

Mitsubishi hoist

Sales & Service

No. 855-0292

Notice of change in 12kW hoist inverter output part for 400V class.

We highly appreciate for your continuous sales support on Mitsubishi hoist and related items. This time, we apologize for the delay in sending notice of change in 12kW hoist inverter output part for 400V class.

1. Changes

Change in 12kW hoist inverter output part for 400V class
(IPM, IPM drive board and other structural parts)

2. Subject models

- ①Product : All 400V class U2 type 7.5 tons and 10 tons and TIB-H11.
- ②Service parts : 400 V class 12 kW inverter IPM and IPM drive board.

3. Schedule for changes

- ①Product : We will change the production from September 2017.
- ②Service parts : We will correspond with the following replacement kit when IPM order receipt after September 2017 accordingly. In order to manage the historical record in our company, please be sure to clarify the serial number before sending us the quotation. In exchange, we will prepare replacement instructions, new sequence diagram, new wiring diagram and necessary parts for its assembly.

Item name	Description of replacement kit
IPM replacement kit	IPM, IPM drive board, replacement instructions, new sequence diagram, new wiring diagram and other required parts for cable replacement.

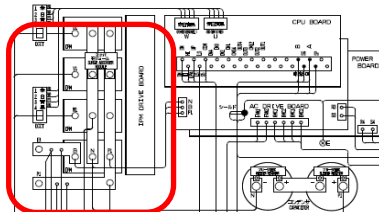
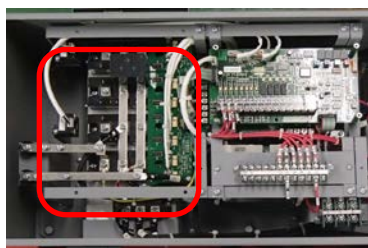
※No change has been made in case of ordering only IPM drive board (model code: 03G512) (Utilizing existing IPM)

4. Reason for changes

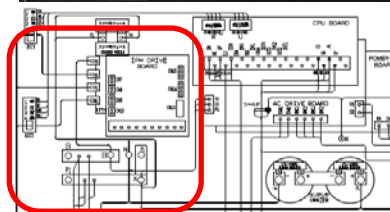
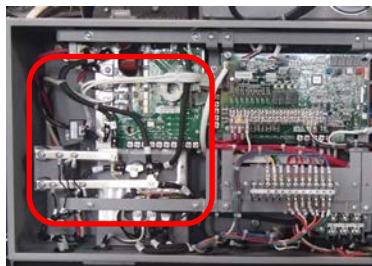
With the discontinuation IPM production, mounting structure will be changed for IPM and IPM drive board.

5. Changes and notes

- (1) We have changed the IPM in a single package item. (Old: 4 pieces/unit, New: 1 piece/unit)
- (2) For replacement details, please refer to the replacement instructions (PHN - 171026) included with the parts.
- (3) There is no change in function and performance.
- (4) The appearance and internal wiring diagram for old and new control boxes are shown below.



