

## INSTRUCTION MANUAL FRONT REMOTE HYDRAULIC CONTROL SYSTEM for KUBOTA STW34 / STW37 / STW40 TRACTOR

This manual describes the procedure for installing the control valve and 3rd function valve without attaching the front loader main frame.

To mount both the 3rd function valve and the front loader main frame, refer to the assembly instructions for LA454ST.

### SAFE OPERATION BEFORE VALVE KIT INSTALLATION

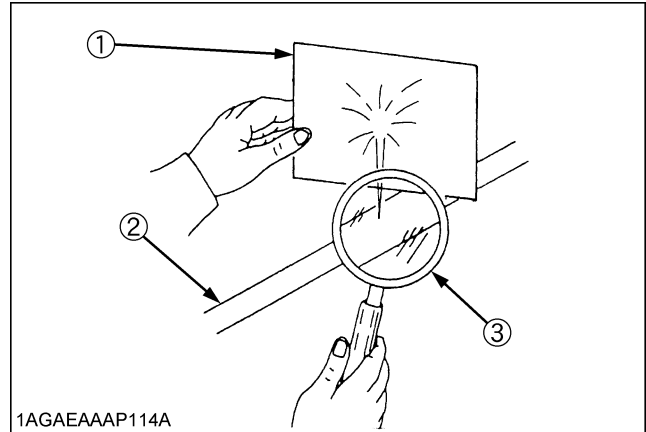
1. Never allow unqualified personnel to install or operate the valve kit.
2. Park the machine on a flat level and hard surface, preferably concrete.
3. Read and understand this installation manual completely as well as operator's manual and warnings.
4. Wear proper safety equipment such as safety goggles, protective gloves, safety boots, hard hat, etc., as appropriate or required.
5. Disconnect both battery cables, starting with the negative cable, before doing any welding.



### CAUTION

To avoid personal injury:

- Escaping hydraulic fluid under pressure has sufficient force to penetrate the skin causing serious personal injury. Before disconnecting lines, be sure to relieve all pressure. Before applying pressure to the system, make sure all connections are tight and that lines, pipes, and hoses are not damaged.
- Fluid escaping from pinholes may be invisible. Use a piece of cardboard or wood to search for suspected leaks: do not use hands. Use safety goggles or other eye protection.
- If injured by escaping fluid, see a medical doctor at once. Serious infection or reaction will result if proper medical treatment is not administered immediately. This fluid can produce gangrene or severe allergic reactions.



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- (1) Cardboard  
(2) Hydraulic line  
(3) Magnifying glass

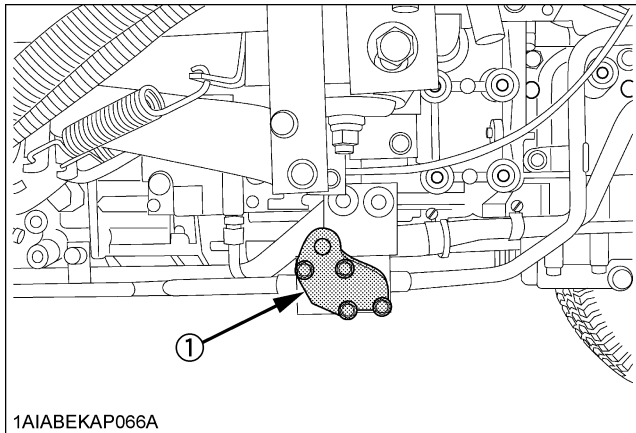
### ■ **S** process

- **S** process means any process that requires priority control due to its characteristics of having a high probability of leading to physical injuries or fire disasters because of abnormal values and defects in manufacturing quality.
- The marks in the text indicate the **S** process that includes the following safety characteristics.
  - Any assembly process with important safety characteristic values that require control to ensure product safety.
  - Any assembly process with characteristic values having impact on the strength and performance of **S** parts.
  - Previous occurrence of accidents related to **S** process (including probability).

## INSTALLATION INSTRUCTION

### Hydraulic Line

1. Remove the cover of the hydraulic block on the tractor.

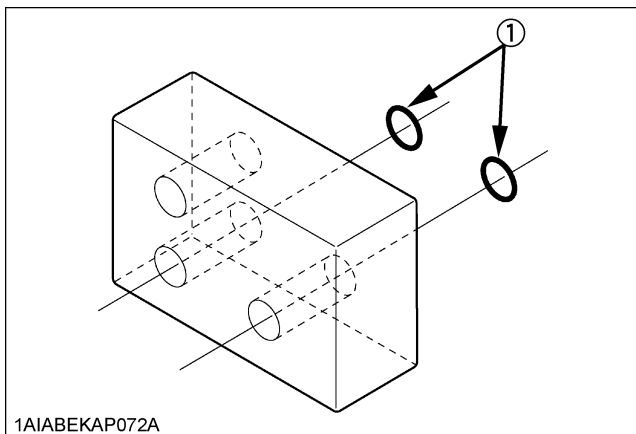


(1) Cover of hydraulic block

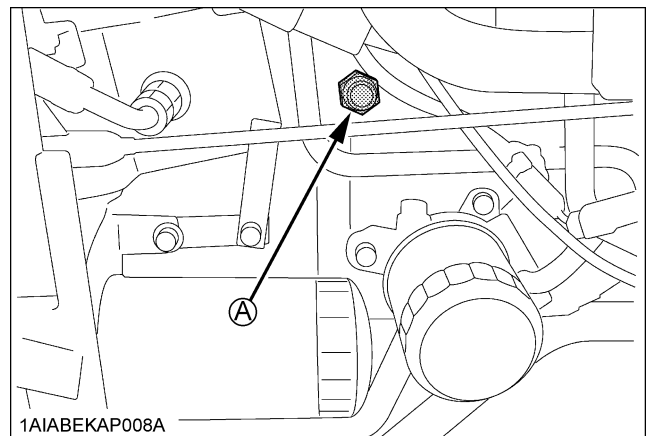
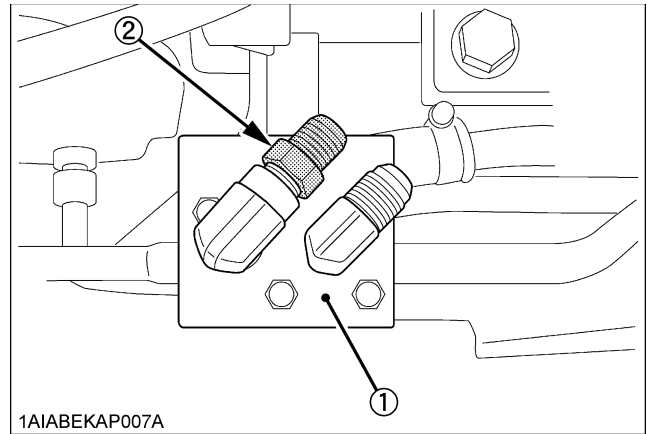
2. Install the loader hydraulic block to the tractor hydraulic block.
3. Wind sealing tape around the adapter and fit it into position.
4. Remove the M16 bolts and nuts, remove the rear wheels RH and LH.
5. Pull the plug out of the transmission case, and connect the tank port adapter.

#### NOTE :

- Make sure install the O-rings at the loader hydraulic block.
- Reuse the bolts fastening the hydraulic block cover.
- When removing the plug, oil will come out. Be careful not to spill oil on the ground.



