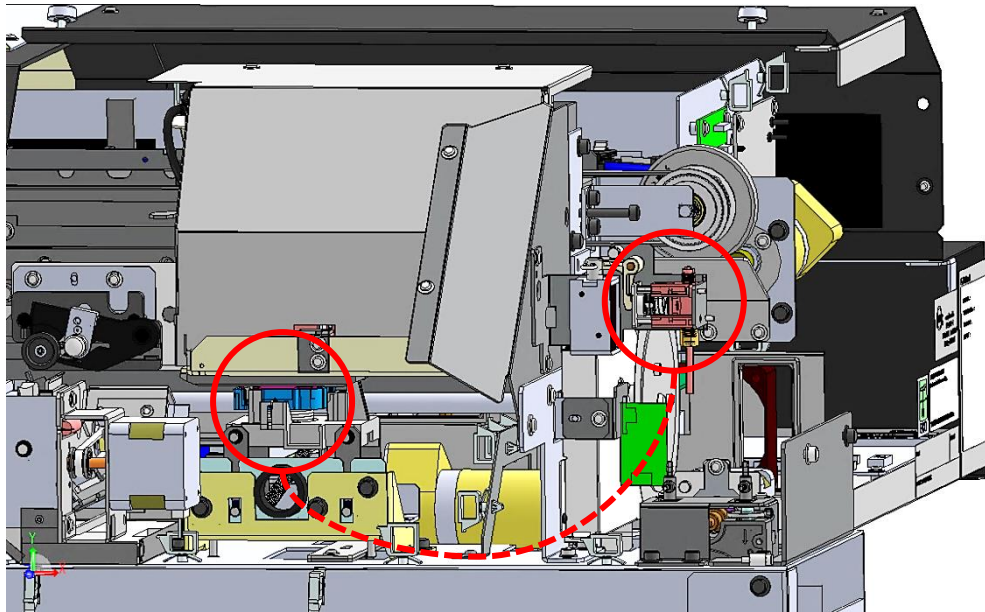
If you use it with INWARD curl, media will not be taken up properly.



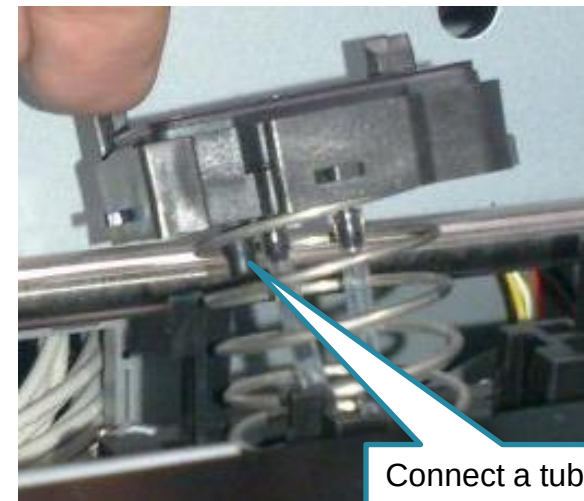
1. Loosen screws
2. Move brackets towards the back until they don't go any further
3. Tighten screws

● Cap Valve

- ❑ Pressure relief valve (to release air pressure)
- ❑ Relieves air pressure inside the cap top during cleaning. Optimized for dye-sub ink.
- ❑ Prevents a situation where the cap top is filled with ink and bubbles are generated on the cap top while performing cleaning, causing missing dots



Connect a tube to the cap top



Connect a tube from the cap valve

2. Printing Theory

Rev.1.3

● Printing Speed (4 colors)

Applicable to both RVW and Ergosoft.
1 pass print mode is available with only Ergosoft.

Media	Mode	dpi	Pass	Dir.	[m2/h]
Decoration (Banner Satin)	Draft	360x360	1pass	Bi	48.5 m2/h *
Decoration (Banner)	High Speed	540x360	2pass	Bi	32.6 m2/h
	Production	540x360	3pass	Bi	22 m2/h
	Standard	360x720	4pass	Bi	16 m2/h
	High Quality	720x720	8pass	Bi	8 m2/h
		720x1440	16pass	Bi	4 m2/h
Decoration (Banner Satin)	High Speed	540x360	2pass	Bi	32.6 m2/h
	Production	540x360	3pass	Bi	22 m2/h
	Standard	360x720	4pass	Bi	16 m2/h
	High Quality	720x720	8pass	Bi	8 m2/h
		720x1440	16pass	Bi	4 m2/h
Decoration (Display Toromat)	High Speed	540x360	2pass	Bi	32.6 m2/h
	Production	540x360	3pass	Bi	22 m2/h
	Standard	360x720	4pass	Bi	16 m2/h
	High Quality	720x720	8pass	Bi	8 m2/h
		720x1440	16pass	Bi	4 m2/h
Decoration (Flag Ink Through)	High Speed	540x360	2pass	Bi	32.6 m2/h
	Production	540x360	3pass	Bi	22 m2/h
	Standard	360x720	4pass	Bi	16 m2/h
	High Quality	720x720	8pass	Bi	8 m2/h
		720x1440	16pass	Bi	4 m2/h

