CHAPTER 6: PRESS SECTION

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Mechanism

1. Press Mechanism

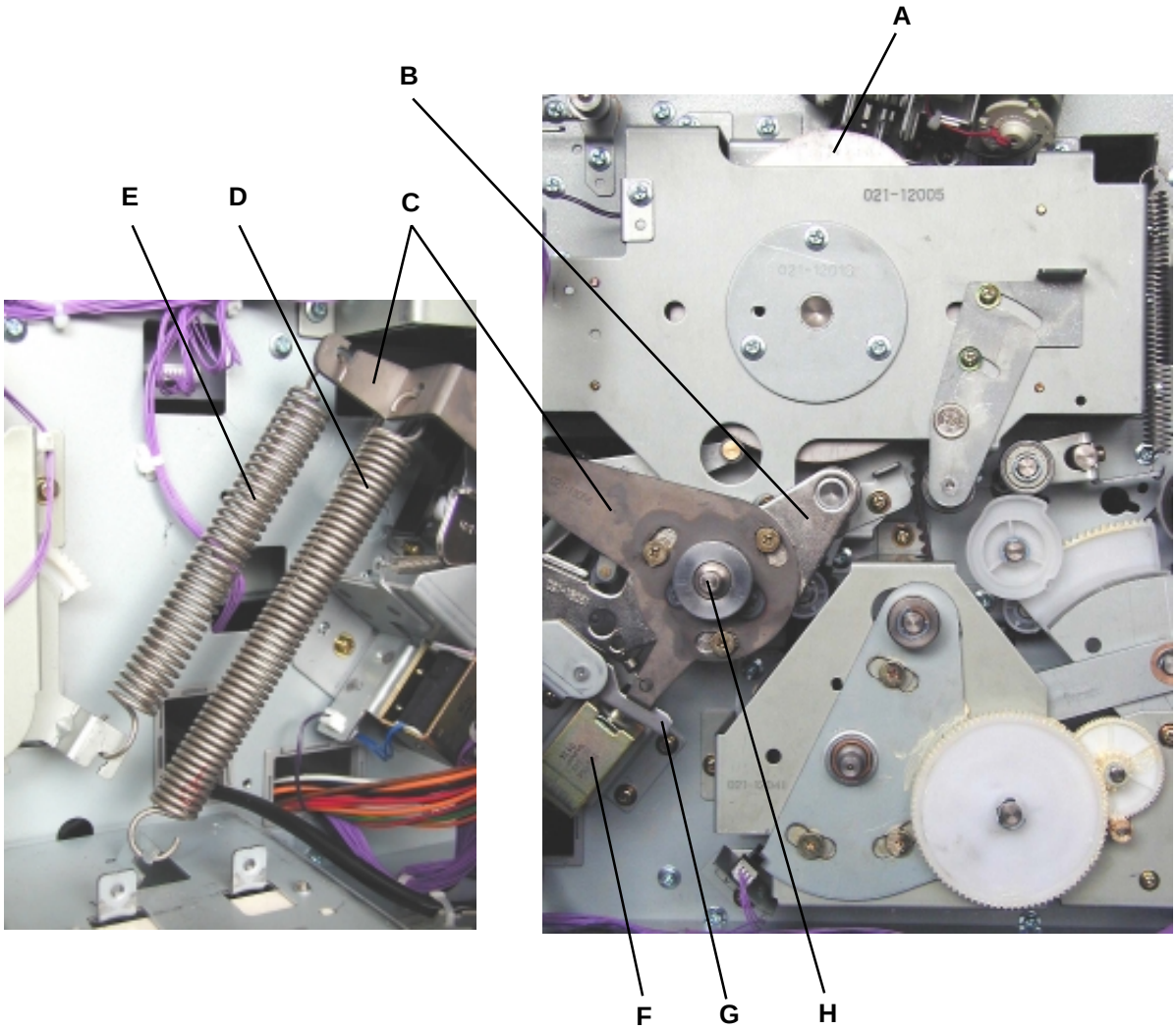
The main motor activates when printing begins, and the Pressure solenoid [F] activates once the print drum rotates through 40°.

