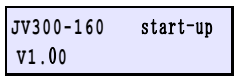
4.1.1 Service Mode and Specialized Key

■ Indication on LCD

In normal mode



■ Outline

For troubleshooting or maintenance work, the machine needs to be operated in service mode.
The following describes the Specialized Key functions which start this machine in service-related mode.

■ Specialized Key Functions

After the start of the machine, press the specific key(s) on the operation panel while the version information is displayed. Then the machine will enter the corresponding one of the following service-related modes.

Service-related mode	How to enter	Remarks
F/W Update	(While version information is displayed) Press [ENTER]	• Receives FirmwareROM data from the host PC via USB2.0 I/F, and updates the firmware of the main PCB. • Available only when the machine is started by turning on the main power. • After firmware update, restart the machine by turning the main power.
Parameter UP/DOWNLOAD	(While version information is displayed) Press [▲]+[▼]	• Uploads the parameters and log data from the machine to the host PC via USB2.0 I/F. • Downloads the parameters and log data from the host PC to the machine via USEB2.0 I/F.
System Parameter input	(While version information is displayed) Press [◀]+[▶]	• Start the machine in [SYSTEM PARAM.] input mode of [#PARAMETER]. • When the machine cannot start because of a parameter hash error or the like, the parameters can be initialized in this mode. • When the machine cannot be operated because of a system down error or the like, input the system parameter No. 45 HASH 0 → 1 or 2 in this mode. Then the machine can be started for the purpose of checking for problem.
Service mode	(While version information is displayed) Press [FUNC1]+[FUNC3]	Active until the power to the machine is turned off.
	System parameter SUPPORT 0 → 2 (3: English version)	Active until the value of the system parameter No. 122 SUPPORT is changed to 0.
When installing the device-specific F/W into new product maintenance PCB (common PCB)	(While version information is displayed) Press [FUNC2]	Install the device-specific F/W into new product maintenance PCB (common PCB).

■ Service Mode

For maintenance work, start the machine in service mode. Then you can use the functions that are not available in normal mode. As for those functions, the "#" mark is added at the head of the function name.

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4.1.2 F/W Update

■ Indication on LCD

❶ Ready for ROM data reception

```
F/W UPDATING
 *TRANSMIT START*
```

❷ ROM data being received

```
*TRANSMIT START*
S recieving...
```

❸ ROM data receiving has been completed

```
TYPE:HOST->MAIN
ver :1.00->*.**
```

❹ ROM data being overwritten

```
ver :1.00->*.**
writing F/W
```

■ Outline

Using FW Version Upgrade function of FW Update Tool III, perform version upgrade of JV300 series.
For FW Update Tool III, refer to “FW Update Tool III User’s Manual”.

■ Update procedure

Caution

Do not turn OFF the power supply during the program is being written into the memory.
Once overwriting fails, the main PCB must be replaced with a new one for recovery.

F/W update can be canceled by turning off the main power in the stage where the indication on the LCD is as shown at ❶.

☐ Normal version upgrade of F/W

Step	Operation	Description	Indication on LCD
1	Main power ON+[REMOTE]	Machine starts in F/W update mode ☐ When replacing maintenance PCB, perform this first. The main circuit board described below is the common parts for several models. When such board is delivered, written firmware is not for specified model, but the common to each model. Part codes: E000011 Main PCB ASSY LCD indication after the startup: `EplMb Start-up` `Ver.x.xx` **IMPORTANT** When display is not above, perform update in regular update mode. For the common F/W, the JV300 series F/W can be updated with Main power ON + [FUNC2].	
		Ready for ROM data reception	❶
2	Version up file trans-mission	Using Version Upgrade function of FW Update Tool III, send the version up file.	
		Data being received	❷
		Data receiving has been completed. Press the [ENTER] key	❸
		The program is written into the memory.	❹
3	Main power OFF	Update work completed	

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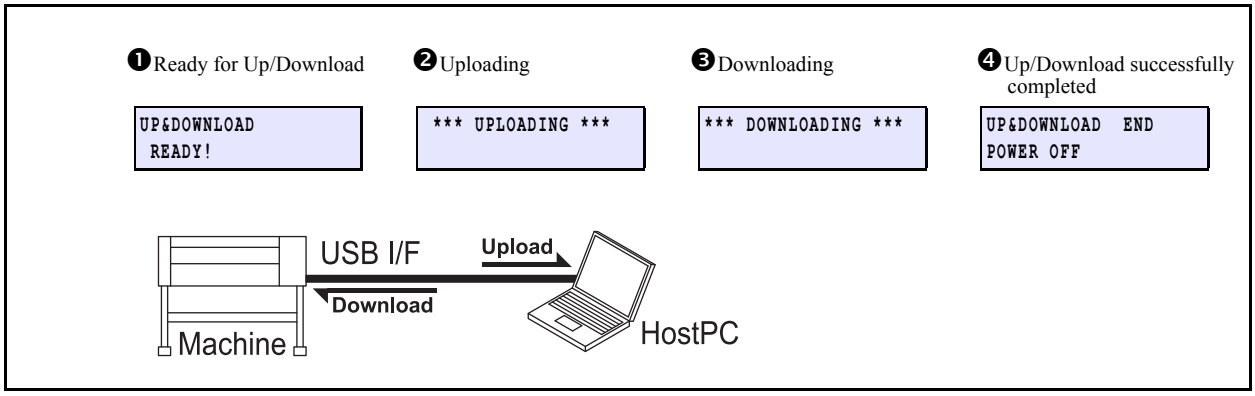
4.1.3 Parameter Up/Download

■ Indication on LCD



■ Upload procedure (machine → host PC)

Step	Operation	Description	Indication on LCD
1	Power ON+[▲]+[▼]	Machine starts in Parameter Up/Download mode.	
		Ready for Up/Download	❶
2	Parameter upload	Uploads parameter data to the host PC.*1	
		Uploading	❷
		Up/Download completed	❹
3	Power OFF	Parameter upload completed	

*1.How to upload the LOG file:
LOG files can be uploaded by uploading the files on the "LCD ❶" screen with the [ENTER] key on the main unit operation panel pressed.