* When using 1 pass print mode, you may experience banding issue depending on printing and environmental conditions.
Please conduct test printing in advance to check your results.

2. Printing Theory

- Printing Speed (8 colors)

Media	Mode	dpi	Pass	Dir.	[m2/h]
Decoration (Banner)	High Speed	540x360	4pass	Bi	16 m2/h
	Production	540x360	6pass	Bi	10.7 m2/h
	Standard	360x720	8pass	Bi	8 m2/h
	High Quality	720x720	12pass	Bi	5.4 m2/h
		720x1440	24pass	Bi	2.2 m2/h
Decoration (Banner Satin)	High Speed	540x360	4pass	Bi	16 m2/h
	Production	540x360	6pass	Bi	10.7 m2/h
	Standard	360x720	8pass	Bi	8 m2/h
	High Quality	720x720	12pass	Bi	5.4 m2/h
		720x1440	24pass	Bi	2.2 m2/h
Decoration (Display Toromat)	High Speed	540x360	4pass	Bi	16 m2/h
	Production	540x360	6pass	Bi	10.7 m2/h
	Standard	360x720	8pass	Bi	8 m2/h
	High Quality	720x720	12pass	Bi	5.4 m2/h
		720x1440	24pass	Bi	2.2 m2/h
Decoration (Flag Ink Through)	High Speed	540x360	4pass	Bi	16 m2/h
	Production	540x360	6pass	Bi	10.7 m2/h
	Standard	360x720	8pass	Bi	8 m2/h
	High Quality	720x720	12pass	Bi	5.4 m2/h
		720x1440	24pass	Bi	2.2 m2/h

● Ink Consumption

4 colors x ErgoSoft Roland Edition

Profiles	Print Mode	dpi	N2A	N5A
Decoration (Display Toromat)	High Speed	540x360	3.31 cc	1.66 cc
	Production	540x360	3.10 cc	1.72 cc
	Standard	360x720	3.88 cc	2.10 cc
	High Quality	720x720 720x1440	2.99 cc 3.82 cc	1.83 cc 1.89 cc

4 colors x Roland VersaWorks

Profiles	Print Mode	dpi	N2A	N5A
Decoration (Display Toromat)	High Speed	540x360	5.42 cc	2.84 cc
	Production	540x360	5.42 cc	2.84 cc
	Standard	360x720	6.08 cc	2.97 cc
	High Quality	720x720 720x1440	6.39 cc 6.28 cc	3.29 cc 3.26 cc

8 colors x ErgoSoft Roland Edition

Profiles	Print Mode	dpi	N2A	N5A
Decoration (Display Toromat)	High Speed	540x360	5.10 cc	2.43 cc
	Production	540x360	4.33 cc	2.55 cc
	Standard	360x720	5.27 cc	2.92 cc
	High Quality	720x720 720x1440	6.54 cc 7.76 cc	3.49 cc 4.52 cc



Conditions
Data: ISO N2A
Size: 841mmX1189mm
(A0)



Conditions
Data: ISO N5A
Size: 841mmX1189mm
(A0)

3. Ink

● Texart ink

- ❑ 8 colors: C M Y K Lc Lm Or Vi
- ❑ Model number: SBL3-BK / CY / MG / YE / LC / LM / OR / VI
- ❑ Ink pouch: 1000cc

