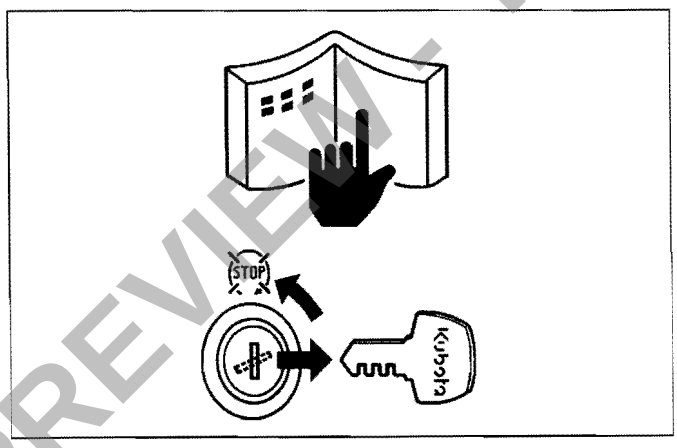
⚠ SAFETY FIRST

This symbol, the industry's "Safety Alert Symbol", is used throughout this manual and on labels on the machine itself to warn of the possibility of personal injury. Read these instructions carefully.

It is essential that you read the instructions and safety regulations before you attempt to repair or use this unit.

⚠ **DANGER**	**: Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.**
⚠ **WARNING**	**: Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.**
⚠ **CAUTION**	**: Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.**
■ **IMPORTANT**	**: Indicates that equipment or property damage could result if instructions are not followed.**
■ **NOTE**	**: Gives helpful information.**



BEFORE SERVICING AND REPAIRING

- Read all instructions and safety instructions in this manual and on your machine safety decals.
- Clean the work area and machine.
- Park the machine on a firm and level ground, and set the parking brake.
- Lower the implement to the ground.
- Stop the engine, and remove the key.
- Disconnect the battery negative cable.
- Hang a "**DO NOT OPERATE**" tag in operator station.

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GENERAL

CONTENTS

1. FEATURES G-1
2. TRACTOR IDENTIFICATION G-3
3. GENERAL PRECAUTIONS G-4
4. HANDLING PRECAUTIONS FOR ELECTRICAL PARTS AND WIRING .. G-5
   [1] WIRING G-5
   [2] BATTERY G-7
   [3] FUSE G-7
   [4] CONNECTOR G-7
   [5] HANDLING OF CIRCUIT TESTER G-8
5. LUBRICANTS FUEL AND COOLANT G-9
6. TIGHTENING TORQUES G-11
   [1] GENERAL USE SCREWS, BOLTS AND NUTS G-11
   [2] STUD BOLTS G-11
7. MAINTENANCE G-12
8. CHECK AND MAINTENANCE G-13
   [1] DAILY CHECK G-13
   [2] CHECK POINTS OF INITIAL 50 HOURS G-14
   [3] CHECK POINTS OF EVERY 50 HOURS G-16
   [4] CHECK POINTS OF EVERY 100 HOURS G-19
   [5] CHECK POINTS OF EVERY 200 HOURS G-23
   [6] CHECK POINTS OF EVERY 300 HOURS G-24
   [7] CHECK POINTS OF EVERY 400 HOURS G-24
   [8] CHECK POINTS OF EVERY 600 HOURS G-26
   [9] CHECK POINTS OF EVERY 800 HOURS G-27
   [10] CHECK POINTS OF EVERY 1 YEAR G-28
   [11] CHECK POINTS OF EVERY 2 YEARS G-28
   [12] OTHERS G-30
9. SPECIAL TOOLS G-32
10. TIRES G-54
   [1] TYPE OF TIRES G-54
   [2] TREAD ADJUSTMENT G-54
      (1) Front Wheels [2WD] G-54
      (2) Front Wheels [4WD] G-55
      (3) Rear Wheels G-55
   [3] WHEEL HUB G-56
   [4] TIRE PRESSURE G-56
   [5] TIRE LIQUID INJECTION G-57
11. IMPLEMENT LIMITATIONS G-60

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5. LUBRICANTS FUEL AND COOLANT

	Place	Capacity			Lubricants, fuel and coolant
		M6800(S)	M8200	M9000	
1	Fuel tank	65 L 17.2 U.S.gals. 14.3 Imp.gals.	90 L 23.8 U.S.gals. 19.8 Imp.gals.		No. 2-D diesel fuel No. 1-D diesel fuel if temperature is below –10 °C (14 °F)
2	Coolant	8.5 L 9.0 U.S.qts. 7.5 Imp.qts.	9.0 L 9.5 U.S.qts. 7.9 Imp.qts.		Fresh clean water with anti-freeze
3	Engine crankcase	10.7 L 11.3 U.S.qts. 9.4 Imp.qts.			Engine oil : [M6800(S)] API Service Classification CC or CD [M8200 · M9000] API Service Classification CD Below 0 °C (32 °F) : SAE10W, 10W-30 or 10W-40 0 to 25 °C (32 to 77 °F): SAE20, 10W-30 or 10W-40 Above 25 °C (77 °F): SAE30, 10W-30 or 10W-40
4	Transmission case	40 L 42.3 U.S.qts. 35.2 Imp.qts.	52 L 54.9 U.S.qts. 45.8 Imp.qts.		KUBOTA SUPER UDT fluid*
5	Front differential case oil	5.0 L 5.3 U.S.qts. 4.4 Imp.qts.		6.0 L 6.3 U.S.qts. 5.3 Imp.qts.	KUBOTA SUPER UDT fluid or SAE80, SAE90 gear oil
6	Front axle gear case oil	3.5 L 3.7 U.S.qts. 3.1 Imp.qts.			
7	Air cleaner (Oil bath type)	2.0 L 2.1 U.S.qts. 1.8 Imp.qts.			Engine oil

Greasing

	Place	No. of greasing point	Capacity	Type of grease
8	Front wheel hub [2WD]	2	Until grease overflows	Multipurpose type grease
	Knuckle shaft [2WD]	2		
	Front wheel case support [4WD]	2		
	Front axle support [4WD]	2		
	Top link	2		
	Top link bracket	2		
	Lift rod	3		
	Battery terminal	2	Moderate amount	Multipurpose type grease or petroleum jelly

* KUBOTA original transmission hydraulic fluid.

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3. TIGHTENING TORQUES

Tightening torques of screws, bolts and nuts on the table below are especially specified.
(For general use screws, bolts and nuts : See page G-11.)

Item	N·m	kgf·m	ft-lbs
Turning delivry hose retaining nut	24.5 to 29.4	2.5 to 3.0	18.1 to 21.7
Front axle support mounting screw (M14 UBS)	166.7 to 196.1	17.0 to 20.0	123.0 to 144.7
Bonnet support mounting screw	48.1 to 55.9	4.9 to 5.7	35.4 to 41.2
Bonnet support from mounting screw	48.1 to 55.9	4.9 to 5.7	35.4 to 41.2
Engine and clutch housing mounting screw and nut	77.5 to 90.2	7.9 to 9.2	57.1 to 66.5
Engine and clutch housing mounting stud bolt	39.2 to 49.0	4.0 to 5.0	28.9 to 36.2
Cylinder head cover mounting screw	1.6 to 2.3	0.16 to 0.23	1.6 to 1.66
Gear case cover mounting screw	23.5 to 27.5	2.4 to 2.8	17.4 to 20.3
* Cylinder head screw	98.1 to 107.9	10.0 to 11.0	72.3 to 79.6
* Connecting rod bolts	78.5 to 83.4	8.0 to 8.5	57.8 to 61.5
* Flywheel screw	98.1 to 107.9	10.0 to 11.0	72.3 to 79.6
* Crankshaft screw (Below YN0476)	343.2 to 372.7	35.0 to 38.0	253.2 to 274.9
(Above YN0477)	255.0 to 274.6	26.0 to 28.0	188.1 to 202.5
* Bearing case screw	137.3 to 147.1	14.0 to 15.0	101.3 to 108.5
Rocker arm bracket screw	49.0 to 55.9	5.0 to 5.7	36.2 to 41.2
Nozzle holder	34.3 to 39.2	3.5 to 4.0	25.3 to 28.9
Nozzle holder assembly	49.0 to 68.6	5.0 to 7.0	36.2 to 50.6
Injection pipe retaining nut	22.6 to 36.3	2.3 to 3.7	16.6 to 26.8
Glow plug	19.6 to 24.5	2.0 to 2.5	14.5 to 18.1
Injection pump cpver mounting screw	23.5 to 27.5	2.4 to 2.8	17.4 to 20.3
Control rod nut	2.8 to 4.0	0.29 to 0.41	2.1 to 3.0
Injection pump mounting screw	23.5 to 27.5	2.4 to 2.8	17.4 to 20.3
Injection pump mounting nut	17.7 to 20.6	1.8 to 2.1	13.0 to 15.2
Injection pump drive shaft nut	73.6 to 83.4	7.5 to 8.5	54.2 to 61.5
Starter's terminal **B** mounting nut	9.8 to 11.8	1.0 to 1.2	7.2 to 8.7
Housing clamp screw	1.5 to 2.5	0.15 to 0.25	1.1 to 1.8

■ **NOTE**

- **For "*" marked screws, bolts and nuts on the table, apply engine oil to their threads and seats before tightening.**

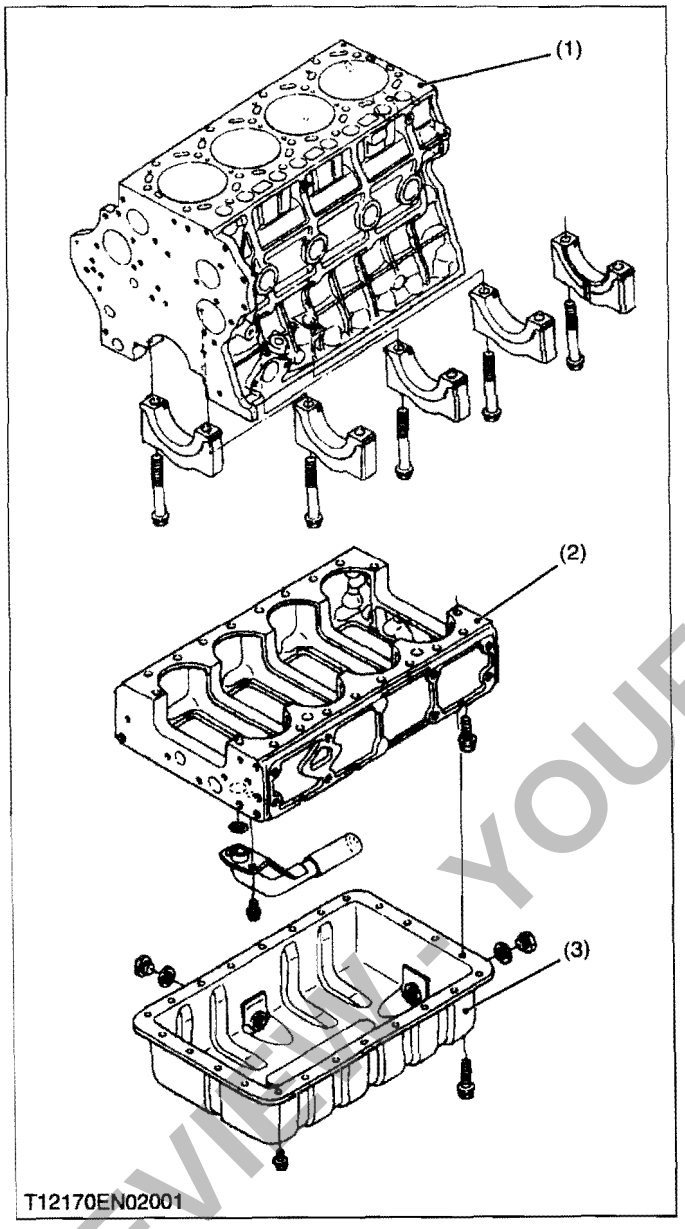
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1. ENGINE BODY

