WSM

WORKSHOP MANUAL
TRACTOR

L3240-3,L3540-3,L3940-3,L4240-3,
L4740-3,L5040-3,L5240-3,L5740-3

Kubota

KiSC issued 11, 2009 A

(1) Part No. 35260-3491-4

⚠CAUTION

TO AVOID PERSONAL INJURY:

1. Read and understand the operator's manual before operation.
2. Before starting the engine, make sure that everyone is at a safe distance from the tractor and that the PTO is OFF.
3. Do not allow passengers on the tractor at any time.
4. Before allowing other people to use the tractor, have them read the operator's manual.
5. Check the tightness of all nuts and bolts regularly.
6. Keep all shields in place and stay away from all moving parts.
7. Lock the two brake pedals together before driving on the road.
8. Slow down for turns, or rough roads, or when applying individual brakes.
9. On public roads use SMV emblem and hazard lights, if required by local traffic and safety regulations.
10. Pull only from the drawbar.
11. Before dismounting, lower the implement to the ground, set the parking brake, stop the engine and remove the key.
12. Securely support tractor and implements before working underneath.

1AGAMAAAP3750

(2) Part No. 6C300-4744-1

⚠WARNING

Operation of this equipment may create sparks that can start fires around dry vegetation.
A spark arrester may be required. The operator should contact local fire agencies for laws or regulations relating to fire prevention requirements.

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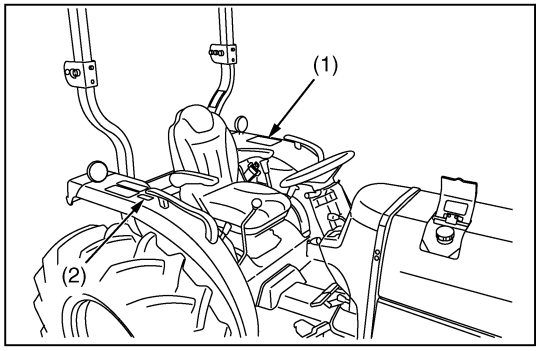

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(Continued)

Model			L3240-3	L3540-3	L3940-3	L4240-3	L4740-3	L5240-3	L5740-3
			4WD						
Weight			1700 kg (3748 lbs)		1800 kg (3968 lbs)	1815 kg (4001 lbs)		1920 kg (4233 lbs)	
Travelling system	Standard tire size	Front	7-16		8.3-16			9.5-16	
		Rear	12.4-24		14.9-24			14.9-26	
	Clutch		Dry type single stage						
	Steering		Hydrostatic power steering						
	Transmission		Hydrostatic transmission (3 speeds)						
	Braking system		Wet disk type						
	Min. turning radius (with brake)		2.7 m (8.9 feet)					2.8 m (9.2 feet)	
Hydraulic unit	Hydraulic control system		Position control						
	Pump capacity		31.5 L (8.3 U.S.gals, 6.9 Imp.gals) / min.		37.0 L (9.8 U.S.gals, 8.1 Imp.gals) / min.			35.6 L (9.4 U.S. gals, 7.8 Imp.gals) / min.	37.0 L (9.8 U.S. gals, 8.1 Imp.gals) / min.
	3 point hitch		SAE Category 1					SAE Category 1, 2	
	Max. lift force	At lift points	1700 kg (3750 lbs)		1750 kg (3860 lbs)				
		24 in. behind lift points	1200 kg (2650 lbs)		1250 kg (2760 lbs)			1350 kg (2980 lbs)	
	System pressure		17.7 MPa (180 kgf/cm^2, 2560 psi)						
PTO	Rear PTO		SAE 1-3/8, 6 splines						
	PTO / Engine speed		540 min^{-1} (rpm) / 2685 min^{-1} (rpm)		540 min^{-1} (rpm) / 2640 min^{-1} (rpm)			540 min^{-1} (rpm) / 2590 min^{-1} (rpm)	
	Mid-PTO (if equipped)		USA No. 5 (KUBOTA 10-tooth) involute spline						
	PTO / Engine speed		2000 min^{-1} (rpm) / 2715 min^{-1} (rpm)		2000 min^{-1} (rpm) / 2670 min^{-1} (rpm)			2000 min^{-1} (rpm) / 2615 min^{-1} (rpm)	

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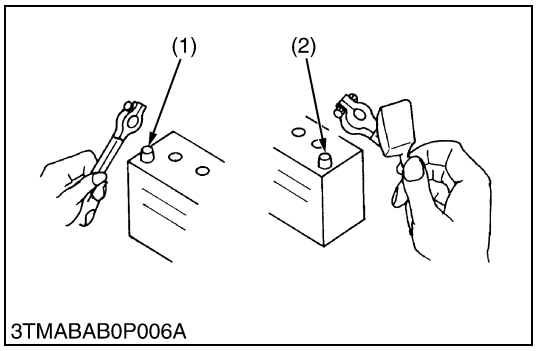
3. HANDLING PRECAUTIONS FOR ELECTRICAL PARTS AND WIRING



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To ensure safety and prevent damage to the machine and surrounding equipment, heed the following precautions in handling electrical parts and wiring.

■ **IMPORTANT**

- **Check electrical wiring for damage and loosened connection every year. To this end, educate the customer to do his or her own check and at the same time recommend the dealer to perform periodic check for a fee.**
- **Do not attempt to modify or remodel any electrical parts and wiring.**
- **When removing the battery cables, disconnect the negative cable first. When installing the battery cables, connect the positive cable first.**

(1) Negative Terminal (2) Positive Terminal

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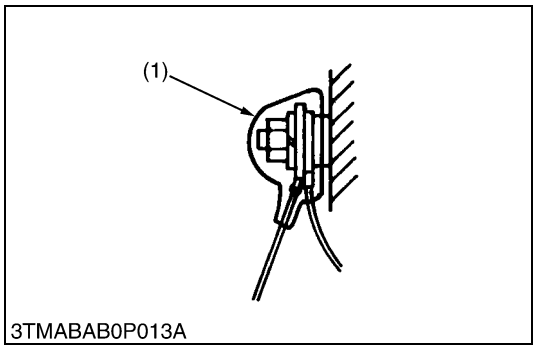
[1] WIRING



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- After installing wiring, check protection of terminals and clamped condition of wiring, only connect battery.

(1) Cover
(Securely Install Cover)

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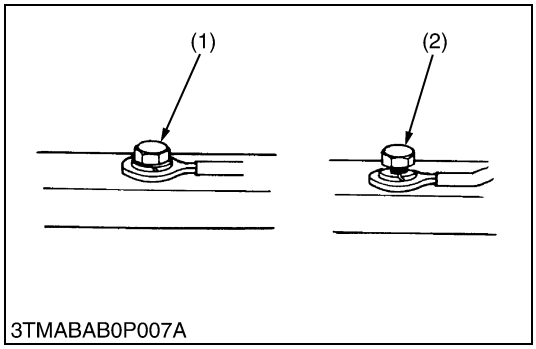

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- Securely tighten wiring terminals.

(1) Correct
(Securely Tighten)
(2) Incorrect
(Loosening Leads to Faulty Contact)

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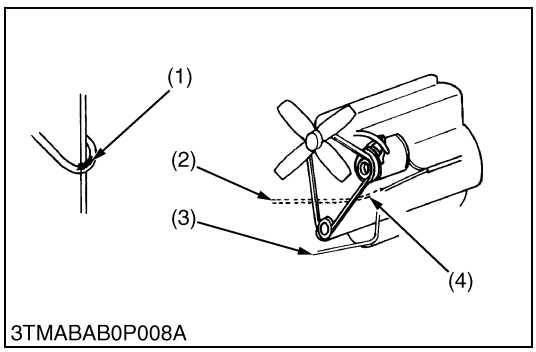

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- Do not let wiring contact dangerous part.

(1) Dangerous Part (Sharp Edge)
(2) Wiring (Incorrect)
(3) Wiring (Correct)
(4) Dangerous Part

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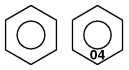
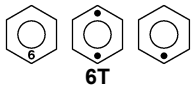
5. TIGHTENING TORQUES

[1] GENERAL USE SCREWS, BOLTS AND NUTS

Screws, bolts and nuts whose tightening torques are not specified in this Workshop Manual should be tightened according to the table below.

Indication on top of bolt	 No-grade or 4T						 7T						 9T		
Indication on top of nut	 No-grade or 4T												 6T		
Material of opponent part	Ordinariness			Aluminum			Ordinariness			Aluminum			Ordinariness		
Unit	N·m	kgf·m	lbf·ft	N·m	kgf·m	lbf·ft	N·m	kgf·m	lbf·ft	N·m	kgf·m	lbf·ft	N·m	kgf·m	lbf·ft
M6	7.9 to 9.3	0.80 to 0.95	5.8 to 6.8	7.9 to 8.8	0.80 to 0.90	5.8 to 6.5	9.81 to 11.2	1.00 to 1.15	7.24 to 8.31	7.9 to 8.8	0.80 to 0.90	5.8 to 6.5	12.3 to 14.2	1.25 to 1.45	9.05 to 10.4
M8	18 to 20	1.8 to 2.1	13 to 15	17 to 19	1.7 to 2.0	13 to 14	24 to 27	2.4 to 2.8	18 to 20	18 to 20	1.8 to 2.1	13 to 15	30 to 34	3.0 to 3.5	22 to 25
M10	40 to 45	4.0 to 4.6	29 to 33	32 to 34	3.2 to 3.5	24 to 25	48 to 55	4.9 to 5.7	36 to 41	40 to 44	4.0 to 4.5	29 to 32	61 to 70	6.2 to 7.2	45 to 52
M12	63 to 72	6.4 to 7.4	47 to 53	–	–	–	78 to 90	7.9 to 9.2	58 to 66	63 to 72	6.4 to 7.4	47 to 53	103 to 117	10.5 to 12.0	76.0 to 86.7
M14	108 to 125	11.0 to 12.8	79.6 to 92.5	–	–	–	124 to 147	12.6 to 15.0	91.2 to 108	–	–	–	167 to 196	17.0 to 20.0	123 to 144
M16	167 to 191	17.0 to 19.5	123 to 141	–	–	–	197 to 225	20.0 to 23.0	145 to 166	–	–	–	260 to 304	26.5 to 31.0	192 to 224
M18	246 to 284	25.0 to 29.0	181 to 209	–	–	–	275 to 318	28.0 to 32.5	203 to 235	–	–	–	344 to 402	35.0 to 41.0	254 to 296
M20	334 to 392	34.0 to 40.0	246 to 289	–	–	–	368 to 431	37.5 to 44.0	272 to 318	–	–	–	491 to 568	50.0 to 58.0	362 to 419

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[2] STUD BOLTS

Material of opponent part	Ordinariness			Aluminum		
Unit	N·m	kgf·m	lbf·ft	N·m	kgf·m	lbf·ft
M8	12 to 15	1.2 to 1.6	8.7 to 11	8.9 to 11	0.90 to 1.2	6.5 to 8.6
M10	25 to 31	2.5 to 3.2	18 to 23	20 to 25	2.0 to 2.6	15 to 18
M12	30 to 49	3.0 to 5.0	22 to 36	31	3.2	23
M14	62 to 73	6.3 to 7.5	46 to 54	–	–	–
M16	98.1 to 112	10.0 to 11.5	72.4 to 83.1	–	–	–
M18	172 to 201	17.5 to 20.5	127 to 148	–	–	–

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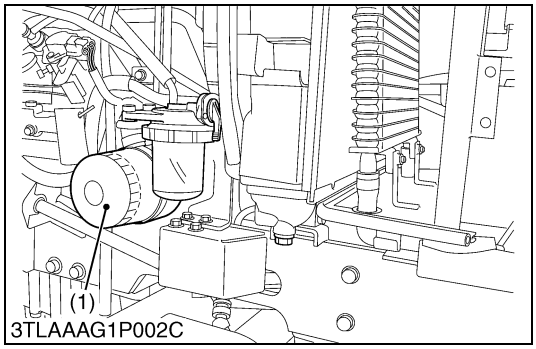

Replacing Engine Oil Filter

CAUTION

- **Be sure to stop the engine before changing the oil filter cartridge.**
- **Allow engine to cool down sufficiently, oil can be hot and can burn.**

1. Remove the oil filter.
2. Put a film of clean engine oil on the rubber seal of the new filter.
3. Tighten the filter quickly until it contacts the mounting surface. Tighten filter by hand an additional 1/2 turn only.
4. After the new filter has been replaced, the engine oil normally decreases a little. Make sure that the engine oil does not leak through the seal and be sure to check the oil level on the dipstick. Then, replenish the engine oil up to the prescribed level.

IMPORTANT

- **To prevent serious damage to the engine, use only a KUBOTA genuine filter.**

(1) Engine Oil Filter

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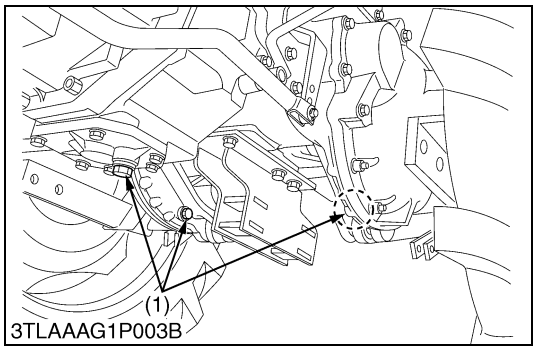

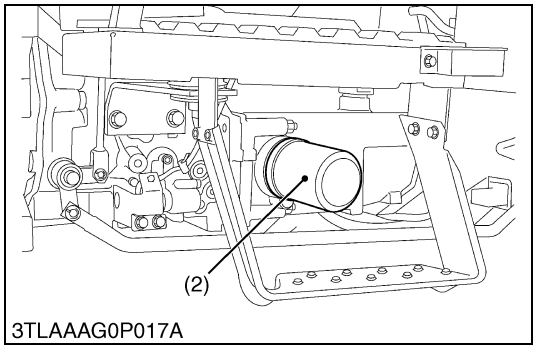

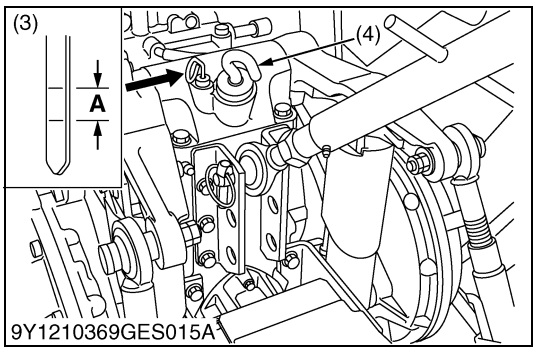

Replacing Transmission Oil Filter (HST Model)

CAUTION

- **Be sure to stop the engine before changing the oil filter cartridge.**
- **Allow engine to cool down sufficiently, oil can be hot and can burn.**

1. Remove the drain plugs at the bottom of the transmission case and drain the oil completely into the oil pan.
2. After draining reinstall the drain plugs.
3. Remove the oil filter.
4. Put a film of clean transmission oil on the rubber seal of the new filter.
5. Quickly tighten the filter until it contacts the mounting surface, then, with a filter wrench, tighten it an additional 1 turn only.
6. After the new filters have been replaced, fill the transmission oil up to the upper notch on the dipstick.
7. After running the engine for a few minutes, stop the engine and check the oil level again, add oil to the prescribed level.
8. Make sure that the transmission fluid does not leak past the seal on the filter.

IMPORTANT

- **To prevent serious damage to the hydraulic system, use only a KUBOTA genuine filter.**

(1) Drain Plug
(2) Transmission Oil FIlter (HST Model)
(3) Gauge
(4) Oil Inlet

A : Oil level is acceptable within this range.

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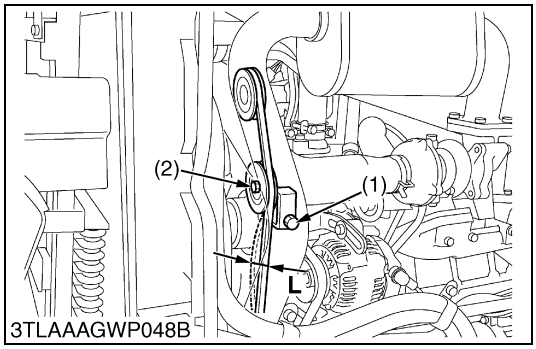

Adjusting Air Conditioner Belt Tension (Cabin Model)

⚠ CAUTION

- **Be sure to stop the engine before checking air conditioner belt tension.**

1. Stop the engine and remove the key.
2. Apply 98 N (10 kgf, 22 lbf) pressure to the belt between the pulleys.
3. If tension is incorrect, loosen the tension pulley mounting nut and turn the adjusting bolt to adjust the belt tension within acceptable limits.
4. If belt is damaged, replace it.

Air conditioner belt tension	Factory specification	A deflection of between 10 to 12 mm (0.39 to 0.47 in.) when the belt is pressed in the middle of the span

(1) Adjusting Bolt
(2) Nut

L : Deflection

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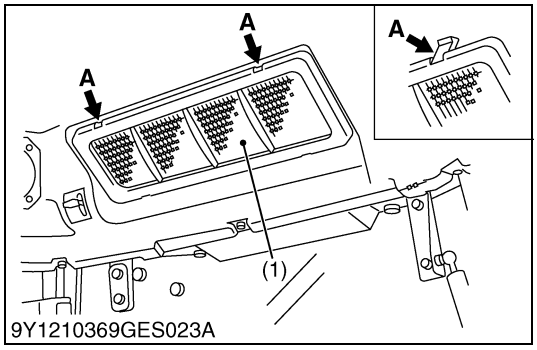

Cleaning Inner Air Filter (Cabin Model)

1. Press the inner air filter in the arrow-marked directions to unlock it and remove the inner filter, and blow air from the direction opposite to the filter's nomal air flow.
2. Pressure of compressed air must be under 205 kPa (2.1 kgf/cm^2, 30 psi).

(1) Inner Air Filter

A : Push

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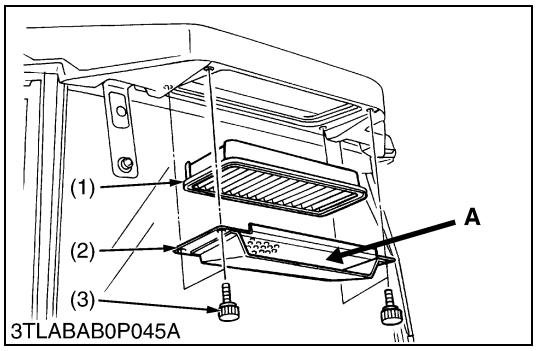

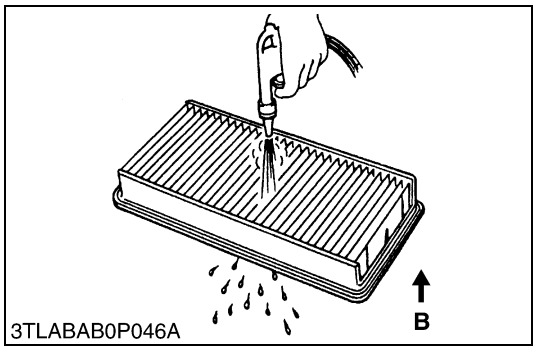

Cleaning Air Filter (Cabin Model)

■ **Fresh Air Filter**

1. Remove the knob bolts (3) and pull out the fresh air filter (1).
2. Blow air from the opposite direction to the filter's normal air flow. Pressure of compressed air must be under 205 kPa (2.1 kgf/cm^2, 30 psi).

■ **NOTE**

- **If the filter is very dirty :**
  Dip the filter in lukewarm water with mild dish washing detergent.
  Move it up and down as well as left and right to loosen dirt.
  Rinse the filter with clean water and let it air-dry.

■ **IMPORTANT**

- **Do not use gasoline, thinner or similar chemicals to clean the filter as damage to the filter may occur.**
- **If may also cause an unpleasant odor in the CABIN when the system is used next.**
- **Do not hit the filter. If the filter becomes deformed, dust may enter into the air-conditioner, which may cause damage and malfunction.**

(1) Fresh Air Filter
(2) Cover
(3) Knob Bolt

A : Air Inlet Port
B : Air Conditioner Air Flow

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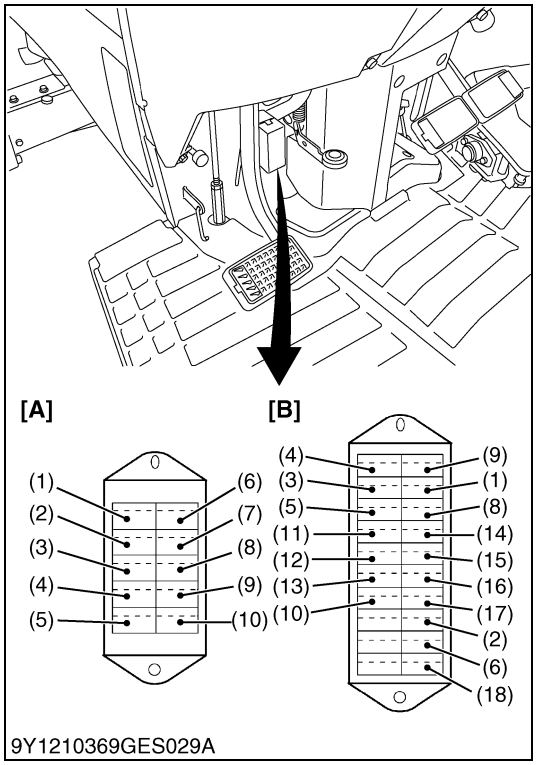

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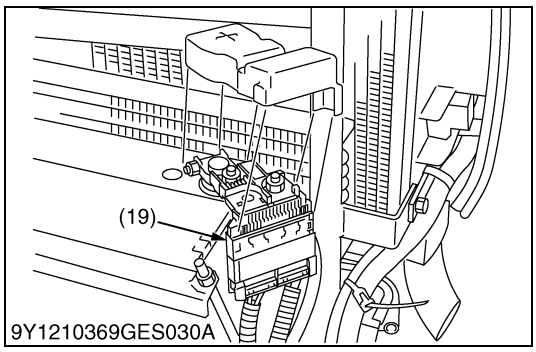

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Replacing Fuse

1. The tractor electrical system is protected from potential damage by fuses.
   A blown fuse indicates that there is an overload or short somewhere in the electrical system.
2. If any of the fuses should blow, replace with a new one of the same capacity.

■ **IMPORTANT**

- **Before replacing a blown fuse, determine why the fuse blew and make any necessary repairs. Failure to follow this procedure may result in serious damage to the tractor electrical system. Refer to troubleshooting section of this manual.**
  If any of them should blow, replace with a new one of the same capacity.

■ **Protected Circuit**

Fuse No.	Capacity (A)	Protected circuit	ROPS		CABIN
			HST GST	MT	HST
1	7.5	Alternator	☆	☆	☆
2	15	Head lights	☆	☆	☆
3	15	Hazard	☆	☆	–
	20	Hazard	–	–	☆
4	5	Panel	☆	☆	☆
5	5	T/M controller 1	☆	–	☆
6	7.5	Work light	☆	☆	–
	15	Work light	–	–	☆
7	5	Brake lamp switch	☆	☆	–
8	10	T/M controller 2	☆	–	☆
		OPC controller	–	☆	–
9	5	Key stop	☆	☆	☆
10	30	Starter relay	–	–	☆
11	10	Dome lamp	–	–	☆
12	20	Aircon blower	–	–	☆
13	5	Radio casette	–	–	☆
14	20	Cigar lighter	–	–	☆
15	7.5	Aircon compressor	–	–	☆
16	30	Wiper	–	–	☆
17	15	Flasher	–	–	☆
18	30	Defogger	–	–	☆
19	Slow blow fuse	Check circuit against wrong battery.	☆	☆	☆

[A] ROPS Model **[B] CABIN Model**

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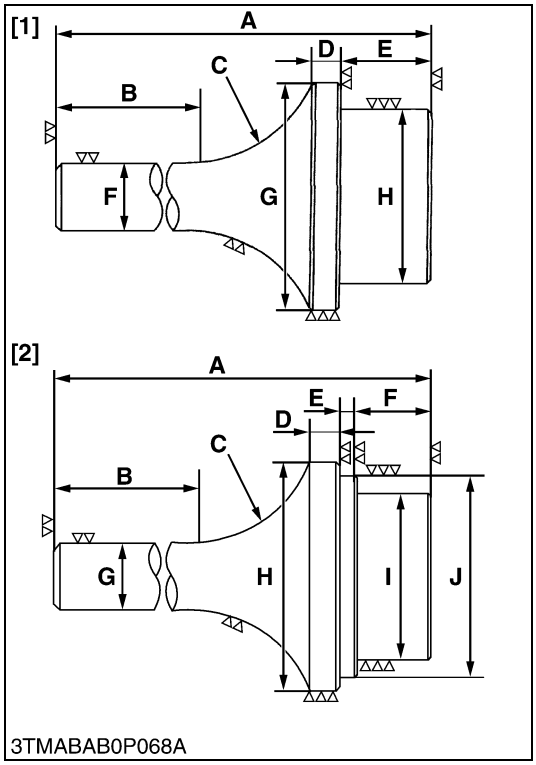

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Crankshaft Bearing 1 Replacing Tool

Application

- To press out and press fit the crankshaft bearing 1.

[1] Extracting tool

A	135 mm (5.31 in.)
B	72 mm (2.8 in.)
C	40 mm radius (1.6 in. radius)
D	10 mm (0.39 in.)
E	20 mm (0.79 in.)
F	20 mm dia. (0.79 in. dia.)
G	64.80 to 64.90 mm dia. (2.552 to 2.555 in. dia.)
H	59.80 to 59.90 mm dia. (2.355 to 2.358 in. dia.)

[2] Inserting tool

A	130 mm (5.12 in.)
B	72 mm (2.8 in.)
C	40 mm radius (1.6 in. radius)
D	9 mm (0.4 in.)
E	4 mm (0.2 in.)
F	20 mm (0.79 in.)
G	20 mm dia. (0.79 in. dia.)
H	68 mm dia. (2.7 in. dia.)
I	59.80 to 59.90 mm dia. (2.355 to 2.358 in. dia.)
J	64.80 to 64.90 mm dia. (2.552 to 2.555 in. dia.)

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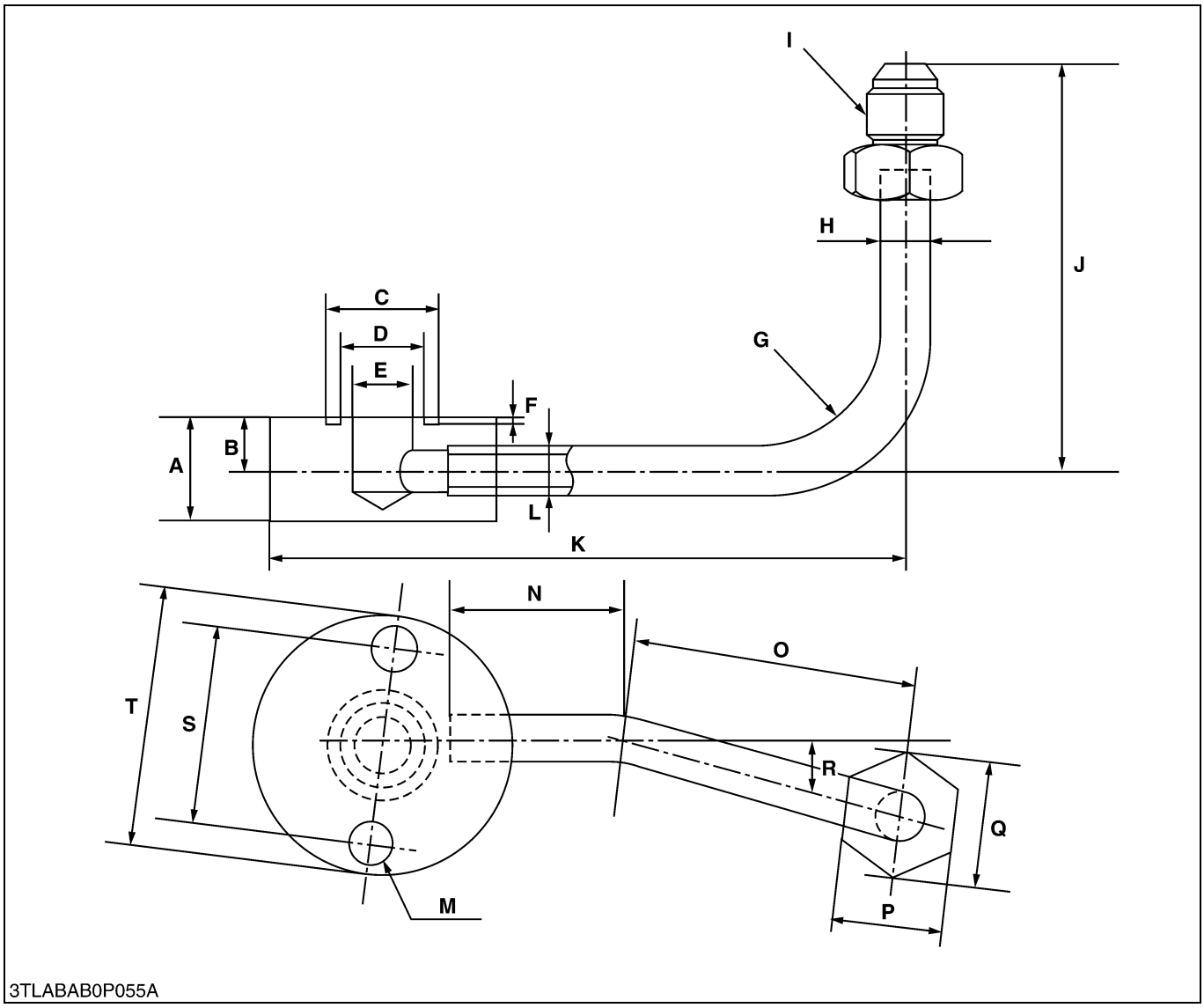
Pump Adaptor



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Application

- Use for examining the main hydraulic pump.