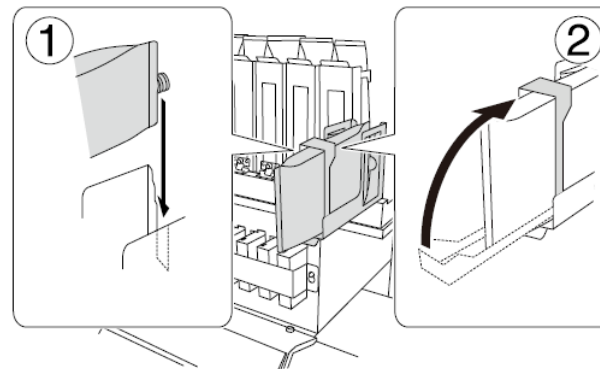
Rev.1.2



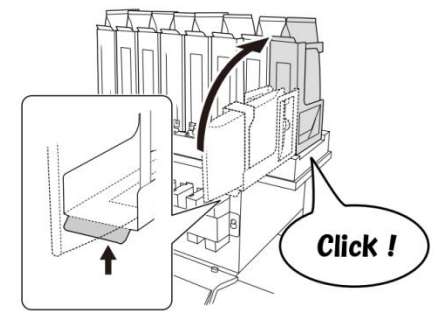
* An ink pouch is not equipped with an IC chip.



Shake an ink pouch gently.



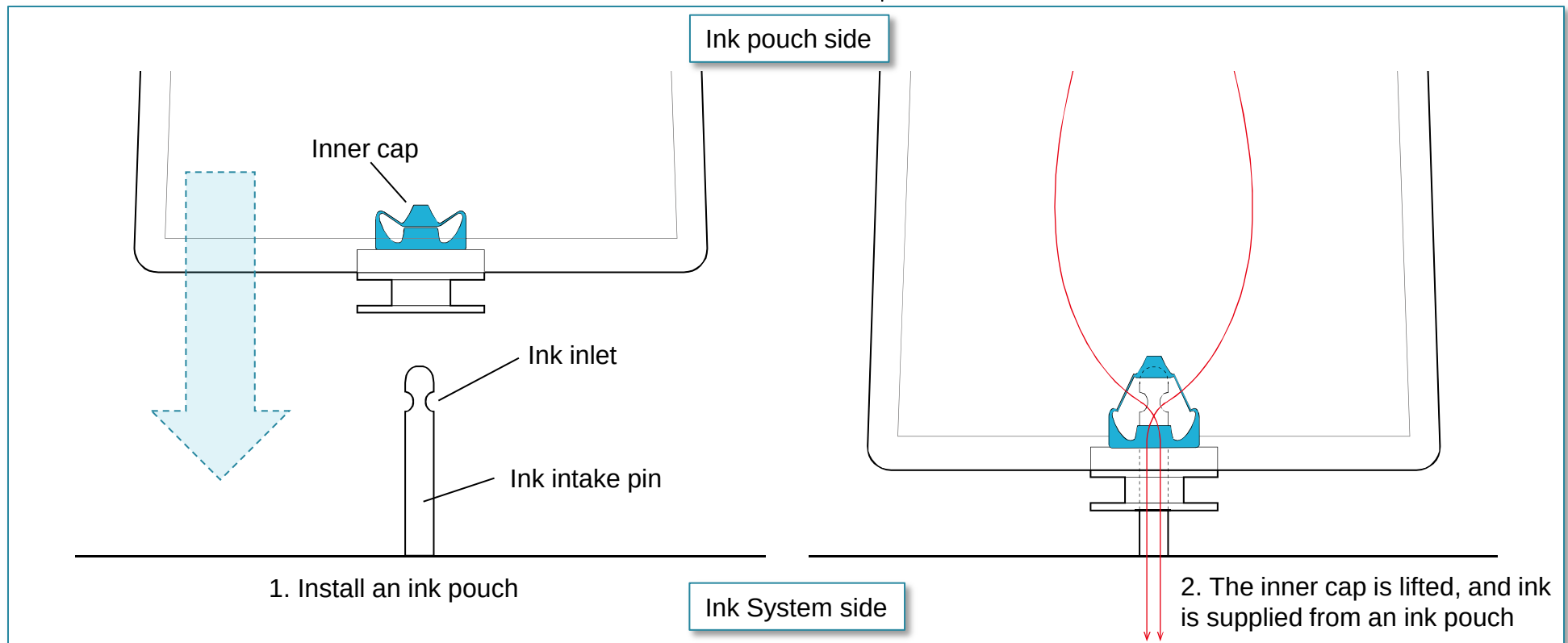
Install the new ink pouch.
Raise the stopper.



Raise the ink pouch holder.