[1] CYLINDER BLOCK



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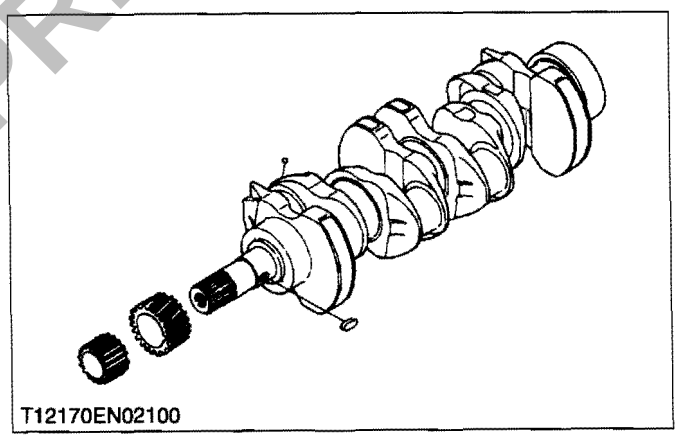
This engine employs separate type crankcases - the crankcase 1 with combustion part and the crankcase 2 which supports the crankcase 1 and reduces noise.

Since it is a hanger type, you can easily assemble / disassemble it. The cylinder is a linerless type which enables good cooling operation, less strain and good abrasion resistance.

(1) Crankcase 1
(2) Crankcase 2
(3) Oil Pan

W1012651

[2] CRANKSHAFT


T12170EN02100

This engine adopts the half counter system and lightweight moving elements, and optimizes the oil clearance of bearings to reduce noise and vibration.

It also adopts a large diameter journal to improve rigidity and reliability, and enable large capacity P.T.O. (Power take-off).

W1012727

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1. TROUBLESHOOTING

Symptom	Probable Cause	Solution	Reference Page
Engine Does Not Start	• No fuel	Replenish fuel	–
	• Air in the fuel system	Vent air	G-30
	• Water in the fuel system	Change fuel and repair or replace fuel system	–
	• Fuel pipe clogged	Clean	–
	• Fuel filter clogged	Replace	G-25
	• Excessively high viscosity of fuel or engine oil at low temperature	Use specified fuel or engine oil	G-9
	• Fuel with low cetane number	Use specified fuel	G-9
	• Fuel leak due to loose injection pipe retaining nut	Tighten retaining nut	–
	• Incorrect injection timing	Adjust	1-S56
	• Injection nozzle clogged	Clean	1-S57, S58
	• Injection pump malfunctioning	Repair or replace	1-S32, S56
	• Seizure of crankshaft, camshaft, piston, cylinder or bearing	Repair or replace	1-S44, S47 to S52
	• Compression leak from cylinder	Replace head gasket, tighten cylinder head screw, glow plug and nozzle holder	1-S18
	• Improper valve timing	Correct or replace timing gear	1-S34
	• Piston ring and cylinder worn	Replace	1-S44, S51
	• Excessive valve clearance	Adjust	1-S20
(Starter Does Not Run)	• Battery discharged	Charge	–
	• Starter malfunctioning	Repair or replace	9-S14
	• Key switch malfunctioning	Repair or replace	9-S10, S11
	• Wiring disconnected	Connect	–
Engine Revolution Is Not Smooth	• Fuel filter clogged or dirty	Replace	G-25
	• Air cleaner clogged	Clean or replace	G-20
	• Fuel leak due to loose injection pipe retaining nut	Tighten retaining nut	–
	• Injection pump malfunctioning	Repair or replace	1-S32, S56
	• Incorrect nozzle opening pressure	Adjust	1-S57
	• Injection nozzle stuck or clogged	Repair or replace	1-S58
	• Governor malfunctioning	Repair	–
	• Bearing worn out	Replace	–
	• Turbocharger shaft bent	Replace	1-S59, S60
	• Turbocharger fin or other part damaged due to foreign matters	Replace	1-S60

W1014322

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SPECIFICATIONS

Model			M6800		M6800S	
			2WD	4WD	2WD	4WD
Engine	Model		V3300-E			
	Type		Vertical, water-cooled, 4-cycle diesel engine			
	Number of cylinders		4			
	Total displacement		3318 cm^3 (202.5 cu.in.)			
	Bore and stroke		98 × 110 mm (3.9 × 4.3 in.)			
	Net power		50.8 kW (68 HP)*			
	PTO power (factory observe)		46.3 kW (62 HP)* / 2600 min^{-1} (rpm)			
	Maximum torque		235 N·m (24.0 kgf·m, 173.3 ft-lbs) / 1300 to 1500 min^{-1} (rpm)			
	Battery capacity		12 V, CCA : 1000 A			
	Fuel		Diesel fuel No. 1 [below –10 °C (14 °F], Diesel fuel No. 2-D [above –10 °C (14 °F)]			
	Fuel tank capacity		65 L (17.2 U.S.gals., 14.3 Imp.gals.)			
	Engine oil capacity		10.7 L (11.3 U.S.qts., 9.4 Imp.qts.)			
	Coolant capacity		8.5 L (9.0 U.S.qts., 7.5 Imp.qts.)			
Dimensions	Overall length		3530 mm (139.0 in.)	3420 mm (134.6 in.)	3560 mm (140.2 in.)	3525 mm (138.8 in.)
	Overall width (min. tread)		1860 mm (73.2 in.)			
	Overall height (with ROPS)		2450 mm (96.9 in.)			
	Wheel base		2050 mm (80.7 in.)			
	Tread	Front	1420 to 1820 mm (55.9 to 71.7 in.)	1420 to 1520 mm (55.9 to 59.8 in.)	1420 to 1820 mm (55.9 to 71.7 in.)	1420 to 1520 mm (55.9 to 59.8 in.)
		Rear	1420 to 1720 mm (55.9 to 67.7 in.)			
	Minimum ground clearance		430 mm (16.9 in.) (COVER TANK)		430 mm (16.9 in.) (BRACKET DRAWBAR)	
Weight (with ROPS)			2030 kg (4475 lbs)	2090 kg (4608 lbs)	2030 kg (4475 lbs)	2090 kg (4608 lbs)
Travelling system	Standard tire size	Front	7.5-16	9.5-24	9.5L-15, 7.5-16	9.5-24
		Rear	16.9-30			
	Clutch		Dry, single plate			
	Steering		Hydrostatic power steering			
	Braking system		Multiple wet disc mechanical			
	Differential		Bevel gears with differential lock (Front, Rear)			
Hydraulic system	Hydraulic control system		Position, draft and mix control			
	Pump capacity		41.3 L (43.6 U.S.qts., 36.3 Imp.qts.) / min.		38.3 L (40.5 U.S.qts., 33.7 Imp.qts.) / min.	
	Three point hitch		SAE Category I & II			
	Max. lifting force	At lift points**	2050 kg (4520 lbs)			
		24 in. behind lift points	1500 kg (3307 lbs)			
	Remote hydraulic control		One remote valve			
	System pressure		19.1 MPa (195 kgf/cm^2, 2775.4 psi)			
PTO	Live PTO (Indipendent)	Direction of turning	Clockwise, viewed from tractor rear			
		Standard PTO	Fixed PTO shaft type with 1 speed : 540 min^{-1} (rpm) at 2295 min^{-1} (rpm) Fixed PTO shaft type with 2 speeds : 540 min^{-1} (rpm) at 2307 min^{-1} (rpm) 1000 min^{-1} (rpm) at 2471 min^{-1} (rpm) Fixed PTO shaft type with 2 speeds : 540 min^{-1} (rpm) at 2307 min^{-1} (rpm) 540E min^{-1} (rpm) at 1828 min^{-1} (rpm)			

Note : * Manufacture's estimate
** At lower link and with links horizontal.
The company reserves the right to change the specifications without notice.

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7. MAINTENANCE

No.	Item \ Period			Service Interval									After purchase		Important		Reference page
				50	100	200	300	400	600	800	1500	3000	1 year	2 years			
1	Engine oil		Change	★		☆											G-14
2	Engine oil filter		Replace	★				☆									G-14
3	Fuel filter		Replace	★				☆								@	G-25
4	Front differential case oil		Change	★					☆								G-27
5	Hydraulic oil filter		Replace	★			☆										G-15
6	Front axle gear case oil		Change	★			☆										G-27
7	Water separator		Clean					☆									G-25
8	Engine start system		Check	☆													G-17
9	Wheel bolt torque		Check	☆													G-19
10	Greasing		–		☆												G-22
11	Battery condition		Check		☆												G-19
12	Air cleaner element [Double type]	Primary element	Clean		☆										*	@	G-20
			Replace										☆		**		G-20
		Secondary element	Replace										☆				G-20
13	Air cleaner [Oil bath type]	Oil	Check	☆													G-16
		Element	Adjust		☆												G-26
14	Fan belt		Adjust		☆												G-21
15	Clutch		Adjust	★	☆												G-16
16	Brake		Adjust		☆												G-21
17	Radiator hose and clamp		Check			☆											G-23
			Replace											☆			G-23
18	Power steering oil line		Check			☆											G-23
			Replace											☆			G-23
19	Fuel line		Check			☆										@	G-23
			Replace											☆			G-23
20	Toe-in		Adjust			☆											G-24
21	Greasing (2WD front wheel hub)		–					☆									G-24
22	Transmission fluid		Change	★					☆								G-15
23	Intake air line		Check			☆										@	–
			Replace											☆	***		–
24	Front axle pivot		Adjust						☆								G-27
25	Engine valve clearance		Adjust							☆							1-S20
26	Fuel injection nozzle injection pressure		Check								☆					@	1-S57
27	Injection pump		Check									☆				@	1-S56
28	Cooling system		Flush											☆			G-28, 29
29	Coolant		Change											☆			G-28, 29
30	Fuel system		Bleed										Service as required				G-30
31	Clutch housing water		Drain														G-30
32	Fuse		Replace														G-31
33	Light bulb		Replace														G-31

■ IMPORTANT

- **The jobs indicated by ★ must be done after the first 50 hours of operation.**
- *** : Air cleaner should be cleaned more often in dusty conditions than in normal conditions.**
- **** : Every year or every 6 times of cleaning.**
- ***** : Replace only if necessary.**
- **The items listed above (@ marked) are registered as emission related critical parts by KUBOTA in the U.S.EPA nonroad emission regulation. As the engine owner, you are responsible for the performance of the required maintenance on the engine according to the above instruction.**
  Please see the Warranty Statement in detail.

