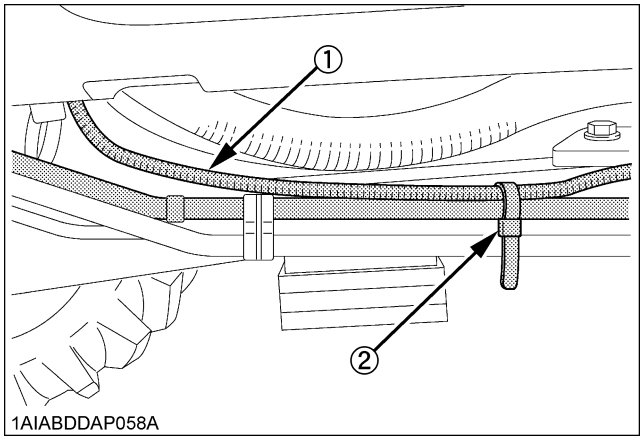
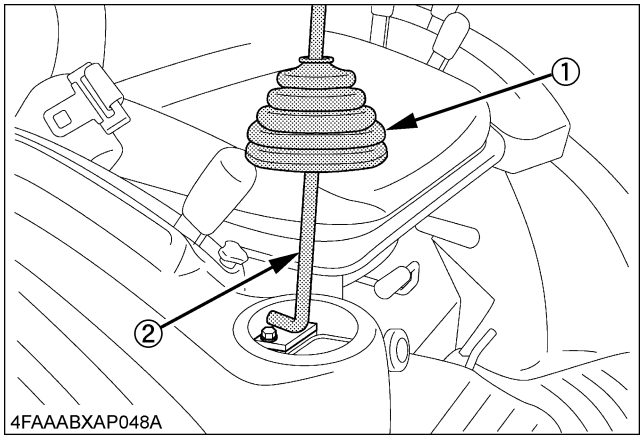
12. Fix the wire harness to the pipe with the cord band.



(1) Wire harness
(2) Cord band

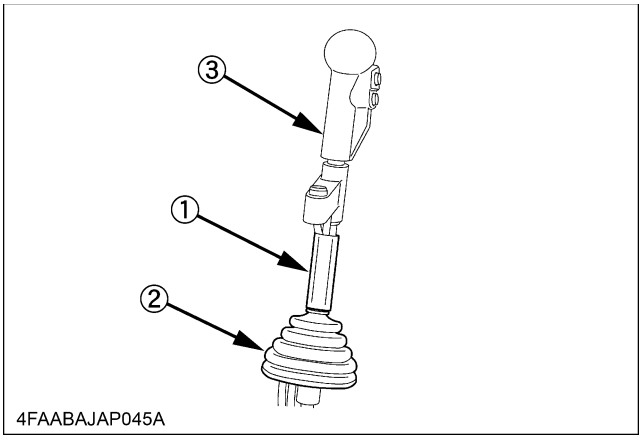
[B7302A] (with lever cover model)

1. Remove the lever boot first and then the control lever. The lever boot will be reused.



(1) Lever boot
(2) Control lever

2. Attach the lever cover first and then the lever boot to the 3rd function lever.



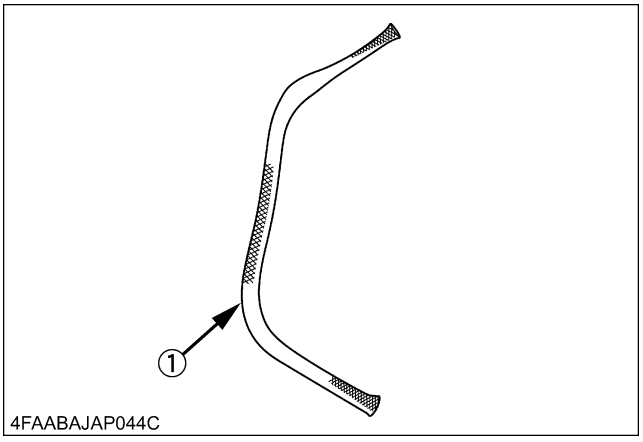
(1) Lever cover
(2) Lever boot
(3) 3rd function lever

NOTE :

- Then follow Step 3 and on in [B7302] (without lever cover model).

◆ Controller Section (ROPS Model)

Before assembly, check whether the lever cover is included or not in the kit.



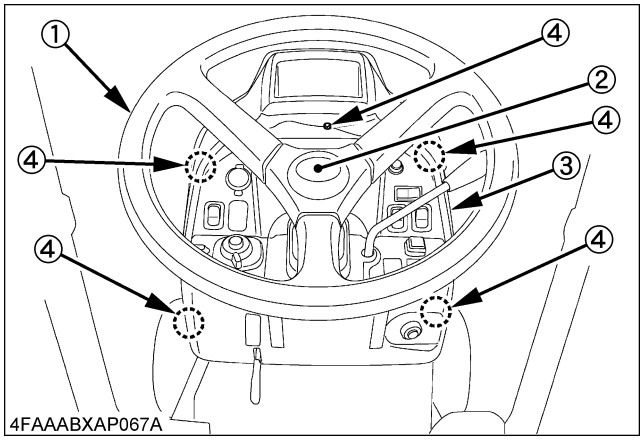
(1) Lever cover

NOTE :

- In case lever cover is "not" included, refer to "B7308". In case lever cover is included, refer to "B7308A".

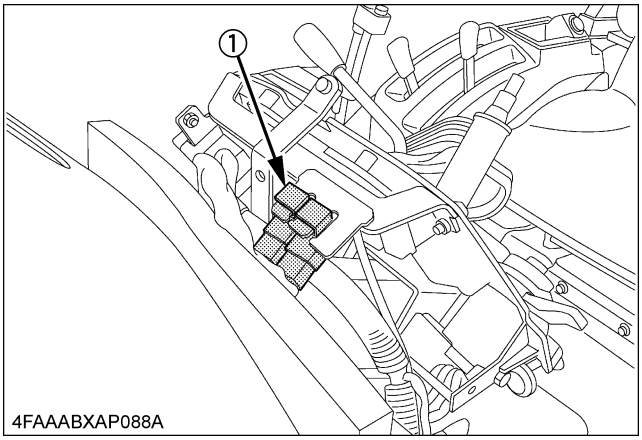
[B7308] (without lever cover model)

1. Detach the steering wheel removing the pad, an M12 nut and spring washer and then detach the meter panel removing the 5 bolts.



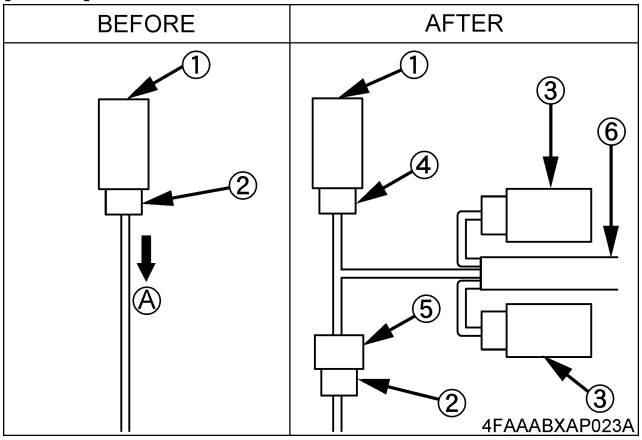
(1) Steering wheel
(2) Pad
M12 nut
Spring washer
(3) Meter panel
(4) Bolt

2. Disconnect the relays and connect the wire harness as shown in the following figure.



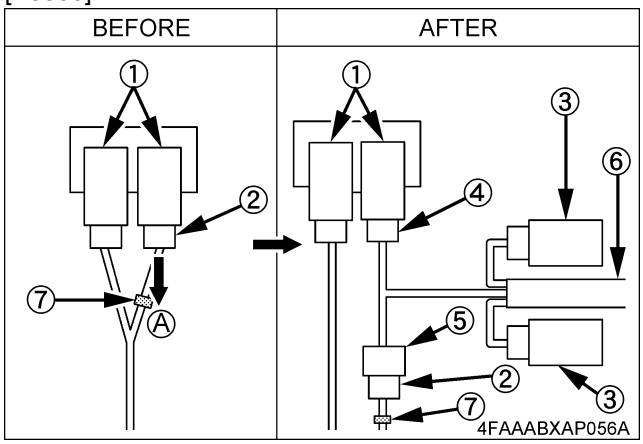
(1) Relay

[B2650]



(1) Relay (original)
(2) Connector (male, original)
(3) Relay
(4) Connector (male)
(5) Connector (female)
(6) Wire harness
(A) Disconnect

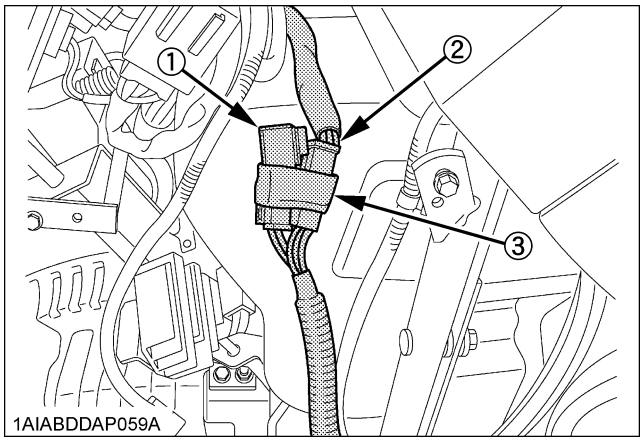
[B3350]



(1) 2-Relays (original)
(2) Connector (male, original)
(3) Relay
(4) Connector (male)
(5) Connector (female)
(6) Wire harness
(7) Yellow tape
(A) Disconnect

NOTE :
- If the yellow tape is not found here, disconnect the connector having the yellow / black, red / yellow, black and white / black wires and connect the wire harness.

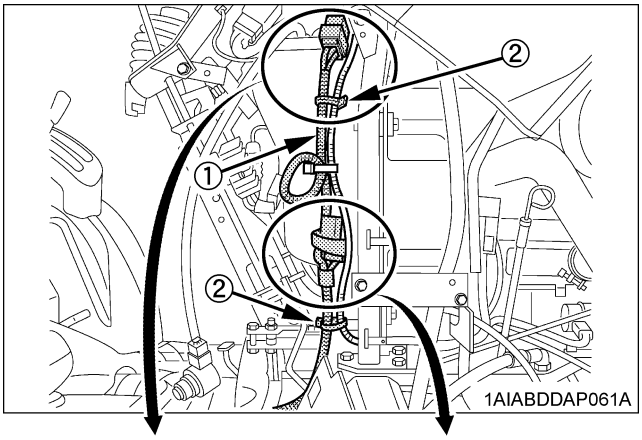
3. Using the black plastic tape, secure the attached relay upward to the wire harness as shown below.