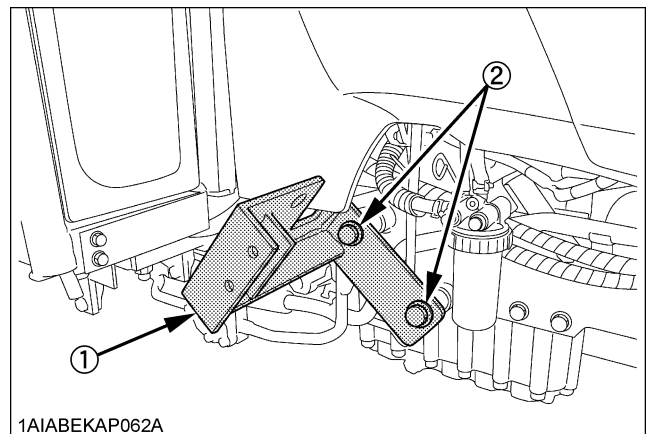
(1) O-ring



(1) Hydraulic block  
(2) Adapter

(A) Tank port adapter (Gray)

6. Attach the stay to the front axle frame.

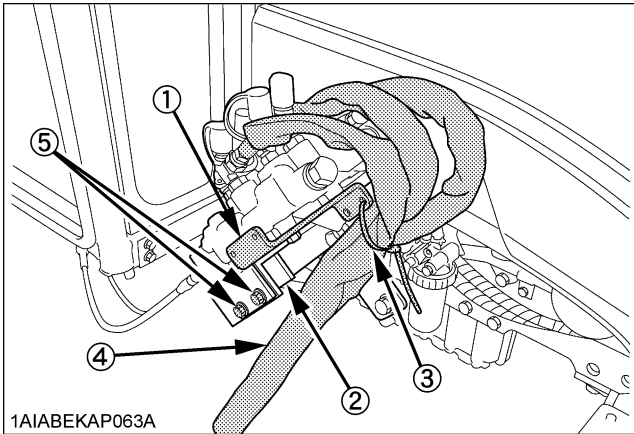


(1) Front implement stay  
(2) 2-M14 x 70 bolts  
2-M14 spring washers  
2-M14 plain washers

Tightening torque : 132 N·m (13.5 kgf·m)

7. Attach the valve to the stay and secure the hoses with the band.

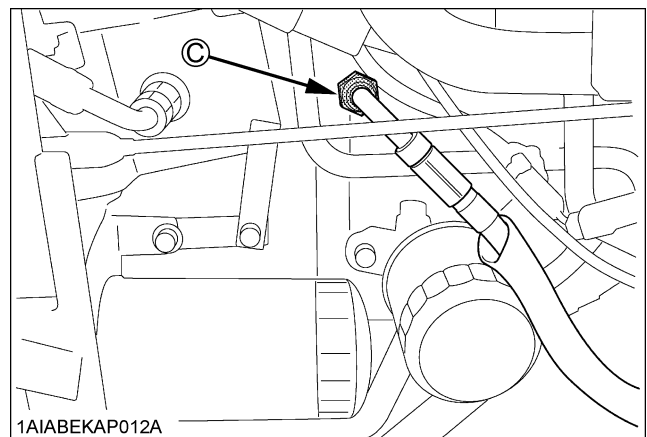
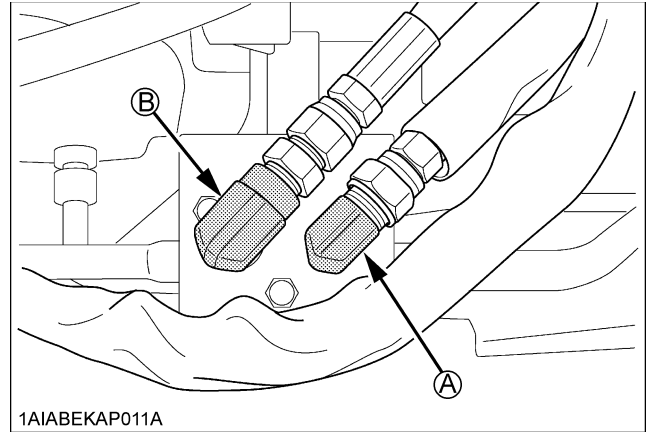
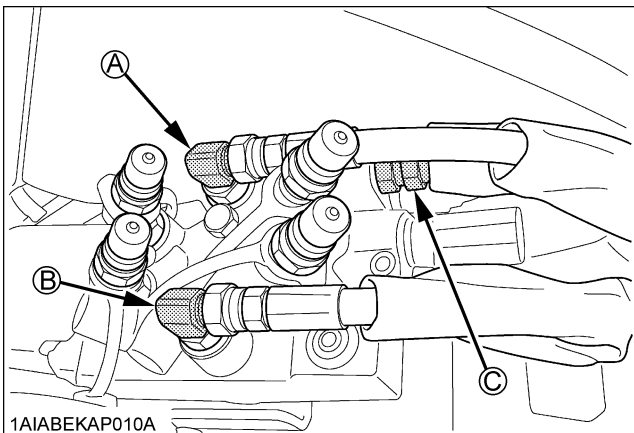
Undo the band from around the 3 hoses. Pass this band through the hole of the valve stay and tie up the hoses again in place.



- (1) Valve stay  
 (2) Front implement stay  
 (3) Band  
 (4) Hose  
 (5) 2-M10 x 35 bolts  
 2-M10 washers  
 2-M10 nuts

Tightening torque : 48.1 N•m (4.9 kgf•m)

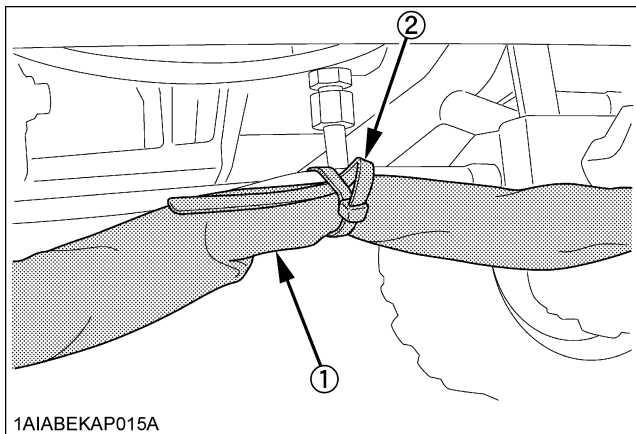
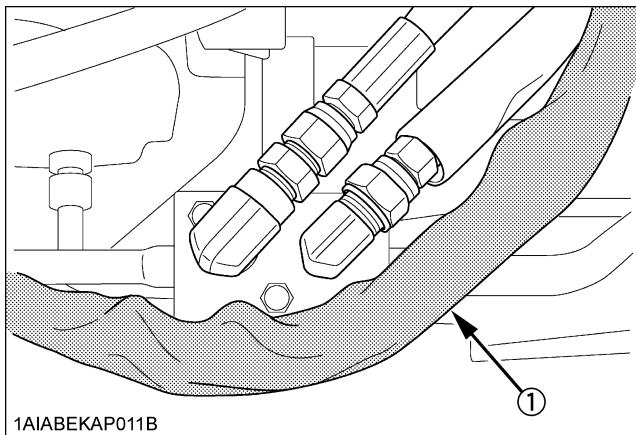
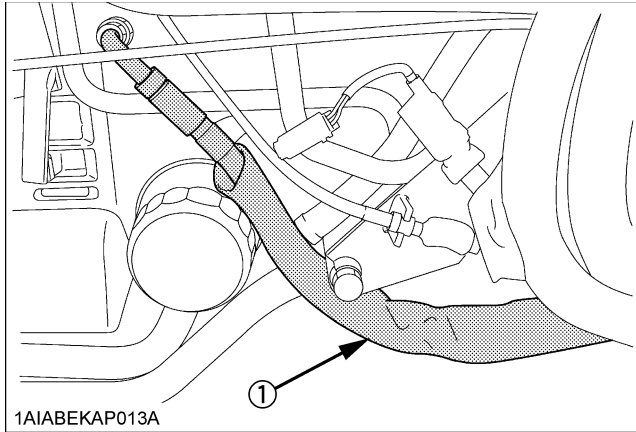
8. Connect the hose from pump port on the control valve assembly to pump port on the hydraulic block.  
 9. Connect the hose from power beyond port on the control valve assembly to power beyond port on the hydraulic block.  
 10. Connect the hose from tank port on the control valve assembly to tank port on the adapter.  
 11. Tighten up the hose ends at the hydraulic block adapters, and then tighten up the other ends at the valve.  
 12. Using the bands, clamp the hoses in their specified positions.