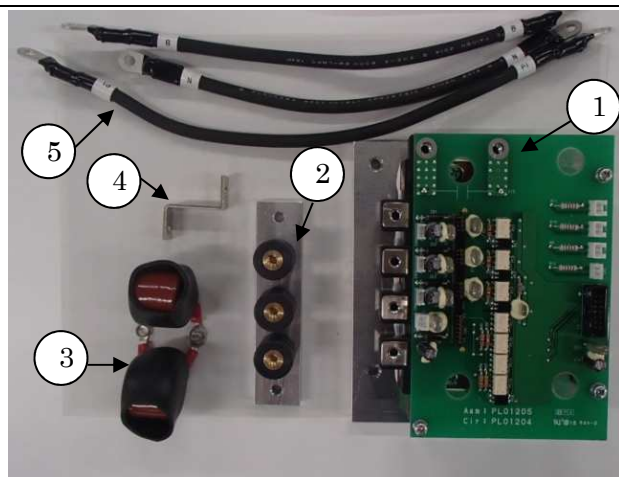
<Old control box>



<New control box>

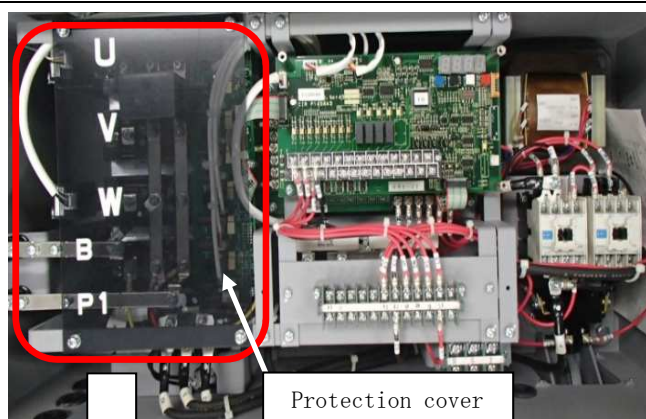
Subject	Notice of change in 12kW hoist inverter output part for 400V class.	Date of issue	October 11, 2017
		MITSUBISHI ELECTRIC FA INDUSTRIAL PRODUCTS CORPORATION 1-1-1 Imajuku-Higashi, Nishi-ku, Fukuoka 819-0192 TEL 092-805-3631	

U2 type IPM · Drive board replacement procedure manual (400 V class, 12 kW)



1. Complete set of replacement parts

- ① IPM drive board assembly
(IPM drive board, IPM, Attachment, Spacer, Screw M5 × 12...2 pieces, Screw M 4 × 6...3 pieces)
- ② Back plate assembly (back plate, insulator)
- ③ Snubber...2 pieces
- ④ Copper bar
- ⑤ Wire (P1, N, B)
- ⑥ Screw M5 × 8...2 pieces
- ⑦ Screw M5 × 12...7 pieces
- ⑧ Screw M5 × 16...8 pieces



2. Work contents

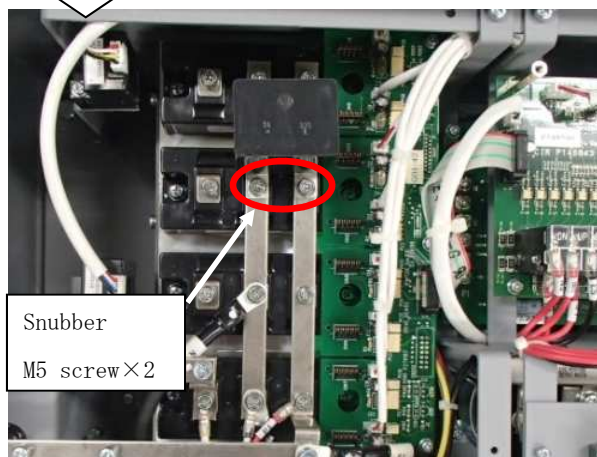
Exchange of IPM and drive board

Tools need to be prepared

Phillips screwdriver, vinyl tape for marking, **check marker.**

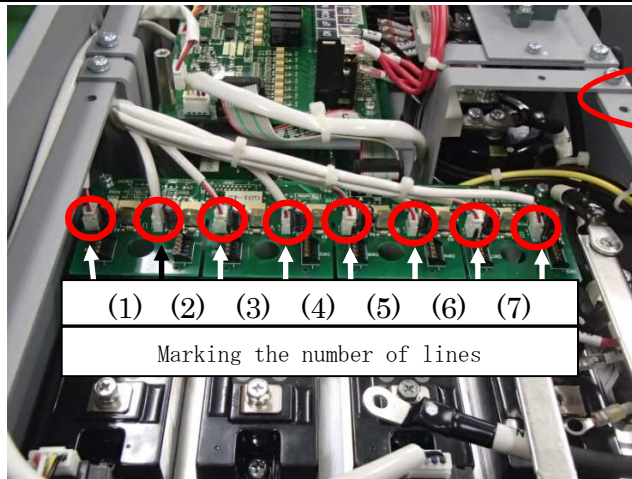
Left photo: Whole view of U2-10t control box

※After turning off the power supply, please wait for at least 5 minutes and make sure to check the P-N voltage becomes DC 30 V or less before making any operation.