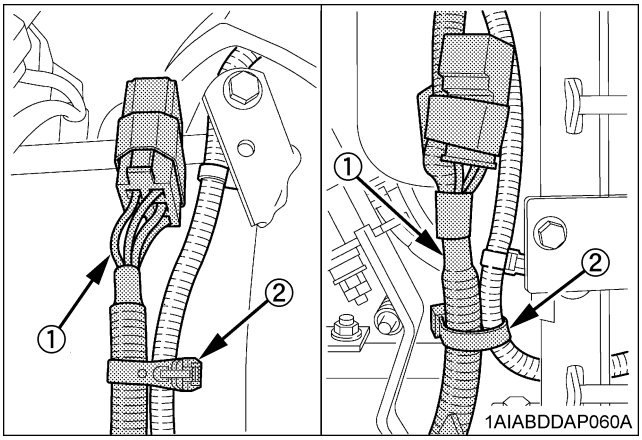


(1) Relay
(2) Wire harness
(3) Plastic tape (a couple of turns)

NOTE :
- Wind the plastic tape a couple of turns to avoid its peel-off.

4. Pass the wire harness and bind it by the cord band as shown below. Cut off excess cord band.

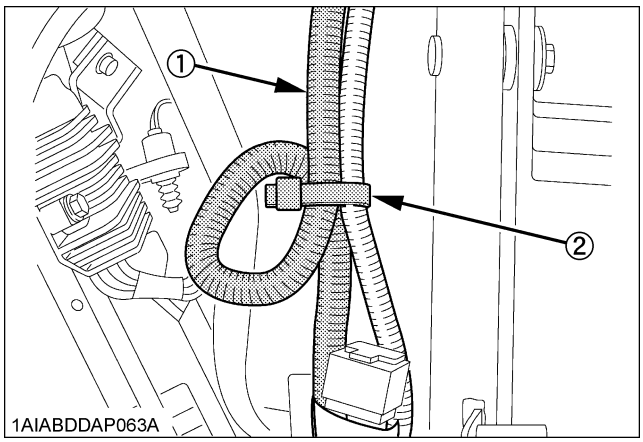




(1) Wire harness
(2) 2-Cord bands

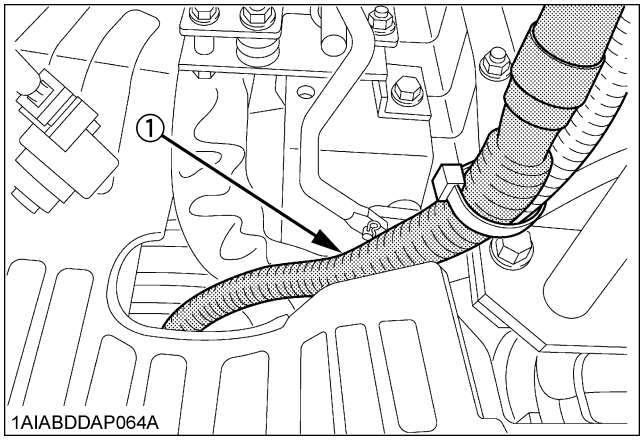
IMPORTANT :
- Wind the cord bands around the plastic protectors. If the bands are wound directly around the bare wires, it may cause a short circuit.
- Secure all the relays that will face upwards.

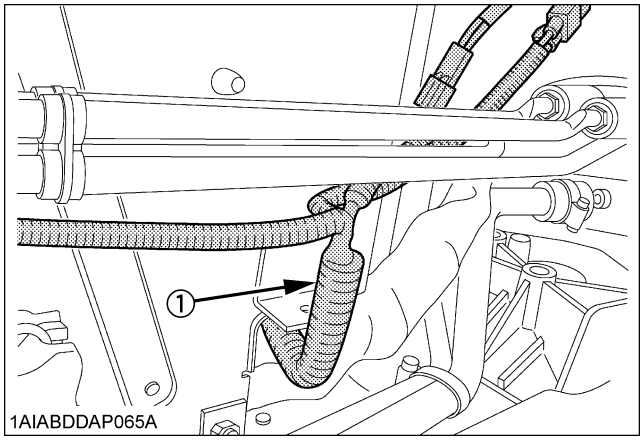
5. If there is an excess wire harness, make a neat coil as shown below. Cut off excess cord band.



(1) Wire harness
(2) Cord band

6. Pass the wire harness below the step.

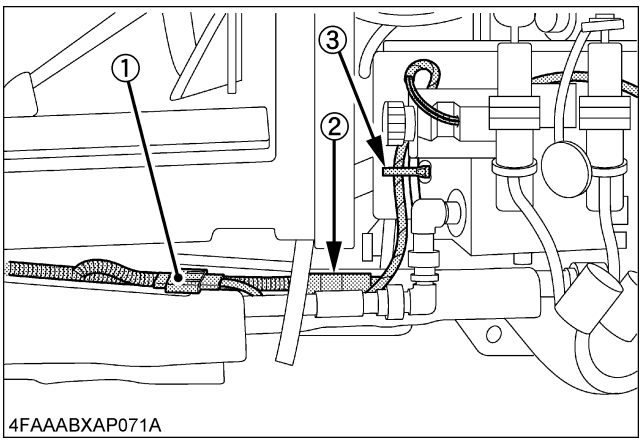




(1) Wire harness

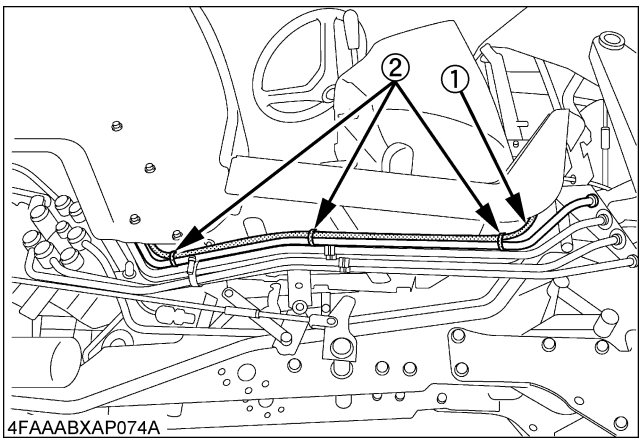
IMPORTANT :
- In fitting the wire harness, make sure the wire harness is out of contact with the movable parts.

7. Connect the wire harness and solenoid valve harness. And then bind them by the cord band.



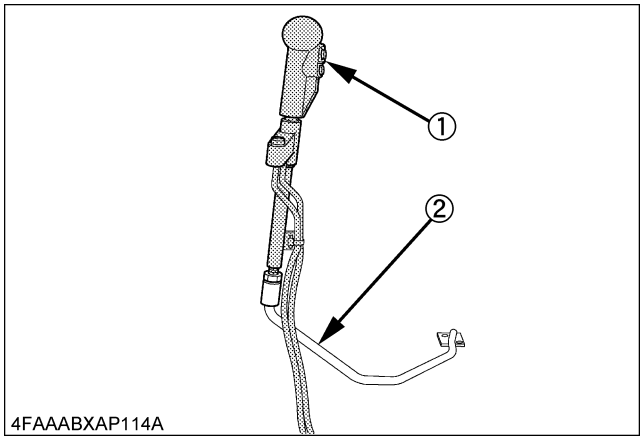
(1) Solenoid valve harness 1
(2) Solenoid valve harness 2
(3) Band

8. Pass the wire harness as shown below and fix it with the band.



(1) Wire harness
(2) Band

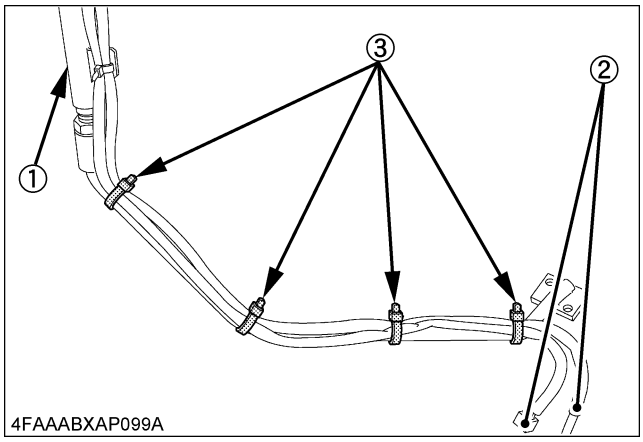
9. Fit the 2 control levers into position.



(1) Control lever 1
(2) Control lever 2

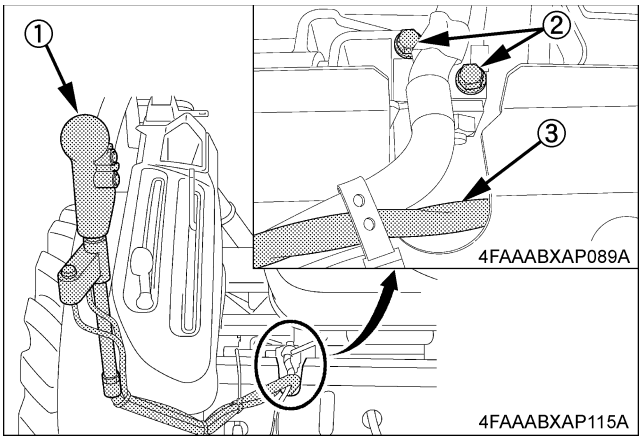
NOTE :
- Make sure the button is positioned toward the operator's seat.

10. As shown below, fix the wire harnesses to the control levers with the bands.



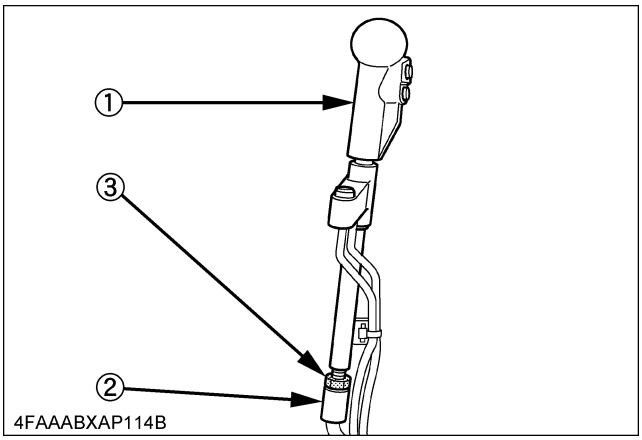
(1) Control lever assy
(2) 2-Wire harnesses
(3) Band (4 locations at the levers' curves)

11. Replace the original control control lever with new one and pass the wire harness as shown below.
Then, connect the wire harness.