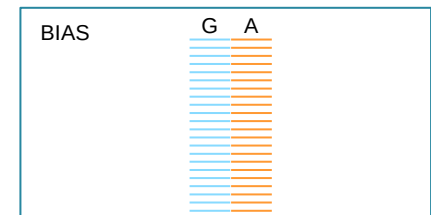
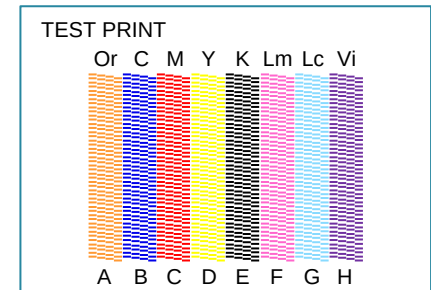
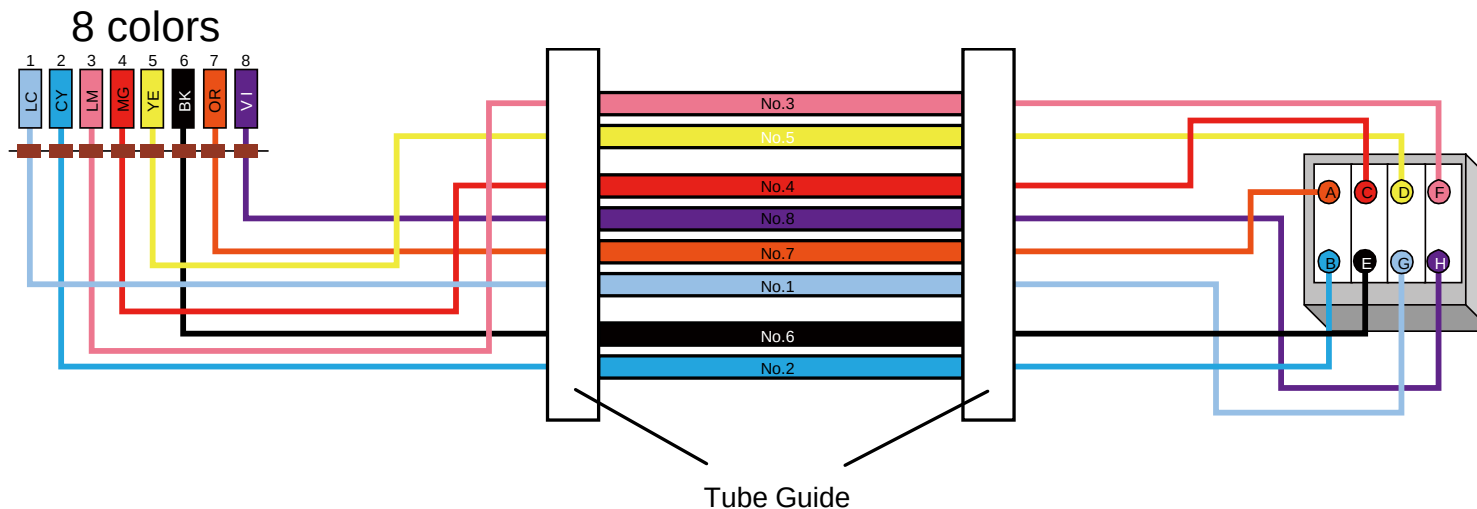
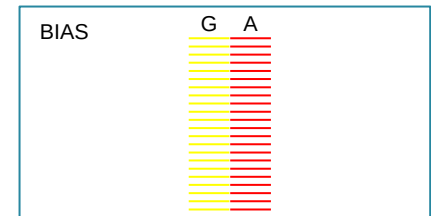
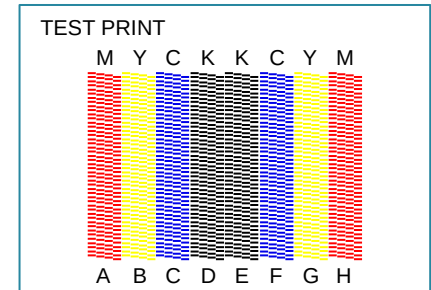
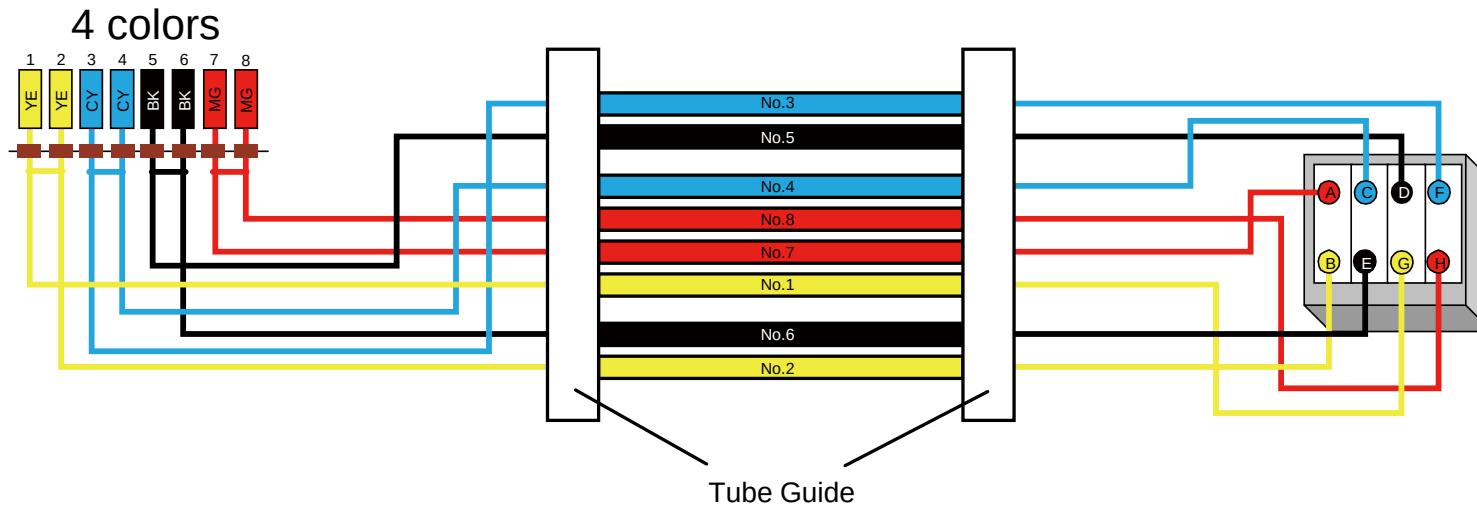
● Texart ink