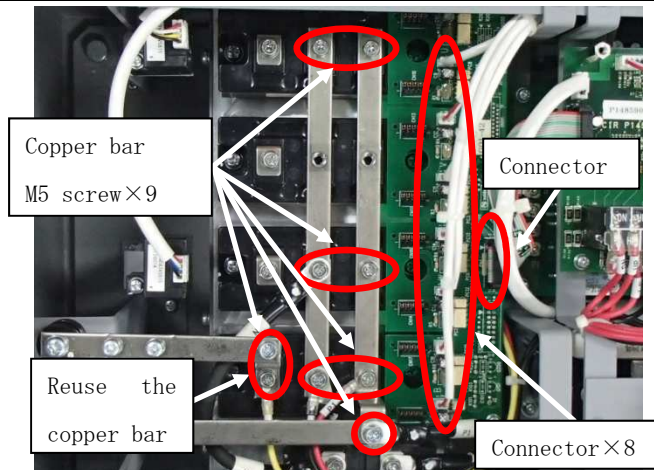
3. Removal of existing parts

- Protection cover
(Will be installed at the end)
- Motor wire (U, V, W)
- Remove the snubber (M5 screw...2 places)



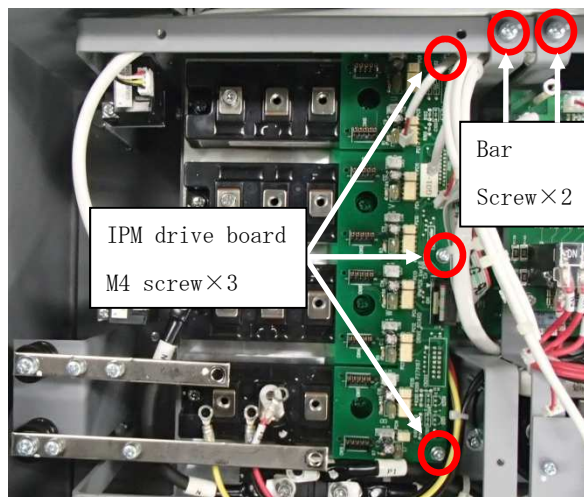
4. (Enlargement1) Connector's connection parts

- Marking the connector (8 places) of CPM board and AC drive board.



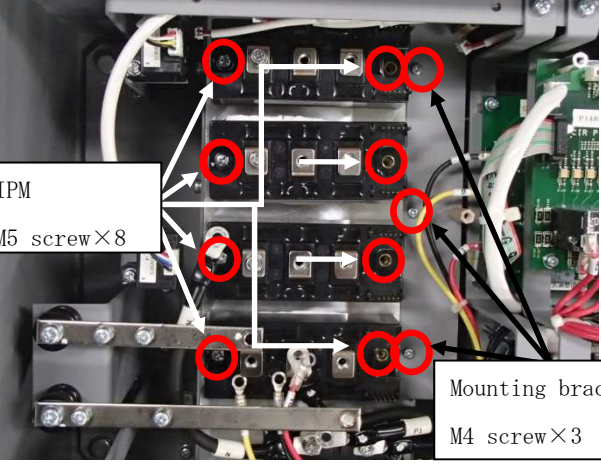
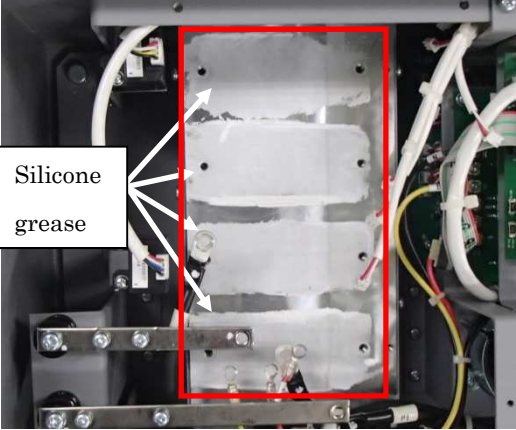
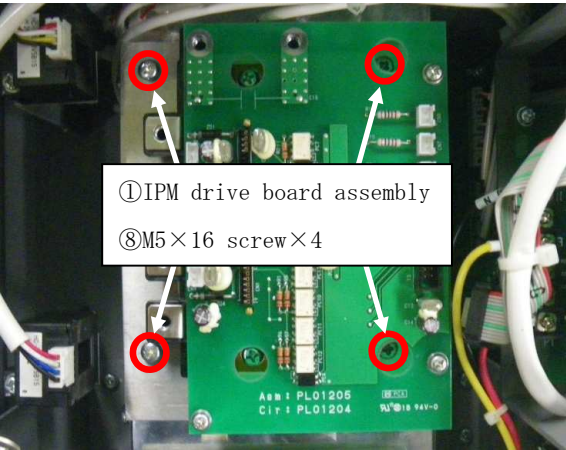
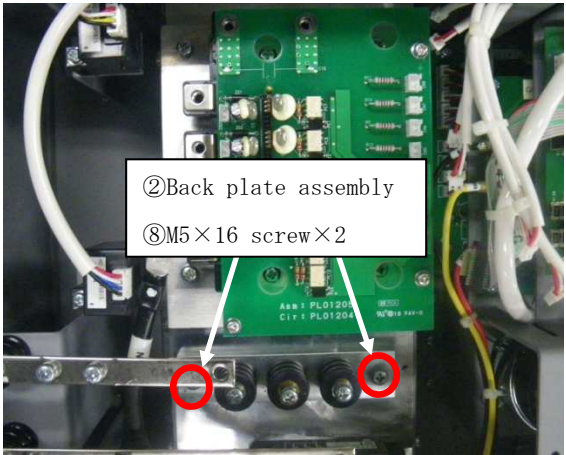
5. Removal of existing parts

