CONTENTS

GENERAL

ENGINE

CLUTCH

TRANSMISSION

TRANSMISSION (HST)

REAR AXLE

BRAKES

FRONT AXLE

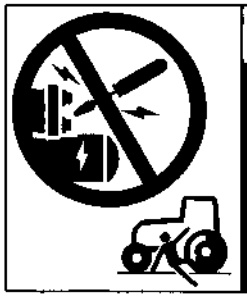
STEERING

HYDRAULIC SYSTEM

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.

①Part No. TA040-4965-2

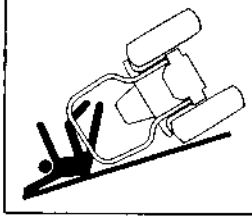


⚠ DANGER

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.

②Part No. TA040-4932-2

⚠ WARNING



TO AVOID PERSONAL INJURY OR DEATH FROM ROLL-OVER:
1. Kubota recommends the use of a Roll-Over Protective Structures (ROPS) and seat belt in almost all applications.
2. Remove the ROPS only when it substantially interferes with operation or itself presents a safety risk. Examples include work in orchards and vineyards. ALWAYS REINSTALL IT BEFORE USING THE TRACTOR IN OTHER APPLICATIONS.
3. Never use just the seat belt or just the ROPS. They must be used together. For further details consult your Operator's Manual or your local dealer.

③Part No. TA040-4959-3

⚠ WARNING

TO AVOID PERSONAL INJURY.
1. Keep PTO shield in place at all times.
2. Do not operate the PTO at speeds faster than the speed recommended by the implement manufacturer.
3. For trailing PTO-driven implements, set drawbar at towing position. (see operator's manual)

④Part No. TA240-4991-1 [HST type]

⚠ WARNING

Do not start engine with speed set lever engaged or control pedal operated.

⑤Part No. TA040-4956-2

Diesel fuel only

No fire

⑥Part No. TA040-4934-1

⚠ WARNING

TO AVOID PERSONAL INJURY:
Do not operate rear-PTO driven implements and mid-PTO driven implements at the same time.

⑦Part No. TA040-4935-1

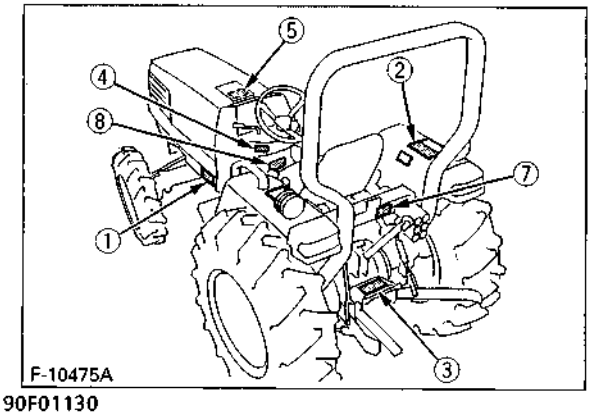
⚠ WARNING

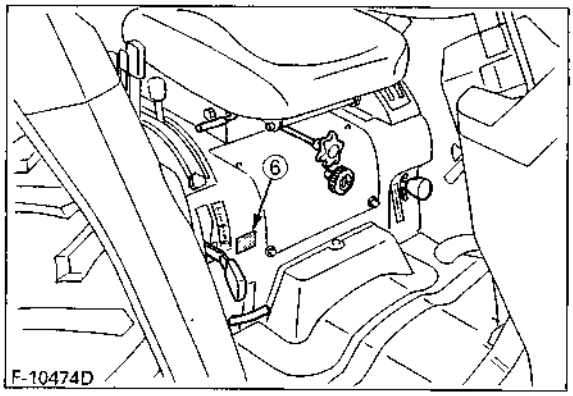
TO AVOID PERSONAL INJURY:
1. Attach pulled or towed loads to the drawbar only.
2. Use the 3-point hitch only with equipment designed for 3-point hitch usage.

⑧Part No. 35080-6528-2

⚠ CAUTION

Pull the engine stop knob back and hold it until the engine stops in case of emergency.





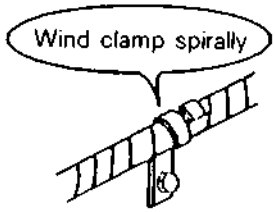
12190F01130

SPECIFICATIONS

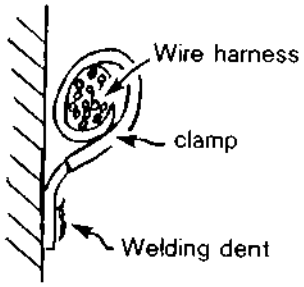
Model			L3010			
			2WD	4WD	4WD-GST	4WD-HST
Maximum PTO power			19.1 kW (25.5 HP)*			17.9 kW (24.0 HP)*
Engine NET power			22.6 kW (30.4 HP)*			
Engine	Model		D1503-L-A			
	Type		Indirect injection, Vertical, Water-Cooled, 4-cycle diesel engine			
	Number of cylinders		3			
	Bore and stroke		83 x 92.4 mm (3.3 x 3.6 in.)			
	Total displacement		1499 cm^3 (91.5 cu.in.)			
	Rated revolution		45.0 r/s (2700 rpm)			
	Combustion chamber		Spherical type (E-TVCS)			
	Fuel injection pump		Bosch type mini pump (PFR3M)			
	Governor		Centrifugal ball mechanical governor			
	Injection nozzle		Throttle type			
	Injection timing		Before T.D.C. 0.314 rad (18°)			
	Injection order		1-2-3			
	Injection pressure		13.73 MPa (140 kgf/cm^2, 1991 psi)			
	Compression ratio		23 : 1			
	Lubricating system		Forced lubrication by trochoidal pump			
	Cooling system		Pressurized radiator, Forced circulation with water pump			
	Starting system		Electric starting with cell starter 12 V, 1.2 kW			
	Alternator		12 V, 480 W (40 AMPS)			
	Battery		12V, RC : 123 min, CCA : 490- Cold cranking Amps at –18 °C (– 0.4 °F)			
	Fuel		Diesel fuel No. 1 [below – 10 °C (14 °F)] Diesel fuel No. 2 [above – 10 °C (14 °F)]			
	Lubricating oil		CC or CD (API grade)			
	Weight (Dry)		176 kg (388 lbs)			
Capacities	Fuel tank		35.0 ℓ (9.2 U.S.gals., 7.7 Imp.gals.)			
	Engine crankcase		5.5 ℓ (5.8 U.S.qts., 4.8 Imp.qts.)			
	Engine coolant		7.0 ℓ (7.4 U.S.qts., 6.2 Imp.qts.)			
	Transmission case		39.0 ℓ (10.3 U.S.gals., 8.6 Imp.gals.)			
	Front axle case		—	5.5 ℓ (5.8 U.S.qts., 4.8 Imp.qts.)		
Dimensions with Std. tires)	Overall length (without 3P)		2820 mm (111.0 in.)			
	Overall length (with 3P)		3060 mm (120.5 in.)			
	Overall width (minimum tread)		1325 mm (52.2 in.)			
	Overall height (Top of ROPS)		2090 mm (82.3 in.)			
	Overall height (Top of steering wheel)		1515 mm (59.6 in.)			
	Wheel base		1675 mm (65.9 in.)	1670 mm (65.7 in.)		
	Min. ground clearance (Under transmission)		325 mm (12.8 in.)			
	Tread	Front mm (in.)	960 (37.8), 1060 (41.7), 1160 (45.7), 1260 (49.6)	1105 (43.5)		
		Rear mm (in.)	1120 (44.1), 1220 (48.0), 1305 (51.4), 1405 (55.3)			

Note : * Manufacturer's estimate

- Securely clamp, being careful not to damage wiring.