■ **NOTE**

- **When you uae, attach with following parts.**
  O-ring : 04811-00180
- **This adaptor is changed from Adaptor 61 of flowmeter adaptor set (see page G-58).**
- **This special tool is not available, so make it. Refer to the figure.**

A	22 mm (0.872 in.)	**K**	135 mm (5.31 in.)
B	11 mm (0.437 in.)	**L**	7 mm dia. (0.28 in. dia.)
C	24 mm dia. (0.94 in. dia.)	**M**	8.5 mm dia. (0.33 in. dia.)
D	18 mm dia. (0.71 in. dia.)	**N**	37 mm (1.46 in.)
E	12 mm dia. (0.47 in. dia.)	**O**	61.5 mm (2.42 in.)
F	1.7 to 1.9 mm (0.067 to 0.075 in.)	**P**	24 mm (0.94 in.)
G	30 mm Round (1.18 in. Round)	**Q**	27.7 mm (1.09 in.)
H	10 mm dia. (0.39 in. dia.)	**R**	0.244 rad (14 °)
I	G 3/8	**S**	40 mm (1.57 in.)
J	89 mm (3.50 in.)	**T**	60 mm dia. (2.36 in. dia.)

(Reference)

- From size **"A"** to size **"R"** are same size as adaptor **61**.

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No.	Implement	Remarks	L3240	L3540
17	Snow Blower	Max. Working Width	1702 mm (67 in.)	
		Max. Weight	280 kg (620 lbs)	

■ **NOTE**
- **Implement size may vary depending on soil operating conditions.**

9Y1210369GEG0089US0

SERVICING

CONTENTS

3. TIGHTENING TORQUES

Tightening torques of screws, bolts and nuts on the table below are especially specified.
(For general use screws, bolts and nuts : Refer to "5. TIGHTENING TORQUES" at "G. GENERAL" section.)

9Y1210369ENS0003US0

[1] ROPS Model

Item	N·m	kgf·m	lbf·ft
Joint bolt for PTO delivery pipe	35 to 39	3.5 to 4.0	26 to 28
Engine and clutch housing mounting screw	78 to 90	7.9 to 9.2	58 to 66
Engine and clutch housing mounting nut	103 to 117	10.5 to 12.0	76.0 to 86.7
Muffler mounting screw	32 to 37	3.2 to 3.8	24 to 27
Joint bolt for power steering delivery pipe	40 to 49	4.0 to 5.0	29 to 36
Retaining nut of power steering delivery pipe	49 to 58	5.0 to 6.0	37 to 43
Front axle frame mounting screw (7T)	78 to 90	7.9 to 9.2	58 to 66
Front axle frame mounting screw (9T)	103 to 117	10.5 to 12.0	76.0 to 86.7

9Y1210369ENS0004US0

[2] CABIN Model

Item	N·m	kgf·m	lbf·ft
Cabin mounting bolt and nut	124 to 147	12.6 to 15.0	91.2 to 108
Joint bolt for delivery pipe 2	40 to 49	4.0 to 5.0	29 to 36
Retaining nut of power steering delivery pipe	49 to 58	5.0 to 6.0	37 to 43
Joint bolt for oil cooler pipe	88.3 to 98.0	9.00 to 10.0	65.1 to 72.3
Engine and clutch housing mounting screw	78 to 90	7.9 to 9.2	58 to 66
Engine and clutch housing mounting nut	103 to 117	10.5 to 12.0	76.0 to 86.7
Muffler mounting screw	32 to 37	3.2 to 3.8	24 to 27
Front axle frame mounting screw (7T)	78 to 90	7.9 to 9.2	58 to 66
Front axle frame mounting screw (9T)	103 to 117	10.5 to 12.0	76.0 to 86.7

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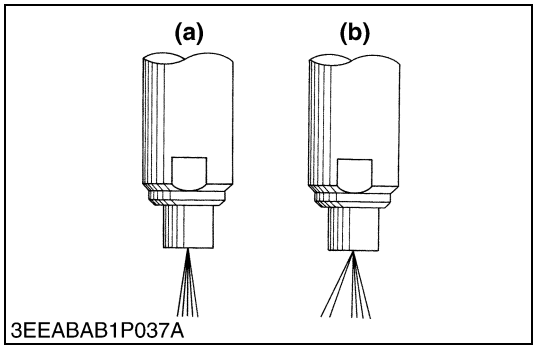
CAUTION

- **Check the injection pressure and condition after confirming that there is nobody standing in the direction the fume goes.**
- **If the fume from the nozzle directly injects the human body, cells may be destroyed and blood poisoning may be caused.**



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Nozzle Spraying Condition

1. Set the injection nozzle to a nozzle tester, and check the nozzle spraying condition.
2. If the spraying condition is defective, replace the nozzle piece.

(a) Good **(b) Bad**

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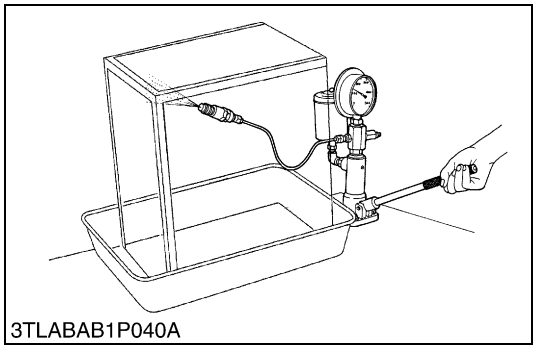
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Fuel Injection Pressure

1. Set the injection nozzle to a nozzle tester.
2. Slowly move the tester handle to measure the pressure at which fuel begins jetting out from the nozzle.
3. If the measurement is not within the factory specifications, replace the adjusting washer (1) in the nozzle holder to adjust it.

(Reference)

- Pressure variation with 0.025 mm (0.0010 in.) difference of adjusting washer thickness.
  Approx. 590 kPa (6.0 kgf/cm^2, 85 psi)

Fuel injection pressure	Factory specification	13.8 to 14.7 MPa 140 to 150 kgf/cm^2 2000 to 2130 psi

(1) Adjusting Washer

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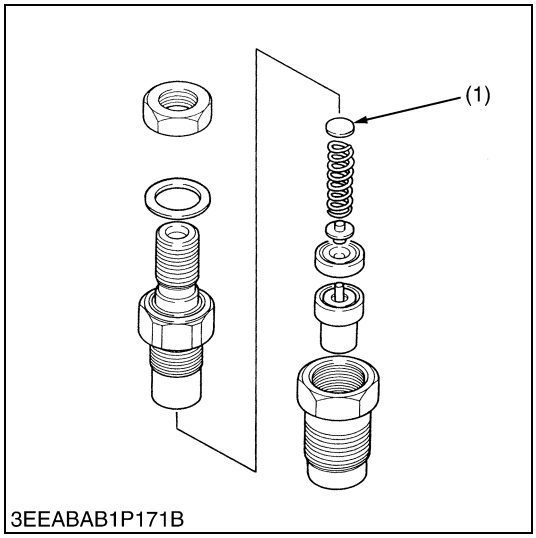

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Valve Seat Tightness

1. Set the injection nozzle to a nozzle tester.
2. Raise the fuel pressure, and keep at 12.8 MPa (130 kgf/cm^2, 1850 psi) for 10 seconds.
3. If any fuel leak is found, replace the nozzle piece.

Valve seat tightness	Factory specification	No fuel leak at 12.8 MPa 130 kgf/cm^2 1850 psi

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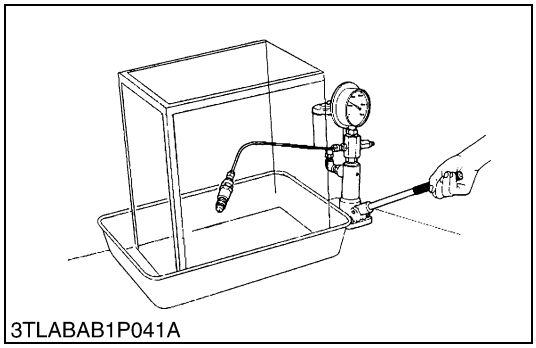
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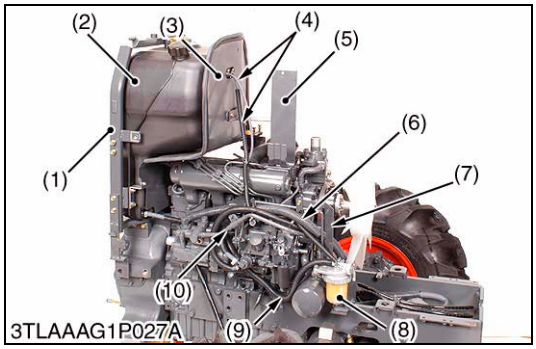

Fuel Tank, Hydraulic Pipe and Fuel Filter

1. Remove the reserve tank bracket (5).
2. Disconnect the over flow hoses (4) and fuel hose (9).
3. Remove the shutter plate (3).
4. Remove the fuel tank (2) with fuel tank frame (1).
5. Remove the power steering delivery pipe (10).
6. Disconnect the power steering return hose (6).
7. Remove the fuel filter (8) with fuel filter bracket (7).

(When reassembling)

Tightening torque	Joint bolt for power steering delivery pipe	40 to 49 N·m 4.0 to 5.0 kgf·m 29 to 36 lbf·ft
	Retaining nut of power steering delivery pipe	49 to 58 N·m 5.0 to 6.0 kgf·m 37 to 43 lbf·ft

(1) Fuel Tank Frame
(2) Fuel Tank
(3) Shutter Plate
(4) Over Flow Hose
(5) Reserve Tank Bracket
(6) Power Steering Return Hose
(7) Fuel Filter Bracket
(8) Fuel Filter
(9) Fuel Hose
(10) Power Steering Delivery Pipe

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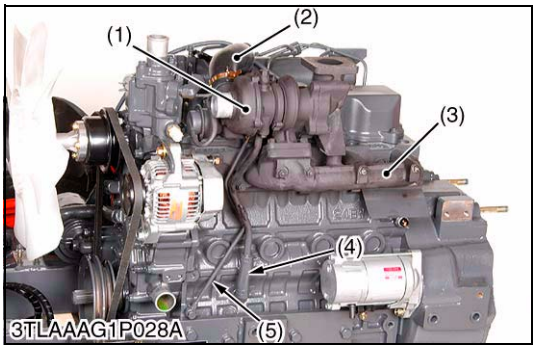

Turbo Charger (if equipped)

1. Disconnect the oil pipe (5) and return hose (4).
2. Disconnect the air intake hose (2).
3. Remove the exhaust manifold (3) with turbo charger (1).

(1) Turbo Charger
(2) Air Intake Hose
(3) Exhaust Manifold
(4) Return Hose
(5) Oil Pipe

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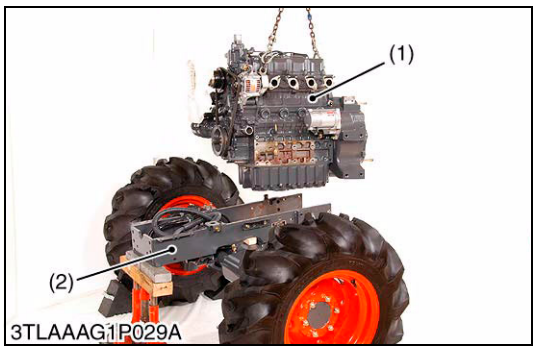

Front Axle Frame [L3240, L3540, L3940, L4240, L4740]

1. Hoist the engine by the chain at the engine hook.
2. Remove the dipstick stay mounting screw and front axle frame mounting screws.
3. Separate the front axle frame (2) from engine (1).

(When reassembling)

Tightening torque	Front axle frame mounting screw (7T)	78 to 90 N·m 7.9 to 9.2 kgf·m 58 to 66 lbf·ft
	Front axle frame mounting screw (9T)	103 to 117 N·m 10.5 to 12.0 kgf·m 76.0 to 86.7 lbf·ft

(1) Engine
(2) Front Axle Frame

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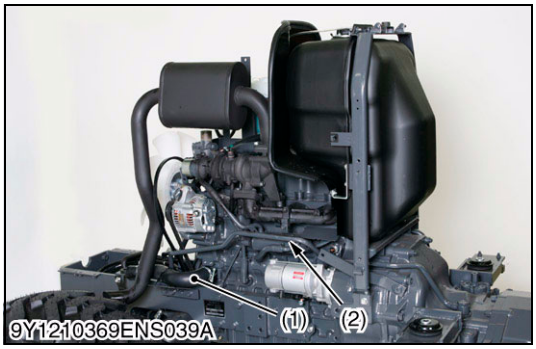

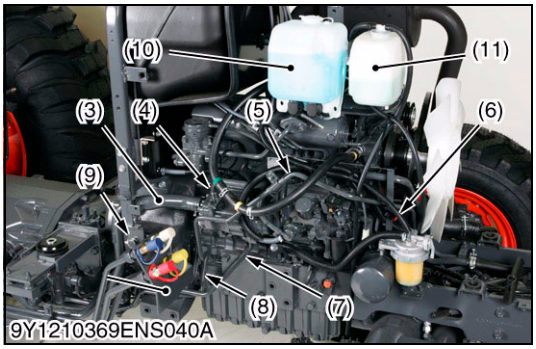

Hydraulic Pipes and Radiator Hose

1. Remove the radiator hose (1).
2. Remove the front loader pipe bracket bolts (9).
3. Remove the oil cooler pipe (2).
4. Remove the suction pipe (3).
5. Disconnect the fuel hose (6) from fuel filter.
6. Remove the power steering delivery pipe (5), delivery pipe 1 (7) and the delivery pipe 2 (8).
7. Remove the return pipe (4).
8. Remove the recovery tank (11) and washer tank (10) with stay.

(When reassembling)

Tightening torque	Joint bolt for delivery pipe 2	40 to 49 N·m 4.0 to 5.0 kgf·m 29 to 36 lbf·ft
	Retaining nut of power steering delivery pipe	49 to 58 N·m 5.0 to 6.0 kgf·m 37 to 43 lbf·ft
	Joint bolt for oil cooler pipe	88.3 to 98.0 N·m 9.00 to 10.0 kgf·m 65.1 to 72.3 lbf·ft

(1) Radiator Hose
(2) Oil Cooler Pipe
(3) Suction Pipe
(4) Return Pipe
(5) Power Steering Delivery Pipe
(6) Fuel Hose
(7) Delivery Pipe 1
(8) Delivery Pipe 2
(9) Front Loader Pipe Bracket Bolt
(10) Recovery Tank
(11) Washer Tank

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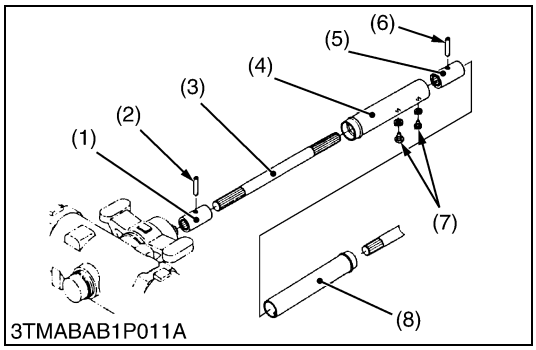

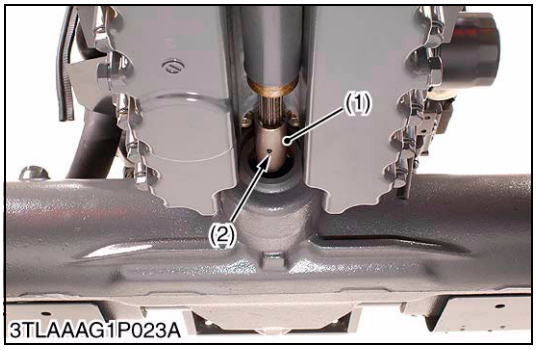

Propeller Shaft

1. Slide the propeller shaft cover (4) and (8) after removing the screws (7).
2. Tap out the spring pins (2), (6) and slide the couplings (1), (5) and then remove the propeller shaft with covers (4), (8).

(When reassembling)

- Apply grease to the splines of propeller shaft 1 (3).

(1) Coupling
(2) Spring Pin
(3) Propeller Shaft 1
(4) Propeller Shaft Cover
(5) Coupling
(6) Spring Pin
(7) Screws
(8) Propeller Shaft Cover

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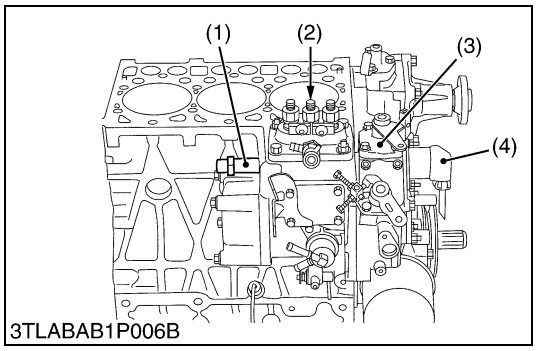
[4] TIMING GEARS, CAMSHAFT AND FUEL CAMSHAFT



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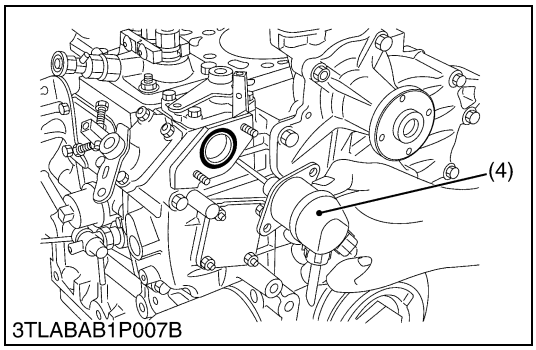

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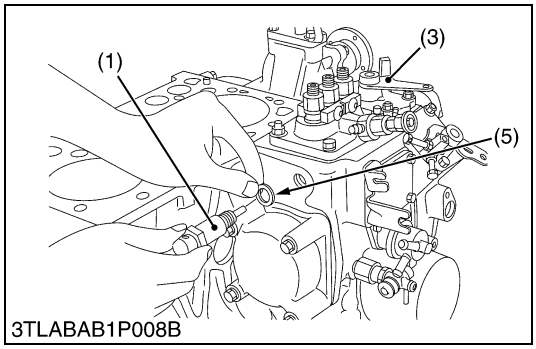

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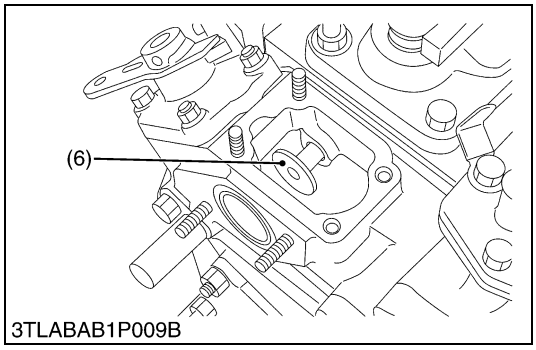

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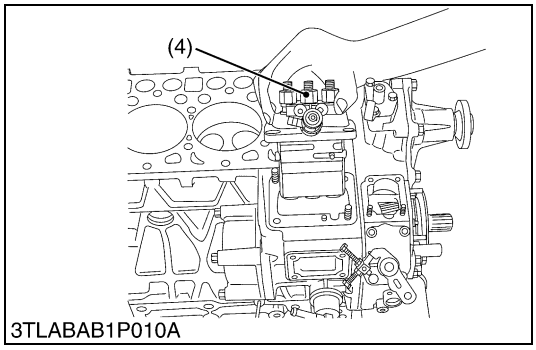

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Injection Pump

1. Remove the stop solenoid (4) and the hi-idling body (1).
2. Remove the engine stop lever (3) and the stop solenoid guide (6).
3. Remove the fuel injection pump assembly (2).

■ **IMPORTANT**

- **Before removing the injection pump assembly (2), be sure to remove the stop solenoid (4), hi-idling body (1), engine stop lever (3) and stop solenoid guide (6).**

(When reassembling)

- Before attaching the stop solenoid (4), the hi-idling body (1) and the stop solenoid guide (6), install the injection pump first into position.
- Replace the hi-idling body gasket (5) with a new one.
- Before fitting the stop lever (3) to the gear case, install the stop solenoid guide (6) first into position. Then attach the stop lever and use it to see if it functions well.
- Before fitting the idling limiter in place, attach the stop solenoid guide (6) and the engine stop lever (3) in their respective positions.
- When installing the stop solenoid (4), be careful to keep the O-ring in place.
- Be sure to insert the push rod of the stop solenoid into the hole at the center of the solenoid guide (6).

Tightening torque	Hi-idling body	45 to 49 N·m 4.5 to 5.0 kgf·m 33 to 36 lbf·ft

(1) Hi-idling Body
(2) Injection Pump Assembly
(3) Stop Lever
(4) Stop Solenoid
(5) Hi-idling Body Gasket
(6) Stop Solenoid Guide

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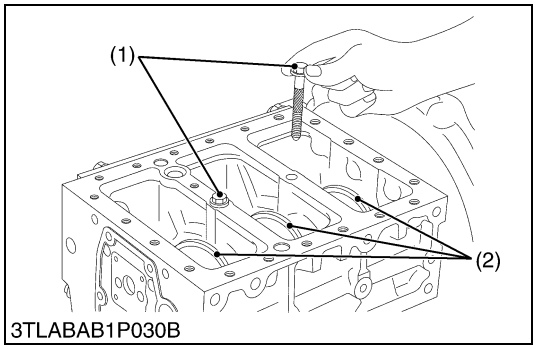

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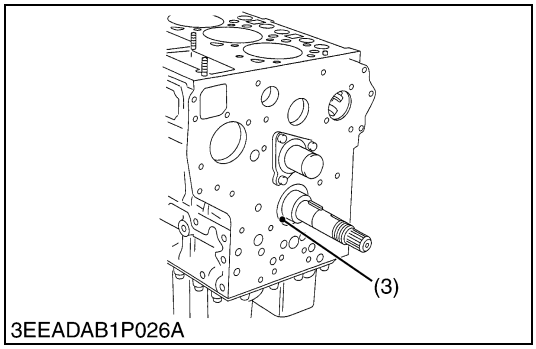

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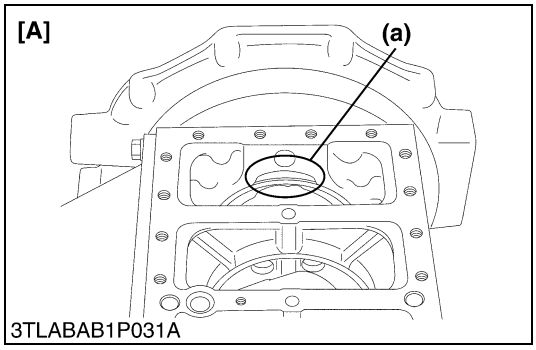

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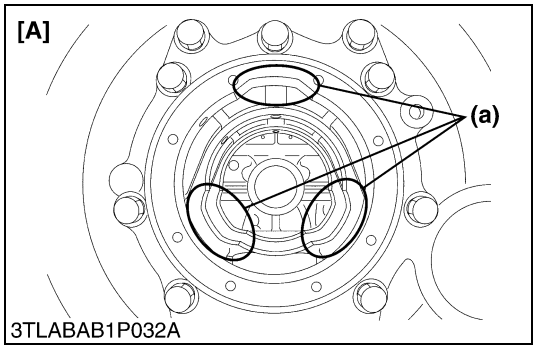

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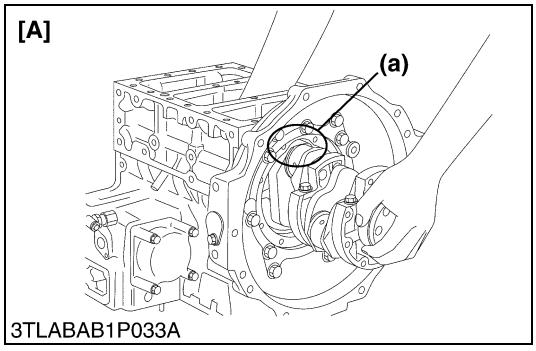

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Crankshaft

■ **NOTE**

- **Before disassembling, check the side clearance of crankshaft. Also check it during reassembling.**

[For D1503-M, D1703-M and V2203-M]

1. Remove the main bearing case screw 2 (1).
2. Pull out the crankshaft assembly, taking care not to damage the crankshaft bearing 1 (3).

[For D1803-M]

1. Remove the main bearing case screw 2 (1).
2. Turn the crankshaft to set the crank pin of the third cylinder to the bottom dead center. Then draw out the crankshaft until the crank pin of the second cylinder comes to the center of the third cylinder.
3. Turn the crankshaft by 2.09 rad (120 °) counterclockwise to set the crank pin of the second cylinder to the bottom dead center. Draw out the crankshaft until the crank pin of the first cylinder comes to the center of the third cylinder.
4. Repeat the above steps to draw out all the crankshaft.

[For V2403-M]

1. Remove the main bearing case screw 2 (1).
2. Turn the crankshaft to set the crank pin of the 4th cylinder to the horizontal directions (Right or Left). Then draw out all the crankshaft, holding the crank pins to the horizontal directions (Right or Left).

(When reassembling)

■ **IMPORTANT**

- **Install the crankshaft sub assembly, aligning the screw hole of main bearing case 2 (2) with the screw hole of cylinder block.**
- **When tightening the main bearing case screw 2 (1), apply oil to the screw and screw by hand before tightening the specific torque.**
  If not smooth to screw by hand, align the screw holes between the cylinder block and the main bearing case.

Tightening torque	Main bearing case screws 2	69 to 73 N·m 7.0 to 7.5 kgf·m 51 to 54 lbf·ft

(1) Main Bearing Case Screw 2
(2) Main Bearing Case 2
(3) Crankshaft Bearing 1
(a) Cut place for removing and installing the crankshaft
[A] D1803-M

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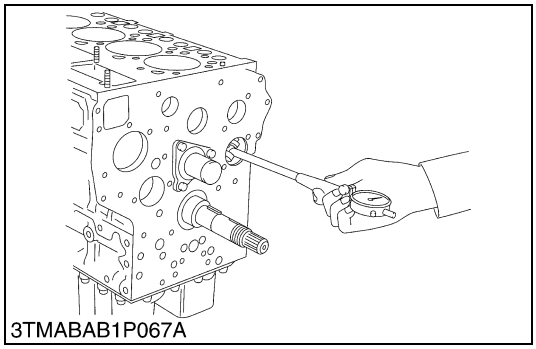
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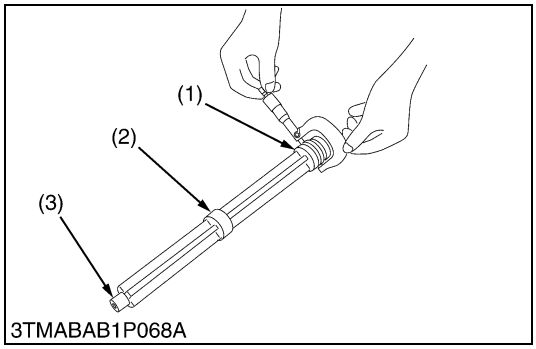

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Oil Clearance of Balancer Shaft Journal (for V2203-M and V2403-M)

1. Measure the balancer shaft journal O.D. with an outside micrometer.
2. Measure the cylinder block bore I.D. for balancer shaft with an inside micrometer or cylinder gauge.
3. If the clearance exceeds the allowable limit, replace the balancer shaft.