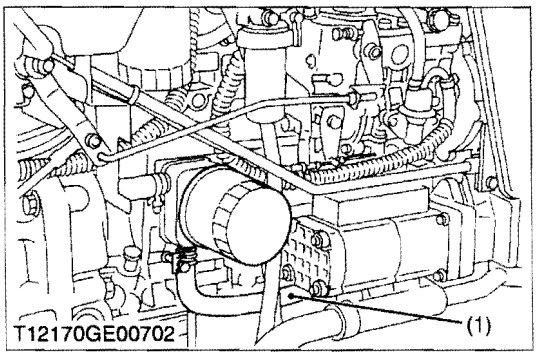
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4. CHECKING, DISASSEMBLING AND SERVICING

[1] SEPARATING ENGINE FROM TRACTOR



Draining Coolant

CAUTION

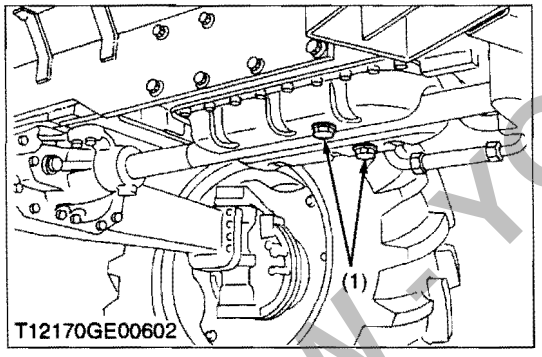
- **Never remove the radiator cap until coolant temperature is well below its boiling point. Then loosen cap slightly to the stop to relieve any excess pressure before removing cap completely.**

1. Stop the engine and let cool down.
2. Remove the radiator hose (1) from the engine side to drain the coolant.
3. Remove the radiator cap to completely drain the coolant.
4. After all coolant is drained, reinstall the radiator hose.

Coolant	Capacity	M6800(S)	8.5 L 9.0 U.S.qts. 7.5 Imp.qts.
		M8200 M9000	9.0 L 9.5 U.S.qts. 7.9 Imp.qts.

(1) Radiator Hose

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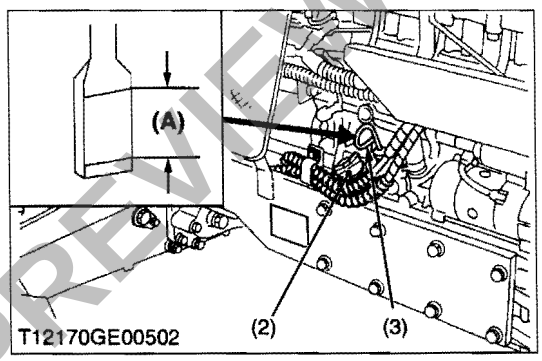
Draining Engine Oil

1. Start and warm up the engine for approx. 5 minutes.
2. Place an oil pan underneath the engine.
3. Remove the drain plugs (1) to drain oil.
4. After draining reinstall the drain plugs (1).

(When reassembling)

- Fill the engine oil up to the upper line on the dipstick (3).

Engine oil	Capacity	10.7 L 11.3 U.S.qts. 9.4 Imp.qts.



■ **IMPORTANT**

- **Never mix two different type of oil.**
- **Use the proper SAE Engine Oil according to ambient temperatures.**
  Refer to "LUBRICANTS, FUEL AND COOLANT". (See page G-9.)

(1) Drain Plug
(2) Oil Inlet Plug
(3) Dipstick

(A) Oil level is acceptable within this range.

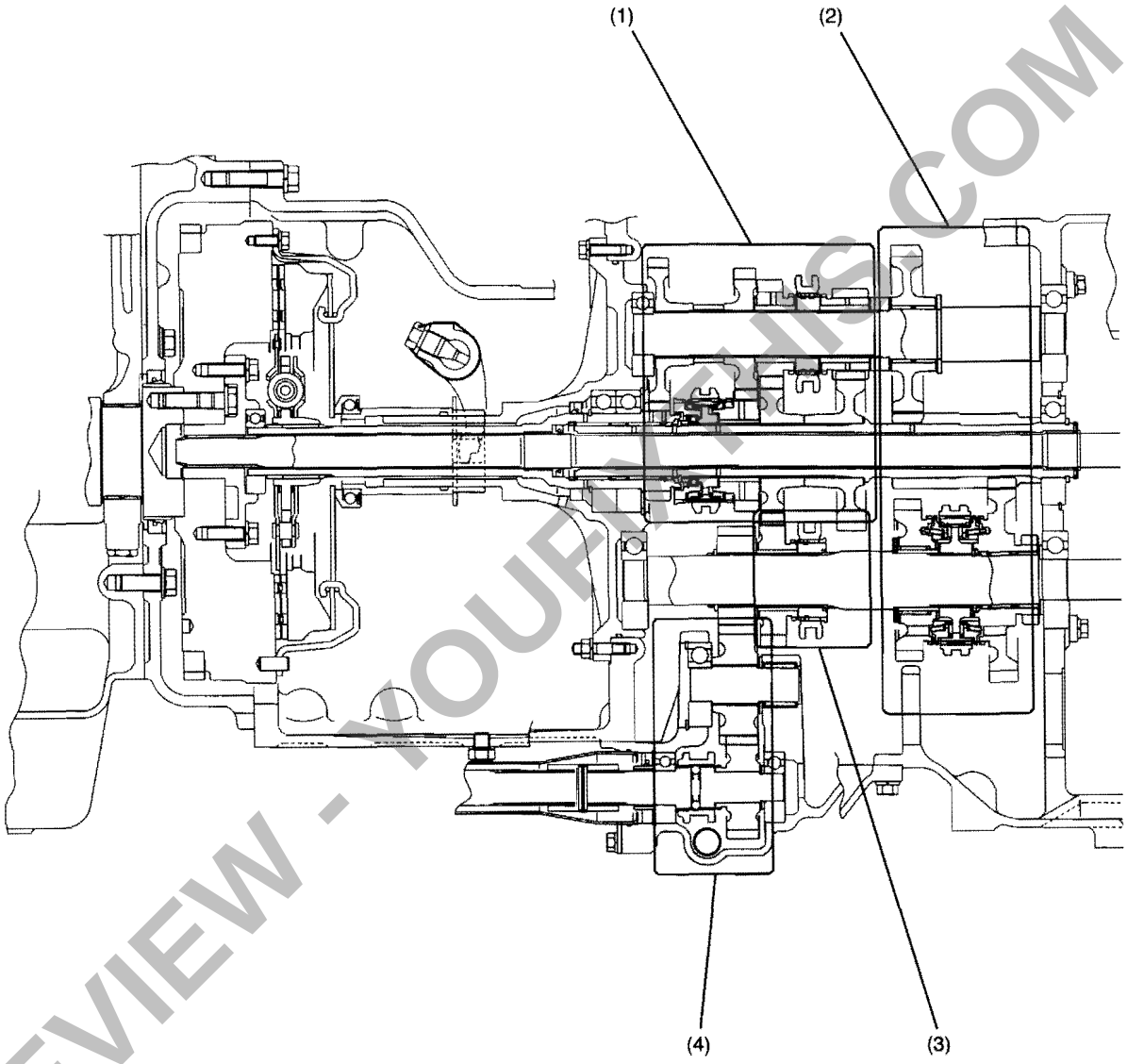
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1. STRUCTURE

[1] M6800



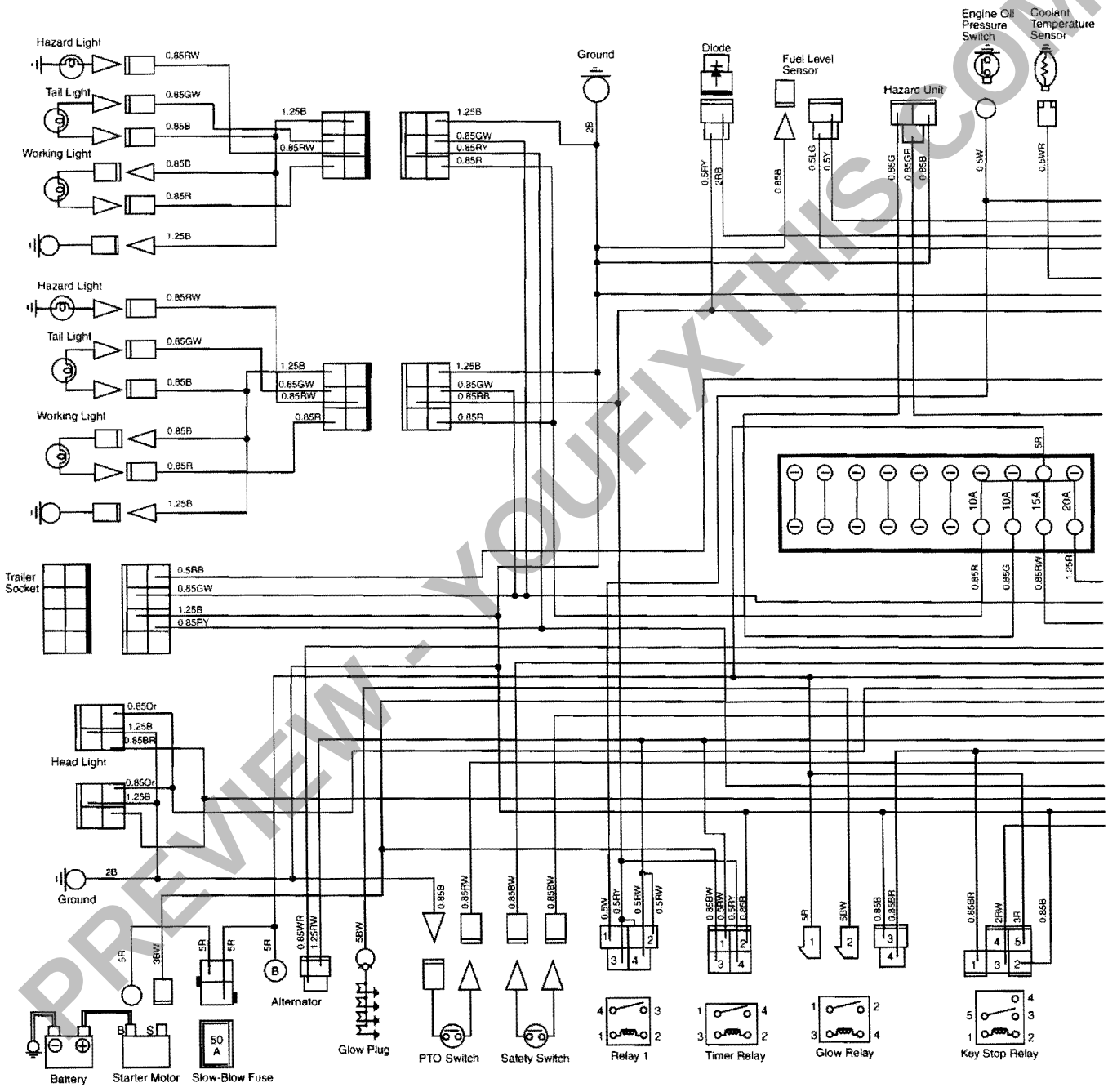
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(1) Main Gear Shift Section
(2) Shuttle Shift Section (Lo-Reverse)
(3) Hi-Creep Shift Section
(4) Four Wheel Drive Section