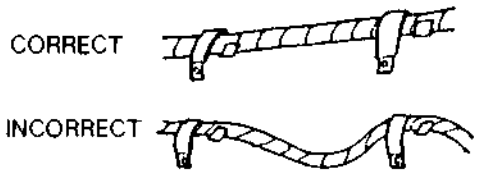


C079F007



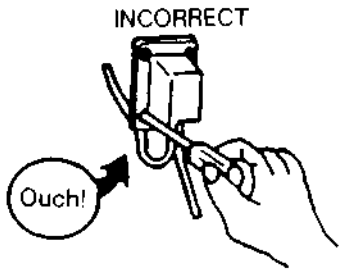
C079F008

- Clamp wiring so that there is no twist, unnecessary sag, or excessive tension, except for movable part, where sag may be required.



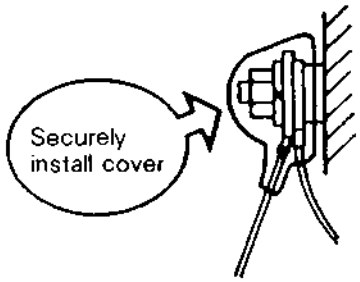
C079F009

- In installing a part, take care not to get wiring caught by it.



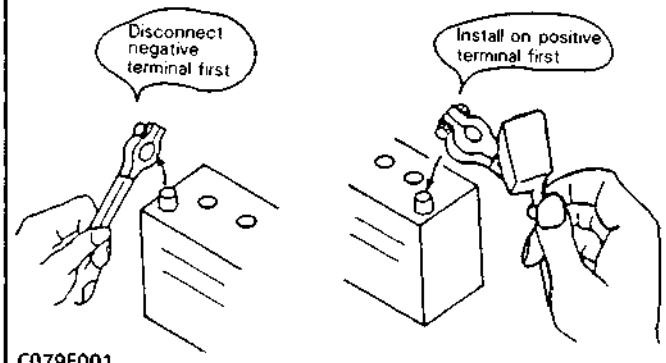
C079F010

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

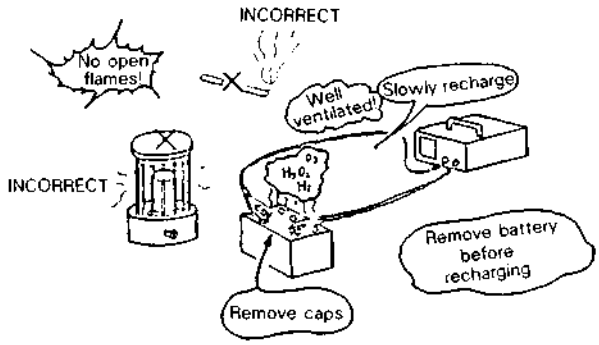


C079F011

■ Battery



C079F001



C079F013

- When removing battery cord, disconnect negative wire first. When installing battery cord, check for polarity and connect positive wire first.
- Do not install any battery with capacity other than is specified (Ah).
- After connecting cord to battery terminals, apply grease to them and securely install terminal covers on them.
- Do not allow dirt and dust to collect on battery.

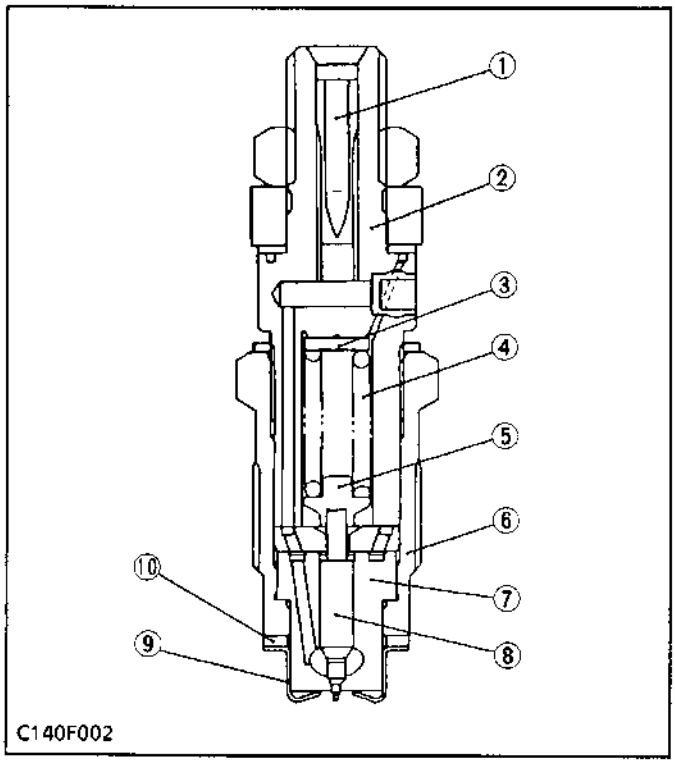
⚠ CAUTION

- **Take care not to let battery liquid spill on your skin and clothes. If contaminated, wash it off with water immediately.**
- **Before recharging the battery, remove it from the machine.**
- **Before recharging, remove cell caps.**

⚠ CAUTION

- **Do recharging in a well-ventilated place where there is no open flame nearby, as hydrogen gas and oxygen are formed.**

(3) Fuel Injection Nozzle



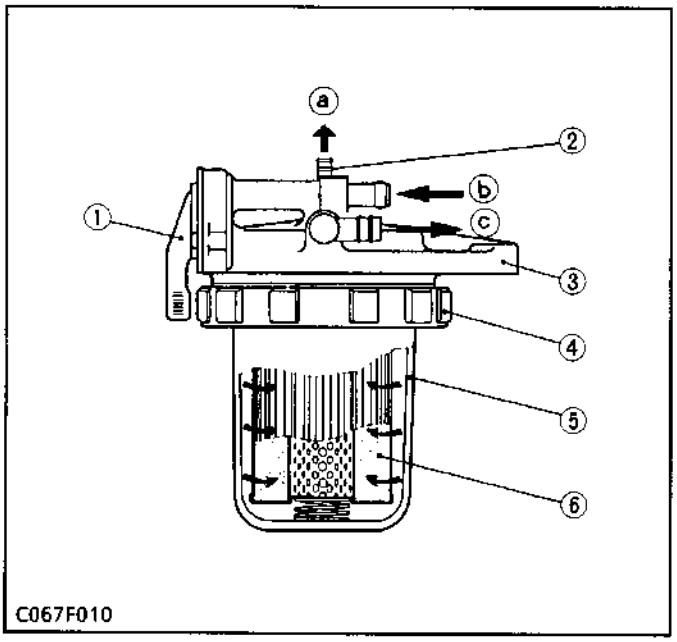
Used as the injection nozzle, the small-sized NIPPONDENSO-made OPD mini nozzle is of a flat-cut-provided double throttle type. This type of nozzle is designed to control the injection quantity when the lift rate is low at start of the injection, and to cut down on the knocking sound caused by excessive fuel injection by giving the needle valve section more taper than before to prevent the rapid increase in the injection quantity when the initial injection turns into the full-force injection.