(1) Control lever
(2) 2-M6 bolts
(3) Wire harness

12. Reposition the grip of control lever 1 so that its button faces the operator's seat. Then tighten up the nut.

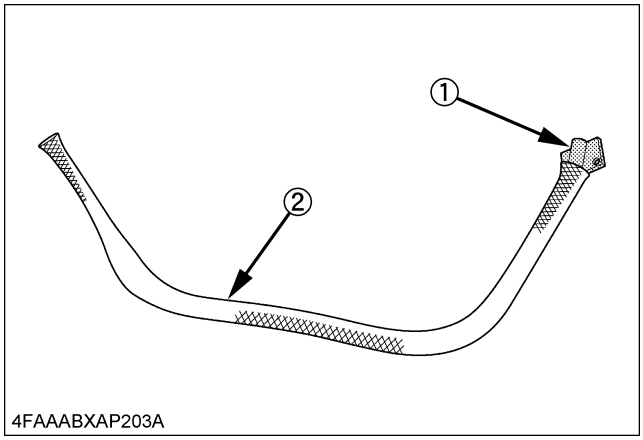


(1) Control lever 1
(2) Control lever 2
(3) M14 nut

[B7308A] (with lever cover model)

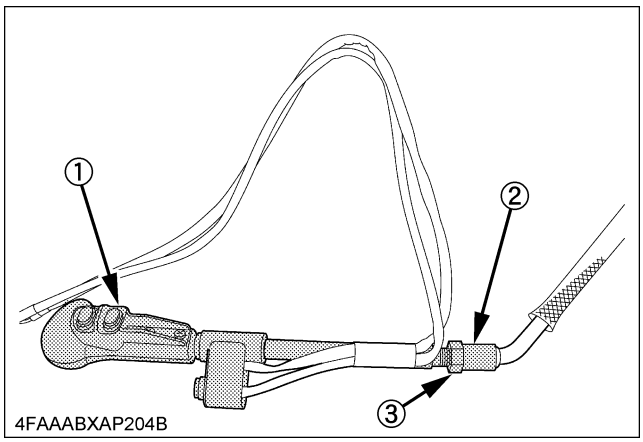
NOTE :
- For steps 1 through 9, refer to [B7308] (without lever cover model).

10. Install the lever cover onto the control lever 2.



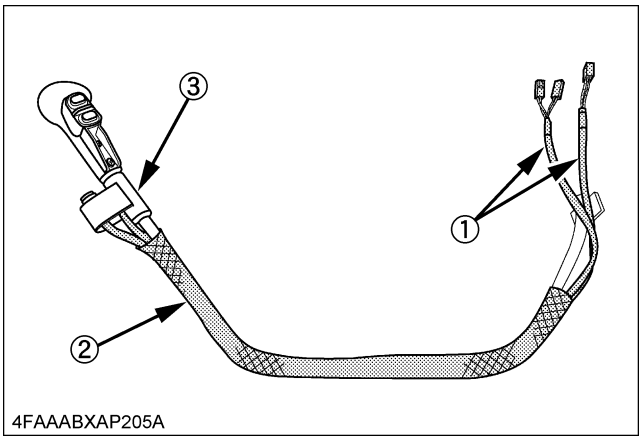
(1) Control lever 2
(2) Lever cover

11. Connect the control lever 1 to the control lever 2 and secure them with the nut.



(1) Control lever 1
(2) Control lever 2
(3) M14 nut
Tightening torque:
See "TIGHTENING TORQUE OF BOLTS AND NUTS" section.

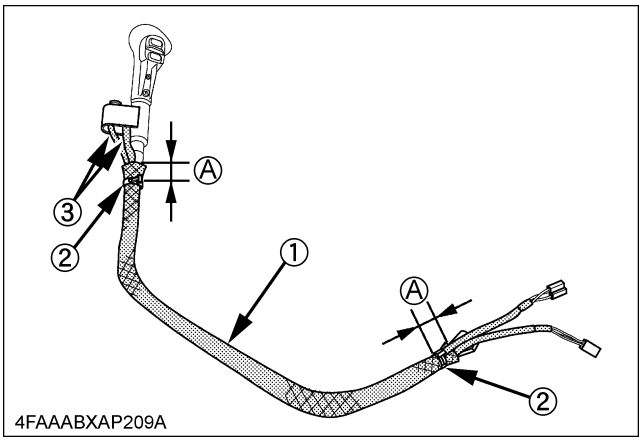
12. Pass the lever wire harness through the lever cover. Then cover the entire lever assembly with the lever cover as shown in the figure.



(1) 2-Wire harnesses
(2) Lever cover
(3) Lever assy

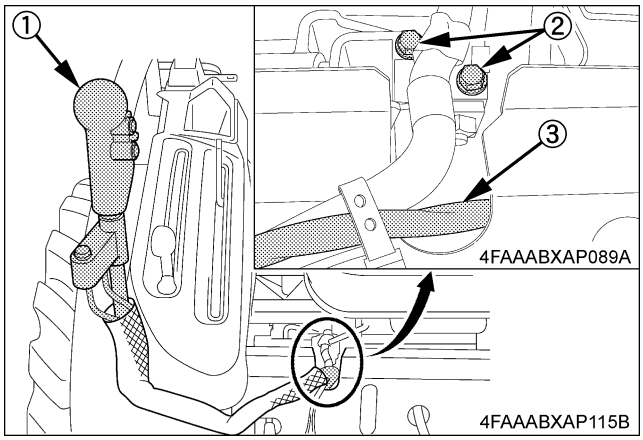
NOTE :
- Make sure the button is positioned toward the operator's seat.

13. Fix both ends of the lever cover with the cord band as shown in the figure. Then cut off excess cord band.



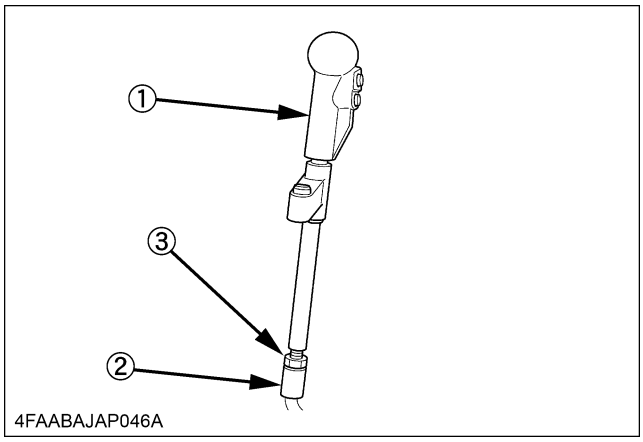
(1) Lever cover
(2) 2-Cord bands
(3) 2-Wire harnesses
(A) 20 to 30 mm (0.8 to 1.2 in.)

14. Replace the original control lever with new one and pass the wire harness as shown below. Then, connect the wire harness.



(1) Control lever
(2) 2-M6 bolts
(3) Wire harness

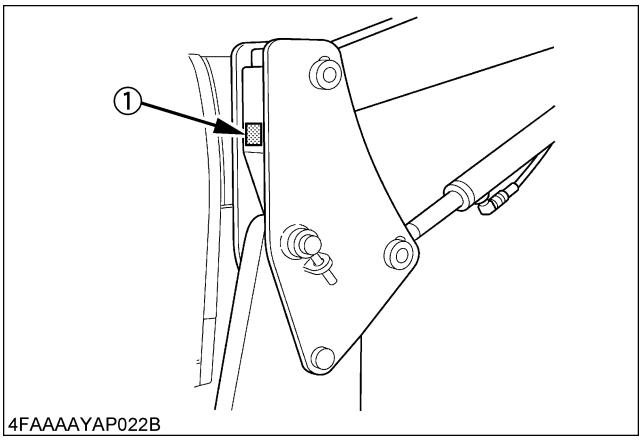
15. Reposition the grip of control lever 1 so that its button faces the operator's seat. Then tighten up the nut.



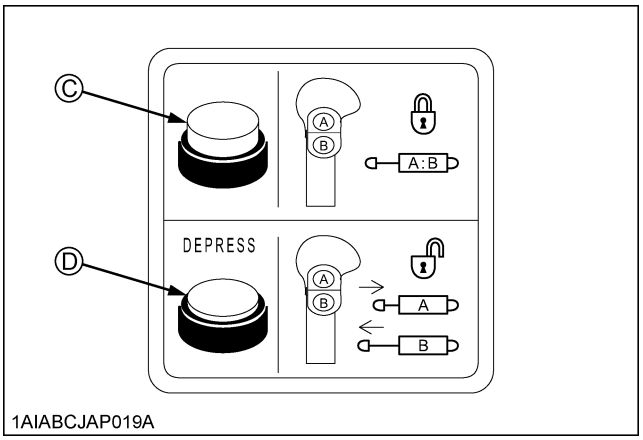
(1) Control lever 1
(2) Control lever 2
(3) M14 nut

◆ **3rd Function Control Operation**

1. Apply the label as shown below.

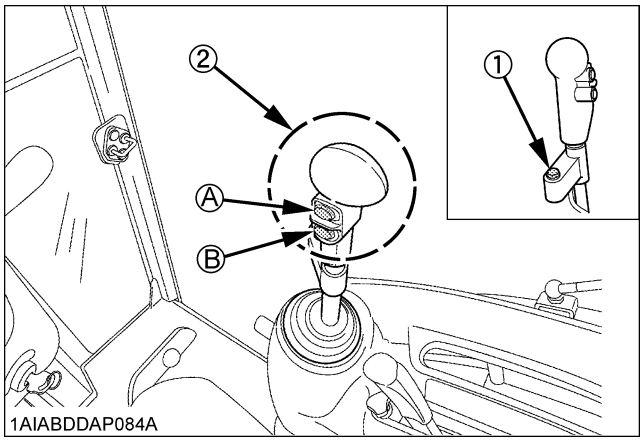


(1) Label

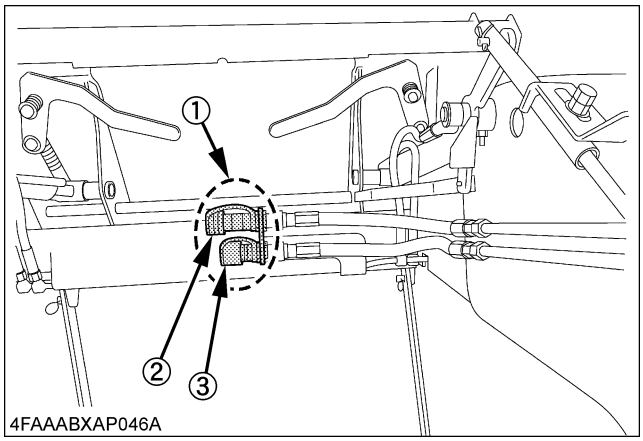


(C) Front hydraulic valve main switch "OFF"
(D) Front hydraulic valve main switch "ON"

2. 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.
3. Activation switch
   (1) When pressing the "A" button, hydraulic oil will come out of the port A and return though 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 though the port A as long as the switch is pressed.