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■ For North America (Old Type)



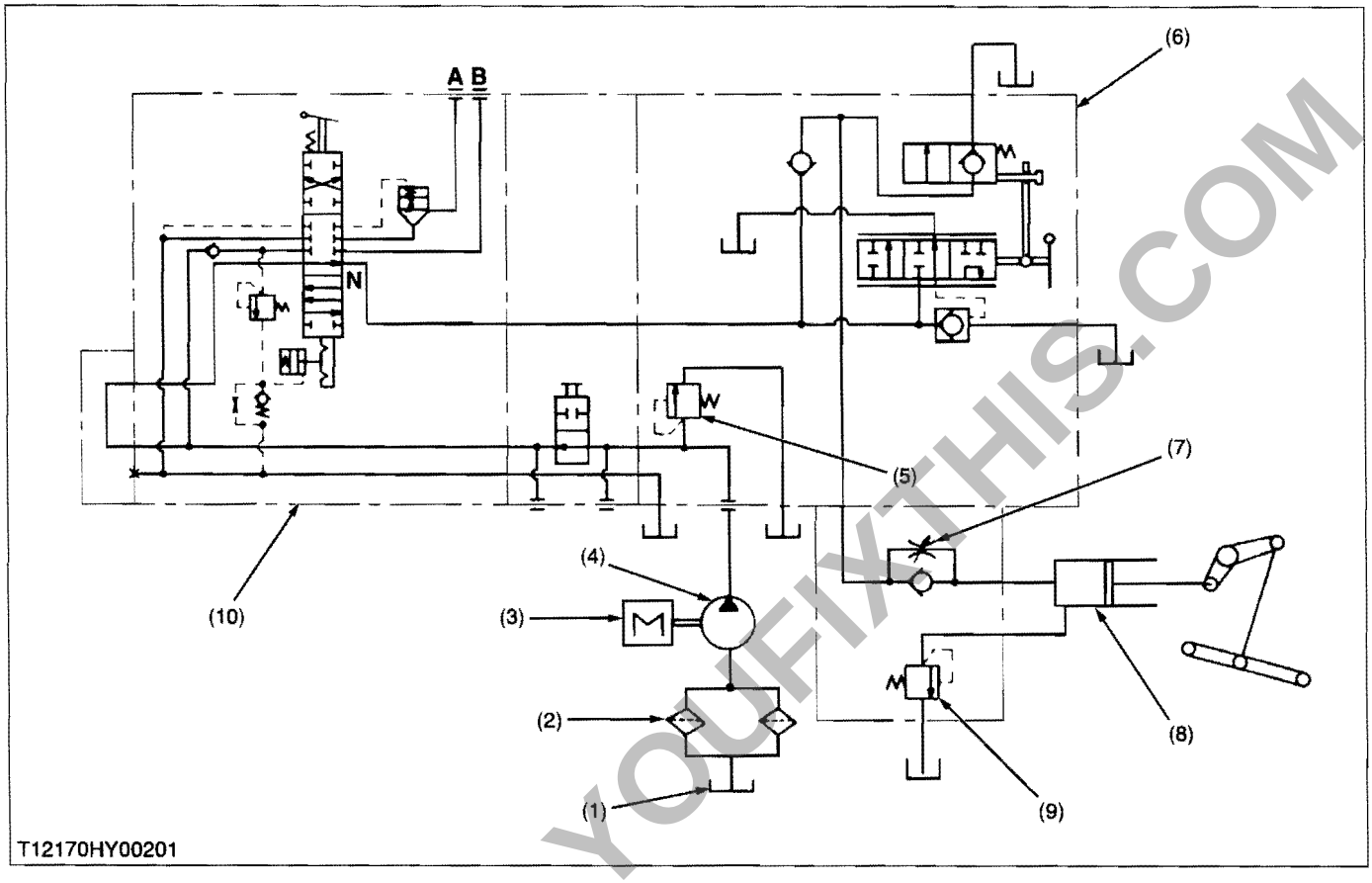
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2. HYDRAULIC CIRCUIT FOR THREE POINT HYDRAULIC SYSTEM

[M6800(S)]



(1) Oil Tank (Transmission Case)
(2) Hydraulic Oil Filter Cartridge
(3) Engine
(4) Hydraulic Pump
(5) Relief Valve
(6) Control Valve
(7) Lowering Speed Adjusting Valve
(8) Hydraulic Cylinder
(9) Cylinder Safety Valve
(10) Auxiliary Control Valve

A : To Implement Cylinder
B : To Implement Cylinder
N : N Port

1. When the engine is started, the hydraulic pump (4) is rotated to suck oil from transmission case (1) through the suction pipe.
   Supplied oil is filtered by the hydraulic oil filter cartridge (2).
2. Filtered oil is forced out by the hydraulic pump to the auxiliary control valve (10) through the delivery pipe.
3. With the auxiliary control valve (10) in neutral position, oil is channelled from **"N"** port to the control valve (6).
4. The hydraulic system has a relief valve (5) which restricts the maximum pressure in the circuit.
   The hydraulic cylinder (8) has a cylinder safety valve (9) to relieve shock pressure due to heavy implement bounce.
5. The control valve is actuated by the mechanical linkage for **"Position control"** or **"Draft control"** or both (**"Mix control"**).
6. These tractors have one single / double acting auxiliary control valve as standard equipment.

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SAFETY DECALS

The following safety decals are installed on the machine.
If a decal becomes damaged, illegible or is not on the machine, replace it. The decal part number is listed in the parts list.

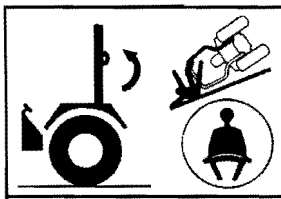
(1) Part No. TA040-4965-2



⚠ DANGER

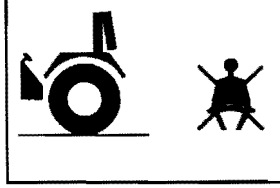
TO AVOID POSSIBLE INJURY OR DEATH FROM A MACHINE RUNAWAY.
1. Do not start engine by shorting across starter terminals or bypassing the safety start switch. Machine may start in gear and move if normal starting circuitry is bypassed.
2. Start engine only from operator's seat with transmission and PTO OFF. Never start engine while standing on the ground.

(2) Part No. 3A111-9848-2 (for North America and Oceania)



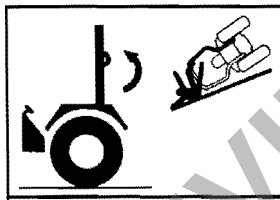
⚠ WARNING

TO AVOID INJURY OR DEATH FROM ROLL-OVER:
- Keep Roll-Over Protective Structures (ROPS) in the upright and locked position.
- Fasten SEAT BELT before operating.



THERE IS NO OPERATOR PROTECTION WHEN THE ROPS IS IN THE FOLDED POSITION.
- Check the operating area and fold the ROPS only when absolutely necessary.
- Do not wear SEAT BELT if ROPS is folded.
- Raise and lock ROPS as soon as vertical clearance allows.
- Read ROPS related instructions and warnings.

(2) Part No. 3A114-9848-1 (for Euro and Asia)



⚠ WARNING

TO AVOID INJURY OR DEATH FROM ROLL-OVER:
- Keep Roll-Over Protective Structures (ROPS) in the upright and locked position.



THERE IS NO OPERATOR PROTECTION WHEN THE ROPS IS IN THE FOLDED POSITION.
- Check the operating area and fold the ROPS only when absolutely necessary.
- Raise and lock ROPS as soon as vertical clearance allows.
- Read ROPS related instructions and warnings.

(3) Part No. TA040-4935-1

⚠ WARNING

TO AVOID PERSONAL INJURY:
1. Attach pulled or towed loads to the drawbar only.
2. Use the 3-point hitch only with equipment designed for 3-point hitch usage.

(5) Part No. 3A111-9544-1

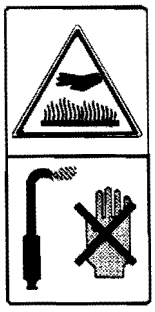
⚠ WARNING

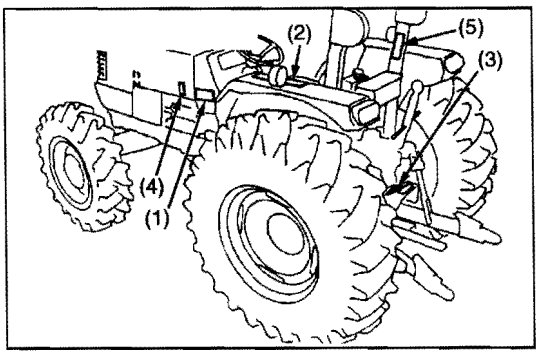
Never modify or repair a ROPS because welding, grinding, drilling or cutting any portion may weaken the structure.