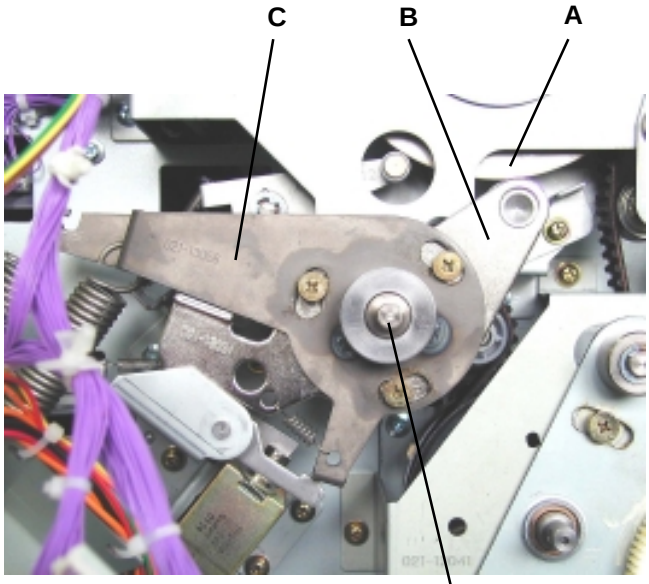
As the clamp plate base on the print drum approaches the pressure roller, the protrusion on the Pressure cam [A] pushes against Pressure lever A [B] to rotate it clockwise. This rotary motion causes Pressure lever A [B] to push against Pressure lever B [C], and the Solenoid lever [G] separates from Pressure lever B [C] and descends.

Once the protrusion on the Pressure cam [A] has passed, pressure lever A [B] rotates counter-clockwise. Likewise, Pressure lever B [C] is pulled by the tension of the Pressure spring [D] and Second pressure spring [E], and rotates in unison with Pressure lever A [B]. The Pressure shaft [H] fixed to Pressure lever B [C] therefore also rotates counter-clockwise. The pressure roller therefore rises and is pressed against the print drum.

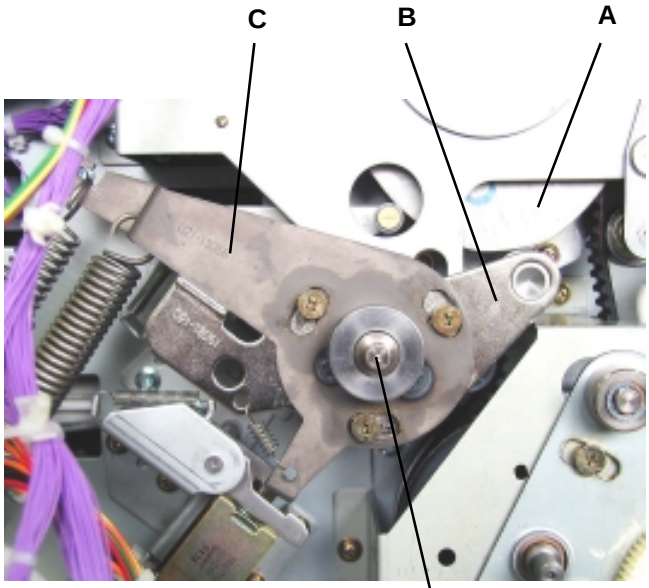
During printing, the Pressure cam [A] pushes against Pressure lever A [B] and lowers the pressure roller to prevent the pressure roller from touching the print drum clamp plate base. The Pressure solenoid [F] remains activated.

After printing is complete, the Pressure solenoid [F] is deactivated when the print drum reaches the 135° position.





Pressure roller is raised



Pressure roller is lowered

A: Pressure cam
B: Pressure lever A
C: Pressure lever B
D: Pressure spring
E: Second pressure spring
F: Pressure solenoid
G: Solenoid lever
H: Pressure shaft