- (A) Pump port (Orange)  
 (B) Power beyond port (Green)  
 (C) Tank port (Gray)

**IMPORTANT :**

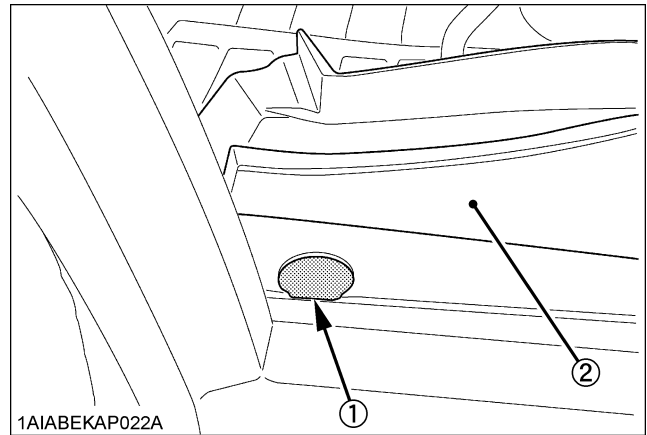
- Make sure to attach the sleeve to each hose before connecting.
- Hoses pre-installed on the control valve assembly are not securely tightened to ease installation of hoses to hydraulic block. Be sure to securely tighten all hose fittings after installing.
- Turn the hose fittings so the hoses clear the tractor and tractor parts.
- Pass the hose and secure it as shown below.
- Undo the band from around the 3 hoses. Pass this band through the hole of the valve stay and tie up the hoses again in place.



(1) Hose (tank)  
(2) Band

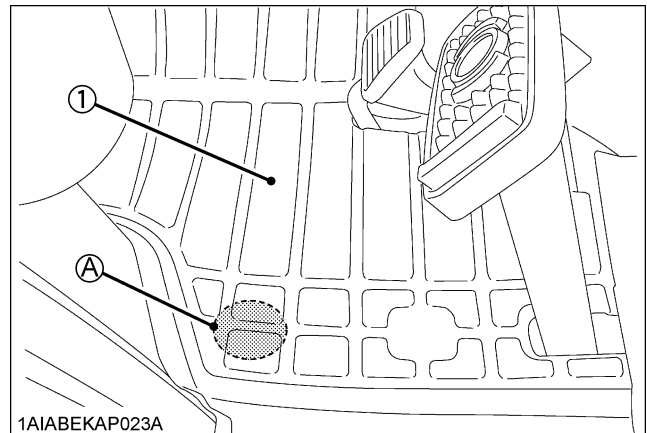
## ■ Control Lever

1. Pull up the step mat and peel off the label.



(1) Label  
(2) Mat

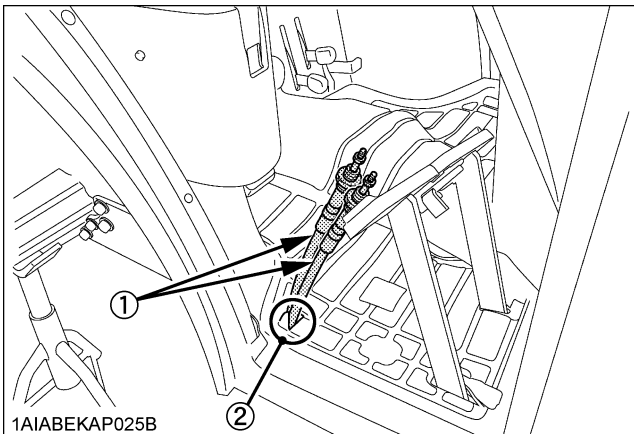
2. Referring to the hole, make a slit in the mat.



(1) Mat

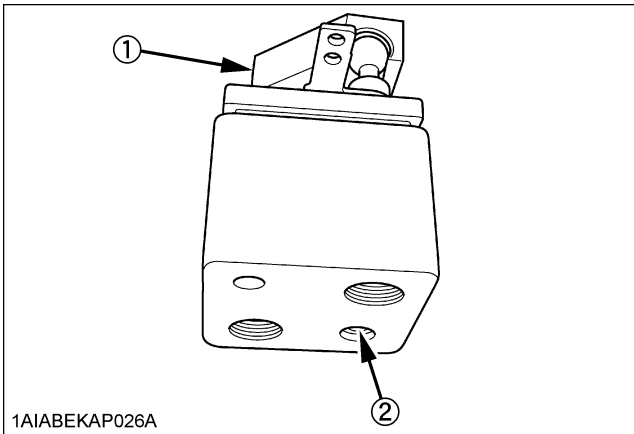
(A) Make a slit here.

3. Pass the hole of the step.



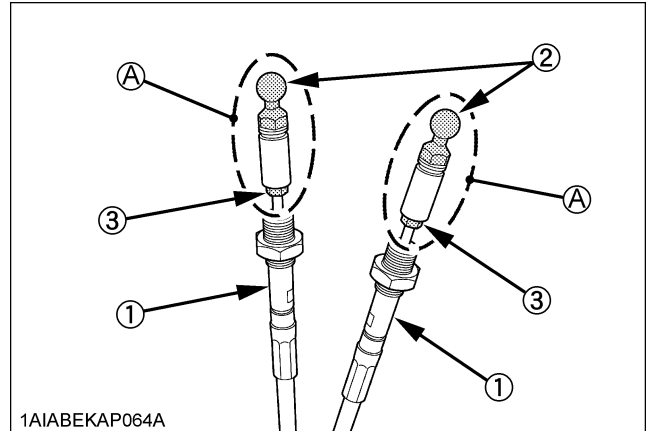
(1) Control cable  
(2) Hole

4. Remove the socket head cap screw and disassemble the lever block.



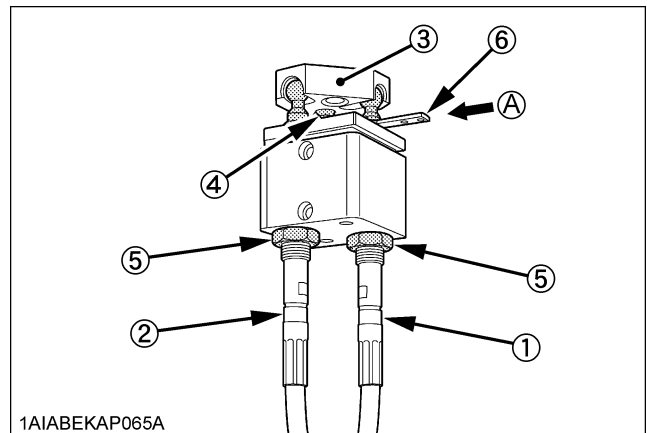
(1) Lever block  
(2) Socket head cap screw

5. Connect the control cables and cable ends. Apply grease to the cable ends.



(1) Control cable  
(2) Cable end  
(3) Lock nut  
Tightening torque : 9.8 N•m (1.0 kgf•m)  
(A) "Apply grease"

