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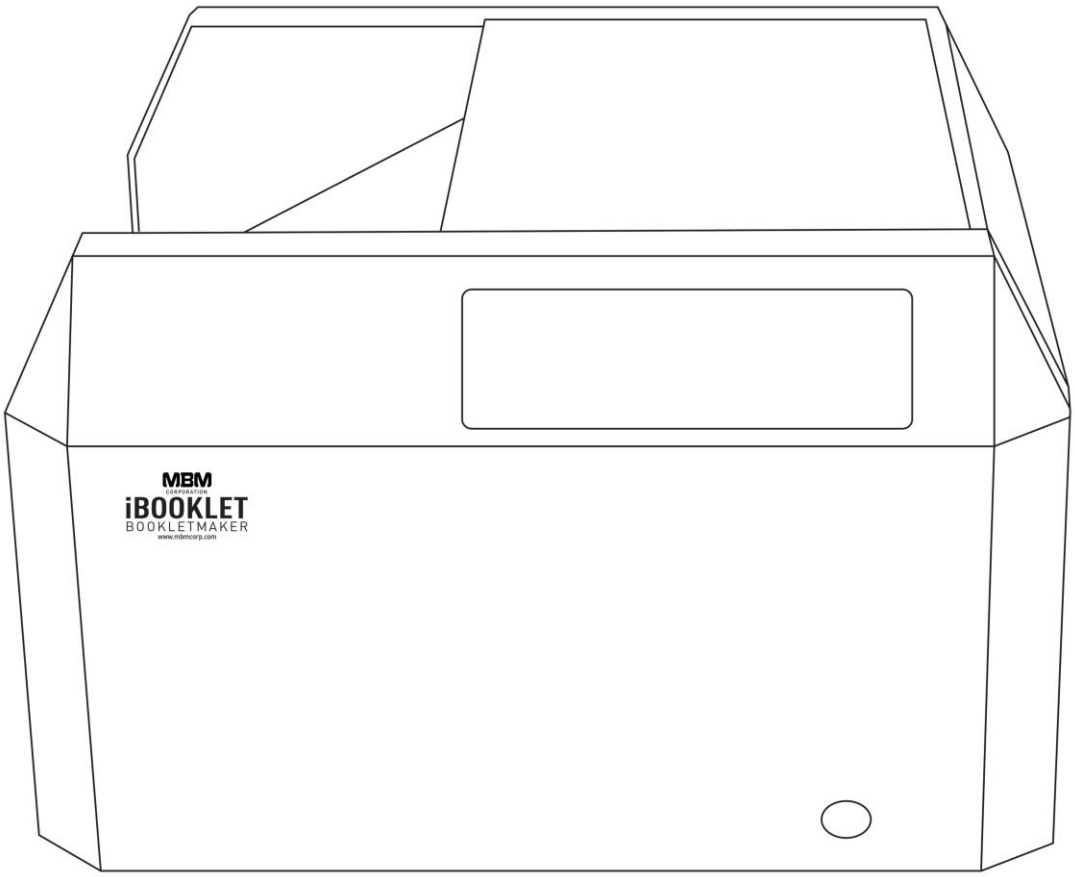
MBM CORPORATION

Ver. A_1

# Service Manual

# MBM
# iBOOKLET




Oct. 24, 2016

**MBM Corporation**

## Introduction

Thank you for purchasing the iBOOKLET.
The iBOOKLET is a tabletop booklet maker.

Its major features include:

- Comfort in operation supported by touch-type switches.
- Support for two clinching methods to make a wide variety of booklets
- Automated or manual booklet making is possible only by selecting paper size.

Read this manual carefully to ensure the product is handled and used under the best condition

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# Safety Precautions

*The repair of a product that is damaged or malfunctions because of failure to follow the instructions in this manual may not be free of charge, even during the warranty period.

# Notes on Installation

| | |
|---|---|
| **Warning** | **Do not install the product at a place where there is alcohol, thinner or other volatile substances, or an open flame.**<br>Doing so may cause fire or electric shock. |
| **Caution** | **Do not install or store the product at an unstable place or at a place prone to vibrations from other machinery.**<br>Doing so may cause the product to drop or fall over, resulting in injury. |
| | **When lifting or transporting the product, use both hands to hold the product from the rear.**<br>Lifting the product from front or side may result in poor weight balance, causing you to fall or become injured. |

# Notes on Power Supply

| | |
|---|---|
| **Warning** | **Connect the power cord to a grounded outlet.**<br>Failure to do so may result in the malfunction of the protection circuit and cause an electric shock. |
| | **Do not connect or disconnect the power plug with wet hands.**<br>Doing so may cause electric shock. |
| | **Do not use any voltage other than specified by the machinery.**<br>Doing so may cause an electric shock or fire. |
| | **Do not use a damaged power cord.**<br>**Do not process the power cord.**<br>**Do not put anything heavy on the power cord.**<br>**Keep the AC inlet at least 8 cm from the wall.**<br>Failure to follow these instructions could cause an electric shock or fire. |

# Notes on Use

| | |
|---|---|
| **Warning** | **Do not use the product when it is acting abnormally, such as emitting smoke, foul odors, or noises.**<br>Doing so may cause an electric shock or fire. Power it off immediately and disconnect the power plug from the outlet. |
| | **Do not disassemble or modify this product unless otherwise specified to do so in this manual.**<br>Doing so may cause an electric shock or fire. |
| | **Do not use the product when there is foreign matter, water, or another form of liquid inside.**<br>Doing so may cause an electric shock or fire. |
| **Caution** | **Do not mount anything on the product or place anything heavy on it.**<br>Doing so may cause the product to fall or break, resulting in injury. |
| | **If the product is not to be used for a long time, be sure to disconnect the power cord from the outlet for safety purposes.** |
| | **Do not use needles other than those that are recommended.**<br>Doing so may cause some staples to become stuck. |
| | **Do not load a number of sheets that exceeds the specified limit.**<br>**Do not use any thick, broken, or old paper.**<br>**Do not feed any paper from a high position.**<br>**Do not push paper forcefully.**<br>Doing so may hamper proper bookbinding. |

## 1. Troubleshooting

If the adjustment or replacement of a component is required, refer to the Service Manual and ensure that it will be performed by a qualified person.

List of Items

| Item | Remedial Measures and Reference |
|---|---|
| **1. Trouble with Staples** | |
| (1) Staples are stuck. | 1. Disassemble the product and remove the staples.<br>-> 3-5 Dissembling and Reassembling Stapler Units<br>2. If staples repeatedly become stuck, adjust the product.<br>-> 3-6. Adjusting the Stapler Unit Head |
| (2) No staple can be clinched. | 1. Adjust the stapler unit.<br>-> 3-6. Adjusting the Stapler Unit Head<br>2. Replacement of the knock pin is recommended.<br>-> 3-3. Replacing the Knock Pin |
| (3) Staples do not bend. | 1. If cleaning does not clear the problem, replacement is recommended.<br>-> 3-7. Replacing and Cleaning the Clincher Piece |
| (4) The leg parts of a staple differ in shape. | 1. Adjust the position of the joint arm.<br>-> 3-13. Replacing the Joint Arm |
| (5) Staples cannot be clinched properly. | 1. Adjust the stapler unit.<br>-> 3-6. Adjusting the Stapler Unit Head<br>2. Adjust the clincher.<br>-> 3-8. Adjusting the Clincher Position |
| (6) E02 is not displayed when staples are running short.<br>E02 is displayed when the product has sufficient staples. | 1. Replacement of the sensor is recommended.<br>-> 3-4. Replacing the Staple Level Sensor.* |
| **2. Trouble with Paper** | |
| (1) Paper is slowly fed. | 1. Adjust the tension of the belt.<br>-> 3-10. Adjusting the Belt Tension |
| (2) Paper is folded at an inappropriate position. | 1. Adjust the tension of the belt.<br>-> 3-10. Adjusting the Belt Tension<br>2. Adjust the folding position.<br>-> 4-1. Maintenance Mode<br>3. Replacement of the cushion piece is recommended.<br>-> 3-9. Replacing the Cushion Piece |
| (3) Paper is stuck and cannot be taken out. | 1. Detach the cover to remove the paper.<br>-> 3-25. Detaching the Cover for Removing Paper |
| (4) The paper folding position is not matched with the staple position. | 1. Adjust the staple position.<br>-> 4-1. Maintenance Mode<br>2. Adjust the tension of the belt.<br>-> 3-10. Adjust the Belt Tension<br>3. Replacement of the cushion piece is recommended.<br>-> 3-9. Replacing the Cushion Piece |
| **3. Errors** | |
| (1) E01 is displayed. | 1. Close the upper cover L.<br>2. Check if the metal plate on the cover side is deformed.<br>-> 3-1. Replacing the Outer Covers<br>3. Check the cover switch.<br>-> 3-17. Replacing the Cover Switch |

| | |
|---|---|
| (2) E02 is displayed. | 1. Refill staples.<br>2. Check the staple level sensor.<br>-> 3-4. Replacing the Staple Level Sensor* |
| (3) E03 is displayed. | 1. Remove paper.<br>2. Check the paper sensor.<br>-> 3-18. Replacing the Paper Sensor* |
| (4) E04 is displayed. | 1. Press the START key to see if the product is restored.<br>2. Replacement of the circuit board is recommended.<br>-> 3-11. Replacing the Circuit Board<br>3-12. Replacing the Control Panel |
| (5) E10 is displayed.<br>After the product is powered on, 888 remains displayed. | 1. Power the product off, unplug the AC cable and after a while, power it on again.<br>2. If all the motors are not operational, check the cover switch.<br>-> 3-17. Replacing the Cover Switch<br>3. Check if there is a plate between the push-up (upper) sensor and the stapler (lower) sensor.<br>-> 3-19. Replacing Sensors*<br>4. If the clincher motor does not operate when the clincher is in the loop mode, check the motor.<br>-> 3-22. Replacing the Clincher Motor<br>5. If the clincher moves beyond its lower limit, check the clincher sensor.<br>-> 3-19. Replacing Sensors*<br>6. If the paper feed motor is not operational, check the paper sensor and the paper feed sensor.<br>-> 3-18. Replacing the Paper Sensor*<br>3-23 Replacing the Paper Feed Sensor<br>3-20. Replacing the Stapler Motor<br>7. If the paper stopper moves beyond its lower limit, check the paper feed sensor.<br>-> 3-18. Replacing the Paper Sensor*<br>8. Check the following components.<br>-> 3-21. Replacing the Wind-Up Motor<br>3-11. Replacing the Circuit Board |

* If the replacement of the sensor does not fix the problem, also check the condition of the sensor cable.

## 2. Descriptions of Different Types of Screws

Shapes of Different Types of Screws

Small Pan Head Screw (M)

Washer-Equipped Screw (medium) (NB)

Washer-Equipped Screw (small) (NC)

Small Countersunk Head Screw (S)

Truss Head Screw (TR)

Inner Hexagonal Hole Screw (HS)

Small Flat Head Screw (F)

Small Slotted Flat Head Screw (SF)

Hexagonal Nut (N)

Spring Washer (SW)

Flat Washer (medium) (W)

Small Flat Washer (LW)

Set Screw (SS)

E-Shaped Ring (E)

Wing Bolt (WB)

Screw Fastening Torque

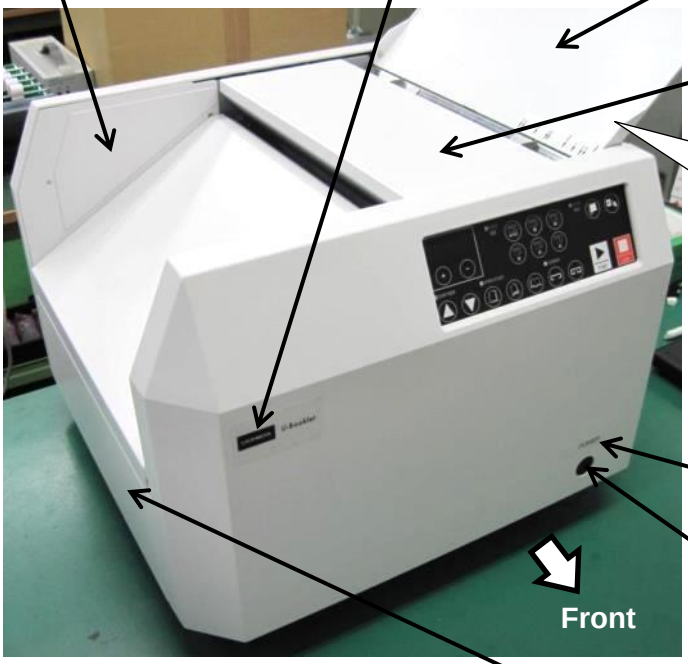
| | M3 | M4 |
|---|---|---|
| Fastening Torque [cN·m] | 50 | 1. 30 |

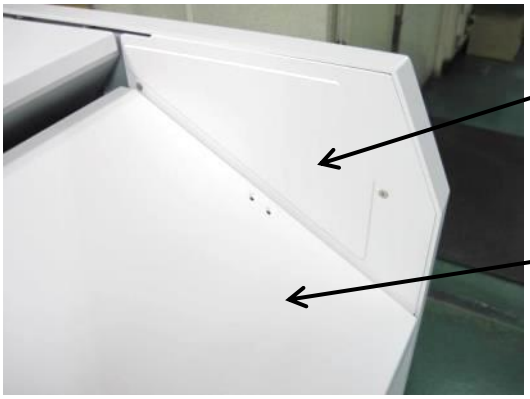
* If the torque is specified in the steps for replacement, follow the specification.

[Notes]

- The photos merely represent examples of the shapes, the actual diameter, length, surface finish and others vary depending on individual screws.
  Notation: [Qty.] - [Form] [Diameter or Nominal Diameter] x [Length] e.g. 4 - M3 x 10, SW4
- If any locked screw becomes unfastened, remove the screw lock and apply the screw lock again at the time of reassembly. (The Threebond 1401B is recommended.)
- Prior to unfastening any position-adjusted screw, record its original position to ensure that it is at refastened at the original position in the reassembly process.

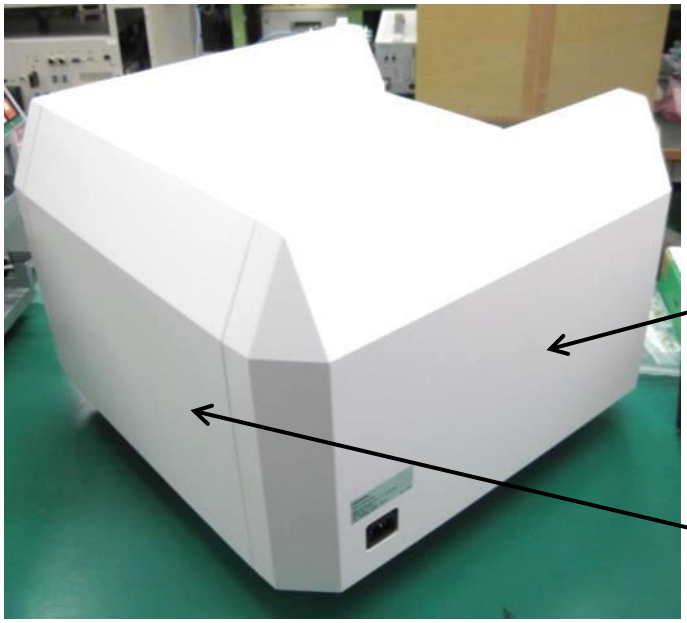
## 3. Replacing Components
### 3-1 Replacing the Outer Covers




421 [Sensor Plate]
2-S3x6
(Be careful about the orientation of the plate when it is attached.)

Assembling the upper cover L

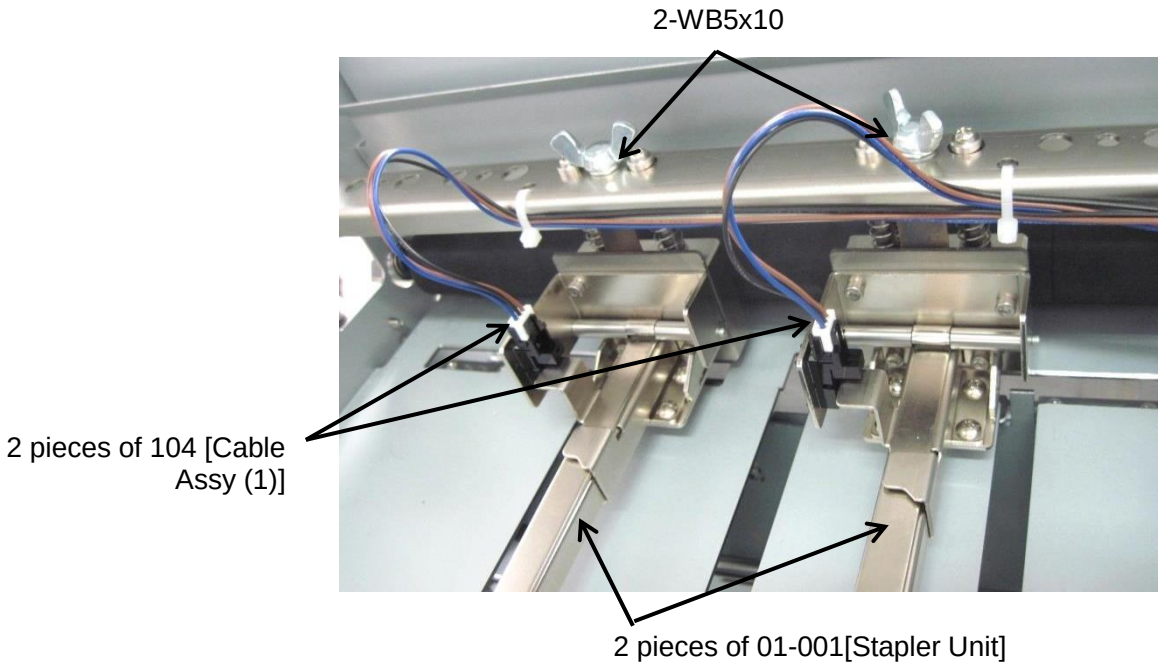


List of Components

| No. | Name | Qty. |
|---|---|---|
| 400 | Front Cover | 1 |
| 401 | Rear Cover | 1 |
| 403 | Upper Cover R | 1 |
| 404 | Upper Cover L | 1 |
| 405 | Side Cover R | 1 |
| 406 | Side Cover L | 1 |
| 407 | Guide Cover R | 1 |
| 423 | Inside Cover F | 1 |
| 424 | Inside Cover R | 1 |
| 421 | Sensor Plate | 1 |
| 425 | PIN | 4 |
| 504 | Power Switch Sticker | 1 |
| 505 | Paper Size Sticker | 1 |
| 503 | Company Logo Sticker | 1 |
| NB3x6 | Washer-Equipped Screw (medium) | 12 |
| S3x6 | Small Countersunk Head Screw | 6 |
| E3 | E-Shaped Ring | 4 |

### 3-2 Replacing the Stapler Units

1. Remove the two cable assemblies (1). Then, while holding the stapler unit, remove the wing bolt.




2. After the replacement, take the reverse steps to reassemble the product.
When inserting a connector to the sensor, be careful not to bend the pin.