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

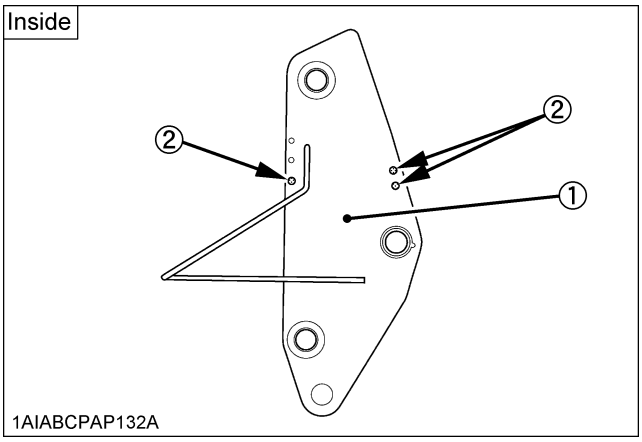


(1) Front hydraulic outlet
(2) Port A
(3) Port B

■Spill Guard (if equipped)

◆ Side Frame (RH) Section

1. Look inside the right-hand side frame of the loader to see if there are the 3 mounting holes as shown below.

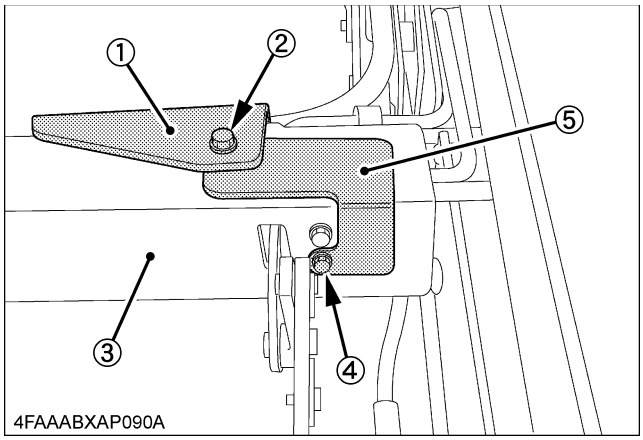


(1) Side frame (RH)
(2) 3-ϕ8.5 holes

2. If the above-mentioned mounting holes are missing, refer to the accompanying template at the last page of this instruction manual and make such holes.

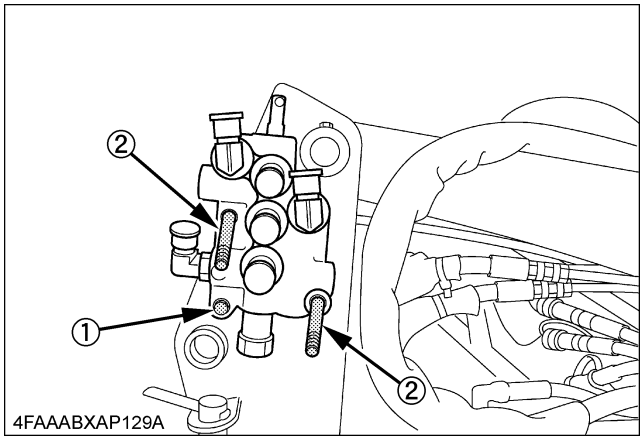
◆ **Spill Guard Mounting Section**

1. Remove the coupler stay and the tube cover bolt and attach the reinforcing plate as shown below.



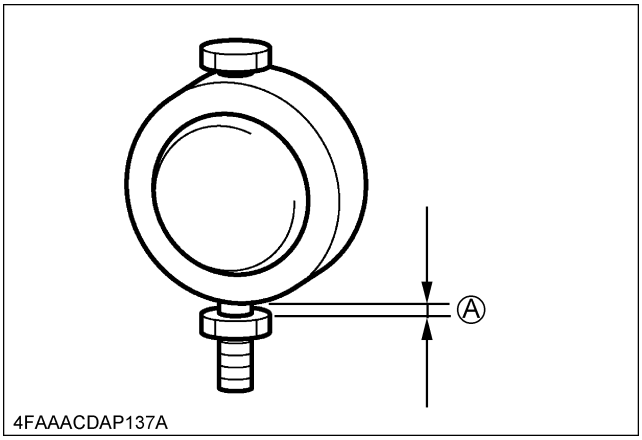
(1) Coupler stay
(2) M8 bolt (original)
(3) Tube cover
(4) M6 bolt (original)
(5) Reinforcing plate

2. Assemble the valve to outside of side frame RH.



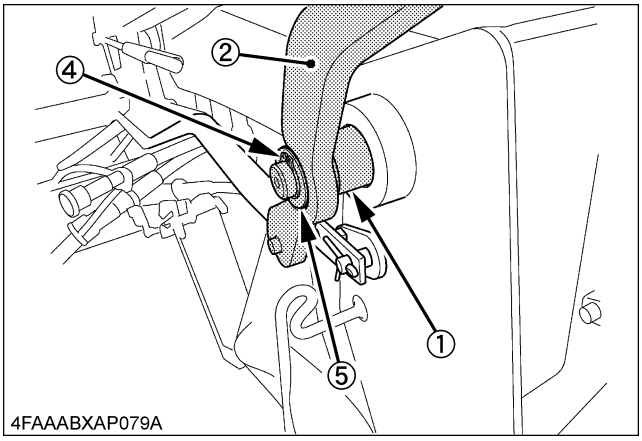
(1) 1-M8 x 45 bolt with washer
(2) 2-M8 x 145 stud bolts

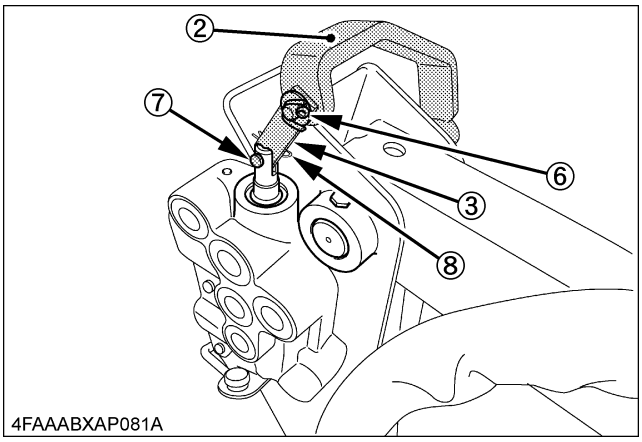
3. Replace the pins with the specific ones, and secure them with the lock bolts and nuts.



(A) 2 to 3 threads

4. Assemble the links as shown below.

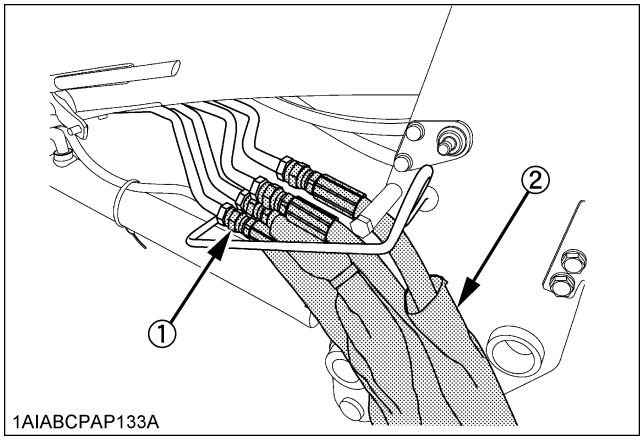




(1) Pin
(2) Link 1
(3) Link 2
(4) Cir-clip
(5) Plate washer
(6) Split pin
(7) Pin
(8) Snap pin

5. Put color markings (White, Blue, Red or Yellow) on the tubes to identify them later for the hoses.

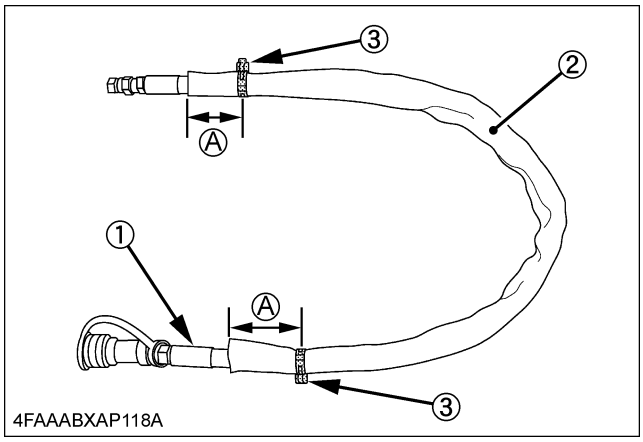
6. Disconnect the hoses with couplers from the tubes and detach the sleeve.



(1) Hose
(2) Sleeve

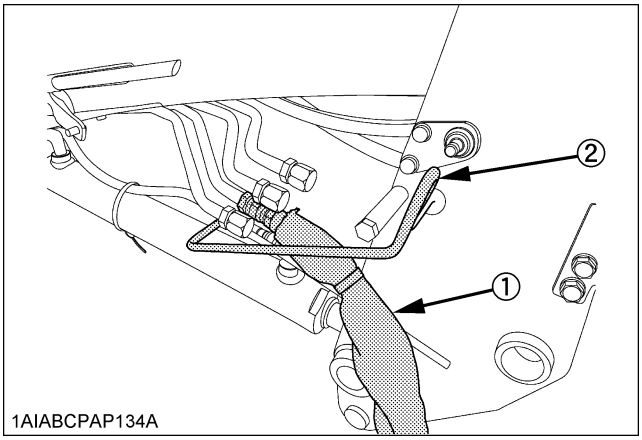
IMPORTANT :
- When disconnecting the hoses, be careful not to get the tubes bent. If they get bent, lay them straight again.