Also, employed to prevent the injection quantity loss in the throttle section caused by carbon, the flat cut provided at the needle valve section helps the throttle withstand long use and reduce as much knocking sound as when it was new.

The heat seal is employed to improve the durability and reliability of the nozzle.

(1) Bar Filter
(2) Nozzle Holder Body
(3) Adjusting Washer
(4) Nozzle Spring
(5) Push Rod
(6) Retaining Nut
(7) Nozzle Body
(8) Needle Valve
(9) Heat Seal
(10) Packing

(4) Fuel Filter



The fuel filter removes dirt and water with its fine filter paper, which collects particles of 15 microns (0.00059 in.) at 20 kPa (0.2 kgf/cm^2, 3 psi).

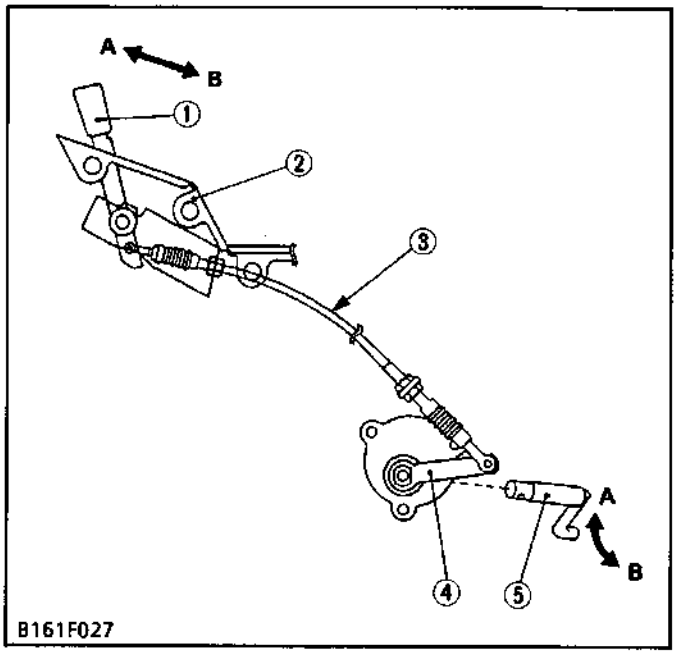
The fuel from the fuel tank is filtered by the filter element (6), while flowing through the filter element from its outside to inside.

The filter bracket (3) has an air vent (2) to take off air in the fuel line.

(a) To Fuel Tank
(b) From Fuel Tank
(c) To Fuel Lift Pump

(1) Cock
(2) Air Vent
(3) Filter Bracket
(4) Retainer Ring
(5) Pot
(6) Filter Element

(5) Rear PTO Shift (Transmission PTO)



The shift lever (1) is connected the shift fork (5) through the shift cable (3), as shown in the left figure.

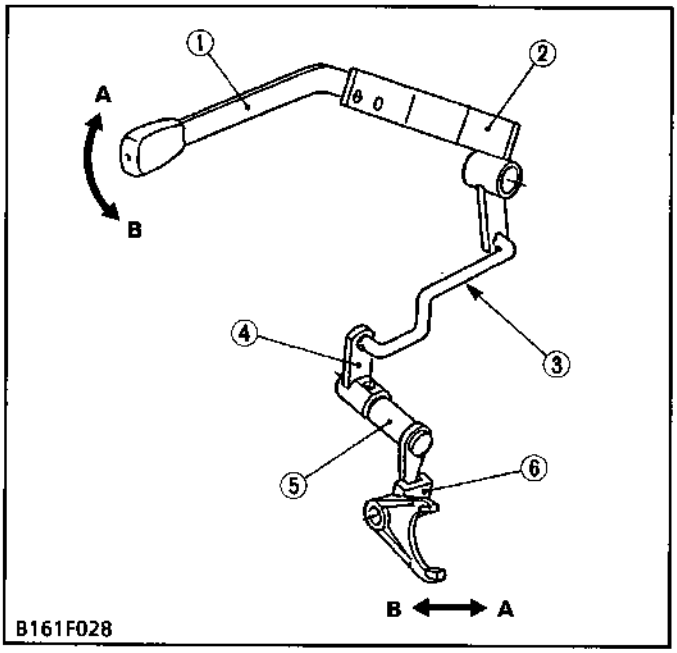
When the shift lever (1) is moved to the A side or the B side, the shift fork (5) is moved by means of the shift cable (3) and lever (4).

When the shift lever (1) is moved to the A side, the PTO is shifted to the **"Disengaged"** position. When the shift lever (1) is moved to the B side, the PTO is shifted to **"Engaged"** position.

A : Disengaged **B : Engaged (540 rpm)**

(1) Shift Lever
(2) Lever Guide
(3) Shift Cable
(4) Lever
(5) Shift Fork

(6) Mid PTO Shift



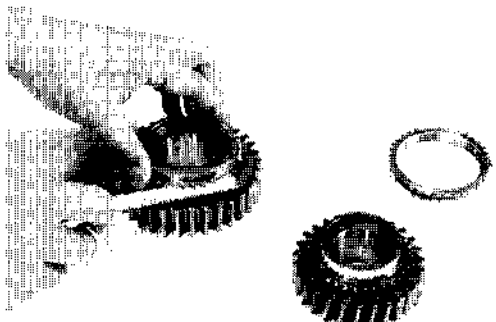
The mid PTO is equipped with some models as an optional. It is shifted **"Engaged"** or **"Disengaged"** position semi-independently by the mid PTO shift lever 1 (1).

When shifting the mid PTO shift lever 1 (1) to **"Engaged"** position (A), the shift fork (6) is moved **"Engaged"** position (A) through the links (2), (3), (4), (5).

"Disengaged" position (B) is its opposite side.