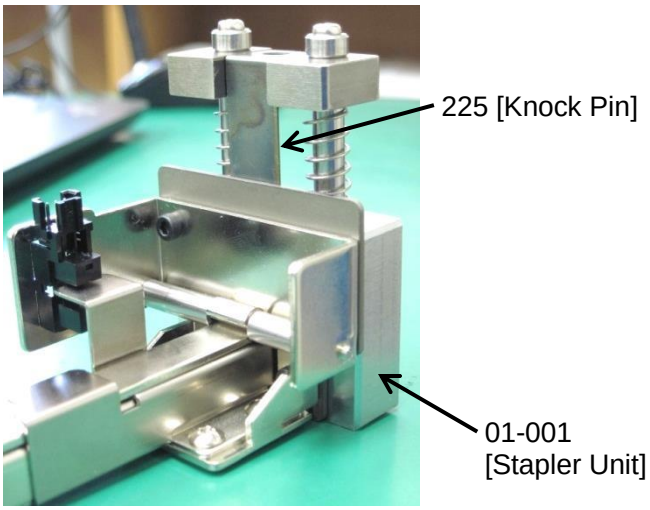
List of Components

| No. | Name | Qty. |
|---|---|---|
| 104 | Cable Assy (1) | 2 |
| 01-001 | Stapler Unit | 2 |
| WB5x10 | Wing Bolt | 2 |

### 3-3 Replacing the Knock Pin

1. Following the steps in *3.2 Replacing the Stapler Units*, remove the stapler unit.

2. Remove the knock pin.




3. After the replacement,
   take the reverse steps to reassemble the product.

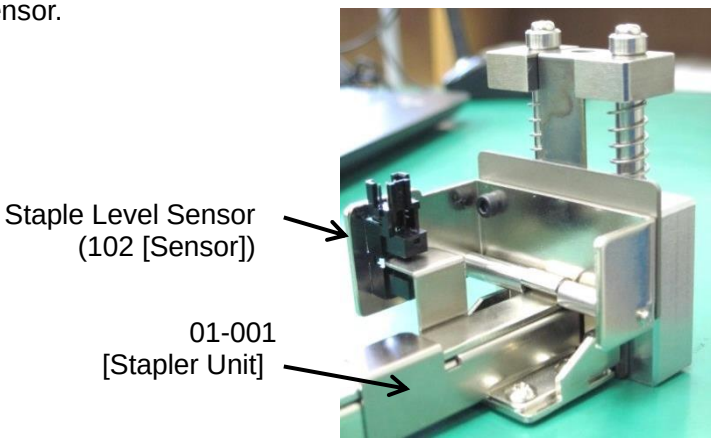
List of Components

| No. | Name | Qty. |
|---|---|---|
| 01-001 | Stapler Unit | 1 |
| 225 | Knock Pin | 1 |

### 3-4 Replacing the Staple Level Sensor

1. Following the steps in *3.2 Replacing the Stapler Units*, remove the stapler unit.

2. Remove the sensor.




3. After the replacement, take the reverse steps to reassemble the product.
   When inserting the connector into the sensor, be careful not to bend the pin.

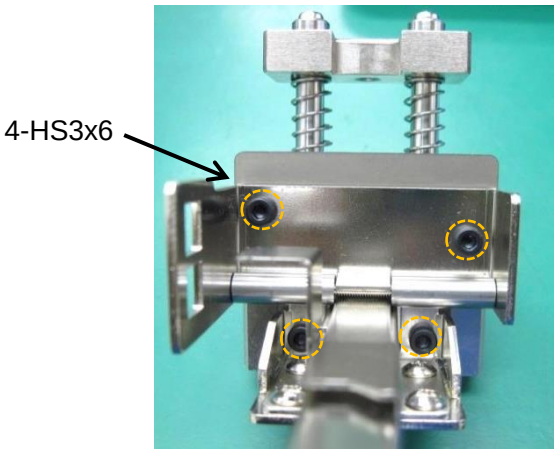
List of Components

| No. | Name | Qty. |
|---|---|---|
| 01-001 | Stapler Unit | 1 |
| 102 | Sensor | 1 |

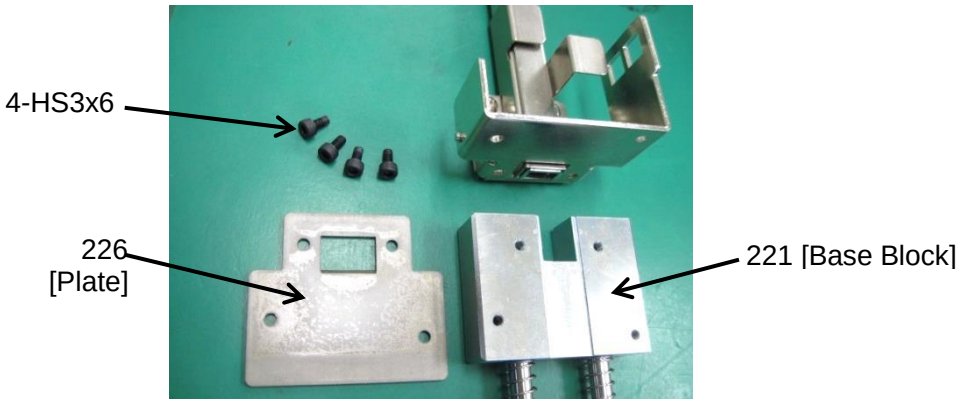
**3-5 Dissembling and Reassembling a Stapler Unit** (Removing the staples that are stuck)

1. Following the steps in *3-4 Replacing the Staple Level Sensor*, remove the sensor.

2. Remove the four hexagonal hole screws.




3. After disassembly, remove all the staples.




4. After the removal, take the reverse steps to reassemble the product.
   When inserting the connector into the sensor, be careful not to bend the pin.
   Refer to *3.6 Adjusting the Stapler Unit Head*.

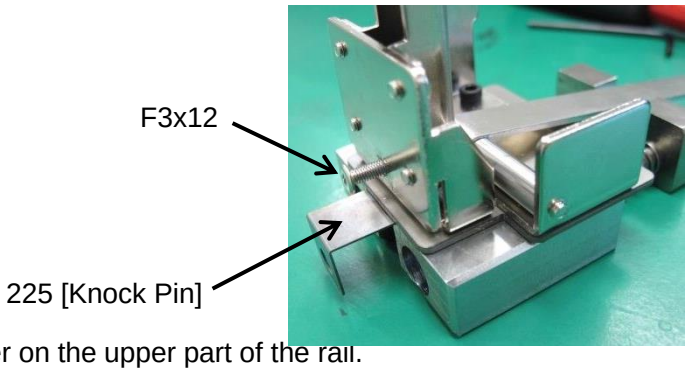
List of Components

| No. | Name | Qty. |
|---|---|---|
| 01-001 | Stapler Unit | 1 |
| 221 | Base Block | 1 |
| 226 | Plate | 1 |
| HS3x6 | Inner Hexagonal Hole Screw | 4 |

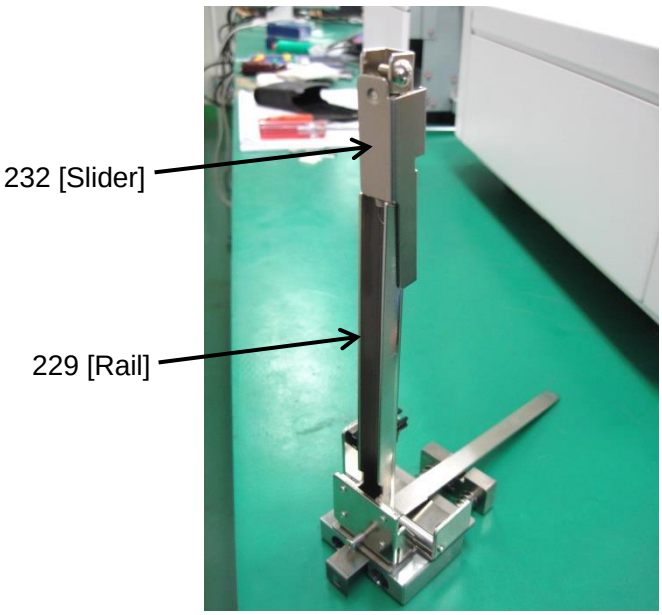
### 3-6 Adjusting the Stapler Unit Head

1. Following the steps in *3-4 Replacing the Staple Level Sensor*, remove the sensor.

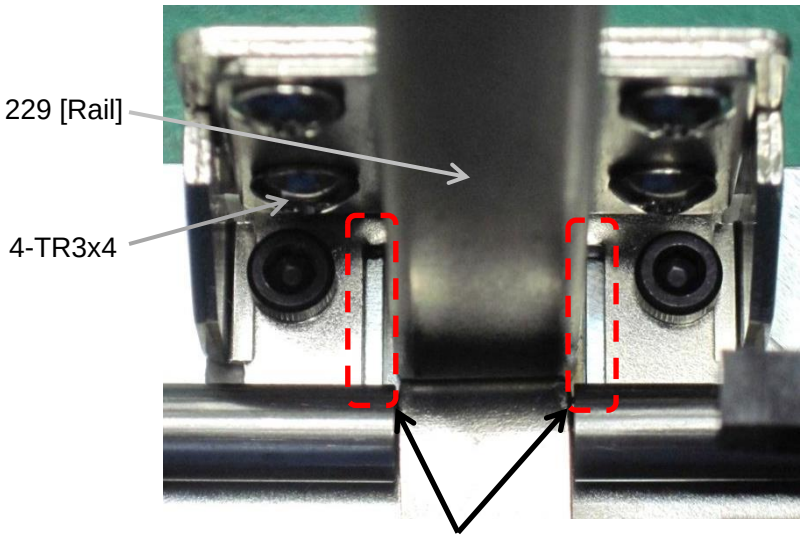
2. Unfasten the small flat head screw to loosen the tension spring inside, and then insert the knock pin from the opposite site.




3. Catch the slider on the upper part of the rail.



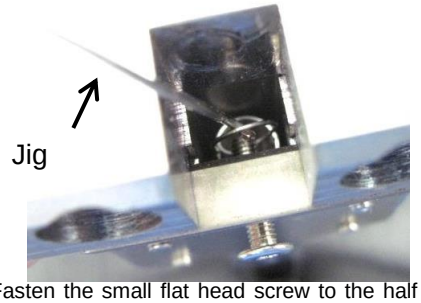

4. Unfasten four screws and adjust the rail position to ensure that the left part space and the right part space of the knock pin are evenly inserted. Fix the rail in the state in which it is not forced downwards but naturally placed.
(Check that the inserted knock pins are not shaky and can be moved smoothly.)




Adjust the rail to make sure that the left part and the right part of the knock pin seen from the gaps are even.

5. After the adjustment, take the reverse steps to reassemble the product.
Creation of a jig from a wire will make it easy to attach the slider tension spring.

An example of a jig



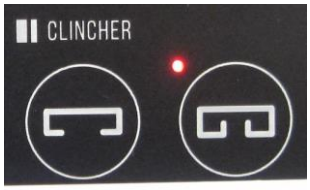
Fasten the small flat head screw to the half of the depth, and catch the spring using the jig.

List of Components

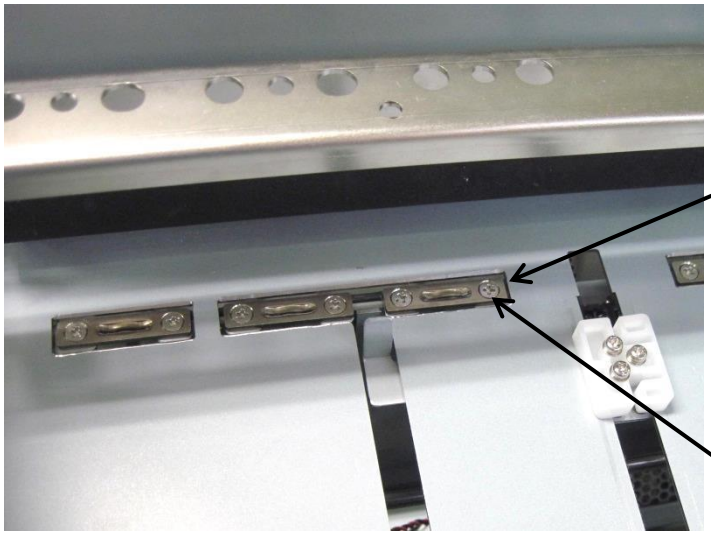
| No. | Name | Qty. |
|---|---|---|
| 102 | Sensor | 1 |
| 225 | Knock Pin | 1 |
| 232 | Slider | 1 |
| 229 | Rail | 1 |
| F3x12 | Small Flat Head Screw | 1 |
| TR3x4 | Small Truss Head Screw | 4 |

### 3-7 Replacing and Cleaning Clincher Pieces

<Replacing Clincher Pieces>
1. Power the product on and switch the clincher mode to Loop. Then power the product off.




2. Unfasten the screws to remove pieces.




3. After the replacement, take the reverse steps to reassemble the product.
After the replacement, perform a clinching trial. If there is any problem with the shape of the staple, reattach the piece in the opposite direction.

Reverse the orientation and reattach the piece.

<Cleaning Clincher Pieces>
Clean the depressed part of the piece with a swab or a soft cloth.

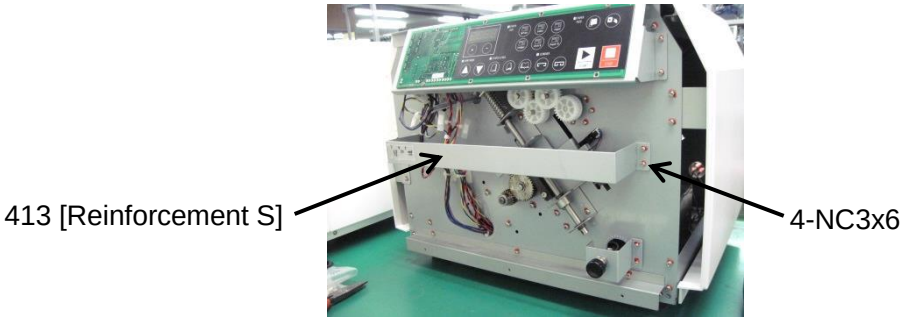
List of Components

| No. | Name | Qty. |
|---|---|---|
| 01-005 | Piece | 5 |
| S3x4 | Small Countersunk Head Screw | 10 |

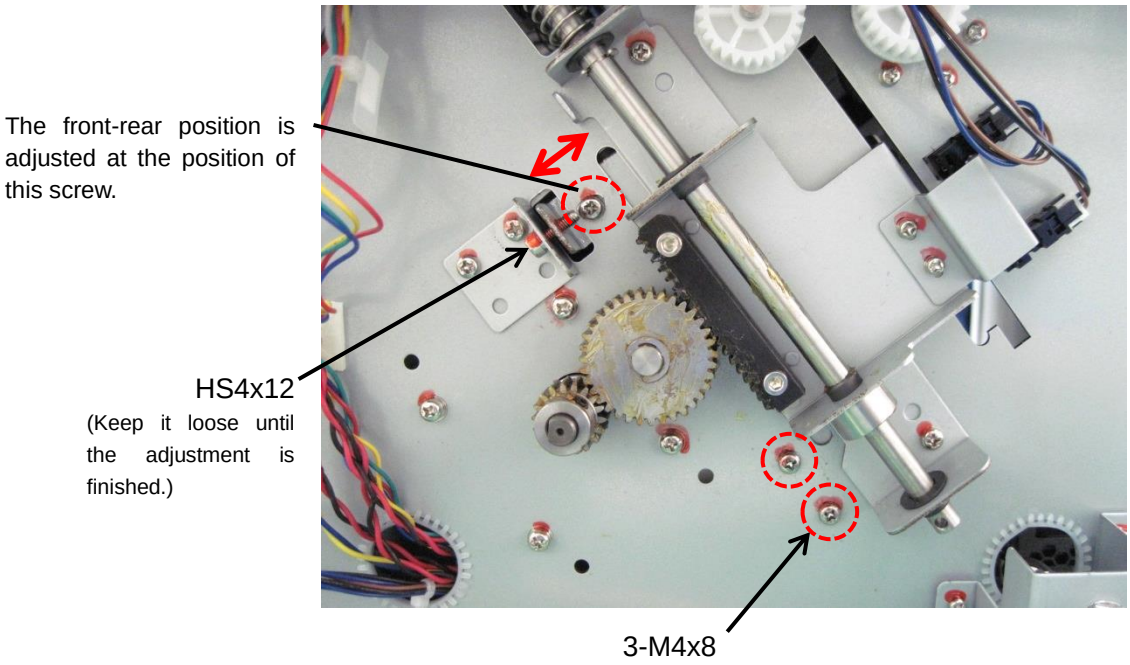
### 3-8 Adjusting the Clincher Position

1. Following the steps in *3-1 Replacing the Outer Covers*, remove the front cover and the rear cover.

2. Unfasten four screws to remove the reinforcement S. (Perform the same process on the rear side.)

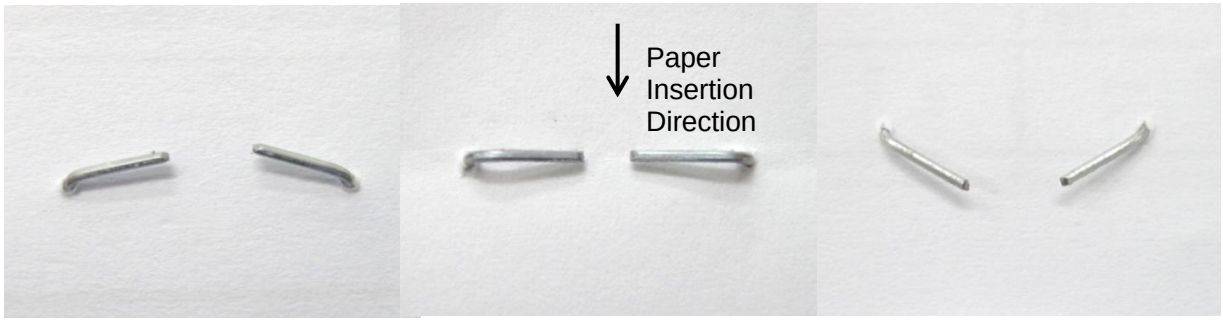



3. Loosen the hexagonal hole screws and three screws without detaching them. Then move the upper screw positions to adjust the front-rear position of the clincher. Next, refasten the screws. Perform the same process on the opposite site as well.