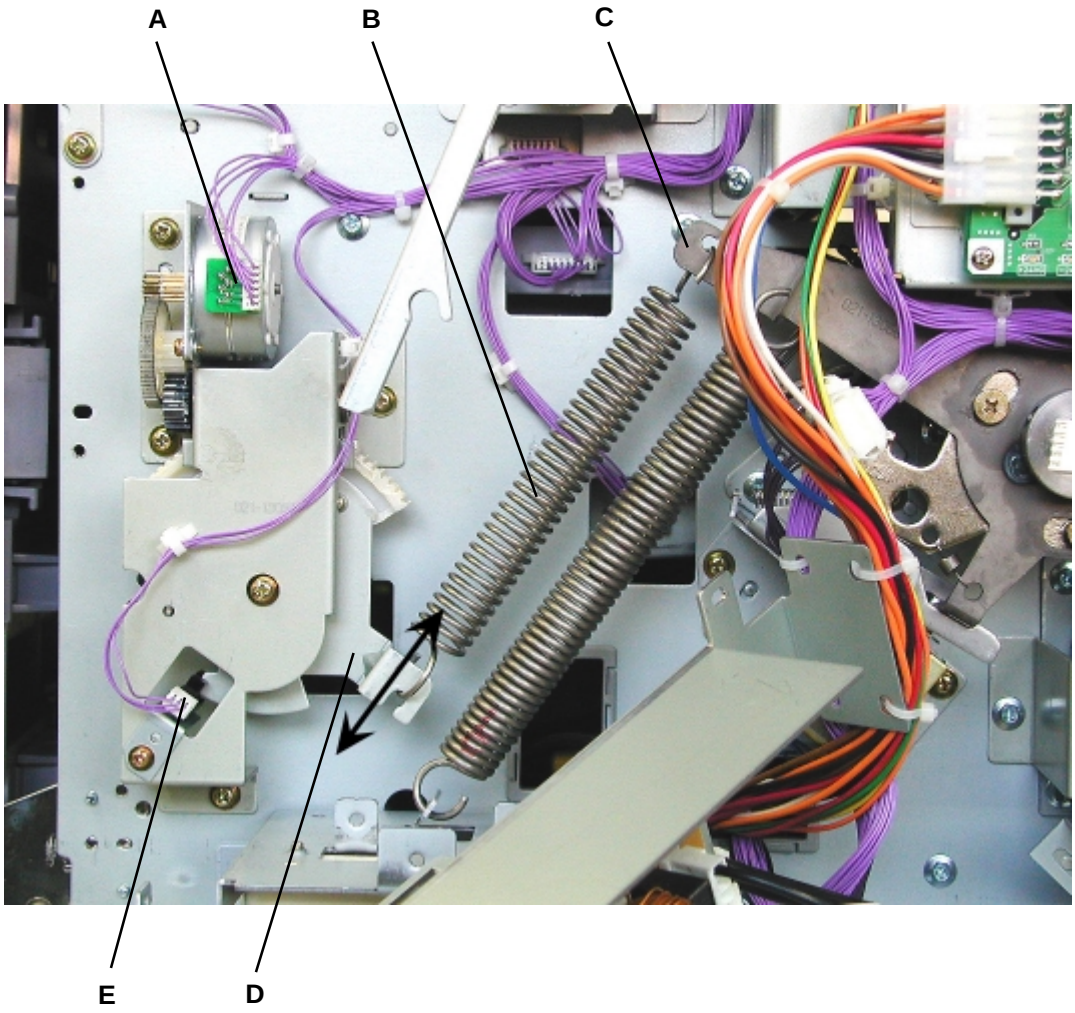
2. Pressure Control Mechanism

Pressing the <◀> or <▶> print density keys on the panel activates the Pressure control motor [A] and moves the Print pressure gear ass'y [D]. The movement of the Print pressure gear ass'y [D] varies the tension of the second pressure spring [B].

This alters the pressure acting on Pressure lever B [C], and varies the print density by varying the pressure of the pressure roller against the print drum. The pressure control motor is not actually activated until the START key is pressed.

The printing pressure will vary depending on the printing speed and print density settings, the ink color, the length of time the print drum remains standing, and the print drum's internal temperature.

The Print pressure control sensor [E] checks the standard printing pressure position.