Oil clearance of balancer shaft journal 1	Factory specification	0.030 to 0.111 mm 0.00119 to 0.00437 in.
	Allowable limit	0.20 mm 0.0079 in.
Balancer shaft journal 1 O.D.	Factory specification	43.934 to 43.950 mm 1.7297 to 1.7303 in.
Balancer shaft bearing 1 I.D.	Factory specification	43.980 to 44.045 mm 1.7315 to 1.7340 in.
Oil clearance of balancer shaft journal 2	Factory specification	0.030 to 0.111 mm 0.00119 to 0.00437 in.
	Allowable limit	0.20 mm 0.0079 in.
Balancer shaft journal 2 O.D.	Factory specification	41.934 to 41.950 mm 1.6510 to 1.6515 in.
Balancer shaft bearing 2 I.D.	Factory specification	41.980 to 42.045 mm 1.6528 to 1.6553 in.
Oil clearance of balancer shaft journal 3	Factory specification	0.020 to 0.094 mm 0.00079 to 0.0037 in.
	Allowable limit	0.20 mm 0.0079 in.
Balancer shaft journal 3 O.D.	Factory specification	21.947 to 21.960 mm 0.86406 to 0.86456 in.
Balancer shaft bearing 3 I.D.	Factory specification	21.980 to 22.041 mm 0.86536 to 0.86775 in.

(1) Balancer Shaft Journal 1
(2) Balancer Shaft Journal 2
(3) Balancer Shaft Journal 3

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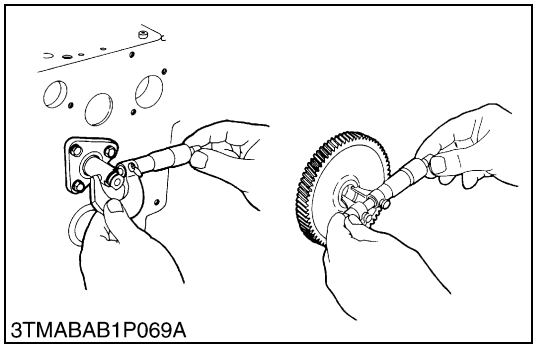
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Oil Clearance between Idle Gear Shaft and Idle Gear Bushing

1. Measure the idle gear shaft O.D. with an outside micrometer.
2. Measure the idle gear bushing I.D. with an inside micrometer, and calculate the oil clearance.
3. If the oil clearance exceeds the allowable limit, replace the bushing.

Clearance between idle gear shaft and idle gear bushing	Factory specification	0.025 to 0.066 mm 0.00099 to 0.0025 in.
	Allowable limit	0.10 mm 0.0039 in.
Idle gear shaft O.D.	Factory specification	37.959 to 37.975 mm 1.4945 to 1.4950 in.
Idle gear bushing I.D.	Factory specification	38.000 to 38.025 mm 1.4961 to 1.4970 in.

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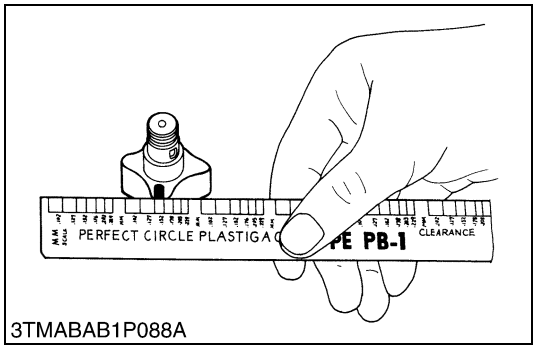

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Clearance between Rotor and Cover

1. Put a strip of plastigage onto the rotor face with grease.
2. Install the cover and tighten the screws.
3. Remove the cover carefully, and measure the width of the press gauge with a sheet of gauge.
4. If the clearance exceeds the factory specifications, replace oil pump rotor assembly.

Clearance between inner rotor and cover	Factory specification	0.105 to 0.150 mm 0.00414 to 0.00590 in.
	Allowable limit	0.20 mm 0.0079 in.

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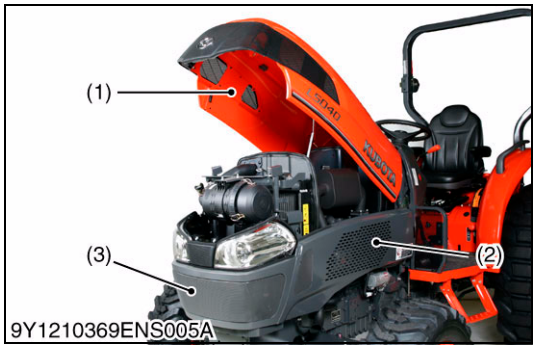

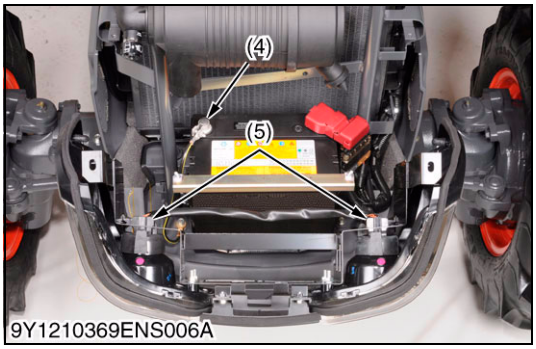

Battery, Front Grill, Skirt and Bonnet

1. Open the bonnet and disconnect the battery negative cable (4).
2. Disconnect the head light connectors (5) and remove the front grill (3).
3. Remove the left and right side skirts (2).
4. Remove the bonnet (1).

■ **NOTE**

- **When disconnecting the battery cords, disconnect the negative cable first, when connecting, positive cable first.**

(1) Bonnet
(2) Skirt
(3) Front Grill
(4) Negative Cable
(5) Connector

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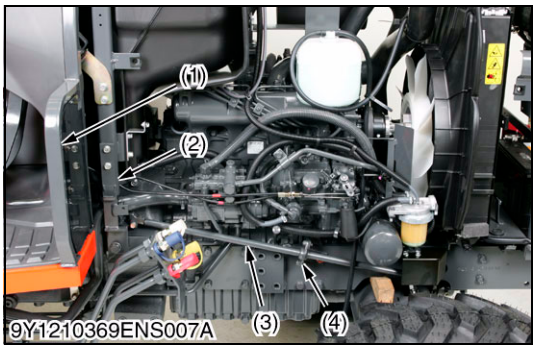

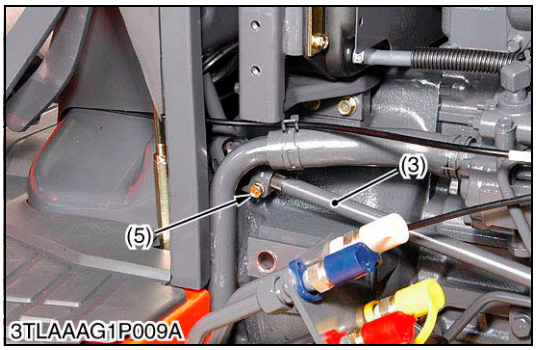

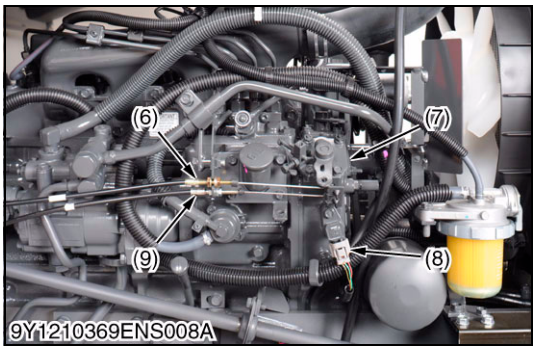

Steering Joint and Electrical Wiring

1. Remove the shield RH (1). (If equipped)
2. Remove the fuel tank frame support (2).
3. Remove the universal joint bolt (5) and steering joint shaft support (4), and then remove the steering joint shaft 2 (3).
4. Disconnect the hand accelerator wire (6) and foot accelerator wire (9).
5. Disconnect the wiring connectors for engine stop solenoid (7), tachometer sensor (8) and glow plug. (Manual Transmission and GST model)
   Disconnect the wiring connector for throttle sensor. (HST model only)

(When reassembling)

- When the accelerator wire is installed, adjust the wiring length. The stop lever must hit the idle speed adjusting bolt and the maximum speed adjusting bolt in the stroke of the accelerator lever.

(1) Shield RH
(2) Fuel Tank Frame Support
(3) Steering Joint Shaft 2
(4) Steering Joint Shaft Support
(5) Universal Joint Bolt
(6) Hand Accelerator Wire
(7) Engine Stop Solenoid
(8) Engine Tachometer Sensor
(9) Foot Accelerator Wire

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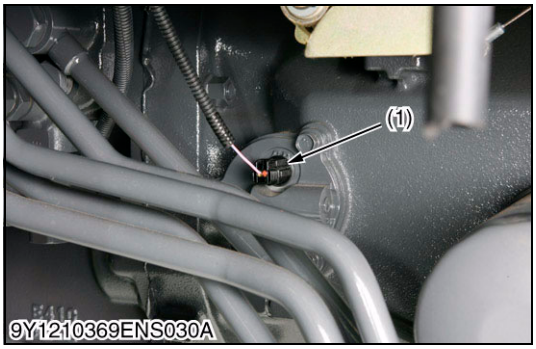

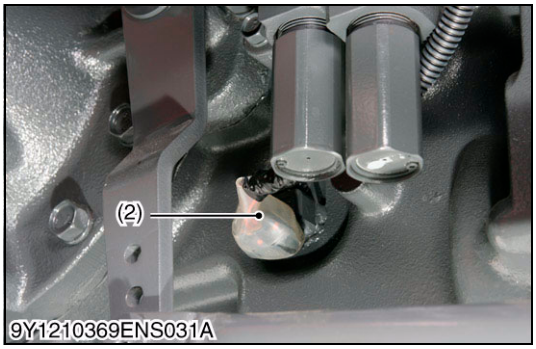

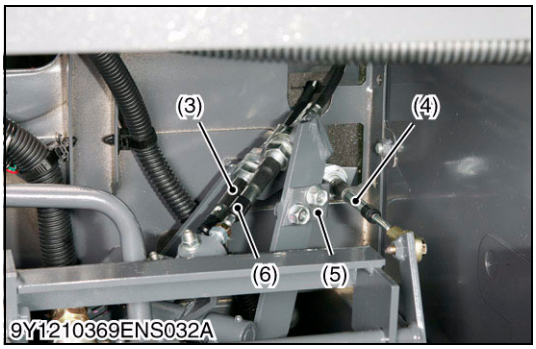

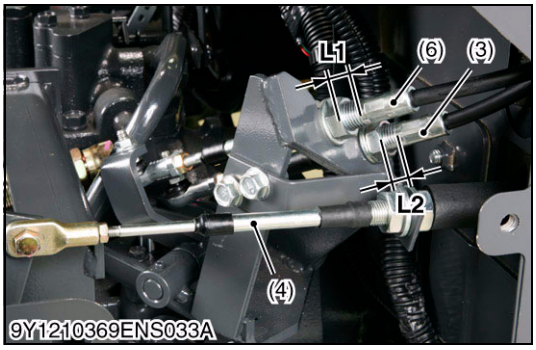

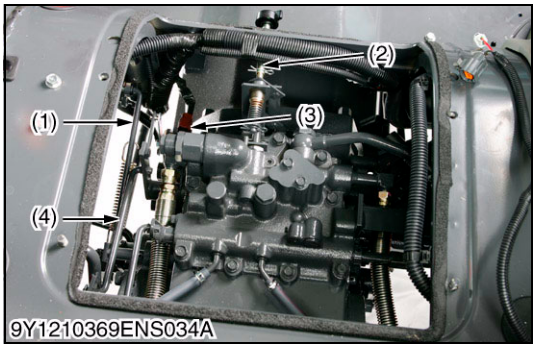

Cables and Wiring Harness

1. Disconnect the PTO connector (1).
2. Disconnect the speed sensor connector (2).
3. Remove the stay (5) and disconnect the position control cable (4).
4. Disconnect the front loader control cables (3) (6).

(When reassembling)

- Lock the position cable at the center of the screw.
- Adjust the front loader cables, with the front loader control lever in the locked position (Neutral position).

Length **L1**	Reference	9.0 mm 0.35 in.
Length **L2**		11 mm 0.43 in.

(1) PTO Connector
(2) Speed Sensor Connector
(3) Front Loader Control Cable
(4) Position Control Cable
(5) Stay
(6) Front Loader Control Cable

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Differential Lock Rod and Lowering Speed Adjusting Knob

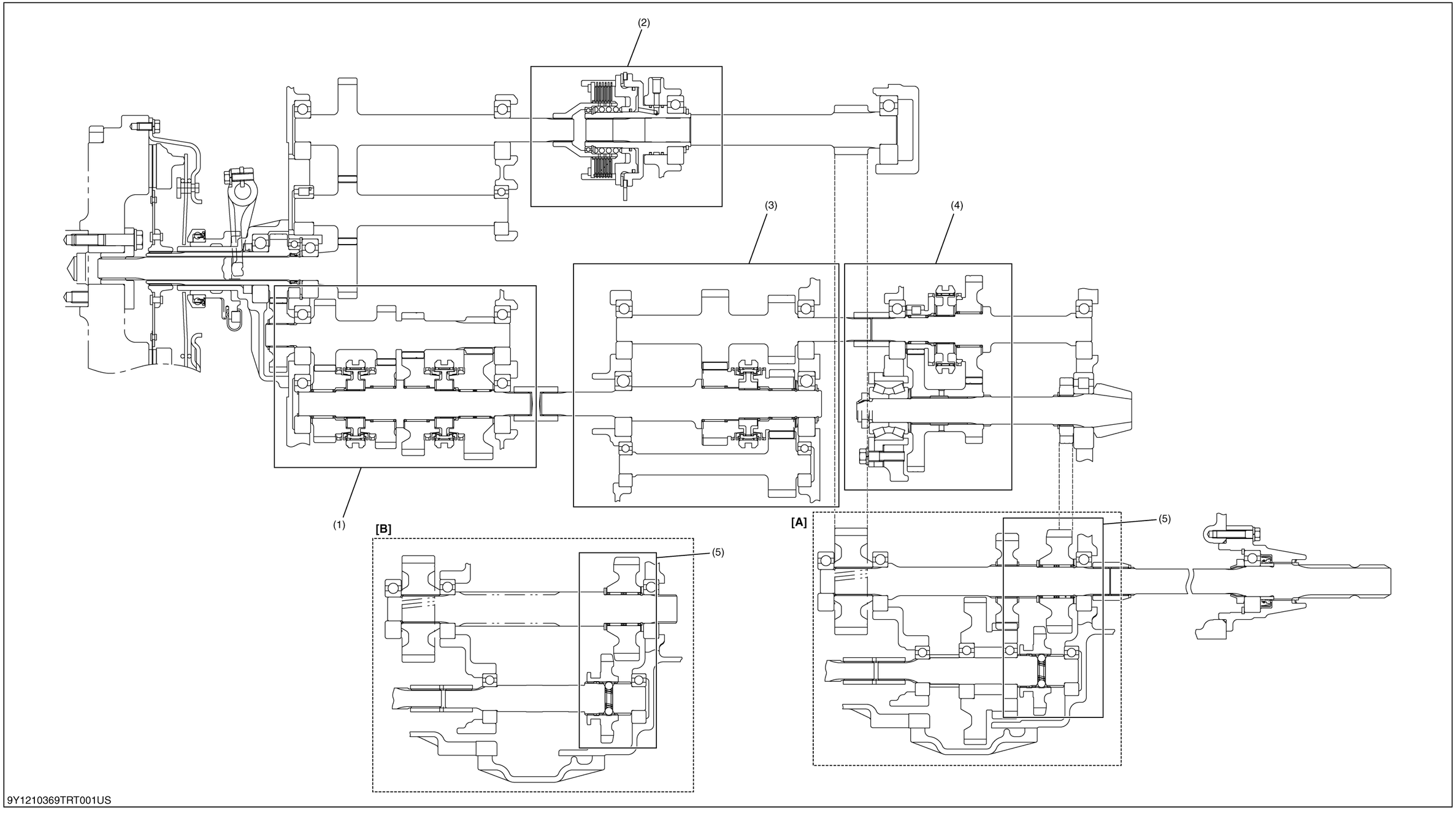
1. Remove the lowering speed adjusting knob (2).
2. Remove the differential lock rod (1) and range gear shift rod (4).
3. Disconnect the range gear sensor connector (3).

(1) Differential Lock Rod
(2) Lowering Speed Adjusting Knob
(3) Range Gear Sensor Connector
(4) Range Gear Shift Rod

9Y1210369ENS0053US0

1. STRUCTURE

[1] MANUAL TRANSMISSION MODEL

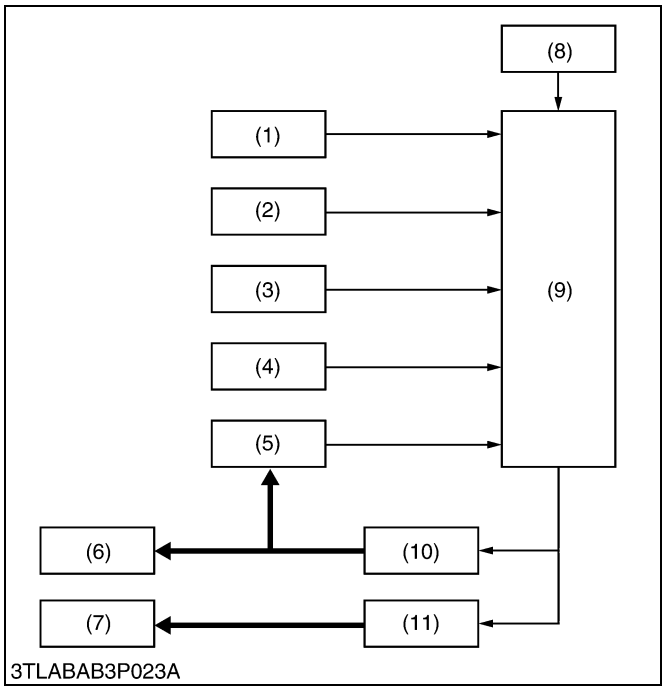


(1) Main Gear Shift Section
(2) PTO Clutch Section
(3) Shuttle Shift Section
(4) Range Gear Shift Section
(5) Front Wheel Drive Shift Section (for Four Wheel Drive Model)

[A] L3240, L3940
[B] L4240

[3] ELECTRICAL CONTROL SYSTEM

(1) Electrical Control



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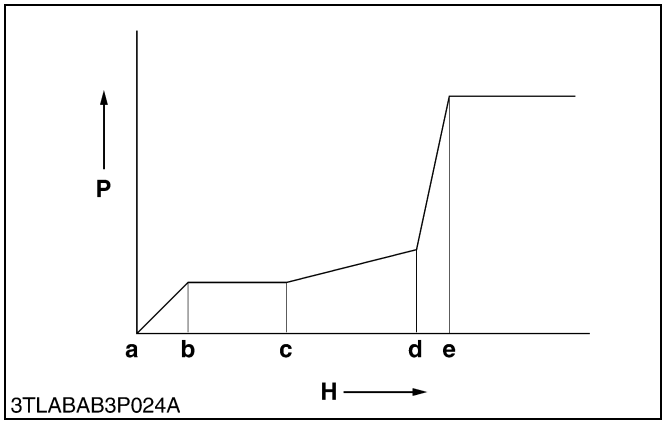

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An electrical control of GST system is as follows.

1. Shift the GST lever and shuttle lever to desired position.
2. The output voltage of selected gear shift position is output to microcomputer of the ECU by lever sensor.
3. The ECU detects the gear shift position with GST lever sensor and shuttle switch, and excites various solenoid valves in accordance with selected position.
4. When the desired solenoid is excited, oil is sent to the desired shift piston.
5. A pressure in the circuit is raised because the movement of shift piston shuts the shift check pin. When the pressure in the circuit reaches 0.49 MPa (5 kgf/cm^2, 71 psi), the pressure switch becomes **"ON"**.
6. By means of the pressure switch's **"ON"**, the ECU detects the present condition (traveling speed, engine speed and oil temperature) from various sensors, and pressure in the hydraulic clutch is raised according to the respective condition.

■ **NOTE**

- **By means of speed increasing, speed decreasing, traveling speed, engine speed and oil temperature, the indicated pressure period from c to d is controlled at appropriate pressure respectively.**

7. A pressurizing to hydraulic clutch has been done until it reaches the system pressure, and pressure in the clutch is maintained at this state.

(1) Oil Temperature Sensor
(2) Engine Tachometer Sensor
(3) Traveling Speed Sensor
(4) Shuttle Switch
(5) Pressure Switch
(6) Shift Piston
(7) Clutch Valve
(8) GST Lever Sensor
(9) ECU
(10) Solenoid Valves
(11) Proportional Reducing Valve

P : Pressure
H : Time
a : Starting of clutch engaging
b : Low-pas pressure
c : Starting of pressurized
c to d : Specified pressure from ECU
e : Gear shifting completion

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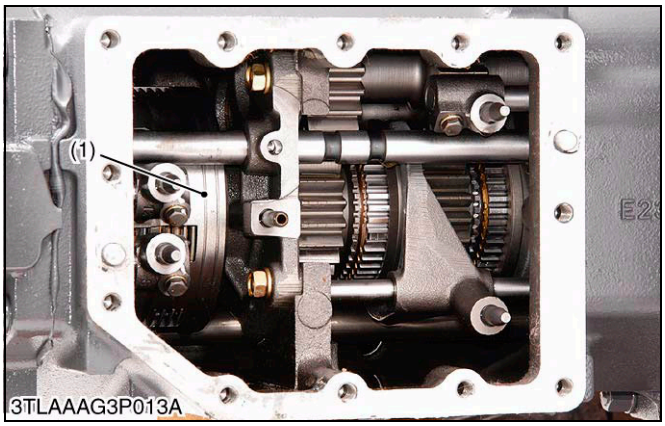
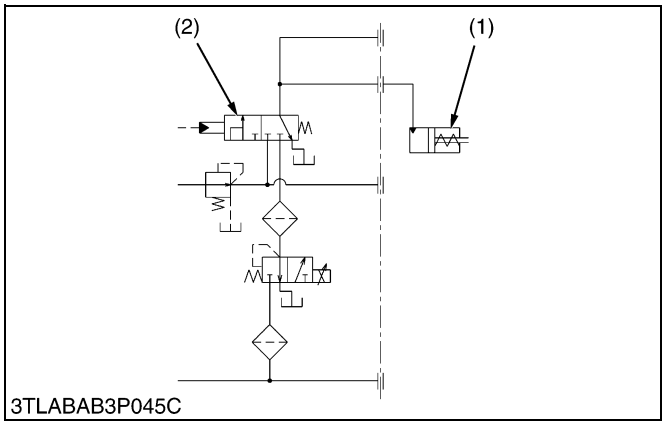
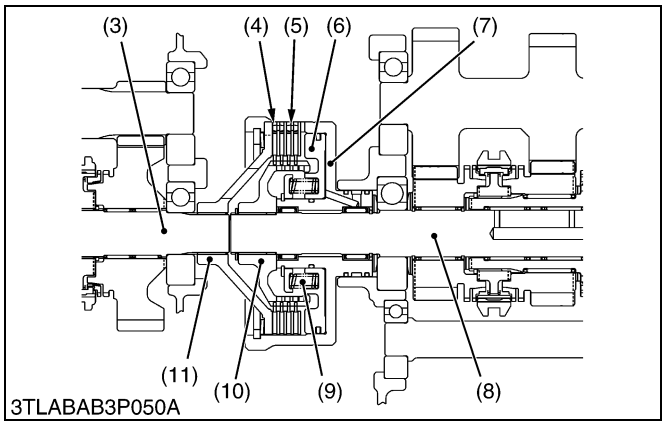
[C] GST Clutch







The GST clutch is hydraulic multiple plate type and is provided between the counter shaft (3) and the shuttle shaft (8), and it **"engages"** and **"disengages"** the power from the engine. This is controlled by the operation of clutch valve (2).

■ **Engaging (When the shift gear is at desired position while engine is running)**

The oil from clutch valve (2) flows in to push the return spring (9) and the piston (6). The piston is pushed to the left by the oil, thereby pushing the clutch discs (4) and the plates (5) to transmit the power.

■ **Disengaging (When the engine stop, the shift levers are neutral position, between from start to end of the gear shifting)**

The oil of the GST clutch (1) is pushed out with return spring (9) and piston (6), and flowed to the tank.

(1) GST Clutch
(2) Clutch Valve
(3) Counter Shaft
(4) Clutch Disc
(5) Plate
(6) Piston
(7) Clutch Case
(8) Shuttle Shaft
(9) Return Spring
(10) Clutch Output Hub
(11) Clutch Input Hub

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[5] SHIFT LINKAGE MECHANISM

The shift linkage mechanisms of **"Shuttle Lever"** and **"Front Wheel Drive Lever"** are similar to manual transmission model.