4. Power the product on and conduct a clinching trial to check the status of the staple. Repeat Step 3 until the staple is properly clinched.
After completion of the adjustment, refasten the hexagonal hole screws.
Note that fastening them too tightly can deform the metal plate.

Adjusting the front-rear position of the clincher piece




When the piece is closer to the rear end

When the piece is at the correct position

When the piece is closer to the front end

5. After the adjustment, take the reverse steps to reassemble the product.

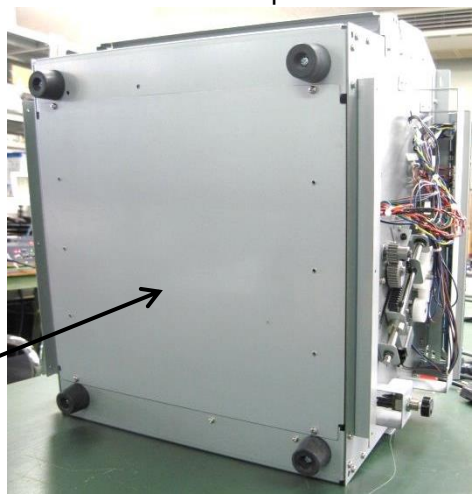
List of Components

| No. | Name | Qty. |
|---|---|---|
| 413 | Reinforcement S | 2 |
| NC3x6 | Washer-Equipped Screw (small) | 8 |
| M4x8 | Small Pan Head Screw | 6 |
| HS4x12 | Inner Hexagonal Hole Screw | 2 |

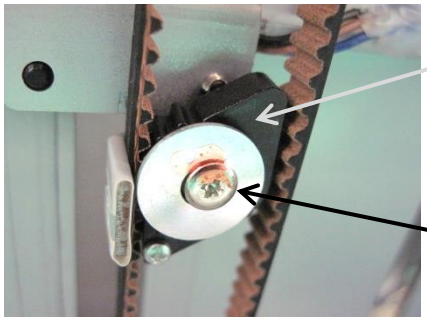
**3-9 Adjusting the Cushion Piece**

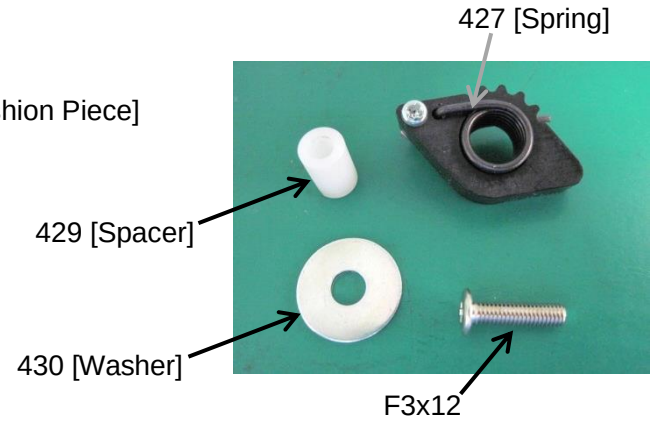
1. Following the steps in *3-1 Replacing the Outer Covers*, remove the side cover L.

2. Unfasten four screws to remove the main unit bottom plate.

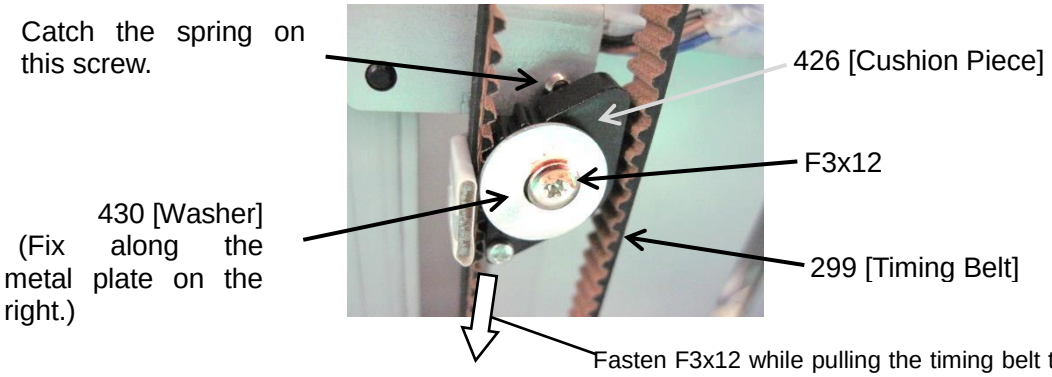


3. Unfasten the screws on the back side of the paper feeder to remove the cushion piece.




4. After the adjustment, take the reverse steps to reassemble the product.




After fastening the cushion piece with a screw, pull the timing belt while holding the paper feeder to check if the cushion piece moves smoothly.

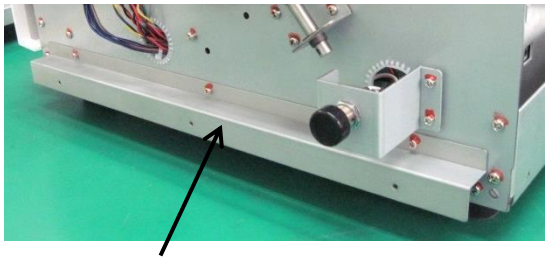
List of Components

| No. | Name | Qty. |
|---|---|---|
| 206 | Main Unit Bottom Plate | 1 |
| 299 | Timing Belt | 1 |
| 426 | Cushion Piece | 1 |
| 427 | Spring | 1 |
| 429 | Spacer | 1 |
| 430 | Washer | 1 |
| M4x8 | Small Pan Head Screw | 4 |
| F3x12 | Small Flat Head Screw | 1 |

### 3-10 Adjusting the Belt Tension

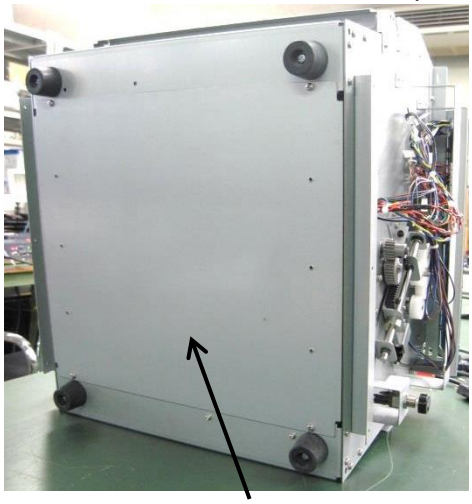
1. Following the steps in *3-1 Replacing the Outer Covers*, remove the front cover, the rear cover, the side cover L and the side cover R.

2. Unfasten three screws to remove the lower bracket. (Perform the same process on the opposite side.)



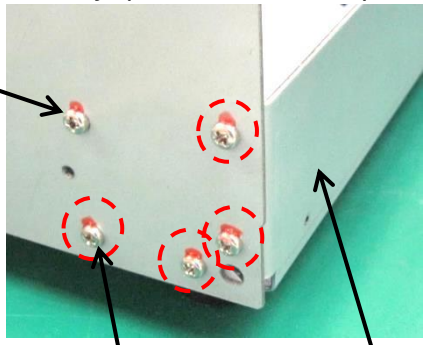
411 [Lower Bracket], 3-M3x6

3. Unfasten four screws to remove the main unit bottom plate.

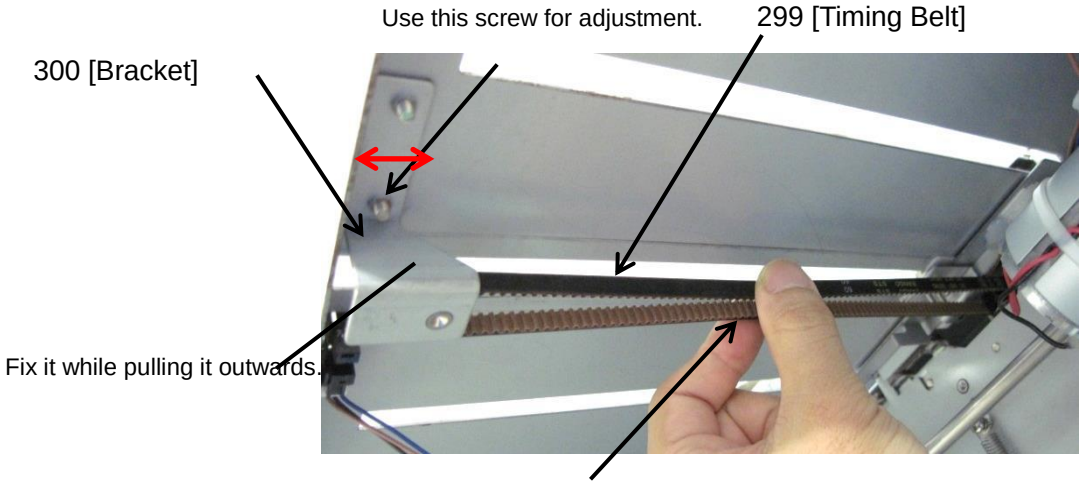


206 [Main Unit Bottom Plate], 4-M4x8

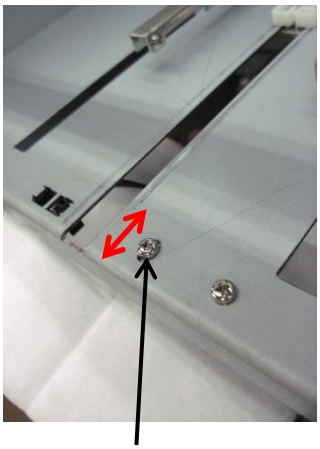
4. Unfasten four screws to remove the stay. (Perform the same process on the opposite side.)



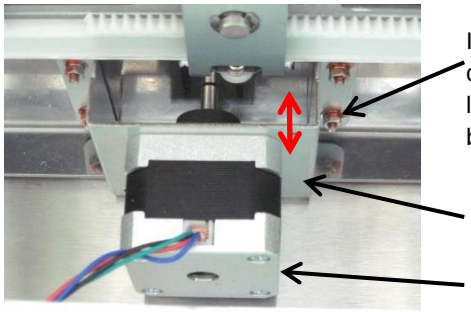
5. For adjusting the tension of the timing belt, fix the bracket on the paper feed motor side at the center, and adjust the position of the bracket on the opposite side and fix it at the position where the timing belt is tense.
(If it is necessary to apply force to manually move the paper feeder, the tension level is too high and needs to be lowered.)




Set the tension to the level at which the two parts of the timing belt do not come into contact when they are gently pinched between two fingers.



Use this screw (M4x8) for the adjustment.




8. After the adjustment, take the reverse steps to reassemble the product.

List of Components

| No. | Name | Qty. |
|---|---|---|
| 411 | Lower Bracket | 2 |
| 206 | Main Unit Bottom Plate | 1 |
| 205 | Stay | 1 |
| 300 | Bracket | 1 |
| 299 | Timing Belt | 1 |
| 298 | Bracket | 1 |
| 113 | Paper Feed Motor | 1 |
| M3x6 | Small Pan Head Screw | 3 |
| M4x8 | Small Pan Head Screw | 14 |

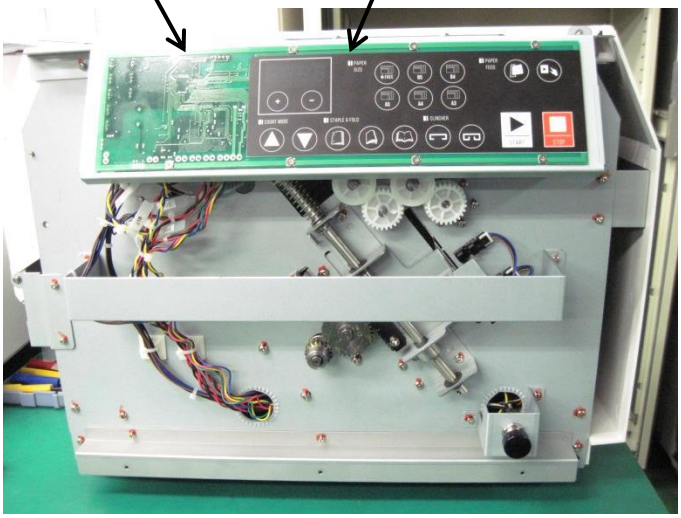
### 3-11 Replacing the Circuit Board

1. Following the steps in *3-1 Replacing the Outer Covers*, remove the front cover.

2. Unfasten eight screws to remove the circuit board.

501-1 [Control Panel (metric)] or
501-2 [Control Panel (inches)]

101 [Circuit Board], 8-F3x6



3. Disconnect all 13 wires connected to the circuit board.

4. After the replacement, take the reverse steps to reassemble the product.
   Check if the signs on the tags are identical between the circuit board and the wiring. (Nothing is connected to J6.)
   If writing a program is required, refer to *4-3 Upgrading the Program*.

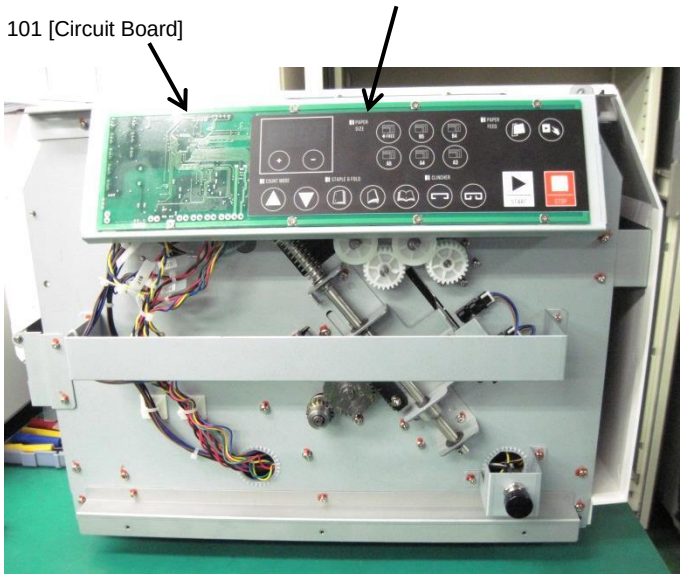
List of Components

| No. | Name | Qty. |
|---|---|---|
| 101 | Circuit Board | 1 |
| 501-1 | Control Panel (metric) | 1 |
| 501-2 | Control Panel (inches) | 1 |
| F3x6 | Small Flat Head Screw | 8 |

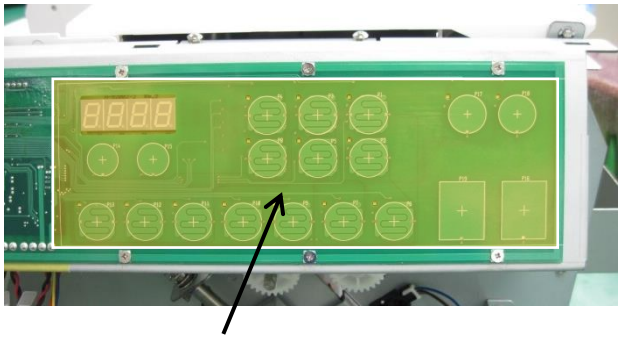
### 3-12 Replacing the Control Panel

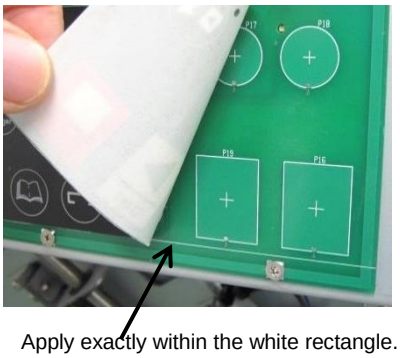
1. Following the steps in *3-1 Replacing the Outer Covers*, remove the front cover.

2. Slowly remove the control panel from the circuit board.




3. Remove dust and grease from the surface of the circuit board indicated with the white rectangle with the use of alcohol. Then attach a new control panel exactly on the area of the board indicated within the white rectangle. Be sure not to make any bubbles.




4. After the replacement, take the reverse steps to reassemble the product.

List of Components

| No. | Name | Qty. |
|---|---|---|
| 101 | Circuit Board | 1 |
| 501-1 | Control Panel (metric) | 1 |
| 501-2 | Control Panel (inches) | 1 |

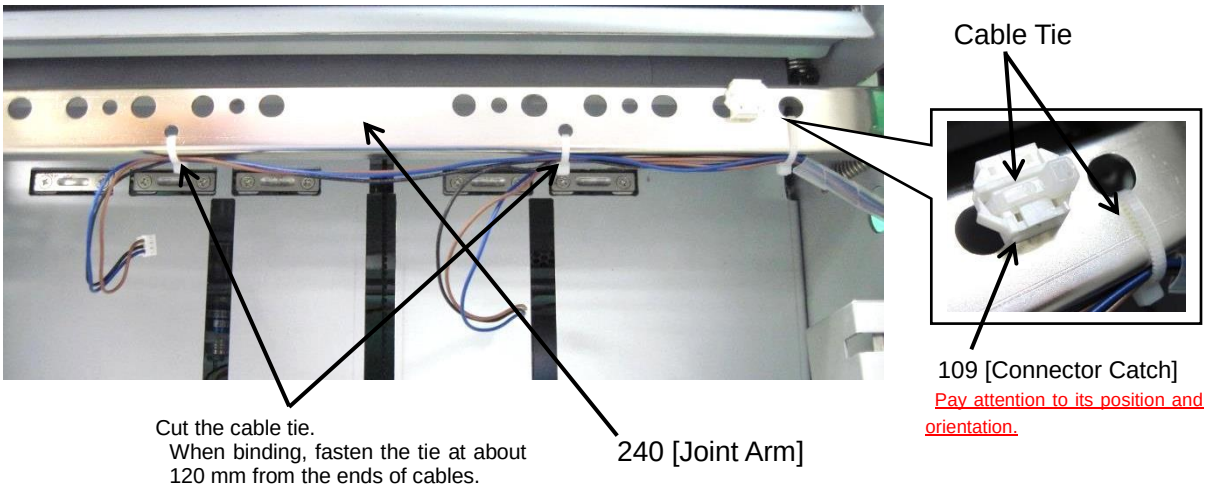
### 3-13 Replacing a Joint Arm

1. Following the steps in *3-1 Replacing the Outer Covers*, remove the front cover and the rear cover.

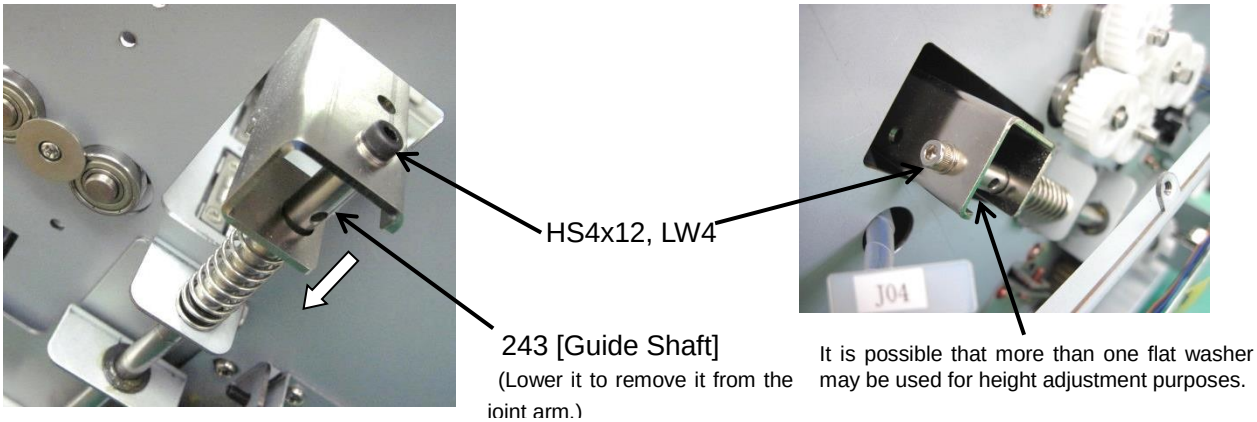
2. Following the steps in *3-11 Replacing the Circuit Board*, remove the circuit board.