6. Screw the cables into the controller block and re-attach the lever block as shown.



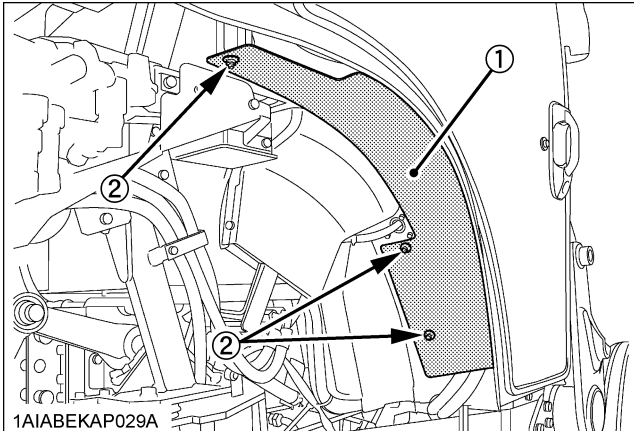
(1) Cable with blue tape for boom section  
(2) Cable with red tape for bucket section  
(3) Lever block  
(4) Control lever pivot  
(5) Nut  
Tightening torque : 60 N•m (6.1 kgf•m)  
(6) Lever lock  
(A) "Lock"

**NOTE :**

- To aid in assembly of the control lever, install the boom section cable end first and the bucket section cable end second. Then, connect the lever block to control lever pivot.

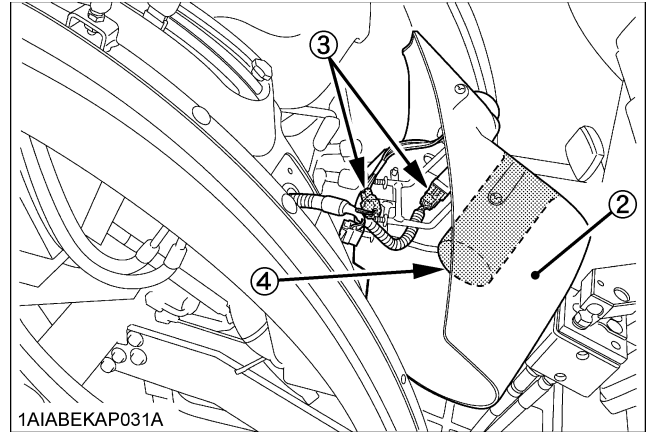
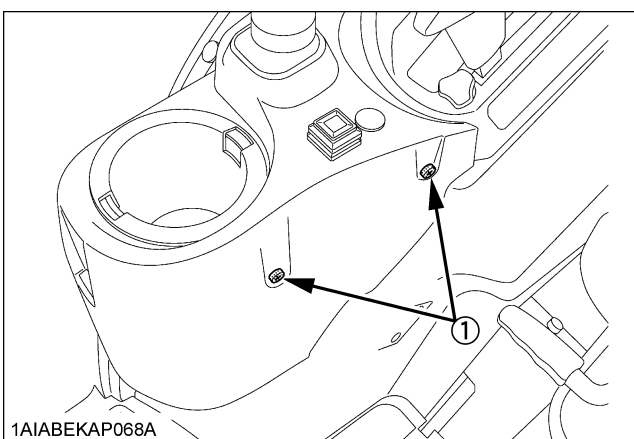
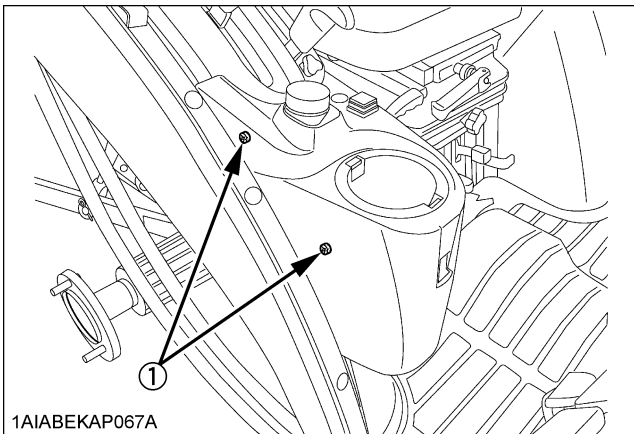
- Tighten the socket head cap screw at the control lever pivot.
- Adjust the length of each cable so that the bottom of the groove on the cable ends align with the top surface of the controller. The lever lock on the controller should lock the control lever in the neutral position when the cable ends are adjusted correctly.

9. Lock the cable in place with the large lock nuts.  
 10. Detach the cover from behind the fender



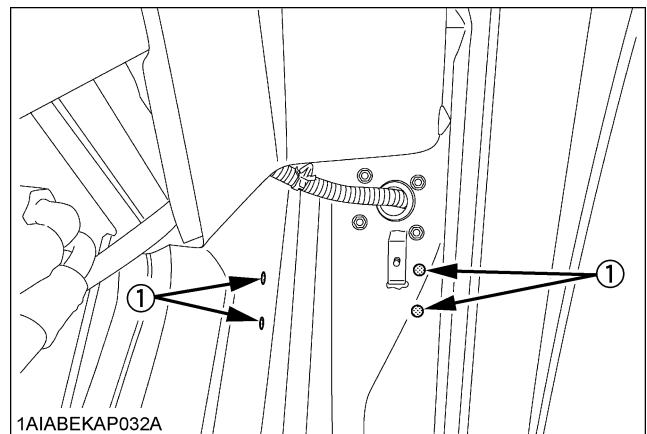
- (1) Fender's rear cover  
 (2) Nut

11. Remove the screws and detach the console.  
 Disconnect the connectors at the same time.  
 12. Detach the cup holder from the console.



- (1) Screw  
 (2) Console  
 (3) 2-connectors  
 (4) Cup holder

13. In alignment with the fender's holes, make holes in the sponge too.

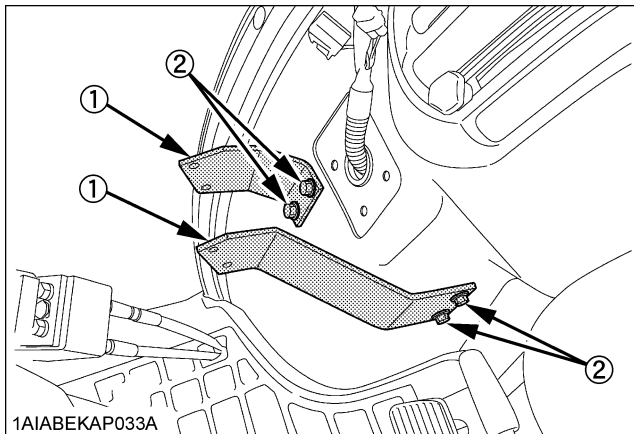


- (1) Hole

**NOTE :**

- In make these holes, be careful not to place your hand on the opposite side not to get it injured.

14. Fit the stay to the holes.

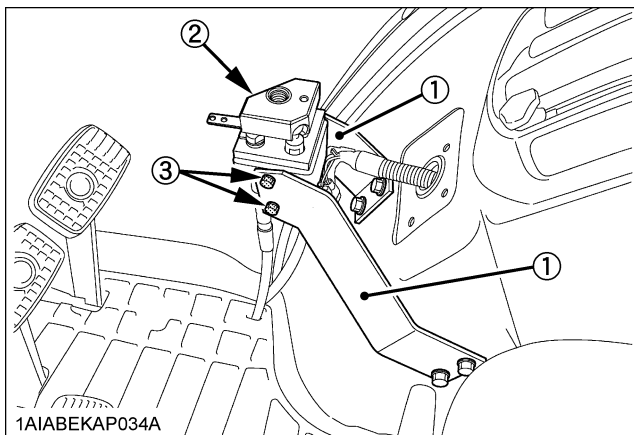


- (1) Stay  
 (2) 4-M8 x 20 bolts  
 4-M8 nuts  
 Tightening torque : 23.6 N•m (2.4 kgf•m)

**NOTE :**

- Pay attention to the direction of the bolts. (Apply them as shown above.)
- Do not tighten the bolts securely.