7. Pass the disconnected white hose through the sleeve of the kit and secure the both ends of the sleeve by the cord bands. Cut off excess cord bands.



(1) Hose (White)
(2) Sleeve
(3) 2-Cord bands
(A) 40 to 50 mm (1.6 to 2.0 in.)

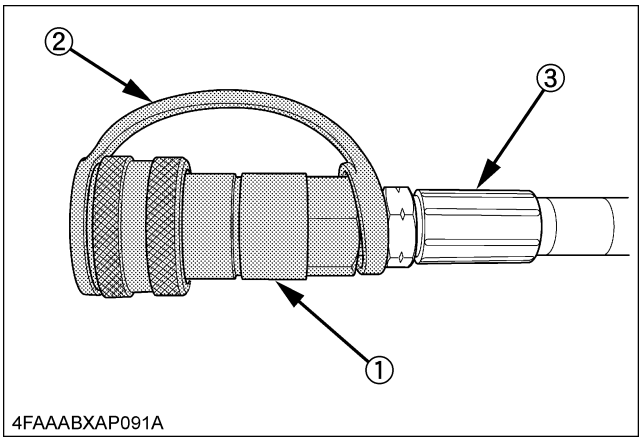
8. Connect the white hose to the tube. At this time, pass this hose through the hose guide.



(1) Hose (White)
(2) Hose guide

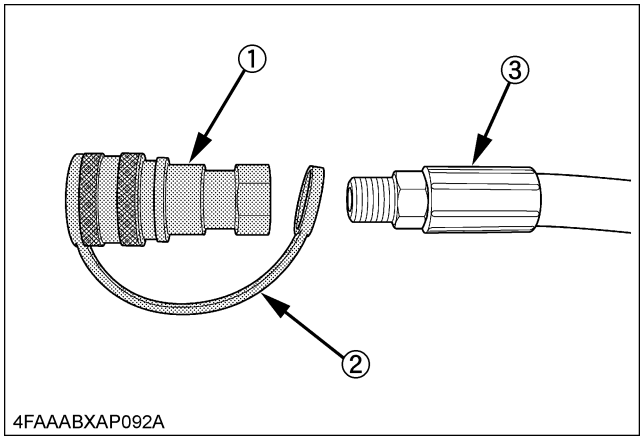
IMPORTANT :
- In securing the hoses, pay attention to their bending tendency. Move up and down the loader and make sure the hoses do not come in contact with the cylinder.
- When connecting the hose, be careful not to get the tube bent. If they get bent, lay them straight again.

9. Detach the couplers and the dust plugs from the other disconnected hoses with couplers (Blue, Red and Yellow).



(1) Coupler
(2) Dust plug
(3) Hose (Blue, Red and Yellow)

10. Assemble the couplers and the dust plugs to the hoses in the kit.

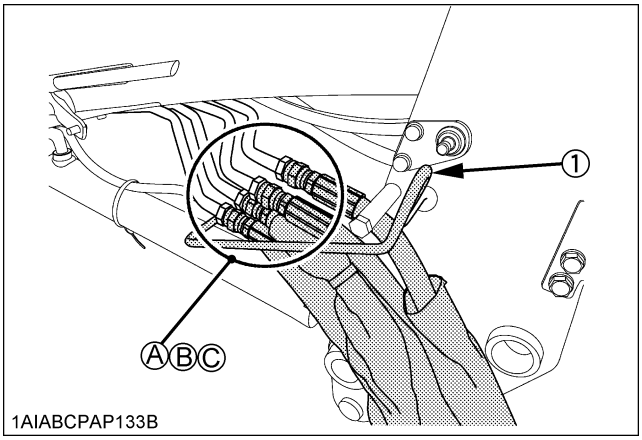


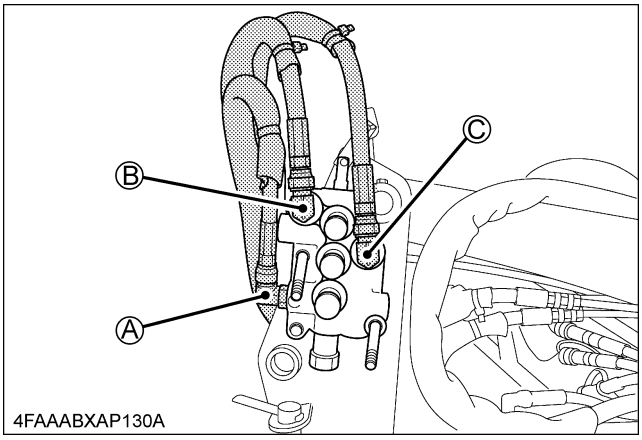
(1) Coupler (original)
(2) Dust coupler (original)
(3) Hose

Tightening torque	30 to 50 N•m (3.0 to 5.0 kgf•m) (23 to 36 lbf•ft)

NOTE :
- Wrap tapered thread of the hose adapters with Teflon tape or similar liquid sealer before assembling.

11. Pass the hoses through the hose guide and connect them to the tubes and the valve.



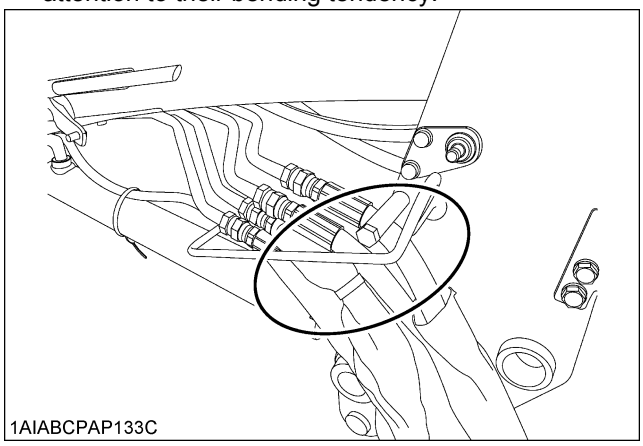


(1) Hose guide

(A) Yellow
(B) Blue
(C) Red

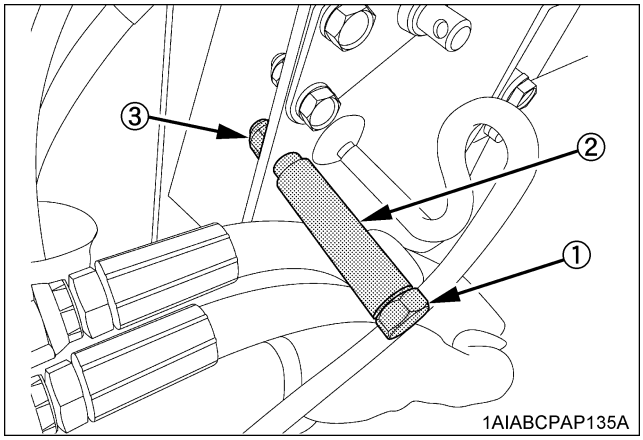
IMPORTANT :

- In securing the hoses, make sure they do not come into tight contact with other component parts. To keep the hoses out of contact with the side frame edge in particular (circled spot in the figure below), pay attention to their bending tendency.



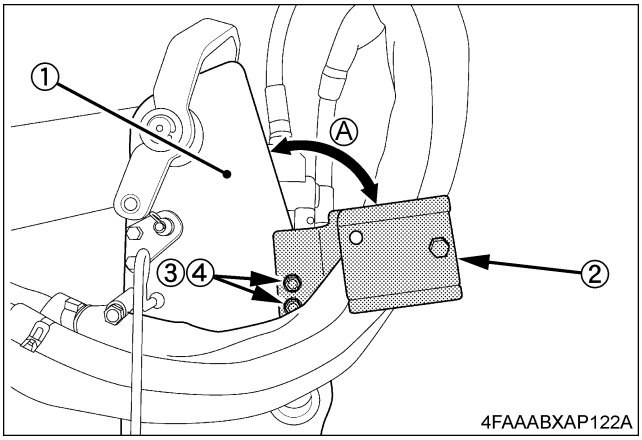
- Make sure the hoses are securely connected untwisted.
- When connecting the hoses, be careful not to get the tubes bent. If they get bent, lay them straight again.

12. Using the shoulder bolt, fix the collar in the position as shown below.



(1) 1-Shoulder bolt
(2) 1-Collar
(3) 1-M8 locking nut

13. Attach the hose guide as shown below.

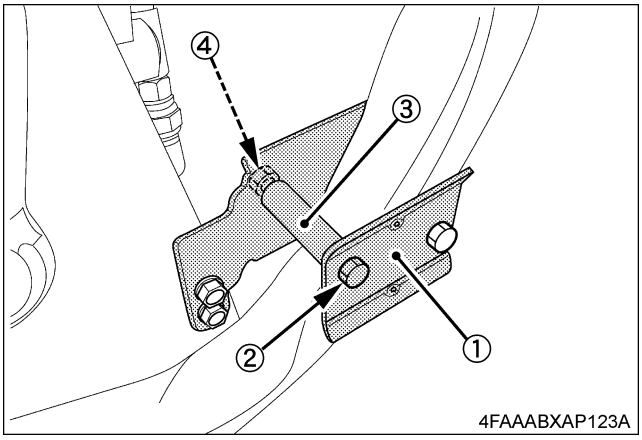


(1) Side frame RH (inside) *(A) 101° ± 5°*
(2) Hose guide
(3) 2-M8 x 20 bolts with washer
(4) 2-M8 nuts

NOTE :

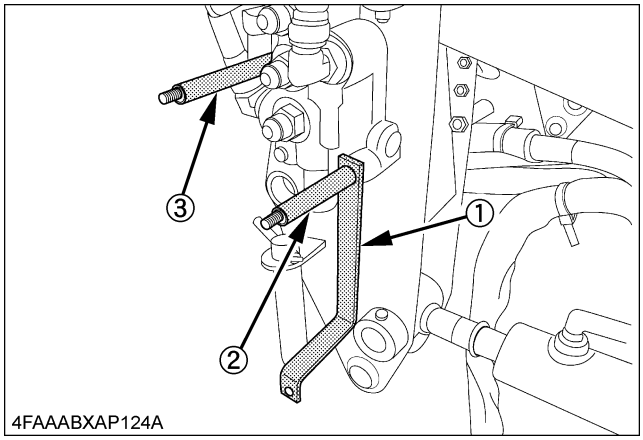
- Set the hose guide so that its top side is horizontal to the ground when mounting the loader.