A: Pressure control motor
B: Second pressure spring
C: Pressure lever B
D: Print pressure gear ass'y
E: Print pressure control sensor

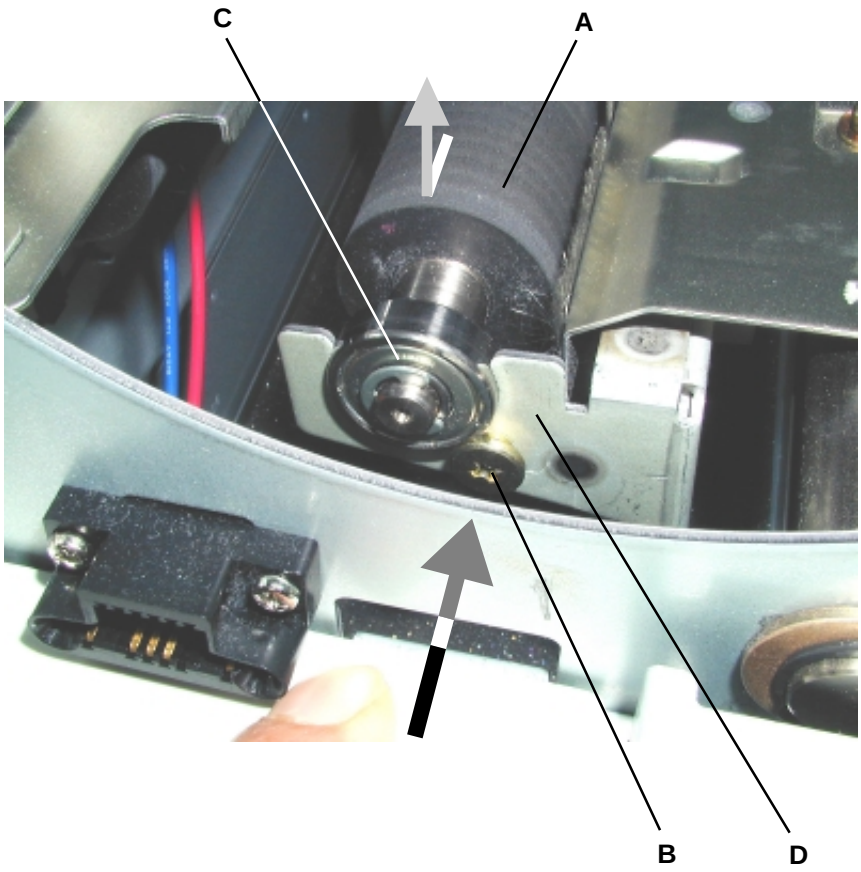
Removal and Assembly

1. Removing the Pressure Roller

(1) Pull out the print drum.

(2) Insert a screwdriver through the opening in the front frame of the machine, and remove the retaining screw [B].

(3) Slide the Pressure roller [A] forward until the bearing [C] disengages from the Pressure roller bracket [D], and then lift upward to remove it.



A: Pressure roller
B: Retaining screw
C: Bearing
D: Pressure roller bracket

2. Removing the Pressure Solenoid

(1) Remove the rear cover.

(2) Remove the mounting screws (M4x8: 3 pcs), and pull the Filter PCB unit [A] forward.

(3) Remove the Second pressure spring [B] and Pressure spring [C].

(4) Unplug the connector [D], remove the mounting screws (M4x8: 4 pcs) on the Solenoid base ass'y [E], and then remove the Solenoid base ass'y [E].

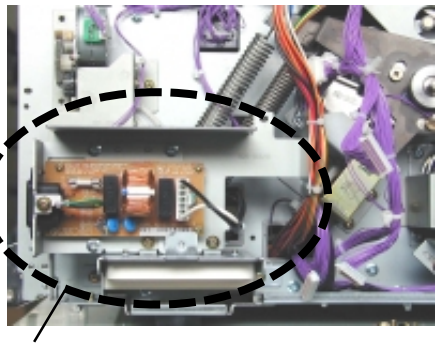
(5) Unplug the Pressure solenoid connector [G], remove the mounting screws (M3x6: 2 pcs), and then remove the Pressure solenoid [F].