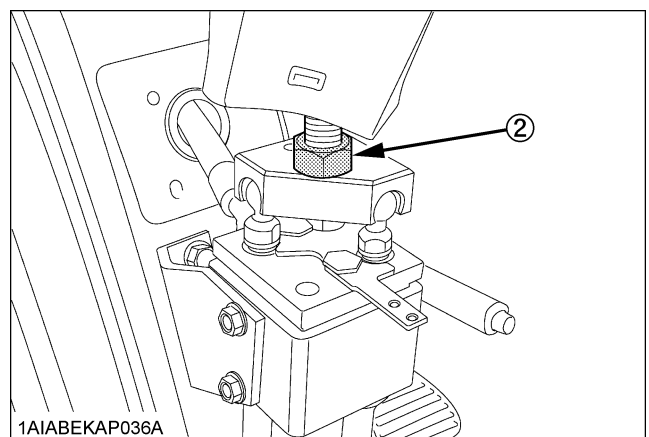
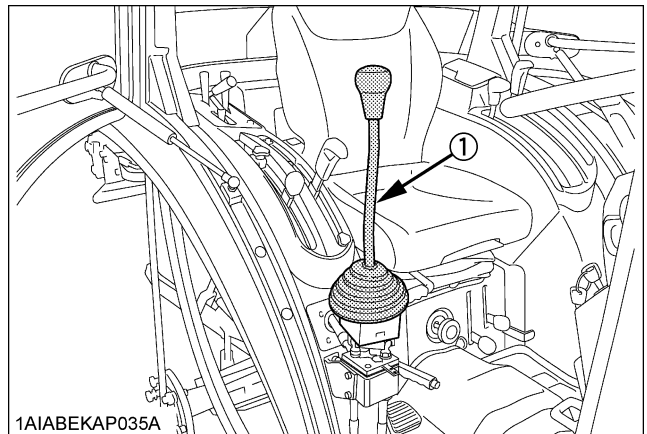
15. Secure the lever block to the stay.



- (1) Stay  
 (2) Lever block  
 (3) 4-M6 x 90 bolts  
 4-M6 nuts  
 Tightening torque : 9.8 N•m (1.0 kgf•m)

16. Tighten the stay securely.

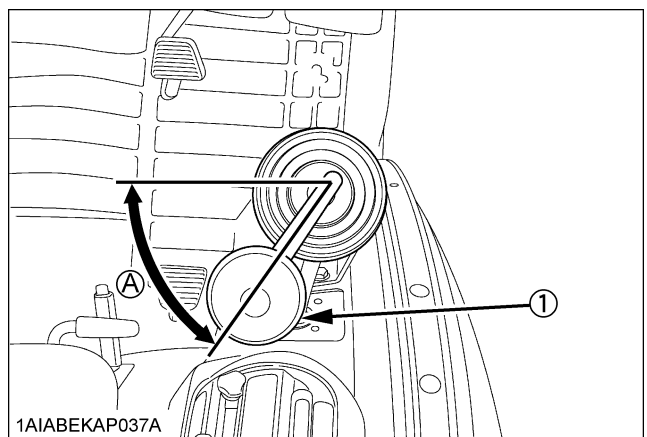
17. Attach the lever.



- (1) Lever  
 (2) Nut  
 Tightening torque : 60 N•m (6.1 kgf•m)

**NOTE :**

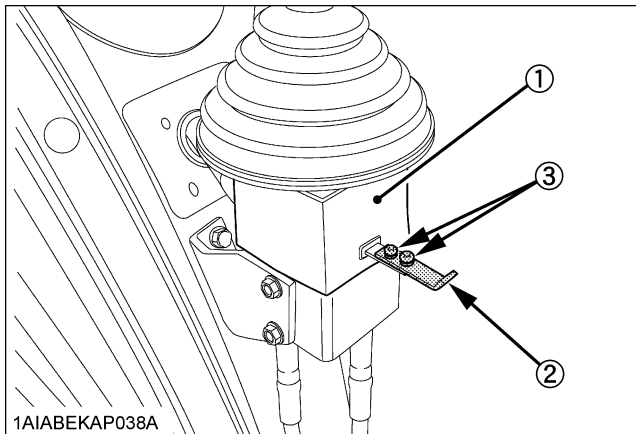
- Position the lever, paying attention to its angle as shown below.



(1) Lever

(A) 45°

18. Attach the boot and lever lock.



- (1) Boot  
 (2) Lever lock  
 (3) 2-M4 x 6 screws

**NOTE :**

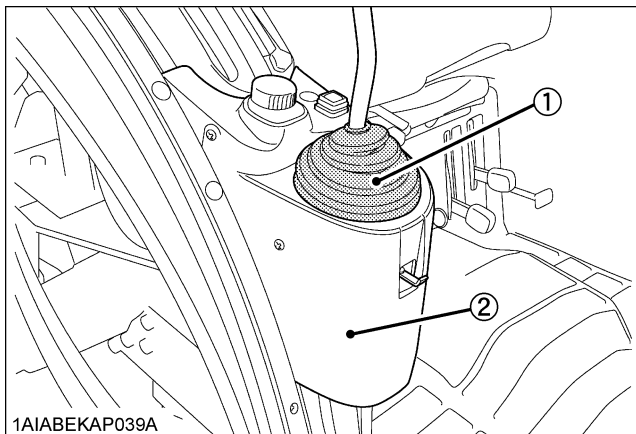
- Fit the boot deep enough in the block's groove.

19. Reattach the wire harness, console and the fender's rear cover in position in the reverse order of them.

**NOTE :**

- Tightening torque in fitting the fender's rear cover :  
 9.8 N·m (1.0 kgf·m)

20. Attach the boot to the console.

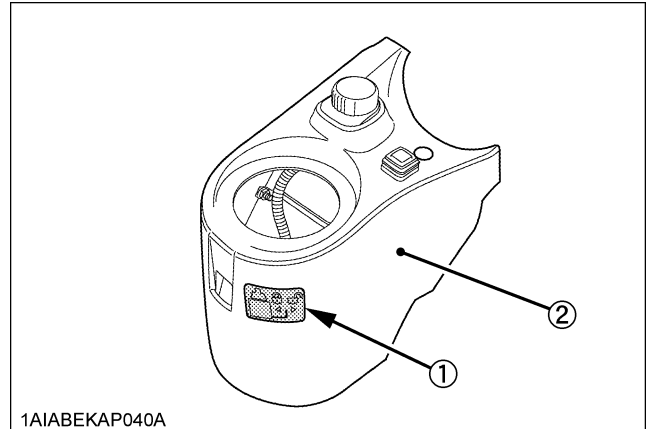


- (1) Boot  
 (2) Console

**NOTE :**

- Fit the boot tight enough in the console.