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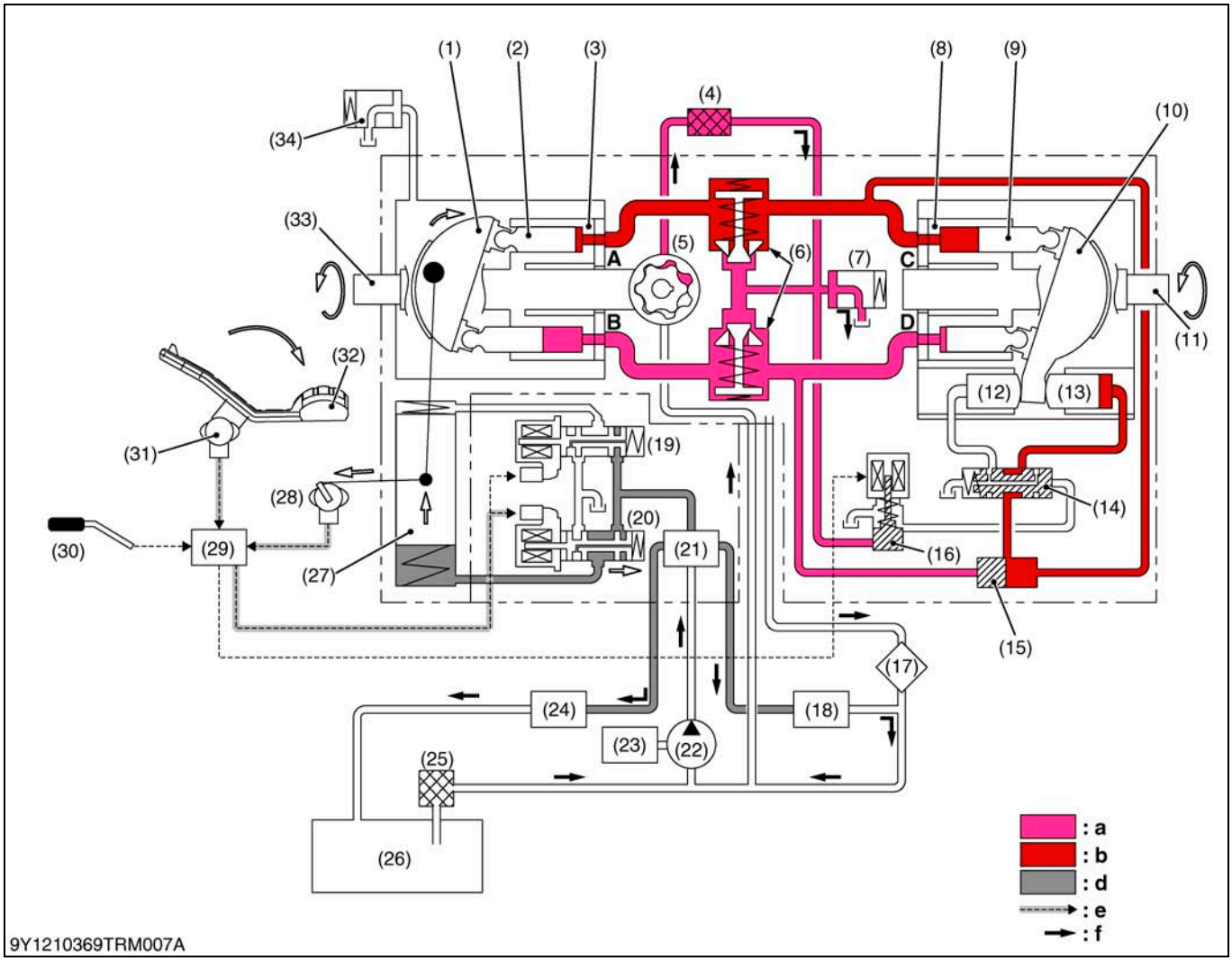
[E] Stage 5

■ **When the pedal is located on the forward side and the Hi-Lo change lever is changed from "Hi" to "Lo" (The lamp of the turtle lights up and the rabbit goes off)**

[Tractor Condition]

HST pedal : **Forward Position**

Hi-Lo select lever : **Lo → Hi**



(1) Pump Swash Plate
(2) Pump Piston
(3) Pump Cylinder Block
(4) HST Filter
(5) Charge Pump
(6) Check and High Pressure Relief Valve
(7) Charge Relief Valve
(8) Motor Cylinder Block
(9) Motor Piston
(10) Motor Swash Plate
(11) Out Put Shaft (Motor Shaft)
(12) Piston H
(13) Piston L
(14) Hi-Lo Spool
(15) Spool (Pressure Selector)
(16) Hi-Lo Solenoid Valve
(17) Oil Cooler
(18) Power Steering Controller
(19) Proportional Valve (Reverse)
(20) Proportional Valve (Forward)
(21) Regulator Valve
(22) Hydraulic Pump
(23) Engine
(24) PTO Valve
(25) Filter
(26) Transmission Case
(27) Servo Piston
(28) Servo Position
(29) ECU
(30) Hi-Lo Selector Lever
(31) HST Pedal Sensor
(32) HST Pedal
(33) Input Shaft (Pump Shaft)
(34) Case Relief Valve

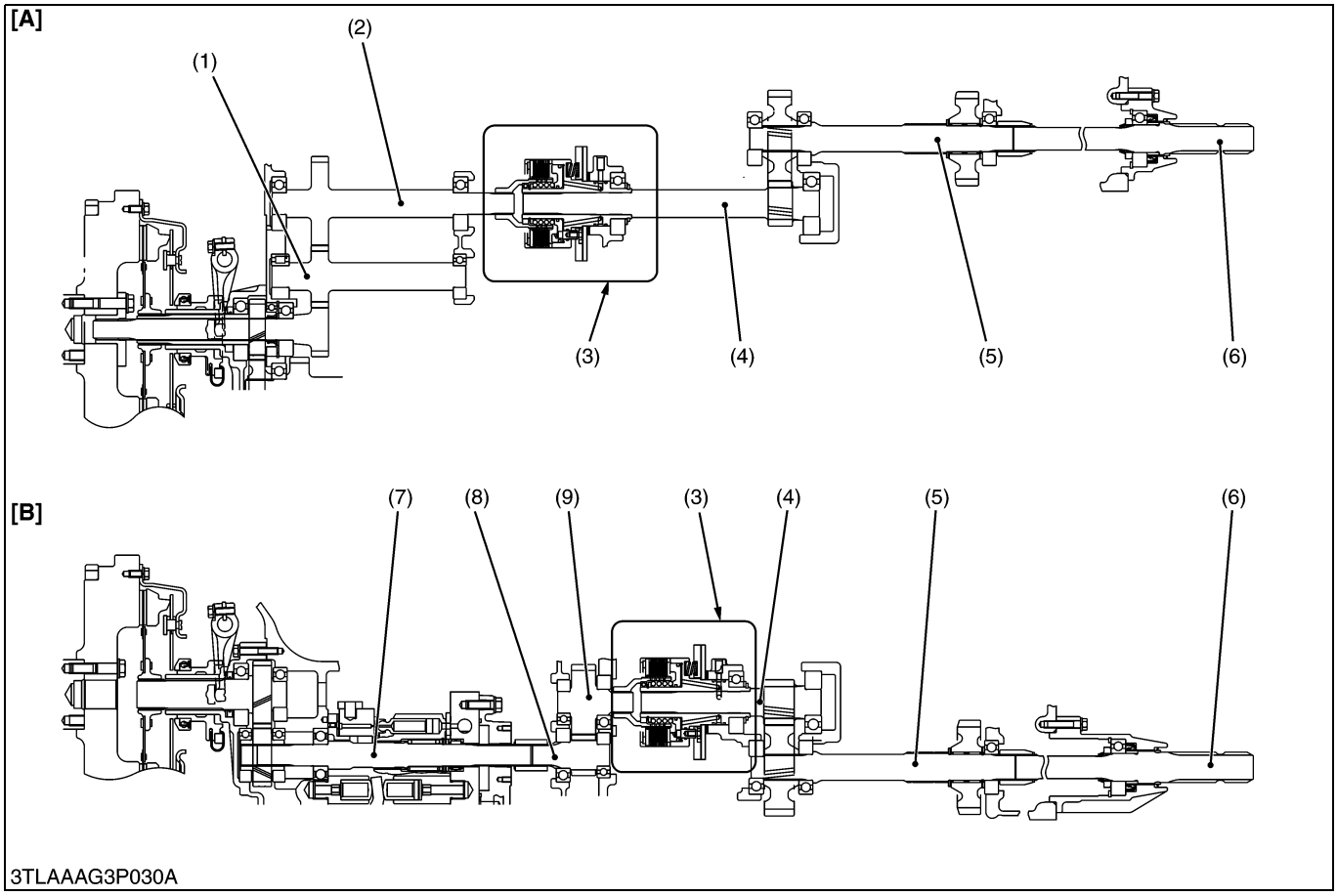
A : A Port
B : B Port
C : C Port
D : D Port

a : Charge Pressure
b : High Pressure
d : Regulating Pressure
e : Signal
f : Oil Flow

(To be continued)

5. PTO SYSTEM

[1] STRUCTURE



(1) PTO Gear Shaft 1
(2) PTO Gear Shaft 2
(3) PTO Clutch Pack
(4) PTO Counter Shaft
(5) PTO Drive Shaft
(6) PTO Shaft
(7) Output Shaft (Motor Shaft)
(8) PTO Gear Shaft 1
(9) PTO Gear Shaft 2
[A] Manual Transmission and GST Model
[B] HST Model

The independent PTO operated by hydraulic clutch (3) is adapted for all models. PTO is **"ENGAGED"** or **"DISENGAGED"** by operating the PTO switch of the PTO solenoid valve.

The power train from the clutch to the PTO shaft is composed as shown in figure above.

(Reference)

- PTO speed of each model is as shown in the table below.

Manual Transmission and GST Model

Rear PTO	All Model	540 min^{-1} (rpm) at 2550 min^{-1} (rpm) engine speed

HST Model

Rear PTO	L3240, L3540	540 min^{-1} (rpm) at 2685 min^{-1} (rpm) engine speed
	L3940, L4240, L4740	540 min^{-1} (rpm) at 2640 min^{-1} (rpm) engine speed
	L5240, L5740	540 min^{-1} (rpm) at 2590 min^{-1} (rpm) engine speed

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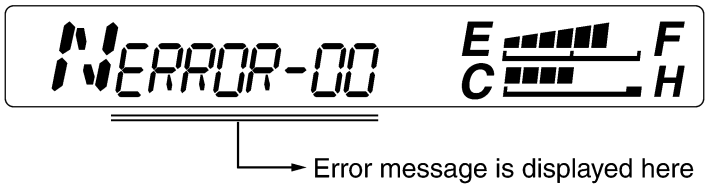
Error Display for GST Model



Display on LCD Screen	Trouble Item	Probable Cause	Solution	Reference Page
ERROR-00	Electronic instrument panel memory device has failed	• Electronic instrument panel memory device failure	Replace the electronic instrument panel	9-S18
ERROR-20	Communication error between ECU and electronic instrument panel	• Fuse blown out • Communication line between ECU and electronic instrument panel is broken or short-circuited • No signals from ECU for longer than 5 seconds (error cleared if signal sent and received later) • ECU defective	Check the fuse	G-44
			Check ECU connector	9-S41
			Check communication line between ECU and electronic instrument panel at ECU connector	9-S44
			Replace ECU	9-S17
ERROR-30	ECU memory device has failed	• ECU memory device failure	Replace ECU	9-S17
ERROR-40	Input voltage to lever sensor from ECU is failed	• Lever sensor input voltage drop below 2. 6 V for 0.1 second or more • Ground wire of lever sensor short-circuited	Check the ground cable	9-S35
			Check input voltage at ECU connector	9-S44
			Check the sensor connector	–
ERROR-50	GST lever sensor is failed	• Lever sensor output terminal is out of adjustment • Lever sensor output wire terminal broken or short-circuited • Input line broken • Lever sensor defective	It is possible to run at its selected speed position until engine is stopped.	–
			Check the sensor connector	–
			Check the sensor voltage by Test mode (Mode **A**)	9-S21
			Check the lever sensor wire connector (voltage) or check the sensor resistance	9-S44
			Replace the lever sensor	–

Error Message Does not Indicate on LCD

Symptom	Probable Cause	Solution	Reference Page
System Will Not Operate in Either Direction	Oil level is low	Check oil level or fill oil to proper level	G-9
	Charge pressure is too low	Solution order 1. Replace oil filter cartridge	G-36
		2. Check charge pressure	3-S37
		3. Inspect or flush charge relief valve	3-S110
	Check and high pressure relief valve does not move smoothly	Inspect or replace check and high pressure relief valve	3-S110
	Component parts defective	Replace hydrostatic transmission assembly	–
	Electronic control parts defective	Inspect or replace electronic control parts	–
Vibration and Noise	Oil level is too low	Check oil level or fill oil to proper level	G-9
	Charge pressure is too low	Solution order 1. Replace oil filter cartridge	G-36
		2. Check charge pressure	3-S37
		3. Inspect or flush charge relief valve	3-S110
	Check and high pressure relief valve does not move smoothly	Inspect or replace check and high pressure relief valve	3-S110
	Component parts defective	Replace hydrostatic transmission assembly	–

[2] GLIDE SHIFT TRANSMISSION (GST) MODEL

(1) Electrical Adjusting [GST Fine-adjustment with Electronic Instrument Panel (Intellipanel)]

■ **NOTE**

- **Before executing the following fine-adjustment, refer to "Testing, Setting and Adjusting by Electronic Instrument Panel" at "Electrical System" section.**
  The fine-adjustment function is a function to update the data of the memory device in the ECU when a sensor, a valve, and an electronic instrument panel which relates to the GST system are repaired or are re-installed. There are three kinds of fine-adjustment functions in the GST system.

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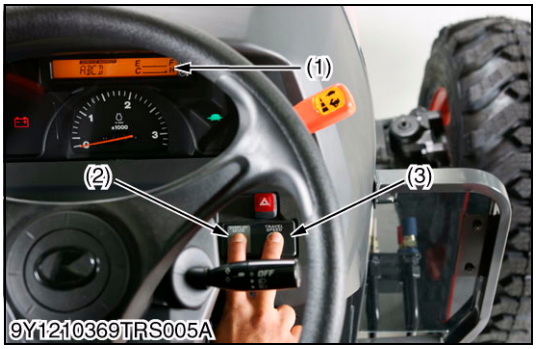

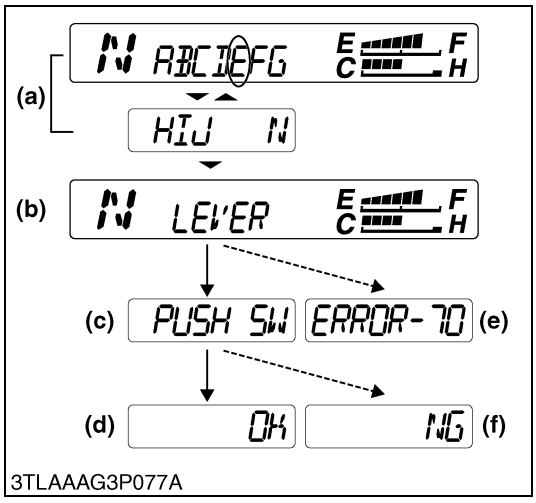

GST Lever Sensor Fine-adjustment
(Setting the GST lever's neutral position with its sensor)

■ **IMPORTANT**

- **As for this fine-adjustment, be sure to set it correctly because the set state becomes the standard of the control thereafter.**

■ **NOTE**

- **When the GST lever sensor, the ECU or the electronic instrument panel is replaced, this adjustment is required.**

1. Set the GST shift lever to **Neutral** position.
2. Push down both the display mode switch (2) and the travel speed switch (3) at once, continue holding switches, and then turn the main switch to **"ON"** position.
3. The **"Mode Selection Display" (a)** is indicated on the LCD (1). And release the switches.
4. Press the display mode switch (2) to move the flashing part, and flash the **"E"**.
5. Hold down the display mode switch (2) for more then 2 seconds at this condition, and the buzzer rings and Mode **E** is selected.
6. **"LEVER"** is displayed **(b)** and **"PUSH SW"** is displayed **(c)** for five seconds.
7. Hold down the display mode switch for more than 2 seconds. (This preserve the adjusted value to the ECU.)
8. **"OK"** is displayed **(d)** on LCD screen to tell that preserving to ECU has been made correctly. Turn off the main switch to end the mode.
9. If **"NG"** is displayed **(f)**, it means the preserving has not been made correctly **(d)**. Turn off the main switch and repeat the procedure.
10. If **"LEVER"** is displayed **(b)** first and then **"ERROR-70"** shows up **(e)**, it means the lever sensor voltage is out of specification. In this case ;
    - Check to see that GST lever is at the **Neutral** position.
    - Check the lever sensor voltage in the Test Mode (Mode **"A"**) (Refer to "9. TESTING, SETTING AND ADJUSTING BY INSTRUMENT PANEL" at "ELECTRICAL SYSTEM" section). If out of specification, replace the sensor itself.

(1) Liquid Crystal Display (LCD)
(2) Display Mode Switch
(3) Travel Speed Switch

(a) Mode Selection Display
(b) Information Display
(c) Adjusting Display
(d) Correct Preserving Display
(e) Error Display
(f) Incorrect Preserving Display

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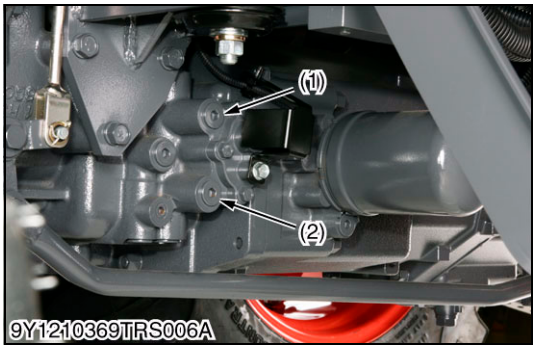
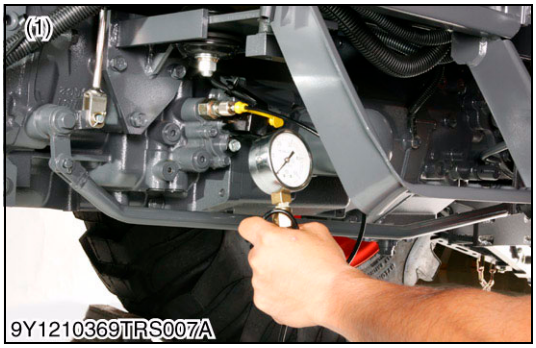
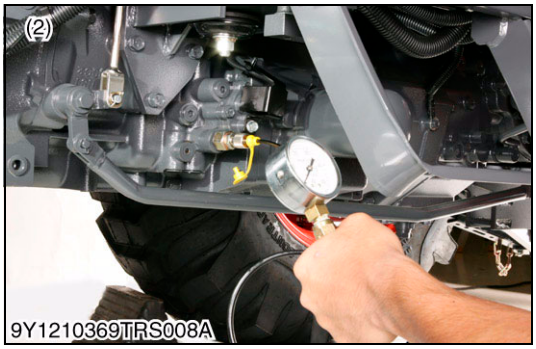
(2) Hydraulic Checking and Adjusting







Checking High Pressure Relief Valve Pressure

CAUTION

- **When checking, park the machine on flat ground, apply the parking brake.**

1. Remove the hex. socket head plug from **P1** or **P2** port. (**P1** is for forward and **P2** is for reverse.)
2. Assemble adaptor **C** (07916-50371) and threaded joint (07916-50341) with the gasket between them.
3. Install the assemble adaptor **C** and threaded joint to **P1** (forward) or **P2** (reverse) port.
4. Install the cable, threaded joint in relief valve set pressure tester and high pressure gauge to threaded joint in order.
5. Check to see that parking brake is applied.
6. Run the engine at maximum speed.
7. Place the range gear shift lever in **H** position.
8. Depress the HST pedal, and measure the check and high pressure relief valve pressure.
9. If the measurement is not within the factory specification, check the check and high relief valve assembly.

Check and high relief pressure (Oil temperature at 40 to 60 °C (104 to 140 °F))	Factory specification	34.0 to 37.5 MPa 347 to 382 kgf/cm^2 4940 to 5430 psi

IMPORTANT

- **Measure quickly so that the relief valve may not be in operation more than 10 seconds.**

NOTE

- **High pressure gauge is 40 MPa (400 kgf/cm^2 , 5800 psi) full scale.**

(When reassembling)

- Install the hex. socket head plug to the port with O-ring.

(1) **P1** Port (for Forward) (2) **P2** Port (for Reverse)

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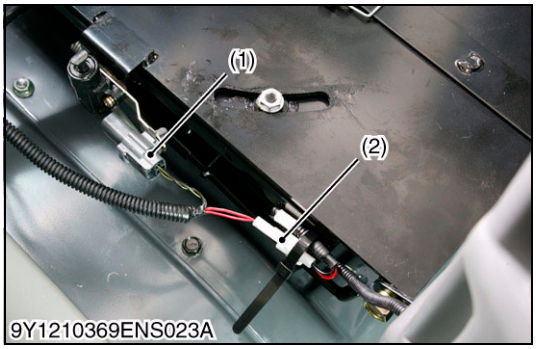

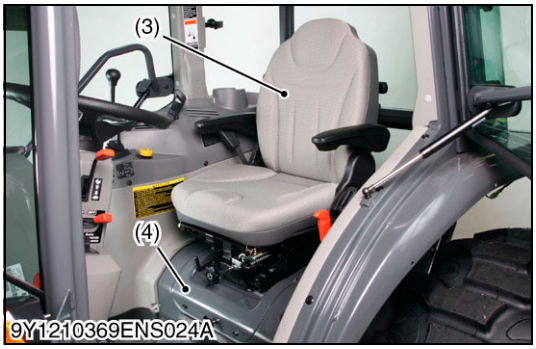

Seat, Seat Bracket and Lever Grips

1. Disconnect the seat switch connector (2) and seat tilt switch connector (1).
2. Remove the seat (3).
3. Remove the seat bracket (4).
4. Remove the front wheel drive lever (6).
5. Remove the lever grip for range gear shift lever (5).

(1) Seat Tilt Switch Connector
(2) Seat Switch Connector
(3) Seat
(4) Seat Bracket
(5) Range Gear Shift Lever
(6) Front Wheel Drive Lever

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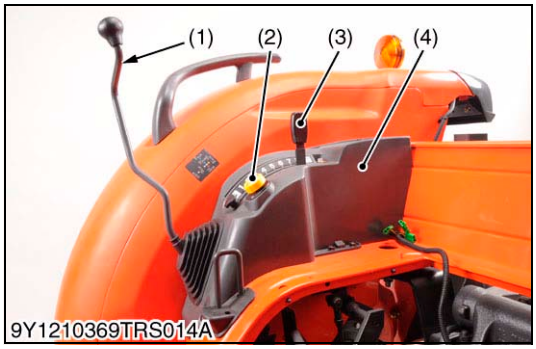

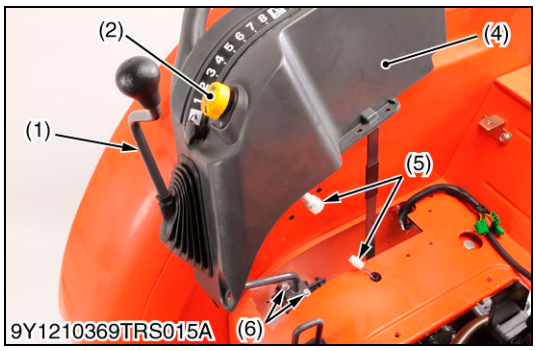

Cover, Control Lever and PTO Switch Connector

1. Remove the grip (3) and remove the cover (4).
2. Disconnect the PTO switch connector (5).
3. Remove the lever screws (6) and remove the control lever (1) with cover (4).

(When reassembling)

- Apply liquid lock (Three Bond 1324B or equivalents) to the control lever screws (6).

(1) Control Lever
(2) PTO Switch
(3) Grip
(4) Cover
(5) PTO Switch Connector
(6) Control Lever Screw

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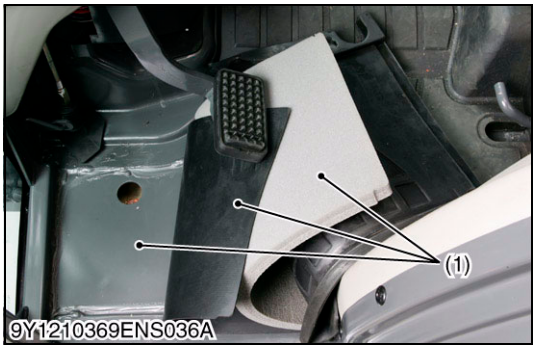

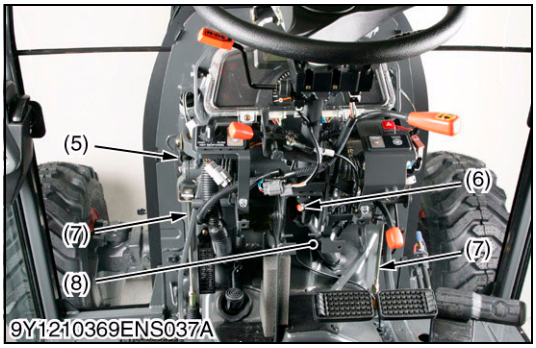

Mats, Panel Cover and Linkage

1. Remove the mats (1).
2. Remove the steering post covers 1 (3) and the steering post cover 2 (4).
3. Remove the panel cover (2).
4. Remove the brake rods (7) and clutch rod (5).
5. Remove the universal joint bolt (6) and disconnect the steering joint shaft 1 (8).

(1) Mat
(2) Panel Cover
(3) Steering Post Cover 1
(4) Steering Post Cover 2
(5) Clutch Rod
(6) Universal Joint Bolt
(7) Brake Rod
(8) Steering Joint Shaft 1

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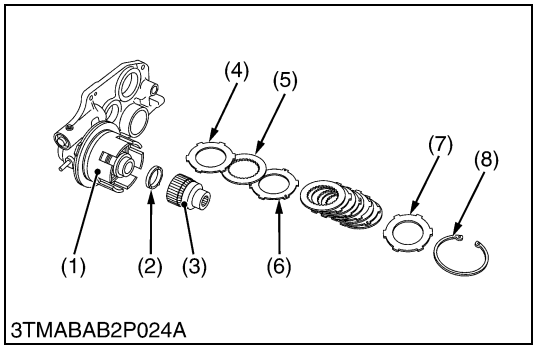

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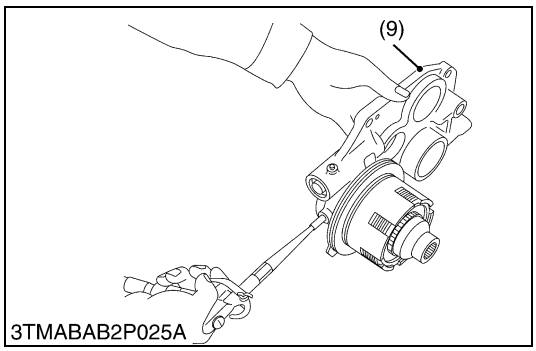

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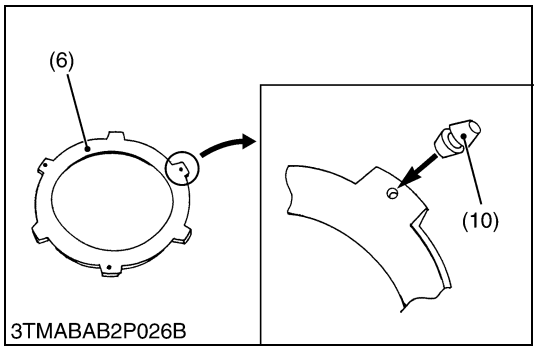


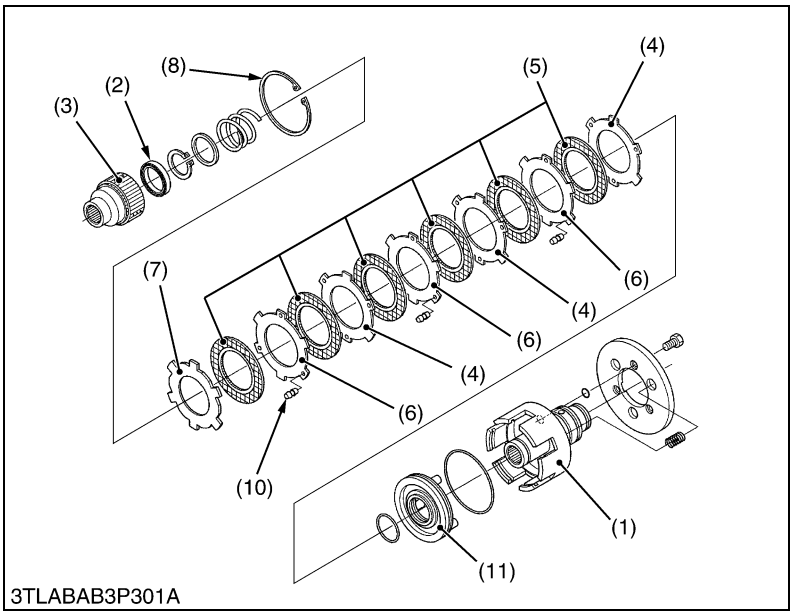
3TMABAB2P026B

Clutch Hub and Clutch Discs of PTO Clutch

1. Remove the internal snap ring (8), and then take out the clutch discs (5), the back plate (7), the steel plates(4) and (6), the hub (3) and the bearing (2).

(When reassembling)

- Install the clutch discs (5) and steel plates (4) and (6) mutually. (Refer to figure below.)
- Do not confuse the two types steel plates. The steel plates with the plug rubbers (10) are (6) and without plug rubbers are (4).
- Do not confuse the back plate (7) and steel plates. The back plate (7) is thicker than the steel plates.
- Assemble the plug rubbers portion of the three steel plates (6) are same positions while assembling them. (Refer to figure below.)
- Apply enough transmission fluid to the discs (5).
- Confirm the moving of the piston (11) smoothly when pressure air at 0.29 to 0.39 MPa (3 to 4 kgf/cm^2, 42 to 57 psi) is sent to clutch pack. (Refer to the figure left.)



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(1) Clutch Case
(2) Bearing
(3) Hub
(4) Steel Plate (without Plug Rubber)
(5) Clutch Disc
(6) Steel Plate (with Plug Rubber)
(7) Back Plate
(8) Internal Snap Ring
(9) Bearing Holder
(10) Plug Rubber
(11) Piston

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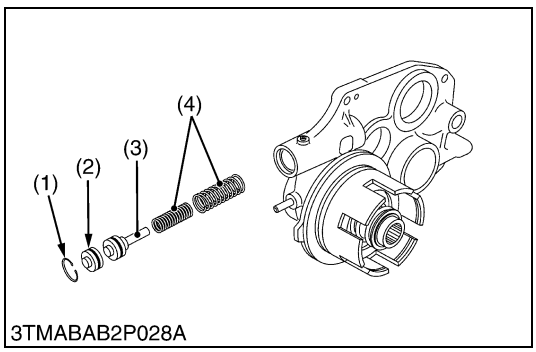

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Accumulator of PTO Clutch

1. Remove the internal snap ring (1).
2. Remove the spring seat (2).
3. Draw out the spring (4) and piston (3).

(1) Internal Snap Ring
(2) Spring Seat
(3) Piston
(4) Spring

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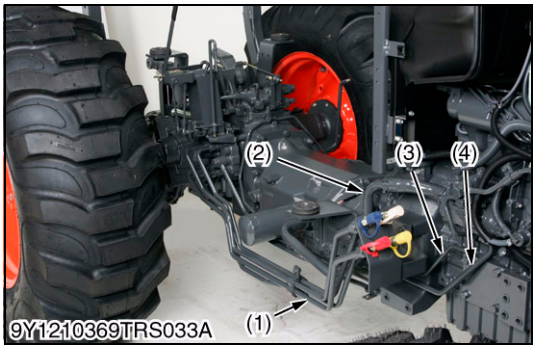
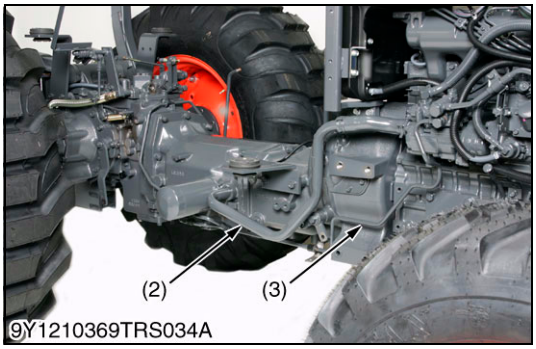
[2] GLIDE SHIFT TRANSMISSION MODEL

(1) Clutch Housing





Hydraulic Pipes

1. Remove the main delivery pipe (4).
2. Remove the front loader pipes (1).
3. Remove the suction pipe 1 (2) and PTO delivery pipe (3).