A : Engaged (2000 rpm) **B : Disengaged**

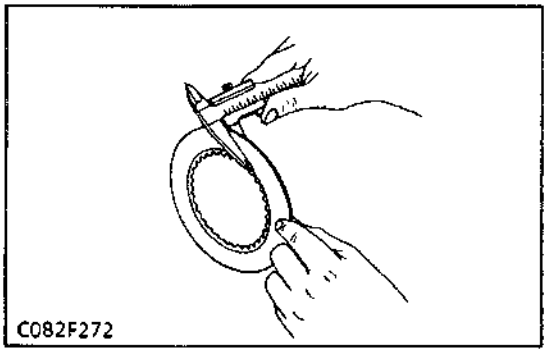
(1) Mid PTO Shift Lever 1
(2) Mid PTO Shift Lever 2
(3) Rod
(4) Mid PTO Shift Lever
(5) Mid PTO Shift Arm
(6) Shift Fork


B161P087

Side Clearance between Synchronizer Ring and Gear (in Contact)

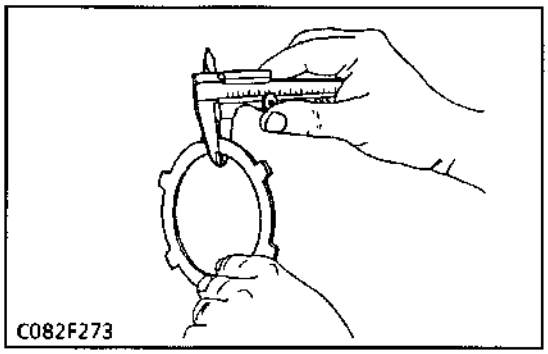
1. Press the synchronizer ring against the tapered portion of the gear, and measure the side clearance.
2. Apply thin film of red lead to the tapered portion, press the ring against it by hand, rub them together a few times, and check the contact.
3. Check the tooth surface and key grooves of the ring for wear.
4. If the side clearance exceeds the allowable limit or if there is any defect, replace the synchronizer ring.

Side clearance	Allowable limit	0.35 mm 0.0138 in.
Contact condition of tapered portion	Allowable limit	More than 80 %

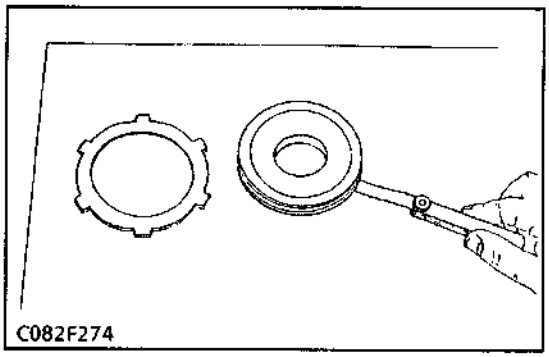

C082F272

Clutch Disc, Steel Plate Wear

1. Measure the thickness of clutch disc with vernier calipers.
2. Measure the thickness of steel plate with vernier calipers.
3. If the thickness is less than the allowable limit, replace it.


C082F273

Thickness of GST clutch disc	Factory spec.	2.55 to 2.65 mm 0.100 to 0.104 in.
	Allowable limit	2.50 mm 0.098 in.
Thickness of GST steel plate	Factory spec.	1.55 to 1.65 mm 0.061 to 0.065 in.
	Allowable limit	1.50 mm 0.059 in.
Thickness of independent PTO clutch disc	Factory spec.	1.70 to 1.90 mm 0.067 to 0.075 in.
	Allowable limit	1.55 mm 0.061 in.
Thickness of independent PTO steel plate	Factory spec.	1.15 to 1.25 mm 0.045 to 0.049 in.
	Allowable limit	1.10 mm 0.043 in.

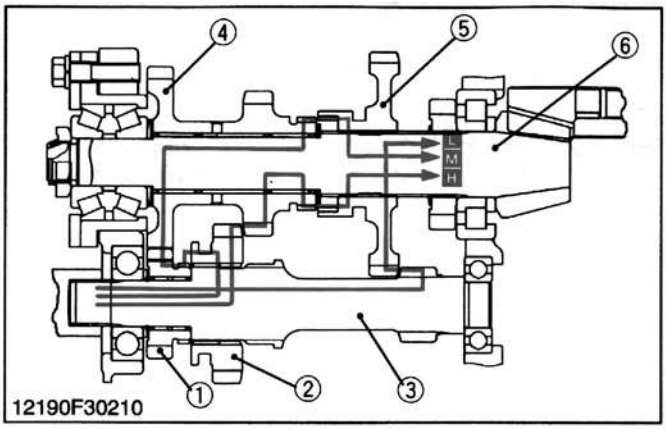

C082F274

Flatness of Piston and Steel Plate

1. Place the part on a surface plate.
2. Check it unable to insert a feeler gauge (allowable limit size) underneath it at least four points.
3. If the gauge can be inserted, replace it.

Flatness of GST piston	Allowable limit	0.15 mm 0.006 in.
Flatness of GST steel plate	Allowable limit	0.30 mm 0.012 in.
Flatness of independent PTO piston	Allowable limit	0.15 mm 0.006 in.
Flatness of independent PTO steel plate	Allowable limit	0.30 mm 0.012 in.

(3) Range Gear Shift Section



12190F30210

Besides neutral, three ways of power flow from 13T gear shaft (3) to the spiral bevel pinion shaft (7) are available by operating the range gear shift lever.

The power is transmitted as follows.

[L] Lo-Range

13T Gear Shaft (3) → 46T Shifter Gear (5) → Spiral Bevel Pinion Shaft (6).

[M] Mi-Range

13T Gear Shaft (3) → 26T Shifter Gear (2) → 17T Gear (1) → 32T-23T Gear (4) → 46T Shifter Gear (5) → Spiral Bevel Pinion Shaft (6).

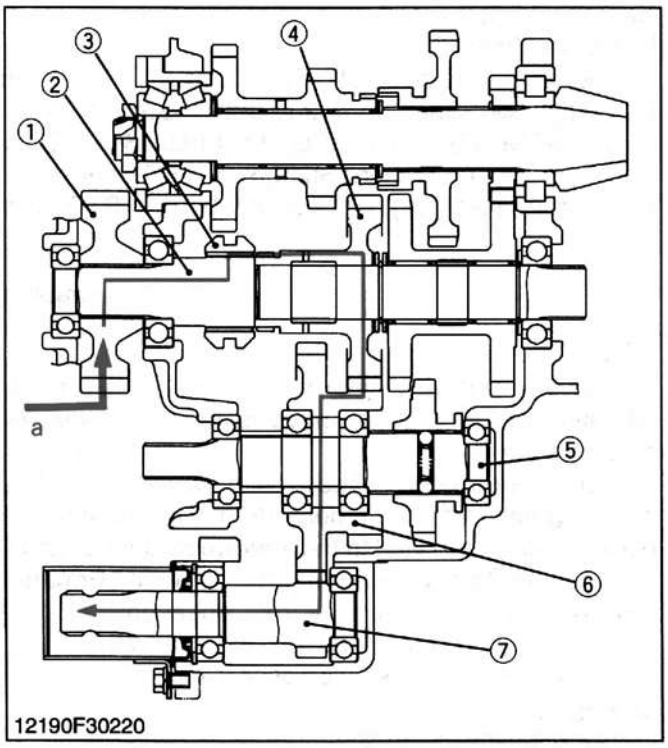
[H] Hi-Range

13T Gear Shaft (3) → 26T Shifter Gear (2) → 32T-23T Gear (4) → 46T Shifter Gear (5) → Spiral Bevel Pinion Shaft (6).