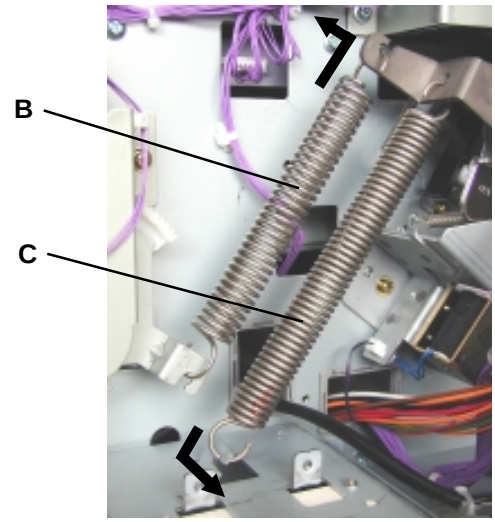
[Work Precautions]

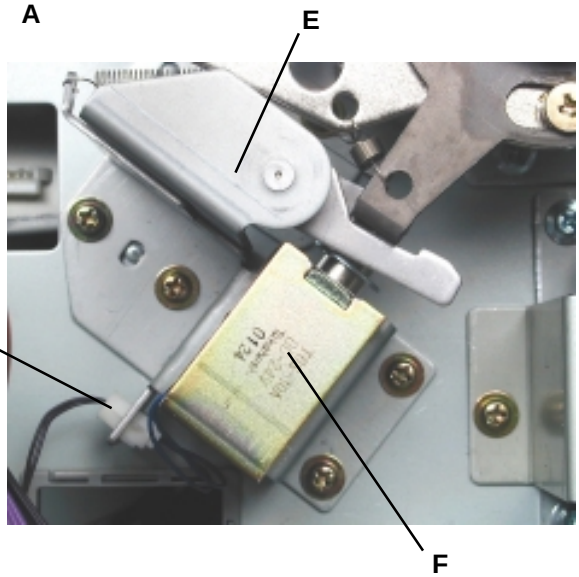
- The Pressure spring and Second pressure spring are extremely powerful. Take care to avoid injury when removing or refitting.

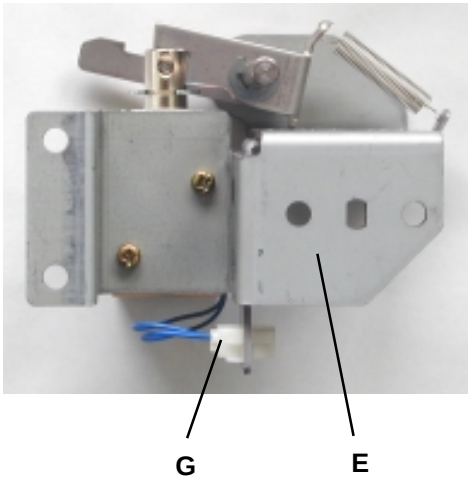
[Precautions on Reassembly]

- Align the half-pierce.









A: Filter PCB unit
B: Second pressure spring
C: Pressure spring
D: Connector
E: Solenoid base ass'y
F: Pressure solenoid
G: Pressure solenoid connector

3. Removing the Pressure Lever Ass'y

(1) Make a confidential master, and then bring the print drum to position A.

(2) Open the scanner table, and remove the rear cover.

(3) Remove the screws and pull forward the filter PCB unit.

(4) Remove both the Second pressure spring and Pressure spring.