Structure of an ink pouch



4. Ink Lines

● Ink Lines



5. Cleaning Function

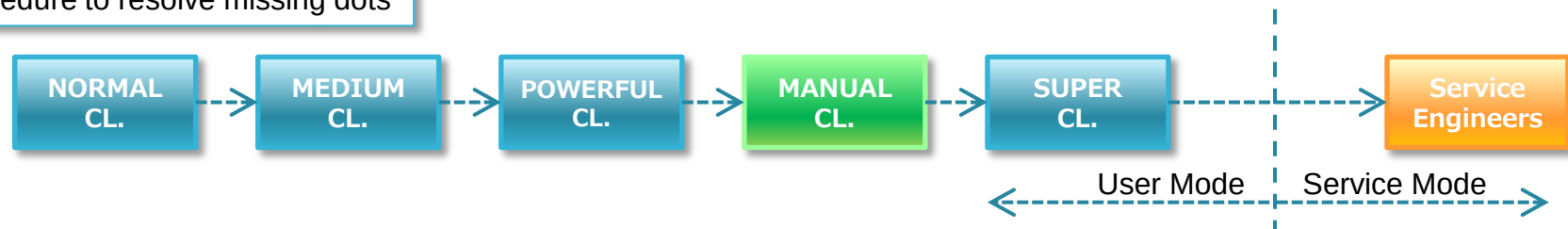
- The Amount of Ink Used for Cleaning

	Description	Ink lines	Ink Consumption
NORMAL CL.	Daily care and maintenance	8 ink lines	2.2 cc
MEDIUM CL.	Perform if missing dots are not resolved by Normal Cleaning.	8 ink lines	10.1 cc
POWERFUL CL.	Perform if missing dots are not resolved by Normal/ Medium Cleaning.	8 ink lines	15.5 cc
SUPER CL.	Perform if missing dots are not resolved by cleaning above or in order to renew ink in the specific ink line. Select the ink line you would like to clean.	1 ink line	75.0 cc
		2 ink lines	113.0 cc
		8 ink lines	226.0 cc

*This is for reference only.

Ink consumption varies by machine and varies depending on how many colors you are using (4 colors or 8 colors).

Procedure to resolve missing dots



● The Amount of Ink Used for Cleaning

	Description	Ink lines	Ink Consumption
LIGHT CHOKE CL.*1	Perform when printed colors are uneven because of the settlement of ink components. The machine rotates the pump while the chock valves are closed. The amount of time required to complete ink renewal by rotating the pump while the chock valves are closed is shorter than that of Choke Cleaning. Therefore, stress on the print head and dampers are less compared to Choke Cleaning. Light Choke Cleaning renews ink in the tubes almost completely to resolve uneven colors.	8 ink lines	141.1 cc
REFRESH SUBTANK	Refresh sub tanks once every six months to refresh ink in the sub tanks. This operation is effective when uneven colors are not resolved by Light Choke Cleaning.	8 ink lines	895.0 cc
CHOCK CL. (Only in Service Mode)	Perform after replacing a damper. The machine rotates the pump while the chock valves are closed. It cleans up the ink components settled at the bottom of dampers.	8 ink lines	91.8cc

*1 "Light" means less stress on the print head, not the ink consumption.