3. Following the steps in *3-1 Replacing the Stapler Unit*, remove the stapler unit.

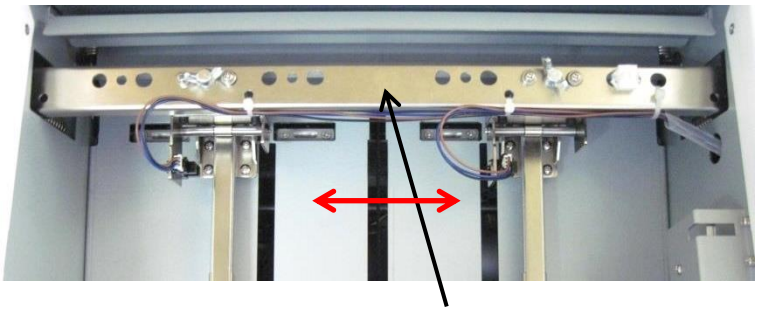
4. Cut the cable tie that binds the cable assy (1) and the connector catch.



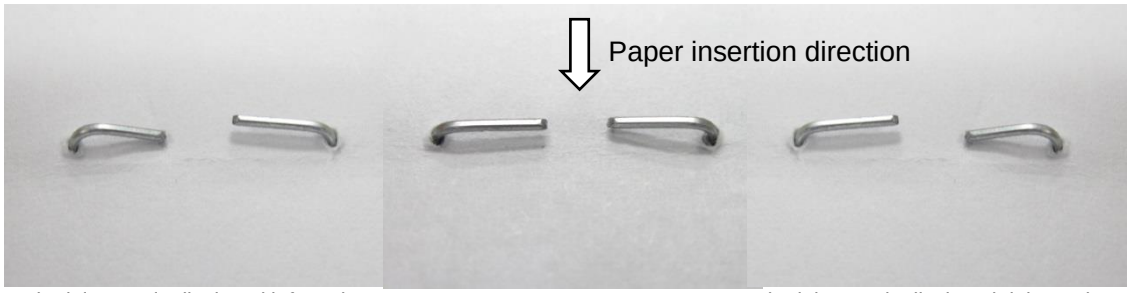

5. Unfasten the left and right hexagonal hole screws to remove the guide shaft from the joint arm and then remove the joint arm.
Take note of the relationship between the installation positions of the screws and the flat washers.



6. After the replacement, take the reverse steps to reassemble the product.
Perform a clinching trial. If there is any problem with the shape of the staple, adjust the left-right position at which the joint arm is attached and repeat it until the problem is resolved.



Loosen the left and right hexagonal hole screws to adjust the position.




The joint arm is displaced leftwards.

The joint arm is at the correct position.

The joint arm is displaced rightwards.

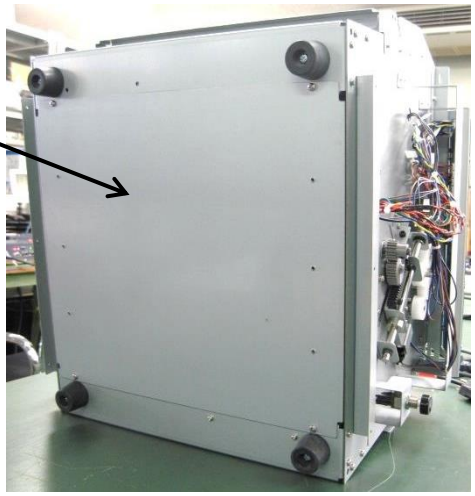
List of Components

| No. | Name | Qty. |
|---|---|---|
| 240 | Joint Arm | 1 |
| 109 | Connector Catch | 1 |
| 243 | Guide Shaft | 2 |
| HS4x12 | Inner Hexagonal Hole Screw | 2 |
| LW4 | Flat Washer (small) | 2 |

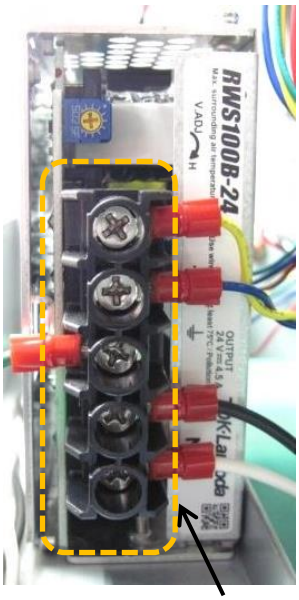
### 3-14 Replacing the Power Supply Unit

1. Following the steps in *3-1 Replacing the Outer Covers*, remove the front cover, the rear cover and the side cover R.

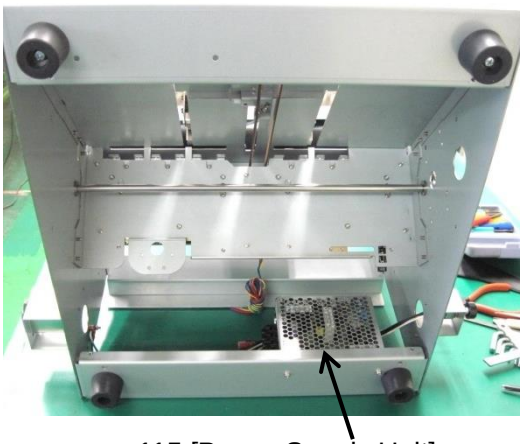
2. Unfasten four screws to remove the main unit bottom plate.




3. Disconnect all power cables and unfasten two screws to remove the power supply unit.



Disconnect five cables.


115 [Power Supply Unit]
2-NC3x10

Connection of Power Supply Terminals

| Color | Yellow | Blue | Green/Yellow | Black | White |
|---|---|---|---|---|---|
| Terminal | +V | -V | GND | L | N |

4. After the replacement, take the reverse steps to reassemble the product.
Incorrect wiring and loose connections may cause failures or fires. Be sure to check the terminal to which each cable should be connected.

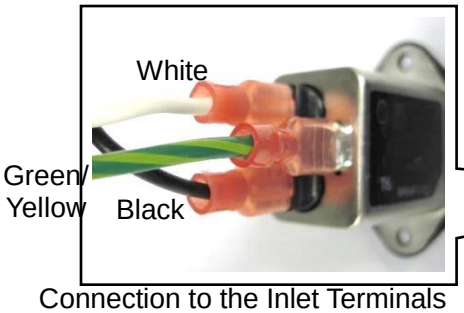
List of Components

| No. | Name | Qty. |
|---|---|---|
| 206 | Main Unit Bottom Plate | 1 |
| 115 | Power Supply Unit | 1 |
| NC3x10 | Washer Equipped Screw (small) | 2 |
| M4x8 | Small Pan Head Screw | 4 |

### 3-15 Replacing the Inlet

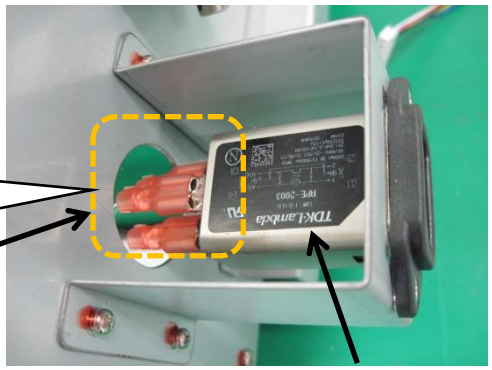
1. Following the steps in *3-1 Replacing the Outer Covers*, remove the rear cover.

2. Remove the wiring from the inlet.

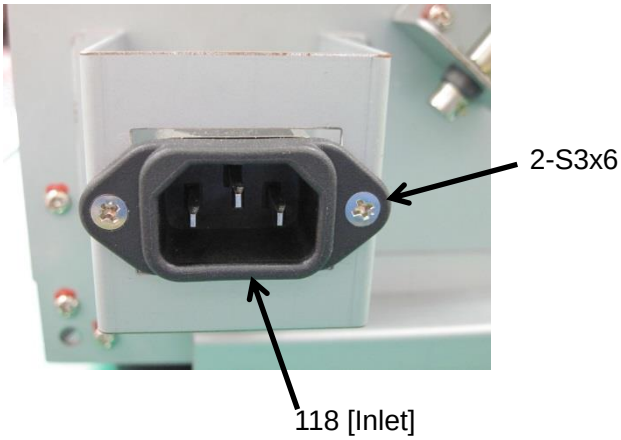



Connection to the Inlet Terminals

| Color | Black | Green/ Yellow | White |
|---|---|---|---|
| Terminal | L | GND | N |




3. Unfasten two screws to remove the inlet.




4. After the replacement, take the reverse steps to reassemble the product.

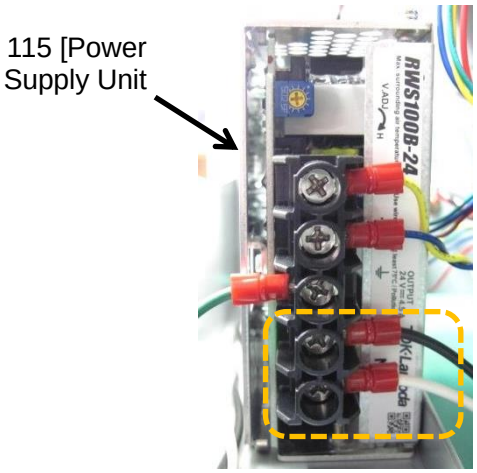
List of Components

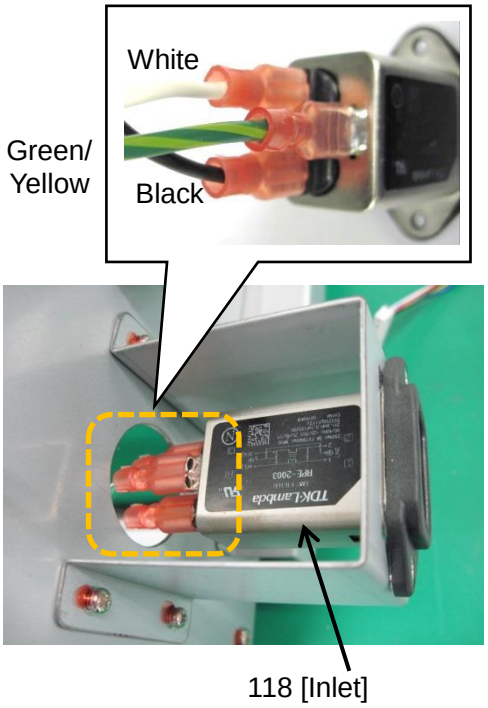
| No. | Name | Qty. |
|---|---|---|
| 118 | Inlet | 1 |
| S3x6 | Small Countersunk Head Screw | 2 |

### 3-16 Replacing the Switch Unit

1. Following the steps in *3-1 Replacing the Outer Covers*, remove the front cover, the rear cover and the side cover R.

2. Disconnect the black and white cables of the switch unit from the power supply unit and the inlet.



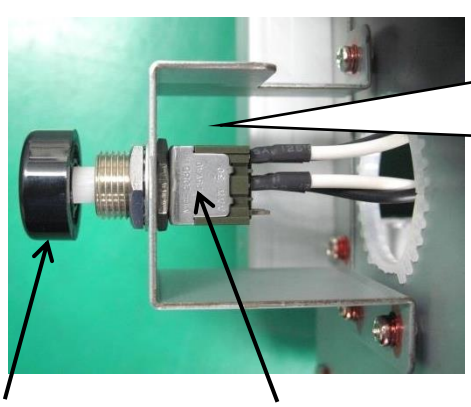

Connection to the terminals of the power supply unit

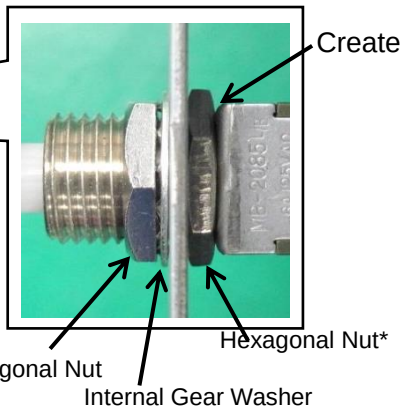
| Color | Black | White |
|---|---|---|
| Terminal | L | N |

Connection to the terminals of the inlet terminals

| Color | Black | White |
|---|---|---|
| Terminal | L | N |

3. Remove the button and unfasten the hexagonal nut to remove the switch unit.




Fasten the nuts while leaving a small gap with the switch unit.
(Fastening too tightly towards the unit could cause damage.)

4. After the replacement, take the reverse steps to reassemble the product.

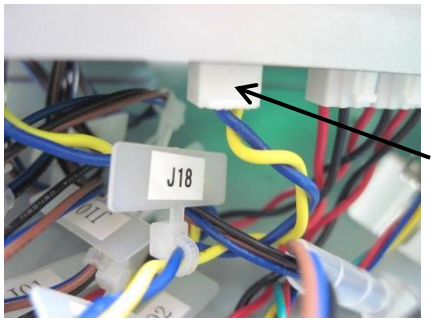
List of Components

| No. | Name | Qty. |
|---|---|---|
| 115 | Power Supply | 1 |
| 116 | Switch Unit | 1 |
| 117 | Button | 1 |
| 118 | Inlet | 1 |

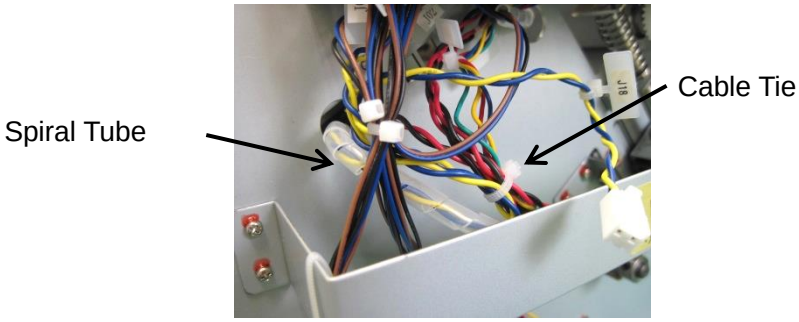
### 3-17 Replacing the Cover Switch

1. Following the steps in *3-1 Replacing the Outer Covers*, remove the front cover.

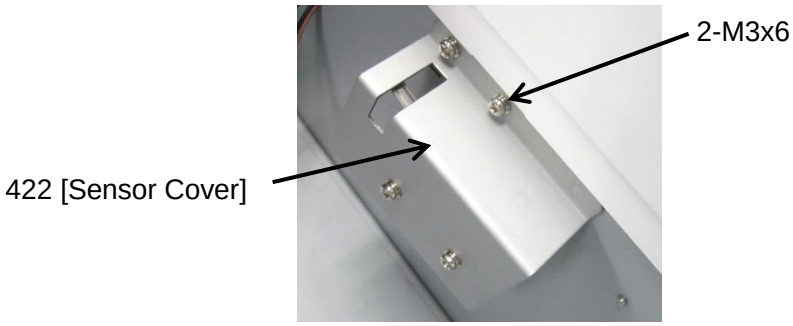
2. Disconnect connector J18 from the circuit board.



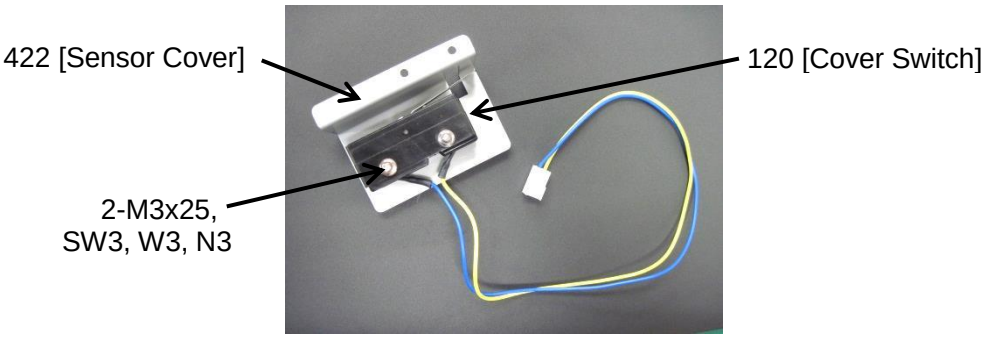

3. Cut the cable tie that binds cable J18 to remove the spiral tube.




4. Unfasten two screws to remove the cover switch together with the sensor cover.

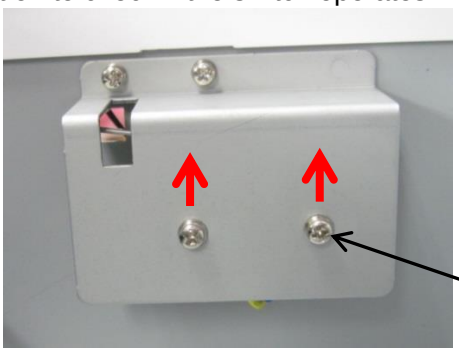



5. Unfasten two screws to remove the sensor cover.



6. After the replacement, take the reverse steps to reassemble the product.

Power the product on to check if the switch operates without fail when the cover is slowly closed.