⚠ CAUTION

TO AVOID INJURY WHEN RAISING OR FOLDING ROPS:
- Set parking brake and stop engine.
- Remove any obstruction that may prevent raising or folding of the ROPS.
- Do not allow any bystanders.
- Always perform function from a stable position at the rear of the tractor.
- Hold the top of the ROPS securely when raising or folding.
- Make sure all pins are installed and locked.

(4) Part No. 32310-4958-1
Do not touch hot surface like muffler, etc.





T12170ZZ00101

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MECHANISM

CONTENTS

1. ENGINE BODY 1-M1
   [1] CYLINDER BLOCK 1-M1
   [2] CRANKSHAFT 1-M1
2. FUEL SYSTEM 1-M2
   [1] FUEL FILTER 1-M2
3. TURBO CHARGER SYSTEM 1-M3
   [1] BOOST COMPENSATOR 1-M3

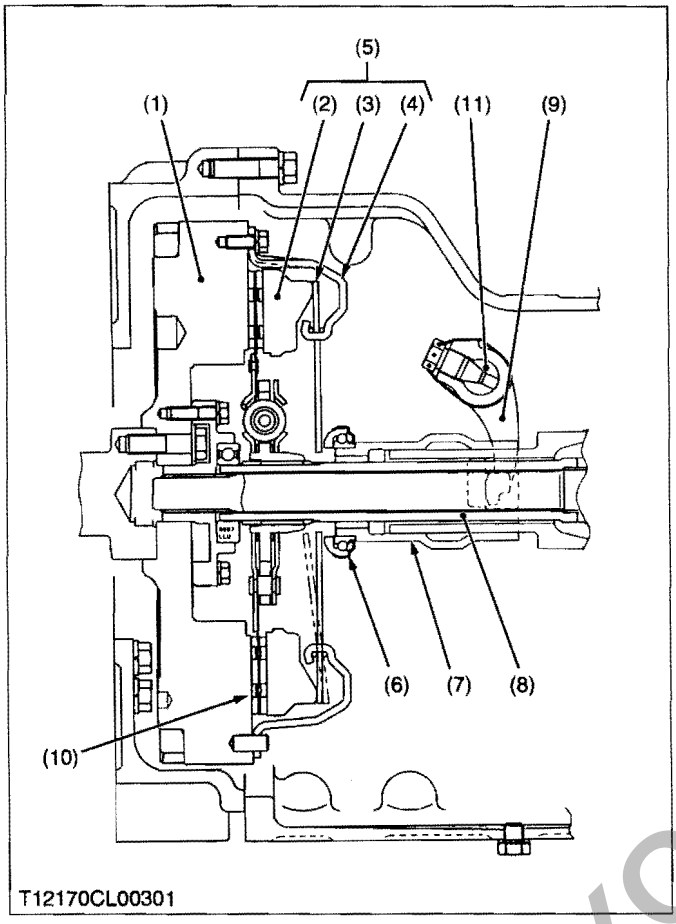
NOTICE

For not above-mentioned engine mechanism information, please refer ENGINE MECHANISM WSM (97897-01872).

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[3] OPERATION



T12170CL00301

■ Clutch "Engaged"

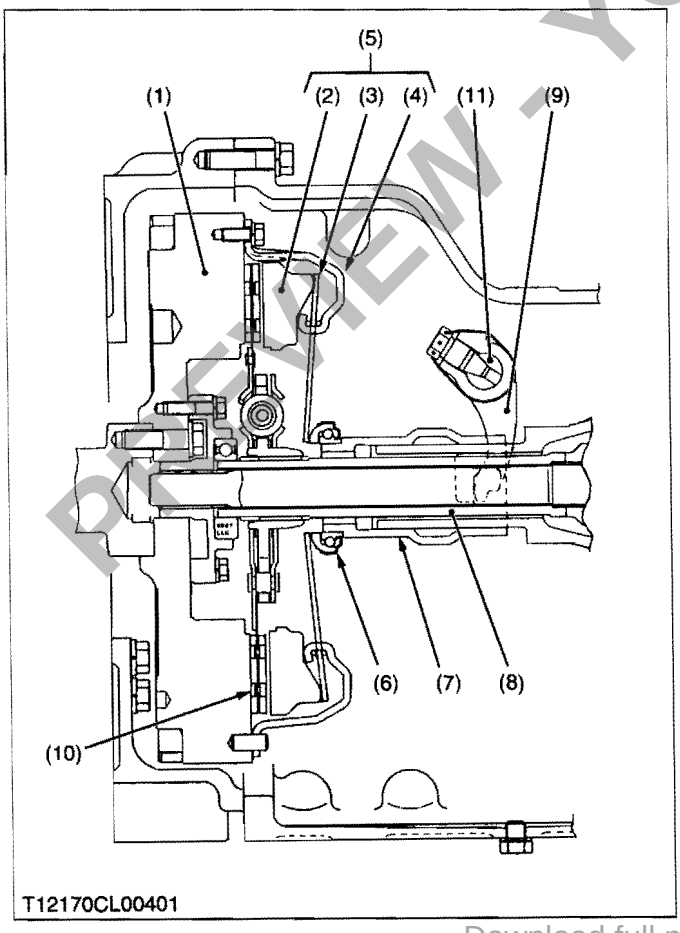
When the clutch pedal is not depressed, the clutch release bearing (6) and the fingers of diaphragm spring (3) are not connected to each other.

Accordingly, the pressure plate (2) is tightly pressed against the flywheel (1) by the diaphragm spring (3).

As a result, rotation of the flywheel (1) is transmitted to the transmission through the gear shaft (8) due to the frictional force among the flywheel (1), clutch disc (10) and pressure plate (2).

(1) Flywheel
(2) Pressure Plate
(3) Diaphragm Spring
(4) Clutch Cover
(5) Pressure Plate Assembly
(6) Release Bearing
(7) Release Hub
(8) Gear Shaft
(9) Release Fork
(10) Clutch Disc
(11) Clutch Lever

W1012942



T12170CL00401

■ Clutch "Disengaged"

When the clutch pedal is depressed, the clutch rod is pulled to move the clutch lever (11). Then, the release fork (9) pushes the release hub (7) and release bearing (6) toward the flywheel. Simultaneously, the release bearing (6) pushes the diaphragm spring (3).

As the pressure plate (2) is pulled by the diaphragm spring (3), the frictional force among the flywheel (1), clutch disc (10) and pressure plate (2) disappears.

Therefore, rotation of the flywheel (1) is not transmitted to the clutch disc (10), and then the rotation of the gear shaft (8) stops.

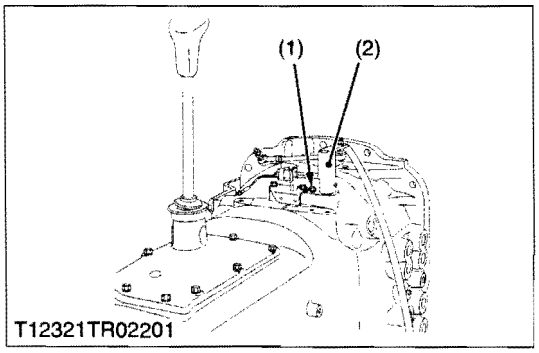
(1) Flywheel
(2) Pressure Plate
(3) Diaphragm Spring
(4) Clutch Cover
(5) Pressure Plate Assembly
(6) Release Bearing
(7) Release Hub
(8) Gear Shaft
(9) Release Fork
(10) Clutch Disc
(11) Clutch Lever

W1013081

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(C) Disassembling Clutch Housing Case [M6800S]

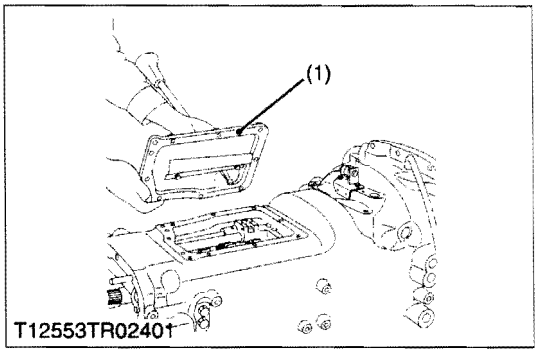


Shift Lever

1. Remove the shift lever setting screw (1).
2. Remove the shift lever (2).

(1) Setting Screw (2) Shift Lever

W1014089



Speed Change Cover

1. Remove the speed change cover (1).

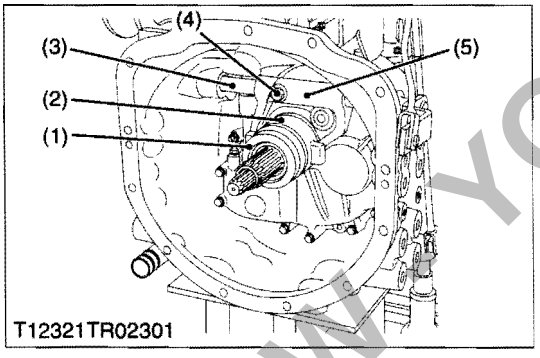
(When reassembling)

- When reassembling the speed change cover (1), set the shifter and fork in neutral position.
- Apply liquid gasket (Three Bond 1216 or equivalent) to seam of speed change cover and clutch housing.

Tightening torque	Speed change cover mounting screw	23.5 to 27.5 N·m 2.4 to 2.8 kgf·m 17.4 to 20.3 ft-lbs

(1) Speed Change Cover

W1014175



Clutch Release Bearing

1. Draw out the release bearing (1) and the release hub (2) together.
2. Remove the release fork setting screw (4).
3. Draw out the control shaft (3) to take out the release fork (5).

(When reassembling)

- After tightening the release fork setting screw to the specified torque, insert a wire through the holes of the setting screw head and release fork.
- Apply grease to the sliding surface of the clutch release hub.
- Apply grease to the bushing of control shaft.