14. Using the shoulder bolt, fix the collar to the hose guide in position as shown below.



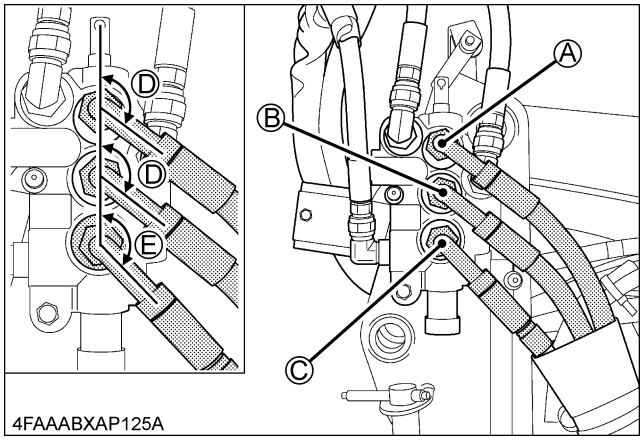
(1) Hose guide
(2) 1-Shoulder bolt
(3) 1-Collar
(4) 1-M8 locking nut

15. Install the cover stay and collar onto the stud bolt that fixes the valve in place.



(1) Cover stay
(2) Collar (short)
(3) Collar (long)

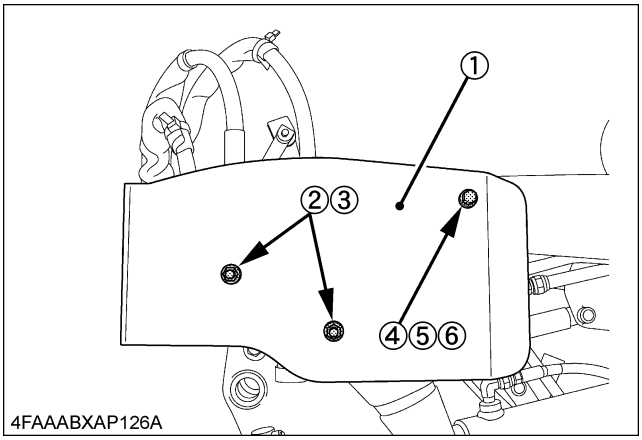
16. Connect the hoses with couplers to the valve.

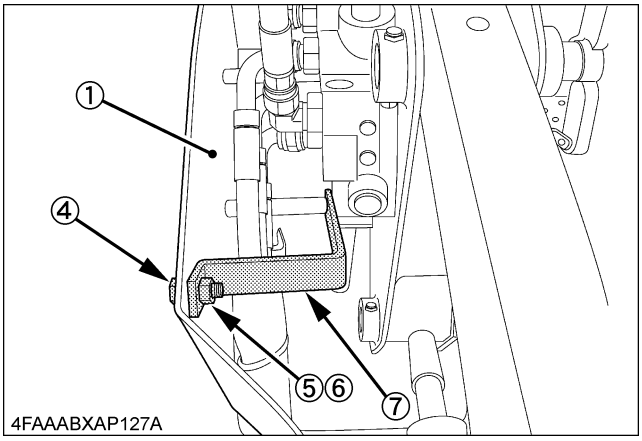


(A) Blue
(B) Red
(C) Yellow
(D) 120° ± 5°
(E) 135° ± 5°

NOTE :
- Pass the yellow hose below the collar.
- When connecting the hoses, adjust their angles so that the hoses would not get unusually twisted and the hoses themselves would not come in tight contact with the guide, links and other hoses.

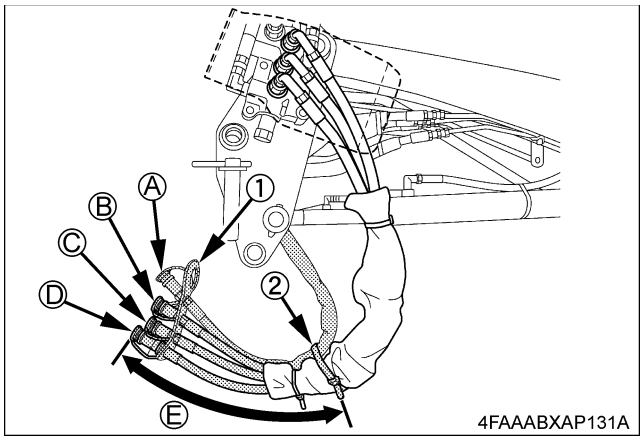
17. Attach the valve cover.





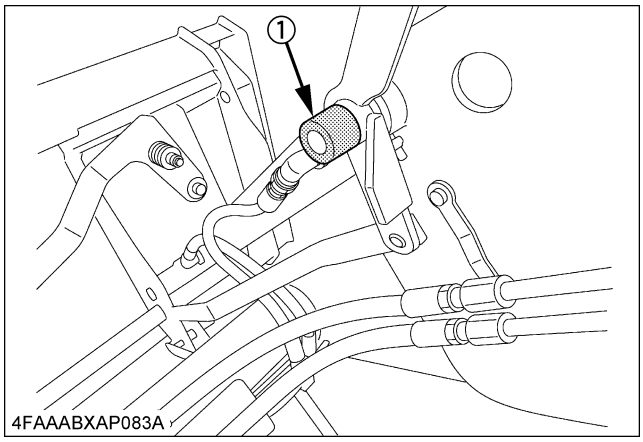
(1) Valve cover
(2) 2-M8 spring washers
(3) 2-M8 nuts
(4) 1-M8 x 20 bolt
(5) 1-M8 spring washer
(6) 1-M8 nut
(7) Cover stay

18. Pass the hoses through the hose clamp as shown below. Secure the 4 hoses with the cord clamp in position as shown below.



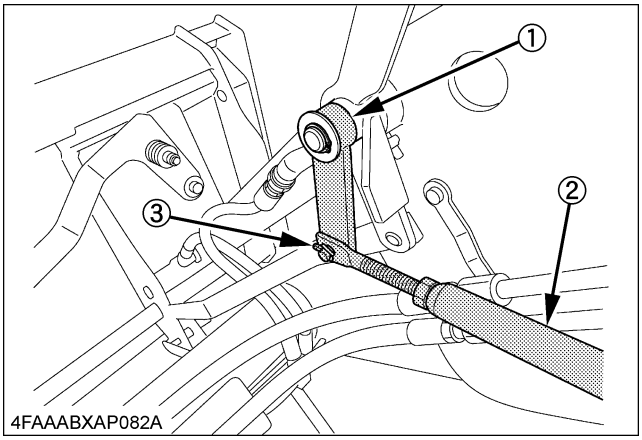
(1) Hose clamp
(2) Cord clamp
(A) White
(B) Blue
(C) Red
(D) Yellow
(E) 300 to 400 mm (11.8 to 15.7 in.)

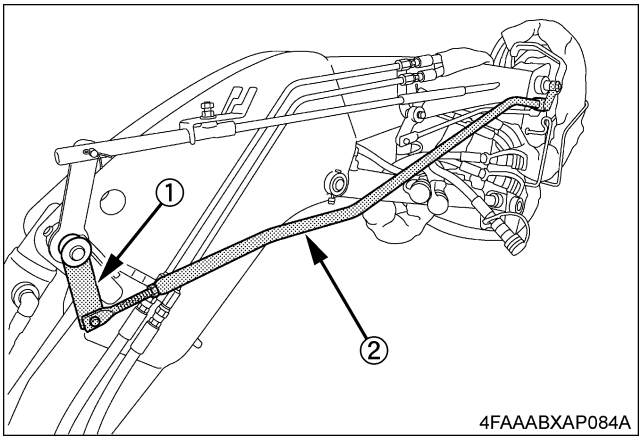
19. Remove the collar

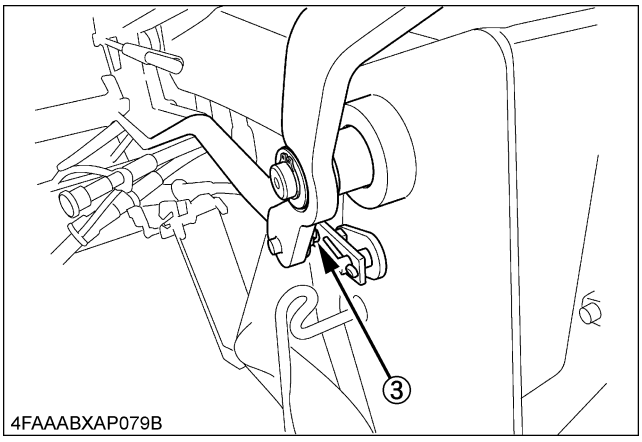


(1) Collar

20. Assemble the link and rod.



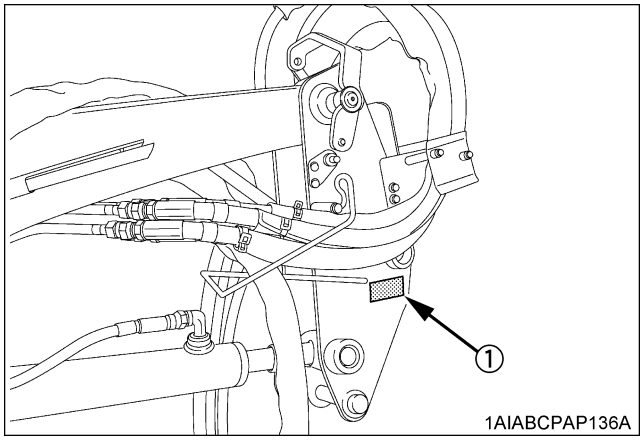




(1) Link
(2) Rod
(3) Split pin

NOTE :
- Be careful not to confuse the directions of the link and rod.

21. Apply the label in position as shown below.

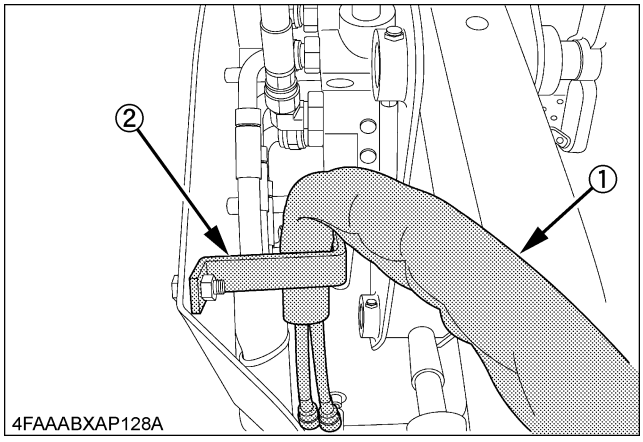


(1) Model label

NOTE :
- Wipe off dust and oil completely before sticking.