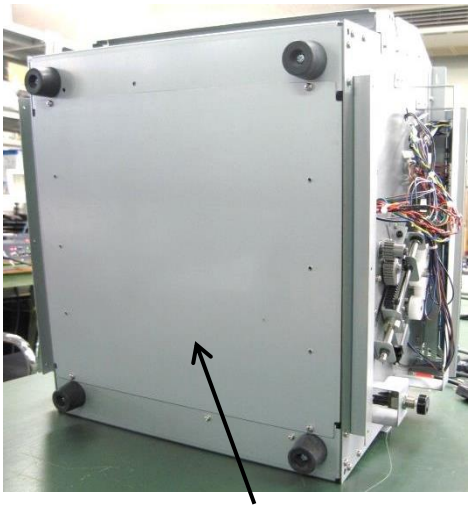

List of Components

| No. | Name | Qty. |
|---|---|---|
| 120 | Cover Switch | 1 |
| 422 | Sensor Cover | 1 |
| M3x6 | Small Pan Head Screw | 2 |
| M3x25 | Small Pan Head Screw | 2 |
| W3 | Flat Washer (medium) | 2 |
| SW3 | Spring Washer | 2 |
| N3 | Hexagonal Nut | 2 |

### 3-18 Replacing the Paper Sensor

1. Following the steps in *3-1 Replacing the Outer Covers*, remove the side cover L.

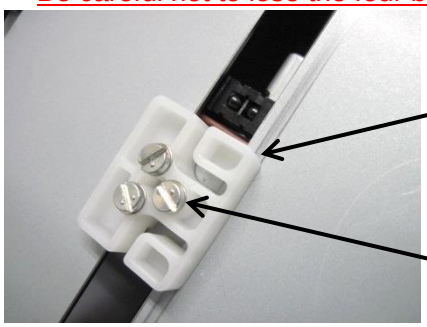
2. Unfasten four screws to remove the main unit bottom plate.



206 [Main Unit Bottom Plate], 4-M4x8

3. Following the steps in *3-9 Replacing the Cushion Piece*, remove the cushion piece.

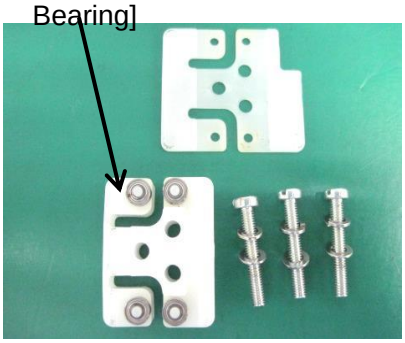
4. Unfasten three screws to remove the paper feeder.
Be careful not to lose the four ball bearings.



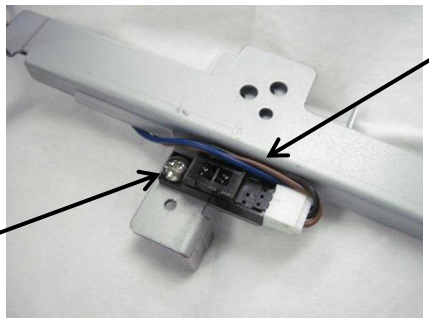
Paper Feeder

3-SF3x20, SW3, LW3

4 pieces of 333 [Ball Bearing]



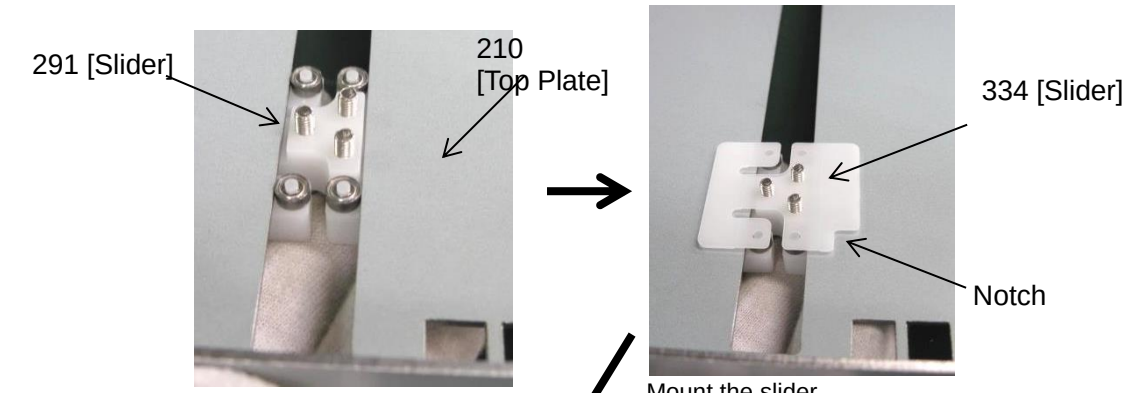
5. Unfasten the screw to remove the paper sensor.



103 [Paper Sensor] Connect Cable J11

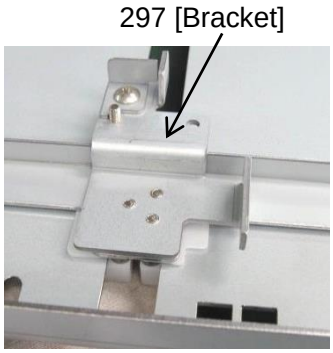
TR3x6

6. After the replacement, take the reverse steps to reassemble the product.
When attaching the connector to the sensor, be careful not to bend the pin.




Push the slide, the ball bearings, and the screw towards the top plate.
(Be careful of the slider orientation. The photo shows the view from the reverse side.)

Mount the slider.
(Pay attention to its orientation.)


Fasten the bracket with screws.

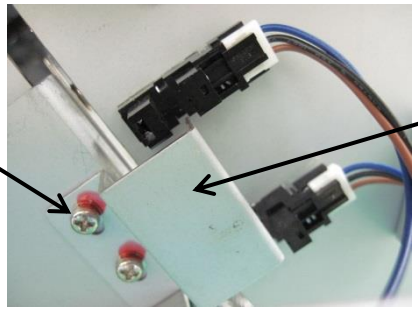
List of Components

| No. | Name | Qty. |
|---|---|---|
| 206 | Main Unit Bottom Plate | 1 |
| 299 | Timing Belt | 1 |
| 103 | Paper Sensor | 1 |
| 333 | Ball Bearing | 4 |
| 291 | Slider | 1 |
| 334 | Slider | 1 |
| 210 | Top Plate | 1 |
| 290 | Plate | 1 |
| 297 | Bracket | 1 |
| M4x8 | Small Pan Head Screw | 4 |
| SF3x20 | Small Slotted Flat Head Screw | 3 |
| SW3 | Spring Washer | 3 |
| LW3 | Flat Washer (small) | 3 |
| TR3x6 | Truss Head Screw | 1 |

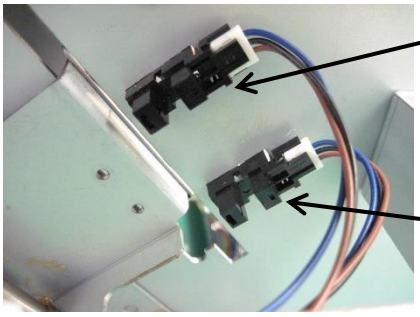
### 3-19 Replacing Sensors

1. Following the steps in *3-1 Replacing the Outer Covers*, remove the front cover, the rear cover, and the side cover R.

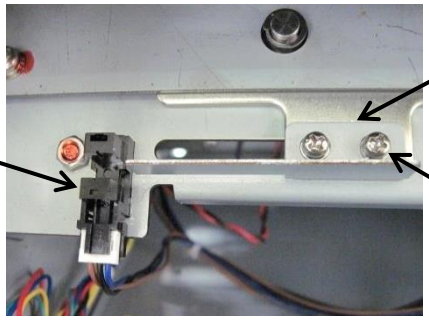
2. Remove sensors.
Replacing the Push-Up (Upper) Sensor and Stapler (Lower) Sensor
(1) Unfasten two screws to remove the plate.




(2) Remove the push-up sensor (above) and the stapler sensor (below).

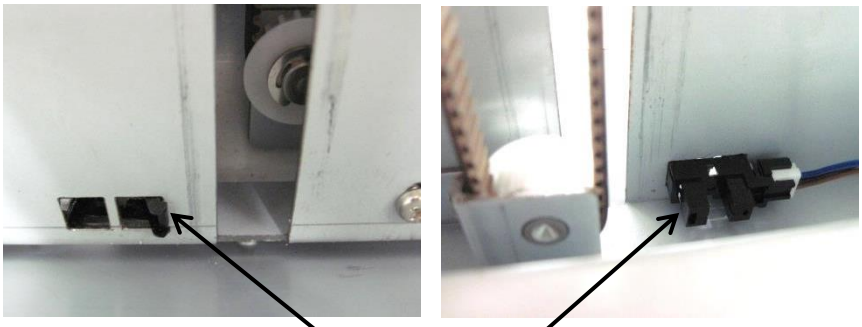



Replacing the Clincher Sensor
(1) Remove the clincher sensor.
If the plate interferes, unfasten the screws to remove it as well.



Replacing the Paper Feed Sensor
(1) Unfasten four screws to remove the main unit bottom plate.


(2) Remove the paper feed sensor.
Push the tab from the front side to remove it.




3. After the replacement, take the reverse steps to reassemble the product.
When inserting a connector to the sensor, be careful not to bend the pin.

List of Components

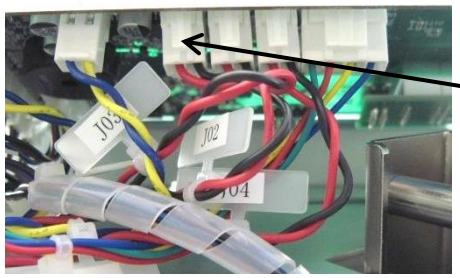
| No. | Name | Qty. |
|---|---|---|
| 285 | Plate | 1 |
| 206 | Main Unit Bottom Plate | 1 |
| 102 | Sensor | 4 |
| NC3x6 | Washer-Equipped Screw | 4 |
| M4x8 | Small Pan Head Screw | 4 |

### 3-20 Replacing the Stapler Motor

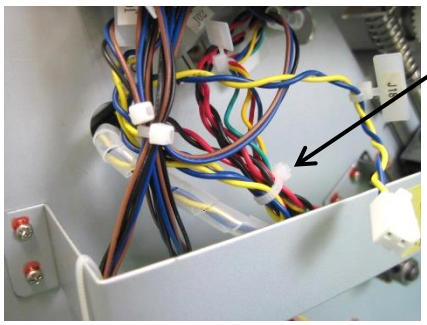
1. Following the steps in *3-1 Replacing the Outer Covers*, remove the front cover, the rear cover. and the side cover R.

2. Unfasten four screws to remove the main unit bottom plate.

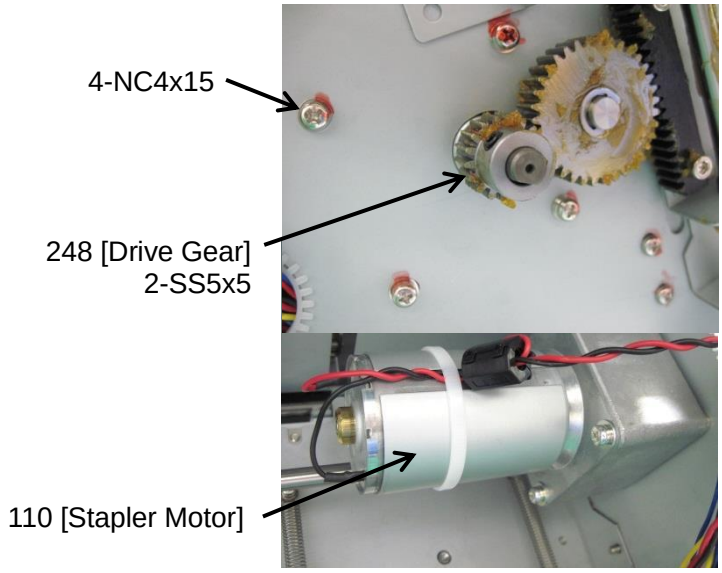

3. Disconnect connector J2 from the circuit board.



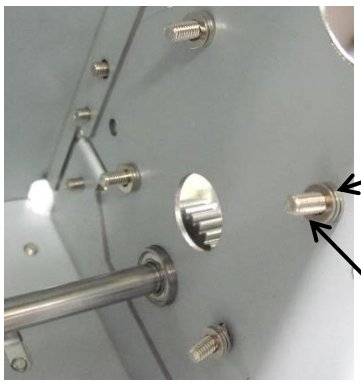

4. Cut the cable tie that binds cable J2 from the motor to the circuit board.



5. Unfasten two sets of screws to remove the gear. Then unfasten four screws to remove the motor.




6. After the replacement, take the reverse steps to reassemble the product.




The way in which the motor is removed

Use grease at NLGI No.2. (AZ's DS768 is recommended.)


Greasing Position

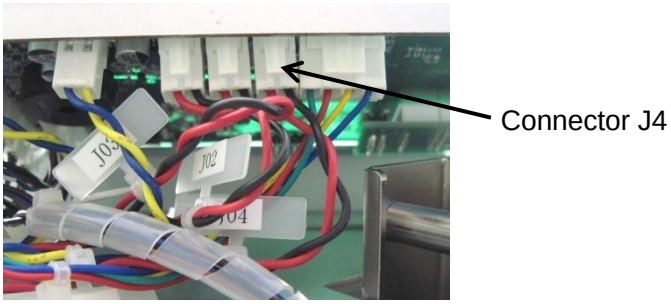
List of Components

| No. | Name | Qty. |
|---|---|---|
| 206 | Main Unit Bottom Plate | 1 |
| 248 | Drive Gear | 1 |
| 110 | Stapler Motor | 1 |
| 507 | Lithium Grease | - |
| M4x8 | Small Pan Head Screw | 4 |
| NC4x15 | Washer-Equipped Screw | 4 |
| SS5x5 | Set Screw | 2 |
| LW4 | Flat Washer (small) | 12 |

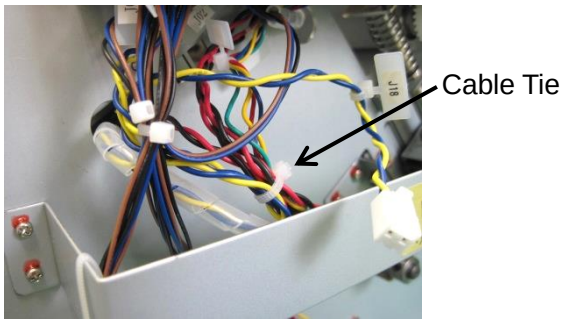
### 3-21 Replacing the Wind-Up Motor

1. Following the steps in *3-1 Replacing the Outer Covers*, remove the front cover, the rear cover, and the side cover R.

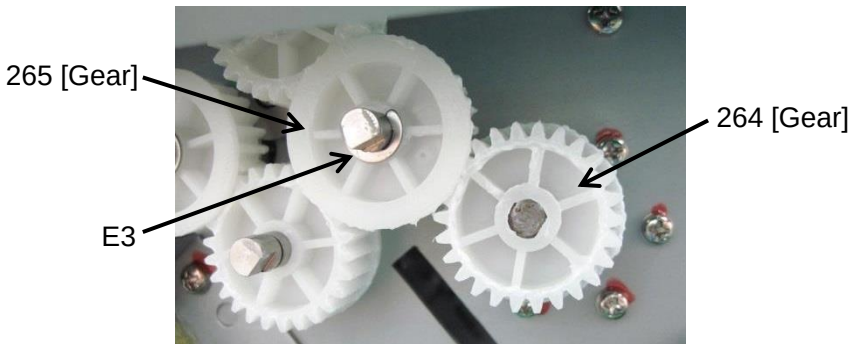
2. Disconnect connector J4 from the circuit board.




3. Cut the cable tie that binds cable J4 from the motor to the circuit board.




4. Remove the E-shaped ring and the gears.
   (Pay attention to attachment of grease. Remove only the components indicated with arrows.)

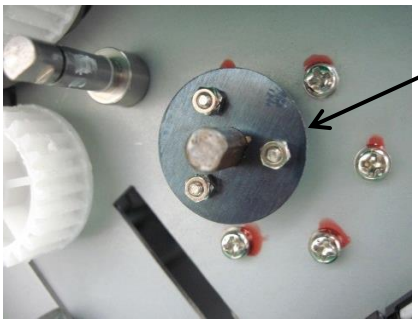




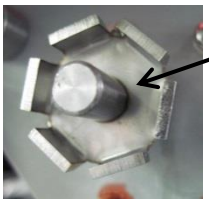
Gear 264 has a D-shaped center hole.


Gear 265 has a round center hole.

5. Remove the gear fixing plate.

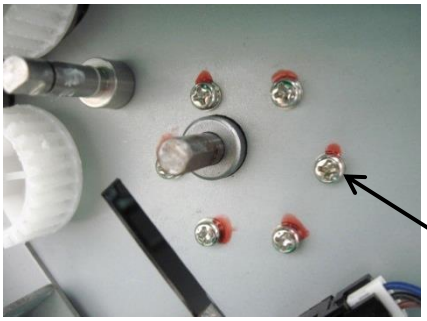


270 [Gear Fixing Plate]
At the time of reassembly, pay attention to the orientation of its two sides.



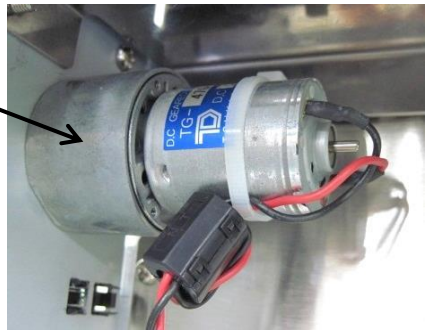
Some gear fixing plates are shaped like this.

6. Unfasten the screws to remove the wind-up motor.

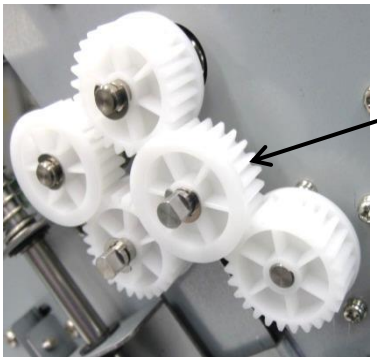


111
[Wind-Up Motor]

6-NC3x6



7. After the replacement, take the reverse steps to reassemble the product.



506
[Grease for Plastics]
Apply it to five positions on the gears.
Use grease at NLGI No.2.
(AZ's 738 is recommended.)

