# **SERVICE MANUAL**



Color Inkjet Printer

## Epson WF-5690 series/Epson WF-4640 series Epson WF-4630 series/Epson WF-5620 series Epson WF-5190 series/Epson WF-5110 series





SEMF13-007

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## **Safety Precautions**

All safety procedures described here shall be strictly adhered to by all parties servicing and maintaining this product.

## **DANGER**

Strictly observe the following cautions. Failure to comply could result in serious bodily injury or loss of life.

- 1. Always disconnect the product from the power source and peripheral devices when servicing the product or performing maintenance.
- 2. When performing works described in this manual, do not connect to a power source until instructed to do so. Connecting to a power source causes high voltage in the power supply unit and some electronic components even if the product power switch is off. If you need to perform the work with the power cable connected to a power source, use extreme caution to avoid electrical shock.

### **WARNING**

Strictly observe the following cautions. Failure to comply may lead to personal injury or loss of life.

- 1. Always wear protective goggles for disassembly and reassembly to protect your eyes from ink in working. If any ink gets in your eyes, wash your eyes with clean water and consult a doctor immediately.
- 2. When using compressed air products; such as air duster, for cleaning during repair and maintenance, the use of such products containing flammable gas is prohibited.

## **PRECAUTIONS**

Strictly observe the following cautions. Failure to comply may lead to personal injury or damage of the product.

- 1. Repairs on Epson product should be performed only by an Epson certified repair technician.
- 2. No work should be performed on this product by persons unfamiliar with basic safety knowledge required for electrician.
- 3. The power rating of this product is indicated on the serial number/rating plate. Never connect this product to the power source whose voltages is different from the rated voltage.
- 4. Replace malfunctioning components only with those components provided or approved by Epson; introduction of second-source ICs or other non-approved components may damage the product and void any applicable Epson warranty.
- 5. The capacitors on the Main Board may be electrically charge right after the power turns off or after driving motors which generates counter electromotive force such as when rotating the PF Roller or when moving the CR Unit. There is a risk to damage the Main Board if the Head FFC is short-circuited with the capacitors on the Main Board electrically charged, therefore, after the power turns off or after motors are driven, leave the printer untouched for approximately 30 seconds to discharge the capacitors before starting disassembly/ reassembly.
- 6. To prevent the circuit boards from short-circuiting, be careful about the following when handing FFC or cables.
  - When handling FFC, take care not to let the terminal section of FFC touch metal parts.
  - When connecting cables/FFC to the connectors on circuit board, connect them straight to the connectors to avoid slant insertion.

- 7. In order to protect sensitive microprocessors and circuitry, use static discharge equipment, such as anti-static wrist straps, when accessing internal components.
- 8. Do not tilt this product immediately after initial ink charge, especially after performing the ink charge several times. Doing so may cause ink to leak from the product because it may take some time for the waste ink pads to completely absorb ink wasted due to the ink charge.
- 9. Never touch the ink or wasted ink with bare hands. If ink comes into contact with your skin, wash it off with soap and water immediately. If you have a skin irritation, consult a doctor immediately.
- 10. When disassembling or assembling this product, make sure to wear gloves to avoid injuries from metal parts with sharp edges.
- 11. Use only recommended tools for disassembling, assembling or adjusting the printer.
- 12. Observe the specified torque when tightening screws.
- 13. Be extremely careful not to scratch or contaminate the following parts.
  - Nozzle plate of the printhead
  - CR Scale
  - PF Scale
  - ASF Scale
  - Coated surface of the PF Roller
  - Gears
  - Rollers
  - LCD
  - Scanner Sensor
  - Exterior parts
- 14. Never use oil or grease other than those specified in this manual. Use of different types of oil or grease may damage the component or give bad influence on the printer function.
- 15. Apply the specified amount of grease described in this manual.
- 16. Make the specified adjustments when you disassemble the printer.
- 17. When cleaning this product, follow the procedure described in this manual.
- 18. When transporting this product after filling the ink in the printhead, pack the printer without removing the ink cartridges in order to prevent the printhead from drying out.
- 19. Make sure to install antivirus software in the computers used for the service support activities.
- 20. Keep the virus pattern file of antivirus software up-to-date.
- 21. When disassembling/reassembling this product, if you find adhesive power of the double-sided tape which secure the parts or FFC is not enough, replace the tape with new one and attach it correctly to the specified points where the parts or FFC should be secured.
- 22. Unless otherwise specified in this manual, the labels attached on the returned product should be transferred to the corresponding attachment positions on the new one referring to the labels on the returned product.

## **About This Manual**

This manual, consists of the following chapters, is intended for repair service personnel and includes information necessary for properly performing maintenance and servicing the product.

### **CHAPTER 1. TROUBLESHOOTING**

Describes the step-by-step procedures for the troubleshooting.

#### CHAPTER 2. DISASSEMBLY / REASSEMBLY

Describes the disassembly/reassembly procedures for main parts/units of the product, and provide the standard operation time for servicing the product.

#### CHAPTER 3. ADJUSTMENT

Describes the required adjustments for servicing the product.

#### CHAPTER 4. MAINTENANCE

Describes maintenance items and procedures for servicing the product.

### CHAPTER 5. APPENDIX

Provides the following additional information for reference:

• Connecter Diagram

## Symbols Used in this Manual

Various symbols are used throughout this manual either to provide additional information on a specific topic or to warn of possible danger present during a procedure or an action. Pay attention to all symbols when they are used, and always read explanation thoroughly and follow the instructions.



Indicates an operating or maintenance procedure, practice or condition that, if not strictly observed, could result in serious injury or loss of life.

Indicates an operating or maintenance procedure, practice, or condition that, if not strictly observed, could result in bodily injury, damage or malfunction of equipment.



For Chapter 4 "Disassembly/Reassembly", symbols other than indicated above are used to show additional information for disassembly/reassembly. For the details on those symbols, see "2.2 Disassembly/Reassembly Procedures (p27)".

## **Revision Status**

Revision	Date of Issue	Description		
А	January 15, 2014	First Release		
В	January 29, 2014	<ul> <li>Revised contents</li> <li>Chapter 1</li> <li>Made change in "1-2 Fatal Error List (p14)".</li> <li>Chapter 3</li> <li>"o Method of the Head angular adjustment (Visual adjustment pattern) (p64)"has been added.</li> </ul>		
С	April 17, 2014	Revised contents         Chapter 1         "1.1.4 Status sheet (p19)" has been added.         Chapter 2         Made change for description in the following items.         "Printhead (p42)"         "Ink System Supply Assy (Ink Supply Unit w/ Printhead) (p42)"         "Ink Supply Unit (p42)"         Chapter 3         Made change for description in "3.2.2 Rear ASF Timing Belt Tension Check (p59)" .         Made change for description in "3.2.4.1 Preparation (p68)".		
D	February 19, 2015	Revised contents <ul> <li>Chapter 1</li> <li>The fatal error code "0x97" has been added in "1.1.3 Fatal Error (p14)".</li> </ul>		

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CHAPTER 1

## TROUBLESHOOTING

#### 1.1 Troubleshooting

This section describes the troubleshooting workflow.

#### 1.1.1 Troubleshooting Workflow

The following page describes the troubleshooting workflow. Follow the flow when troubleshooting problems.



. In case of Not House Found , check fatar

Figure 1-1. Troubleshooting Workflow (1)



- Main Board
- Paper Stopper Assy

 PF Motor Cassette Assy

Paper Stopper Assy

Adjust PG againReplace Printer Mechanism

Replace PE Sensor Lever

Decompress Pump Tube Replace Decompress Pump Unit

 Replace Ink Supply Unit Check the condition of the joint section of Ink Supply Tube

Replace PE Sensor Replace Carriage Assy

 Check the attach condition of APG Lever

· Check the condition

Note \*1: If the printer can turn on but turns off right away, the protection circuit may cut off the power due to an error such as a circuit failure.

- \*2: Only for manual duplex printing
- \*3: WF-5690/4640/4630/5620 series only
- \*4: Installed on WF-4640 series, and option for WP-5690/4630/5620/5190/5110 series.

#### 1.1.2 Power-On Sequence

This section describes the power-on sequences for this product. The preconditions are as follows.

- □ Normal power-on sequence
  - Turning on the printer after turning it off without an error.
  - Initial ink charge has finished and every cartridge has sufficient ink.
  - No paper on the paper path.
  - The Printhead is capped by the cap of Ink System and the CR Lock is engaged normally.
  - The carriage is locked by the CR lock.
  - PG position is set to PG1.

Operation	Movement of Components	Front ASF drive condition	Decompress motor
<ol> <li>Printhead initialization and fuse inspection         <ol> <li>Initializes the Printhead, and checks the fuse on the printer control circuit board.</li> </ol> </li> </ol>	80	OFF	
<ul> <li>2. Seeking the home position</li> <li>2-1. The carriage moves to the 0-digit side slowly and confirms it touches the Right Frame.</li> </ul>	80	ţ	
2-2.Regards the position where the carriage touches the Right Frame as the position of the specified steps from the home position, and set it as the origin position.	80	ţ	
2-3.The carriage slowly moves the CR lock set position.	80	ţ	
2-4.The PF Motor rotates clockwise and releases the CR lock.	80	ţ	
2-5.The PF Motor rotates counterclockwise and sets the CR lock.	80	ţ	
2-6.The carriage moves to the 80-digit side slowly and confirms it touches the CR lock.	80	ţ	
2-7.The carriage returns to its home position.	80	ţ	
2-8.The PF Motor rotates clockwise and releases the CR lock.		ţ	
<ul> <li>3. Switching front ASF drive</li> <li>3-1.The carriage moves to the 80-digit side slowly up to position where the Front ASF turn on.</li> </ul>	80	ON	

Table 1-1.	Power-On	Sequence
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Operation	Movement of Components	Front ASF drive condition	Decompress motor
3-2. The carriage moves to the 0-digit side slowly up to the position where the Front ASF turn off.	80	OFF	
3-3.The carriage moves to the 80-digit side slowly and passes by the CR lock.	80	Ļ	
<ul><li><b>4. PF initialization</b></li><li>4-1.The PF Motor rotates clockwise for approximately one second.</li></ul>	80	ţ	
4-2.The PE sensor checks if paper exists, and the PF Motor rotates clockwise for approximately 0.5 seconds.	80	Ļ	
<ul> <li>5. Low temperature operation sequence</li> <li>5-1. The carriage moves back and forth between CR lock and the left Frame two times.</li> </ul>	80 — HP — O	ţ	
<ul> <li>6. Checking waste ink overflow</li> <li>6-1.Reads out the waste ink counter value of the Maintenance Box to check waste ink overflow.</li> </ul>	80	Ļ	
<ul><li>7. Detecting ink cartridge and initializing ink system</li><li>7-1. The carriage moves slowly to the ink detection position.</li></ul>	80	Ļ	
7-2.The Decompress Motor is driven and Diaphragm Pump sucks the ink in the ink cartridges.	80	Ļ	Decompress and vent to atmosphere
7-3.While monitoring the ink end sensor, the Decompress Motor is driven again and the Diaphragm Pump sucks the ink.	80	Ļ	Decompress and vent to atmosphere
7-4.Detects the ink remaining.	80 HP - 0	ţ	
7-5.The carriage returns to its home position.		Ļ	

Note \*1: On the premise on this table, PG does not change and the Rear ASF does not operate during the sequence.

\*2: Executes when the detected temperature is under 5 (41) by the thermistor on the Printhead.

<sup>\*3:</sup> The Printhead is capped with the Cap of the Ink System but the Carriage is not locked by the CR lock in order to shorten the time before printing starts. The Carriage is locked when the printer enters the power saving mode without any operation after it is turned on.

#### 1.1.3 Fatal Error

This section describes the fatal error code and the possible cause for this product.



Fatal errors related to the ADF/Scanner unit do not occur for WF-5190/5110 series because this model does not have ADF/Scanner unit.

#### Table 1-2. Fatal Error List

Error type	Error code	Error name	Possible cause			
	0x01	ADF PID excess speed error	<ul> <li>ADF Encoder failure (contaminated/detached scale, Encoder Board failure)</li> <li>Motor driver failure (Main Board failure)</li> </ul>			
	0x02	ADF PID reverse error	<ul> <li>ADF Encoder failure (contaminated/detached scale, Encoder Board failure)</li> <li>Paper jam</li> </ul>			
	0x03	ADF PID lock error	• ADF Encoder failure (contaminated/detached scale, Encoder Board			
	0x04	ADF PID acceleration lock detection error	• ADF Motor failure			
	0x05	ADF PID excess load error	<ul><li>Paper jam</li><li>Cable disconnection</li></ul>			
	0x06	ADF PID driving time error	Main Board failure			
	0x09	ADF BS+ excess speed error	<ul> <li>ADF Encoder failure (contaminated/detached scale, Encoder Board failure)</li> <li>Motor driver failure (Main Board failure)</li> </ul>			
	0x0A	ADF BS+ reverse error	<ul> <li>ADF Encoder failure (contaminated/detached scale, Encoder Board failure)</li> <li>Paper jam</li> </ul>			
	0x0B	ADF BS+ lock error	ADF Encoder failure (contaminated/detached scale, Encoder Board			
ADF/	0x0D	ADF BS+ excess load error	<ul><li>failure)</li><li>ADF Motor failure</li><li>ADF drive overload (paper jam/foreign object)</li><li>Cable disconnection</li></ul>			
Scanner	0x0E	ADF BS+ driving time error	Main Board failure			
	0x10	HP detection error	<ul><li>CIS Unit failure</li><li>Scanner Housing failure</li><li>Main Board failure</li></ul>			
	0x11	Contact detection distance exceeded error	<ul> <li>CIS Unit failure</li> <li>Scanner Housing failure (Including wrong attachment of the origin mark)</li> <li>Main Board failure</li> <li>Scanner FFC failure / Scanner FFC connection failure</li> <li>Scanner Motor failure / Scanner Motor connection failure</li> </ul>			
	0x12	Opposite side contact detection distance exceeded error	<ul> <li>CIS Unit failure</li> <li>Scanner Housing failure (Including wrong attachment of the origin mark)</li> <li>Main Board failure</li> <li>Scanner FFC failure / Scanner FFC connection failure</li> <li>Scanner Motor failure / Scanner Motor connection failure</li> </ul>			
	0x13	Opposite side wrong contact detection distance error	<ul> <li>CIS Unit failure</li> <li>Scanner housing failure (Including wrong attachment of the origin mark)</li> <li>Main Board failure</li> <li>Scanner FFC failure / Scanner FFC connection failure</li> <li>Scanner Motor failure / Scanner Motor connection failure</li> </ul>			
	0x14	Measurement failure error	Scanner drive mechanism was overloaded.			
	0x20	LED light error	<ul><li>CIS Unit failure</li><li>Main Board failure</li></ul>			