(1) 17T Gear
(2) 26T Shifter Gear
(3) 13T Gear Shaft
(4) 32T-23T Gear
(5) 46T Shifter Gear
(6) Spiral Bevel Pinion Shaft

12190M30200

(4) Mid PTO Section



12190F30220

In these tractors, the power can be taken out from the mid case by installing the Mid PTO system. (Factory option.)

The power is transmitted to the Mid PTO shaft (7) from the rear PTO drive shaft.

Therefore the Mid PTO is rotated, while the rear PTO is engaged.

[Mid PTO Speed]

Model	Mid PTO rpm / Engine rpm
L3010 HST L3410 HST	2000 min.$^{-1}$ (32.3 r/s, 2000 rpm) / 2666 min.$^{-1}$ (44.4 r/s, 2666 rpm)
L3710 HST	2000 min.$^{-1}$ (32.3 r/s, 2000 rpm) / 2394 min.$^{-1}$ (39.9 r/s, 2394 rpm)

The power is transmitted as follows

■ Engagement

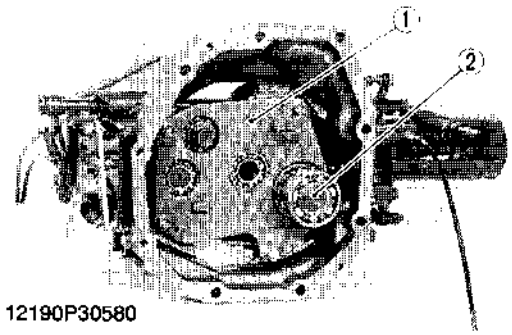
Rear PTO Drive Shaft → 30T Gear (1) → PTO Drive Shaft (2) → Shifter (3) → 28T Gear Shaft (4) → 24T-42T Gear (6) → Mid PTO Shaft with 13T Gear (7).

(1) 30T Gear
(2) PTO Drive Shaft
(3) Shifter
(4) 28T Gear Shaft
(5) Front Drive Shaft
(6) 24T-42T Gear
(7) Mid PTO Shaft with 13T Gear

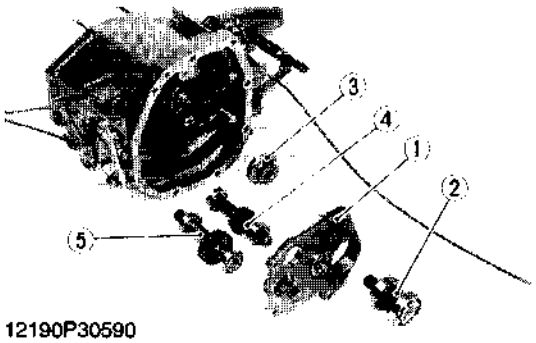
a : Power from PTO Drive Shaft

12190M30210

(6) Disassembling Mid Case



12190P30580



12190P30590

Bearing Holder, 16T Gear Shaft and 22T Gear Shaft

1. Pull out the 11T gear shaft (2) with bearings.
2. Remove the mid case bearing holder mounting screws, and set the jack screws. Then, turn the jack screws to remove the bearing holder (1).
3. Pull out the 16T gear shaft (4) with ball bearings.
4. Pull out the 22T gear shaft (5) with ball bearings.

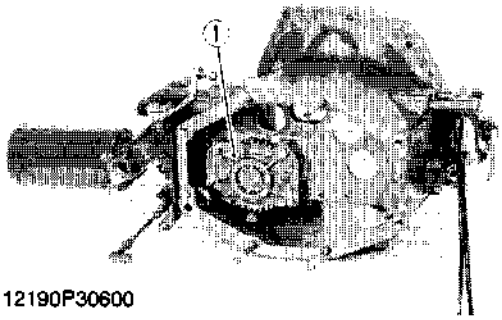
(When reassembling)

- Tap in the mid case bearing holder (1) with plastic hummer until contact to mid case, and then tighten the screws to specified torque.

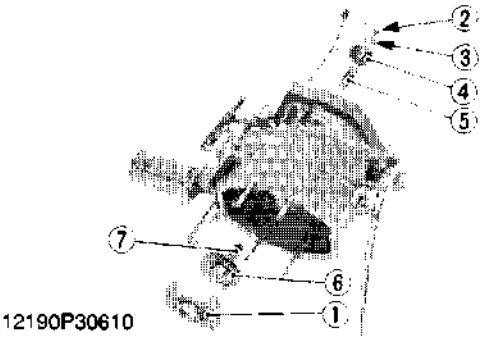
Tightening torque	Mid case bearing holder mounting screw	48.1 to 55.9 N·m 4.9 to 5.7 kgf·m 35.4 to 41.2 ft-lbs

(1) Mid Case Bearing Holder
(2) 11T Gear Shaft
(3) PTO Clutch Cam, OUT
(4) 16T Gear Shaft
(5) 22T Gear Shaft

12190S30520



12190P30600



12190P30610

PTO Counter Shaft and Bearing Holder

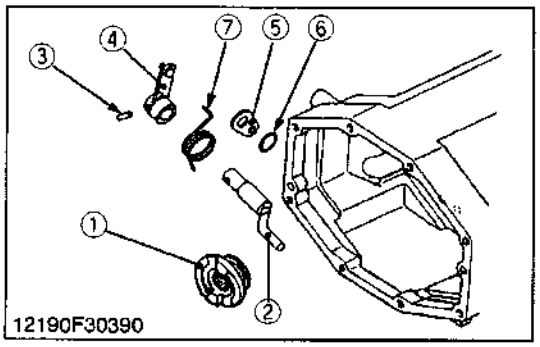
1. Remove the bearing holder (1).
2. Lock the 33T gear (6) and loosen the one-way clutch cam mounting screw (2).
3. After removing the clutch cam and spring, tap out the PTO counter shaft with 33T gear and bearing to the front.

(When reassembling)

Tightening torque	One-way clutch cam mounting screw	60.8 to 70.6 N·m 6.2 to 7.2 kgf·m 44.8 to 52.1 ft-lbs
	Bearing holder mounting screw	23.5 to 27.4 N·m 2.4 to 2.8 kgf·m 17.4 to 20.2 ft-lbs

(1) Bearing Holder for PTO Counter Shaft
(2) One-way Clutch Cam Mounting Screw
(3) Plain Washer
(4) PTO Clutch Cam, IN
(5) Spring
(6) 33T Gear
(7) PTO Counter Shaft

12190S30530



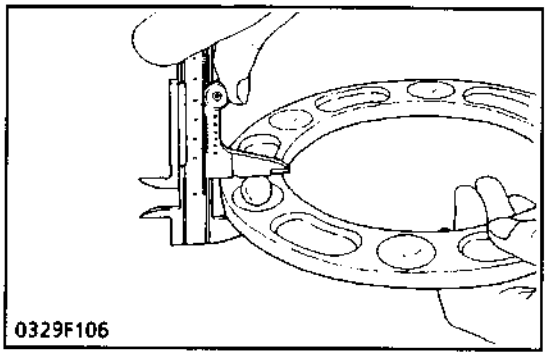
12190F30390

PTO Shift Levers

1. Tap out the spring pin (3), and remove the shift arm (4) and spring (7).
2. Remove the holder (5) and shift fork (2).

(1) One-way Clutch Cam
(2) Shift Fork
(3) Spring Pin
(4) Shift Arm
(5) Holder
(6) O-ring
(7) Spring