■ Download procedure (machine ← host PC)

Step	Operation	Description	Indication on LCD
1	Power ON+[▲]+[▼]	Machine starts in Parameter Up/Download mode.	
		Ready for Up/Download	❶
2	Parameter download	Downloads parameter data to the host PC.	
		Downloading	❸
		Up/Download completed	❹
3	Power OFF	Parameter download completed	

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4.1.4 Parameter Function

■ Outline

With the PARAMETER function, you can check and set parameters on the machine. (Available in service mode)

Be sure to upload parameters before changing them.
There is a possibility that input errors may make recovery impossible.

■ Parameter function items

No.	Item	Description	Change
1	SYSTEM PARAMETER	A group of parameters as a storage of adjusted values for each machine (printing)	Partially permitted
2	MAINTENANCE PARAMETER	A group of parameters for firmware debugging and assessment in the development stage	Partially permitted
3	SERVO PARAMETER	A group of parameters for XY motor control.	Disapprove*1
4	FEED PARAMETER	A group of parameters for feed control.	Disapprove
5	HEAD PARAMETER	A group of parameters to save the dot position correction and the head voltage (correction value)	Permitted
6	OPE PARAMETER	A group of parameters for operation control.	Disapprove
7	INK PARAMETER1	A group of parameters as a storage of the operation status of the machine	Partially permitted
8	INK PARAMETER2	Parameters for control of function related to ink system.	Disapprove
9	DEBUG PARAMETER	Parameters for evaluation of debug in development	Disapprove
10	SCAN PARAMETER	A group of parameters for scan control.	Disapprove
11	NOZZLE RECOVERY PARAMETER	Parameters to save nozzle numbers registered at nozzle recovery	Disapprove

*1.Do not change the disapprove parameter without instructions from developer.

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4.1.5 Important Parameter

■ Outline

This section shows the parameters necessary in repair and verification work.

■ Important parameters

☐ SYSTEM PARAMETER

No.	Display	Initial Value	Adjusted Value	Description	Unit	Input Range
007	FLSposY	0		Flushing Y position adjustment	0.1mm	-200~200
008	CapPosY	0		Capping Y position adjustment	0.1mm	-200~200
009	WipPosY	0		Wiping Y position adjustment	0.1mm	-200~200
032	INK SET	0		Ink set	codes	0x0000 ~0x00ff
109	AirVacY	0		Air vacuum Y position adjustment	Pulses	-200~200
124	MECASIZ	6		Mecha size 6: 130, 7: 160	codes	0~10
129	SUPPORT	0		Adjustment functionality expansion 2: Adjustment functionality expansion 3: Adjustment functionality expansion + English	codes	0~2
130	INITIAL	0		Initialization 1: All parameters (1: 2 head machine, 2: 1 head machine) 10: Restore from FROM to EEPROM (Not used) 11~:Parameter initialized at update (11: 2 head machine, 12: 1 head machine) 20: Reserve 21~:System parameter and Operation parameter (21: 2 head machine, 22: 1 head machine)	codes	0~255

☐ INK PARAMETER1

No.	Display	Initial Value	Adjusted Value	Description	Unit	Input Range
000	INKSET	0x0000		Initial filling performing flag: Bit allocation ^0=Head 1 ~ ^7=8		0~255
256	SubsSW	1		Filling fluid filling (for initial filling) execution flag 1=Execute		0~1

☐ HEAD PARAMETER

Drop position adjusting value has been saved.

For details, refer to the parameter list.

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4.1.6 F/W update procedure after the replacement of the main circuit board

■ Outline

This section shows the procedure for F/W updating after the replacement of the main circuit board.

■ Update procedure

Step	Operation	Description
1	Parameter upload	Refer to "4.1.3 Parameter Up/Download"
2	Replace the main PCB	Replace the main PCB
3	Power ON	Turn the power ON
4	F/W update	Update F/M to the same version of F/W when uploading the parameter. Refer to "4.1.2 F/W Update" IMPORTANT ● If version upgrade of Epl Mb F/W (common F/W) is required, start the machine while pressing the [FUNC2] key, and then perform version upgrade. (As Epl Mb F/W (common PCB) is installed in the main PCB for maintenance, start with the [FUNC2] key, and perform version upgrade.) ● When you start the machine with Epl Mb F/W installed in while pressing the [ENTER] key, the machine will be in the unexpected status other than the specification. Therefore, be sure to start the machine while pressing the [FUNC2] key.
5	Initial the SYSTEM PARAMETER	Input system parameter INITIAL= "1" for initializing all parameters.*1
6	Parameter download	Download the parameter that is uploaded on the above step "1". Refer to "4.1.3 Parameter Up/Download"

*1.Make sure all parameters are initialized

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