◆ **Common Set-up with the 3rd Function Valve Kit (if equipped)**

1. Pass the 3rd function hoses as shown below.



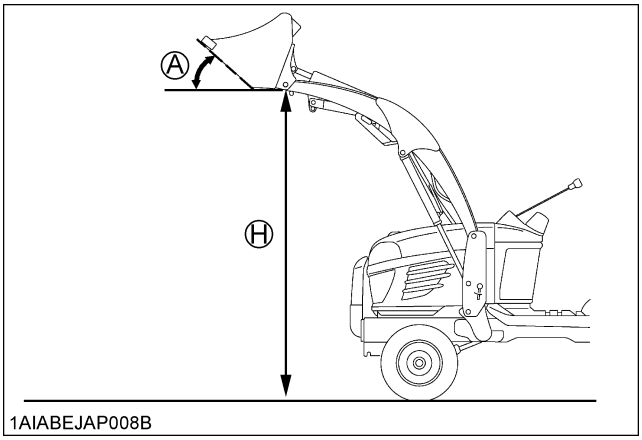
(1) 3rd function hose
(2) Cover stay

◆ **Operation Test**

CAUTION

To avoid personal injury:
- **Keep your hand away from links or boom when operating the loader.**

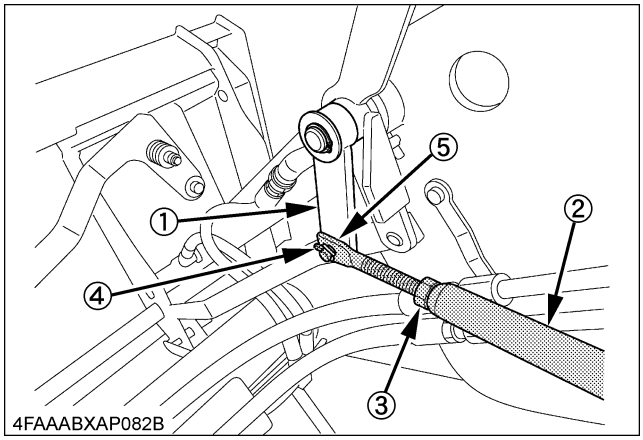
1. Start the engine and roll back the bucket fully from the horizontal position on the ground.
2. Raise the boom up to the highest position (H) and check the bucket angle (A).
3. If the rollback angle is not the same as following illustration, adjust the length of connecting rod.



(A) 45°
(H) Highest position

◆ **Adjustment of spill guard link**

1. Remove the split pin.
2. Remove the rod from the link.
3. Unfasten the lock nut and adjust the length of connecting rod by turning rod.

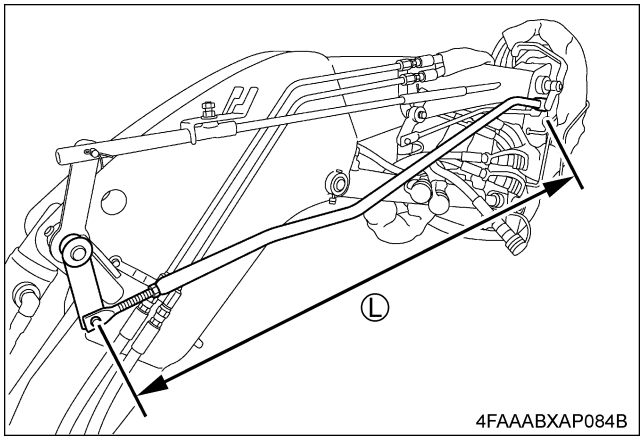


(1) Link
(2) Connecting rod
(3) Lock nut
(4) Split pin
(5) Rod

Condition of the bucket at appointed height	Adjustment
Bucket rolled back too far	Shorten connecting rod
Bucket dumped too far	Lengthen connecting rod

NOTE :

- Adjust the length of the rod as shown below.



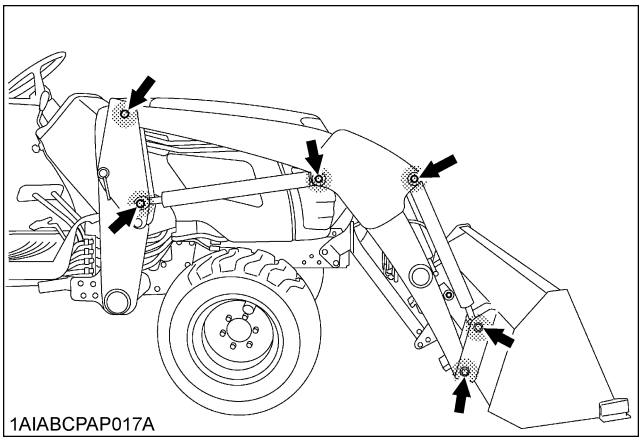
(L) 1040 to 1055 mm (40.9 to 41.5 in.)

4. Tighten the lock nut and set the rod to the link with the split pin.

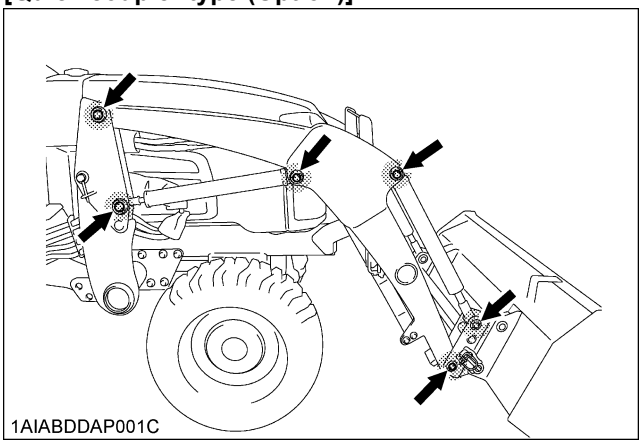
PRE-OPERATION CHECK

■Lubrication

Lubricate all grease fittings with grease. High quality grease designating "extreme pressure" and containing Molybdenum disulfide is recommended.
This grease may specify "Moly EP" on its label.

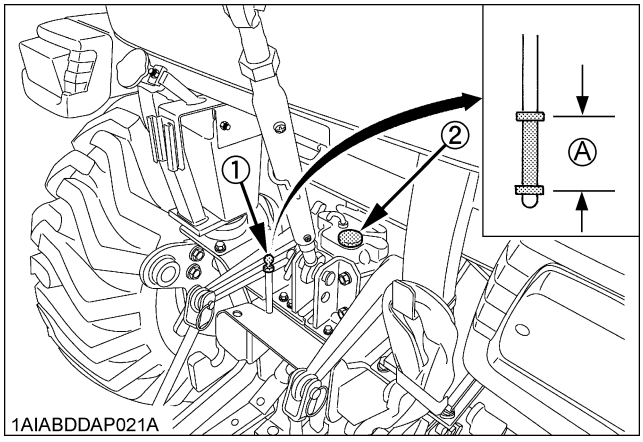


[Quick coupler type (Option)]



■Transmission Fluid

Check tractor transmission fluid level. Add fluid if necessary. Refer to the tractor's Operator's Manual for instructions and proper fluid. Repeat this check after purging air from the system. At that time, it will be necessary to add transmission fluid.



(1) Dipstick (Rear)
(2) Oil inlet
(A) Oil level is acceptable within this range.

IMPORTANT :

- To check tractor transmission fluid level, lower the bucket to the ground and lower the 3 point hitch.

■Rear Ballast

CAUTION

To avoid personal injury:

- **For tractor stability and operator's safety, rear ballast should be added to the rear of the tractor in the form of 3-point counter weight and rear wheel ballast. The amount of rear ballast will depend on the application.**

Implement as Counter Weight	
	LA534
Box Blade	Approx. 225 kg (496 lbs.)
Rear Blade	Approx. 250 kg (550 lbs.)
Rotary Tiller	Approx. 250 kg (550 lbs.)
Ballast Box	Approx. 400 kg (880 lbs.)

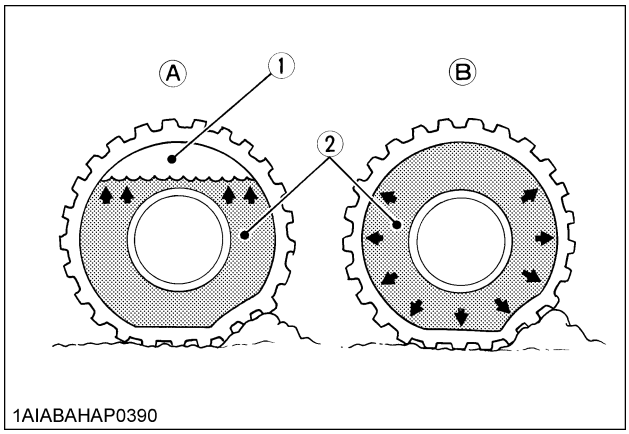
■Liquid Ballast in Rear Tires

Water and calcium chloride solution provides a safe and economical ballast. Used properly, it will not damage tires, tubes or rims. The addition of calcium chloride is recommended to prevent the water from freezing. Use of this method of weighting the wheels has full approval of the tire manufacturers. See your tire dealer for this service.

Liquid weight per tire (75 Percent filled)

Tire sizes	12.4-16
Slush free at -10℃ (14℉) Solid at -30℃ (-22℉) [Approx. 1 kg (2 lbs.) $CaCl_2$ per 4 L (1 gal) of water]	85 kg (187 lbs.)
Slush free at -24℃ (-11℉) Solid at -47℃ (-52℉) [Approx. 1.5 kg (3.5 lbs.) $CaCl_2$ per 4 L (1 gal) of water]	89 kg (196 lbs.)
Slush free at -47℃ (-52℉) Solid at -52℃ (-62℉) [Approx. 2.25 kg (5 lbs.) $CaCl_2$ per 4 L (1 gal) of water]	94 kg (207 lbs.)

IMPORTANT :
- Do not fill tires with water or solution more than 75% of full capacity (to the valve stem level at 12 o'clock position).



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(1) Air *(A) Correct: 75% Full*
Air compresses like a cushion
(2) Water *(B) Incorrect: 100% Full*
Water can not be compressed

NOTE :
- When mounting a heavy implement, a liquid in the tire may not be required.
- While backhoe is installed on the tractor, the liquid ballast in the rear tires should be removed.
- When filling 15-19.5 tires with water, the counter weight should be between 91 kg and 182 kg (200 lbs and 400 lbs.) in weight.