(When reassembling)

Tightening torque	Joint bolt for delivery pipes	118 to 137 N·m 12.0 to 14.0 kgf·m 86.8 to 101 lbf·ft
	Front loader pipe retaining nut	49.0 to 58.8 N·m 5.00 to 5.99 kgf·m 36.2 to 43.3 lbf·ft
	Joint bolt for PTO delivery pipe	35 to 39 N·m 3.5 to 3.9 kgf·m 26 to 28 lbf·ft

(1) Front Loader Pipe
(2) Suction Pipe 1
(3) PTO Delivery Pipe
(4) Main Delivery Pipe

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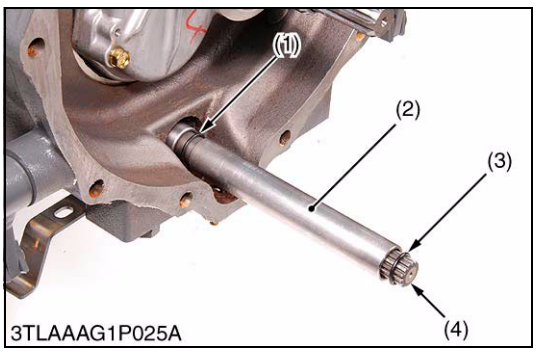
Separating Engine and Clutch Housing

1. Place the disassembling stand under the engine and clutch housing.
2. Remove the engine and clutch housing mounting screws and nuts.
3. Separate the engine and clutch housing.

(When reassembling)

- Install the O-rings (1) (3) and collar (2) on the front axle drive shaft (4) as shown in the figure.
- Apply grease to the spline of clutch shaft.
- Apply liquid gasket (Three Bond 1211 or equivalent) to joint face of the flywheel housing and clutch housing.

Tightening torque	Engine and clutch housing mounting screw	78 to 90 N·m 7.9 to 9.2 kgf·m 58 to 66 lbf·ft
	Engine and clutch housing mounting nut	103 to 117 N·m 10.5 to 12.0 kgf·m 76.0 to 86.7 lbf·ft



(1) O-ring
(2) Collar
(3) O-ring
(4) Front Axle Drive Shaft

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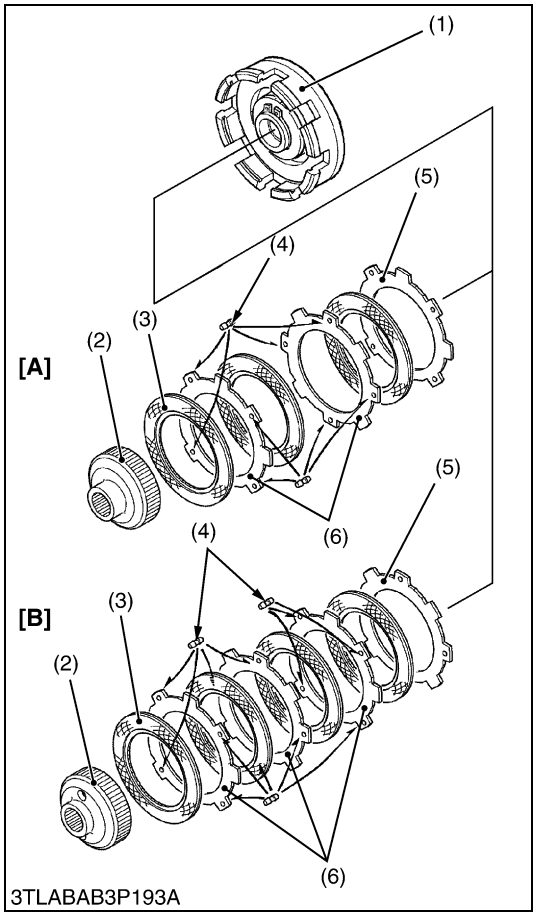

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GST Clutch Discs

1. Take out the clutch hub (2), clutch disc (3) and steel plate (5), (6) from clutch case (1).

(When reassembling)

- Assemble the two (L3240, L3540) or three (L3940, L4240, L4740, L5040) steel plates (6) with plug rubbers (4) to the front side, one steel plate (5) without plug rubber to the piston side. (Steel plate (5), (6) are used same part.)
- Do not pile up the plug rubber (4) portion on steel plates (6) while reassembling as shown in the figure.

(1) Clutch Case
(2) Clutch Hub
(3) Clutch Disc (Three pieces for L3240, L3540, four pieces for L3940, L4240, L4740, L5040)
(4) Plug Rubber
(5) Steel Plate without Plug Rubber
(6) Steel Plate with Plug Rubber (Two pieces for L3240, L3540, three pieces for L3940, L4240, L4740, L5040)

[A] L3240, L3540
[B] L3940, L4240, L4740, L5040

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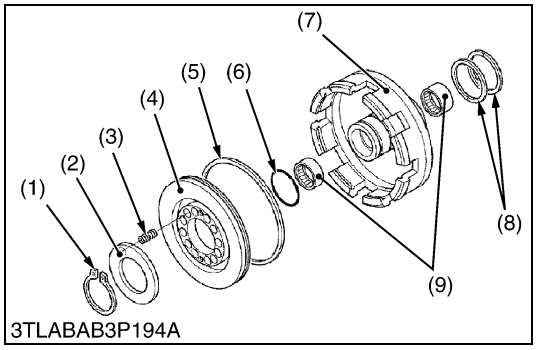

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Clutch Case and GST Clutch Piston

1. Remove the external snap ring (1) while pushing the spring retainer (2) by hand press.
2. Take out the spring retainer (2), springs (3) and piston (4).

(When reassembling)

- Apply small amount of the grease to the seal rings (8) when assemble the clutch case (7).
- Apply enough transmission fluid to the O-ring (6) and D-ring (5).

(1) External Snap Ring
(2) Spring Retainer
(3) Spring
(4) Piston
(5) D-ring
(6) O-ring
(7) Clutch Case
(8) Seal Ring
(9) Needle Bearing

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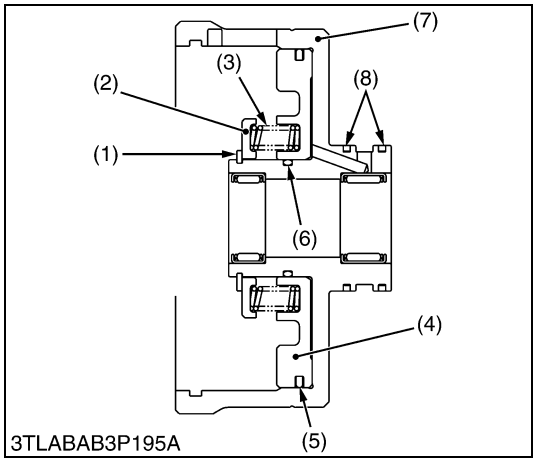

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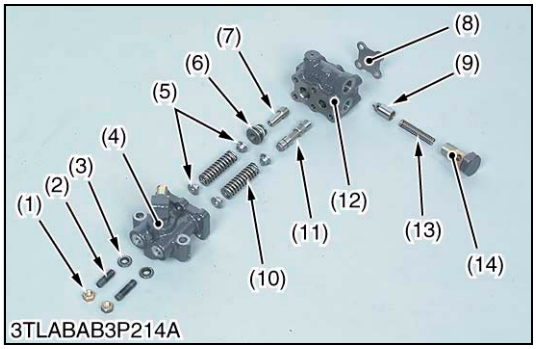

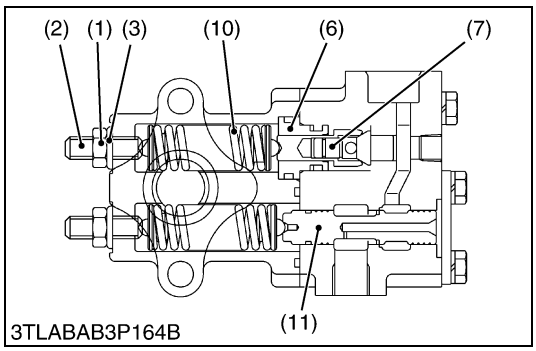

Disassembling Regulating Valve

■ **NOTE**

- **The regulating valve has been precisely machined and assembled. It is advisable not to disassemble it as long as there is no necessary.**

1. Remove the plate (8) and take out reducing spool (11), spring retainer (5) and spring (10).
2. Separate the regulating valve case (12) and support (4).
3. Take out the bush (6) and poppet (7).
4. Remove the joint bolt (14), and then take out the spring (13) and the poppet (9).
5. Take out the spring retainer (5) and spring (10).

(When reassembling)

- Take care not to damage the O-rings.

■ **IMPORTANT**

- **After reassembling, the adjustment of regulating pressure should be performed.**

Tightening torque	Joint bolt (14)	35 to 39 N·m 3.5 to 4.0 kgf·m 26 to 28 lbf·ft
	Plate (8)	9.8 N·m 1.0 kgf·m 7.2 lbf·ft
	Regulating valve case and support mounting screws	9.8 N·m 1.0 kgf·m 7.2 lbf·ft

(1) Nut
(2) Adjustor
(3) Washer with Rubber
(4) Support
(5) Spring Retainer
(6) Bush
(7) Poppet
(8) Plate
(9) Poppet
(10) Spring
(11) Reducing Spool
(12) Regulating Valve Case
(13) Spring
(14) Joint Bolt

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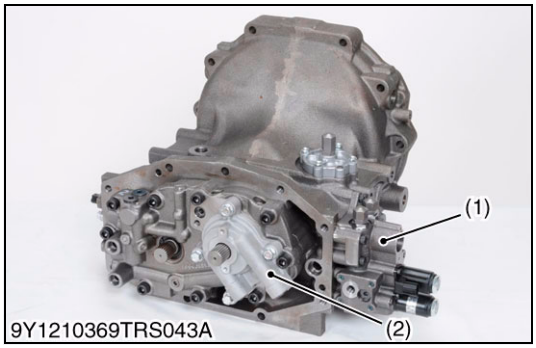

Regulating Valve Assembly and Charge Pump

1. Remove the regulating valve assembly (1).
2. Remove the charge pump (2).

(When reassembling)

■ **NOTE**
- **Replace the gasket with a new one.**
- **Alignment mark should be front side.**

Tightening torque	Regulating valve assembly mounting hex. socket head screw	29 to 34 N·m 3.0 to 3.4 kgf·m 22 to 25 lbf·ft

(1) Regulating Valve Assembly
(2) Charge Pump
(3) Outer Rotor
(4) Inner Rotor
(5) Alignment Mark

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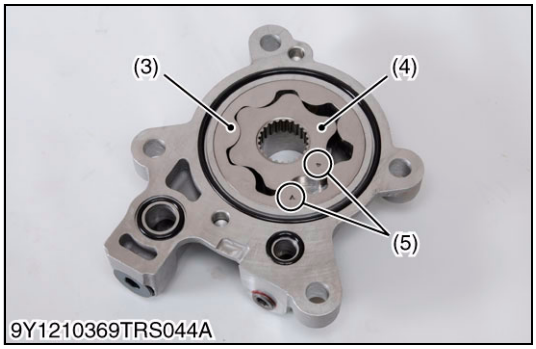
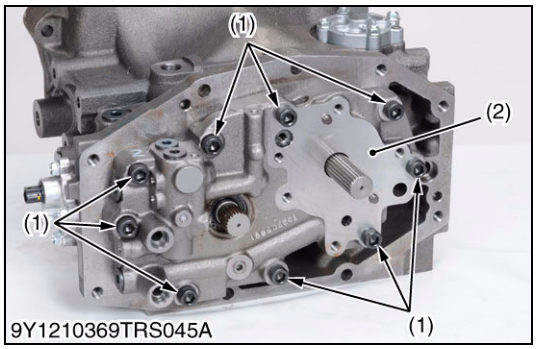


Port Block

1. Remove the port block mounting hex. socket head screws (1).
2. Pull and remove the port block (2) from the HST housing.

(When reassembling)
- Install port block with O-rings (3), valve plates and gasket in place.
- Replace the gasket (5) with a new one.

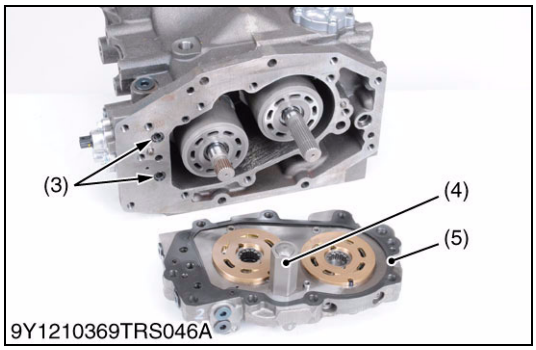
■ **NOTE**
- **Valve plates may stick to the port block but they are not fixed. Take care not to drop them.**
  And these valve plates are not interchangeable.



Tightening torque	Port block mounting hex. socket head screw	103 to 118 N·m 10.5 to 12.5 kgf·m 76.0 to 87.0 lbf·ft
	Piston H (5)	59 to 78 N·m 6.1 to 7.9 kgf·m 44 to 57 lbf·ft

(1) Head Screw
(2) Port Block
(3) O-ring
(4) Piston H
(5) Gasket

9Y1210369TRS0131US0

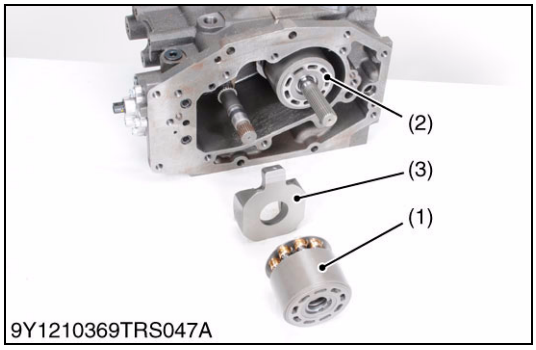


Cylinder Block Assemblies

1. Remove both motor and pump cylinder block (1), (2) with pistons.
2. Remove the motor swashplate (3).

(When reassembling)
- Apply clean hydrostatic transmission oil to cylinder blocks.

■ **NOTE**
- **Take care not to damage the surface of cylinder blocks and pistons.**
- **Do not interchange pistons between pump and motor cylinder block.**



(1) Motor Cylinder Block
(2) Pump Cylinder Block
(3) Motor Swashplate

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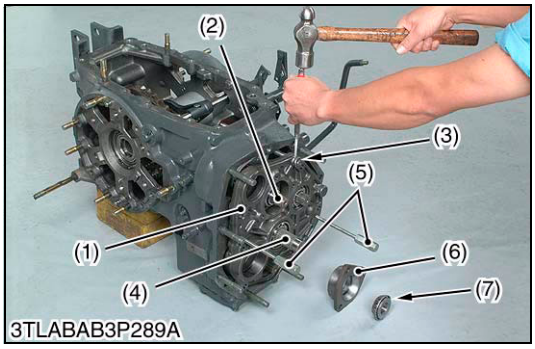

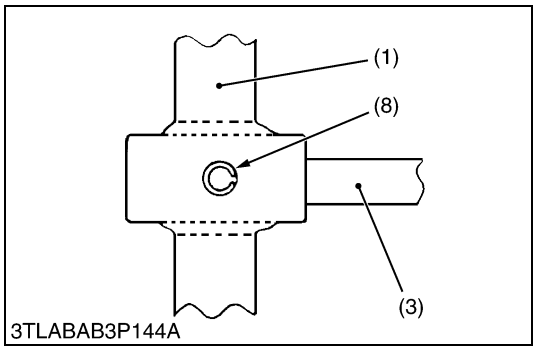

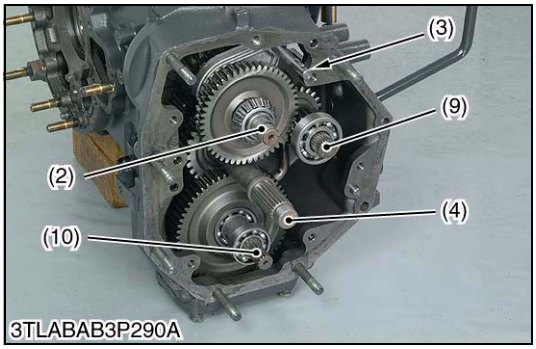

Transmission Bearing Holder

1. Remove the transmission bearing holder mounting screws.
2. Tap out the spring pin (8) on the shift fork rod (3).
3. Jack up the bearing holder (1) by using the two jack screws (5) until the taper roller bearing (7) can be removed.

■ **NOTE**

- **Jack up the bearing holder while hitting the two shafts (2) (4) by copper hummer or soft hummer.**

4. Jack up more and remove the transmission bearing holder (1).

(When reassembling)

- Tap in the transmission bearing holder with soft hummer until contact to transmission case, and then tighten the screws to specified torque.
- Tap in the spring pin (8) so that its split portion may face forward. (Refer to figure.)

Tightening torque	Transmission bearing holder mounting screw	48 to 55 N·m 4.9 to 5.7 kgf·m 36 to 41 lbf·ft

(1) Transmission Bearing Holder
(2) Spiral Bevel Pinion Shaft
(3) Shift Fork Rod for Range Gear Shift
(4) PTO Drive Shaft
(5) Jack Screw
(6) Pinion Bearing Case
(7) Taper Roller Bearing
(8) Spring Pin
(9) Range Gear Shaft
(10) Front Wheel Drive Shaft

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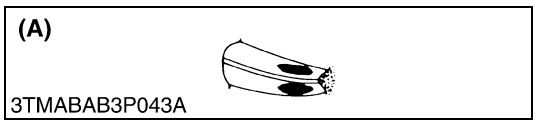

More than 35 % contact area on the gear tooth surface.

The center of tooth contact at 1/3 of the entire width from the small end.

(A) Proper Contact

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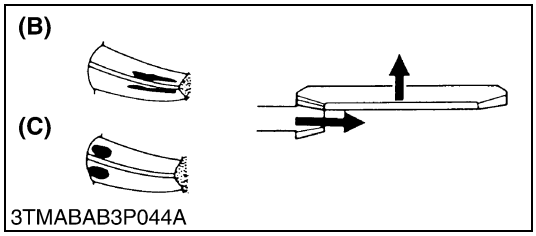

Replace the adjusting shim (2) with thicker one to move the spiral bevel pinion shaft backward.

For move the spiral bevel gear rightward, reduce right side shim (5) and add shim (6) of the same thickness as the right side to left side.

(B) Shallow Contact **(C) Heel Contact**

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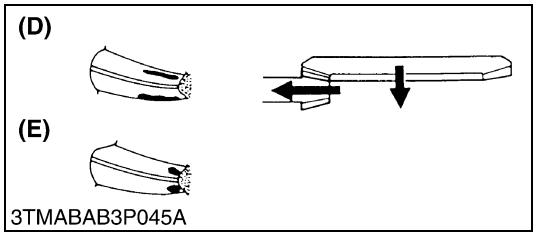


Replace the shim (2) with a thinner one to move the spiral bevel pinion shaft forward.

For move the spiral bevel gear leftward, reduce left side shim (6) and add shim (5) of the same thickness as the left side to right side.

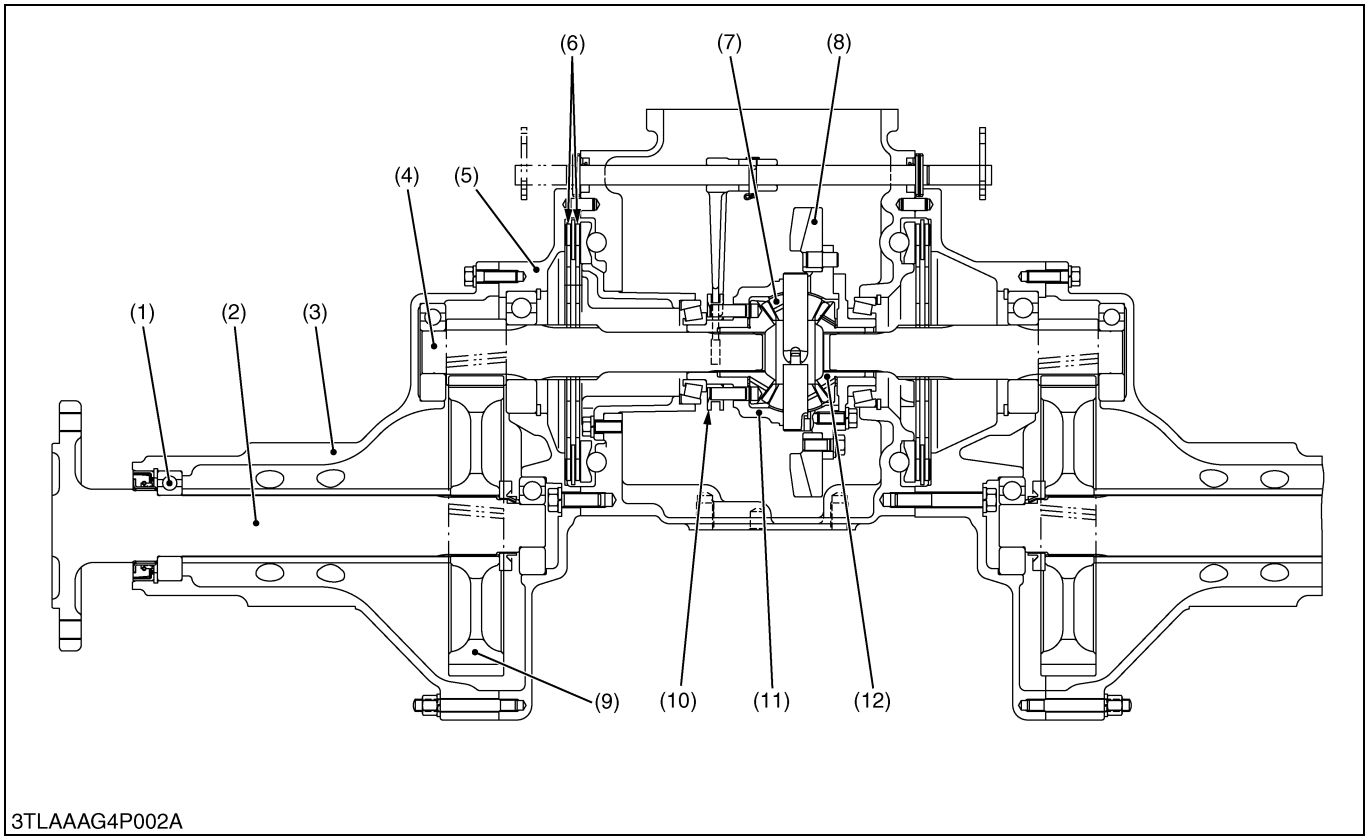
Repeat above until the proper tooth contact and backlash are achieved.

(D) Deep Contact **(E) Toe Contact**

9Y1210369TRS0171US0

1. STRUCTURE

[L3240, L3540, L3940, L4270, L4740]



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(1) Ball Bearing
(2) Rear Axle
(3) Rear Axle Case
(4) Differential Gear Shaft
(5) Brake Case
(6) Brake Disc
(7) Differential Pinion
(8) Ring Gear
(9) Final Gear
(10) Differential Lock Shifterr
(11) Differential Case
(12) Differential Side Gear

The final gear (9) are final reduction mechanism which further reduces the speed of rotation. The direction of power transmitted is changed by the differential gear.

The rear axles (2) are the final transmission mechanism which transmit the power from the transmission to the rear wheels. The rotation speed is reduced by the final gears (9).

The rear axles are the semi-floating type with the ball bearing (1) between the rear axle (2) and rear axle case (3), which support the rear wheel load besides transmitting power to the rear wheel. The rear axles also support the weight of the tractor.

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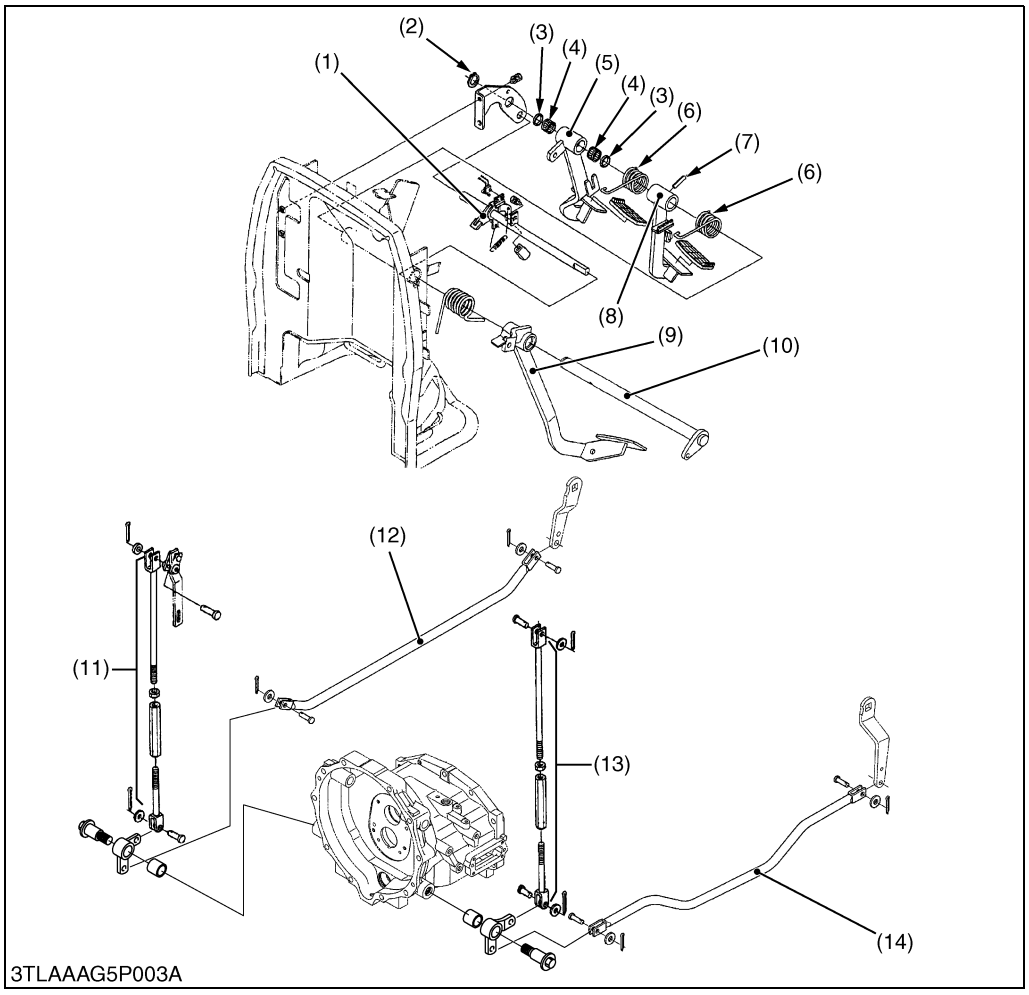
5 BRAKES

Brake Pedal and Brake Rod



(1) Parking Brake Lever
(2) External Snap Ring
(3) Oil Seal
(4) Needle Bearing
(5) Brake Pedal RH
(6) Spring
(7) Spring Pin
(8) Brake Pedal LH
(9) Clutch Pedal
(10) Brake Pedal Shaft
(11) Brake Pedal Rod RH
(12) Brake Rod RH
(13) Brake Pedal Rod LH
(14) Brake Rod LH

1. Remove the brake rods (12), (14).
2. Remove the brake pedal rods (11), (13).
3. Disconnect the clutch pedal rod.
4. Remove the external snap ring (2).
5. Tap out the spring pin (7) and pull out the brake pedal shaft (10) with clutch pedal (9).
6. Remove the brake pedals (5), (8) and springs (6).
7. Remove the parking brake lever (1).