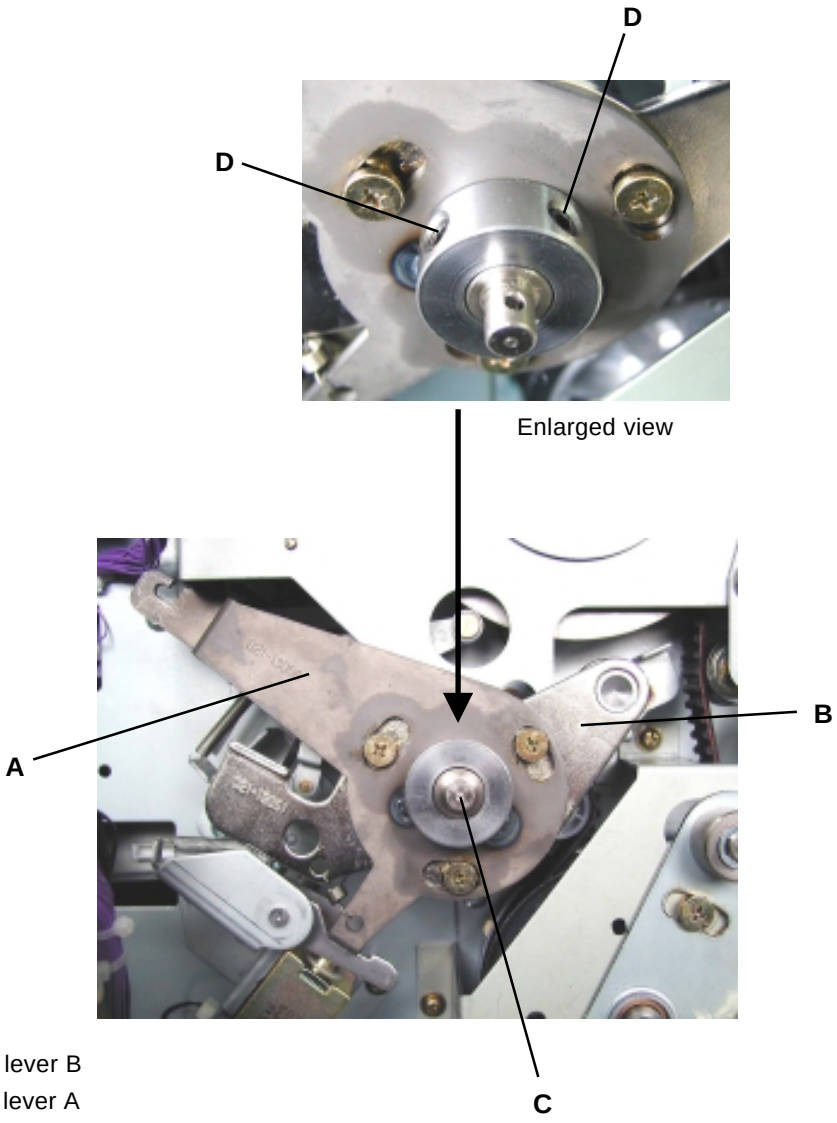
(5) Loosen the two set screws [D] on Pressure lever B [A] using an Allen wrench (3 mm), and remove the Pressure lever ass'y (Pressure lever A [B] + Pressure lever B [A]) from the Pressure shaft [C].

[Work Precautions]

- The Pressure spring and Second pressure spring are extremely powerful. Take care to avoid injury when removing or refitting.

[Precautions on Reassembly]

- Adjust the mounting position of the Pressure lever ass'y.



A: Pressure lever B
B: Pressure lever A
C: Pressure shaft
D: Set screw

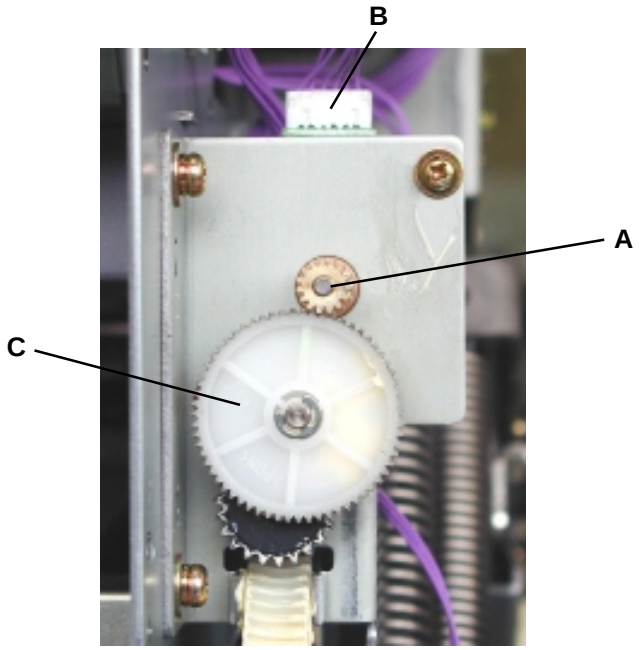
4. Removing the Pressure Control Motor and Print Pressure Control Sensor

Removing the Pressure Control Motor

(1) Remove the rear cover.

(2) Remove the E-ring and the Drive transfer gear [C].

(3) Unplug the connector [B] on the Pressure control motor [A], remove the mounting screws (M3x6: 2 pcs), and then remove the Pressure control motor [A].