Tightening torque	Release fork setting screw	166.7 to 186.3 N·m 17.0 to 19.5 kgf·m 130.0 to 137.4 ft-lbs

(1) Release Bearing
(2) Release Hub
(3) Control Shaft
(4) Release Fork Setting Screw
(5) Release Fork

W1014300

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SERVICING

CONTENTS

1. TROUBLESHOOTING 6-S1
2. SERVICING SPECIFICATIONS 6-S2
3. TIGHTENING TORQUES 6-S5
4. CHECKING, DISASSEMBLING AND SERVICING 6-S6
   [1] CHECKING AND ADJUSTING 6-S6
   [2] DISASSEMBLING AND ASSEMBLING 6-S8
      (1) Separating Front Axle [2WD Type] 6-S8
      (2) Separating Front Axle [4WD Type] 6-S8
      (3) Disassembling Front Axle [2WD Type] 6-S10
      (4) Disassembling Front Axle [4WD Type] 6-S12
   [3] SERVICING 6-S18
      (1) 2WD Type 6-S18
      (2) 4WD Type 6-S19

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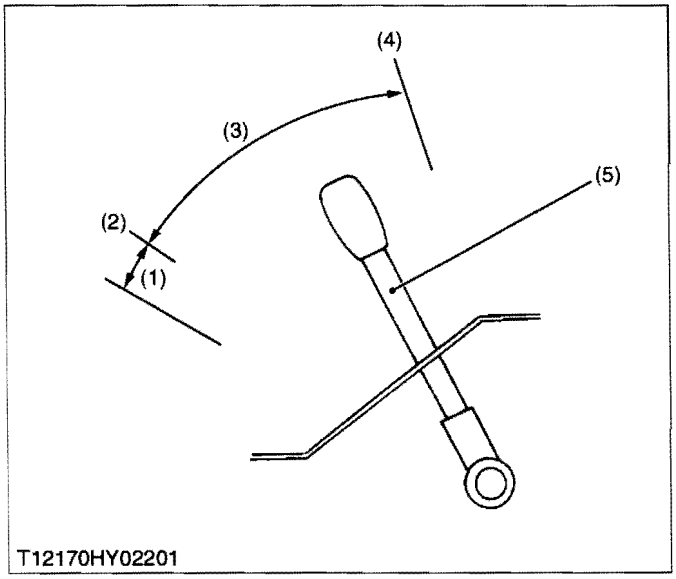
(2) Draft Control

Draft control is a system which maintain a constant traction load, and is suited for the work which needs heavy traction load such as plowing.

The implement is automatically raised when its traction load is increased, and lowers when the traction load is decreased. By maintaining a constant load level, it prevents the tractor from slipping and being loaded excessively.

The setting traction load can be adjusted by changing the position of the draft control lever (5).

The draft control system uses the same control valve as the position control system. The traction load applied to the tractor is sensed and is fed back to the control valve by means of the other linkage mechanism.



T12170HY02201

With this type of draft control, operation is as described below according to the position of the draft control lever.

1. When the draft control lever is positioned in the floating range, the implement lowers to the ground.
2. When the draft control lever is positioned in the draft control range, work is performed as follows.
   - As the traction load applied to the tractor from the implement increases, the implement is raised.
   - As the traction load decreases, the implement lowers to the position at which it matches the setting traction load.
3. When the implement is raised as described in 2 above, the force to raise the implement is applied to the rear wheels so that the ground pressure of the wheels is momentarily increased to prevent slippage.

(Reference)

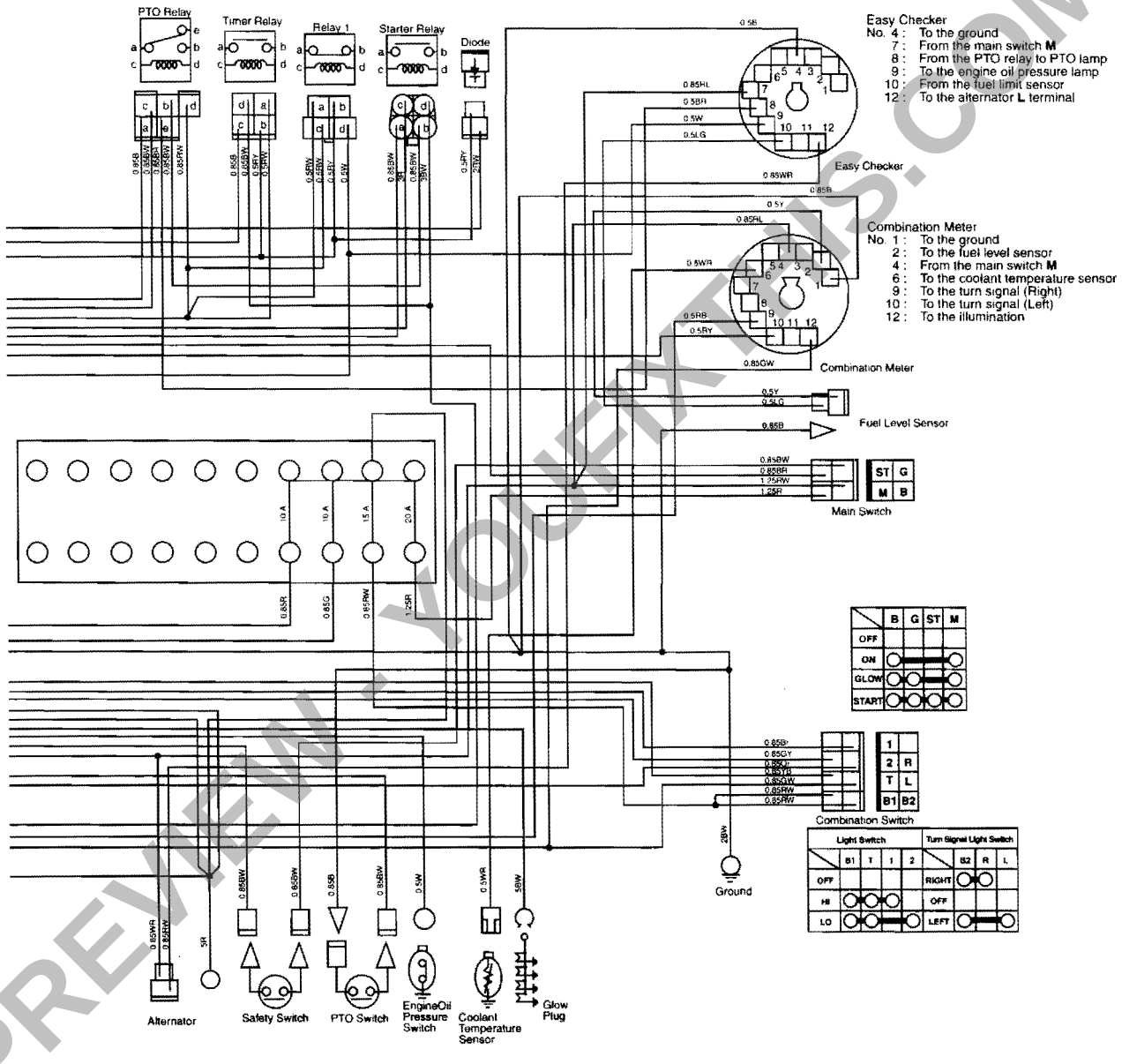
- When the draft control is used, the position control lever should be set at **"FLOATING"** range.
- If the position control lever is set at working range, both control systems operate performing mix control system. (See **"(3) Mixed Control"**.)

(1) Floating Range
(2) Deep
(3) Draft Range
(4) Shallow
(5) Draft Control Lever

W1016418

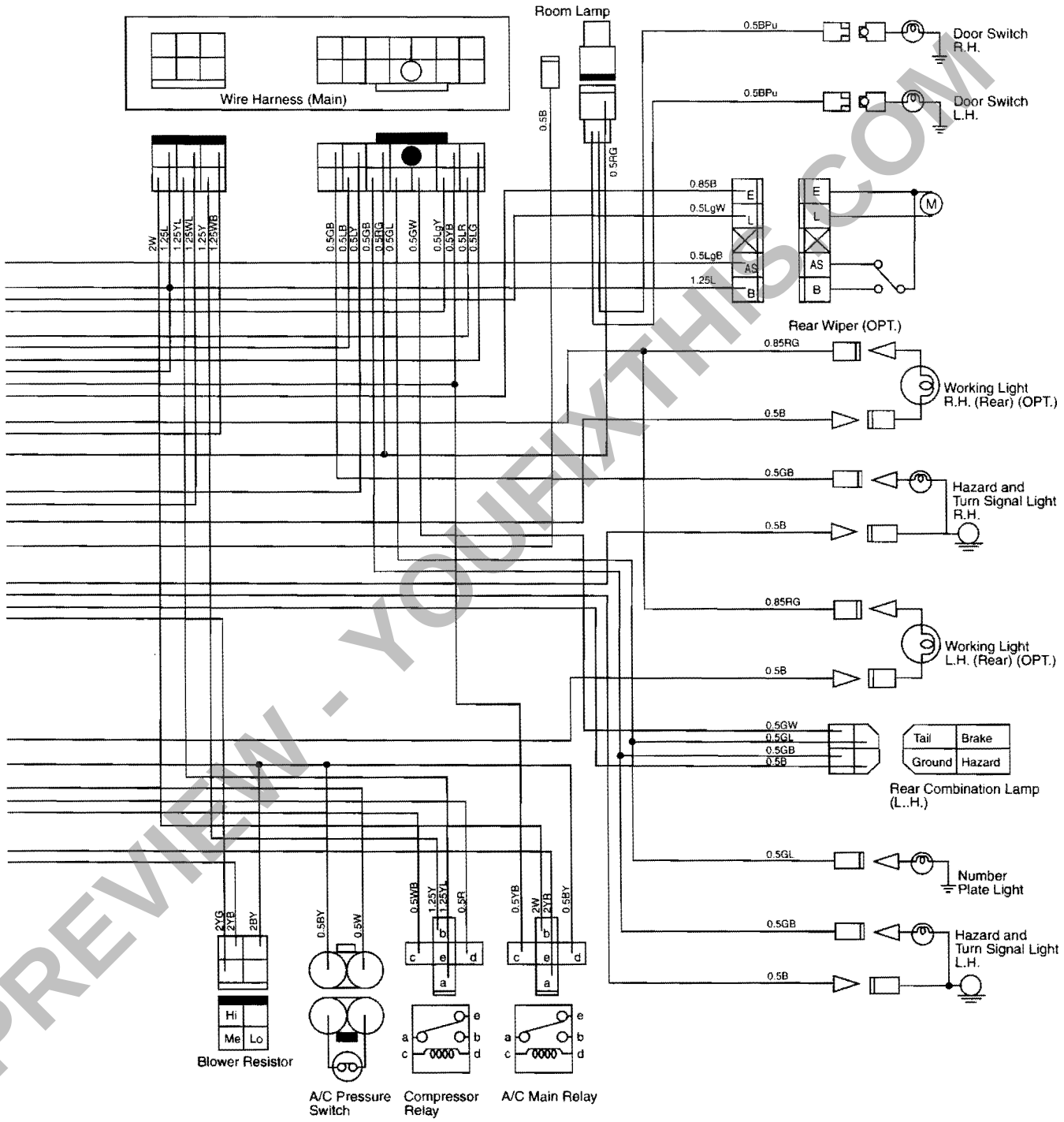
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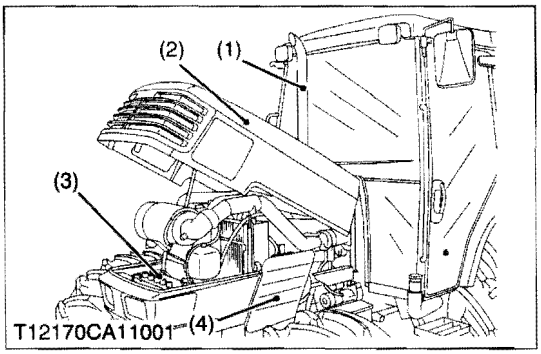
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(B) Removing Air Conditioner Pipes