*This is for reference only.
Ink consumption varies by machine and varies depending on how many colors you are using (4 colors or 8 colors).

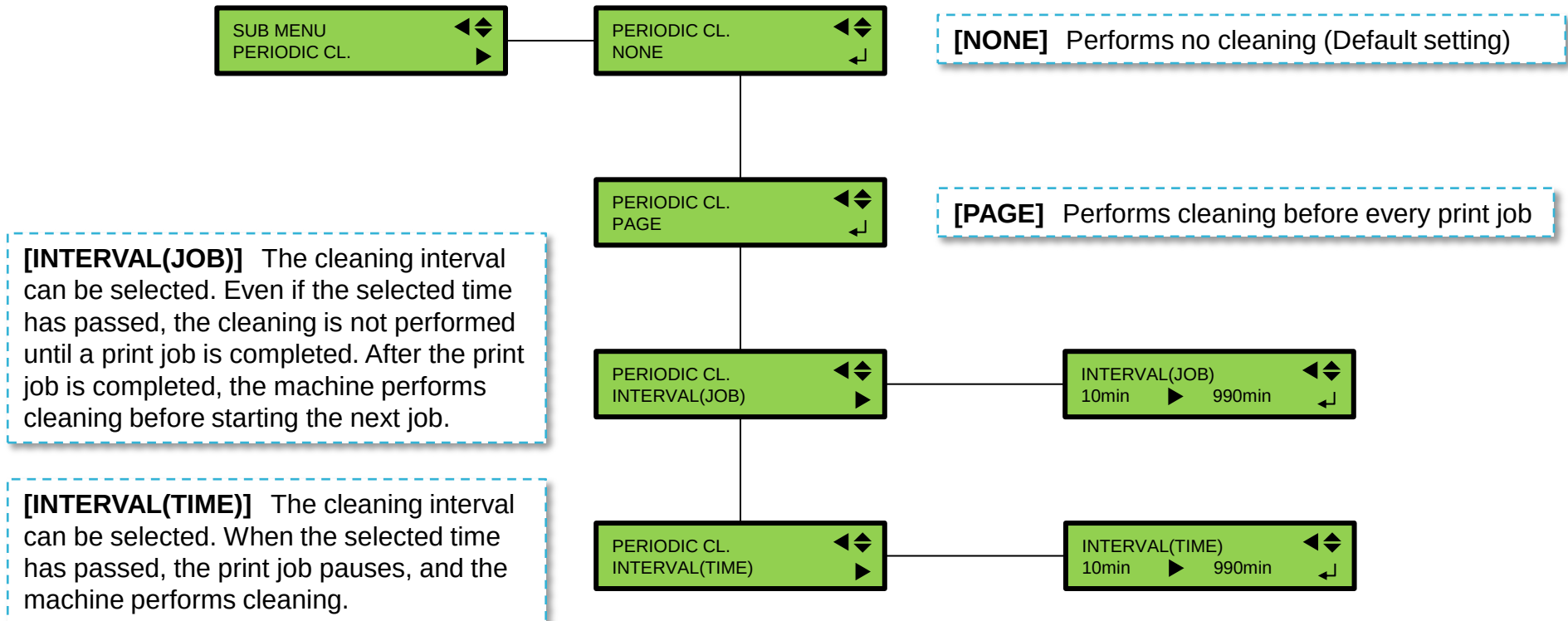
Procedure to resolve unstable colors



● Cleaning Function

Periodical Cleaning

- The cleaning interval can be selected.