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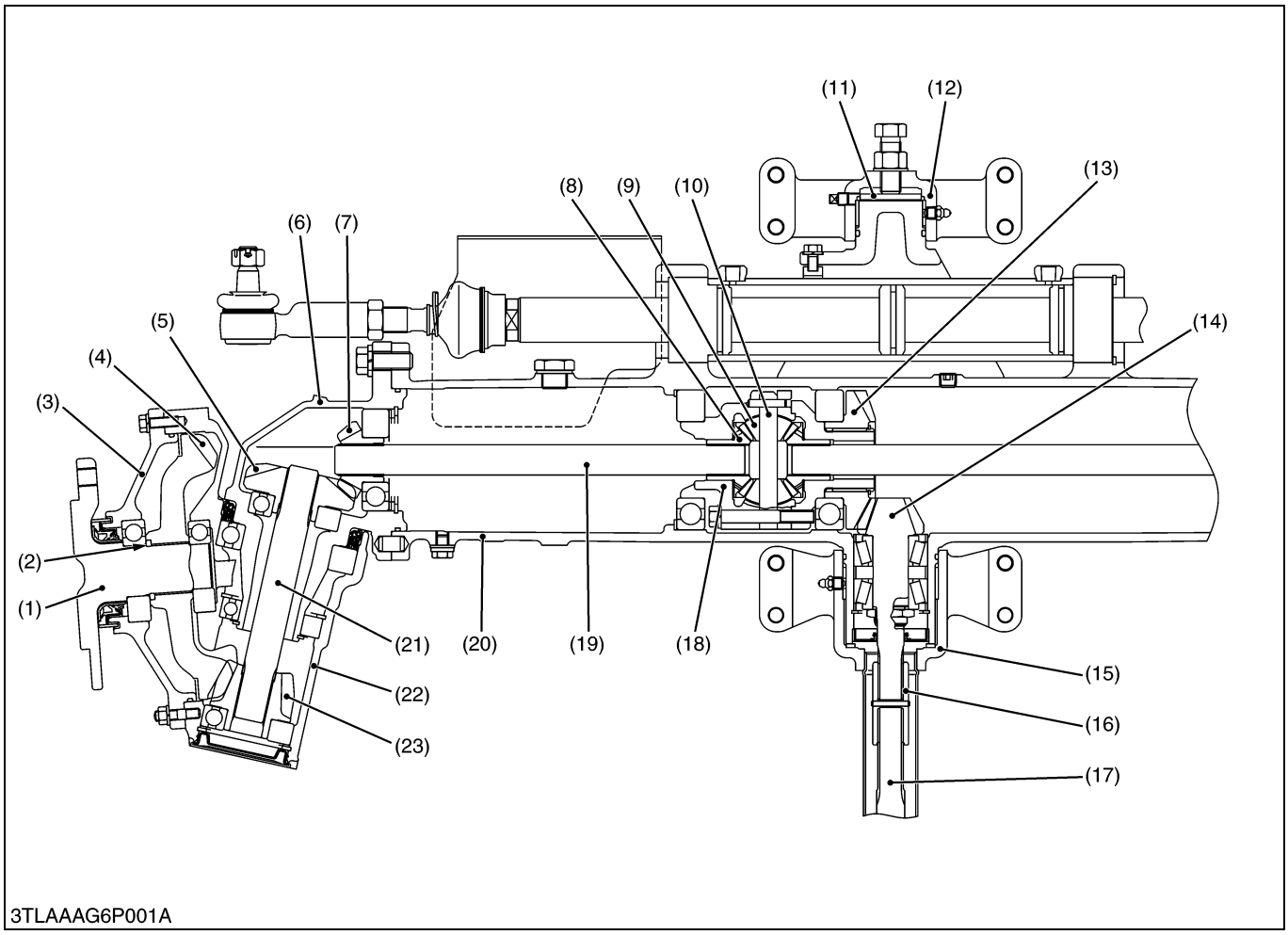
[2] 4WD TYPE

for L3240, L3540 and L3940



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(1) Axle
(2) Collar
(3) Axle Flange
(4) Bevel Gear
(5) Bevel Gear
(6) Bevel Gear Case
(7) Bevel Gear
(8) Differential Side Gear
(9) Differential Pinion
(10) Pinion Shaft
(11) Collar
(12) Front Axle Bracket, Front
(13) Spiral Bevel Gear
(14) Spiral Bevel Pinion Shaft
(15) Front Axle Bracket, Rear
(16) Coupling
(17) Propeller Shaft
(18) Differential Case
(19) Differential Yoke Shaft
(20) Front Axle Case
(21) Bevel Gear Shaft
(22) Front Gear Case
(23) Bevel Gear

The front axle of the 4WD is constructed as shown above. Power is transmitted from the transmission through the propeller shaft (17) and to the spiral bevel pinion shaft (14), then to the spiral bevel gear (13) after that to the differential gear.

The power through the differential is transmitted to the differential yoke shaft (19), and to the bevel gear shaft (21) in the bevel gear case (6).

The revolution is greatly reduced by the bevel gears (23), (4), then the power is transmitted to the axle (1).

The differential system allows each wheel to rotate at a different speed to make turning easier.

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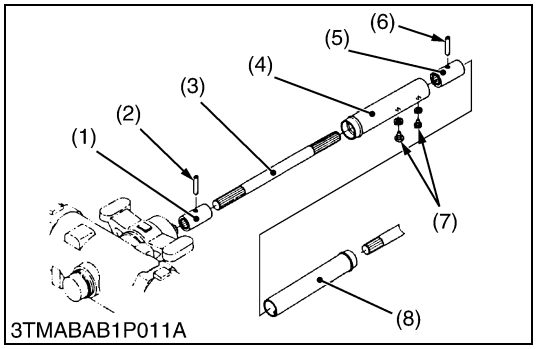
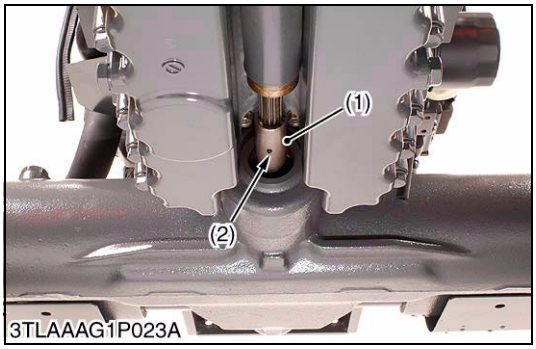
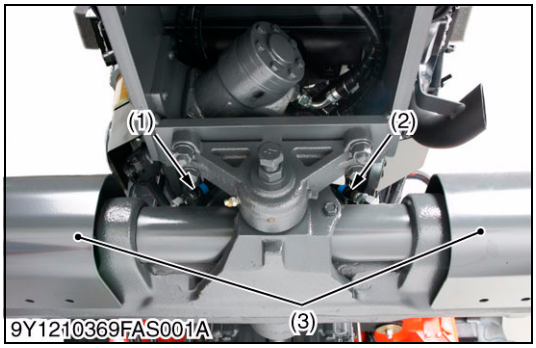
5. DISASSEMBLING AND ASSEMBLING

[1] SEPARATING FRONT AXLE ASSEMBLY







Propeller Shaft [4WD Only]

1. Slide the propeller shaft cover (4) and (8) after removing the screws (7).
2. Tap out the spring pins (2), (6) and slide the couplings (1), (5) and then remove the propeller shaft with covers (4), (8).

(When reassembling)

- Apply grease to the splines of propeller shaft 1 (3).

(1) Coupling
(2) Spring Pin
(3) Propeller Shaft 1
(4) Propeller Shaft Cover
(5) Coupling
(6) Spring Pin
(7) Screws
(8) Propeller Shaft Cover

9Y1210369ENS0030US0

Power Steering Hoses

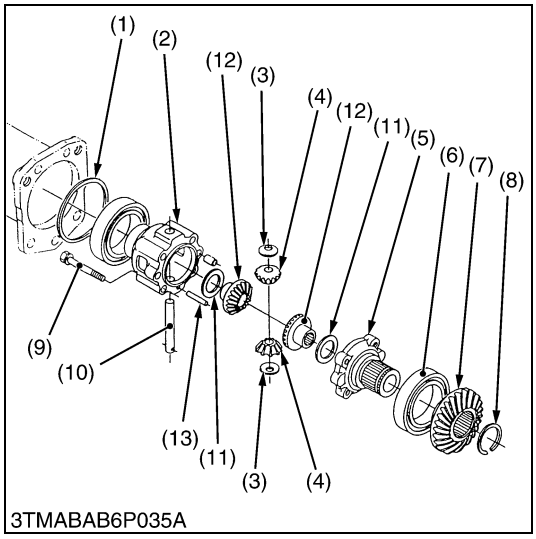
1. Disconnect the power steering hoses (1), (2) from steering cylinder.
2. Remove the cylinder cover.

(When reassembling)

Tightening torque	Power steering hose retaining nut	25 to 29 N·m 2.5 to 3.0 kgf·m 18 to 21 lbf·ft
	Cylinder cover mounting screw	61 to 70 N·m 6.2 to 7.2 kgf·m 45 to 52 lbf·ft

(1) Power Steering Hose, RH (with Red Tape)
(2) Power Steering Hose, LH (with Blue Tape)
(3) Cylinder Cover

9Y1210369FAS0001US0



3TMABAB6P035A

Differential Gear

1. Remove the differential case cover mounting screws (9) and then take out the differential case cover (5), ball bearing (6) and spiral bevel gear (7) as a unit.
2. Remove the external snap ring (8), and then remove the ball bearing (6) and spiral bevel gear (7) as a unit with a puller.
3. Remove the straight pin (13).
4. Pull out the pinion shaft (10) and take out the differential pinions (4) and differential side gears (12).

(When reassembling)

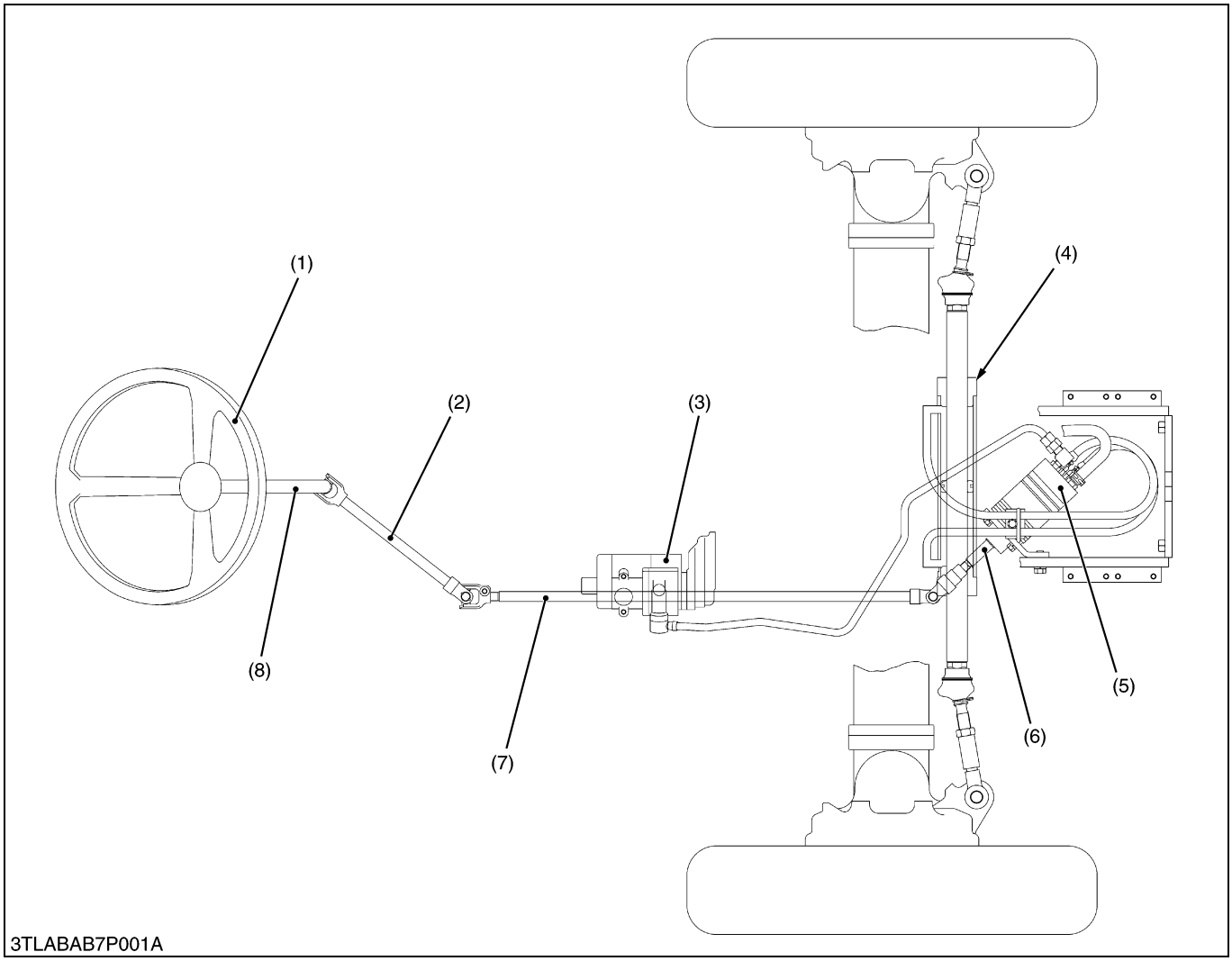
- Apply molybdenum disulfide (Three Bond 1901 or equivalent) to the inner circumferential surface of the differential side gears (12) and differential pinions (4).

Tightening torque	Differential case cover mounting screw	L3240 L3540 L3940	48 to 58 N·m 4.9 to 6.0 kgf·m 36 to 43 lbf·ft
		L4240 L4740 L5040 L5240 L5740	61 to 70 N·m 6.2 to 7.2 kgf·m 45 to 52 lbf·ft

(1) Shim
(2) Differential Case
(3) Thrust Collar
(4) Differential Pinion
(5) Differential Case Cover
(6) Ball Bearing
(7) Spiral Bevel Gear
(8) External Snap Ring
(9) Differential Case Cover Mounting Screw
(10) Pinion Shaft
(11) Shim
(12) Differential Side Gear
(13) Straight Pin

9Y1210369FAS0025US0

1. STRUCTURE



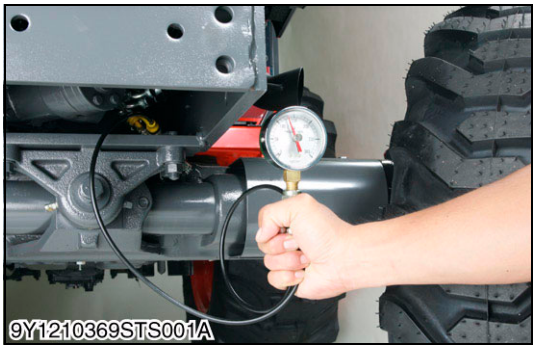
(1) Steering Wheel
(2) Steering Joint Shaft 1
(3) Hydraulic Pump
(4) Steering Cylinder
(5) Steering Controller
(6) Steering Joint Shaft 3
(7) Steering Joint Shaft 2
(8) Steering Shaft

The full hydrostatic type power steering is used on these tractors. This steering system is composed of steering wheel, steering joint shafts, steering controller, steering cylinder and other components shown in the figure.

9Y1210369STM0001US0

4. CHECKING AND ADJUSTING

[1] STEERING CONTROLLER



Relief Valve Setting Pressure Test

1. Disconnect the power steering hose **LH**.
2. Install the power steering tee fitting adaptor to the steering cylinder and connect the power steering hose **LH**.
3. Install the adaptor **D** to the power steering tee fitting adaptor and set the cable and pressure gauge.
4. Start the engine and set the engine speed at maximum speed.
5. Fully turn the steering wheel to the left and read the pressure when the relief valve functions.
6. Stop the engine.
7. If the pressure is not within the factory specifications, check the pump delivery line or replace the steering controller assembly.

Power steering relief valve setting pressure	Factory specification	L3240 2WD	8.0 to 9.0 MPa 82 to 91 kgf/cm^2 1200 to 1300 psi
		L3240 4WD L3540	10.7 to 11.7 MPa 110 to 119 kgf/cm^2 1560 to 1690 psi
		L3940 L4240 L4740 L5040 L5240 L5740	12.7 to 13.7 MPa 130 to 139 kgf/cm^2 1850 to 1980 psi

Tightening torque	Power steering hose retaining nut	25 to 29 N·m 2.5 to 3.0 kgf·m 18 to 21 lbf·ft

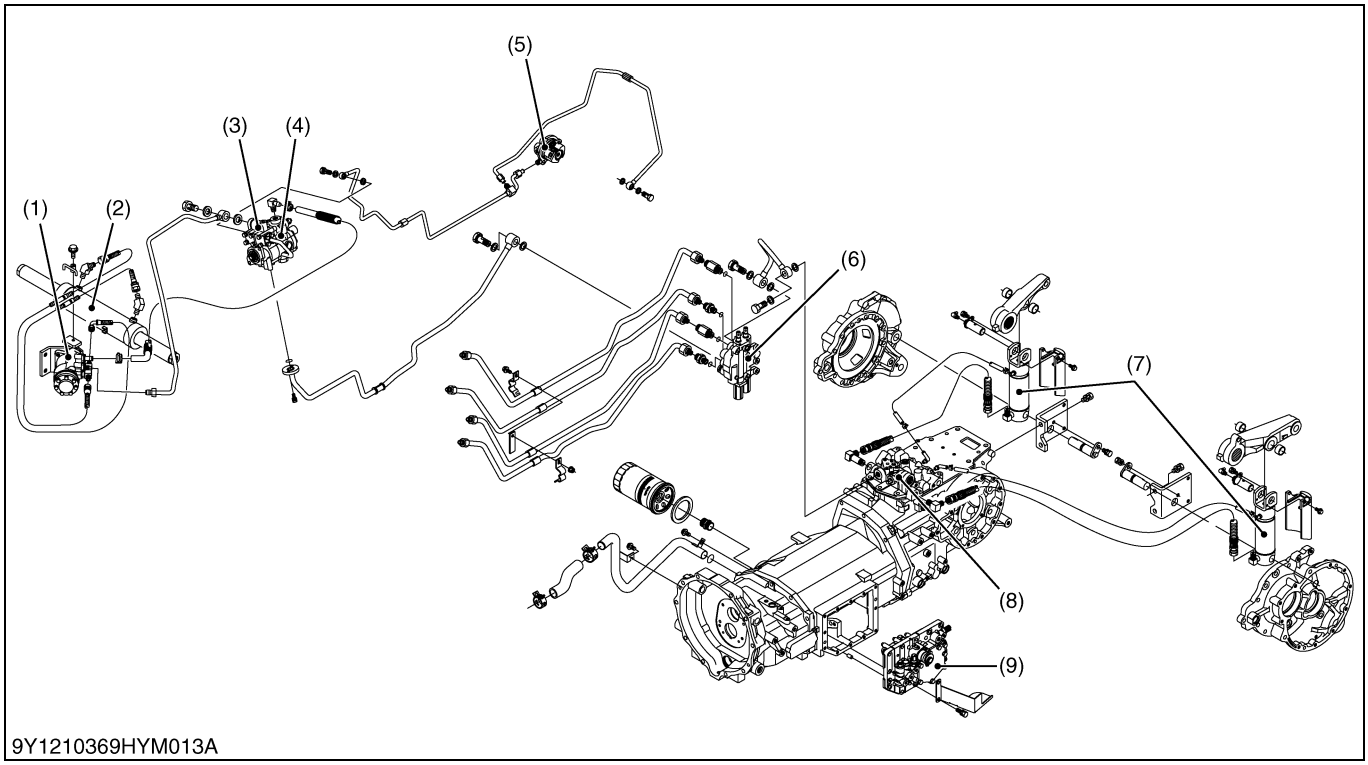
Condition

- Engine speed
  Maximum
- Oil temperature
  40 to 60 °C (104 to 140 °F)

9Y1210369STS0004US0

1. STRUCTURE

[1] MANUAL TRANSMISSION AND GLIDE SHIFT TRANSMISSION

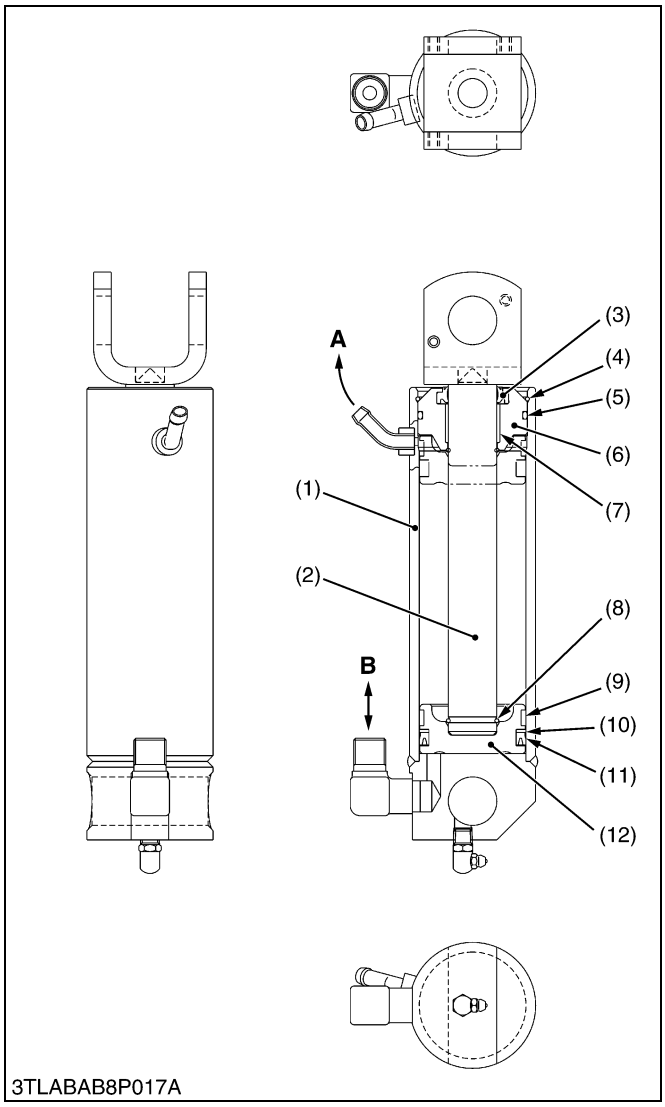


(1) Power Steering Controller
(2) Power Steering Cylinder
(3) Regulating Valve
(4) Hydraulic Pump
(5) PTO Solenoid Valve
(6) Front Loader Control Valve
(7) Hydraulic Cylinder
(8) Hydraulic Block
(9) GST Valve [GST Model Only]

The hydraulic system of machine consists of a hydraulic pump (4), front loader control valve (6), hydraulic cylinder (7) and other components.

9Y1210369HYM0001US0

[5] HYDRAULIC CYLINDER



3TLABAB8P017A

The external type hydraulic cylinders are used for three point linkage system. This hydraulic cylinder is single acting type, and it is installed directly between hydraulic lift arm and lower link.

The main components of the hydraulic cylinder are shown in the figure.

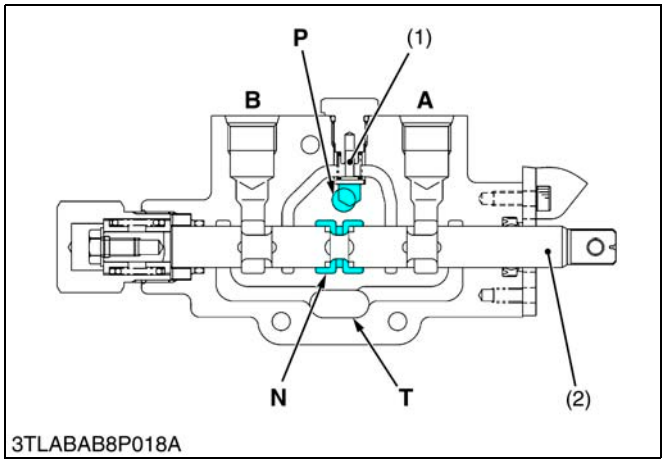
(1) Cylinder Tube
(2) Rod
(3) Wiper
(4) Snap Ring
(5) O-ring
(6) Head
(7) Bushing
(8) Snap Ring
(9) Bearing Ring
(10) Backup Ring
(11) Seal
(12) Piston

A : To Transmission Case
B : To or From Position Control Valve

9Y1210369HYM0011US0

6. AUXILIARY CONTROL VALVE (IF EQUIPPED)

[1] DOUBLE ACTING TYPE



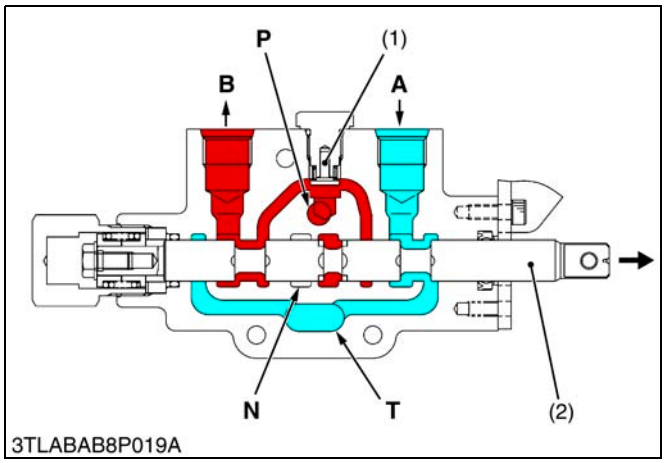
3TLABAB8P018A

Neutral

Pressure-fed oil from the hydraulic pump is delivered into the **P** port, and flows to the position control valve via **N** port.

(1) Check Valve
(2) Spool
A : A Port (Implement Cylinder)
B : B Port (Implement Cylinder)
P : Pump Port
N : Neutral Port
T : Tank Port

9Y1210369HYM0021US0



3TLABAB8P019A

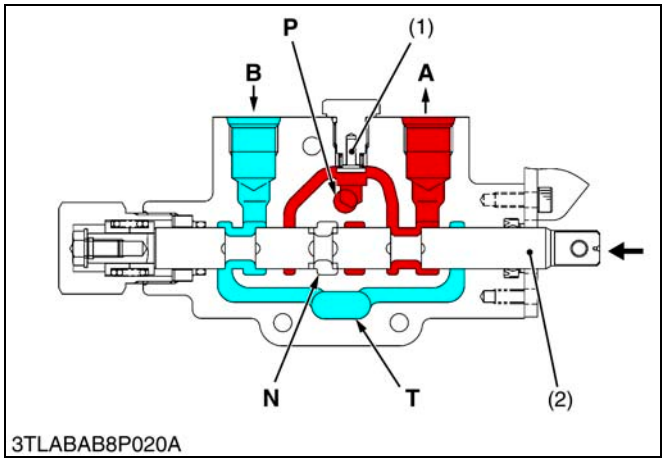
Lift

When the spool (2) is moved in the direction of the arrow, the pressure-fed oil in the **P** port opens the check valve (1) and flows to the implement cylinder via **B** port.

Return oil from the implement cylinder flows from the **A** port to the transmission case through **T** port.

(1) Check Valve
(2) Spool
A : A Port (Implement Cylinder)
B : B Port (Implement Cylinder)
P : Pump Port
N : Neutral Port
T : Tank Port

9Y1210369HYM0022US0



3TLABAB8P020A

Down

When the spool (2) is moved in the direction of the arrow, the pressure-fed oil in the **P** port opens the check valve (1) and flows to the implement cylinder via **A** port.

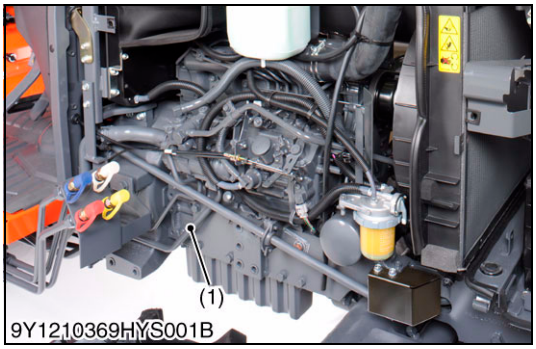
Return oil from the implement cylinder flows from the **B** port to the transmission case through **T** port.