Discharging Refrigerant

1. Refer to **"Discharging the System"**. (See page 10-S17.)

W1032195

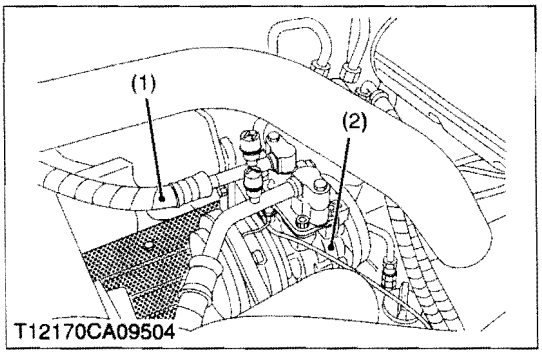


Muffler and Bonnet

1. Disconnect the battery cable (3).
2. Remove the muffler (1).
3. Remove the bonnet (2).
4. Remove the side cover (4).

(1) Muffler
(2) Bonnet
(3) Battery Cable
(4) Side Cover

W1032248



High Pressure Pipe 1

1. Disconnect the high pressure pipe 1 (1) from the compressor (2) and cap the open fittings immediately to keep moisture out of the system.

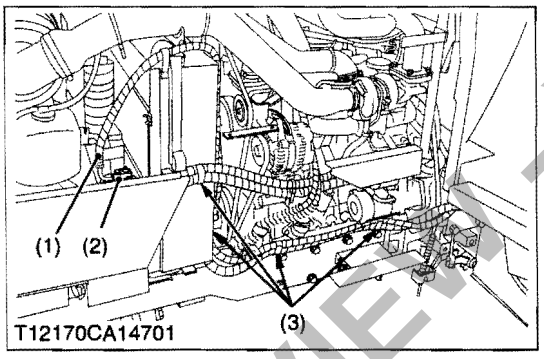
(When reassembling)

- Apply compressor oil (NIPPONDENSO ND-OIL8) to the O-rings and take care not to damage them.

Tightening torque	High pressure pipe 1 mounting screw (Compressor side)	7.8 to 11.8 N·m 0.8 to 1.2 kgf·m 5.8 to 8.7 ft-lbs

(1) High Pressure Pipe 1
(2) Compressor

W1032372



High Pressure Pipe 2

1. Remove the pipe clamps (3).
2. Disconnect the high pressure hose 2 (1) from the receiver (2) and cap the open fittings immediately to keep moisture out of the system.

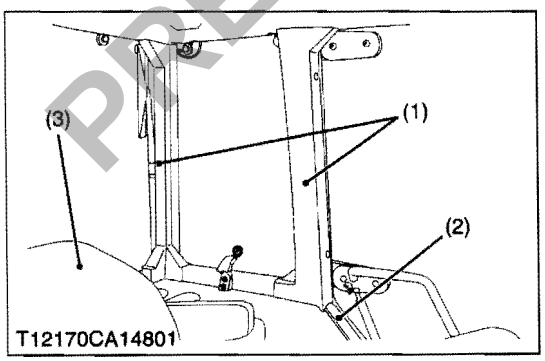
(When reassembling)

- Apply compressor oil (NIPPONDENSO ND-OIL8) to the O-rings and take care not to damage them

Tightening torque	High pressure pipe 2 mounting screw (Receiver side)	11.8 to 14.7 N·m 1.2 to 1.5 kgf·m 8.7 to 10.8 ft-lbs

(1) High Pressure Pipe 2
(2) Receiver
(3) Clamp

W1032488



Inner Covers

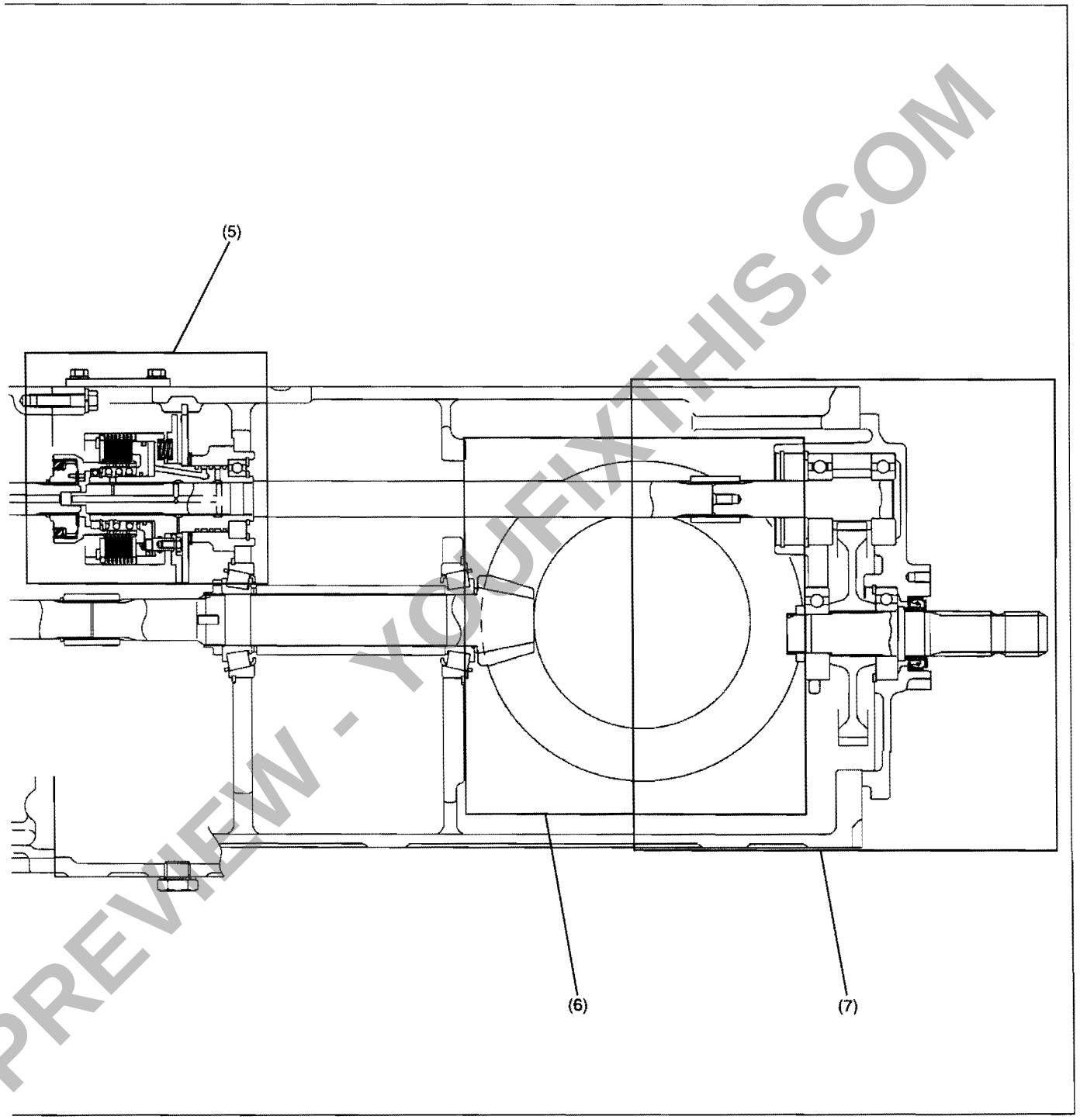
1. Remove the inner covers (1) and (2).
2. Remove the seat (3).

(1) Inner Cover (Upper)
(2) Inner Cover (Lower)
(3) Seat

W1032629

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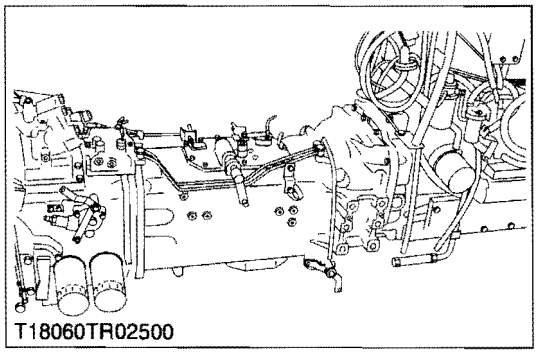
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(5) PTO Clutch Section (6) Differential Gear Section (7) PTO Gear Section

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T18060TR02500

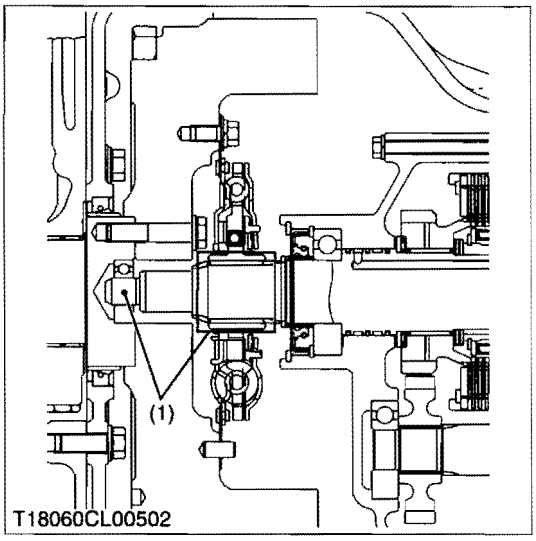
Separating Engine from Clutch Housing

1. Remove the engine mounting screws and nuts, and separate the engine from the clutch housing.

(When reassembling)

- Apply molydenum disulphide (Three Bond 1901 or equivalent) to the splines of clutch disc boss.
- Apply liquid gasket (Three Bond 1211, 1141 or equivalent) to the seam of engine and clutch housing.
- When connecting the engine to the clutch housing, be sure to align the input shaft spline to the clutch hub center.