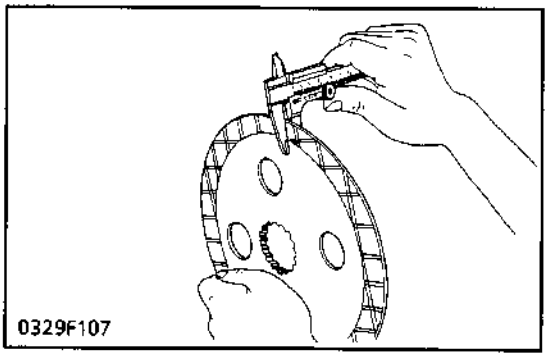
12190S30540


0329F106

Height of Cam Plate and Ball

1. Measure the dimensions of the cam plate with the ball installed.
2. If the measurement is less than the allowable limit, replace the cam plate and balls.
3. Inspect the ball holes of cam plate for uneven wear. If the uneven wear is found, replace it.

Height of cam plate and ball	Factory spec.	20.9 to 21.1 mm 0.8228 to 0.8307 in.
	Allowable limit	20.5 mm 0.8071 in.


0329F107

Brake Disc Wear

1. Measure the brake disc thickness with vernier calipers.
2. If the thickness is less than the allowable limit, replace it.

Brake disc thickness	Factory spec.	4.6 to 4.8 mm 0.181 to 0.189 in.
	Allowable limit	4.2 mm 0.165 in.

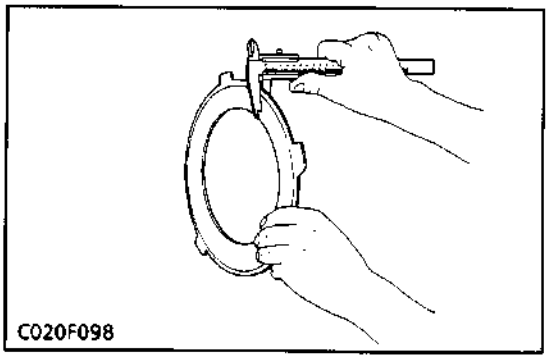

C020F098

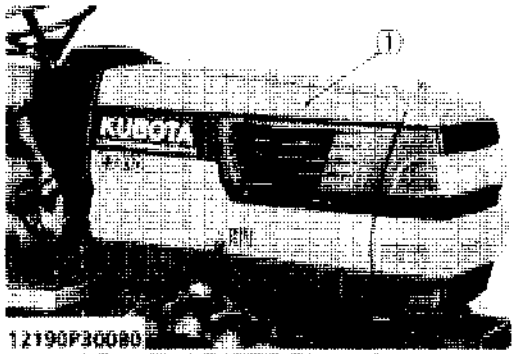
Plate Wear

1. Measure the plate thickness with vernier calipers.
2. If the thickness is less than the allowable limit, replace it.

Plate thickness	Factory spec.	2.54 to 2.66 mm 0.1000 to 0.1047 in.
	Allowable limit	2.10 mm 0.0827 in.

[2] RELIEF VALVE

CHECKING



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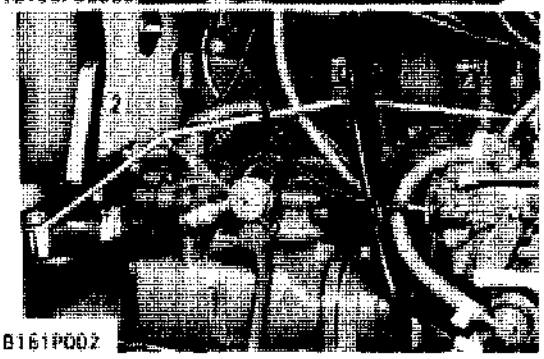

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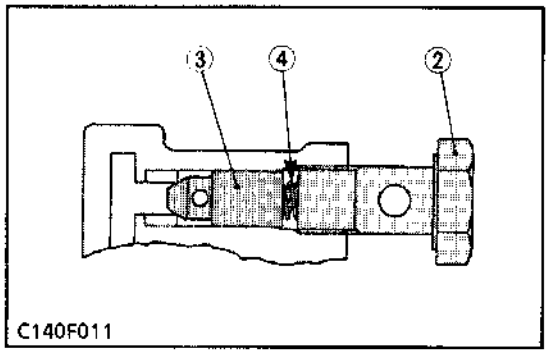

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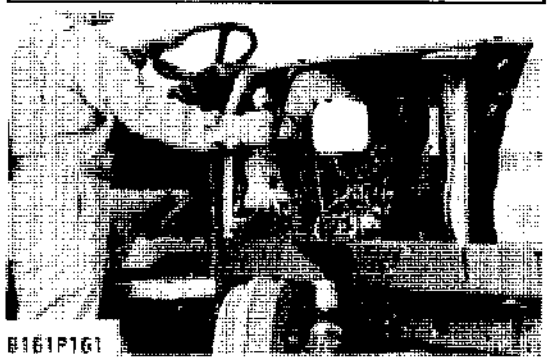

B161P161

Relief Valve Setting Pressure Test

1. Remove the side cover RH (1).
2. Disconnect the delivery hose joint bolt (2) which connects delivery hose and regulator valve.
3. Take out the spring (4) and check valve (3).
4. Install the adaptor **E** and adaptor **58** of relief valve setting pressure tester to the regulator valve, and then set a thread joint, cable and pressure gauge.
5. Start the engine and set the engine speed at max. speed.
6. Fully turn the steering wheel to the left or right and read the pressure when the relief valve functions.
7. Stop the engine.
8. If the pressure is not within the factory specifications, check the pump delivery line, replace the relief valve assembly or repair the power steering.

Power steering relief valve setting pressure	Factory spec.	2WD	5.1 to 6.1 MPa 52 to 62 kgf/cm² 740 to 882 psi
		4WD	10.7 to 11.7 MPa 109 to 119 kgf/cm² 1550 to 1693 psi

(When reassembling)

- Install the spring (4) and check valve (3) firmly.
- Install the copper washers firmly.