Greasing Positions

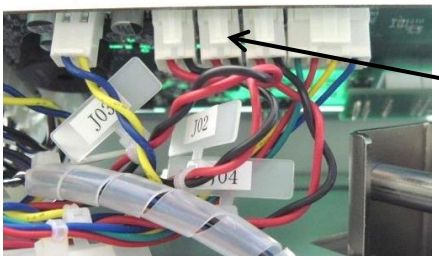
List of Components

| No. | Name | Qty. |
|---|---|---|
| 264 | Gear | 1 |
| 265 | Gear | 1 |
| 270 | Gear Fixing Plate | 1 |
| 111 | Wind-Up Motor | 1 |
| 506 | Grease for Plastics | - |
| NC3x6 | Washer-Equipped Screw (small) | 6 |
| E3 | E-Shaped Ring | 1 |

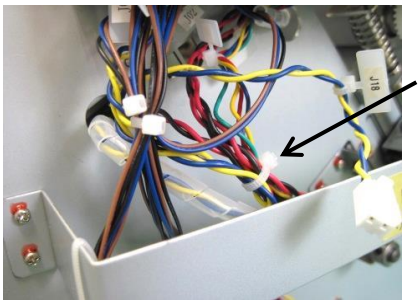
### 3-22 Replacing the Clincher Motor

1. Following the steps in *3-1 Replacing the Outer Covers*, remove the front cover, the rear cover, and the side cover R.

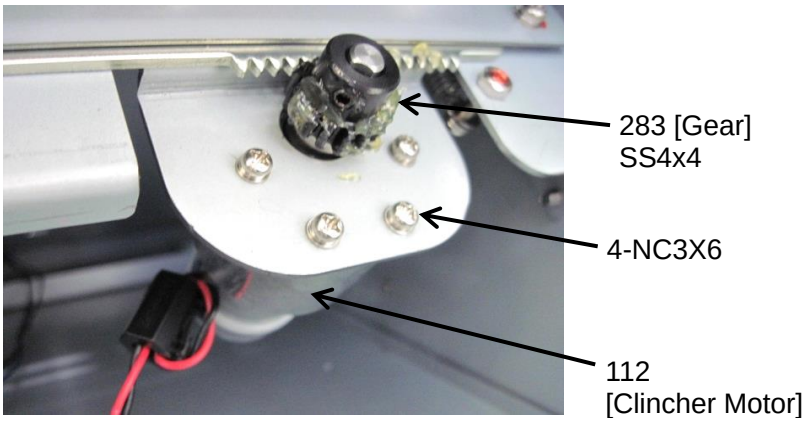
2. Disconnect connector J3 from the circuit board.



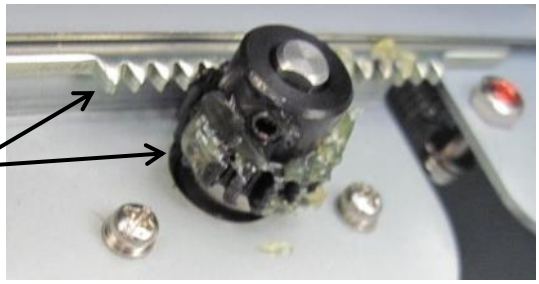

3. Cut the cable tie that binds cable J3 from the motor to the circuit board.




4. Unfasten the set screw to remove the gear. Then unfasten four screws to remove the motor. (Pay attention to attachment of grease.)




5. After the replacement, take the reverse steps to reassemble the product.




Greasing Positions

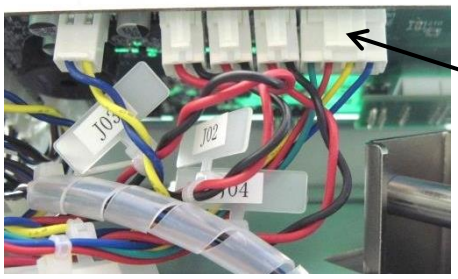
List of Components

| No. | Name | Qty. |
|---|---|---|
| 283 | Gear | 1 |
| 112 | Clincher Motor | 1 |
| 507 | Lithium Grease | - |
| NC3x6 | Washer-Equipped Screw (small) | 4 |
| SS4x4 | Set Screw | 1 |

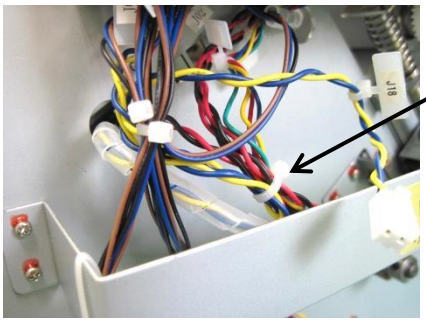
### 3-23 Replacing the Paper Feed Motor

1. Following the steps in *3-1 Replacing the Outer Covers*, remove the front cover, the rear cover, and the side cover R.

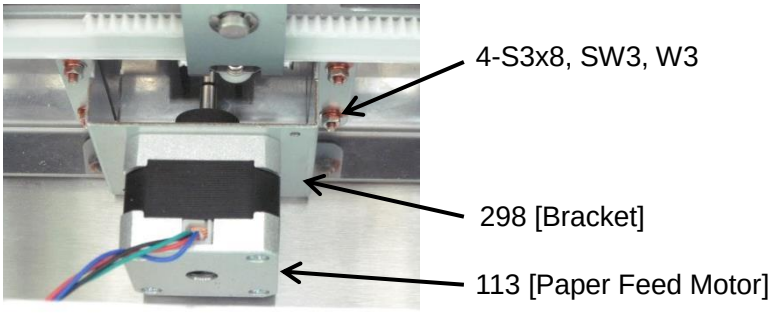
2. Disconnect connector J5 from the circuit board.



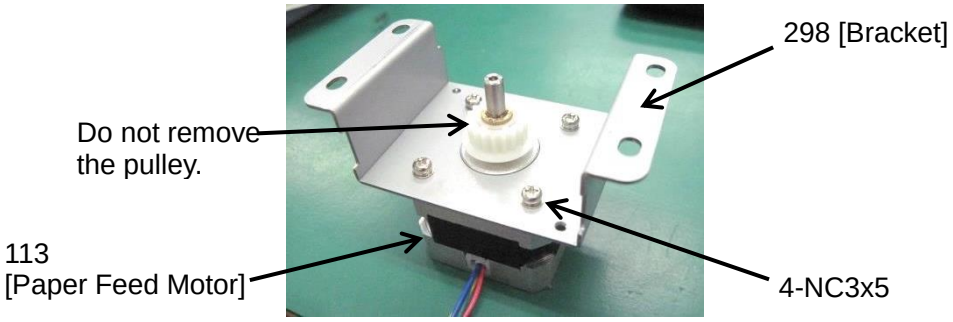

3. Cut the cable tie that binds cable J5 from the motor to the circuit board.




4. Unfasten four screws to remove the paper feed motor together with the bracket.




5. Unfasten four screws to remove the bracket.



6. After the replacement, take the reverse steps to reassemble the product.
For adjustment of the timing belt, refer to *3-10 Adjusting the Belt Tension*.

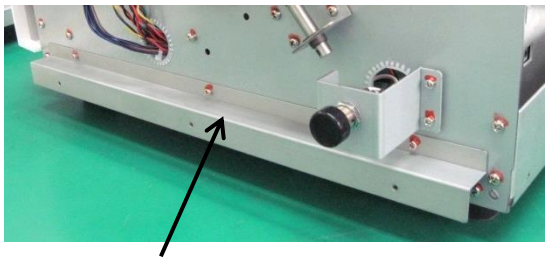
List of Components

| No. | Name | Qty. |
|---|---|---|
| 113 | Paper Feed Motor | 1 |
| 298 | Bracket | 1 |
| S3x8 | Small Countersunk Head Screw | 4 |
| SW3 | Spring Washer | 4 |
| W3 | Flat Washer (medium) | 4 |
| NC3x5 | Washer-Equipped Screw (small) | 4 |

### 3-24 Replacing the Timing Belt

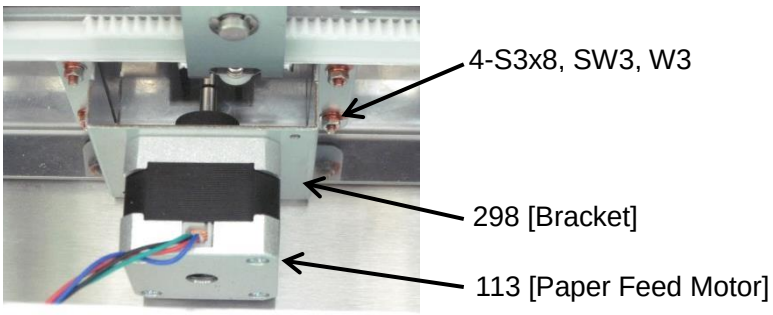
1. Following the steps in *3-1 Replacing the Outer Covers*, remove the front cover, the rear cover, the side cover L, and the side cover R.

2. Unfasten three screws to remove the lower bracket. (Perform the same process on the opposite side.)

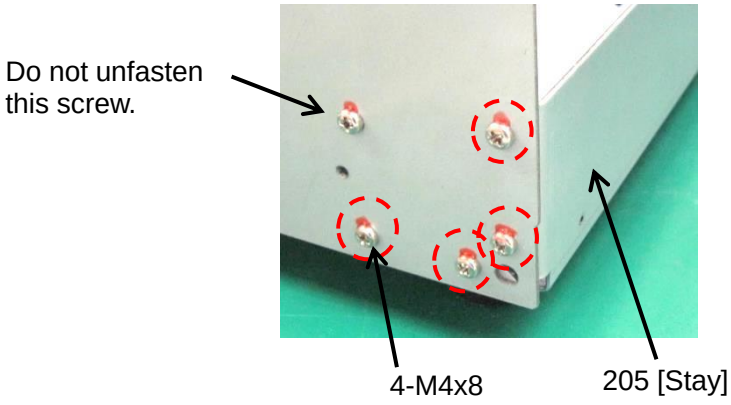



3. Following the steps in *3-9 Adjusting the Cushion Piece*, remove the cushion piece.

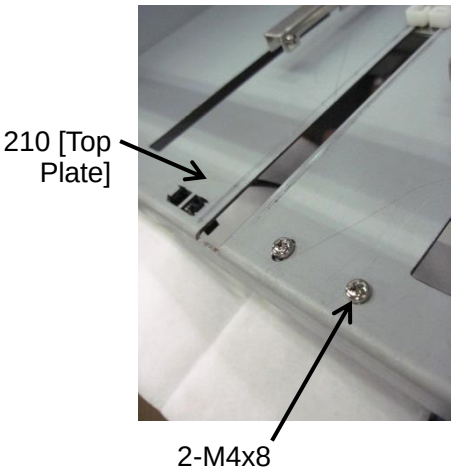
4. Unfasten four screws to remove the paper feed motor together with the bracket.

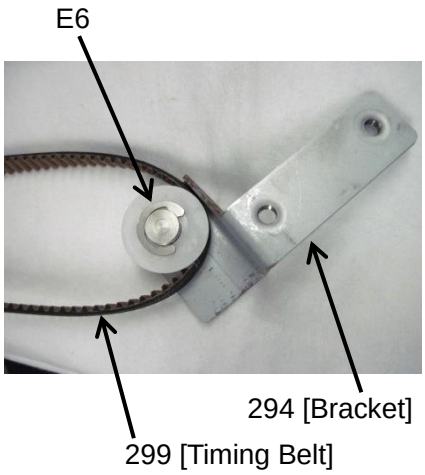



5. Unfasten four screws to remove the stay. (Perform the same process on the opposite side.)



6. Unfasten two screws to remove the bracket from the top plate. Then remove the E-shaped ring from the bracket to remove the timing belt.




7. After the replacement, take the reverse steps to reassemble the product.
   After fixing the paper feed motor at the center of the hole, follow the steps in *3-10 Adjusting the Belt Tension* to adjust the tension of the belt.
   To reassemble the cushion piece, refer to *3-18 Replacing the Paper Sensor*.

List of Components

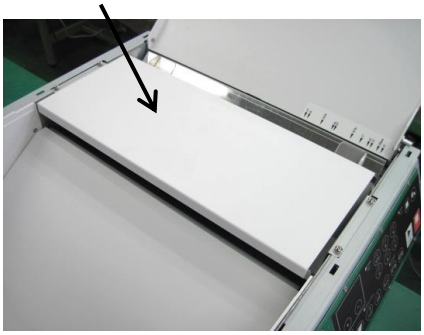
| No. | Name | Qty. |
|---|---|---|
| 411 | Lower Bracket | 2 |
| 298 | Bracket | 1 |
| 113 | Paper Feed Motor | 1 |
| 205 | Stay | 1 |
| 210 | Top Plate | 1 |
| 294 | Bracket | 1 |
| 299 | Timing Belt | 1 |
| M3x6 | Small Pan Head Screw | 6 |
| M4x8 | Small Pan Head Screw | 14 |
| S3x8 | Small Countersunk Head Screw | 4 |
| SW3 | Spring Washer | 4 |
| W3 | Flat Washer (medium) | 4 |
| E6 | E-Shaped Ring | 1 |

### 3-25 Detaching the Cover for Removing Paper

1. Following the steps in *3-1 Replacing the Outer Covers*, remove the front cover and the rear cover.

2. Lift up the upper cover R and the paper guide R at the same time to remove them.

403 [Upper Cover R], 416 [Paper Guide R]



3. Remove the paper.

4. After finishing the removal, take the reverse steps to reassemble the product.

List of Components

| No. | Name | Qty. |
|---|---|---|
| 403 | Upper Cover R | 1 |
| 416 | Paper Guide R | 1 |

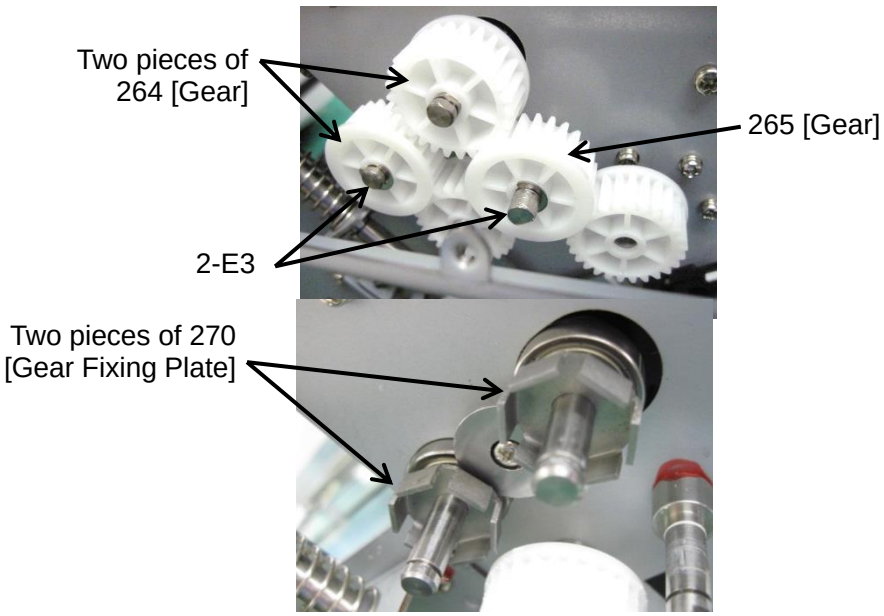
**3-26 Replacing the Wind-Up Roller**

1. Following the steps in *3-1 Replacing the Outer Covers*, remove the front cover, the rear cover, the side cover L, and the side cover R.

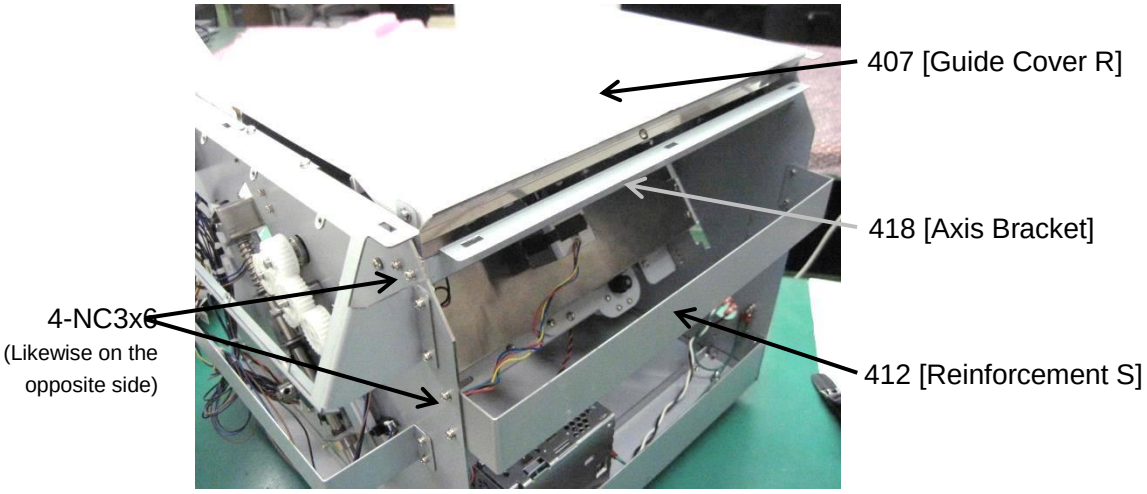
2. Following the steps in *3-11 Replacing the Circuit Board*, remove the circuit board.

3. Following the steps in 3-25 *Detaching the Cover for Removing Paper*, pull upward on the upper cover R and the paper guide R at the same time to remove them.

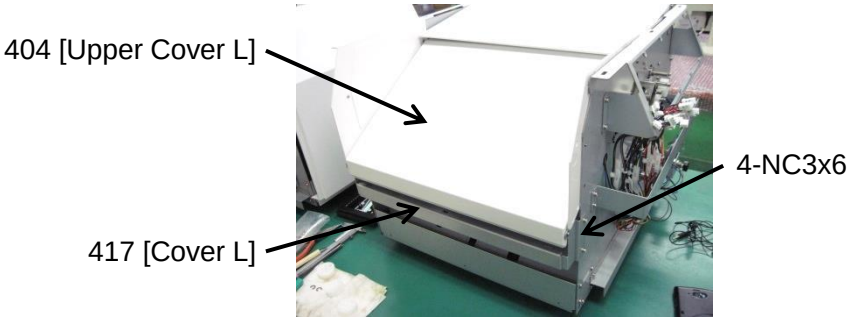
4. Remove the E-shaped ring, two types of gears, and the gear fixing plates.
(Pay attention to the attachment of grease. Remove the only components indicated with arrows.)