21. Apply the label to the console in position as shown below.



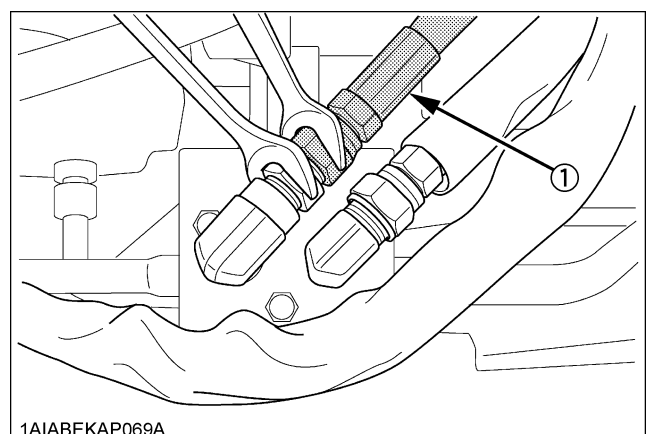
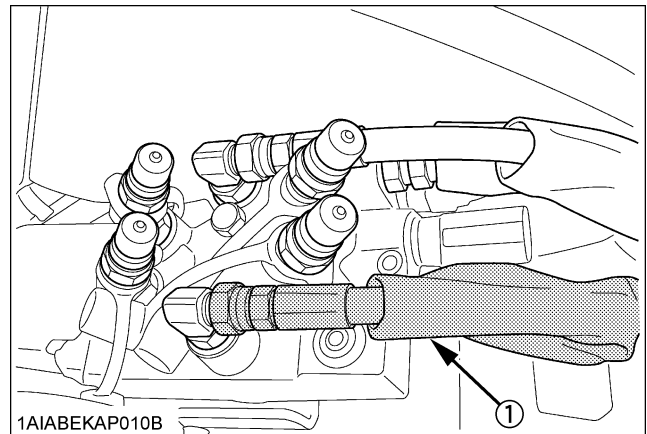
- (1) Label  
 (2) Console

22.  Attach the rear wheels RH and LH with the original parts.

Tightening torque (M16 bolts and nuts):  
 197 to 225 N·m (20.0 to 23.0 kgf·m)

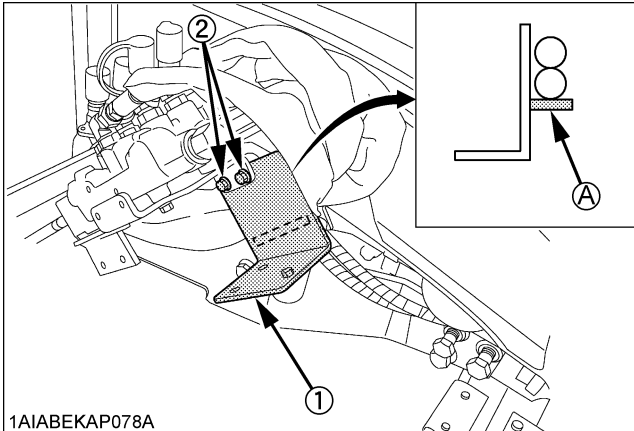
**3rd Function (Option)**

1. Disconnect the hose as shown below.



- (1) Hose (Green)

2. Undo the band that secures the hoses to the control valve assembly. Bolt down the stay in position.

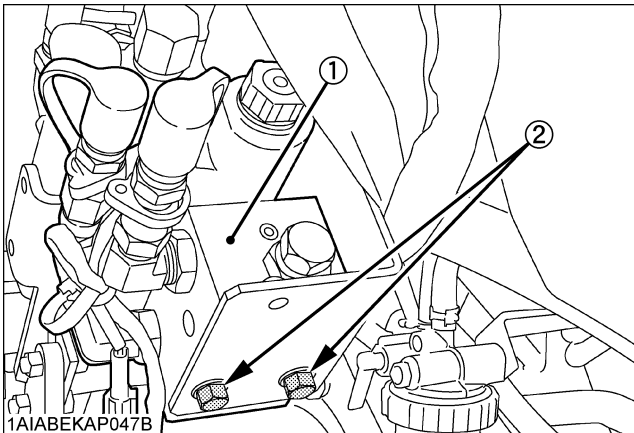


- (1) Stay  
 (2) 2-M8 x20 bolts  
 Tightening torque : 23.6 N•m (2.4 kgf•m)

**NOTE :**

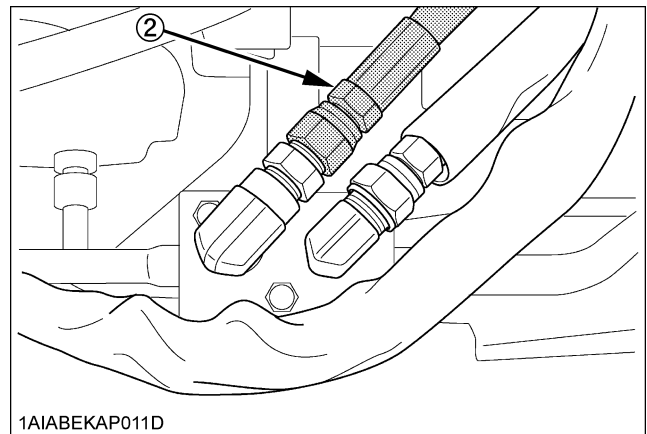
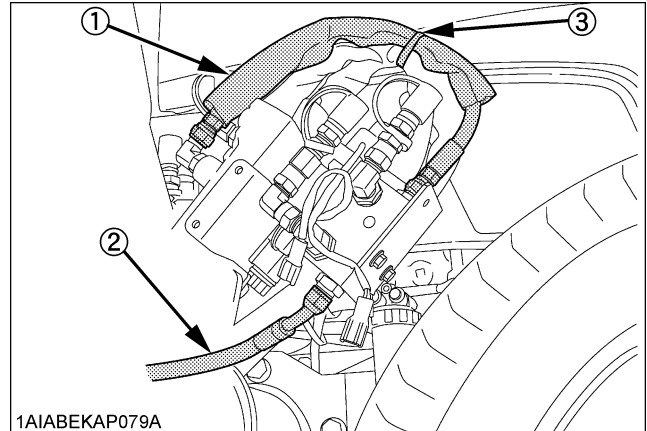
- Place the IN and OUT hoses on the plate (A) behind the stay. Do not allow any contact with the separator.

3. Attach the 3rd function valve to the stay.



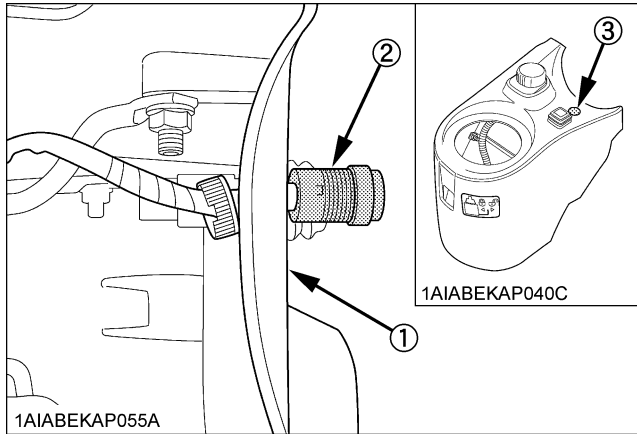
- (1) 3rd function valve  
 (2) 2-M10 x 25 bolts  
 Tightening torque : 48.1 N•m (4.9 kgf•m)

4. Connect the 2 hoses and secure them with the band as shown below.



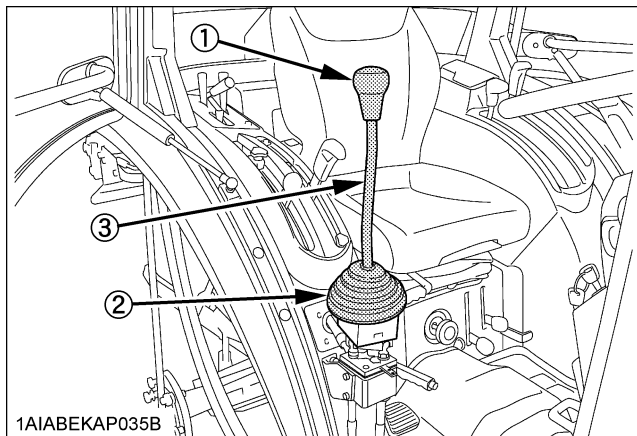
- (1) PB hose 1  
 (2) PB hose 2  
 (3) Band

5. Detach the console.  
(Refer to the step 11 in the "Control Lever" section.)  
(P6)
6. Remove the plug from the console and connect the switch.