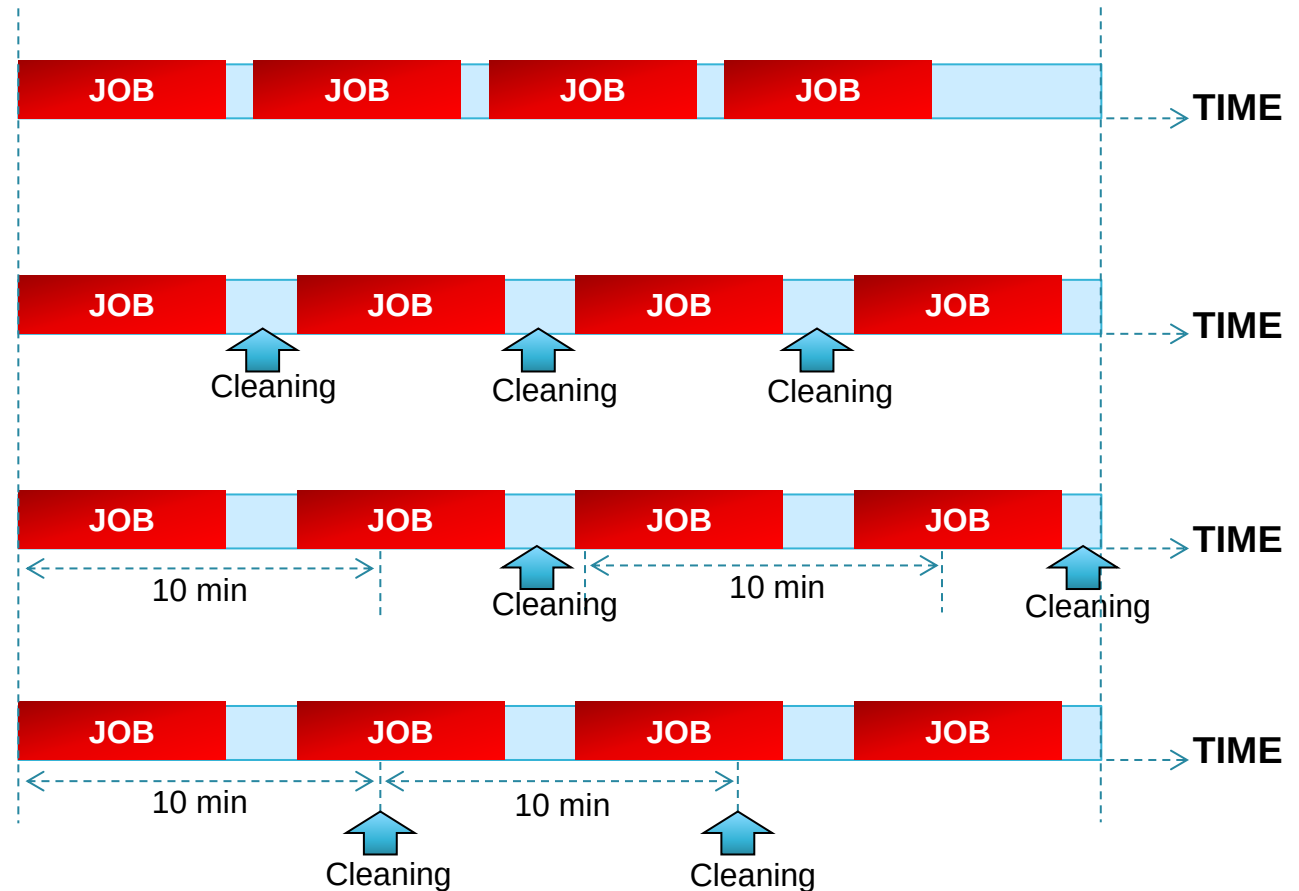
● The Timing of Periodical Cleaning

PERIODIC CL.
NONE

PERIODIC CL.
PAGE

PERIODIC CL.
INTERVAL(JOB)

PERIODIC CL.
INTERVAL(TIME)



● The Simulation of Ink Consumption per Month for Automatic Maintenance

Conditions of the simulation:

- ❑ Operation hours: 8 hours/day
- ❑ Operation days: 5 days/week (22 days/month)
- ❑ The machine does not enter the Sleep Mode during operation.

	Ink Consumption per Machine	Ink Consumption per Ink Pouch
Texart ink	67.4 cc	16.9 cc

*This is for reference only.

Ink consumption varies widely by usage conditions.

6. Special Pump Operations

● Pump Operations

- Initial Ink Filling : Fills ink lines with ink. Cleaning liquid is not required.
(Cleaning liquid is not included with RT-640.)
- PUMP UP : Removes ink in the tubes.
(Ink in the sub tanks will not be removed.)
- HEAD WASH : Cleans ink lines. 8 cleaning cartridges (CJ-CL) are required.
- REPLACE SUBTANK : Removes ink in the ink tubes and sub tanks.
It should be performed when replacing the sub tanks.