Error type	Error code	Error name	Possible cause	
	0x30	Option error	Main Board failure	
	0x36	Paper jam error	Paper jam	
			Foreign object	
	0x41	FB PID excess speed error	ADF Encoder failure (contaminated/detached scale, Encoder Board failure)	
			Motor driver failure (Main Board failure)	
	0x42	FB PID reverse error	<ul> <li>ADF Encoder failure (contaminated/detached scale, Encoder Board failure)</li> <li>Paper jam</li> </ul>	
	0x43	FB PID lock error	ADF Encoder failure (contaminated/detached scale, Encoder Board	
	0x44	FB PID acceleration lock	failure)	
	0x45	FB PID excess load error	ADF drive mechanism overload (assembling failure, lubrication failure     Cable disconnection	
	0x46	FB PID driving time error	Main Board failure	
ADF/ Scanner	0x49	FB BS+ excess sped error	<ul> <li>ADF Encoder failure (contaminated/detached scale, Encoder Board failure)</li> <li>Motor driver failure (Main Board failure)</li> </ul>	
	0x4A	FB BS+ reverse error	<ul> <li>Motor driver failure (Main Board failure)</li> <li>ADF Encoder failure (contaminated/detached scale, Encoder Board failure)</li> </ul>	
	0x4B	FB BS+ lock error	ADF Encoder failure (contaminated/detached scale, Encoder Board	
	0x4D	FB BS+ excess load error	<ul> <li>failure)</li> <li>ADF Motor failure</li> <li>ADF drive mechanism overload (assembling failure, lubrication failure)</li> <li>Cable disconnection</li> </ul>	
	0x4E	FB BS+ driving time error	Main Board failure	
	0x51	Automatic judgement fatal error 1		
	0x52	Automatic judgement fatal error 2		
	0x53	Automatic judgement fatal error 3	*	
	0x54	Automatic judgement fatal error 4		
	0x55	Automatic judgement fatal error 5		
PDL	0x5F	Main ROM and µ SD ROM matching error	• Mismatch the Main ROM FW version and $\mu$ SD ROM FW version.	
	0x60	HP error	• Paper jam	
	0x61	Deadlock avoidance error	• Foreign object	
	0x62	Impossible contact detection error	Deformation of the Main Frame	
	0x6B	PF runaway error	<ul><li>PF Encoder failure (contaminated/detached scale, Encoder Board failure)</li><li>Motor drive error</li></ul>	
	0x7F	Inspection mode error	*	
	0x8D	Factor error other than printer device	This error occurs if the printer becomes a fatal error status due to a failure of parts other than the printer such as the scanner or ADF	
Printer	0x8E	Driver mismatch error	An unsupported driver was used.	
	0x8F	EEPROM verify error (by command)	*	
	0x90	PW Sensor failure error	PW sensor failure	
	0x91	PW Sensor detected foreign object error	Main Board failure     Foreign object	
	0x92	Hot plug disconnection paper jam error	<ul> <li>2nd Cassette Unit has been removed during feeding (when the ASF Motor is operating).</li> <li>Contact failure of the connector which contacts 2nd Cassette Unit and the printer.</li> </ul>	
	0x93	PE Sensor error	<ul><li>PE Sensor failure</li><li>Main Board failure</li></ul>	

#### Table 1-2. Fatal Error List

Error type	Error code	Error name	Possible cause				
	0x94	PW Sensor light value adjust error	<ul><li> PW Sensor failure</li><li>Main Board failure</li></ul>				
	0x96	Decompress pump motor driving time error	<ul><li>Decompress pump motor failure</li><li>Main Board failure</li></ul>				
	0x99	IES process check error	*				
	0x97	Head drive circuit VBS over-voltage error	<ul><li>Printhead failure</li><li>Head FFC failure</li><li>Main Board failure</li></ul>				
	0x9A	Circuit error (include blowout of a fuse)					
	0x9B	Transistor temperature error	• Main Board failure				
	0x9C	X-Hot detect error (pre printing)					
	0x9D	X-Hot detect error (after flushing)	Printhead failure     Main Board failure				
	0x9E	Head temperature error					
	0x9F	No print inspection mode error	*				
	0xB8	CRCM access error	<ul> <li>CR Contact Module failure</li> <li>CRCM FFC disconnection</li> <li>Main Board failure</li> </ul>				
Printer	0xB9 - 0xBA	Ink device error	<ul> <li>Ink cartridge failure</li> <li>CSIC Terminal failure</li> <li>CR Contact Module failure</li> <li>Main Board failure</li> </ul>				
	0xBD - 0xC2	CRCM access error	<ul> <li>CR Contact Module failure</li> <li>CRCM FFC disconnection</li> <li>Main Board failure</li> </ul>				
	0xC3	Ink device error	<ul> <li>Ink cartridge failure</li> <li>CSIC Terminal failure</li> <li>CR Contact Module failure</li> <li>Main Board failure</li> </ul>				
	0xC4 - 0xCF	CRCM access error	<ul> <li>CR Contact Module failure</li> <li>CRCM FFC disconnection</li> <li>Main Board failure</li> </ul>				
	0xD1	ASF PID excess load error	<ul> <li>ASF Encoder failure (contaminated/detached scale, Encoder Board failure)</li> <li>ASF Motor failure</li> <li>Pickup Roller (2nd cassette) drive mechanism overload (paper jam / foreign object)</li> <li>Cable disconnection</li> </ul>				
	0xD2	ASF PID excess speed error	<ul> <li>ASF Encoder failure (contaminated/detached scale, Encoder Board failure)</li> <li>Motor driver failure (Main Board failure)</li> </ul>				
	0xD3	ASF PID reverse error	<ul> <li>ASF Encoder failure (contaminated/detached scale, Encoder Board failure)</li> <li>Paper jam</li> </ul>				
	0xD4	ASF PID lock error	<ul> <li>ASF Encoder failure (contaminated/detached scale, Encoder Board failure)</li> <li>ASF Motor failure</li> <li>Pickup Roller (2nd cassette) drive mechanism overload (paper jam / foreign object)</li> <li>Cable disconnection</li> </ul>				
	0xD8	ASF load position reverse error	<ul> <li>ASF Encoder failure (contaminated/detached scale, Encoder Board failure)</li> <li>Paper jam</li> </ul>				
	0xD9	ASF load position excess speed error	<ul> <li>ASF Encoder failure (contaminated/detached scale, Encoder Board failure)</li> <li>Motor driver failure (Main Board failure)</li> </ul>				
bleshooting			1				

#### Table 1-2. Fatal Error List

Error type	Error code	Error name	Possible cause
	0xDA	ASF load position excess load error	<ul> <li>ASF Encoder failure (contaminated/detached scale, Encoder Board failure)</li> <li>ASF Motor failure</li> <li>Pickup Roller (2nd cassette) driven mechanism overload (paper jam/ foreign object)</li> <li>Cable disconnection</li> </ul>
	0xDE	ASF PID driving time error	
	0xDF	ASF load position driving time error	• Main Board failure
	0xE1	CR PID excess load error	<ul> <li>CR Encoder failure (contaminated/detached scale, Encoder board failure)</li> <li>CR Motor failure</li> <li>Carriage overload error (paper jam/foreign object)</li> <li>Cable disconnection</li> </ul>
	0xE2	CR PID excess speed error	<ul> <li>CR Encoder failure (contaminated/detached scale, Encoder board failure)</li> <li>Motor driver failure (Main Board failure)</li> <li>Tooth skip of the CR Timing Belt</li> <li>Improper tension of the CR Timing Belt</li> </ul>
	0xE3	CR PID reverse error	<ul> <li>CR Encoder failure (contaminated/detached scale, Encoder board failure)</li> <li>Tooth skip of the CR Timing Belt</li> <li>Improper tension of the CR Timing Belt</li> <li>Paper jam</li> </ul>
	0xE4	CR PID lock error	<ul> <li>CR Encoder failure (contaminated/detached scale, Encoder Board failure)</li> <li>CR Motor failure</li> <li>Carriage overload error (paper jam/foreign object)</li> <li>Cable disconnection</li> </ul>
Printer	0xE5	CR PID speed fall error	<ul> <li>CR Encoder failure (contaminated/detached scale, Encoder Board failure)</li> <li>Motor driver failure (Main Board failure)</li> <li>Tooth skip of the CR Timing Belt</li> <li>Improper tension of the CR Timing Belt</li> <li>Paper jam</li> </ul>
	0xE8	CR load position reverse error	<ul> <li>CR Encoder failure (contaminated/detached scale, Encoder Board failure)</li> <li>Tooth skip of the CR Timing Belt</li> <li>Improper tension of the CR Timing Belt</li> <li>Paper jam</li> </ul>
	0xE9	CR load position excess speed error	<ul> <li>CR Encoder failure (contaminated/detached scale, Encoder Board failure)</li> <li>Motor driver failure (Main Board failure)</li> <li>Tooth skip of the CR Timing Belt</li> <li>Improper tension of the CR Timing Belt</li> </ul>
	0xEA	CR load position excess load error	<ul> <li>CR Encoder failure (contaminated/detached scale, Encoder Board failure)</li> <li>CR Motor failure</li> <li>Carriage overload error (paper jam/foreign object)</li> <li>Cable disconnection</li> </ul>
	0xEE	CR PID driving time error	
	0xEF	CR load position driving time error	• Main Board failure
	0xF1	PF PID excess load error	<ul> <li>PF Encoder failure (contaminated/detached scale, Encoder Board failure)</li> <li>PF Motor failure</li> <li>PF drive mechanism overload (paper jam/foreign object)</li> <li>Cable disconnection</li> </ul>
	0xF2	PF PID excess speed error	<ul> <li>PF Encoder failure (contaminated/detached scale, Encoder Board failure)</li> <li>Motor driver failure (Main Board failure)</li> <li>Tooth skip of the PF Timing Belt</li> <li>Improper tension of the PF Timing Belt</li> </ul>
	0xF3	PF PID reverse error	<ul> <li>PF Encoder failure (contaminated/detached scale, Encoder Board failure)</li> <li>Tooth skip of the PF Timing Belt</li> <li>Improper tension of the PF Timing Belt</li> <li>Paper jam</li> </ul>

#### Table 1-2. Fatal Error List

Error type	Error code	Error name	Possible cause
	0xF4	PF PID lock error	<ul> <li>PF Encoder failure (contaminated/detached scale, Encoder Board failure)</li> <li>PF Motor failure</li> <li>PF driver mechanism overload (paper jam/foreign object)</li> <li>Cable disconnection</li> </ul>
	0xF8	PF load position reverse error	<ul> <li>PF Encoder failure (contaminated/detached scale, Encoder Board failure)</li> <li>Tooth skip of the PF Timing Belt</li> <li>Improper tension of the PF Timing Belt</li> </ul>
Printer	0xF9	PF load position excess speed error	<ul> <li>PF Encoder failure (contaminated/detached scale, Encoder Board failure)</li> <li>Motor driver failure (Main Board failure)</li> <li>Tooth skip of the PF Timing Belt</li> <li>Improper tension of the PF Timing belt</li> </ul>
	0xFA	PF load position excess load error	<ul> <li>PF Encoder failure (contaminated/detached scale, Encoder Board failure)</li> <li>PF Motor failure</li> <li>PF driver mechanism overload (paper jam/foreign object)</li> <li>Cable disconnection</li> </ul>
	0xFE	PF PID driving time error	Main Board failura
	0xFF	PF load position driving time error	

#### Table 1-2. Fatal Error List

Note \*: When the optional 2nd cassette is installed for WP-5690/4630/5620/5190/5110 series.

#### 1.1.4 Status sheet

This section describes the Status sheet for this product.



- This product can print the three kind of status sheet, and you can confirm the following information.
  - Configuration Status Sheet
  - Supply Status Sheet
  - Usage History Sheet
- This product has Non-disclosed information to user. This information can be displayed on the Status sheet by starting the product with the Inspection Mode.

#### 1.1.4.1 Start method of Inspection Mode

- 1. From a power off status, push the following buttons until the message is displayed on LCD.
- □ WF-5690/4640/4630/5620 series



□ WF-5190/5110 series



- 2. Select the following items from the Inspection menu.
  - WF-5690/4640/4630/5620 series : "7. Status Sheet Print Mode"
  - WF-5190/5110 series : "3. STSheet Mode"



- 3. The product starts as usual.
- 4. Print the status sheets.

#### 1.1.4.2 Description of Status sheet (Non-disclosed information to user)

□ Supply Status sheet

WF-4640		EPSON EXCEED YOUR VISION
Supply Status Sheet		PAGE, 001 2014.04:15 16:38
Rardware Configuration		
Device ID Serial Number MAC Address < Hardware > Memory Capacity - Unreign -	MF-4640 Series 17E9100028 00:00:00:00:00:00 256MByte	
Version S Nain Firmware Network Firmware QPIT	6603DA 24.Al QP100C41	
Supply Status		
< Ink Cartridges >		
	Black Part Number 788XXL 18	
	Cyan Part Number 788XXL 94	
	Part Number 788XXL 94 Yellow	
	Part Number 785XXL 88	
< Maintenance Box >	Part Number 76710	

Figure 1-1. Supply Status Sheet (Non-disclosed information to user)

Item	Content	Item	Content
Consumable informat	ion <ink cartridge=""></ink>		
Ink residual quantity	Residual quantity information of the Ink Cartridge. (each color)		
Consumable informat	ion <maintenance box=""></maintenance>		
Maintenance Box residual quantity	Residual quantity information of the Maintenance Box.		

#### □ Usage History Sheet

WF-4640		EPSON EXCEED YOUR VISION	WF-4640		
Usage History Sheet		PAGE. 001 2014.04.14 17:54	Usage History Sheet	ALC: YEAR	PAGE. 003 2014.04.14 17:55
Hardware Configuration Device ID Serial Number MGC Address < Hardware > Memory Capacity < Version > Main Pinnware Network Firmware	WF-4640 Series 17E9100028 00:00:00:00:00:00 256MByte GG03DA 24.A1		Color Fax B4W Scan Color Scan B4W Frint from Memory Device Color Print from Memory Device B4W Frint from Mobile Device Color Print from Mobile Device	0 2 11 101 4 0	
QPIT Usage History Pirst Time Printing	QP100C41 2013/1 /1		Other Number of Sheets Loaded From Cassette 1 From Reasette 2 From Rear Paper Feed Number of Sheets Scanned From ADF	117 66 6 76	
Number of Pages < Sorted by Function > In Total B&W Color 2-Sided 1-Sided -Sided	120 18 102 4 116		From Scanner Glass Number of Replacements Black Cyan Magenta Yellow Maintenance Box	2 1 2 2 2 0	
<pre>&lt; Sorted by Paper Size &gt;</pre>					
< Sorted by Usage > BaW Copy Color Copy B6W Pax	3 2 0				

Figure 1-2. Usage mistory Sneet (Non-disclosed miormation to us	Figure 1-2	. Usage History	Sheet (Non	-disclosed	information	to user)
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Item	Content	Item	Content			
Number of Sheets Loa	aded	_				
Casette 1	Number of sheets loaded from 1st cassette.	Cassette 2	Number of sheets loaded from 2nd cassette.			
Rear Paper Feed	Number of sheets loaded from rear paper feed tray.					
Number of Sheets Sca	nned					
ADF	Number of sheets scanned from ADF Unit.	Scanner Glass	Number of sheets scanned from Scanner Glass.			
Number of Replacement						
Ink Cartridge	Number of replacement of Ink cartridge	Maintenance Box	Number of replacement of Maintenance Box.			

CHAPTER 2

## **DISASSEMBLY/REASSEMBLY**

#### 2.1 Overview



In this manual, the product name is abbreviated to such as "WP-4510 series", however, the last digit of the actual name may differ. Identify your product with the first three digits and refer to the appropriate sections in this manual.

This chapter describes procedures for disassembling the main parts/units of WP-5690/4640/4630/5620/5190/ 5110 series. Unless otherwise specified, disassembled parts/units can be reassembled by reversing the disassembly procedure. See the cautions or tips for disassembly/reassembly described in "2.3 Detailed Disassembly/Reassembly Procedure for each Part/Unit (p38)".

Read the "Safety Precautions (p3)" before disassembling and reassembling.

When you have to remove units or parts that are not described in this chapter, see the exploded diagrams of SPI (Service Parts Information).

#### **2.1.1 Tools**

Use only specified tools to avoid damaging the printer.