(1) Check Valve
(2) Spool
A : A Port (Implement Cylinder)
B : B Port (Implement Cylinder)
P : Pump Port
N : Neutral Port
T : Tank Port

9Y1210369HYM0023US0

[2] HYDRAULIC PUMP (FOR THREE POINT HITCH)

(1) Pump Test Using Flow-meter



Preparation

1. Open the bonnet.
2. Remove the side skirt RH.
3. Remove the main delivery pipe (1).

(When reassembling)

- Install the copper washers firmly.

Tightening torque	Main delivery pipe joint bolt	49 to 54 N·m 5.0 to 5.6 kgf·m 37 to 40 lbf·ft

(1) Main Delivery Pipe

9Y1210369HYS0006US0

Hydraulic Flow Test

■ **IMPORTANT**

- **When using a flowmeter other than KUBOTA specified flowmeter, be sure to use the instructions with that flowmeter.**
- **Do not close the flowmeter loading valve completely, before testing, because it has no relief valve.**

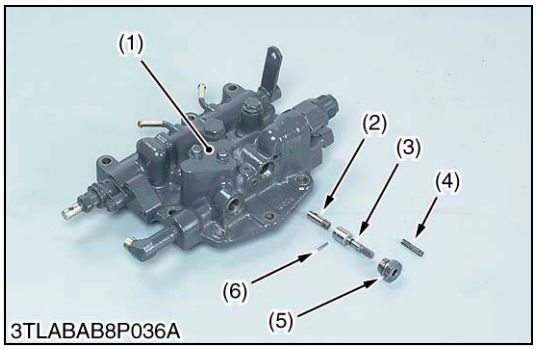
1. Install the pump adaptor (Refer to "8. SPECIAL TOOLS" at "G. GENERAL" section) with O-ring to the pump discharge port.
2. Connect the hydraulic test hose to the adaptor and flowmeter inlet port.
3. Connect the other hydraulic test hose to the flowmeter outlet port and to transmission fluid filling plug hole.
4. Open the flowmeter loading valve completely. (Turn counterclockwises.)
5. Start the engine and set the engine speed at **2000 to 2200 min^{-1} (rpm)**.
6. Slowly close the loading valve to generate pressure approx. **14.7 MPa (150 kgf/cm^2, 2133 psi)**. Hold in this condition until oil temperature reached approx. **40 °C (104 °F)**
7. Open the loading valve completely.
8. Set the engine speed. (Refer to **Condition**.)
9. Read and note the pump delivery at no pressure.
10. Slowly close the loading valve to increase (Rated pressure). As the load is increased, engine speed drops, therefore, reset the engine speed.
11. Read and note the pump delivery at rated pressure.
12. Open the loading valve completely and stop the engine.
13. If the pump delivery does not reach the allowable limit, check the pump suction line, oil filter or hydraulic pump.

Condition

- Engine Speed
  Approx. 2700 min^{-1} (rpm) (Except L5040, L5240)
  Approx. 2600 min^{-1} (rpm) (L5040, L5240)
- Rated pressure
  L3240, L3540
  17.1 to 18.1 MPa (175 to 184 kgf/cm^2, 2480 to 2625 psi)
  L3940, L4240, L4740, L5040, L5240, L5740
  18.1 to 19.1 MPa (185 to 194 kgf/cm^2, 2630 to 2770 psi)
- Oil Temperature
  40 to 60 °C (104 to 140 °F)

(To be continued)

(2) Disassembling Hydraulic Assembly



Lowering Speed Adjusting Valve

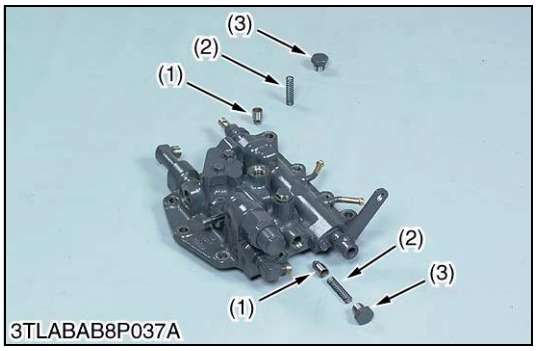
1. Draw out the spring pin (4).
2. Remove the holder (5).
3. Draw out the lowering speed adjusting shaft (3), dowel pin (6) and rotor (2).

(When reassembling)

- Take care not to damage the O-rings.

(1) Rear Hydraulic Block
(2) Rotor
(3) Lowering Speed Adjusting Shaft
(4) Spring Pin
(5) Holder
(6) Dowel Pin

9Y1210369HYS0020US0



Check Valves

1. Remove the plug (3).
2. Draw out the spring (2) and poppet (1).

(When reassembling)

- Take care not to damage the O-ring.

(1) Poppet
(2) Spring
(3) Plug

9Y1210369HYS0021US0

Cylinder Safety Valve

1. Remove the cylinder safety valve assembly (1).
2. Secure the cylinder safety valve assembly in a vise.
3. Loosen the lock nut (3), and remove the adjust screw (2).
4. Draw out the spring (4), seat (5), and ball (6).

(When reassembling)

- Take care not to damage the O-rings.

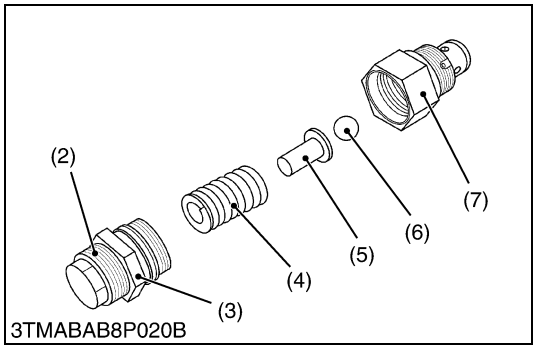
Tightening torque	Cylinder safety valve assembly	40 to 49 N·m 4.0 to 5.0 kgf·m 29 to 36 lbf·ft
	Cylinder safety valve lock nut	59 to 78 N·m 6.0 to 8.0 kgf·m 44 to 57 lbf·ft

■ **IMPORTANT**

- **After disassembling and assembling the cylinder safety valve assembly, be sure to check the operating pressure.**

(1) Cylinder Safety Valve Assembly
(2) Adjusting Screw
(3) Lock Nut
(4) Spring
(5) Seat
(6) Ball
(7) Housing

9Y1210369HYS0022US0



Position Control Valve

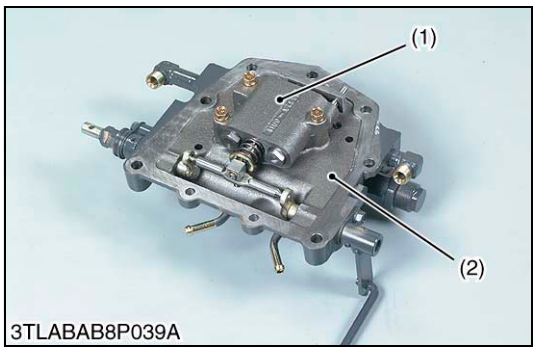
1. Remove the position control valve (1) from rear hydraulic block (2).

(When reassembling)

- Take care not to damage the O-rings.

(1) Position Control Valve
(2) Rear Hydraulic Block

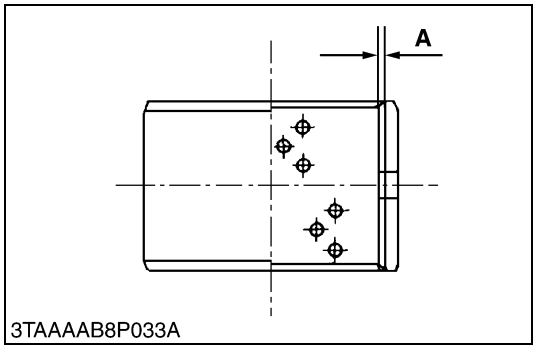
9Y1210369HYS0023US0



6. SERVICING

[1] LIFT ARM


3TLABAB8P051A



3TAAAAB8P033A

Lift Arm Support Bushing

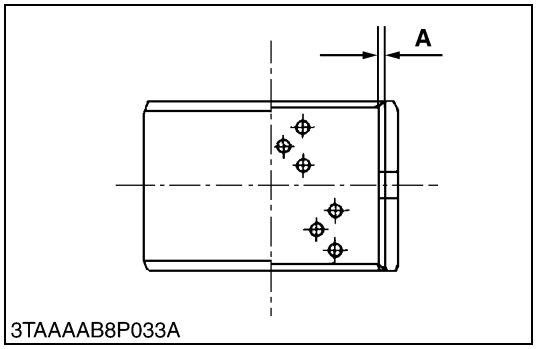
1. Visually inspect the DX bushings for signs of wear or damage. (The DX bushing tends to show concentrated wear.)
2. If the DX bushing is worn beyond the alloy portion (**A**), replace it.

(Reference)

Lift arm support bushing	Alloy thickness (**A**)	0.57 mm 0.022 in.

9Y1210369HYS0037US0


3TLABAB8P049B



3TAAAAB8P033A

Lift Arm Bushing

1. Visually inspect the DX bushings for signs of wear or damage. (The DX bushing tends to show concentrated wear.)
2. If the DX bushing is worn beyond the alloy portion (**A**), replace it.

(Reference)

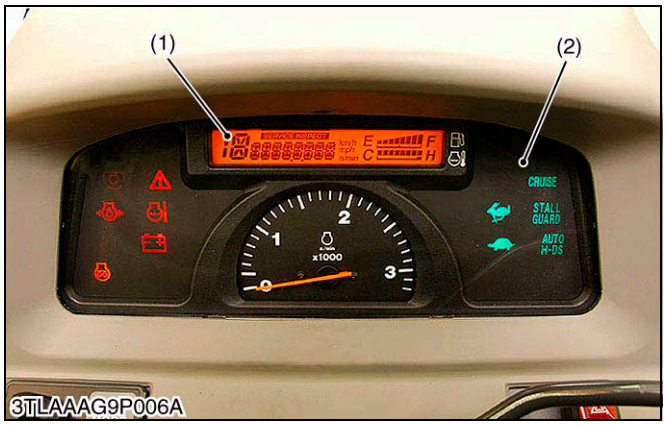
Lift arm bushing	Alloy thickness (**A**)	0.57 mm 0.022 in.

9Y1210369HYS0038US0

2. ELECTRONIC CONTROL PANEL

[1] SYSTEM OUTLINE AND ELECTRICAL CIRCUIT

(1) System Outline



(1) Liquid Crystal Display (LCD) (2) Electronic Instrument Panel (Intellipanel)

The Electronic Instrument Panel (Intellipanel) adopted in the L40 series tractors consists of an 8-bit CPU*1, sensors and input devices, memory devices such as RAM and ROM, and others. The CPU executes multiplex-communication*2 with ECU (Electronic Control Unit) and various sensors, switches and other related devices in order to give the functions that accurately and timely provide an operator with various information necessary for tractor operation. The contents include corrective procedure in case of an erroneous operation, precautions, and various alerts. If the tractor gets in trouble, a defective location, for example, is displayed with a message (sign) on the liquid crystal display or indicated with a monitor lamp.

The messages are displayed with segments, which gives approximately 200 patterns.

In the liquid crystal display (LCD)*3, characters appear over reflected illumination, and are always back-lit by a small yellow lamp while the main switch is **"ON"**.

***1 CPU**

This Central Processing Unit is the core part of computers that controls the input/output devices to receive data, processes the data, and sends out the computing results.

The CPU comes in different types : 8 bits, 16 bits, 32 bits, etc., according to the number of bits as the unit of internal data processing. In general, the larger the number is, the higher the performance is.

***2 Multiplex communication**

In multiplex communication, just one transmission (signal) line is effectively used to send and receive signals for digital transmission. In data communication, the transmission capacity of the line and the capacity of signal transmission/reception are represented by the number of bits that can be transmitted or received for one second. When the capacity of the transmission line is extremely larger than the ability of the transmission/reception performed by a terminal device, signals from plural terminals can be transmitted by means of time-sharing and multiplexing of one transmission path.

The merits of multiplex communication are as follows :

1. It permits high-performance control that allows three units to share information from sensors and information required for control.
2. It provides the smaller number of wire harnesses.
3. It allows each control unit to independently control the connected devices if communication should fail for some reason and become impossible.

***3 Liquid Crystal Display**

Liquid crystal display is a displaying device that utilizes the characteristic of liquid crystal, in which the application of voltage triggers the molecules to change their orientations. The principle of indication is that when a voltage is applied on a liquid crystal sandwiched between two glass plates, the direction of molecules changes, with the resultant variation of the oscillatory direction of light that penetrates the liquid crystal. The set-up of a polarizing plate makes light go through or get blocked according to a change in voltage. Since the use of only the polarizing plate results in peculiar color, the film to counteract colored light is superimposed. However, the liquid crystal it self does not generate light, so it is back-lit by a fluorescent tube, for example, which makes the display easy to read in a dark space.

9Y1210369ELM0006US0

HST Mode Select Switch

The HST mode select switch is used to change HST functions.

There are three HST modes.

The first one is the same as for the existing HST on which the lamp does not light up on the panel.

The second one is provided with a stall-guard function and the lamp lights up on the panel.

The third one is provided with a stall-guard function and automatic transmission function (H-DS) and the lamp lights up on the panel.

These three modes are changed every time the switch is pressed.

(1) HST Mode Select Switch

9Y1210369ELM0036US0

H-DS (Hydro Dual Speed) Lever

The H-DS lever is located on the left of the steering.

When the H-DS lever is operated, signals are sent to the ECU.

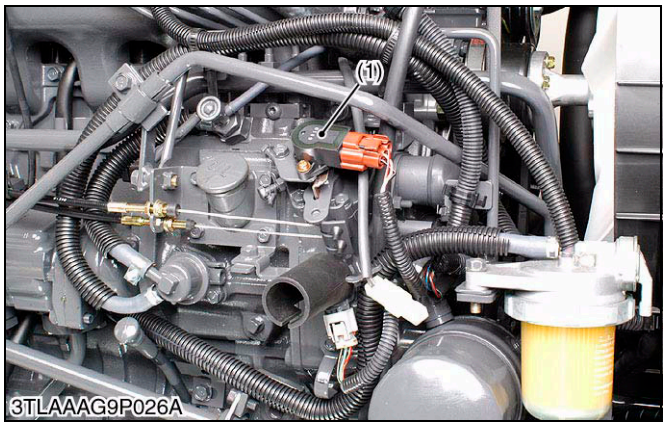
When the H-DS lever is pulled up, the HST motor is changed to the Hi side.

When the H-DS lever is pushed down, the HST motor is changed to the Lo side.

When the HST motor is set to the Lo side by means of the H-DS lever, it is not automatically changed to the Hi side even if the HST mode is set to the automatic transmission mode.

(1) H-DS Lever

9Y1210369ELM0037US0



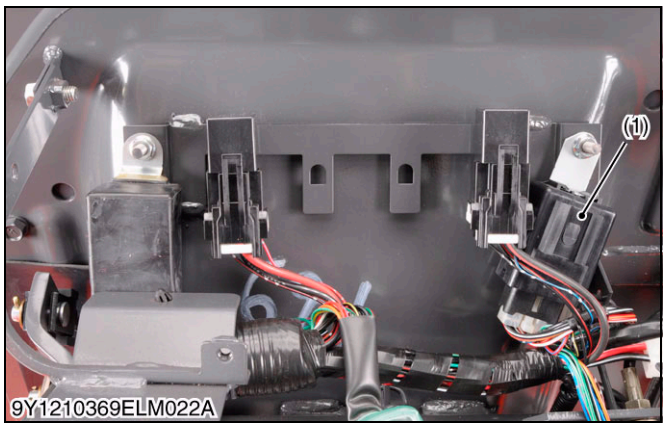
Throttle Sensor

The throttle sensor is located on the right of the engine.

The throttle sensor sends the signal of accelerator opening degree to the ECU.

(1) Throttle Sensor

9Y1210369ELM0038US0

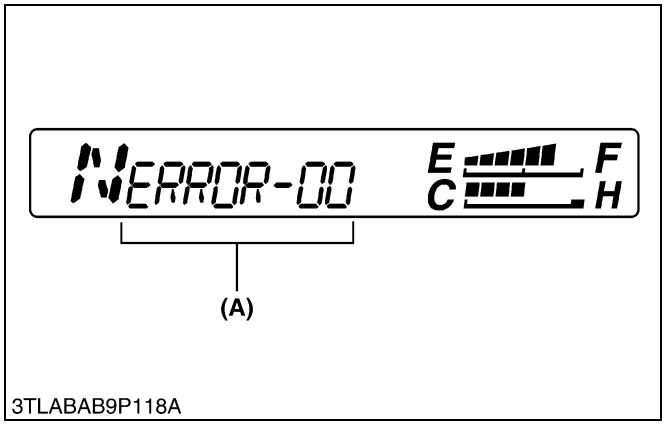


OPC Controller (Manual Transmission Only)

OPC controller is configured with a delay timer in the OPC controller unit to hold fuel cut signal from the OPC controller unit to engine stop solenoid for about 1 second.

(1) OPC Controller

9Y1210369ELM0039US0



3TLABAB9P118A

(Error Messages)

■ **For All Models**
- **ERROR-00** : Electronic meter in trouble

■ **For GST and HST Models**
- **ERROR-20** : Communication error GST and HST-specified meter wrongly installed on Manual Transmission Model.
- **ERROR-30** : ECU in trouble
- **ERROR-40** : Power supply of sensor from ECU in trouble
- **ERROR-90** : Starter relay in trouble
- **ERROR-94** : Key stop solenoid relay in trouble

■ **For GST Model Only**
- **ERROR-50** : GST lever sensor in trouble
- **ERROR-60** : Proportional reducing valve in trouble
- **ERROR-61** : Shift solenoid 1 in trouble
- **ERROR-62** : Shift solenoid 2 in trouble
- **ERROR-63** : Shift solenoid 3 in trouble
- **ERROR-64** : Shift solenoid 4 in trouble
- **ERROR-65** : Shift solenoid 5 in trouble
- **ERROR-66** : Shift solenoid 6 in trouble

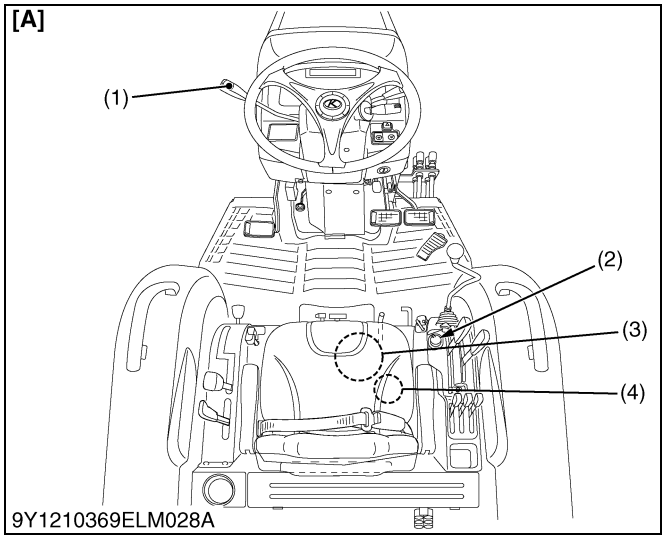
■ **For HST Model**
- **ERROR-80** : Range gear shift sensor in trouble
- **ERROR-81** : HST pedal sensor in trouble
- **ERROR-82** : Swash plate position sensor in trouble
- **ERROR-83** : Cruise control lever position sensor in trouble
- **ERROR-84** : Throttle sensor in trouble
- **ERROR-85** : HST response dial in trouble
- **ERROR-87** : Engine tachometer sensor in trouble
- **ERROR-90** : Forward proportional valve in trouble
- **ERROR-91** : Reverse proportional valve in trouble
- **ERROR-92** : Hi-Lo solenoid valve in trouble

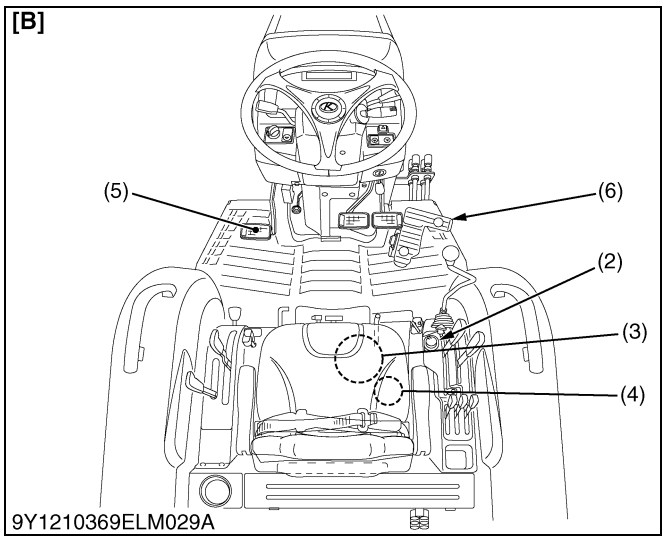
■ **NOTE**
- **See page 9-S4 about a detailed content of the error messages and their action method.**

(A) The error message is displayed here.

9Y1210369ELM0063US0

(3) Automatic Engine Stop





Engine can be shut off under the following conditions since these conditions cause ECU or OPC controller to operate and it controls fuel cut solenoid.

(1) Shuttle Shift Lever
(2) PTO Clutch Lever
(3) Seat Switch
(4) Seat Tilt Switch
(5) Clutch Pedal
(6) HST Pedal

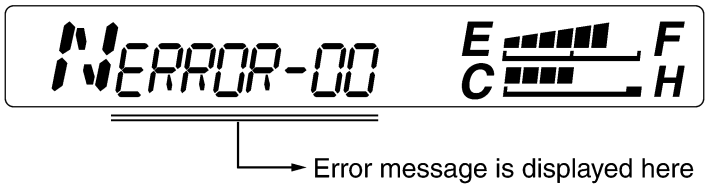
[A] Manual Transmission and GST Model
[B] HST Model

	Shuttle Switch or HST Pedal Switch (Neutral : ON) (Others : OFF)	**PTO Switch** (Neutral : ON) (Engaged : OFF)	**Seat Switch** (Occupied : ON) (Vacant : OFF)	**Seat Tilt Switch** (Tilted : ON) (Normal : OFF)
1	OFF	ON / OFF	OFF	ON / OFF
2	ON	ON	OFF	ON / OFF
3	ON	ON	OFF	OFF

■ **NOTE**
- **When the mid PTO is not engaged and the seat is tilted, the engine does not stop even if rear PTO is engaged.**

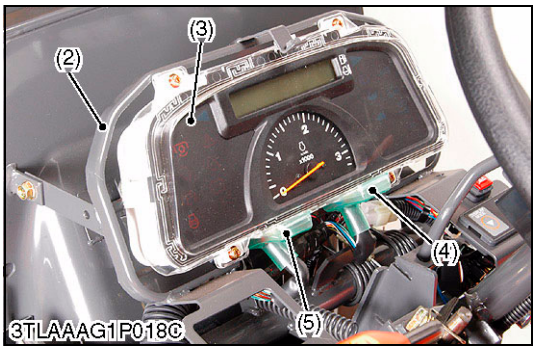
9Y1210369ELM0077US0

Error Display for HST Model



Display on LCD Screen	Trouble Item	Probable Cause	Solution	Reference Page
ERROR-00	Electronic instrument panel memory device has failed	• Electronic instrument panel memory device failure	Replace the electronic instrument panel	9-S18
ERROR-20	Communication error between ECU and electronic instrument panel	• Fuse blown out • Communication line between ECU and electronic instrument panel is broken or short-circuited • No signals from ECU for longer than 5 seconds (error cleared if signal sent and received later) • ECU defective	Check the fuse	G-44
			Check ECU connector	9-S41
			Check the communication line between ECU and electronic instrument panel at ECU connector	9-S44
			Replace ECU	9-S17
ERROR-30	ECU memory device has failed	• ECU memory device failure	Replace ECU	9-S17
ERROR-40	Input voltage to sensor from ECU is failed	• Sensor input voltage drop below 2.6 V for 0.1 second or more • Ground wire of lever sensor short-circuited	Check the ground cable	9-S35
			Check the input voltage at ECU connector	9-S44
			Check the sensor connector	–
ERROR-80 -SUB--NG	Range gear shift sensor failed	• Sensor output terminal is out of adjustment • Sensor output wire terminal broken or short-circuited • Input line broken • Sensor defective	Terminal motion is possible	–
			Check the sensor connector	–
			Check the sensor voltage by Test mode (Mode **A**)	9-S21
			Check the sensor wire connector (voltage) or check sensor resistance	9-S44
			Replace the sensor	9-S47

(2) Electronic Instrument Panel



Disconnecting Electronic Instrument Panel Connector

1. Remove the panel cover (1).
2. Disconnect the panel connectors (4), (5).
3. Remove the electronic instrument panel (3) from panel frame (2).

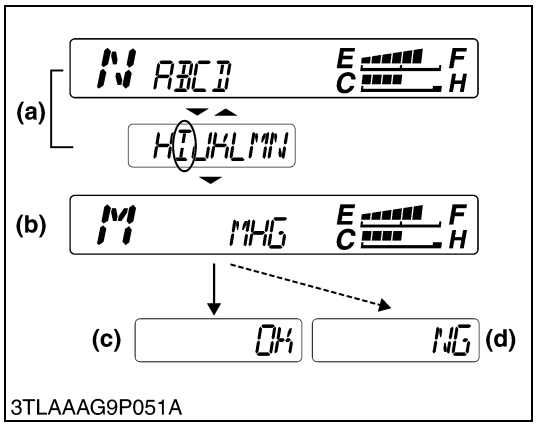
■ **NOTE**

- **When replacing the electronic instrument panel, be sure to adjust the mode "I" first.**
  Then adjust to mode "B", "C" and mode "J"

(1) Panel Cover
(2) Panel Frame
(3) Electronic Instrument Panel (Intellipanel)
(4) Connector **A** (**20P**)
(5) Connector **B** (**16P**)

9Y1210369ELS0009US0

(10) Mode "I" (Transmission Model Input Mode) Input the Transmission Model into Electronic Instrument Panel



3TLAAAG9P051A

■ **NOTE**
- **When the electronic instrument panel is replaced, this operation is required.**
- **On the HST models, the range gear shift lever sensor must be adjusted at the same time.**

1. While holding down the both switches at once, turn on the main switch.
2. Select the mode **"I"**.
3. **"MHG"** is displayed **(b)**, and the existing symbol setting is flashing.

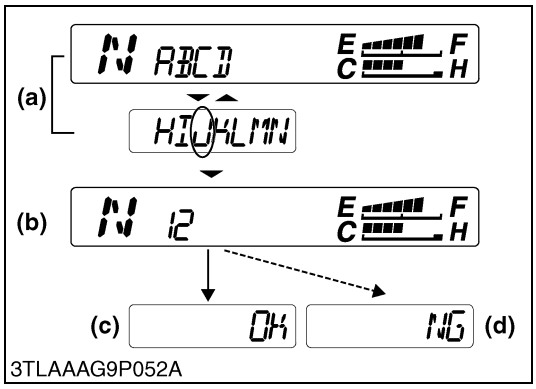
(Reference)
- **"M"** : Manual Transmission Model
- **"G"** : GST Model
- **"H"** : HST Model

4. To change the setting, select either **"G"** or **"M"**, and input to the electronic instrument panel. Each time display mode switch is pressed, the flashing symbol shifts. And then, hold down switch for more than 2 seconds with the symbol flashing.
5. **"OK"** is displayed **(c)** : The tractor model has been input correctly.
6. If **"NG"** is displayed **(d)** : The tractor model has not been input correctly. Repeat the procedure.

(a) Mode Selection Display
(b) Input Display
(c) Correct Preserving Display
(d) Incorrect Preserving Display

9Y1210369ELS0021US0

(11) Mode "J" (Speed Unit Selection Mode) Input the Traveling Speed Unit to the Electronic Instrument Panel



3TLAAAG9P052A

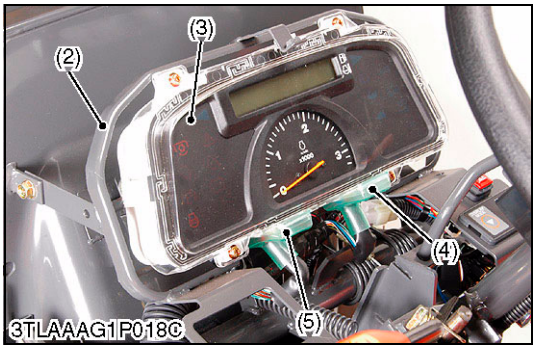
1. While holding down the both switches at once, turn on the main switch.
2. Select the mode **"J"**.
3. **"12"** is displayed **(b)**, and existing number is flashing.