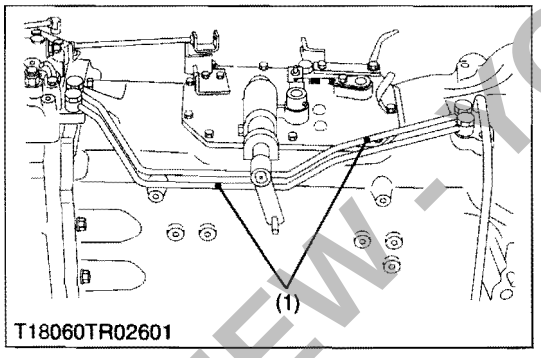
Tightening torque	Engine and clutch housing mounting screw, nut	77.5 to 90.2 N·m 7.9 to 9.2 kgf·m 57.1 to 66.5 ft-lbs
	Engine and clutch housing mounting stud bolt	38.2 to 45.1 N·m 3.9 to 4.6 kgf·m 28.2 to 33.3 ft-lbs



T18060CL00502

(1) Greasing Point

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T18060TR02601

Shuttle Pipe

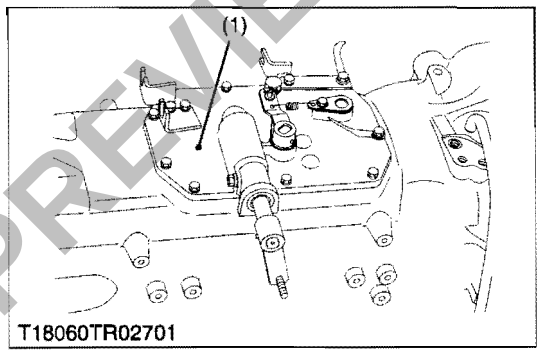
1. Remove the shuttle pipes (1).

(When reassembling)

Tightening torque	Shuttle pipe eye joint bolt	39.2 to 45.0 N·m 4.0 to 4.6 kgf·m 29.0 to 33.2 ft-lbs

(1) Shuttle Pipe

W1035880



T18060TR02701

Speed Change Cover

1. Remove the speed change cover (1).

(When reassembling)

- When reassembling the speed change cover (1), set the shifter and fork in neutral position.
- Apply liquid gasket (Three 1216 or equivalent) to joint face of shuttle valve base and transmission case.

Tightening torque	Speed change cover mounting screw	23.5 to 27.5 N·m 2.4 to 2.8 kgf·m 17.4 to 20.3 ft-lbs

(1) Speed Change Cover

W1039686

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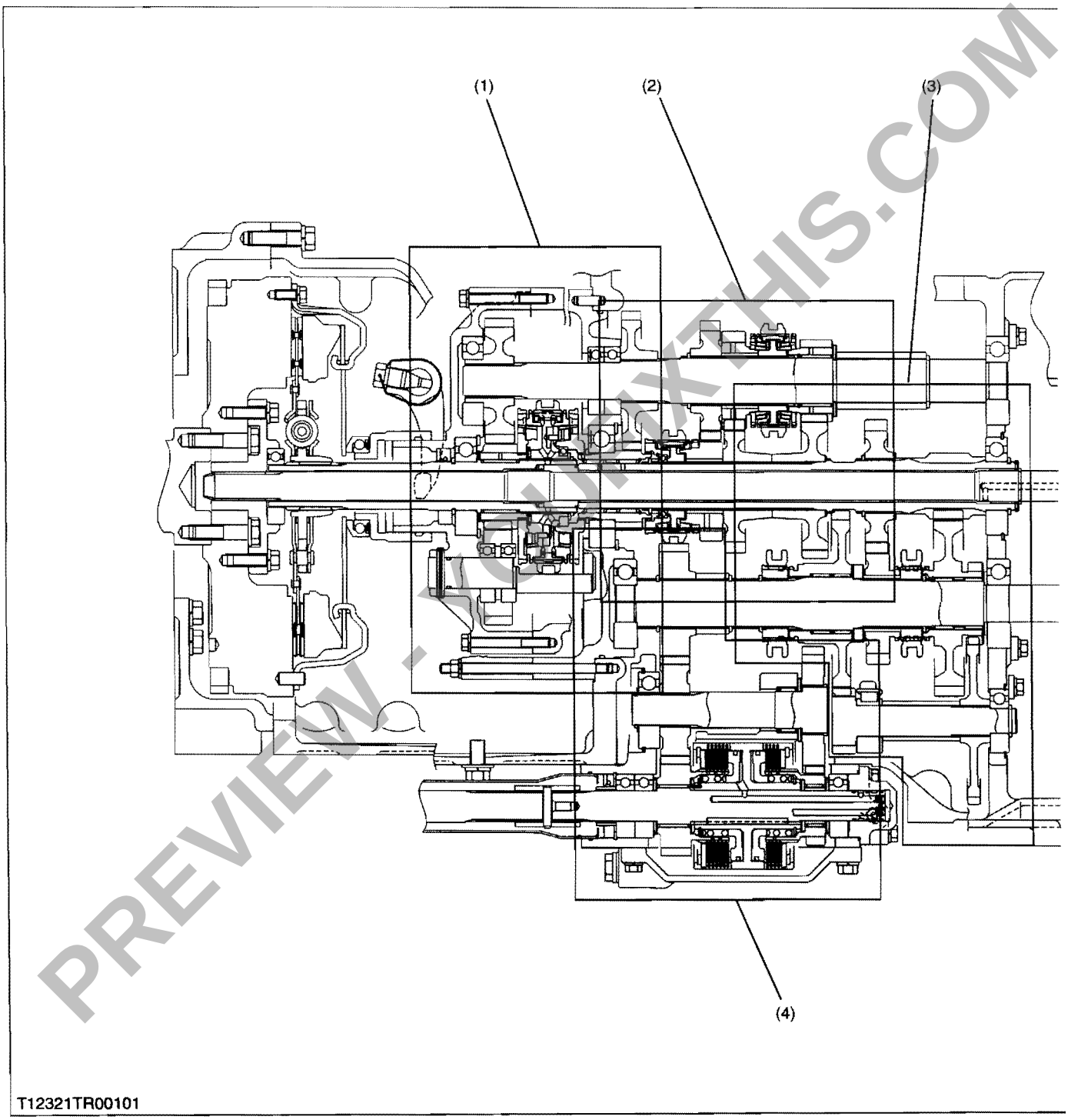
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3. TRANSMISSION

[1] MECHANISM

(1) Structure

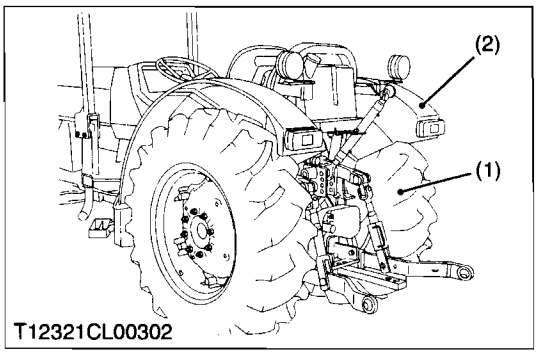
(A) M8200SDNB

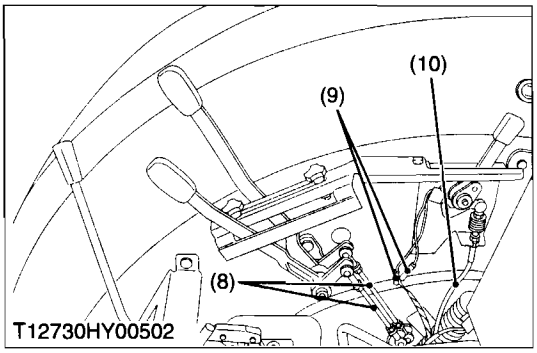


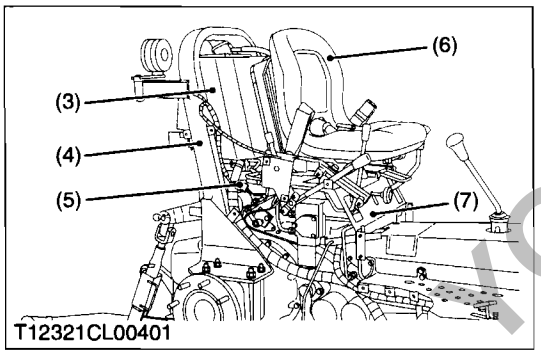
(1) Shuttle Shift Section (Forward-Reverse)
(2) Main Gear Shift Section
(3) Hi-Low, Creep Section
(4) Four Wheel Drive Section

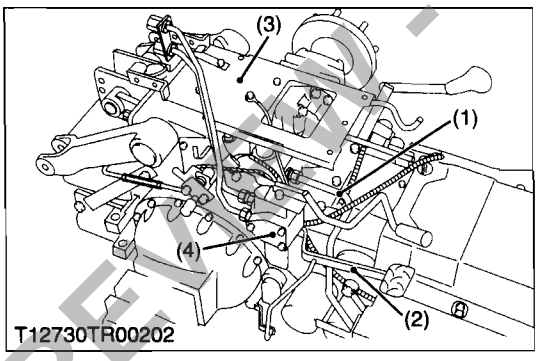
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Rear Wheel, Fender and ROPS

1. Remove the seat (6).
2. Check the transmission case are securely mounted on the disassembly stands.
3. Disconnect the connector (5) for hazard and tail lights.
4. Disconnect the connectors (6) for PTO safety switch.
5. Remove the rear wheels (1).
6. Remove the position, draft lever rods (8).
7. Remove the PTO lever wire (10).
8. Remove the fender (2) and center cover (7).
9. Remove the rear ROPS (4) with fuel tank (3).

(When reassembling)

Tightening torque	Rear wheel mounting nut	260 to 304 N·m 26.5 to 31.0 kgf·m 192 to 224 ft-lbs
	Rear ROPS mounting U-bolt	196 to 225 N·m 20 to 23 kgf·m 144.7 to 166.4 ft-lbs

■ **NOTE**

- **Please adjust the hydraulic control levers after reassembly when you remove the right fender and the lever guide.**

(1) Rear Wheel
(2) Fender
(3) Fuel Tank
(4) Rear ROPS
(5) Connector
(6) Seat
(7) Center Cover
(8) Rod
(9) Connector
(10) PTO Lever Wire

W1013661

Hydraulic Pipe and Differential Lock pedal

1. Remove the delivery pipe (1) for the three point hydraulic system.
2. Remove the differential lock pedal (2).
3. Remove the seat frame (3).
4. Remove the auxiliary control valve (4).

(When reassembling)

Tightening torque	Delivery pipe retaining nut	39.2 to 49.0 N·m 4.0 to 5.0 kgf·m 28.9 to 36.2 ft-lbs

(1) Delivery Pipe
(2) Differential Lock Pedal
(3) Seat Frame
(4) Auxiliary Control Valve

W1013432

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