Name	Availability	EPSON Part Code
(+) Phillips screwdriver #1	0	1080530
(+) Phillips screwdriver #2	0	
Flathead screwdriver	0	
Flathead Precision screwdriver #1	0	
Tweezers	0	
Longnose pliers	0	
Acetate tape		1003963

Note 1: Some of the tools listed above are commercially available.

2: EPSON provides the tools listed with EPSON part code.

#### 2.1.2 Jigs

Name	Quantity	EPSON Part Code
Thickness gauge (5 mm)	1	
Ink Leak Measurement Jig	1	
Ink Leak Check Cartridge	1	1565785

### 2.1.3 Standard Operation Time for servicing the product

The following are the standard operation time for servicing the product. Those are base on the MTTR result measured using a prototype.

The underlined parts/units are supplied as After Service parts.

Standard Operation Time for servicing WF-5690/4640/4630/5620 series : See Table 2-1

Standard Operation Time for servicing WF-5190/5110 series : See Table 2-2

#### Table 2-1. Standard Operation Time (WF-5690/4640/4630/5620 series)

	Time (second)				Time (second)		
Parts/Unit	Repla ceme nt	Adjus tment	Total	Parts/Unit	Repla ceme nt	Adjus tment	Total
Panel Unit	60	25	85	Rear ASF Guide Upper Assy	552	0	552
Metal Plate (Including Paper Stopper Assy)	80	0	80	<u>CSIC FFC</u>	488	0	448
Pickup Assy 1st	13	0	13	Metal Plate Left	515	0	515
Paper Stopper Assy	31	0	31	PF Encoder	529	0	529
Cover ASF Assy	10	0	10	PF Encoder FFC	552	0	552
Cover ASF Front	14	0	14	PF Tension Stopper Holder	546	15	546
Cover ASF Rear	14	0	14	PF Timing Belt	561	15	576
ADF Pad Assy	10	0	10	Decompress Pump Unit	560	0	560
Housing Rear Assy	49	0	49	Power Supply Unit	606	182	788
Housing Rear	64	0	64	CR Cover	455	0	455
Paper Support	64	0	64	Ink Supply unit Grounding Plate	481	0	481
FAX Cover	81	0	81	Ink System Supply Assy	739	1850	2589
Speaker/Speaker Holder	86	0	86	Ink Supply Unit	693	1088	1781
ADF/Scanner Unit	314	135	449	Printhead	648	2638	3286
ADF Unit	595	135	730	Fasten Plate Center	966	0	966
ADF Rear Cover	628	0	628	Fasten Plate Left	1073	0	1073
ADF Cover Assy	641	0	641	Driven Pulley Assy	1115	15	1130
ADF Cover Housing Upper	710	0	710	CR Motor	1164	30	1194
LD Cover	726	0	726	Maintenance Box Ink Eject Joint	775	0	775
LD Shaft	730	0	730	Ink System Unit	799	0	799
Extension Spring	758	0	758	Option Connecter	829	0	829
ADF LD Assy	803	0	803	Shaft Drive Pickup	947	0	947
ADF Document Support Assy	651	0	651	ASF Drive Change lever Assy	837	0	837
Scanner Unit	595	135	730	ASF Drive Change Lever Holder	839	0	839
Front Housing Assy	374	0	374	Spur Gear 11.2	839	0	839
Stacker Assy	386	0	386	Extension Spring 0.63	839	0	839
Middle Housing	441	0	441	Spur Gear 11.2	839	0	839
Main Board Unit	725	1025	1750	Compound Gear 16,10.6	839	0	839
Main Board Cable Holder	737	0	737	CR Scale/Extension Spring 2.03	1363	0	1363
Shield Plate Holder	772	0	772	Front Frame Assy	1476	613	2089
Main Board Shield plate Upper Assy	972	0	972	Star Wheel Assy	1398	99	1497

Parts/Unit		Time (second)				Time (second)		
		Repla ceme nt	Adjus tment	Total	Parts/Unit		Adjus tment	Total
Interface Board Assy		1029	0	1029	<u>EJ Roller</u>	1545	366	1911
Interface Board Shield Plate Upper		1059	0	1059	Frame Base Assy	1574	1678	3252
Interface Board		1076	0	1076	Main Frame Mounting Plate	1599	0	1599
Interface Board Shield Plate Lower		1076	0	1076	Support Plate Right/Left	1630	250	1880
Main Board Shield Plate Upper		1029	0	1029	CR Guide Frame (Including Carriage Assy)	2082	1463	3545
Main Doord	Read OK	1033	119	1152	CR Guide Frame	2090	748	2838
Main Board	Read NG	1033	1025	2228	Carriage Assy	2090	1524	3614
Main Board Shield Plate Lower		1033	0	1033	Main Frame Assy	2332	1583	3915
<u>Wi-Fi Board</u>		463	0	463	Paper Guide Upper Assy	2440	463	1903
Rear ASF Assy		515	134	649	PE Lever Holder Assy	2390	56	2446

Table 2-1. Standard Operation Time (WF-5690/4640/4630/5620 series)

Table 2-2. Standard Operation Time (WF-5190/5110 series)

Parts/Units		Time (second)		nd)		Time (second)		
		Repla ceme nt	Adjus tment	Total	Pats/Units	Repla ceme nt	Adjus tment	Total
Panel Unit		19	0	19	Power Supply Unit	470	52	522
Metal Plate (Including Paper Support A	Assy)	80	0	80	CR Cover	319	0	319
Pickup Assy 1st		93	0	93	Ink Supply Unit Grounding Plate	345	0	345
Paper Stopper Assy		31	0	31	Ink System Supply Assy	603	1850	2453
Cover ASF Assy		10	0	10	Ink Supply Unit	559	1088	1647
Cover ASF Front		14	0	14	Printhead	554	2638	3192
Cover ASF Rear		14	0	14	Fasten Plate Center	830	0	830
Housing Rear Assy		49	0	49	Fasten Plate left	937	0	937
Housing Rear		64	0	64	Driven Pulley Assy	979	15	994
Paper Support		64	0	64	CR Motor	1028	30	1058
USB Cover		81	0	81	Maintenance Box Ink Eject Joint	639	0	639
Housing Upper		97	0	97	Ink System Unit	663	0	663
Front Housing Assy		157	0	157	Option Connecter	693	0	693
Middle Housing		305	0	305	Shaft Drive Pickup	811	0	811
Stacker Assy		169	0	169	ASF Drive Change Lever Assy	701	0	701
Main Board Unit		589	890	1479	ASF Drive Change Lever Holder	703	0	703
Main Board Cable Hold	ler	601	0	601	Spur Gear 11.2	703	0	703
Shield Plate Holder		636	0	636	Extension Spring 0.63	703	0	703
Main Board Shield Plate		818	0	818	Spur Gear 11.2	703	0	703
Main Doord	Read OK	862	119	981	Compound Gear 16,10.4	703	0	703
Main Board	Read NG	862	890	1752	CR Scale/Extension Spring 2.03	1076	0	1076
Main Board Shield Plate	e Lower	862	0	862	Front Frame Assy	1189	613	1802
<u>Wi-Fi Board</u>		327	0	327	Star Wheel Assy	1111	99	1210
Rear ASF Assy		379	134	513	<u>EJ Roller</u>	1227	366	1593
Rear ASF Guide Upper A	<u>ssy</u>	416	0	416	Frame Base Assy	1287	1678	2965
CSIC FFC		352	0	352	Main Frame Mounting plate	1312	0	1312
Metal Plate Left		379	0	379	Support Plate Right/Left	1343	250	1593
PF Encoder		393	0	393	CR Guide Frame Assy (Including Carriage Assy)	1731	878	2609
PF Encoder FFC		406	0	406	CR Guide Frame	1739	748	2609
PF Tension Stopper Holder		410	15	425	Carriage Assy	1739	1524	3263
PF Timing Belt		425	15	440	Main Frame Assy	1981	1583	3564
Decompress pump Unit		424	0	424	Paper Guide Upper Assy	2089	463	2552
					PE Lever Holder Assy	2089	56	2095

### 2.2 Disassembly/Reassembly Procedures

### 2.2.1 Caution when Replacing the Printhead/Ink Supply Unit

For stable ink supply, this product employs a mechanism where the ink in the ink path is pressurized even the power is off. Therefore, if the joint section of the printhead and the Ink Supply Unit is simply disconnected, the ink in the ink tube will spill over.



Figure 2-1. Joint Section of the Printhead and Ink Supply Unit

To prevent this from happening, before separating the Printhead and Ink Supply Unit to replace the Printhead or the Ink Supply Unit, make sure to release the pressure inside the ink path using the Adjustment Program. The following explains the procedure.



- This is not necessary when replacing the Printhead and Ink Supply Unit together.
- Approximately two minutes are required to release the applied pressure.
- The ink in the ink path is pressurized in the power-off sequence again, therefore, make sure not to turn the power off by the power button after the applied pressure is released.

#### □ Tools

■ Ink Cartridges (four colors: cyan, magenta, yellow, black)

Do not use user's ink cartridges since the ink in the ink cartridges is consumed when releasing the pressure. Prepare ink cartridges supplied as consumables for this procedure. (Hereafter, an ink cartridge for this purpose is called as an "ink cartridge (for service use)".

Maintenance box

Do not use user's maintenance box since the ink the ink path flows to the maintenance box when releasing the pressure. Prepare maintenance box supplied as a consumable for this procedure. (Hereafter, a maintenance box for this purpose is called as a "maintenance box (for service use)".

□ Procedure

- 1. Remove the ink cartridges and maintenance box in the returned unit, and install the ink cartridges (for service use) and maintenance box (for service use).
- 2. Connect the printer and the PC installed the Adjustment Program with the USB cable, and turn the power on.
- 3. Start the Adjustment Program, and select the "Ink Pressure Release" from the menu.
- 4. Click "Execute" in the displayed screen to release the applied pressure.
- 5. When the completion message appears, unplug the computer power cable.

Afterward, remove the parts referring to "2.2.2 Parts/Units Need to be Removed in Advance (p29)" and replace them referring to "2.2.3 Disassembly Flowchart (p30)".

When separating the Printhead and the Ink Supply Unit, make sure to perform "3.2.7 Ink Leak Check (p79)" to check if ink is leaking.
 After disconnecting the Printhead and the Ink Supply Unit, ink may spill over even if the pressure is released. Therefore, be careful not to contaminate the surroundings.
 Make sure that the buffer is being deflated before the print head is removed, as shown below.
 If the buffer is inflated, make sure to perform the "Ink pressure release" again, because the ink is not discharged condition.



Before the ink pressure release (The Buffer is inflated condition)

After the ink pressure release (The Buffer is deflated condition)

Figure 2-2. The buffer condition before and after performing the ink pressure release

### 2.2.2 Parts/Units Need to be Removed in Advance

In Chapter 2 "Disassembly Flowchart (p30)", the procedures are indicated on the premise that some parts/units are removed in advance. Make sure to remove the following parts/units before starting disassembly.

□ Ink Cartridges (x4)

□ Maintenance Box





□ Cassette Assy 1st

Duplex Unit





 $\Box$  Cassette Assy 2nd<sup>\*</sup>



Note "\*": When the optional Cassette Assy 2nd is installed for WF-5690/4640/4630/5620/5190/5110 series.

#### 2.2.3 Disassembly Flowchart

This section describes procedures for disassembling the parts/units in a flowchart format. For some parts/units, detailed procedures or precautions are provided (accordingly indicated by icons and cell's color). Refer to the explanations in the example chart below and perform an appropriate disassembling and assembling procedure. (See "2.3 Detailed Disassembly/Reassembly Procedure for each Part/Unit (p38)".) For routing cables, see "2.4 Routing FFCs/Cables (p46)".

#### 2.2.3.1 Parts/Units whose Configuration is Different between Models in the Flowchart

The models describe in this manual employ the same printer mechanism but they have different printing related functions and structures. Therefore, the parts/units vary and the shape of them differs even they have the same parts name.

In the flowchart in this section, the parts are in two colors: black for the common parts or units, and blue for the parts or units which differ between models. For the parts or units which differ between models, confirm the composition of the parts for the printer whose disassembly procedure you want to check, and then see the disassembly flowchart.

Model Name	Exterior Parts	Main Board Related Parts	Control Panel Components
WF-5690/4640/4630/ 5620 series	<ul> <li>"Scanner Unit (p33)"</li> <li>"ADF Unit (p33)"</li> <li>"ADF Cover Assy (p33)"</li> <li>"ADF Cover Housing Upper (p33)"</li> <li>"LD Cover (p33)"</li> <li>"LD Shaft (p33)"</li> <li>"LD Shaft (p33)"</li> <li>"Extension Spring 0.99 (p33)"</li> <li>"ADF LD Assy (p33)"</li> <li>"ADF Rear Cover (p33)"</li> <li>"ADF Rear Cover (p33)"</li> <li>"ADF Document Support Assy (p33)"</li> <li>"ADF Pad Assy (p32)"</li> <li>"FAX Cover (p32)"</li> </ul>	<ul> <li>"Interface Board Assy (p35)"</li> <li>"Interface Board Shield Plate Upper (p35)"</li> <li>"Interface Board (p35)"</li> <li>"Interface Board Shield Plate Lower (p35)"</li> </ul>	□ "Panel Assy (p32)"
WF-5190/5110 series	<ul> <li>□ "Housing Upper Assy (p32)"</li> <li>□ "USB Cover (p32)"</li> </ul>		□ "Panel Assy (p32)"

Table 2-3. Parts/Units whose Configuration is Different between Models

Note: The 2nd Cassette Unit is installed for WF-4640 series, and option for WF-5690/4630/5620/5190/5110 series.

Explanation ava Reference Guid	ilable in the e	Ink System Unit White let unit supp 1 Shows th the specif "Screw ty Reference	ters indicate a part/ blied as an ASP. e screw types and fied torque in the ype/torque list".
Black letters ind unit not supplied	icate a part/ l as an ASP.	USB Cover USB Cover 1 USB Cover 1 Cover 1 Cover 1 Cover 2 Cover Cov	moval/installation assy. is available.
Iter	n	Description	Reference
Parts/unit name	White-letter	Part/unit supplied as an ASP	
	Black-letter	Part/unit not supplied as an ASP Indicates a practice or condition that could result in injury or loss of life if not strictly observed.	 Indicates the reference page in blue-letter
	!	Indicates a practice or condition that could result in damage to, or destruction of equipment if not strictly observed.	Indicates the reference page in blue-letter
	**	Indicates the parts that are inevitably broken in the disassembling procedure, and should be replaced with a new one for reassembly.	
	$\checkmark$	Indicates necessary check items in the disassembling/ assembling procedure.	Indicates the reference page in blue-letter
Icon		Indicates supplementary explanation for disassembly is given.	Indicates the reference page in blue-letter
1001	2	Indicates particular tasks to keep quality of the units are required.	Indicates the reference page in blue-letter
	5	Indicates particular routing of cables is required.	Indicates the reference page in blue-letter
	<b>~</b> *	Indicates particular adjustment(s) is/are required.	Chapter 3 "Adjustmen" (p50)"
	$\mathbf{}$	Indicates lubrication is required.	Chapter 4 "Maintenand (p82)"
	4	Indicates the number of screws securing the parts/ units.	