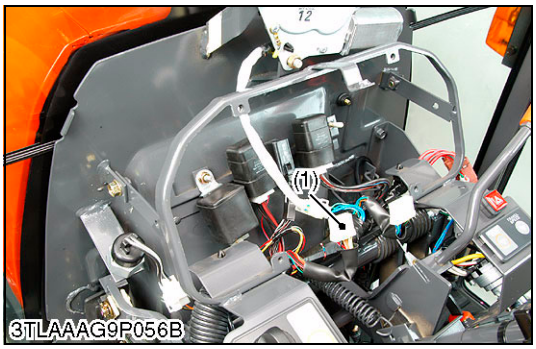
(Reference)
- **"1"** : Traveling speed unit is **"mph"**
- **"2"** : Traveling speed unit is **"km/h"**

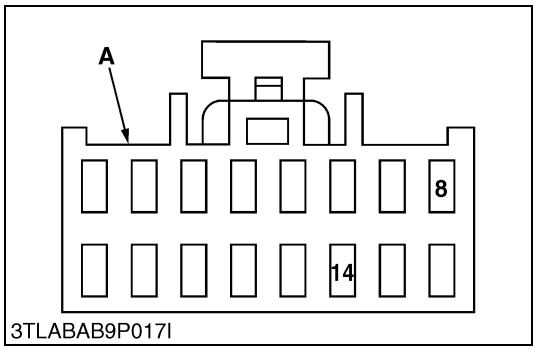
4. To change the setting, select an appropriate number, and input to the electronic instrument panel. Each time display mode switch is pressed, the flashing number shifts. And then, hold down switch for more than 2 seconds with the number flashing.
5. **"OK"** is displayed **(c)** : The code number has been input correctly.
6. If **"NG"** is displayed **(d)** : The code number has not been input correctly. Repeat the procedure.

(a) Mode Selection Display
(b) Input Display
(c) Correct Preserving Display
(d) Incorrect Preserving Display

9Y1210369ELS0022US0







Disconnecting Electronic Instrument Panel Connector

1. Remove the panel cover (1).
2. Disconnect the panel connectors (4), (5).
3. Remove the electronic instrument panel (3) from panel frame (2).

(1) Panel Cover
(2) Panel Frame
(3) Electronic Instrument Panel (Intellipanel)
(4) Connector **A** (**20P**)
(5) Connector **B** (**16P**)

9Y1210369ELS0032US0

Connector Voltage

■ Main Voltage

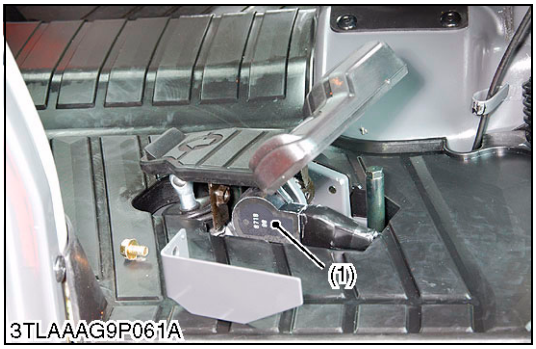
1. Measure the voltage between the terminal **8** (+) and terminal **14** (−).
2. If the voltage differs from the battery voltage (11 to 14 V), the wiring harness or battery is faulty.

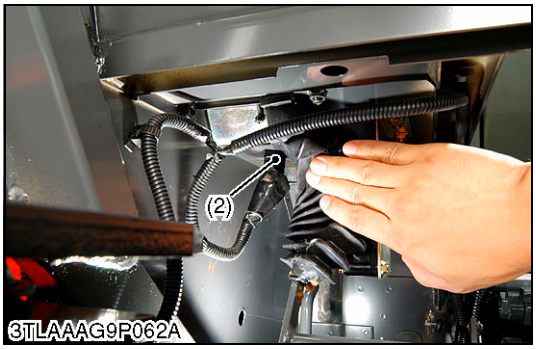
Voltage	Terminal **8** to **14**	Approx. battery voltage

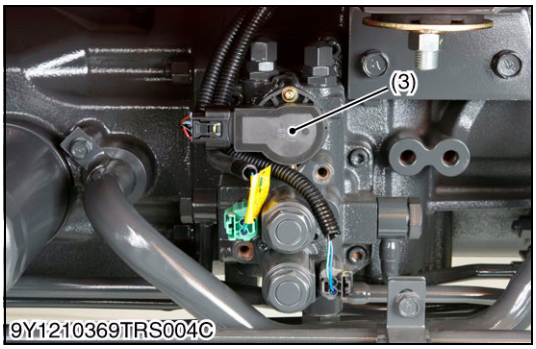
(1) Connector **B** (**16P**)

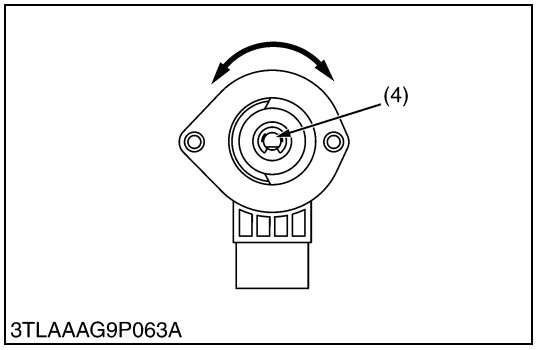
A : Connector B (16P) of Wire Harness Side

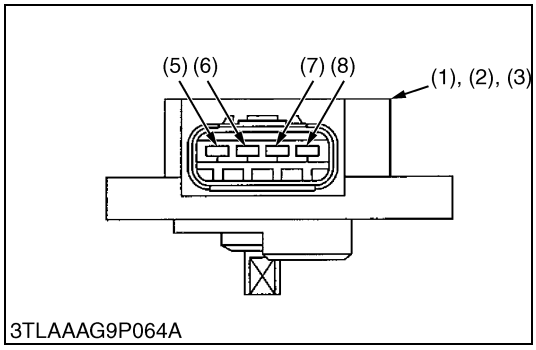
9Y1210369ELS0033US0











HST Pedal Sensor, Cruise Lever and Swash Plate Position Sensor

1. Measure the resistance between terminal **B** (7) and **GND** (8).
2. Measure the resistance between terminal **GND** (8) and **a** while slowly turning the sensor shaft.
3. Measure the resistance terminal **GND** (8) and **b** (6) while slowly turning the sensor shaft.
4. It is OK if the resistance value approximates to the value shown in the table below.

■ **NOTE**

- **When replacing the each sensor be sure to adjust the mode "K".**

(Reference)

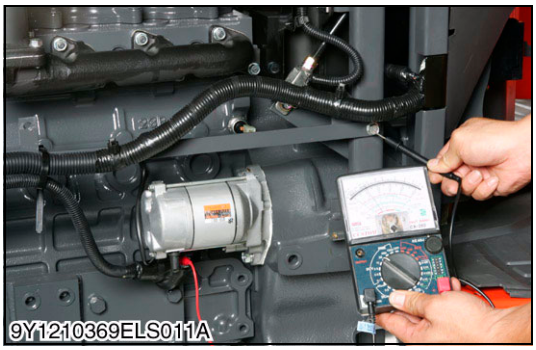
- The change of resistance can be checking easily when an analog tester is employed.

Reference	Terminal **B** - Terminal **GND**	Approx. 1 kΩ
	Terminal **GND** - Terminal **a**	Resistance is normal if smoothly changing Approx. 1 kΩ to 0 Ω
	Terminal **GND** - Terminal **b**	Resistance is normal if smoothly changing Approx. 0 Ω to 1 kΩ

(1) HST Pedal Sensor
(2) Cruise Control Position Sensor
(3) Swash Plate Position Sensor
(4) Sensor Shaft
(5) Terminal **a**
(6) Terminal **b**
(7) Terminal **B**
(8) Terminal **GND**

9Y1210369ELS0048US0

(4) Starter and Starter Relay

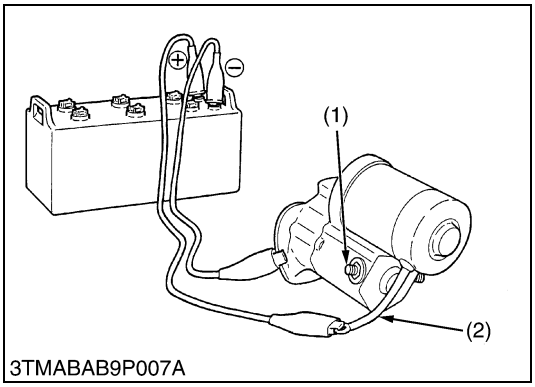


Starter Motor B Terminal Voltage

1. Measure the voltage across the **B** terminal and chassis.
2. If the voltage differs from the battery voltage, check the battery's cable.

Voltage	Factory specification	Approx. battery voltage

9Y1210369ELS0069US0



Motor Test

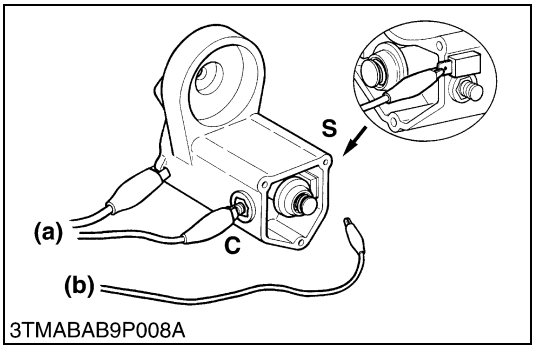
CAUTION

- **Secure the starter to prevent it from jumping up and down while testing the motor.**

1. Disconnect the battery negative cable from the battery.
2. Disconnect the battery positive cable and the leads from the starter.
3. Remove the starter from the engine.
4. Disconnect the connecting lead (2) from the starter **C** terminal (1).
5. Connect a jumper lead from the connecting lead (2) to the battery positive terminal post.
6. Connect a jumper lead momentarily between the starter motor housing and the battery negative terminal post.
7. If the motor does not run, check the motor.

(1) **C** Terminal (2) Connecting Lead

WSM000001ELS0009US0



Magnet Switch Test (Pull-in, Holding Coils)

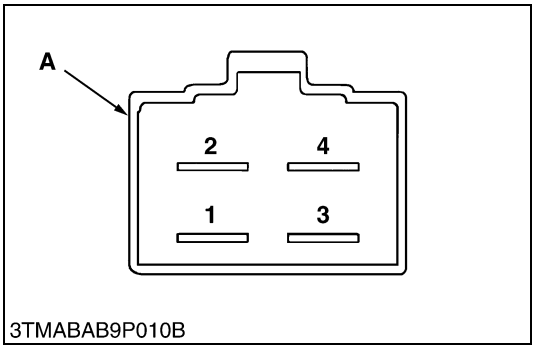
1. Remove the motor from the starter housing.
2. Prepare a 6 V battery for the test.
3. Connect jumper leads from the battery negative terminal to the housing and the starter **C** terminal.
4. The plunger should be attached and the pinion gear should pop out when a jumper lead is connected from the battery positive terminal to the **S** terminal. It is a correct.
5. Disconnect the jumper lead to the starter **C** terminal. Then the pinion gear should remain popped out. It is a correct.

IMPORTANT

- **Testing time must be 3 to 5 sec..**

(a) To Negative Terminal **(b) To Positive Terminal**

9Y1210369ELS0070US0



Checking Starter Relay

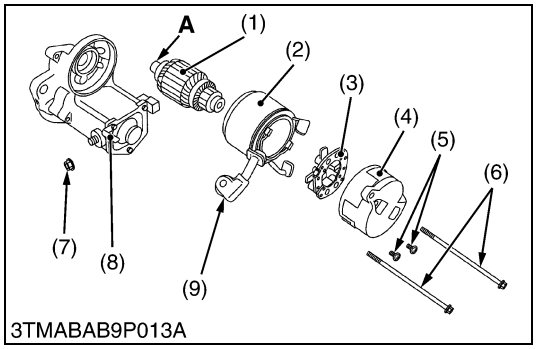
1. Remove the panel cover and meter panel.
2. Remove the starter relay.
3. Apply battery voltage across terminals **3** and **4**, and check for continuity across terminals **1** and **2**.
4. If continuity is not established, renew the starter relay.

A : Connector of Starter Relay

9Y1210369ELS0071US0

5. DISASSEMBLING AND ASSEMBLING

[1] STARTER



3TMABAB9P013A

Disassembling Motor

1. Disconnect the connecting lead (9) from the magnet switch (8).
2. Remove the screws (6), and then separate the end frame (4), yoke (2) and armature (1).
3. Remove the two screws (5), and then take out the brush holder (3) from the end frame (4).

(When reassembling)

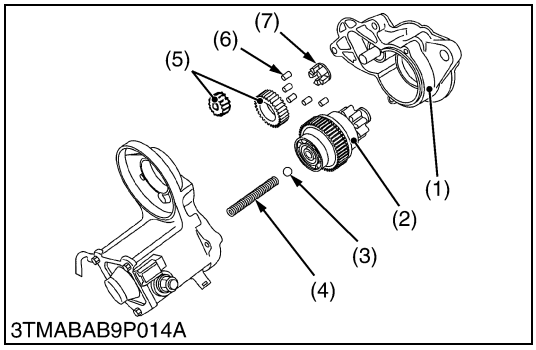
- Apply grease to the spline teeth (**A**) of the armature (1).

Tightening torque	Nut (7)	5.9 to 11 N·m 0.60 to 1.2 kgf·m 4.4 to 8.6 lbf·ft

(1) Armature
(2) Yoke
(3) Brush Holder
(4) End Frame
(5) Screw
(6) Screw
(7) Nut
(8) Magnet Switch
(9) Connecting Lead

A : Spline Teeth

9Y1210369ELS0093US0



3TMABAB9P014A

Disassembling Magnet Switch

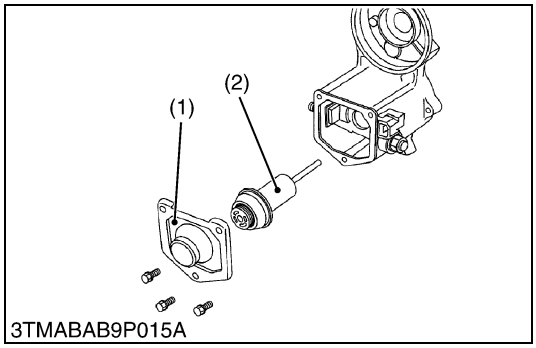
1. Remove the drive end frame (1) mounting screws.
2. Take out the overrunning clutch (2), ball (3), spring (4), gears (5), rollers (6) and retainer (7).

(When reassembling)

- Apply grease to the gear teeth of the gears (5) and overrunning clutch (2), and ball (3).

(1) Drive End Frame
(2) Overrunning Clutch
(3) Ball
(4) Spring
(5) Gear
(6) Roller
(7) Retainer

WSM000001ELS0021US0



3TMABAB9P015A

Plunger

1. Remove the end cover (1).
2. Take out the plunger (2).

(1) End Cover
(2) Plunger

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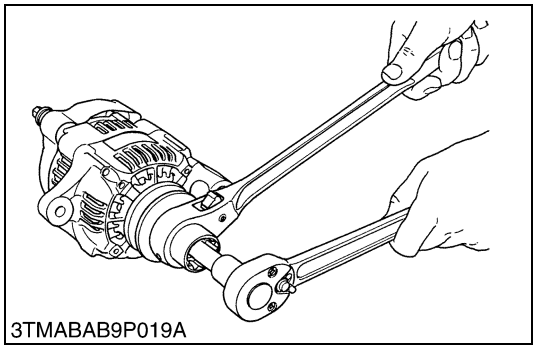
[2] ALTERNATOR


3TMABAB9P019A

Pulley

1. Secure the hexagonal end of the pulley shaft with a double-ended ratchet wrench as shown in the figure, loosen the pulley nut with a socket wrench and remove it.

(When reassembling)

Tightening torque	Pulley nut	58.4 to 78.9 N·m 5.95 to 8.05 kgf·m 43.1 to 58.2 lbf·ft

WSM000001ELS0023US0

The machine is equipped with a thin large-capacity air conditioner with outside air intake. Through the inside air filter (7) as well as the outside air filter (5), the inner roof (6) and reaches the air conditioner unit (13). The air is then cooled and defumidified by this unit.

The resulting air is heated to a comfortable level. In this way, the air being blown via the blow port can be kept at comfortable temperature and humidity.

The front air outlet (9) can be opened and closed using the center knob of each port. The side air outlet (8) are opened and closed using the mode lever on the control panel (3). With these ports open or closed, you can feel your head cool and your feet warm.

Capacity (Cooling)	Factory specification		2.8 to 3.4 kW
Capacity (Warming)	Factory specification	Water	3.8 to 4.7 kW
		LLC* 50 %	3.6 to 4.4 kW
Kinds of refrigerant (Charge amount)	Factory specification		R134a 0.95 to 1.05 kg 2.09 to 2.31 lbs
Pressure sensor (Low)	Factory specification		0.196 MPa 2.0 kgf/cm^2 28.4 psi
Pressure sensor (High)	Factory specification		3.14 MPa 32.0 kgf/cm^2 455 psi

*LLC : Anti-freeze

■ **NOTE**

- **As for the mechanism and function of each component part, refer to Workshop Manual of "MECHANISM".**

■ **Compressor Oil**

The compressor oil dissolves in the refrigerant, circulates through the air-conditioning cycle, and functions to lubricate the compressor. But the conventional compressor oil for R12 doesn't dissolve in R134a, so it doesn't circulate through the cycle, and the lifespan of the compressor is considerably shortened.

It is still essential to ensure that the correct refrigerant oil is used. R12 systems were lubricated with mineral oil, which is totally unsuitable for R134a systems. The letter require PAG oil, which mixes very well with the refrigerant and provides ideal lubrication throughout the system.

Quantity (Total)	Brand Name
50 to 70 cm^3 3.1 to 4.3 cu.in.	ND-OIL 8 <PAG* oil>

*PAG : Polyalkyleneglycol (Synthetic oil)

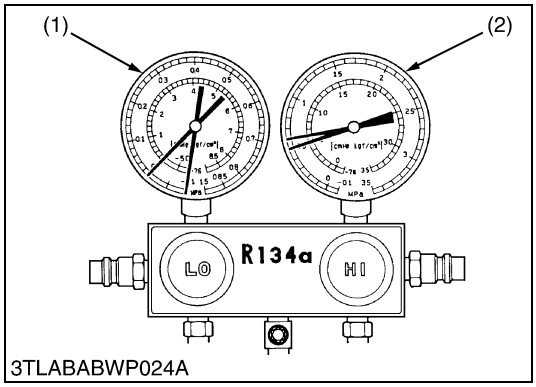
9Y1210369CAM0002US0

3. TIGHTENING TORQUES

Tightening torques of screws, bolts and nuts on the table below are especially specified.
(For general use screws, bolts and nuts : Refer to "5. TIGHTENING TORQUES" at "G. GENERAL" section.)

Item	N·m	kgf·m	lbf·ft
Cabin mounting bolt and nut	124 to 147	12.6 to 15.0	91.2 to 108
High pressure pipe and low pressure pipe mounting screw	7.9 to 11	0.80 to 1.2	5.8 to 8.6
Compressor mounting screws	25 to 29	2.5 to 3.0	18 to 21
Clutch mounting screw	12.3 to 14.1	1.25 to 1.44	9.05 to 10.4
A/C unit mounting screw (M6)	4.0 to 6.8	0.40 to 0.70	2.9 to 5.0
A/C unit mounting screw (M8)	9.81 to 11.6	1.00 to 1.19	7.24 to 8.60
Low pressure pipe (Cooler pipe (suction)) retaining nut	30 to 34	3.0 to 3.5	22 to 25
High pressure pipe (Cooler pipe (liquid)) retaining nut	12 to 14	1.2 to 1.5	8.7 to 10
High pressure pipe 1 mounting screw (Compressor side)	7.95 to 11.7	0.80 to 1.20	5.86 to 8.67
High pressure side 1 retaining nut (Condenser side)	20 to 24	2.0 to 2.5	15 to 18
High pressure pipe 2 retaining nut (Receiver side)	12 to 14	1.2 to 1.5	8.7 to 10
Low pressure pipe mounting screw (Compressor side)	7.95 to 11.7	0.80 to 1.20	5.86 to 8.67
High pressure pipe 2 retaining nut	12 to 14	1.2 to 1.5	8.7 to 10
Low pressure pipe retaining nut	30 to 34	3.0 to 3.5	22 to 25
Wiper motor mounting nut (4)	6.4 to 9.3	0.65 to 0.95	4.7 to 6.8

9Y1210369CAS0003US0



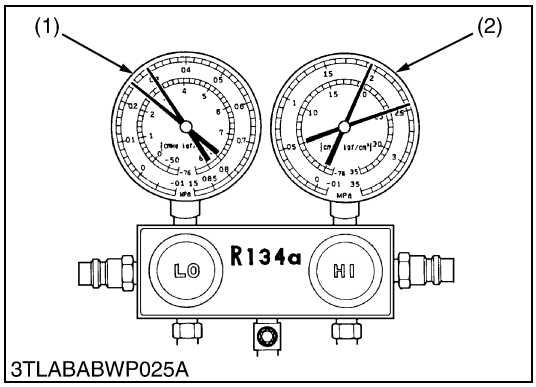
3TLABABWP024A

Refrigerant Fails to Circulate

1. Symptoms seen in refrigerating cycle
   - **LO** pressure side (1) pressure is vacuum and, **HI** pressure side (2) is low pressure.
     LO pressure side (1)
     Vacuum
     HI pressure side (2)
     0.49 to 0.59 MPa (5 to 6 kgf/cm^2, 71.2 to 85.3 psi)
2. Probable cause
   - Refrigerant flow obstructed by moisture or dirt in the refrigerating cycle freezing or sticking on the expansion valve orifice.
3. Solution
   Allow to stand for same time and then resume operation to decide whether the plugging is due to moisture or dirt.
   - If caused by moisture, correct by referring to instructions in previous.
   - If caused by dirt, remove the expansion valve and blow out the dirt with compressed air.
   - If unable to remove the dirt, replace the expansion valve. Replace the receiver. Evacuate and charge in proper amount of new refrigerant. (Refer to "(3) Charging the Refrigerant" in this section.)
   - If caused by gas leakage in heat sensitizing tube, replace the expansion valve.

(1) **LO** Pressure Side (2) **HI** Pressure Side

9Y1210369CAS0024US0



3TLABABWP025A

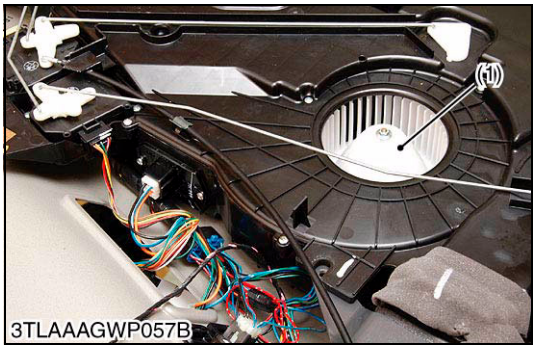
Expansion Valve Opens Too Far or Improper Installation of Heat Sensitizing Tube

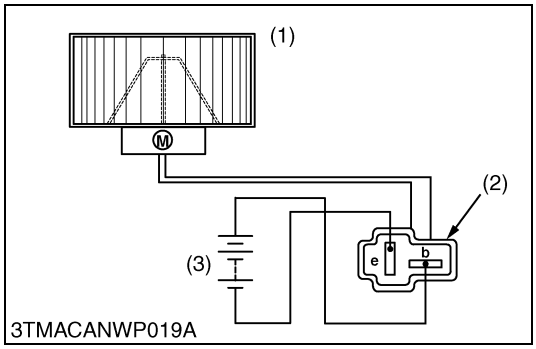
1. Symptoms seen in refrigerating cycle
   - Both **LO** and **HI** pressure side (1), (2) pressures too high.
     LO pressure side (1)
     0.29 to 0.39 MPa (3 to 4 kgf/cm^2, 42.7 to 56.9 psi)
     HI pressure side (2)
     1.96 to 2.45 MPa (20 to 25 kgf/cm^2, 284.5 to 355.6 psi)
   - Frost or heavy dew on low pressure side piping.
2. Probable cause
   - Expansion valve trouble or heat sensitizing tube improperly installed.
   - Flow adjustment not properly done.
3. Solution
   - Check installed condition of heat sensitizing tube.
   - If installation of heat sensitizing tube is correct, replace the expansion valve.

(1) **LO** Pressure Side (2) **HI** Pressure Side

9Y1210369CAS0025US0

(4) Blower Motor





Blower Motor Test

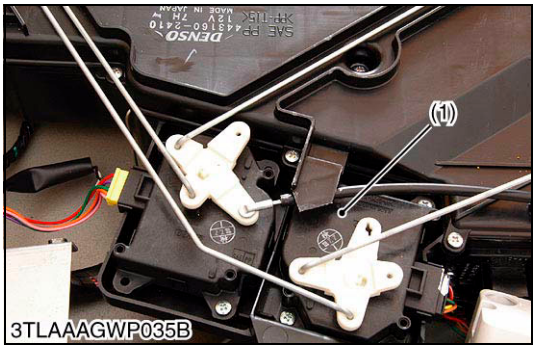
1. Turn the blower motor (1) by hand and check whether it turns smoothly.
2. Disconnect the **2P** connector (2) of blower motor (1).
3. Connect a jumper lead from battery (3) positive terminal to connector terminal **b**.
4. Connect a jumper lead from battery negative terminal to connector terminal **e** momentarily.
5. If the blower motor does not run, check the motor.

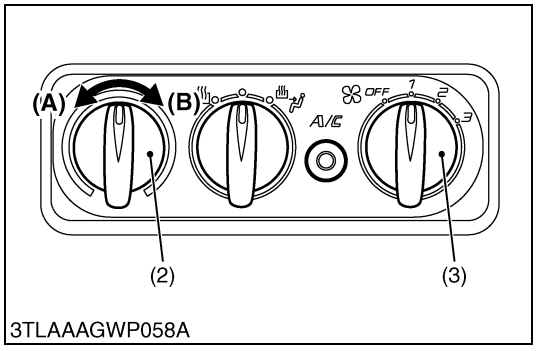
(1) Blower Motor
(2) **2P** Connector (Blower Motor Side)
(3) Battery (12 V)

b : Terminal b
e : Terminal e

9Y1210369CAS0044US0

(5) Temperature Motor





Temperature Motor Checking

1. Confirm whether the temperature control dial (2) is defective. (Refer to "(4) Control Panel" in this section.)
2. Turn the main switch to **"ON"** position.
3. Turn the blower switch (3) at **1** position.
4. Turn the temperature control dial from **"COOL"** position **(A)** to **"WARM"** position **(B)**. At the time, confirm the motor is operating.
5. If the motor does not operate, replace it.

(1) Temperature Motor
(2) Temperature Control Dial
(3) Blower Switch

(A) COOL
(B) WARM

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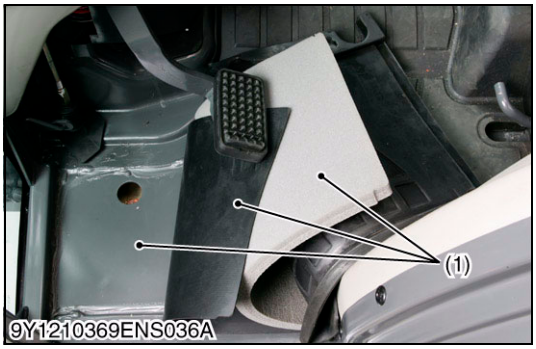

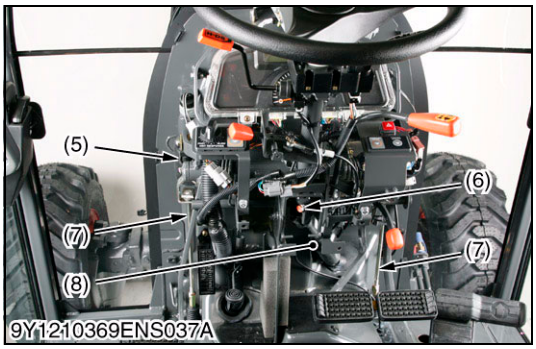

Mats, Panel Cover and Linkage

1. Remove the mats (1).
2. Remove the steering post covers 1 (3) and the steering post cover 2 (4).
3. Remove the panel cover (2).
4. Remove the brake rods (7) and clutch rod (5).
5. Remove the universal joint bolt (6) and disconnect the steering joint shaft 1 (8).

(1) Mat
(2) Panel Cover
(3) Steering Post Cover 1
(4) Steering Post Cover 2
(5) Clutch Rod
(6) Universal Joint Bolt
(7) Brake Rod
(8) Steering Joint Shaft 1

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