	Ink Consumption	Waste Amount	Referential Time
Initial Ink Filling / User Menu	1856.0 cc	445.0 cc	Approx. 20 min.
PUMP UP / Service Menu	-	200.0 cc	Approx. 25 min.
HEAD WASH / Service Menu	810.0 cc (Cleaning liquid)	837.0 cc	Approx. 45 min.
REPLACE SUBTANK / Service Menu	854.0 cc	608.0 cc	Approx. 35 min.

*This is for reference only.
Ink consumption varies by machine and varies depending on how many colors you are using (4 colors or 8 colors).

7. Software

● For Users

- ❑ Roland VersaWorks ver.5.30~
- ❑ Ergosoft Roland Edition



* Insert a dongle to use Ergosoft.

- ❑ Roland OnSupport ver.2.20~
(Available on the website)

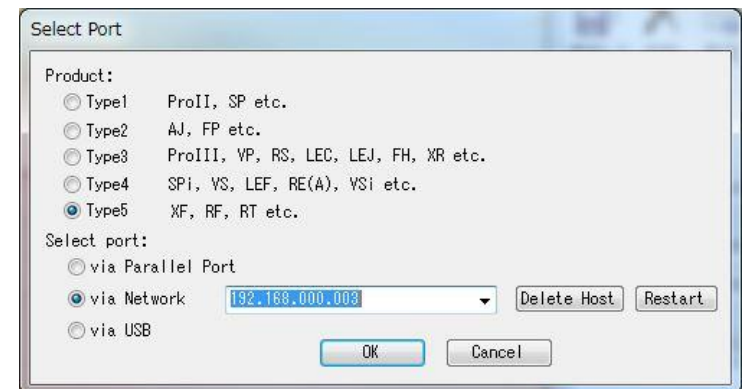


- ❑ Roland Printer Assist ver.1.10~
(Will be available on the Apple Store at the end of February, 2015)



● For Service Engineers

- ❑ Peck 6.80~



8. Installation

● Installation

1	Unpacking	Referential time: 20 min.	Accumulated time: 20 min.
2	Printer Installation	Referential time: 30 min.	Accumulated time: 50 min.
3	Ink System Installation	Referential time: 25 min.	Accumulated time: 75 min.
4	Initial Ink Filling <i>* The pump does not rotate for 10 minutes in order to let ink flow into sab tanks by its own gravity.</i>	Referential time: 20 min.	Accumulated time: 95 min.
5	Take-Up Unit (TUC-3) Installation <i>* Check which setting a user prefers beforehand, INWARD or OUTWARD.</i>	Referential time: 15 min.	Accumulated time: 110 min.
6	Bidirectional Adjustment (Perform this adjustment using media a user uses.)	Referential time: 5 min.	Accumulated time: 115 min.
7	Feed Adjuster Adjustment	Referential time: 60 min.	Accumulated time: 175 min.
8	RIP Software Installation	Referential time: 15 min.	Accumulated time: 190 min.
9	Explanations about how to operate the printer and how to use RIP software	Referential time: Depends on a user's request	

*This is for reference only.

The amount of time required for each procedure may vary depending on the installation environment.

9. Transport

● Transport of the Machine

The machine can be transported in three different ways.*1

with ink filled

with ink removed
(without HEAD WASH)

with ink removed
(with HEAD WASH)

Be sure to observe the following points when transporting.

Do not subject the machine to impact

Do not expose the machine to temperatures exceeding 30°C for a prolonged period
*2

Turn on the main power SW within 24 hours

Do not subject the machine to impact

Do not expose the machine to temperatures exceeding 30°C for a prolonged period
*2

Perform FILL INK within the day

Do not subject the machine to impact

Do not expose the machine to temperatures exceeding 30°C for a prolonged period
*2

Perform FILL INK within three days

*1 For more details on how to transport the machine, refer to Service Note.

*2 During non-operation:

Keep the machine at a temperature of 15 to 30°C and relative humidity of 20 to 80%RH (no condensation).

10. Consumables

- Consumables

	Life Expectancy
Print Head	6 billion times/nozzle *
Rubber Wiper	Wiping count 3,000 times
Felt Wiper	Wiping count 800 times
Cap Top	24 months
Wiper Scraper	Replace when worn out or transformed
Scan Motor	3,000 hours
Ink Tube	3,000 hours
Sponge under the Wiper	Replace when worn out
Battery	24 months
Pinch Rollers	Replace when worn out

* Even if 1 out of 8 nozzle lines reached 6 billion times, this print head is regarded as the one which has reached the life expectancy.