Removing the Print Pressure Control Sensor

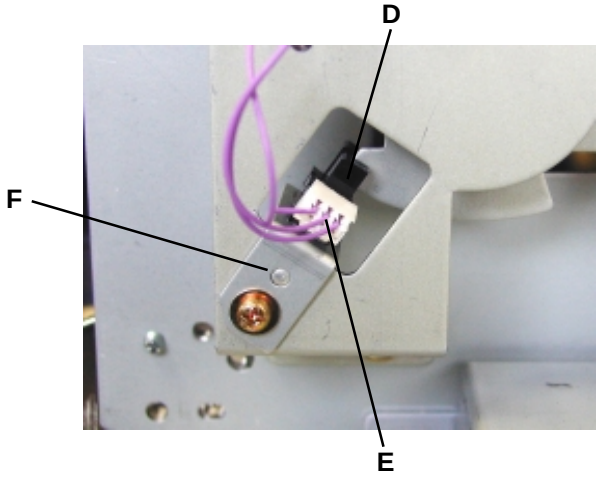
(1) Remove the rear cover.

(2) Remove the mounting screws on the filter PCB unit, and then pull it forward.

(3) Unplug the connector [E] on the Print pressure control sensor [D], remove the mounting screw (M3 x 6: 1 pc), and then remove the Print pressure control sensor [D] together with the Print pressure control sensor bracket [F].

[Precautions on Reassembly]

- Align the half-pierce.



A: Pressure control motor
B: Pressure control motor connector
C: Drive transfer gear
D: Print pressure control sensor
E: Print pressure control sensor connector
F: Print pressure control sensor bracket

[Memo]

Adjustment

1. Mounting Position of the Pressure Lever Ass'y

Checking and adjustment procedure

(1) Make a confidential master, and then bring the print drum to position A.

(2) Remove the rear cover.

(3) Remove the screws and pull forward the filter PCB unit.

(4) Remove the Second pressure spring, push up the Pressure lever B [A], and disengage it from the Solenoid lever [D].

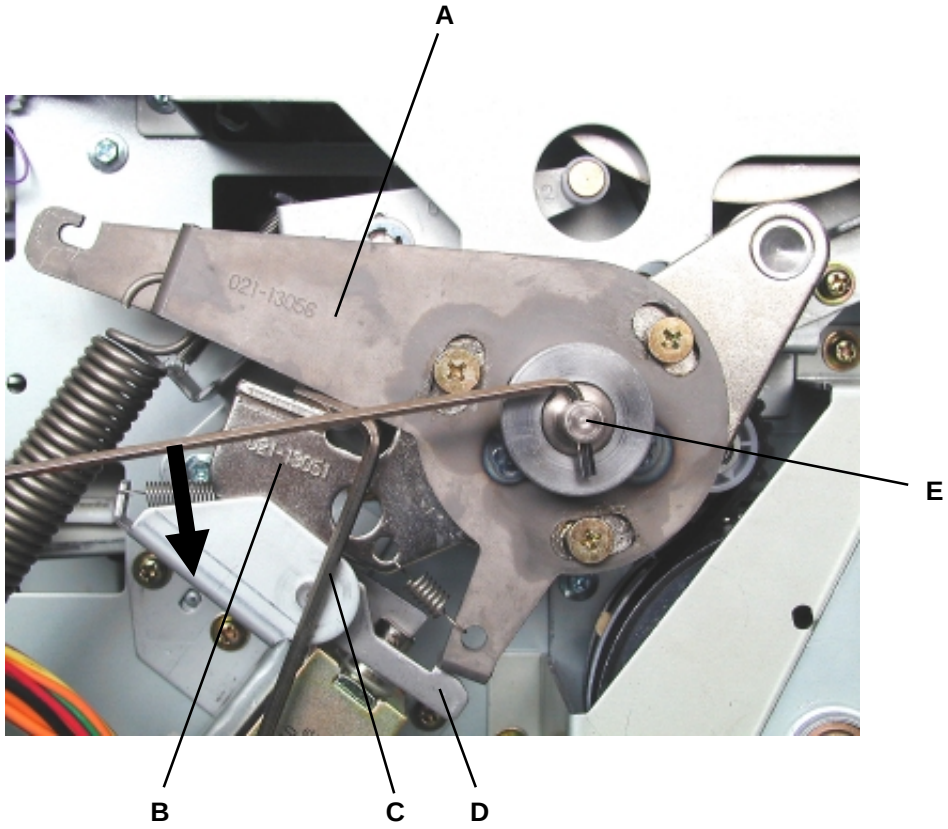
(5) Attach the Second pressure spring and check that the gap between Pressure lever A [B] and Pressure lever B [A] is between 1.5 mm and 2.0 mm. (See detailed figure 2.)