Flowchart 2-1. Disassembling Flowchart of Exterior Parts (1)

#### Epson WF-5690/4640/4630/5620/5190/5110 series

**START** 

2.2.3.2 Exterior Parts

ymbol	Screw Type	Torque
<u>S1</u>	C.B.P-TITE SCREW 2x6-F/ZN-3C	$2 \pm 1 \text{ kgf} \cdot \text{cm}$
S2	C.B.P-TITE SCREW 3x10-F/ZN-3C	$6 \pm 1 \text{ kgf} \cdot \text{cm}$
<b>S</b> 3	C.B.S-TITE SCREW 3x6-F/ZN-3C	$6 \pm 1 \text{ kgf} \cdot \text{cm}$
<u>S4</u>	C.P.SCREW 3x6-F/ZN-3C	$6 \pm 1 \text{ kgf} \cdot \text{cm}$
<b>S</b> 5	C.P.SCREW 3x6-F/ZN-3C	$2 \pm 5 \text{ kgf} \cdot \text{cm}$
<b>S6</b>	C.B.P-TITE (P2) SCREW 3x10-F/ZN-3C	$6 \pm 1 \text{ kgf} \cdot \text{cm}$
<u>\$7</u>	C.B.P-TITE SCREW 3x8-F/ZN-3C	$6 \pm 1 \text{ kgf} \cdot \text{cm}$
<b>S</b> 8	C.P.SCREW 2.5x6-F/ZN-3C	$2 \pm 5 \text{ kgf} \cdot \text{cm}$
<b>S</b> 9	C.P.SCREW 3x5-F/ZN-3C	$6 \pm 1 \text{ kgf} \cdot \text{cm}$
<u>\$10</u>	C.B.S-TITE (P4) SCREW 3x8-F/ZN-3C	$6 \pm 1 \text{ kgf} \cdot \text{cm}$
<u>§11</u>	C.B.P-TITE SCREW 2.5x8-F/ZN-3C	$6 \pm 1 \text{ kgf} \cdot \text{cm}$
<u>\$12</u>	C.B.P-TITE SCREW 2x10-F/ZN-3C	$3 \pm 0.5$ kgf·cm
<u>\$13</u>	C.B.P-TITE (S-P1) SCREW 3x12-F/ZN-3C	$6 \pm 1 \text{ kgf} \cdot \text{cm}$
<u>S14</u>	C.B.S-TITE (P4) SCREW 3x10-F/ZN-3C	$6 \pm 1 \text{ kgf} \cdot \text{cm}$
<u>S15</u>	C.P.SCREW 3x4-F/ZN-3C	$6 \pm 1 \text{ kgf} \cdot \text{cm}$
S16	C.B.EP-TITE SCREW 2.6x17 (B=14) F/ZN-3C	$2.5 \pm 0.4$ kgf·cm
<b>S17</b>	P.W.,2.8x0.5x6.5-F/ZN-3C	$3 + 0.5 \text{ kgf} \cdot \text{cm}$
<u>§18</u>	C.P.SCREW 2.5x6-F/ZN-3C	$6 \pm 1 \text{ kgf} \cdot \text{cm}$
<u>S19</u>	C.B.S-TITE(P2) SCREW, 3x8-F/ZB-3C	$6 \pm 1 \text{ kgf} \cdot \text{cm}$



Common parts/units
Parts/units whose
composition or shape
differ between models

Flowchart 2-2. Disassembling Flowchart of Exterior Parts (2)

Torque

<u>S1</u>	C.B.P-TITE SCREW 2x6-F/ZN-3C	$2 \pm 1 \text{ kgf} \cdot \text{cm}$
<u>S2</u>	C.B.P-TITE SCREW 3x10-F/ZN-3C	$6 \pm 1 \text{ kgf} \cdot \text{cm}$
<u>S3</u>	C.B.S-TITE SCREW 3x6-F/ZN-3C	$6 \pm 1 \text{ kgf} \cdot \text{cm}$
<u>S4</u>	C.P.SCREW 3x6-F/ZN-3C	$6 \pm 1 \text{ kgf} \cdot \text{cm}$
<u>S5</u>	C.P.SCREW 3x6-F/ZN-3C	$2 \pm 5 \text{ kgf} \cdot \text{cm}$
<u>S6</u>	C.B.P-TITE (P2) SCREW 3x10-F/ZN-3C	$6 \pm 1 \text{ kgf} \cdot \text{cm}$
<u>\$7</u>	C.B.P-TITE SCREW 3x8-F/ZN-3C	$6 \pm 1 \text{ kgf} \cdot \text{cm}$
<u>S8</u>	C.P.SCREW 2.5x6-F/ZN-3C	$2 \pm 5 \text{ kgf} \cdot \text{cm}$
<b>S</b> 9	C.P.SCREW 3x5-F/ZN-3C	$6 \pm 1 \text{ kgf} \cdot \text{cm}$
<u>\$10</u>	C.B.S-TITE (P4) SCREW 3x8-F/ZN-3C	$6 \pm 1 \text{ kgf} \cdot \text{cm}$
<u>S11</u>	C.B.P-TITE SCREW 2.5x8-F/ZN-3C	$6 \pm 1 \text{ kgf} \cdot \text{cm}$
<u>\$12</u>	C.B.P-TITE SCREW 2x10-F/ZN-3C	$3 \pm 0.5$ kgf·cm
<u>\$13</u>	C.B.P-TITE (S-P1) SCREW 3x12-F/ZN-3C	$6 \pm 1 \text{ kgf} \cdot \text{cm}$
<u>S14</u>	C.B.S-TITE (P4) SCREW 3x10-F/ZN-3C	$6 \pm 1 \text{ kgf} \cdot \text{cm}$
S15	C.P.SCREW 3x4-F/ZN-3C	$6 \pm 1 \text{ kgf} \cdot \text{cm}$
<u>S16</u>	C.B.EP-TITE SCREW 2.6x17 (B=14) F/ZN-3C	$2.5 \pm 0.4$ kgf·cm
<u>\$17</u>	P.W.,2.8x0.5x6.5-F/ZN-3C	3 + 0.5 kgf⋅cm
<u>S18</u>	C.P.SCREW 2.5x6-F/ZN-3C	$6 \pm 1 \text{ kgf} \cdot \text{cm}$
<u>S19</u>	C.B.S-TITE(P2) SCREW, 3x8-F/ZB-3C	$6 \pm 1 \text{ kgf} \cdot \text{cm}$

Screw Type

Screw type/torque list

Symbol

2.2.3.3 Printer Mechanism









The removed parts/units differ between models when the name of each model is indicated and enclosed in a box. If "Go to the next step" is indicated for a specific model in the box, skip the step for the model and go to the next step. See "2.2.3.4 Printhead/Ink Supply Unit (p36)" for disassembly of the Printhead and Ink Supply Unit.



Flowchart 2-1. Disassembling Flowchart of Printer Mechanism (1)

(**p 32**)





(**p 35**)

Screw type/torque list

ymbol	Screw Type	Torque
<u>S1</u>	C.B.P-TITE SCREW 2x6-F/ZN-3C	$2 \pm 1 \text{ kgf} \cdot \text{cm}$
<u>S2</u>	C.B.P-TITE SCREW 3x10-F/ZN-3C	$6 \pm 1 \text{ kgf} \cdot \text{cm}$
<u>S3</u>	C.B.S-TITE SCREW 3x6-F/ZN-3C	$6 \pm 1 \text{ kgf} \cdot \text{cm}$
<u>S4</u>	C.P.SCREW 3x6-F/ZN-3C	$6 \pm 1 \text{ kgf} \cdot \text{cm}$
<b>S</b> 5	C.P.SCREW 3x6-F/ZN-3C	$2\pm 5$ kgf·cm
<u>S6</u>	C.B.P-TITE (P2) SCREW 3x10-F/ZN-3C	$6 \pm 1 \text{ kgf} \cdot \text{cm}$
<u>\$7</u>	C.B.P-TITE SCREW 3x8-F/ZN-3C	$6 \pm 1 \text{ kgf} \cdot \text{cm}$
<b>S</b> 8	C.P.SCREW 2.5x6-F/ZN-3C	$2\pm 5$ kgf·cm
<u>(59)</u>	C.P.SCREW 3x5-F/ZN-3C	$6 \pm 1 \text{ kgf} \cdot \text{cm}$
<u>\$10</u>	C.B.S-TITE (P4) SCREW 3x8-F/ZN-3C	$6 \pm 1 \text{ kgf} \cdot \text{cm}$
<u>S11</u>	C.B.P-TITE SCREW 2.5x8-F/ZN-3C	$6 \pm 1 \text{ kgf} \cdot \text{cm}$
<u>\$12</u>	C.B.P-TITE SCREW 2x10-F/ZN-3C	$3 \pm 0.5$ kgf·cm
<u>\$13</u>	C.B.P-TITE (S-P1) SCREW 3x12-F/ZN-3C	$6 \pm 1 \text{ kgf} \cdot \text{cm}$
<u>\$14</u>	C.B.S-TITE (P4) SCREW 3x10-F/ZN-3C	$6 \pm 1 \text{ kgf} \cdot \text{cm}$
<u>S15</u>	C.P.SCREW 3x4-F/ZN-3C	$6 \pm 1 \text{ kgf} \cdot \text{cm}$
<u>S16</u>	C.B.EP-TITE SCREW 2.6x17 (B=14) F/ZN-3C	$2.5 \pm 0.4$ kgf·cm
<u>\$17</u>	P.W.,2.8x0.5x6.5-F/ZN-3C	$3 + 0.5 \text{ kgf} \cdot \text{cm}$
<u>S18</u>	C.P.SCREW 2.5x6-F/ZN-3C	$6 \pm 1 \text{ kgf} \cdot \text{cm}$
<u>S19</u>	C.B.S-TITE(P2) SCREW,3x8-F/ZB-3C	6±1 kgf⋅cm

#### Epson WF-5690/4640/4630/5620/5190/5110 series



Flowchart 2-2. Disassembling Flowchart of Printer Mechanism (2)



----

Screw	type/torque	list
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3

Main Board Cable

Holder

S

5

4 2

5

•

4

•

1

(p 50)

2

(**p** 34)

5

•

4 3

4

4

4

**Common parts/units** 

composition or shape

differ between models

Parts/units whose

---

3

---

7

3

(p 48)

Shield Plate

Holder

(S:

----

Main Board

Shield Plate Upper

Assv

**(p 39)** 

Main Board

(S4) (S8

**(p 40)** 

Main Board

Shield Plate Lower Assy

**(p 40)** 

**S3 S15 S1** 

.

Symbol	Screw Type	Torque
<u>(S1)</u>	C.B.P-TITE SCREW 2x6-F/ZN-3C	$2 \pm 1 \text{ kgf} \cdot \text{cm}$
<u>S2</u>	C.B.P-TITE SCREW 3x10-F/ZN-3C	$6 \pm 1 \text{ kgf} \cdot \text{cm}$
S3	C.B.S-TITE SCREW 3x6-F/ZN-3C	$6 \pm 1 \text{ kgf} \cdot \text{cm}$
S4	C.P.SCREW 3x6-F/ZN-3C	$6 \pm 1 \text{ kgf} \cdot \text{cm}$
<b>S</b> 5	C.P.SCREW 3x6-F/ZN-3C	$2 \pm 5 \text{ kgf} \cdot \text{cm}$
<b>S6</b>	C.B.P-TITE (P2) SCREW 3x10-F/ZN-3C	$6 \pm 1 \text{ kgf} \cdot \text{cm}$
<b>S</b> 7	C.B.P-TITE SCREW 3x8-F/ZN-3C	$6 \pm 1 \text{ kgf} \cdot \text{cm}$
<b>S</b> 8	C.P.SCREW 2.5x6-F/ZN-3C	$2 \pm 5 \text{ kgf} \cdot \text{cm}$
<b>S</b> 9	C.P.SCREW 3x5-F/ZN-3C	$6 \pm 1 \text{ kgf} \cdot \text{cm}$
S10	C.B.S-TITE (P4) SCREW 3x8-F/ZN-3C	$6 \pm 1 \text{ kgf} \cdot \text{cm}$
S11	C.B.P-TITE SCREW 2.5x8-F/ZN-3C	$6 \pm 1 \text{ kgf} \cdot \text{cm}$
S12	C.B.P-TITE SCREW 2x10-F/ZN-3C	$3 \pm 0.5$ kgf·cm
<u>S13</u>	C.B.P-TITE (S-P1) SCREW 3x12-F/ZN-3C	$6 \pm 1 \text{ kgf} \cdot \text{cm}$
<u>S14</u>	C.B.S-TITE (P4) SCREW 3x10-F/ZN-3C	$6 \pm 1 \text{ kgf} \cdot \text{cm}$
S15	C.P.SCREW 3x4-F/ZN-3C	$6 \pm 1 \text{ kgf} \cdot \text{cm}$
S16	C.B.EP-TITE SCREW 2.6x17 (B=14) F/ZN-3C	$2.5 \pm 0.4$ kgf·cm
<u>§17</u>	P.W.,2.8x0.5x6.5-F/ZN-3C	$3 + 0.5 \text{ kgf} \cdot \text{cm}$
<b>S18</b>	C.P.SCREW 2.5x6-F/ZN-3C	$6\pm 1 \text{ kgf} \cdot \text{cm}$
<u>S19</u>	C.B.S-TITE(P2) SCREW,3x8-F/ZB-3C	$6\pm 1 \text{ kgf} \cdot \text{cm}$

#### 2.2.3.4 Printhead/Ink Supply Unit

The disassembling and reassembling procedure of the Printhead/Ink Supply Unit requires additional steps before and during the procedure. Therefore, the whole flow from disassembling to reassembling is provided below.

Note: The black arrows (  $\rightarrow$  ) indicate disassembling, and the red arrows (  $\rightarrow$  ) show reassembling.











#### Screw type/torque list

		-
ymbol	Screw Type	Torque
S1	C.B.P-TITE SCREW 2x6-F/ZN-3C	$2 \pm 1 \text{ kgf} \cdot \text{cm}$
<u>S2</u>	C.B.P-TITE SCREW 3x10-F/ZN-3C	$6 \pm 1 \text{ kgf} \cdot \text{cm}$
S	C.B.S-TITE SCREW 3x6-F/ZN-3C	$6 \pm 1 \text{ kgf} \cdot \text{cm}$
<b>S4</b>	C.P.SCREW 3x6-F/ZN-3C	$6 \pm 1 \text{ kgf} \cdot \text{cm}$
<b>S</b> 5	C.P.SCREW 3x6-F/ZN-3C	$2\pm 5$ kgf·cm
<u>S6</u>	C.B.P-TITE (P2) SCREW 3x10-F/ZN-3C	$6 \pm 1 \text{ kgf} \cdot \text{cm}$
<b>S</b> 7	C.B.P-TITE SCREW 3x8-F/ZN-3C	$6 \pm 1 \text{ kgf} \cdot \text{cm}$
<b>S</b> 8	C.P.SCREW 2.5x6-F/ZN-3C	$2 \pm 5 \text{ kgf} \cdot \text{cm}$
(8)	C.P.SCREW 3x5-F/ZN-3C	$6 \pm 1 \text{ kgf} \cdot \text{cm}$
S10	C.B.S-TITE (P4) SCREW 3x8-F/ZN-3C	$6 \pm 1 \text{ kgf} \cdot \text{cm}$
<u>S11</u>	C.B.P-TITE SCREW 2.5x8-F/ZN-3C	$6 \pm 1 \text{ kgf} \cdot \text{cm}$
<u>S12</u>	C.B.P-TITE SCREW 2x10-F/ZN-3C	$3 \pm 0.5$ kgf·cm
<b>S13</b>	C.B.P-TITE (S-P1) SCREW 3x12-F/ZN-3C	$6 \pm 1 \text{ kgf} \cdot \text{cm}$
<u>\$14</u>	C.B.S-TITE (P4) SCREW 3x10-F/ZN-3C	$6 \pm 1 \text{ kgf} \cdot \text{cm}$
<b>S15</b>	C.P.SCREW 3x4-F/ZN-3C	$6 \pm 1 \text{ kgf} \cdot \text{cm}$
<b>S16</b>	C.B.EP-TITE SCREW 2.6x17 (B=14) F/ZN-3C	$2.5 \pm 0.4$ kgf·cm
<u>\$17</u>	P.W.,2.8x0.5x6.5-F/ZN-3C	$3 + 0.5 \text{ kgf} \cdot \text{cm}$
<b>S18</b>	C.P.SCREW 2.5x6-F/ZN-3C	$6 \pm 1 \text{ kgf} \cdot \text{cm}$
S19	C.B.S-TITE(P2) SCREW,3x8-F/ZB-3C	$6 \pm 1 \text{ kgf} \cdot \text{cm}$
### 2.2.3.5 2nd Cassette Unit

This unit is installed for WF-4640 series, and option for WF-5690/4630/5620/5190/5110 series.