Tightening torque	Power steering delivery hose joint bolt	49.0 to 58.8 N·m 5.0 to 6.0 kgf·m 36.2 to 43.4 ft-lbs

Condition

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

(1) Side Cover RH
(2) Delivery Hose Joint Bolt
(3) Check Valve
(4) Spring

SERVICING SPECIFICATIONS

THREE POINT SYSTEM HYDRAULIC PUMP

Item		Factory Specification	Allowable Limit
Hydraulic Pump **Condition** ● Engine Speed [L3010 · L3410] ·· Approx. 2700 rpm [L3710 · L4310] ·· Approx. 2600 rpm ● Rated Pressure ·· 16.2 to 17.2 MPa 165 to 175 kgf/cm² 2347 to 2489 psi ● Oil Temperature ··· 40 to 60 °C 104 to 140 °F	Delivery at No Pressure [L3010 · L3410]	Above 26.4 ℓ / min 6.97 U.S.gal / min 5.81 Imp.gal / min	–
	[L3710 · L4310]	Above 29.5 ℓ / min 7.79 U.S.gal / min 6.49 Imp.gal / min	–
	Delivery at Rated Pressure [L3010 · L3410]	Above 25.6 ℓ / min 6.76 U.S.gal / min 5.63 Imp.gal / min	23.0 ℓ / min 6.08 U.S.gal / min 5.06 Imp.gal / min
	[L3710 · L4310]	Above 28.6 ℓ / min 7.56 U.S.gal / min 6.29 Imp.gal / min	25.7 ℓ / min 6.79 U.S.gal / min 5.65 Imp.gal / min
Housing	Depth of Scratch	–	0.09 mm 0.0035 in.
Bushing to Gear Shaft	Clearance	–	0.12 mm 0.0043 in.
Bushing	Length [L3010 · L3410]	22.99 to 23.00 mm 0.9051 to 0.9055 in.	22.80 mm 0.8976 in.
	[L3710 · L4310]	20.49 to 20.50 mm 0.8067 to 0.8071 in.	20.30 mm 0.7992 in.

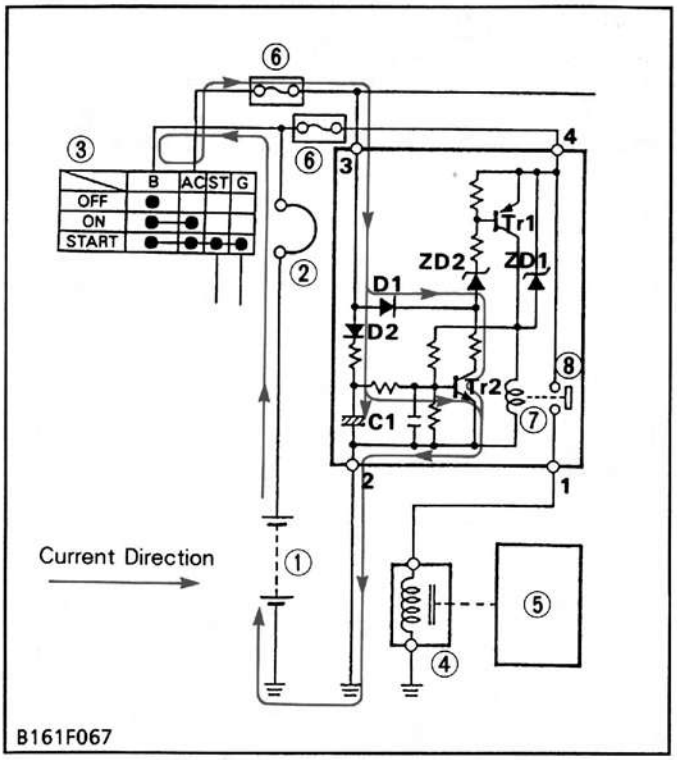
RELIEF VALVE

Relief Valve **Condition** ● Engine Speed ····· Maximum ● Oil Temperature ··· 40 to 60 °C 104 to 140 °F	Setting Pressure	16.2 to 17.2 MPa 165 to 175 kgf/cm² 2347 to 2489 psi	–

CONTROL LINKAGE

Lift Arm	Free Play (at Maximum Raising Position)	5 to 10 mm 0.19 to 0.39 in.	–

(1) Operation of Timer Relay



■ When the Main Switch is Turned to "ON" Position

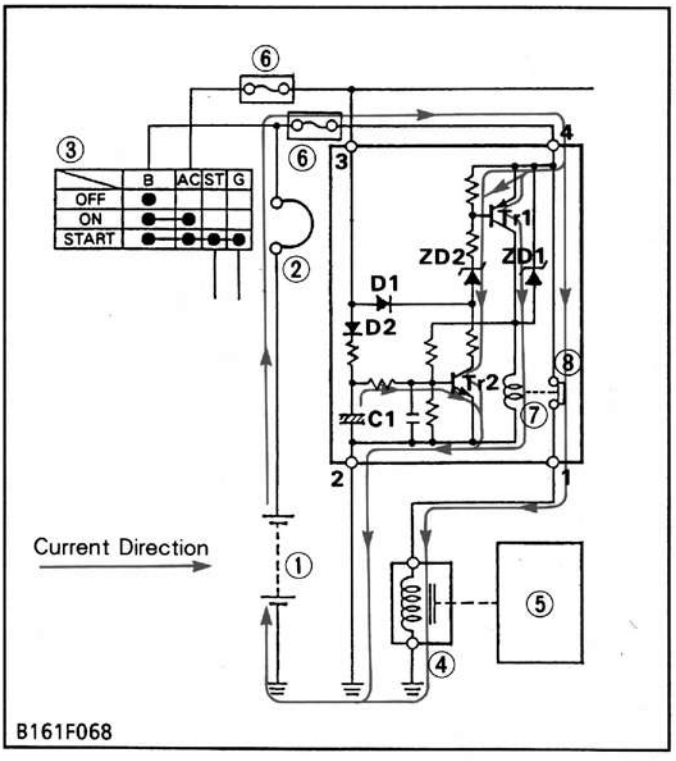
The capacitor **C1** is charged by the battery current flowing through the terminal **3** immediately after the main switch (3) is turned to the **ON** position.

1. The transistor **Tr2** is then turned on.
2. The transistor **Tr1** remains off because the battery voltage is applied to the anode of the zener diode **ZD2**.
3. Therefore, the relay coil (7) does not conduct, and the relay contact points (8) remain open so that the battery current does not flow into the fuel cut off solenoid (4).

(Reference)

- The critical voltage of zener diode **ZD2** is about 5 volts.

(1) Battery
(2) Slow Blow Fuse
(3) Main Switch
(4) Fuel Cut Off Solenoid
(5) Injection Pump
(6) Fuses
(7) Relay Coil
(8) Contact Point



■ When the Main Switch is Turned to "OFF" Position

Changes described below take place in the timer to stop the engine when the main switch (3) is turned to the **OFF** position.

1. The battery voltage is not applied to the terminal **3**.
2. Since the discharge current from capacitor **C1** flows into the base of transistor **Tr2**, it is held **ON** state.
3. The voltage at the anode of the zener diode **ZD2** becomes low, and the voltage across the zener diode **ZD2** exceeds the critical voltage so that this zener diode conducts.
4. Consequently, the battery current supplied from the terminal **4** begins to flow from the collector to the emitter of the relay drive transistor **Tr1**.
5. The transistor **Tr1** is then turned on, and the battery current flows into the relay coil (7) to close relay contact point (8).
6. The battery current flows into the fuel cut off solenoid (4) via the terminals **4** and **1**.
7. As a result, the amount of the fuel injected from the injection pump (5) becomes zero to stop the engine.
8. The transistor **Tr2** turns off after the discharging period approx. 10 seconds of the capacitor **C1**. No current flows through the circuit, and then the relay contact point (8) opens so that the battery current does not flow into the fuel cut off solenoid (4).