IMPORTANT :
- Do not add liquid ballast or any other weights to the front tires.

■Tire Inflation

Ensure that the tractor tires are properly inflated.
Refer to the tractor's Operator's Manual for optional tires.

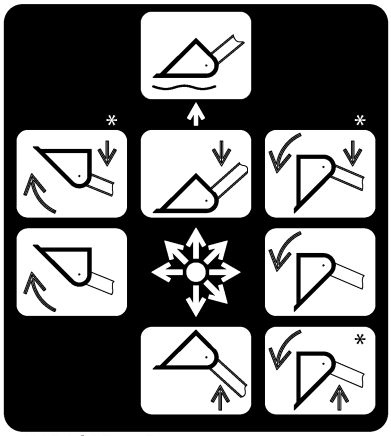
■Inflation Pressure

	Tire sizes	Inflation Pressure
Rear	12.4 - 16, 4PR	110 kPa (1.1 kgf/cm^2, 16 psi)
	13.6 - 16, 4PR	100 kPa (1.0 kgf/cm^2, 14 psi)
	12.4 - 16Ind., 4PR	138 kPa (1.4 kgf/cm^2, 20 psi)
Front	7 - 12, 4PR	170 kPa (1.7 kgf/cm^2, 24 psi)
	23 x 8.50 - 12, 4PR	150 kPa (1.5 kgf/cm^2, 22 psi)
	24 x 8.50 - 14, 4PR	150 kPa (1.5 kgf/cm^2, 22 psi)
	23 x 8.50 - 14Ind., 4PR	241 kPa (2.5 kgf/cm^2, 35 psi)

■Test Operation

WARNING

To avoid personal injury:
- **Keep engine speed at low idle during the test operation.**
- **Escaping hydraulic fluid under pressure can have sufficient force to penetrate skin, causing serious personal injury.**
  Before disconnecting lines, be sure to relieve all pressure.
  Before applying pressure to system, be sure all connections are tight and that lines, tubes and hoses are not damaged.
  Fluid escaping from a very small hole can be almost invisible. Use a piece of cardboard or wood, rather than hands to search for suspected leaks.
  If injured by escaping fluid, see a doctor at once. Serious infection or allergic reaction will develop if proper medical treatment is not administered immediately.



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NOTE :
- When the lever is at each corner position marked by asterisk (*), boom and bucket cylinders work at the same time. However, the blank position (Raise & Roll back) is not recommended for scooping because of insufficient lift force.

To begin test operation, slightly move the control lever from "N" position. Slowly raise the loader boom just enough for the bucket to clear the ground when fully dumped. Slowly work through the dump and roll back cycles.

IMPORTANT :
- If the boom or bucket does not work in the directions indicated on the label, lower the bucket to the ground, stop the engine, and relieve all hydraulic pressure. Recheck and correct all hydraulic connections.

This control valve has two stage dump positions. The first "Regenerative" dump position, activated by moving the lever to the right, features high speed for efficient normal loader operations.
The second "Regular" dump position, activated by moving the lever further to the right, features increased power. This second position should be used when operating implements other than the loader with this control valve. These two positions are separated by a "Feel" position for your convenience.

■Removing Air from Hydraulic System

Repeat raising and lowering the boom and bucket operations until all the air is removed from the system and the system responds properly.

IMPORTANT :

- Do not move the control lever into float position when the bucket is off the ground.

ESTIMATED ASSEMBLY TIME

Refer to the following table for the estimated assembly time to open the crate and assemble the loader.
Assembly times on the table are just reference under the average conditions with following assumption.

(1) Assembly by one worker.
(2) Following tools and equipment are prepared.

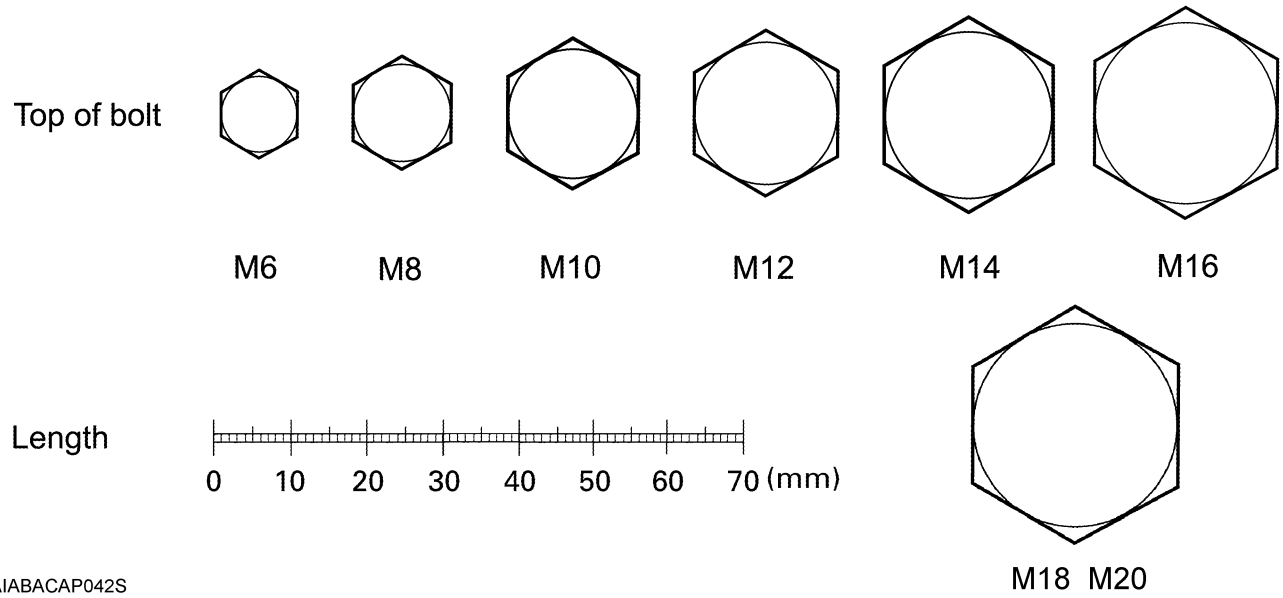
1. Chain hoist or crane.
2. Impact wrench, Ratchet wrench, Torque wrench, Socket wrench, Spanner wrench.
3. Nylon strap.

	Standard valve type Loader
LA534	0.5 hour

TIGHTENING TORQUE OF BOLTS AND NUTS

If the torque levels are specified in the text, follow that specification.

American standard screws, bolts and nuts with UNC or UNF threads				Metric cap screws 8.8		
SAE grade No.		SAE GR.5	SAE GR.8	property class		8.8 Approx. SAE GR 5
1/4	(N·m) (kgf·m) (lbf·ft)	11.7 to 15.8 1.19 to 1.61 8.6 to 11.6	16.3 to 19.8 1.66 to 2.02 12.0 to 14.6	M6	(N·m) (kgf·m) (lbf·ft)	9.8 to 11.2 1.0 to 1.1 7.2 to 8.3
5/16	(N·m) (kgf·m) (lbf·ft)	23.1 to 27.8 2.35 to 2.83 17.0 to 20.5	32.5 to 39.3 3.31 to 4.01 24.0 to 29.0	M8	(N·m) (kgf·m) (lbf·ft)	23.6 to 27.4 2.4 to 2.8 17.4 to 20.2
3/8	(N·m) (kgf·m) (lbf·ft)	47.5 to 57.0 4.84 to 5.81 35.0 to 42.0	61.0 to 73.2 6.22 to 7.46 45.0 to 54.0	M10	(N·m) (kgf·m) (lbf·ft)	48.1 to 55.8 4.9 to 5.7 35.5 to 41.2
1/2	(N·m) (kgf·m) (lbf·ft)	108.5 to 130.2 11.06 to 13.28 80.0 to 96.0	149.2 to 179.0 15.21 to 18.25 110.0 to 132.0	M12	(N·m) (kgf·m) (lbf·ft)	77.5 to 90.1 7.9 to 9.2 57.2 to 66.5
9/16	(N·m) (kgf·m) (lbf·ft)	149.2 to 179.0 15.21 to 18.25 110.0 to 132.0	217.0 to 260.4 22.13 to 26.55 160.0 to 192.0	M14	(N·m) (kgf·m) (lbf·ft)	124 to 147 12.6 to 15.0 91.5 to 108.4
5/8	(N·m) (kgf·m) (lbf·ft)	203.4 to 244.1 20.74 to 24.89 150.0 to 180.0	298.3 to 358.0 30.42 to 36.51 220.0 to 264.0	M16	(N·m) (kgf·m) (lbf·ft)	197 to 225 20.0 to 23.0 145 to 166
				M18	(N·m) (kgf·m) (lbf·ft)	275 to 318 28.0 to 32.5 203 to 235
				M20	(N·m) (kgf·m) (lbf·ft)	368 to 431 37.6 to 44.0 272 to 318



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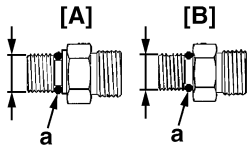
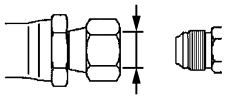
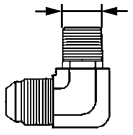
TIGHTENING TORQUE OF ADAPTORS, ELBOWS AND OTHERS

If the torque levels are specified in the text, follow that specification.

Item	Shape	Thread size	Tightening torque		
			N·m	kgf·m	lbf·ft
Adjustable elbow, Adaptor (O-ring port) (UNF)	 [A] Nut Type [B] No Nut Type a: O-ring 4FBAAAKAP064A	9/16	37 to 44	3.8 to 4.5	27 to 33
		3/4	48 to 54	4.9 to 5.5	35 to 40
		7/8	77 to 85	7.9 to 8.6	57 to 62
Hose fitting, Flare nut (UNF)	 4FBAAAKAP065A	9/16	25 to 28	2.55 to 2.85	18.5 to 20.6
		3/4	49 to 53	5.00 to 5.40	36.2 to 39.0
		7/8	77 to 85	7.86 to 8.67	56.8 to 62.6
		1-1/16	107 to 119	10.8 to 12.0	79 to 88
		1-3/16	127 to 141	13.0 to 14.4	94 to 104
Adaptor (NPT)	 4FBAAAKAP066A	1/4	30 to 50	3.1 to 5.0	23 to 36
		3/8	39 to 60	4.0 to 6.1	29 to 44
		1/2	49 to 58	5.0 to 5.9	36 to 43

TEMPLATE
FOR SIDE FRAME (RH)

measure : mm