Symbol



ymbol	Screw Type	Torque
<u>S1</u>	C.B.P-TITE SCREW 2x6-F/ZN-3C	$2 \pm 1 \text{ kgf} \cdot \text{cm}$
<u>S2</u>	C.B.P-TITE SCREW 3x10-F/ZN-3C	$6 \pm 1 \text{ kgf} \cdot \text{cm}$
<b>S</b> 3	C.B.S-TITE SCREW 3x6-F/ZN-3C	$6 \pm 1 \text{ kgf} \cdot \text{cm}$
<u>S4</u>	C.P.SCREW 3x6-F/ZN-3C	$6 \pm 1 \text{ kgf} \cdot \text{cm}$
<b>S</b> 5	C.P.SCREW 3x6-F/ZN-3C	$2\pm 5$ kgf·cm
<u>S6</u>	C.B.P-TITE (P2) SCREW 3x10-F/ZN-3C	$6 \pm 1 \text{ kgf} \cdot \text{cm}$
<b>S</b> 7	C.B.P-TITE SCREW 3x8-F/ZN-3C	$6 \pm 1 \text{ kgf} \cdot \text{cm}$
<b>S</b> 8	C.P.SCREW 2.5x6-F/ZN-3C	$2\pm 5$ kgf·cm
<b>S</b> 9	C.P.SCREW 3x5-F/ZN-3C	$6 \pm 1 \text{ kgf} \cdot \text{cm}$
<u>\$10</u>	C.B.S-TITE (P4) SCREW 3x8-F/ZN-3C	$6 \pm 1 \text{ kgf} \cdot \text{cm}$
<u>S11</u>	C.B.P-TITE SCREW 2.5x8-F/ZN-3C	$6 \pm 1 \text{ kgf} \cdot \text{cm}$
<u>\$12</u>	C.B.P-TITE SCREW 2x10-F/ZN-3C	$3 \pm 0.5$ kgf·cm
<u>S13</u>	C.B.P-TITE (S-P1) SCREW 3x12-F/ZN-3C	$6 \pm 1 \text{ kgf} \cdot \text{cm}$
<u>S14</u>	C.B.S-TITE (P4) SCREW 3x10-F/ZN-3C	$6 \pm 1 \text{ kgf} \cdot \text{cm}$
<u>S15</u>	C.P.SCREW 3x4-F/ZN-3C	$6 \pm 1 \text{ kgf} \cdot \text{cm}$
S16	C.B.EP-TITE SCREW 2x16 (B=10) F/ZN-3C	$2.5 \pm 0.4$ kgf·cm
<u>S17</u>	P.W.,2.8x0.5x6.5-F/ZN-3C	$3 + 0.5 \text{ kgf} \cdot \text{cm}$
S18	C.P.SCREW 2.5x6-F/ZN-3C	$6 \pm 1 \text{ kgf} \cdot \text{cm}$
<b>S19</b>	C.B.S-TITE(P2) SCREW,3x8-F/ZB-3C	$6 \pm 1 \text{ kgf} \cdot \text{cm}$

### Screw type/torque

### 2.3 Detailed Disassembly/Reassembly Procedure for each Part/Unit



Disassembly/Reassembly

Detailed Disassembly/Reassembly Procedure for each Part/Unit



*Confidential* 





### Disassembly/Reassembly

Detailed Disassembly/Reassembly Procedure for each Part/Unit





### Interface Board Assy (WF-5690/4640/4630/5620 series)

# Interface Board Interface Board Shield Plate Interface Board Grounding Plate



 $\bigcirc$  C.B.S-TITE SCREW 3x6 F/ZN-3C (6 ± 1 kgf·cm)

When removing the Interface Board Assy, follow the procedure below.

- 1. Interface Board Shield Plate, Interface Board, Interface Board Grounding Plate are secured with the screws (x3).
- Aline the dowel of the Main Board Shield Plate with the hole of the Interface Board Assy, and install the Main Board Shield Plate to the Interface Board Assy.
- The above figure shows the kind and position of the screw.

## Main Board / Main Board Shield Plate Lower Assy Speaker/Speaker Holder (WF-5690/4640/4630/5620 series) Speaker Holder Main Board Main Board Shield Plate Lower Assy Speaker O C.P.SCREW 2.5x6 F/ZN-3C (2 ± 5 kgf⋅cm) C.P.SCREW 3x6 F/ZN-3C ( $6 \pm 1 \text{ kgf} \cdot \text{cm}$ ) Tighten the screws in the order indicated in the figure above. Spin the Speaker Holder in the direction of the arrow of the above 7 figure, and remove the Speaker and Speaker Holder



- When installing the Ink System Unit, follow the procedure below.
- Route the Ink System Tube through the hole of the Frame Base.
- the tube clamp.
- Route the Ink System Tube through the groove of the Frame Base, and secure it with acetate tape.
  - Tighten the screws (x2) in the order indicated in the figure above to secure the Ink System Unit to the Frame Base.

Disassembly/Reassembly

-7

Detailed Disassembly/Reassembly Procedure for each Part/Unit

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### Ink System Unit

Align the dowels A to dowel E of the Ink System Unit with the hole A to hole E of the Frame Base, and install the Ink System Unit to the Frame Base. Insert the end of the Ink System Tube into the socket on the Maintenance Box Ink Eject Joint to the full up to its base, and secure the tube with

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Detailed Disassembly/Reassembly Procedure for each Part/Unit

### **Revision** D

### **Metal Plate Left**



### **Front Frame Assy**



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### Ink System Supply Assy (Ink Supply Unit w/ Printhead)



When removing/installing the Printhead, move the Carriage Assy to the center of the printer, and place the Spacer (about 5 mm) between the Carriage Assy and Star Wheel Assy in order to prevent the CR Guide Frame and Main Frame from being deformed. (See "Printhead (p42)".) • To prevent ink leakage, make sure not to separate the ink tubes from the I/C Holder Unit by removing the screws (x2) in section A shown above. Loosening the screws even just once will cause ink leakage, therefore, make sure to replace the Ink System Supply Assy with a new one.

When installing the Ink System Supply Assy, see "Printhead (p42)" and "Ink Supply Unit (p42)".



- To replace the Printhead, it is necessary to disconnect the joint section of the Printhead and the ink tubes of the Ink Supply Unit. Before disconnecting the joint section, perform "Ink Pressure Release" in advance. (See "2.2.1 Caution when Replacing the Printhead/Ink Supply Unit (p27)" and " Ink Supply Unit (p42)".)
- When disconnecting the joint section of the ink tubes of the Ink Supply Unit and the Printhead, ink may slightly spill over from the ink tubes even if "Ink Pressure Release" has been performed. To prevent the inside of the printer being made dirty by the spilling ink, make sure to attach tape at the joint section of the ink tube when disconnecting the joint section of the ink tube of the Ink Supply Unit and the Printhead. (See " Ink Supply Unit (p42)".)
- When disconnecting the ink tubes from the Printhead, make sure to replace the rubber packing between the ink tubes and the Printhead with a new one in order to prevent ink leakage.
- When removing/installing the Printhead, move the Carriage Assy to the center of the printer, and place the Spacer (about 5 mm) between the Carriage Assy and Star Wheel Assy in order to prevent the CR Guide Frame and Main Frame from being deformed.
- Tighten the screws in the order indicated in the figure above.
- After installing the Printhead, make sure to connect the ink tubes to the Printhead. (See "Ink Supply Unit (p42)".)
  - When replacing the Printhead, make sure to perform "3.2.7 Ink Leak Check (p79)" and



- the Printhead/Ink Supply Unit (p27)".)
- tape at the joint section of the ink tube hen disconnecting the joint section of the ink tube of the ink supply unit and the printhead. (See "Printhead (p42)".)
- new one in order to prevent ink leakage.
- prevent the CR Guide Frame and Main Frame from being deformed. (See "Printhead (p42)".)
- When installing the Ink Supply Unit, follow the procedure below.
- Secure the ink tubes with the Tube Holder A (x3).
  - Move the Carriage Assy to the center of the printer.
  - tubes into the holes of the Printhead, and then secure the end of the ink tubes with the screws  $(x_2)$ .
  - Secure the ink tubes with the Tube Holder B (x3), and then adjust their attachment positions to between the Tube Spacers.
- Dree you loosen the screws on the joint section of the ink tubes to the Printhead, make sure to perform "3.2.7 Ink Leak Check (p79)".

Detailed Disassembly/Reassembly Procedure for each Part/Unit

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### **Ink Supply Unit**

C.B.EP-TITE SCREW, 2.6x17(B=14), F/ZN-3C (3 ± 0.5 kgf·cm)

Before disconnecting the joint section of the Printhead and the ink tubes of the Ink Supply Unit, it is necessary to perform "Ink Pressure Release" in advance. Make sure to perform "Ink Pressure Release", otherwise, the ink in the ink tube will spill over. (See "2.2.1 Caution when Replacing

When disconnecting the joint section of the ink tubes of the Ink Supply Unit and the Printhead, ink may slightly spill over from the ink tubes even if "Ink Pressure Release" has been performed. To prevent the inside of the printer being made dirty by the spilling ink, make sure to attach

• When disconnecting the ink tubes from the Printhead, make sure to replace the rubber packing between the ink tubes and the Printhead with a

• When connecting the ink tubes to the Printhead, place the Spacer (about 5 mm) between the Carriage Assy and Star Wheel Assy in order to

Align the positioning holes (x2) and dowels (x2) shown above, and tighten the screws (x4) of the I/C Holder Unit in the order indicated in the figure above.

While aligning the Tube Holder C attached on the ink tubes with the groove of the Carriage Assy, insert the joint section on the end of the ink

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Disassembly/Reassembly

### **Revision** D



position shown above.



Disassembly/Reassembly

Detailed Disassembly/Reassembly Procedure for each Part/Unit







### **Revision** D

### 2.4 Routing FFCs/Cables







### **Top of the Printer**

### **Bottom of the Ink System Unit**



# Main Board Assy (1) Double-sided tape (1) Clamp E Clamp G Clamp F Clamp D Clamp C Clamp B Clamp A Double-sided tape (2) Rib A

Top of Main Board Assy	Power Unit cable Decompress Pump cable CR Motor cable	Connect CN501	CN34 CN30 CN45 CN51 CN57 CN56 CN 55
	CSIC FFC PF Encoder FFC Paper Stopper	CN# CN30 CN34	Name       CR Motor cable       Decompress Pump cable
	Lever Sensor cable PE Sensor cable ASF Encoder relay cable	CN45 CN51 CN56 CN57 CN55 CN501	CSIC FFC         PF Encoder FFC         PE Sensor cable         Paper Stopper Lever cable         ASF Encoder relay cable         Power Unit cable
<ul> <li>Power Unit cable (CN501)</li> <li>CR Motor cable (CN30)</li> </ul>	Route it through the clamp A, clamp C and clamp D Main Board. Route it through the clamp B and clamp E as shown	as shown al	pove, and then connect it to the connector on the then connect it to the connector on the Main Board.
PF Encoder FFC (CN51)	Secure it on the double-sided tape (1) as shown abo of the FFCs, and then route and connect it to the co	ve with a pie	ece of double-sided tape and fold it on the fold lines ne Main Board.

FFCs, and then route and connect it to the connector on the Main Board.

Secure it on the double-sided tape (2) as shown above with double-sided tape  $(x^2)$  and fold it on the fold lines of the

Route it through the rib A and secure it on the double-side tape  $(x^2)$ , and then connect them to the connectors on the

Route it through the rib A and clamp F of the Main Board Assy, and then connect it to the connector on the Main Board

■ CSIC FFC (CN45)

■ Paper Stopper Lever Sensor cable (CN57)/ Route them through the rib A, clamp F and clamp G of the Main Board Assy, and then connect them to the ASF Encoder relay cable (CN55) connectors on the Main Board.

Main Board.

■ PE Sensor cable (CN30)

Decompress Pump cable (CN22)



PF Motor cable

Front right of Main Board Assy

■ Head FFC (CN41, CN42, CN43, CN44)/ Fold them on the fold lines of the FFCs, and route and connect them to the connectors on the Main Board. CR Encoder FFC (CN45)



Secure the Maintenance Box FFC on the position shown above with acetate tape, and then connect it to the connector (CN1) on the Main Board.

Main Board Assy (2)

Disassembly/Reassembly

### **Revision** D



Route them through the ribs (x5) of the Main Board Cable Holder, and then connect them to the connectors on the

Connect the CR Encoder FFC to the connector on the CR Encoder Board, and then route it under the hooks (x3) of the Carriage Assy.

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Insert the ferrite core of the ASF Motor cable into the hole A of the 2nd Cassette Housing Assy, and route the cable through the hooks and ribs as shown above.

Insert the ferrite core of the ASF Encoder cable in the hole B of the 2nd Cassette Housing Assy, and route the cable through the hooks and ribs as shown above.
 When connecting the Paper Stopper Lever Sensor cable to the ASF Encoder Board, follow the procedure below.

1. Route it through the groove A of the 2nd Cassette Housing Assy, and then route it through the hook and ribs as shown above.

2. Pull it out from the hole C of the 2nd Cassette Housing Assy, and route it through the groove B of the 2nd Cassette Housing Assy.





CHAPTER 3

# ADJUSTMENT

### 3.1 Required Adjustments

The table from the following page lists the required adjustments depending upon the parts being repaired or replaced. Find the part(s) you removed or replaced, and check which adjustment(s) must be carried out.