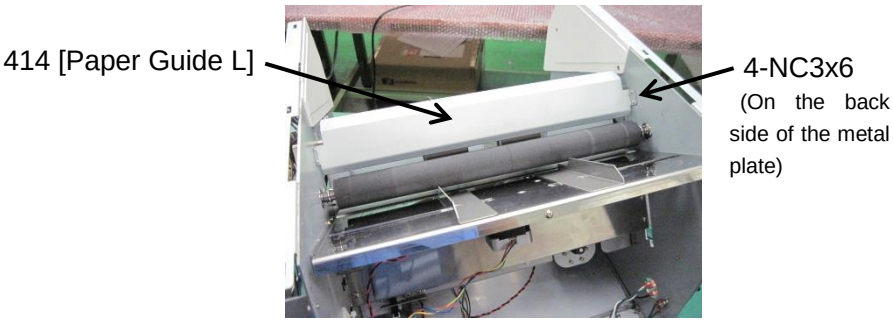

5. Unfasten eight screws to remove the guide cover R and the axis bracket together. Then remove the reinforcement S.



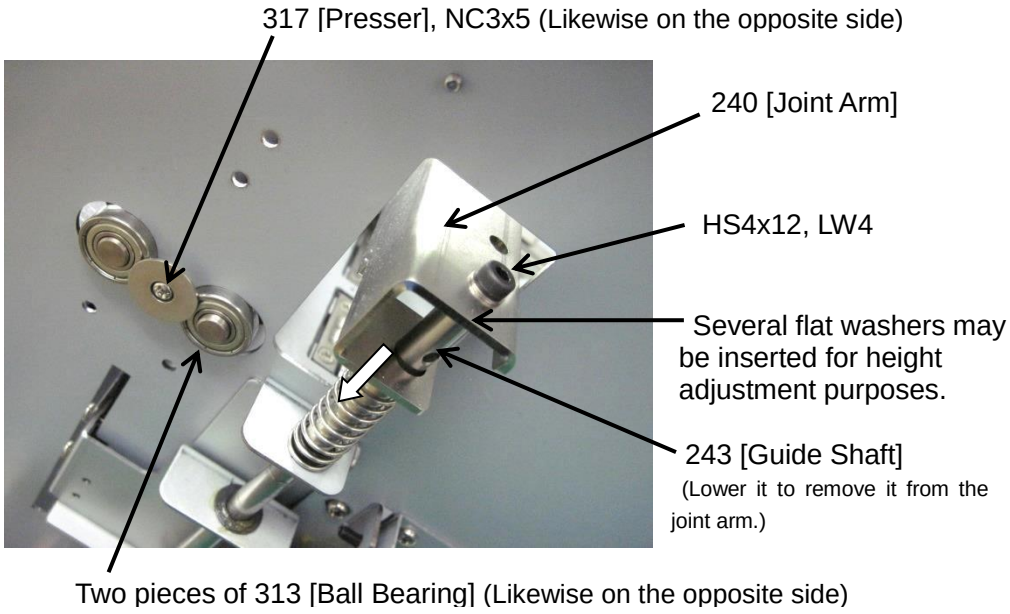
6. Unfasten four screws to remove the cover L and the upper cover L together.



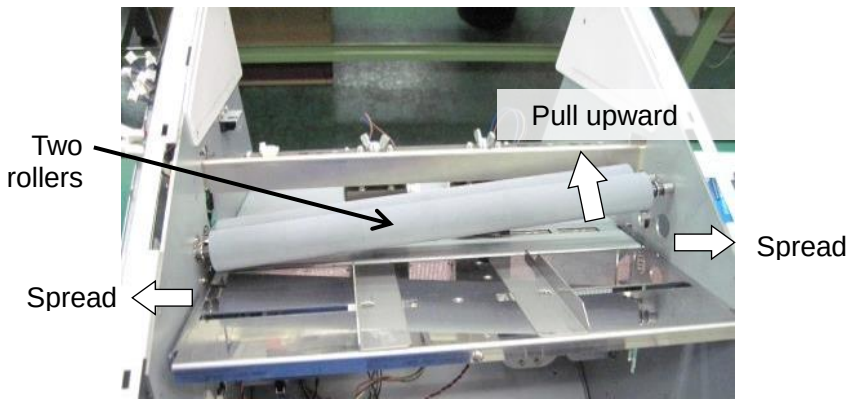

7. Unfasten four screws to remove the paper guide L.



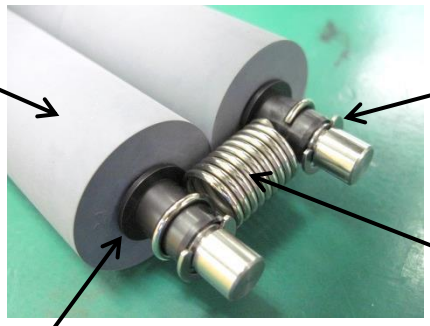

8. Unfasten either of the screws to remove the guide shaft from the joint arm.
Then unfasten a screw to remove the presser and the ball bearings.




9. While spreading the case horizontally, pull upward on the two rollers to remove them.

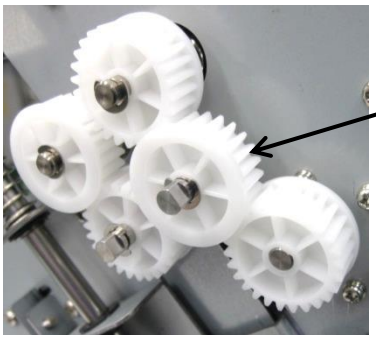


10. Remove different components from the wind-up rollers.




Perform the same process on the opposite side.

11. After the replacement, take the reverse steps to reassemble the product.



Apply 506 [Plastic Grease] onto five positions on the gears.
Use grease at NLGI No.2. (AZ's 738 is recommended.)

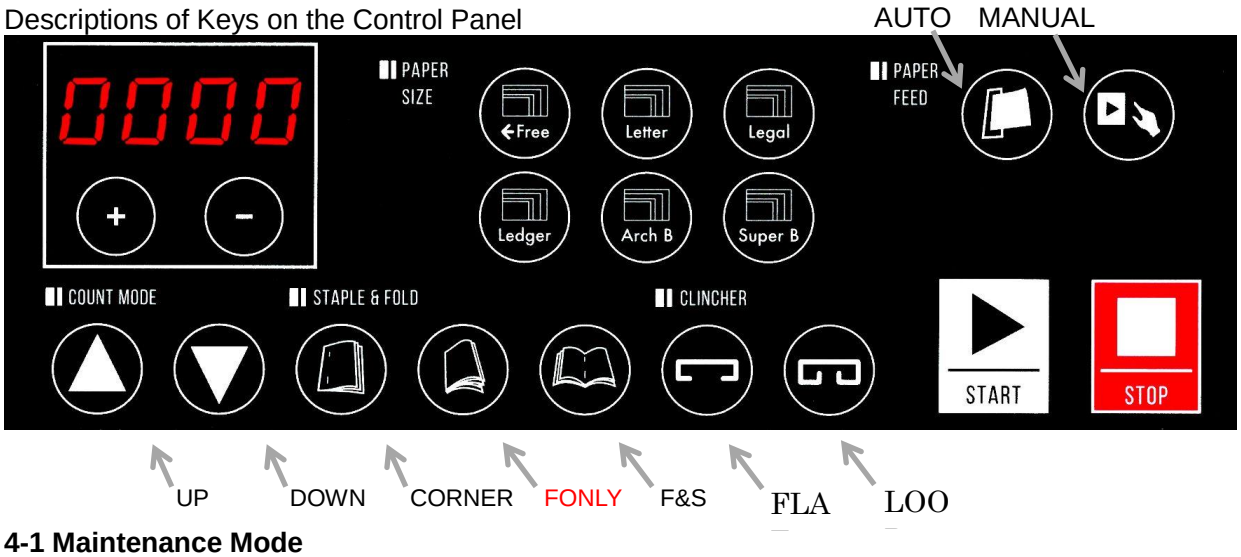
Greasing Position

List of Components

| No. | Name | Qty. |
|---|---|---|
| 264 | Gear | 2 |
| 265 | Gear | 1 |
| 270 | Gear Fixing Plate | 2 |
| 407 | Guide Cover R | 1 |
| 418 | Axis Bracket | 1 |
| 412 | Reinforcement S | 1 |
| 404 | Upper Cover L | 1 |
| 417 | Cover L | 1 |
| 414 | Paper Guide L | 1 |
| 317 | Presser | 2 |
| 313 | Ball Bearing | 4 |
| 01-006 | Joint Arm | 1 |
| 243 | Guide Shaft | 2 |
| 01-008 | Wind-Up Roller | 2 |
| 316 | Collar | 4 |
| 266 | Spring | 2 |
| 506 | Plastic Grease | - |
| NC3x5 | Washer-Equipped Screw (small) | 2 |
| NC3x6 | Washer-Equipped Screw (small) | 16 |
| HS4x12 | Inner Hexagonal Hole Screw | 2 |
| LW4 | Flat Washer (small) | 2 |
| E3 | E-Shaped Ring | 2 |
| E6 | E-Shaped Ring | 4 |

## 4. Adjusting the Program

Descriptions of Keys on the Control Panel




### 4-1 Maintenance Mode

Switching to the Maintenance Mode

(1) Power the product off.

(2) Just after powering it on, press the [+], [-], [AUTO], and [MANUAL] keys at the same time.

(3) Together with the beep, the version number will be displayed for about three seconds.

(4) Press the [+] and/or [-] keys to select the desired function and press [START] to confirm the selection.

Function 1: Adjusting sensitivity of the touchpad
Function 2: Switching between *metric* and *inch* measurements
Function 3: Adjusting the folding position
Function 4: Adjusting the origin of the paper feed sensor
Function 5: Adjusting the staple position
Function 6: Freely operating individual motors
Function 7: Displaying total shot counts

If the function is left unconfirmed for 20 seconds after start-up, Function 1 will be automatically confirmed.

Function 1: Adjusting sensitivity of the touchpad

This function automatically adjusts the sensitivity of the touchpad on the control panel. Carry out this adjustment when the touchpad sensitivity is abnormal or when the control panel has been replaced.

Values ranging from 1 to 14 are displayed. As the values change, there is a brief beep. When the value turns 14 with a long beep, the function process is finished and the product will automatically restart.

The sensitivity adjustment is conducted automatically. In the course of the adjustment, do not touch the control panel.

Function 2: Switching between *metric* and *inch* measurements

This function switches between metric and inch measurements. Press the [+] and/or [-] keys to select the desired value and press [START] to confirm the selection and the product will automatically restart.

1: Metric measurements
2: Inch measurements

Function 3: Adjusting the folding position

This function is for the fine adjustment of the position at which paper is folded.Carry out this adjustment when the staple position or the folding position deviates from the center of the paper.

Never operate this function before carrying out the adjustment using Function 5.

Press the [+] and/or [-] keys to set the value in the range from 0 to 99. A value change by 1 means a change in position by 0.1 mm.

An increase in the value means that the staple position and the folding position move in an identical direction with the paper insertion direction.

A decrease in the value means that the staple position and the folding position move in the

direction opposite to the paper insertion direction.
Press [START] to confirm the adjustment and the product will automatically restart.

Function 4: Adjusting the origin of the paper feed sensor

This setting is for the fine adjustment of the origin position of the paper feed sensor.
Press the [+] and/or [-] keys to set the value in the range of 0 to 99. A value change by 1 means a change in position by 0.1 mm.
An increase in the value means that the staple position moves towards the top end of the paper when seen from the direction of insertion.
A decrease in the value means that the staple position moves towards the bottom end of the paper when seen from the direction of insertion.
Press [START] to confirm the adjustment and the product will automatically restart.

Function 5: Adjusting the staple position

This setting is for the fine adjustment of the relationship between the staple position and the folding position.
Carry out this adjustment when the staple position deviates from the folding position.
Press the [+] and/or [-] keys to set the value in the range of -20 to 20. A value change by 1 means a change in position by 0.1 mm.
An increase in the value means that the staple position moves towards the top end of the paper when seen from the direction of insertion.
A decrease in the value means that the staple position moves towards the bottom end of the paper when seen from the direction of insertion.
Press [START] to confirm the adjustment and the product will automatically restart.

Function 6: Freely operating individual motors

This function allows you to freely move the paper feed motor, the stapler motor, the clincher motor, and the wind-up motor according to the rotation direction and the designated output. However, only one of the motors can be operated at a time.
Select the motor to be operated.
[Free]: The paper feed motor −
[B5] or [Letter]: The stapler motor
[B4] or [Legal]: The clincher motor
[A5] or [Ledger]: The wind-up motor −
Select the rotation direction.
[CORNER]: In the braking status
[FONLY]: In the status of regular rotation
[F&S]: In the status of inverse rotation
Adjust the output.
[+]: Increase the output
[-]: Decrease the output
Start or stop the motor operation:
[START]: While holding down this button, the selected motor (excluding the paper feed motor) will operate.
Upon pressing this button, the paper feed motor (when it is selected) will start its operation.
[STOP] Upon pressing this button while the paper feed motor is in operation, it will stop its operation.

The rotation direction and the output are to be set on a motor-by-motor basis.
To exit this function, power the product off.
Please note that the mechanism may be damaged given that all motors can be operated freely.
The cover switch is active. When the cover is open, the motor will not operate.

Function 7: Displaying total shot counts

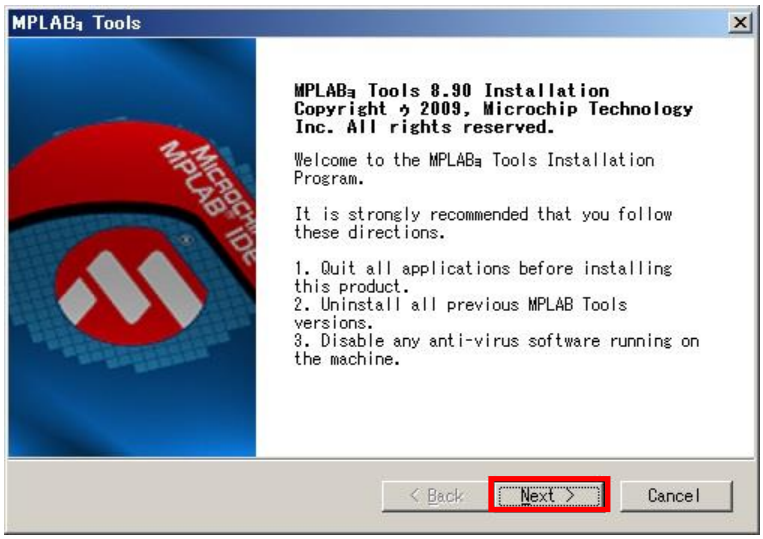
This function displays the total shot counts in units of 100 shots.
When either the Corner, Fonly, or F&S process takes place, it is counted as one shot.
To exit this function, power the product off.
The function of clearing the total shot counts is not supported.
(The counts are cleared when the program is rewritten.)

**4-2 Installing Program Writing Software**

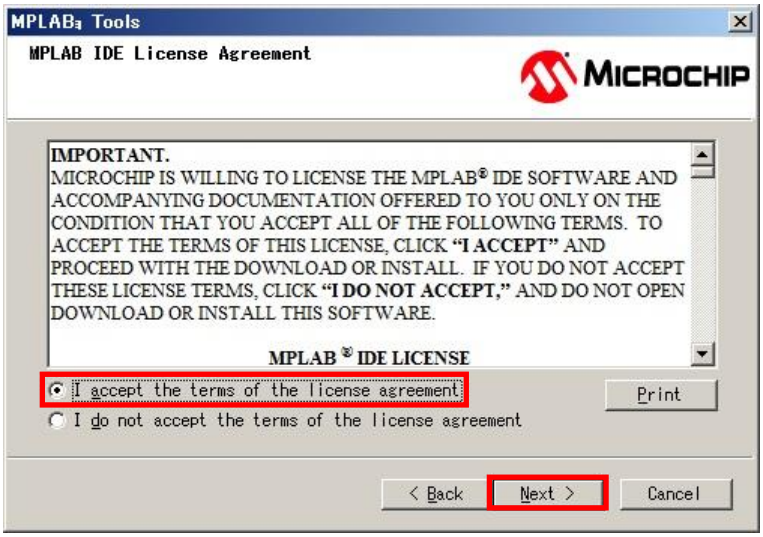
This section describes an example of installing MPLAB IDE V8.90 on Windows 7 Professional.

1. Select the disk that comes with the writer kit on the computer. Double click *setup.exe* in the *MPLAB_IDE_8_90* folder. The computer will start preparations for installation.

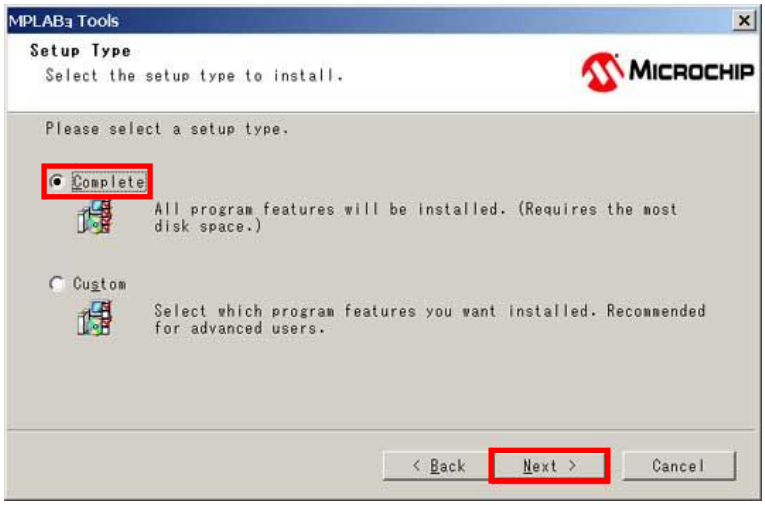
2. When the window shown below appears, click *Next*.