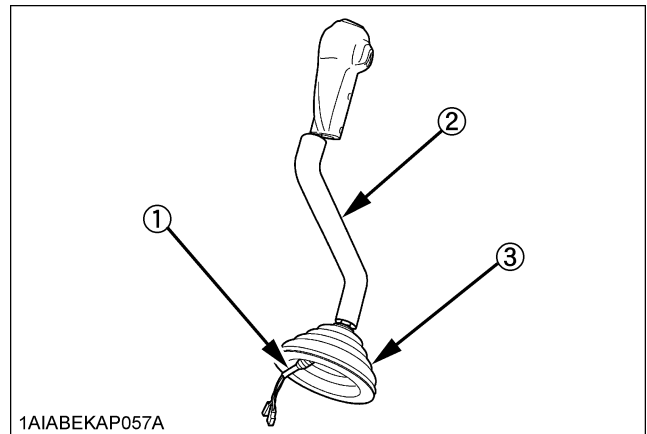
- (1) Console
- (2) Switch
- (3) Plug

7. Remove the grip and boot from the lever.



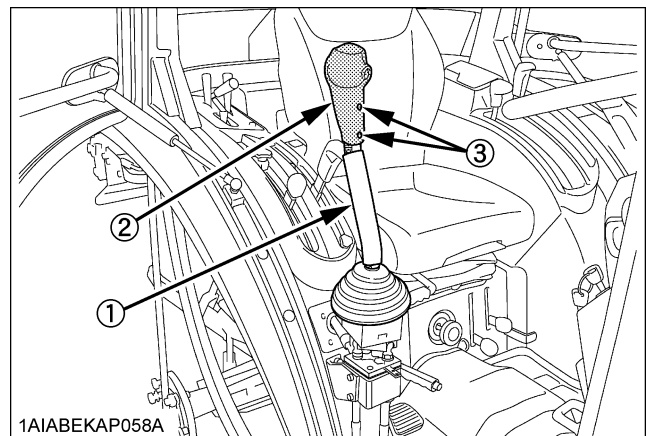
- (1) Grip
- (2) Boot
- (3) Lever

8. Pass the grip wire harness as shown below.



- (1) Grip wire harness
- (2) Wire harness cover
- (3) Boot

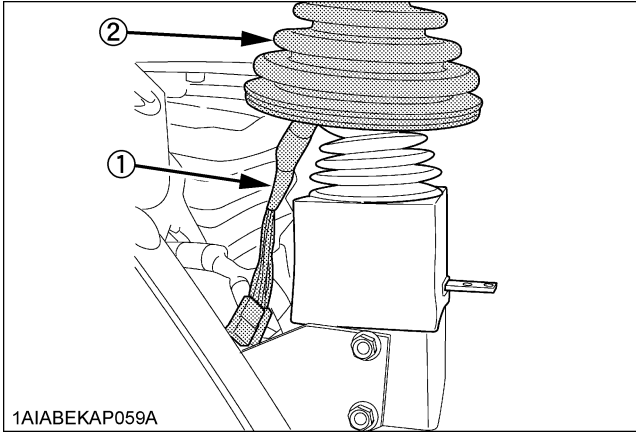
9. Pass the grip wire harness through the lever and attach the 3rd function grip.



- (1) Lever
- (2) 3rd function grip
- (3) 2-screws

**NOTE :**

- Be careful to secure the 3rd function grip in its specified direction. (Fit the grip in the threaded hole.)
- Be careful not to confuse the positions of the grip wire harness and the boot.

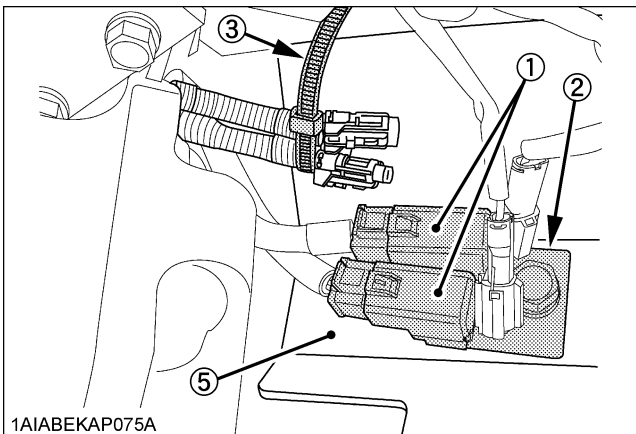


(1) Wire harness  
(2) Boot

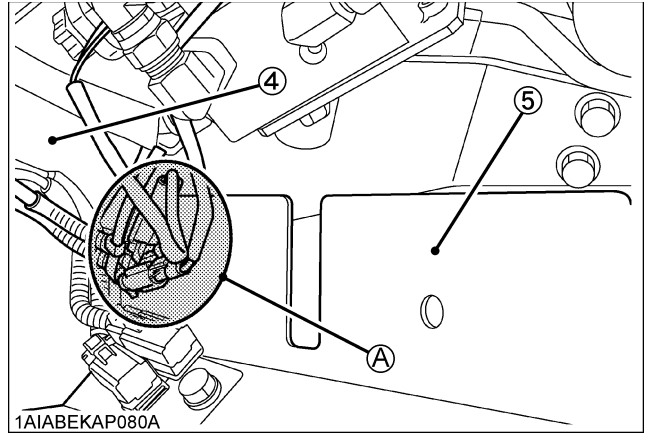
10. Attach the relay to the relay stay, connect the wire harness.

Using the band, secure the solenoid wire harnesses to the 3rd function cover at the main wire harness.

Lay the solenoid wire harnesses at the valve side as shown below. Then connect these harnesses to those secured on the 3rd function cover.

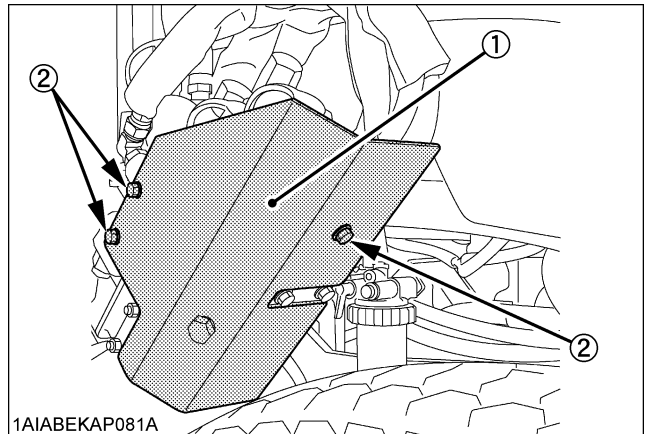


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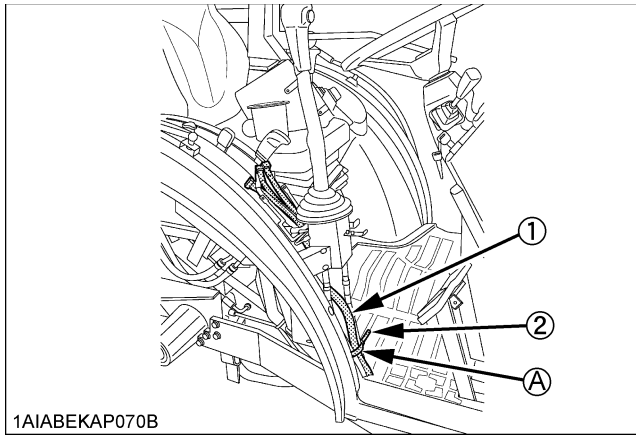
(1) Relay  
(2) Relay stay  
(3) Band  
(4) Round pipe  
(5) 3rd function cover  
(A) Red and black wire harness to be in front of the solenoid

11. Attach the 3rd function cover.



(1) 3rd function cover  
(2) 3-M8 x 16 bolts  
Tightening torque : 23.6 N·m (2.4 kgf·m)

12. Pass the wire harness through the hole of the step. Then using the band, secure this harness at the white-taped spot.