!	<ul> <li>After all required adjustments are complete, use the "Final check pattern print" function to print all adjustment patterns for final check. If you find a problem with the printout patterns, carry out the adjustment again.</li> <li>When replacing the Main Board and the Printer Mechanism (Frame Base Assy) at the same time, the adjustment should be made after performing the initial setting.</li> </ul>
	<ul> <li>In this manual, the product name is abbreviated to such as "WP-5620 series", however, the last digit of the actual name may differ. Identify your product with the first three digits and refer to the appropriate sections in this manual.</li> <li>The table items and marks used in the "Required Adjustment List" provided on the following pages have the following meanings.</li> <li>"O" indicates that the adjustment must be carried out.</li> <li>"" indicates that the adjustment is not required.</li> <li>The "Mechanism Adjustment" should be performed just after reinstalling or reassembling the part or unit. (See "Table 3-1 Required Adjustment List (Mechanism adjustment) (p52)".)</li> <li>The "Adjustments using the Adjustment Program" need to be performed after reassembling the printer completely. (See "Table 3-2 Required Adjustment List (Adjustment List (Adjustment Program) (p54)".)</li> <li>If you have removed or replaced multiple parts, make sure to check the required adjustments for the all parts. And when multiple adjustments must be carried out, be sure to carry them out in the order given in the "Priority" row.</li> </ul>

Table 3-1. Required Adjustment List (Mechanism adjustment)

	Adjustment	Туре			Me	echanism Adjustn	ient		
	Priority	7	1	2	3	4	5	6	7
	Adjustment	Item	PF Timing Belt Tension Measurement	Rear ASF Timing Belt Tension Measurement	Head Angular Adjustment	PG Adjustment	Check the Platen Gap	Ink Leak Check	Touch Panel Adjustment
	Purpose		Check if the tension of CR/ PF Timing Belt is within the standard.	Check if the tension of Rear ASF Timing Belt is within the standard.	To correct tilt of the Printhead caused at the installation through mechanism control.	Adjustment the PG to within the standard.	Check if the PG is within the standard.	Check if ink is leaking.	This adjustment is made to adjust the relative positions between the Touch Panel detection points and displaying positions on the Control Panel.
	Panel Unit	Remove							
		Replace							0
	Duplex Unit	Remove							
	Duplex Onit	Replace							
	Cassette	Remove							
	Assy 1st	Replace							
	ADE Unit	Remove							
	ADFOIN	Replace							
	Soonnor Unit	Remove							
	Scanner Unit	Replace							
		Remove							
ne	Main Board	Replace (Read OK)							
art nar		Replace (Read NG)							0
ц	Rear ASF	Remove							
	Assy	Replace							
	PF Holder /	Remove	0						
	PF Timing Belt	Replace	0						
	Power	Remove							
	Supply Unit	Replace							
	Ink System	Remove			0	0	0		
	Supply Assy	Replace			0	0	0		
	Ink Supply	Remove						0	
	Unit	Replace						0	
	Pint head	Remove			0	0	0	0	
	T int nead	Replace			0	0	0	0	
Но	w to judge		See " 3.2.1 PF Timing Belt Tension Check (p58)" for the details	See " 3.2.2 Rear ASF Timing Belt Tension Check (p59)" for the details	See "Table 3.2.3 Head Angular Mechanism adjustment. (p60)" for the details	See " 3.2.3 Head Angular Mechanism adjustment. (p60)" for the details	See " 3.2.5 Checking the Platen Gap (p75)" for the details	See " 3.2.7 Ink Leak Check (p79)" for the details	See " 3.2.6 Touch Panel Adjustment (WF-5690/ 4640/4630/ 5620 series only) (p76) " for the details
Adj	ustment program				0				
Тос	bl		Sonic tension gauge	Sonic tension gauge	Scanner	Thickness gauge	Thickness gauge	Ink Leak Measurement Jig/Ink Leak Check Cartridge	Touch pen

### Table 3-1. Required Adjustment List (Mechanism adjustment)

	Adjustment	Туре			Me	echanism Adjustn	ient		
	Priority	y	1	2	3	4	5	6	7
	Adjustment	: Item	PF Timing Belt Tension Measurement	Rear ASF Timing Belt Tension Measurement	Head Angular Adjustment	PG Adjustment	Check the Platen Gap	Ink Leak Check	Touch Panel Adjustment
	Purpose	2	Check if the tension of CR/ PF Timing Belt is within the standard.	Check if the tension of Rear ASF Timing Belt is within the standard.	To correct tilt of the Printhead caused at the installation through mechanism control.	Adjustment the PG to within the standard.	Check if the PG is within the standard.	Check if ink is leaking.	This adjustment is made to adjust the relative positions between the Touch Panel detection points and displaying positions on the Control Panel.
	Driven	Remove							
	Pulley Assy	Replace	0						
	CR Motor	Remove	0						
	CRIMOLOI	Replace	0						
	Front Frame	Remove							
	1 tont 1 tante	Replace							
	Star Wheel	Remove							
	Assy	Replace							
		Remove							
	EJ Roller	Replace							
	Frame Base	Remove	0	0	0	0	0		
0	Assy	Replace	0	0	0	0	0		
lame	Support Plate	Remove				0	0		
art r	Right/Left	Replace				0	0		
Р	CR Guide	Remove	0		0	0	0		
	Frame	Replace	0		0	0	0		
	Carriage	Remove	0		0	0	0		
	Assy	Replace	0		0	0	0		
	Main Erama	Remove	0		0	0	0		
	Assy	Replace	0		0	0	0		
	Panan Cuida	Remove							
	Upper Guide	Replace							
	Daman Cuida	Remove							
	Front Assy	Replace				0	0		
	Printer Mechanism	Replace	0	0	0	0	0		
Hov	v to judge		See " 3.2.1 PF Timing Belt Tension Check (p58)" for the details	See " 3.2.2 Rear ASF Timing Belt Tension Check (p59)" for the details	See "Table 3.2.3 Head Angular Mechanism adjustment. (p60)" for the details	See " 3.2.3 Head Angular Mechanism adjustment. (p60)" for the details	See " 3.2.5 Checking the Platen Gap (p75)" for the details	See " 3.2.7 Ink Leak Check (p79)" for the details	See " 3.2.6 Touch Panel Adjustment (WF-5690/ 4640/4630/ 5620 series only) (p76) " for the details
Adj	ustment program				0				
Тос	31		Sonic tension gauge	Sonic tension gauge	Scanner	Thickness gauge	Thickness gauge	Ink Leak Measurement Jig/Ink Leak Check Cartridge	Touch pen

	Adjustment T	уре											Adjust	ment using th	e Adjustme	ent Program										
	Priority		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
	Adjustment It	tem	EEPROM data copy	Initialize Setting (MAC address setting)	Ink Pressure Release	Mainte- nance counter	Ink charge	Head ID input	PE Detector confirma- tion	PF/EJ Adjustm- ent	First dot posit PW adjustm Rear ASF Fre	tion / nent	PG1	Bi-d adjustment PG2	PG3	Head angular adjustment	PE adji Rear ASF	ıstment Front ASF	Paper skew adjustm- ent	PF/EJ deterior- ation offset	PW deterior- ation offset	PF band adjustm- ent	CR Motor heat protection control	PF Motor heat protection control	SCN Motor heat protection control	ADF Motor heat protection control
	Purpose		To copy adjustment values or the like stored on the old Main Board to the new board when the Main Board needs to be replaced.	To write sale destination- specific settings and the serial number into the Main Board after replacing it.	To minimize the amount of ink spilling when removing the pint head, discharge ink in the ink tube via the Ink System (Cap) out of the printer	To confirm the counter value of maintenance box.	To fill ink throughout the ink path to make all the nozzles ready for printer.	To correct characters- tic variation of the replaced Printhead by entering its Printhead ID (Head ID).	Confirm the PE sensor's chattering after detecting the end of the paper falls within the specified period.	To correct variations in paper feed accuracy to achieve higher print quality.	To correct the pape detection positions mounting positions PW Sensor by soft control.	er s and the s of the ware	To correct pri bidirectional control.	nt start timing in orinting through	software	To correct tilt of the Printhead caused at the installation through software control	To correct the detection posi mounting pos PE Sensor by control.	paper tions and the titions of the software	To align print start position at O-digit side with that at 80-digit side in bidirectional band printing, timing of firing ink droplet is adjusted through software control.	To reset the counter or set it to its maximum according to the replaced parts.	To reset the counter according to the replaced parts.	To correct variations in paper feed accuracy to achieve higher print quality in band printing.	To measure and and the power a (For Scanner m preparation)	d correct the ele supply board. notor and ADF r	ctrical variation o	of each motor ement
	Panel Unit	Remove																								
		Replace																								
	Duplex Unit	Remove																								
	_	Replace								0	0	0	0	0	0											
	Cassette Assy 1st	Remove																								
a)		Replace								0		0														
namo	ADF Unit	Remove																								
Part		Replace																								0
	Scanner Unit	Remove																								
		Replace																							0	
		Remove																								
	Main Board	Replace (Read OK)	0																							
		Replace (Read NG)		0				0		0	0	0	0	0	0	0	Ο	0	0	0	0	0	0	0	0	0
Pri	ntout pattern									OK NG NG	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$			OK NG NG		OK NG		-	NG OK NG			OK NG NG				
Но	w to judge									Examine the printout patterns and enter the value for the pattern with no overlap and gap between the two rectangles.	■ PW adjustme Examine the misal lines printed on top bottom, left, and ri the paper, and ente number beside the is exactly 5 mm aw the paper edge for side. ■ 1st dot adjust Examine the lines left side of paper, a the number beside that overlaps with horizontal line.	ent digned p, ght of er the line that vay from each the the the the the the	Examine the j the four mode the pattern wi each mode.	printout pattern s ils, and enter the th no gap and ov	for each of value for erlap for	Enter the values of the most straight lines.		-	Examine the printout pattern and enter the number of the one with the least gap and overlap between the two different colored line.			Examine the printout pattern an enter the value for the pattern with no overlap and gap between the two rectangles.				
Ad	justment program		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
To	ol										Ruler															

	Adjustment T	ype											Adjus	tment using t	he Adjustm	ent Program										
	Priority		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
	Adjustment If	tem	EEPROM	Initialize Setting (MAC	Ink Pressure	Mainte- nance	Ink	Head ID	PE Detector	PF/EJ Adiustm-	First dot PW adj	t position / justment		Bi-d adjustmer	nt	Head	PE adj	justment	Paper skew	PF/EJ deterior-	PW deterior-	PF band adjustm-	CR Motor heat	PF Motor heat	SCN Motor heat	ADF Motor heat
	Aujustinent it		data copy	address setting)	Release	counter To confirm	charge To fill ink	input	confirma- tion	ent	Rear ASF	Front ASF	PG1	PG2	PG3	adjustment	Rear ASF	Front ASF	ent To align	ation offset	ation offset	ent To correct	protection control	protection control	protection control	protection control
	Purpose		adjustment values or the like stored on the old Main Board to the new board when the Main Board needs to be replaced.	sale destination- specific settings and the serial number into the Main Board after replacing it.	minimize the amount of ink spilling when removing the pint head, discharge ink in the ink tube via the Ink System (Cap) out of the printer	the counter value of maintenance box.	throughout the ink path to make all the nozzles ready for printer.	characters- tic variation of the replaced Printhead by entering its Printhead ID (Head ID).	PE sensor's chattering after detecting the end of the paper falls within the specified period.	variations in paper feed accuracy to achieve higher print quality.	detection pos mounting pos PW Sensor by control.	itions and the sitions of the y software	bidirectional control.	printing throug	h software	tilt of the Printhead caused at the installation through software control	detection pos mounting po PE Sensor by control.	sitions and the sitions of the software	print start position at O-digit side with that at 80-digit side in bidirectional band printing, timing of firing ink droplet is adjusted through software control.	counter or set it to its maximum according to the replaced parts.	counter according to the replaced parts.	variations in paper feed accuracy to achieve higher print quality in band printing.	and the power (For Scanner n preparation)	supply board. totor and ADF	notor, re-measur	ement
	Rear ASF Assy	Remove																								
		Replace									0						0									
	PF Holder / Timing Belt	Remove																								
		Replace																								
	Power Supply Unit	Remove																								
Je		Replace																					0	0	0	0
t nan	Ink System Supply	Remove											0	0	0				0							
Par	Порт	Replace					0	0		0	0	0	0	0	0	0	0	0	0			0				
	Ink Supply Unit	Remove			0		0																			
		Replace			0		0																			
	Printhead	Remove			0		0						0	0	0	0			0							
		Replace			0		0	0		0	0	0	0	0	0	0	0	0	0			0				
	Driven Pulley	Remove																								
	Assy	Replace																								
Pri	ntout pattern											) 1 2 -2 -1 0 1 2 2 0 1 2 -2 -1 -1 -1 -2 -2 -1 -1 -2 -2 -1 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2		OK NG NG		OK NG	-		NG OK NG			OK NG NG				
Но	w to judge									Examine the printout patterns and enter the value for the pattern with no overlap and gap between the two rectangles.	■ PW adju Examine the : lines printed a bottom, left, i the paper, and number besid is exactly 5 m the paper edg side. ■ 1st dot a left side of pa the number b that overlaps horizontal lin	istment misaligned on top, and right of d enter the le the line that im away from ye for each djustment lines on the per, and enter eside the line with the le.	Examine the the four mod the pattern w each mode.	printout pattern els, and enter th ith no gap and c	s for each of e value for overlap for	Enter the values of the most straight lines.	-		Examine the printout pattern and enter the number of the one with the least gap and overlap between the two different colored line.			Examine the printout pattern an enter the value for the pattern with no overlap and gap between the two rectangles.				
Ad	justment program		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
То	ol										Ru	ıler														
																		·								

	Adjustment T	ype											Adjus	tment using t	he Adjustm	ent Program										
	Priority		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
	Adjustment I	tem	EEPROM data copy	Initialize Setting (MAC address	Ink Pressure Release	Mainte- nance counter	Ink charge	Head ID input	PE Detector confirma- tion	PF/EJ Adjustm- ent	First dot PW adj Rear ASF	t position / justment Front ASF	PG1	Bi-d adjustmen PG2	nt PG3	Head angular adjustment	PE adj Rear ASF	justment Front ASF	Paperskew adjustm- ent	PF/EJ deterior- ation offset	PW deterior- ation offset	PF band adjustm- ent	CR Motor heat protection control	PF Motor heat protection control	SCNMotor heat protection control	ADF Motor heat protection control
	Purpose		To copy adjustment values or the like stored on the old Main Board to the new board when the Main Board needs to be replaced.	To write sale destination- specific settings and the serial number into the Main Board after replacing it.	To minimize the amount of ink spilling when removing the pint head, discharge ink in the ink tube via the Ink System (Cap) out of the printer	To confirm the counter value of maintenance box.	To fill ink throughout the ink path to make all the nozzles ready for printer.	To correct characters- tic variation of the replaced Printhead by entering its Printhead ID (Head ID).	Confirm the PE sensor's chattering after detecting the end of the paper falls within the specified period.	To correct variations in paper feed accuracy to achieve higher print quality.	To correct the detection pos mounting pos PW Sensor by control.	e paper itions and the sitions of the y software	To correct pr bidirectional control.	int start timing i printing through	n n software	To correct tilt of the Printhead caused at the installation through software control	To correct th detection pos mounting por PE Sensor by control.	e paper itions and the sitions of the <i>y</i> software	To align print start position at 0-digit side with that at 80-digit side in bidirectional band printing, timing of firing ink droplet is adjusted through software control.	To reset the counter or set it to its maximum according to the replaced parts.	To reset the counter according to the replaced parts.	To correct variations in paper feed accuracy to achieve higher print quality in band printing.	To measure an and the power (For Scanner n preparation)	d correct the ele supply board. notor and ADF 1	etrical variation o	of each motor ement
	CR Motor	Remove																								
		Replace																					0			
	Front Frame	Remove																								
		Replace									0	0	0	0	0	0	0	0	0							
	Star Wheel Assy	Remove																								
Je		Replace								0												0				
t nan	EJ Roller	Remove																								
Part		Replace								0	0	0							0	0		0				
	Frame Base Assy	Remove									0	0	0	0	0	0	0	0	0							
	-	Replace							0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	Support Plate Left	Remove																								
	/ Right	Replace																								
	CR Guide Frame	Remove														0										
		Replace									0	0	0	0	0	0	0	0	0							
Prii	atout pattern										-2 -1 ( -2 -1 -1 -2 -2 -2 -2 -1 -2 -2 -1 -2 -1 -2 -1 -2 -1 -2 -2 -1 -2 -2 -2 -1 -2 -1 -2 -2 -1 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$		OK NG NG		OK NG	-		NG OK NG			OK NG NG				
Ho	v to judge									Examine the printout patterns and enter the value for the pattern with no overlap and gap between the two rectangles.	PW adju Examine the ines printed of bottom, left, i the paper, and number besid is exactly 5 m the paper edg side. Ist dot a Examine the left side of pa the number b that overlaps horizontal lim	Istment misaligned on top, and right of d enter the le the line that un away from ye for each djustment lines on the uper, and enter eside the line with the le.	Examine the the four mod the pattern w each mode.	printout pattern els, and enter tha ith no gap and o	s for each of e value for wverlap for	Enter the values of the most straight lines.	-		Examine the printout pattern and enter the number of the one with the least gap and overlap between the two different colored line.			Examine the printout pattern an enter the value for the pattern with no overlap and gap between the two rectangles.				
Ad	ustment program		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Тос	<u> </u>										Ru	iler														