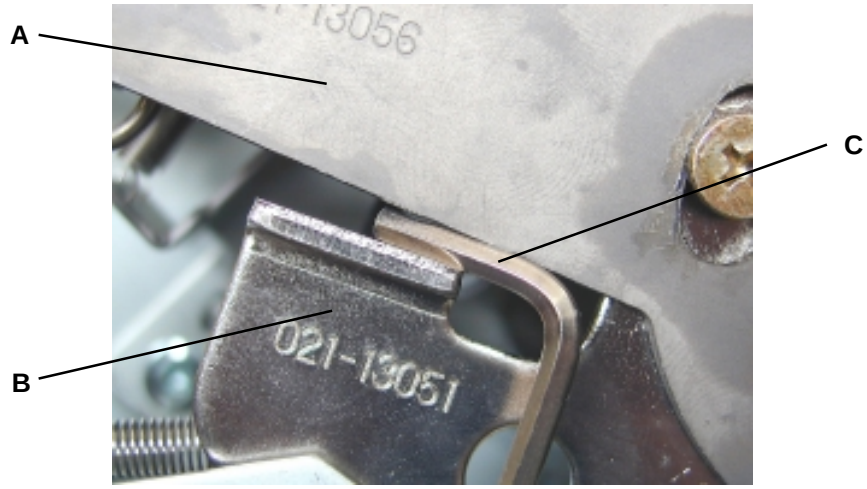
(6) If the gap in step (5) is outside the specifications, remove the Second pressure spring and loosen the two set screws on Pressure lever B [A]. Insert a 3 mm Allen wrench [C] between Pressure lever A [B] and Pressure lever B [A] (see detailed figure 1), rotate the Pressure shaft [E] fully counter-clockwise, and then tighten the set screws on Pressure lever B [A] with the pressure roller pressing hard against the print drum. The Pressure lever B [A] should be pushed all the way back against the machine, when tightening the set screws.

(7) Check as in step (5), and if the gap is still outside the specifications, repeat step (6). If the gap is within the specifications, push Pressure lever B [A] upwards, lock with the Solenoid lever [D], and attach the Second pressure spring.

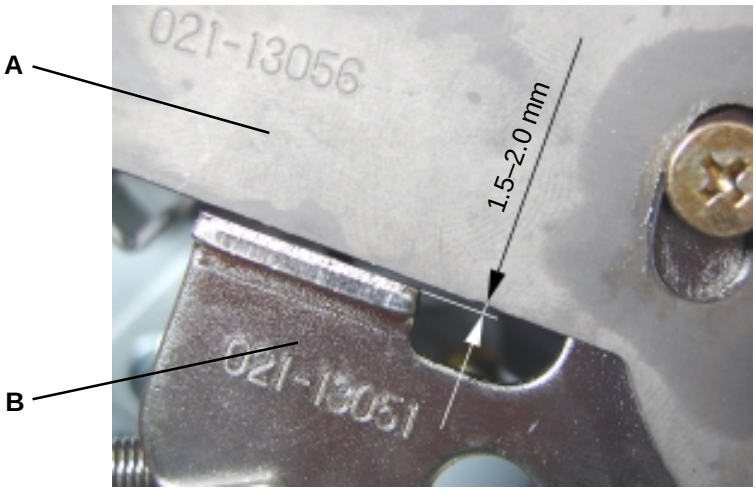
Symptoms

- If the gap is too small, the pressure will be too weak, and the printing density may become too light.
- If the gap is too large, there will not be sufficient space between the Pressure roller and the Clamp plate base on the print drum, and they may touch, damaging the Clamp plate base.





Detailed figure 1



Detailed figure 2

A: Pressure lever B
B: Pressure lever A
C: Allen wrench (3 mm)
D: Solenoid lever
E: Pressure shaft

[Memo]