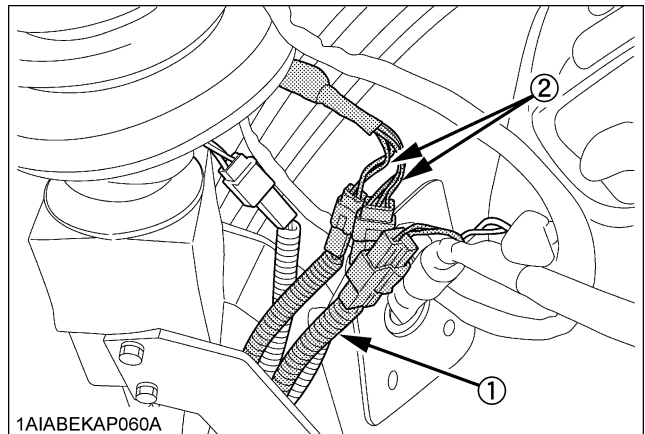
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- (1) Wire harness
- (2) Band
- (A) White-taped spot

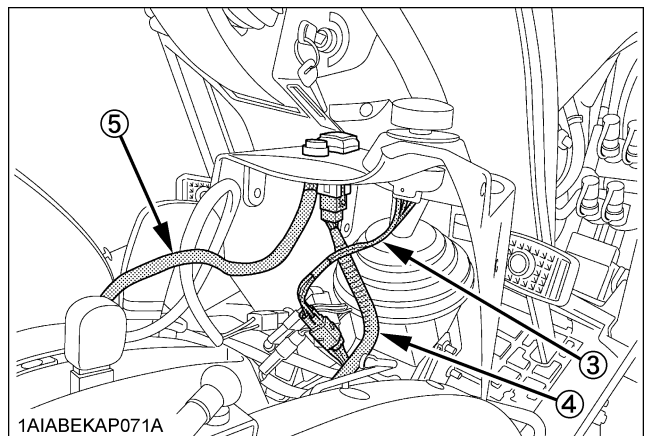
**NOTE :**

- Make sure that the wire harness is not sagging.

13. Connect the wire harness.



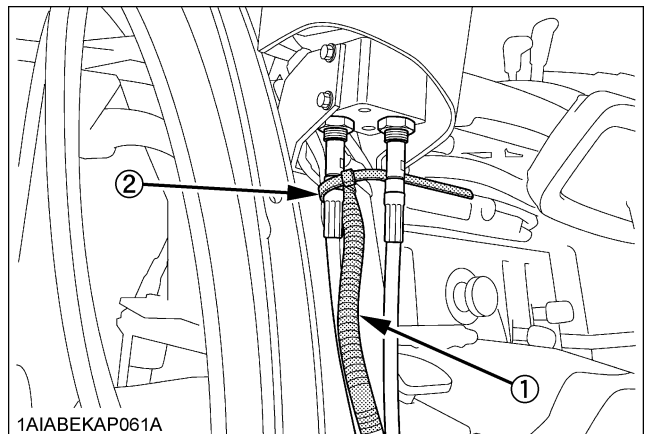
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- (1) Electric wire harness
- (2) 3rd AB wire harness
- (3) PTO wire harness
- (4) Hazard wire harness
- (5) ON/OFF switch wire harness

14. Secure the wire harness with the band at the white-taped spot as shown below.

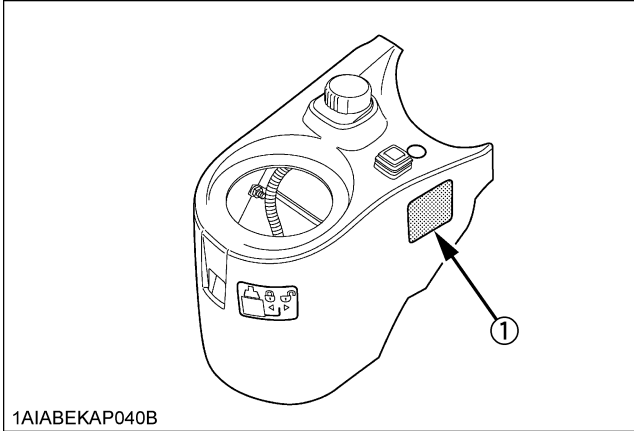


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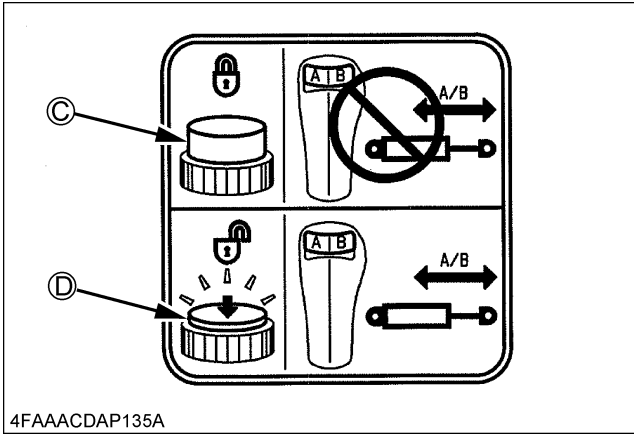
- (1) Wire harness
- (2) Band

15. Reassemble the console in the reverse order of undoing them.

16. Apply the label as shown in the illustration.



(1) Label



(C) Front hydraulic valve main switch "OFF"  
 (D) Front hydraulic valve main switch "ON"

17. Front hydraulic valve main switch

Push the front hydraulic valve main switch (1) to engage the front hydraulic valve.

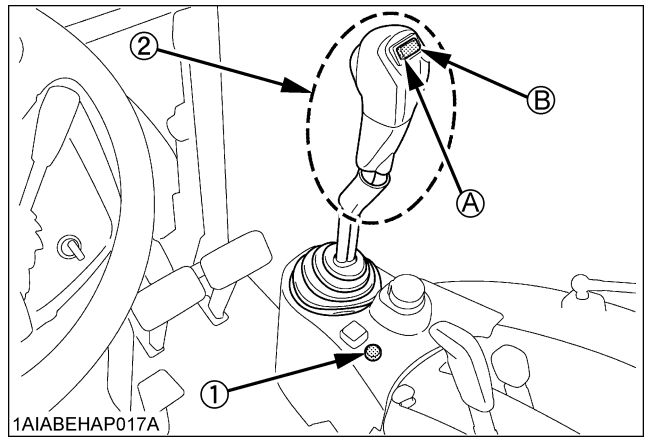
A light on the switch will illuminate to indicate that the front hydraulic valve is on, and to enable the activation switch (2).

18. Activation switch

(1) When pressing the "A" button, hydraulic oil will come out of the port A and return through the port B as long as the switch is pressed.

(2) When pressing the "B" button hydraulic oil will come out of the port B and return through the port A as long as the switch is pressed.

19. Push the front hydraulic valve main switch again to disengage the front hydraulic valve, and the light of the front hydraulic valve main switch will turn off.



(1) Front hydraulic valve main switch  
 (2) Activation switch

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## CHECK LIST FOR INSPECTION AFTER ASSEMBLY

Inspector:	Date completed:
Loader model:	Serial No.:

No.	Inspection item	Result
1	Check for proper tightening of the rear wheel RH and LH. Tightening torque for M16 bolts and nuts: 197 to 225 N·m	