	Adjustment	Гуре											Adjus	tment using t	he Adjustme	ent Program										
	Priority		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
	Adjustment ]	ltem	EEPROM data copy	Initialize Setting (MAC address setting)	Ink Pressure Release	Mainte- nance counter	Ink charge	Head ID input	PE Detector confirma- tion	PF/EJ Adjustm- ent	First dot PW adj Rear ASF	position / justment Front ASF	PG1	Bi-d adjustmer PG2	nt PG3	Head angular adjustment	PE adj Rear ASF	justment Front ASF	Paperskew adjustm- ent	PF/EJ deterior- ation offset	PW deterior- ation offset	PF band adjustm- ent	CR Motor heat protection control	PF Motor heat protection control	SCNMotor heat protection control	ADF Motor heat protection control
	Purpose		To copy adjustment values or the like stored on the old Main Board to the new board when the Main Board needs to be replaced.	To write sale destination- specific settings and the serial number into the Main Board after replacing it.	To minimize the amount of ink spilling when removing the pint head, discharge ink in the ink tube via the Ink System (Cap) out of the printer	To confirm the counter value of maintenance box.	To fill ink throughout the ink path to make all the nozzles ready for printer.	To correct characters- tic variation of the replaced Printhead by entering its Printhead ID (Head ID).	Confirm the PE sensor's chattering after detecting the end of the paper falls within the specified period.	To correct variations in paper feed accuracy to achieve higher print quality.	To correct the detection posi mounting pos PW Sensor b control.	e paper itions and the itions of the y software	To correct pr bidirectional control.	int start timing i printing throug	n 1 software	To correct tilt of the Printhead caused at the installation through software control	To correct th detection pos mounting po PE Sensor by control.	e paper sitions and the sitions of the y software	To align print start position at 0-digit side with that at 80-digit side in bidirectional band printing, timing of firing ink droplet is adjusted through software control.	To reset the counter or set it to its maximum according to the replaced parts.	To reset the counter according to the replaced parts.	To correct variations in paper feed accuracy to achieve higher print quality in band printing.	To measure and and the power's (For Scanner m preparation)	l correct the ele upply board. otor and ADF 1	ctrical variation notor, re-measur	of each motor rement
	Carriage Assy	Remove									0	0				0	0	0								
		Replace								0	0	0	0	0	0	0	0	0	0		0	0				
	Main Frame Assy	Remove									0	0				0	0	0								
ame		Replace								0	0	0	0	0	0	0	0	0	0							
art n	Paper Guide Upper	Remove																								
ц		Replace								0			0	0	0				0			0				
	Paper Guide Front Assy	Remove																								
	Printer Machaniam	Replace								0			0	0	0	0			0					0		
	Finiter Mechanisin	Replace							0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Pri	ntout pattern									OK NG NG	-2 -1 ( -2 -1 0 1 2 -2 -1 (	$\begin{array}{c} \begin{array}{c} & & & \\ & & & & \\ & & & \\ & & & & \\ & & & \\ & & & & \\ & & & & \\ & & & \\ & & & & \\ & & & \\ & & & \\ & & & \\ & & & & \\ & & & $		OK NG NG		OK NG	-		<b>NG OK NG</b>			OK NG NG				
Но	w to judge									Examine the printout patterns and enter the value for the pattern with no overlap and gap between the two rectangles.	PW adju Examine the fines printed d bottom, left, a the paper, and number besid is exactly 5 m the paper edg side. Ist dot a Examine the left side of pa the number bo that overlaps horizontal lin	stment misaligned on top, and right of d enter the e the line that m away from e for each djustment lines on the per, and enter eside the line with the e.	Examine the the four mod the pattern w each mode.	printout pattern els, and enter th ith no gap and c	s for each of e value for wverlap for	Enter the values of the most straight lines.	-		Examine the printout pattern and enter the number of the one with the least gap and overlap between the two different colored line.			Examine the printout pattern an enter the value for the pattern with no overlap and gap between the two rectangles.				
Ad	justment program		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
То	ol										Ru	iler														

### 3.2 Details of Adjustments

This section provides adjustment procedures for which explanation in details is necessary. See "3.1 Required Adjustments (p51)" for the adjustments not explained here.

### 3.2.1 PF Timing Belt Tension Check

This section describes PF Timing Belt tension check.



- This printer is designed so that the tension of the PF Timing Belt falls within the expected range if you correctly reassemble the unit according to this manual. However, deformation of any related part(s) can cause improper tension of the belt. In such case, replace the Printer Mechanism (Frame Base Assy).
  - The standard tension range of the PF Timing Belt is as follows:
    - Standard: 5.0 ± 1.0 N

### Tools

- □ Sonic tension gauge
- □ Plastic tweezers

### Adjustment procedure

- When performing the PF Timing Belt tension measurement, make sure of the following.
- Perform PF Timing Belt tension measurement before installing the Metal Plate Left.
- Bring the microphone of the sonic tension gauge within 5 mm from the PF Timing Belt but do not let it touch the belt.
- Flip the PF Timing Belt as weak as the sonic tension gauge can measure it.
- Be careful not to damage the PF Timing belt when flipping it with the plastic tweezers.
- 1. Set the following parameters to the sonic tension gauge:
  - Weight: 0.96 g/m
  - Width: 2.5 mm
  - Span: 51 mm
- 2. Bring the microphone of the sonic tension gauge close to the lower center of the PF Timing Belt as shown in Figure 3-1.
- 3. Press the "MEASURE" button of the sonic tension gauge and flip the PF Timing Belt with plastic tweezers and measure the tension of the belt.
- 4. Rotate the EJ Pulley a half turn in the direction of the arrow, and measure the tension of the belt. Repeat the same measurement five times (including the first one). After measuring it six times in total, check the average of the measured values falls within the standard range.



### **3.2.2 Rear ASF Timing Belt Tension Check**

This section describes Rear ASF Timing Belt tension check.



- This printer is designed so that the tension of the Rear ASF Timing Belt falls within the expected range if you correctly reassemble the unit according to this manual. However, deformation of any related part(s) can cause improper tension of the belt. In such case, replace the Printer Mechanism (Frame Base Assy).
- The standard tension range of the Rear ASF Timing Belt is as follows:
  - Standard: 6.0 ~ 7.5 N

### Tools

- □ Sonic tension gauge
- □ Plastic tweezers

### Adjustment procedure



When performing the Rear ASF Timing Belt tension measurement, make sure of the following.

- Perform Rear ASF Timing Belt tension measurement before installing the Rear ASF Assy.
- Bring the microphone of the sonic tension gauge within 5 mm from the Rear ASF Timing Belt but do not let it touch the belt.
- Flip the Rear ASF Timing Belt as weak as the sonic tension gauge can measure it.
- Be careful not to damage the Rear ASF Timing belt when flipping it with the plastic tweezers.
- 1. Set the following parameters to the sonic tension gauge:
  - Weight: 1.3 g/m
  - Width: 4 mm
  - Span: 107 mm
- 2. Bring the microphone of the sonic tension gauge close to the Rear ASF Timing Belt on the position shown in Figure 3-2.
- 3. Press the "MEASURE" button of the sonic tension gauge and flip the Rear ASF Timing Belt with plastic tweezers and measure the tension of the belt.
- 4. Rotate the PF Roller one turn in the direction of the arrow, and measure the tension of the belt. Repeat the same measurement four times (including the first one). After measuring it five times in total, check the average of the measured values falls within the standard range.



Figure 3-2. Rear ASF Timing Belt Tension Check

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### 3.2.3 Head Angular Mechanism adjustment.

This section describes the procedure for the Head angular mechanism adjustment.

### 3.2.3.1 Preparation of the Head Angular Adjustment



When the Head angular adjustment is performed, it is necessary to remove the ADF/SCN unit and the exterior parts from the product.

However, the fatal error occurs if the ADF/SCN unit is removed from product, and the printer is turned on.

Therefore, make sure to start the printer by the printer inspection mode when the Head angular adjustment is performed.

■ In case of the WF-5190/5110 series, turn on them as usual because ADF/SCN unit is not supported for them.



- Start operation of Printer Inspection Mode
  - 1. Connect the Panel Unit and the Cover open sensor to the Main Board in the condition that ADF/SCN Unit and exterior parts are removed.

(Make sure to fix the cover open sensor with the tape to deactivate the cover open error.)



Figure 3-4. Preparation of the Head Angular Adjsutment (1)

2. Start the Printer inspection mode by turning the product on with holding down the [Home] button, [\*]button, [Stop] button and [Power] button on the panel simultaneously.





3. On the displayed menu screen, select "1. Mechanism Inspection" and press the [Color] button.

Run:Color / Select:[3][6]
<ol> <li>Mechanism Inspection</li> <li>Special Inspection</li> <li>FAX Inspection</li> <li>Touch Screen Inspection</li> <li>Development Mode</li> <li>FAX Development Mode</li> <li>Normal Mode</li> </ol>



4. On the displayed menu screen, select "1. Printer Inspection Mode" and the press the [Color] button.



**Figure 3-7.** Preparation of the Head Angular Adjustment (4)

5. When following message is displayed, Head Angular Adjustment can be performed.



Figure 3-8. Preparation of the Head Angular Adjustment (5)

### 3.2.3.2 Adjustment Procedure



- Using the particular scanner
- Using the visual adjustment pattern
- In this adjustment, make sure to set the dial at the origin position with the follows before perform the Head angular adjustment.



Figure 3-9. Origin position of the adjustment dial

Tool

Specified Scanner for Head Angular Mechanism Adjustment : Perfection V600 Photo / V550 Photo

- □ Method of the Head angular adjustment.(Using the particular Scanner)
- 1. Start the product in the "Printer Inspection Mode" in accordance with "3.2.3.1 Preparation of the Head Angular Adjustment (p60)".
- 2. Select the "Head angular mecha adjustment" from menu of adjustment program, and print the head angular adjustment pattern

model = WF-5690   port = Auto selection   AdjProg Ver.0.9.0 🔀	model = WF-4640   port = Auto selection   AdjProg Ver.1.0.0
model = WF-5690   port = Auto selection   AdjProc Ver.0.9.0         Select an adjustment item from the below window and double-click to execute it.         Adjustment         EEPROM Data Copy         Initialize PF deterioration offset         Initialize PF deterioration offset         Initialize PW sensor deterioration counter         PE Detector confirmation         Head angular mecha adjustment         PF / EJ adjustment         PW / First dot position adjustment         PF band adjustment         PE adjustment         PF adjustment         PF sent adjustment         Paper Skew Adjustment	model = WF-4640   port = Auto selection   AdjProg Ver.1.0.0         Head angular mecha adjustment         1) Print Adjustment Pattern Set A4 size Matte paper in the rear ASF, then click the [Print] button.         2) Scan Adjustment Pattern Select the scanner you want to use from the list box. Then set the Adjustment Pattern on the document table, and click the [Scan] button.         3) Adjustment         1. Print adjustment pattern         2. Scan adjustment pattern         Select scanner         EPSON Perfection V600         steps
PE adjustment Paper Skew Adjustment CR motor heat protection control PF motor heat protection control Scanner/ADF motor heat protection control	
Maintenance  OK Setting Previous	Get Status Cleaning < Back Finish Cancel

Figure 3-10. Procedure of the Head Angular Adjustment (1)

3. Set the adjustment pattern for the specified scanner as shown below, and scan the head angular adjustment pattern.

When the scanning is completed, the adjustment parameter is displayed on the adjustment program



Figure 3-11. Procedure of the Head Angular Adjustment (2)

4. Turn off the product, and turn the PF Scale with holding its edge by the hand, and release the CR lock. Move the CR Assy to the center after releasing the CR lock.



- Do not touch the PF scale except the edge of the PF scale.

5. Set the Spacer (about 5mm) between the CR Assy and Star wheel Assy, loosen the screw (x3) 90 deg. Move the dial of head angular adjustment in accordance with adjustment parameter



Figure 3-12. Procedure of the Head Angular Adjustment (3)

6. Tighten the screw(x3) and move the CR Assy to the home position.

Procedure Flowchart



Figure 3-13. Head angular mecha adjustment procedure flowchart

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- Adjustment method/procedure
- 1. Start the product in the "Printer Inspection Mode" in accordance with "3.2.3.1 Preparation of the Head Angular Adjustment (p60)".
- 2. Select the "Head angular mecha adjustment" from menu of adjustment program, and print the head angular adjustment pattern.
- 3. Check the Adjustment pattern, and forecast the adjustment value when the line space becomes equal.



Figure 3-14. Procedure of the Head Angular Adjustment\_Visual adjustment (1)

- 4. Turn off the product, and turn the PF scale with holding its edge by the hand, and release the CR lock. Move the CR Assy to the center after releasing the CR lock.
- 5. Set the Spacer (5 mm) between the CR Assy and Star wheel Assy, loosen the screw (x3) 90 deg. Move the dial of head angular adjustment in accordance with forecast value of Step 3.
- 6. Tighten the screw(x3) and move the CR Assy to the home position.
- 7. Start the product in the "Printer Inspection Mode" again, and print the Head angular adjustment pattern.
- 8. Check the adjustment pattern, and move one step the adjustment dial to gap direction after performing Step 4.
- 9. Repeat the operation from Step 7 to Step 9 until the line space becomes equal.

- When was carried out A, make sure confirm the operation of the cap of the ink system by the following procedure.
- If the cap does not return to original position, make sure to replace the ink system Assy. because it can not be performed accurately capping, and printing failure occurs.
- 1. Push the Cap to rear side, and confirm to return to original position.



Figure 3-15. Operation check of the Cap (1)

2. Push the rear of the cap to the home position, and confirm to return to original position.



Figure 3-16. Operation check of the Cap (2)

### 3.2.4 PG Adjustment

This section describes the procedure for the platen gap (PG) adjustment.

	Move the Ca Be careful no Be careful no	rriage Assy ot to damage ot to damage	by pulling the Timing Belt. the nozzle surface of the Printhead with the thickness gauge. the PF Scale when removing/installing the PG Cam Left.
	The PG posi PG adjustme	tion of this p ent with the	printer can be set to four points, from PG 1 to PG 4. Perform the PG position set to PG 1.
	Position	PG (mm)	Application
	PG 1	1.50	Printing plain paper/EPSON special paper, PG adjustment
	PG 2	1.85	Select when PG 1 is too narrow, printing envelopes/matte paper
	PG 3	2.50	Select when PG 2 is too narrow
	PG 4	3.00	Printing envelopes
	<ul><li>Ine standard</li><li>Standard</li></ul>	u range of th : $1.5 \pm 0.0.5$ into the pitch: 0.0	mm (PG position: PG 1)
8	Adjustme     When performed the formation of the for	ming the PC	5 mm (distance between notches on the PG Cam) G adjustment, install the Printhead to the Carriage Assy, and ts beforehand.