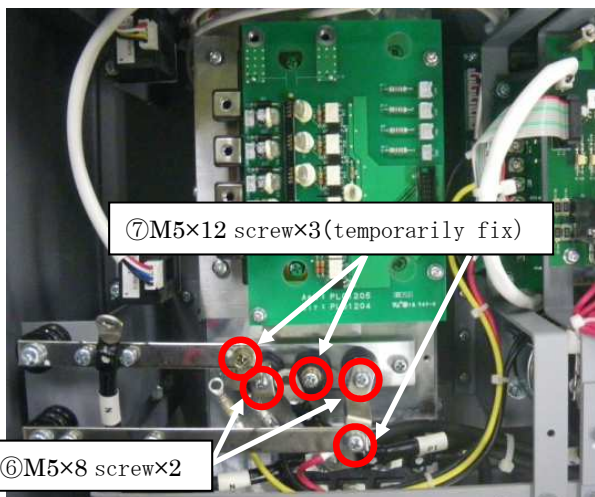
- Copper bar...3 pieces (M5 screw...9 places)
- Remove the connector inserted in the 2 pole connector on the IPM drive board (8 connectors)
- Remove the connector inserted in the 14 pole connector (1 connector) on the IPM drive board.
- ※Reuse the copper bar on the left side.
- ※When removing the copper bar, wiring is also need to be removed. At the same time, please do not cut or disconnect them because the wire need to be reconnected.



6. Removal of existing parts

- Remove the IPM drive board fixing screws (M4 screw...3 places)
- Pull and remove the IPM drive board vertically toward you from the heat sink.
- ※If you have difficulty removing the fixing screws from the IPM drive board, please remove the bar mounting screws (2 places).

 <p>IPM M5 screw×8</p> <p>Mounting bracket M4 screw×3</p>	<p>7. Removal of existing parts</p> <ul style="list-style-type: none"> • Remove IPM drive board mounting bracket (M4 screw...3 places) • Remove IPM...4 pieces (M5 screw...8 places)
 <p>Silicone grease</p>	<p>8. Removal of existing parts</p> <ul style="list-style-type: none"> • Wipe the silicone grease (white). <p>Removal of existing parts is completed.</p>
 <p>①IPM drive board assembly ⑧M5×16 screw×4</p>	<p>9. Replacement parts installation</p> <ul style="list-style-type: none"> • Thinly apply silicone grease to the back of the aluminum plate of the ①IPM drive board assembly. • Attach the ①IPM drive board assembly to the heat sink with ⑧ screws (M5×16...4 places).
 <p>②Back plate assembly ⑧M5×16 screw×2</p>	<p>10. Replacement parts installation</p> <ul style="list-style-type: none"> • Attach the ②back plate assembly to the heat sink with ⑧screws (M5×16...2 places).



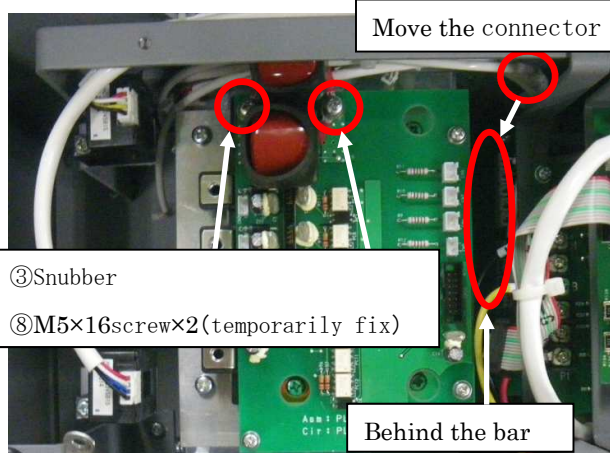
11.Replacement parts installation

- ④Copper bar removed in procedure 2,
- ⑦Screw (M5×12...1 place) and
- ⑥Screw (M5×8...1 place)

Attach right side of the insulator and attach left side of the insulator.