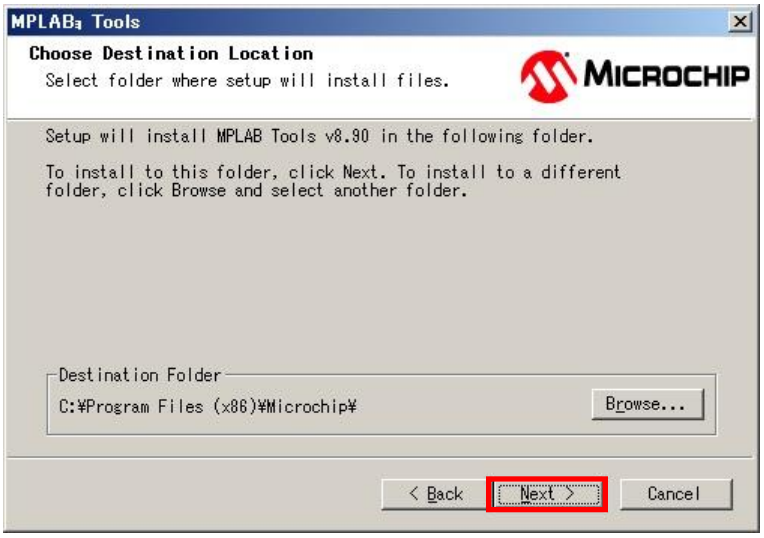

3. Select *I accept the ...* and click *Next*.



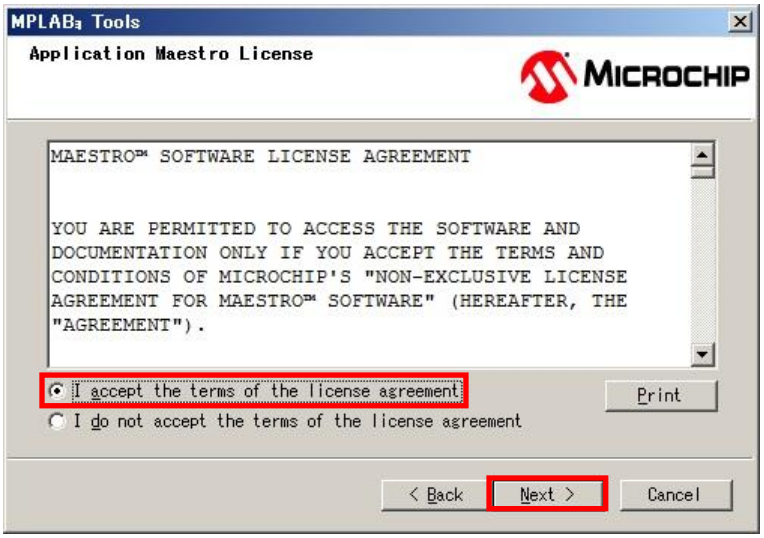

4. Select *Complete* and click *Next*.



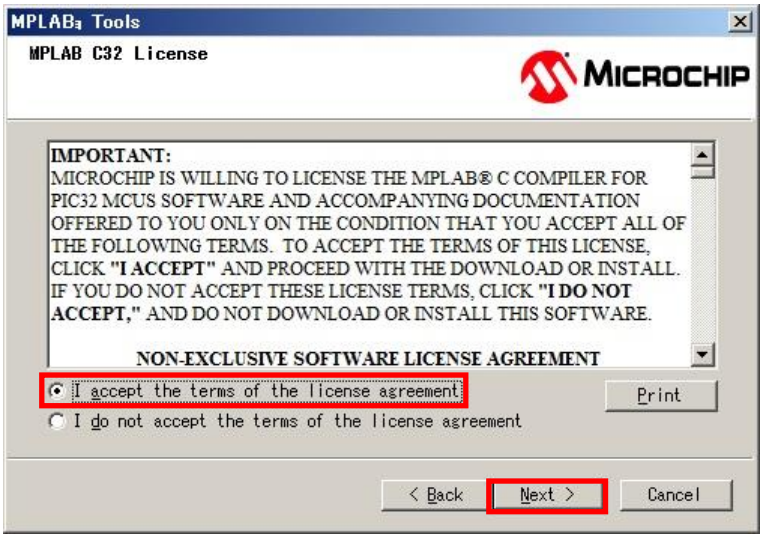
5. Click *Next*.



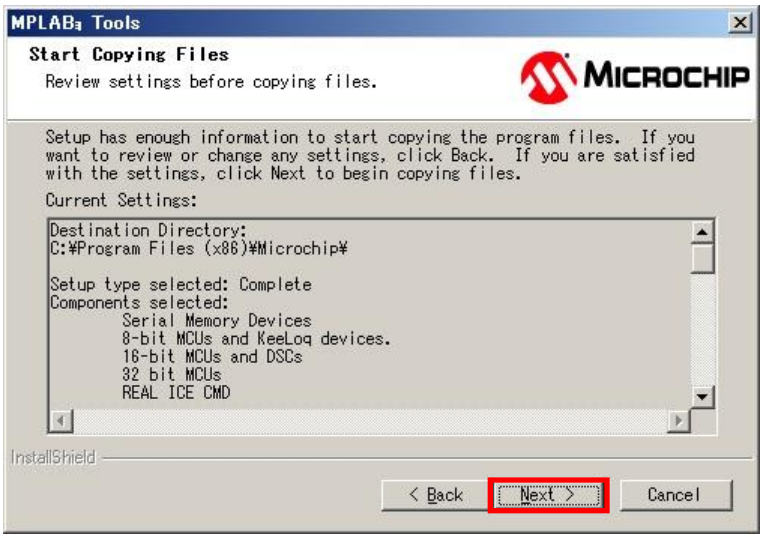

6. Select *I accept the ...* and click *Next*.



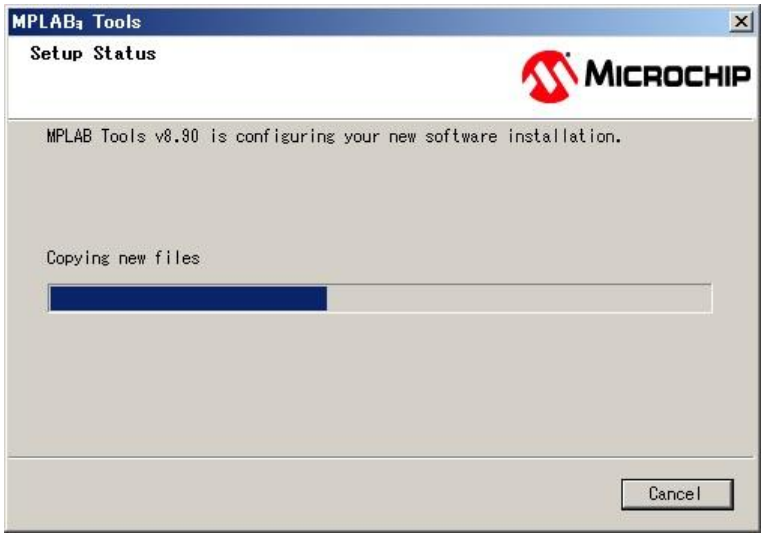

7. Select *I accept the ...* and click *Next*.



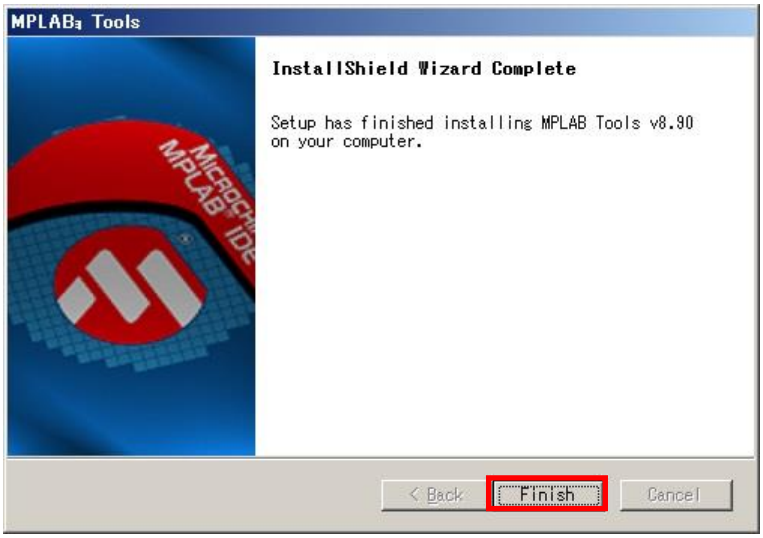
8. Click *Next* and the installation process will start.



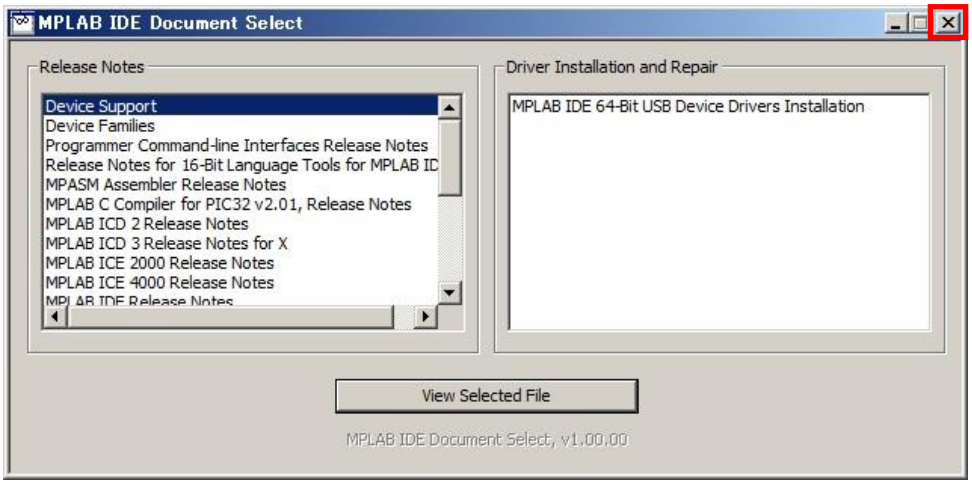

9. Wait until the installation process is complete.




10. Click *Finish*.



11. If the window shown below appears, click the [X] in the upper right corner to close it.




12. Connect PICkit 3 to the computer using the accompanying USB cable. The driver will automatically be installed.

## 4-3 Upgrading the Program

This section describes the writing procedures in the case where MPLAB IDE V8.9 is used.

When the program is overwritten, all of the adjustment values will be reset. Retrieve the individual adjustment values in advance in Functions 2 to 5 in 4-1 Maintenance Mode and take note of these values.

In addition, the total shot counts in Function 7 will be reset.

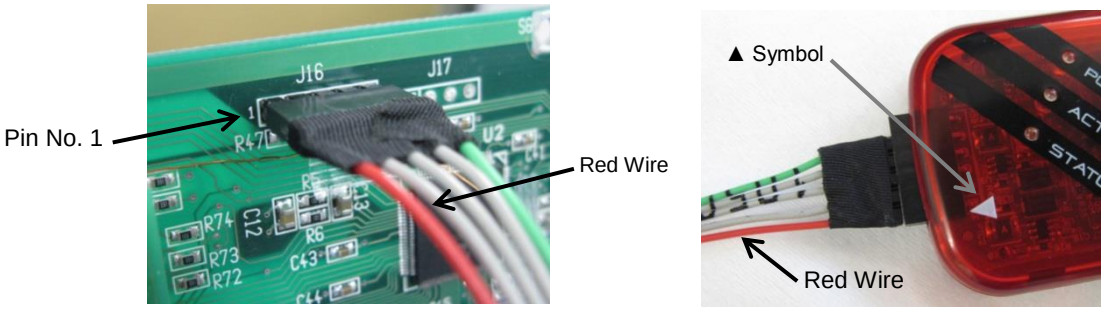
1. Power this product off.

2. Connect the writing cable.

   Following the steps in *3-11 Replacing the Circuit Board*, make sure that connector J16 on the back side of the circuit board is accessible.

   Connect the cable in the manner in which the red wire of the cable is located at position No. 1 (marked with the ▽ symbol) of PICkit 3 and at Pin No. 1 of Connector J16 on this product.

   After the connection, fasten the circuit board with screws while paying attention not to catch the cable between other components.

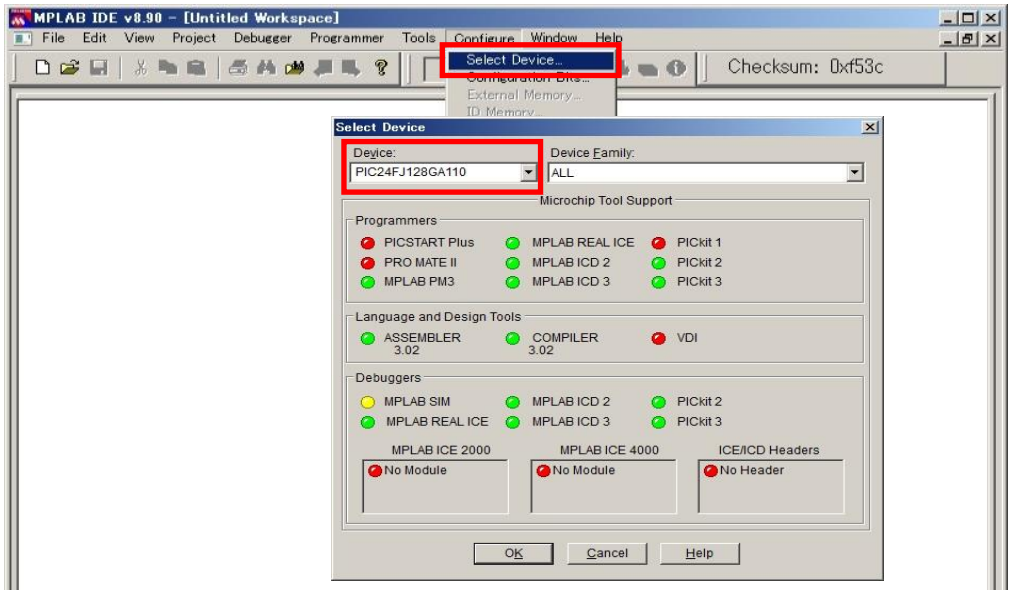



3. Connect PICkit 3 to the computer using the USB cable that comes with the writing kit.

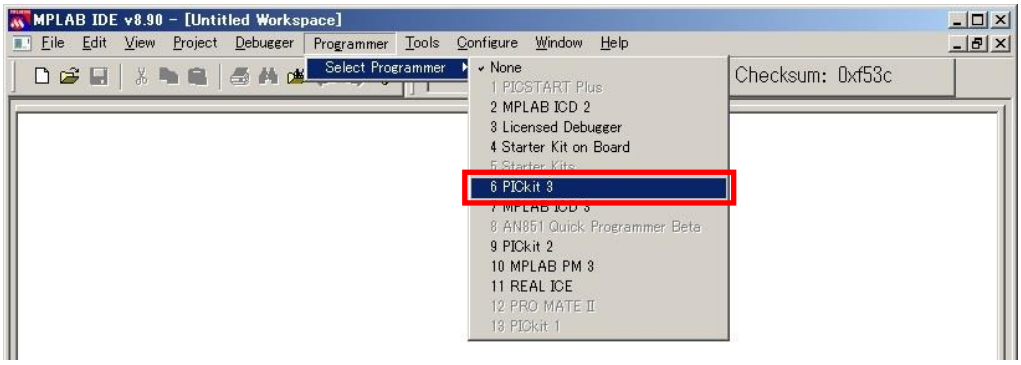
4. Power this product on.

5. From Windows' Start Menu, start MPLAD IDE.

6. In the MPLAB IDE window, choose *Configure* and then *Select Device...*.
   In the *Device:* pulldown menu, select *PIC24FJ128GA110* and click *OK*.
   (This setting is saved on MPLAB IDE. It is unnecessary repeat this step for subsequent times of use.)

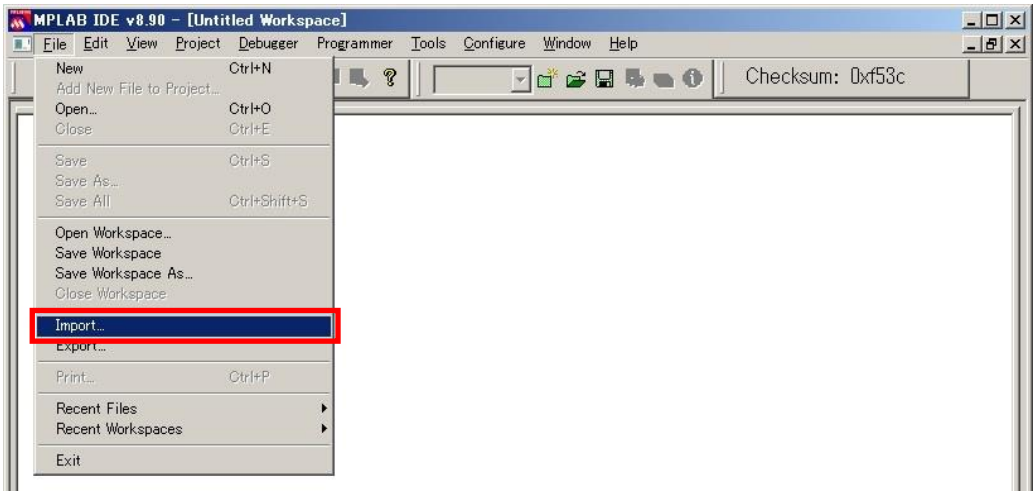


7. In the MPLAB IDE window, select *Programmer*, then *Select Programmer*, and *PICkit 3*.

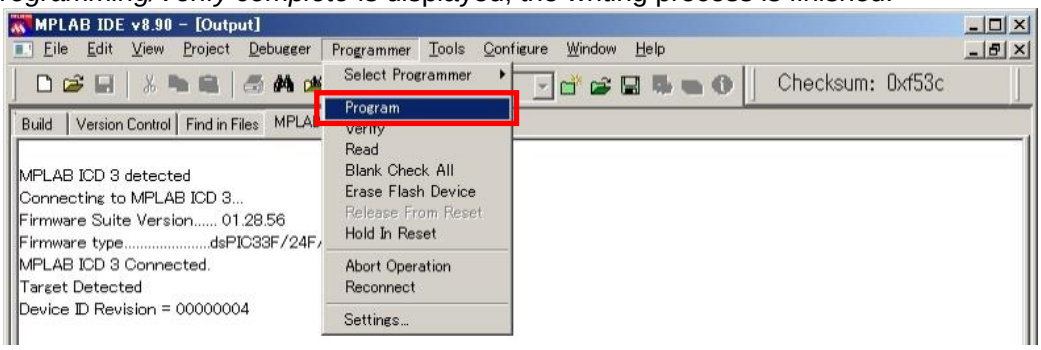



8. When the window shown below appears, click *OK*. (This step will be skipped for subsequent times of use.)


8. In the MPLAB IDE window, select *File* and then *Import* to specify the HEX file to be written.




9. In the MPLAB IDE window, select *Programmer* and then *Program* to execute the writing process. When *Programming/Verify complete* is displayed, the writing process is finished.




10. The product will beep and the version number will be displayed for about three seconds. Then the touchpad adjustment will automatically start. After the automatic adjustment is finished, re-enter the values noted earlier.

Service Manual

# iBOOKLET

Keep this Operation Manual with care in a fixed storage place so that it may be available whenever required.

When the Operation Manual is stained or lost, contact the distributor or a person in charge in our sales office to ask for a new one.

When you want to transfer this product to the next owner, be sure to hand over this Instruction Manual along with the product.

If there is any label that becomes illegible or is about to peel off, contact the distributor or a person in charge in our sales office to immediately replace it with a new one.

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