### Tools

- $\Box$  Thickness gauge: 1.37 mm (x2), 1.47 mm (x2)
- □ Teflon Tape: Commercial item (thickness: 0.08 mm)

### 3.2.4.1 Preparation

This section describes how and what to prepare for the preparation before starting the PG adjustment.

□ Modification of the thickness gauges



- Application procedure of Teflon tape
  - 1. Clean the surfaces of the thickness gauge using alcohol, and make sure no dirt or contamination remains on the surfaces.
  - 2. Apply Teflon tape on the thickness gauge as shown below.



Figure 3-17. Modification of Thickness Gauge (1)

3. Fold the excess portions of Teflon tape along the edges of the thickness gauge, and trim the portions at about the center in the thickness direction of the sides.



Figure 3-18. Modification of thickness gauge



When the Teflon tape is trimming, the Teflon tape can be easily cut out by guiding the half thickness gauge.



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Make sure to wear the heavy gloves to prevent the cut the hand when trim the Teflon tape.

4. Make sure any tears or burns on the applied Teflon tape, then the modification of thickness gauges is complete.

### ■ How to check

Perform the following to check if the PG position is surely set to PG 1.

- 1. Move the Carriage Assy to the center of the printer.
- 2. From the 0-digit side between the Main Frame and Carriage Assy, check the APG Cam is as shown in "PG 1" in Figure 3-19.



PG 1 When the APG Cam is the nearest to the 0-digit side.



PG 4 When the APG Cam is the nearest to the 80-digit side.

### Figure 3-19. PG Position

If the lever is in the NG condition shown in Figure 3-19, set it in the [PG1] position as follows.

- 1. Move the Carriage Assy to the 0-digit side.
- 2. Rotate the PF Roller counterclockwise to move the APG Lever out of the hole of the Main Frame.
- 3. Move the Carriage Assy to the 80-digit side until it touches the APG Lever.
- 4. Return the Carriage Assy to the center of the printer.



Figure 3-20. APG Lever



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### 3.2.4.2 PG Adjustment procedure

When performing the PG adjustment, make sure of the following.

- perform the PG adjustment with the new cartridges installed on the CR Unit before installing the CR Scale.
- Move the CR Unit by pulling the top pf the CR timing belt.
- Be careful not no damage the nozzle surface of the Printhead with the thickness gauge.
- When make the Printhead touch the thickness gauge, be careful not to let the Printhead un onto the gauge.
- 1. Remove the screws (one each) that secure the PG Cam Left and PG Cam Right on both sides of the printer, and remove the PG Cam Left and PG Cam Right.



Figure 3-21. PG Cam Left/PG Cam Right

2. Loosen the screws (x3) that secure the CR Guide Frame.



- 3. Set the PG Cam Left to the dowel of the Paper Guide Front Assy, and set the PG Cam Right to the dowel of the Frame Base.
- 4. Align the "+" marked notches of the PG Cams with the ribs of the Frame Base so as to make the PG the widest.



Figure 3-23. Installing the PG Cam Left/PG Cam Right

- 5. Press the two points down vertically on the Carriage Assy shown in Figure 3-19 simultaneously, and make sure of the following.
  - The Carriage Assy is installed correctly without any gap between the Carriage Assy and CR Guide Frame.
  - The PG Cam Right/PG Cam Left touch the CR Guide Frame.



Figure 3-24. The PG Cam Right/PG Cam Left and CR Guide Frame

6. Place the thickness gauges (1.47 mm) on the positions shown in Figure 3-25.



Figure 3-25. Position of the Thickness Gauge



When adjusting the PG Cam Right/PG Cam Left in the following steps, make sure to adjust the same amount for both right and left.
- 7. With the Carriage Assy in the center of the printer, adjust three notches each for both PG Cam Right and PG Cam Left to make the PG narrower.
- 8. Pull the Timing Belt to move the Carriage Assy to 0-digit side and 80-digit side and check if the Carriage Assy touches the thickness gauges. If the Carriage Assy does not come in contact with the thickness gauges, adjust the PG Cam Right and PG Cam Left to make the PG narrower until the Carriage Assy touches the thickness gauges.



Figure 3-26. PG Adjustment



In the following steps, make sure the PG Cam Right/PG Cam Left always touch the CR Guide Frame. (See Figure 3-24 (p 72).)

9. Follow the flowchart below to perform the PG adjustment.



Figure 3-27. PG Adjustment Flow

**Revision** D

## 3.2.5 Checking the Platen Gap

This section describes the procedure for checking the platen gap (PG) necessary when removing the Printhead or in a similar case.



- When checking the PG, make sure of the following.
- Move the Carriage Assy by pulling the Timing Belt.
  - Be careful not to damage the nozzle surface of the Printhead with the thickness gauge.

#### Tools

- $\Box$  Thickness gauge: 1.37 mm (x2), 1.47 mm (x2)
- □ Teflon Tape: Commercial item (thickness: 0.08 mm)

#### **Checking procedure**

- 1. Check the PG position is set to PG 1. (See "Preparation (p68)".)
- 2. Move the Carriage Assy to the center of the printer.
- 3. Place the thickness gauges (1.37 mm) on the positions shown in Figure 3-25 (p 72).
- 4. Pull the Timing Belt to move the Carriage Assy to both ends and confirm the Carriage Assy does not touch the thickness gauges. If the Carriage Assy comes in contact with the thickness gauges, the PG is narrower than the standard value, therefore, perform "3.2.3 Head Angular Mechanism adjustment. (p60)".
- 5. Move the Carriage Assy to the center, and replace the thickness gauges (1.37 mm) with the thickness gauges (1.47 mm) on the same positions as Step 3.
- 6. Pull the Timing Belt to move the Carriage Assy to both ends and confirm the Carriage Assy touches the thickness gauges. If the Carriage Assy does not come in contact with the thickness gauges, the PG is wider than the standard value, therefore, perform "3.2.3 Head Angular Mechanism adjustment. (p60)".

# 3.2.6 Touch Panel Adjustment (WF-5690/4640/4630/5620 series only)

This section describes Touch Panel adjustment.

□ Purpose

This adjustment is made to adjust the relative positions between the Touch Panel detection points and displaying positions on the Control Panel.

- □ Tools
  - Touch pen (without a sharp end such as a plastic stick)



- □ Adjustment procedure
- 1. Start the printer in the Touch Panel Adjustment mode by turning it on with the [HOME]button, [\*]button, [Stop]button, and [Power]button on the panel simultaneously.
- 2. On the displayed menu screen, select "4. Touch Screen Inspection" and press the [Color] button.





3. On the displayed menu screen, select "1.Touch Screen Calibration" and press the [Color] button.



### Figure 3-30. Touch Panel Adjustment (2)

4. Press "Push this Area.[OK]" to displayed the adjustment screen. To abort the adjustment, press "Push this Area.[Cancel]".



Figure 3-31. Touch Panel Adjustment (3)

5. Press "+" displayed on the four corners in order using the touch pen.



Figure 3-32. Touch Panel Adjustment (4)

6. When preforming the adjustment again, press "Push this Area.[Cancel]" and start from Step 2 again. To save the adjustment result, press "Push this Area. [Save]".



Figure 3-33. Touch Panel Adjustment (5)

7. Press the areas within the red boxes (x5) using the Touch Pen.





8. When "Complete!" appears on the LCD, press the [Color] button to finish the adjustment

Complete!	
Push [Color] Button.	

Figure 3-35. Touch Panel Adjustment (7)

If "Retry Check" appears on the LCD, press "Push this Area. [OK]" to start from Step 7 again.



Figure 3-36. Touch Panel Adjustment (8)

# 3.2.7 Ink Leak Check

This section describes the procedure for ink leak check necessary when disconnecting the Ink Supply Unit from the Printhead or in a similar case.

#### Tools

□ Ink Leak Measurement Jig (Parts code: TBD) Battery type: CR2016 (3 V) x1



Figure 3-37. Ink Leak Measurement Jig

□ Ink Leak Check Cartridge (Parts code: 1565785)

Ink Leak Check Cartridge			
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Figure 3-38. Ink Leak Check Cartridge



Do not touch or press the regulator located under the regulator protection plate of the Ink Leak Measurement Jig.

 $\checkmark$ 

The Ink Leak Measurement Jig applies pressure by sending air using a syringe into the ink path, and detects the variation of pressure in the ink path between the self-sealing valve in the Printhead and the ink supply holes of the ink cartridges to check the presence of ink leakage. If air leak occurs in the Ink Leak Measurement Jig, the leak check itself cannot be done. Therefore, before performing the leak check, perform "Ink Leakage Inspection Condition (p80)" without inserting the Ink Leak Check Cartridge to the printer to test air leak from the Ink Leak Measurement Jig itself. (If the Ink Leak Check Cartridge is not loaded to the printer, the valve in the cartridge is shut. Therefore, the air leak check from the Ink Leak Measurement Jig itself becomes possible.)

The ink leak check should be done with the ink tubes secured with the tube clamps and the CR Cover attached after the joint section of the Printhead and the Ink Supply Unit has been secured. (See "Ink Supply Unit (p42)".)

## Ink Leakage Inspection Condition

- Air pressure power :  $48 \pm 2$  Kpa
- Air pressure time : 10 sec
- Air pressure hold time : 30 sec
- Air pressure judgement standard : Less than 0.4 Kpa

## **Checking procedure**

- 1. Turn each valve of the Ink Leak Measurement Jig as follows:
  - Valve A: Open
  - Valve B: Open
  - Valve C: Open
- 2. Connect the Ink Leak Check Cartridge to the Ink Leak Measurement Jig.



## Figure 3-39. Ink Leak Check (1)

- 3. Install the Ink Leak Check Cartridge into the ink cartridge slot of the printer to check.
- 4. Press the power button of the pressure gauge.
- 5. Confirm the value on the pressure gauge is 0.0 kPa. Otherwise, restart the pressure gauge.
- 6. Pull the plunger up to the 20 mark.



Figure 3-40. Ink Leak Check (2)

#### Epson WF-5690/4640/4630/5620/5190/5110 series

- 7. Close the valve C of the Ink Leak Measurement Jig.
- 8. Push the plunger to inject the air out, and confirm the pressure gauge indicates 48 ± 2 kPa, then after the value has stabilized, shut the value A. If the value is less than 48 ± 2 kPa, open the value A and pull out and push in the plunger several times until the value reaches 48 ± 2 kPa, then after the value has stabilized, shut the value A.



Figure 3-41. Ink Leak Check (3)

- 9. Close the valve B, and after waiting 10 seconds for the pressure to stabilize, record the value displayed on the pressure gauge.
- 10. After about 30 seconds have passed, check the value on the pressure gauge, and compare it with the recorded value.
  - Difference is less than 0.4 kPa: No problem. Go to Step 11.
  - Difference is 0.4 kPa or more: Air may be leaking. Disconnect the ink tubes of the Ink Supply Unit from the Printhead, and connect them again correctly. (See "Ink Supply Unit (p42)".) Then, start the check again from Step 3.
- 11. Open the valve C to release the air pressure in the jig.
- 12. After confirming the value on the pressure gauge is 0.0 kPa, remove the Ink Leak Check Cartridge from the printer.
- 13. Repeat from Step 3. to Step 12. for the rest of the ink cartridge slots to check.
- 14. After checking all the ink cartridge slots, press and hold the power button of the pressure gauge for about four to five seconds to turn off.

CHAPTER 4

# MAINTENANCE

## 4.1 Overview



In this manual, the product name is abbreviated to such as "WP-4510 series", however, the last digit of the actual name may differ. Identify your product with the first three digits and refer to the appropriate sections in this manual.

This section provides information to maintain the printer in its optimum condition.

## 4.1.1 Cleaning

Except for the printhead, there are no other mechanical parts or units that require periodic cleaning. However, if need arises, clean the component observing the following instructions.

- □ Instructions for cleaning
  - Exterior parts such as housing Wipe dirt off with a soft clean cloth moistened with water. For glossy or transparent parts, use of unwoven cloth is recommended to avoid scratching those parts.
  - Inside of the printer Remove paper dust with a vacuum cleaner.
  - Rubber or plastic rollers such as an LD roller/Pickup Roller used to feed paper If paper dust adhered to the rollers decreases the frictional force of the rollers and the rollers cannot properly feed paper, wipe off the paper dust with a soft cloth moistened with diluted alcohol.
- □ Instructions for cleaning ink stains

Wipe the stains off with a cloth wrung out of diluted alcohol.

- Do not use alcohol for cleaning the transparent parts. Doing so may cause them to get cloudy.
- When wiping paper dust off the LD roller/Pickup Roller, be careful not to rub against the surface asperity.
- To minimize the effect on the parts, use diluted alcohol such as 70% diluted ether.
- After using alcohol for cleaning, make sure to wipe the part off with a soft dry dust-free cloth to remove alcohol traces fully.

## 4.1.2 Lubrication

The type and amount of the grease used to lubricate the printer parts are determined based on the results of the internal evaluations. Therefore, refer to "4.2 Lubrication Points and Instruction (p84)" for the repairing procedures below, and apply the specified type and amount of the grease to the specified part of the printer mechanism.

□ Grease

Туре	Name	<b>EPSON Part Code</b>	Supplier
Grease	G-71	1304682	EPSON
Grease	G-74	1409257	EPSON

#### □ Tools

Name	Availability	EPSON Part Code
Injector	O *	
Brush	O *	

Note \*: Use tools whose specifications are specified in "4.2 Lubrication Points and Instruction (p84)".



The new Printer Mechanism (Frame Base Assy) supplied as an ASP is not lubricated on the two points described in "4-3 Lubrication of the Main Frame Assy (p84)" and "4-4 Lubrication of the CR Guide Frame (p84)" of "4.2 Lubrication Points and Instruction (p84)". Therefore, make sure to lubricate the Printer Mechanism (Frame Base Assy) on the specified points when replacing it.

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## **4.2** Lubrication Points and Instruction



Figure 4-1. Lubrication of the Cassette Assy 1st and 2nd

Figure 4-2. Lubrication of the Driven Pulley Assy

Figure 4-3. Lubrication of the Main Frame Assy











Figure 4-6. Lubrication of the Duplex Unit

Figure 4-7. Lubrication of the LD Shaft



Figure 4-8. Lubrication of the PF / EJ Grounding Spring

Figure 4-9. Lubrication of the Ink system Assy



Figure 4-10. Lubrication of the Carriage Assy





# 4.3 Firmware Update

This section describes how to update the firmware of the printer.



- The start-up method of the firmware update mode differs depending on the panel type mounted on the printer, so refer to the appropriate start-up method.
- If any error occurs during a firmware update and all LEDs light, disconnect the power cable and update it again.

#### Firmware update procedure

- □ Case of WF-5690/4640/4630/5620 series
- 1. From a Power-off status, push "Power on button" while pushing "Home button", "No.1 button" and "Stop button"(Until a message is displayed on the LCD)



<Panel condition when PC status normally>

The following message is displayed on the LCD and all LEDs light.



- 2. Start the exclusive firmware update program and select the latest firmware data to rewrite it.
- 3. After the firmware update is completed and the following message is displayed and also all LEDs light, push "No.0 button" to turn off the printer.



- □ Case of WF-5190/5110 series
- 1. From a power-off status, push "Power on button" while pushing "Paper setup button", "Left button" and "Stop button".(Until a message is displayed on the LCD)



### <Panel condition when PC status normally>

The following message is displayed on the LCD and all LEDs light.



- 2. Start the exclusive firmware update program and select the latest firmware data to rewrite it.
- 3. After the firmware update is completed and the following message is displayed, push "OK button" to turn off the printer.



CHAPTER 5

# APPENDIX

# 5.1 Connector Diagram

Cable connections of this printer are shown below



Figure 5-1. Connector Diagram

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