- Attach the screw ⑦ (M5×12...1 place) to the center insulator.

※ Please temporarily fix the screw ⑦ (M5 × 12...3 places) in order to route the cables later.



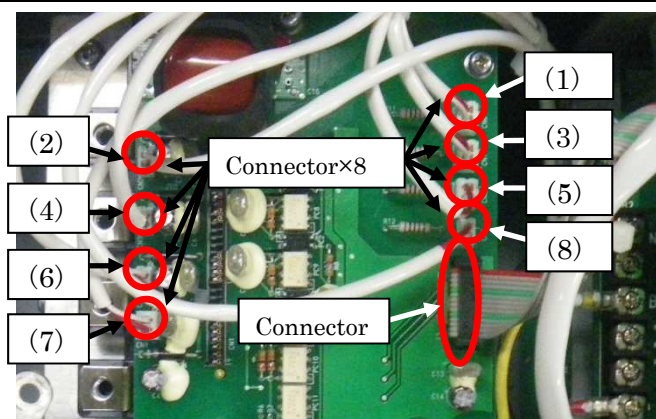
12.Replacement parts installation

- Attach the ③ snubber to the IPM drive board with ⑧ screws (M5×16...2 places).

• The connector runs through the back of the bar.

※ Please be careful not to bend snubber mounting part (lead wire, crimp terminal part) many times. (Breakage prevention)

※ Please temporarily fix the ⑧ screw (M5×16 ...2 places) in order to route the cables later.



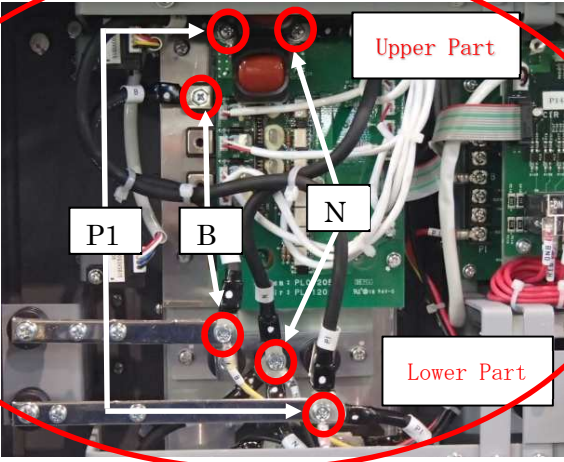
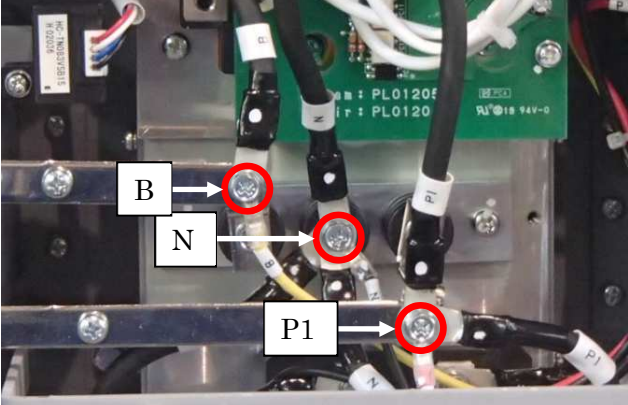
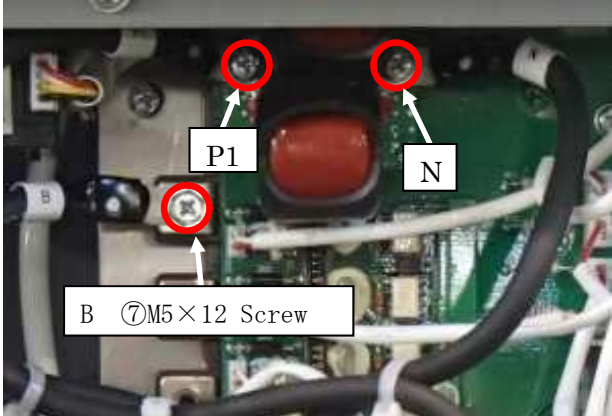
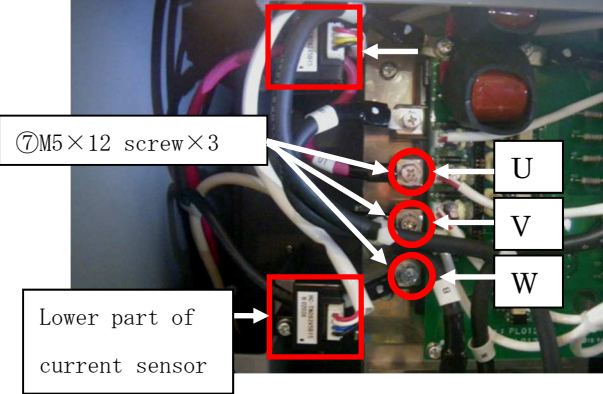
13.Replacement parts installation