(1) Battery
(2) Slow Blow Fuse
(3) Main Switch
(4) Fuel Cut Off Solenoid
(5) Injection Pump
(6) Fuses
(7) Relay Coil
(8) Contact Point

SPECIFICATIONS (Continued)

Model			L4310HST	
			2WD	4WD
Maximum PTO power			26.8 kW (36.0 HP)*	
Engine NET power			32.1 kW (43.0 HP)*	
Engine	Model		V2203-AN	
	Type		Indirect injection, vertical, water-cooled, 4-cycle diesel engine	
	Number of cylinders		4	
	Bore and stroke		87 x 92.4 mm (3.4 x 3.6 in.)	
	Total displacement		2197 cm^3 (114.1 cu.in.)	
	Rated revolution		43.3 r/s (2600 rpm)	
	Combustion chamber		Spherical type (E-TVCS)	
	Fuel injection pump		Bosch type mini pump (PFR4M)	
	Governor		Centrifugal ball mechanical governor	
	Injection nozzle		Throttle type	
	Injection timing		Before T.D.C. 0.314 rad. (18°)	
	Injection order		1-3-4-2	
	Injection pressure		13.73 MPa (140 kgf/cm^2, 1991 psi)	
	Compression ratio		23 : 1	
	Lubricating system		Forced lubrication by trochoidal pump	
	Cooling system		Pressurized radiator, forced circulation with water pump	
	Starting system		Electric starting with cell starter 12 V, 1.4 kW	
	Alternator		12 V, 720 W (60 AMPS)	
	Battery		447-Cold cranking Amps at – 18 °C (– 0.4 °C)	
	Fuel		Diesel fuel No.1 [below – 10 °C (14 °F)] Diesel fuel No.2 [above –10 °C (14°F)]	
	Lubricating oil		CC or CD (API grade)	
	Weight (Dry)		206.5 kg (455 lbs)	
Capacities	Fuel tank		35.0 L (9.2 U.S.gal., 7.7 Imp.gal.)	
	Engine crankcase		7.6 L (8.0 U.S.qts., 6.7 Imp.qts.)	
	Engine coolant		8.7 L (9.2 U.S.gal., 7.7 Imp.qts.)	
	Transmission case		39.0 L (10.3 U.S.gal., 8.6 Imp.gal.)	
	Front axle case		5.5 L (5.8 U.S.qts., 4.8 Imp.qts.)	
Dimensions (with Std. tires)	Overall length (without 3P)		3020 mm (118.9 in.)	
	Overall length (with 3P)		3230 mm (127.2 in.)	
	Overall width (Minimum tread)		1585 mm (62.4 in.)	
	Overall height (with CAB)		2175 mm (85.6 in.)	
	Overall height (Top of steering wheel)		1535 mm (60.4 in.)	
	Wheel base		1810 mm (71.3 in.)	1805 mm (71.1 in.)
	Minimum ground clearance (Under transmission)		370 mm (14.6 in.)	
	Tread	Front mm (in.)	1145 (45.1), 1245 (49.0) 1345 (53.0), 1445 (56.9)	1155 (45.5)
		Rear mm (in.)	1180 (46.5), 1200 (47.2), 1300 (51.2), 1450 (57.1), 1545 (60.8)	

NOTE : * Manufacturer's estimate

12190Z00050

2) A/C Blower Switch

1. Check the continuity through the switch with an ohmmeter.
2. If the continuity specified below are not indicated, the switch is faulty.

Position \ Terminal		A	L	M	N
A/C blower switch	OFF	●			
	● (Low)	●	●		
	● (Medium)	●		●	
	● (High)	●			●

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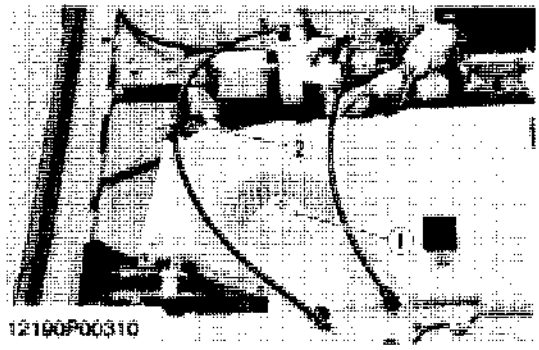

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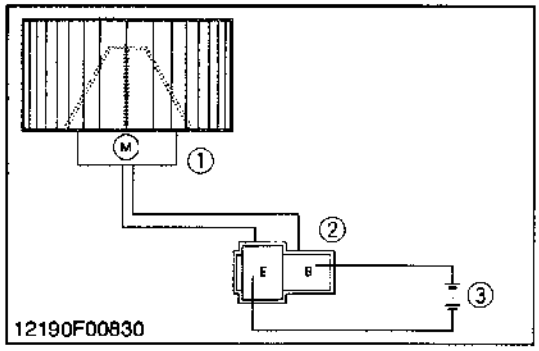

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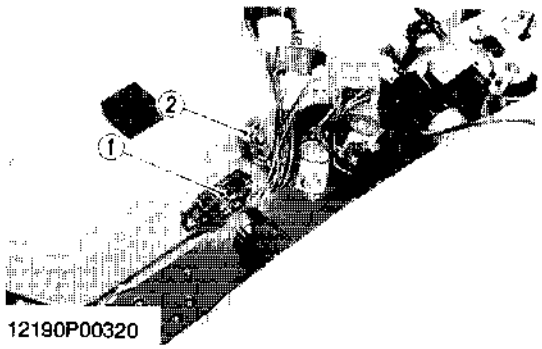
A/C Blower Motor Test

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

(1) Blower Motor
(2) Blower Motor Connector
(3) Battery (12 V)

12190S00690



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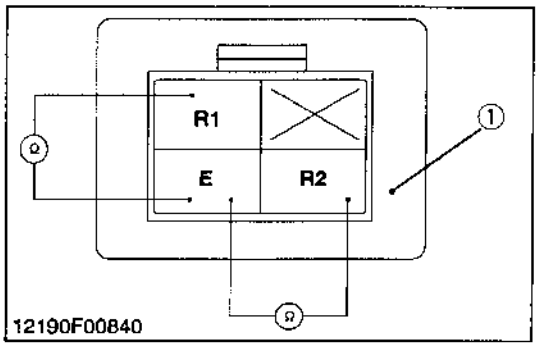

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A/C Blower Resistor

1. Remove the outer roof.
2. Disconnect the **4P** connector (2) for A/C blower resistor (1).
3. Measure the resistance with an ohmmeter across the **R1** terminal and **E** terminal, and across the **R2** terminal and **E** terminal.
4. If the factory specifications are not indicated, A/C blower resistor is faulty.

Resistance	Factory spec.	**R1** terminal – **E** terminal	Approx. 0.9 ohm
		R2 terminal – **E** terminal	Approx. 1.8 ohm

(1) A/C Blower Resistor
(2) A/C Blower Resistor Connector

12190S00700