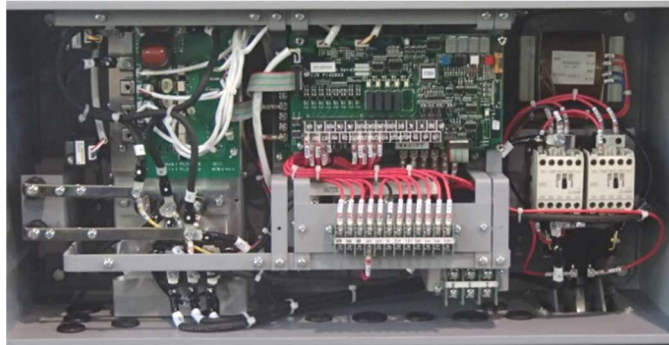
- 2 pole connector on IPM drive board (8 places)
- 14 pole connector on IPM drive board (1 place)

Attach the connector marked as shown in the figure shown on the left.

※ Connectors ((1),(3),(5),(8)) are top of red lead line and connectors ((2),(4),(6),(7)) are under red lead line.

※ When connecting the connector please pay attention to the shape and orientation.

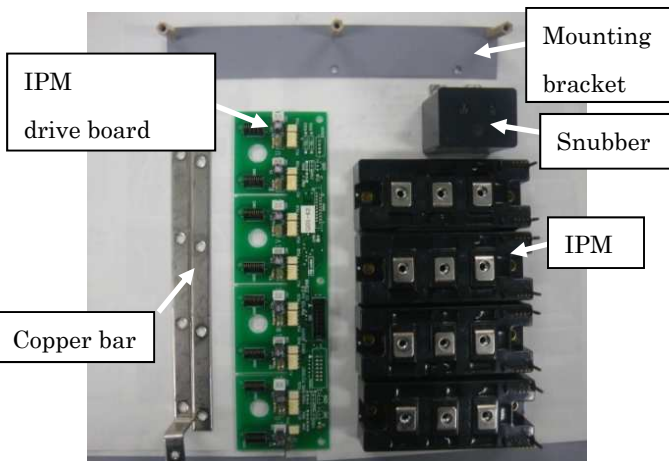
	<p>14.Replacement parts installation</p> <ul style="list-style-type: none"> • Install electric wires ⑤ (P1, N, B) • The upper part of electric wire B is mounted with ⑦ screw (M5×12...1 place). <p>Tighten the wiring when removing the copper bar.</p> <p>Wire lower part mounting part (Refer Enlargement 2)</p> <p>Wire upper part mounting part (Refer Enlargement 3)</p>
	<p>15.(Enlargement 2) Lower mounting part</p> <p>⑤Wire (P1、N、B)</p>
	<p>16.(Enlargement 3) Upper mounting part</p> <p>⑤Wire (P1、N、B)</p>
	<p>17.Replacement parts installation</p> <ul style="list-style-type: none"> • Mount the motor wires (U, V, W) to IPM by ⑦ screws (M5×12...3 places). ※Motor wire U should pass through the upper part and W should pass through the lower part current sensor • Reinstall the protection cover. <p>This completes replacing the IPM / drive board</p>



18.

The left picture shows the entire view of the finished control box.

(Before mounting the motor wire and protection cover)



19. Unnecessary parts after replacement

- IPM...4 pieces
- Copper bar...2 pieces
- IPM drive board
- Snubber
- Mounting bracket (with 3 spacers)
- Screw (M5...19 pieces, M4...6 pieces)

※Please return removed parts to our head office for quality assurance purpose.