2. SPECIFICATIONS

(1) Specifications

Specifications are subject to change without notice.

MECHANICAL TRANSMISSION

MODEL:	TH4260F		TH4290F	
SUB MODEL:	**MDRE / MDE**	**DRE**	**MDRE / MDE**	**DRE**
ENGINE:				
Make	Iseki Diesel			
Model	E3CE-VB12		E3CF-VB24	
Type	Indirect injection, overhead valve			
Aspiration	Natural			
Displacement	1430 cc		1463 cc	
Number of Cylinders	3			
Bore	85 mm		86 mm	
Stroke	84 mm			
Engine Horsepower (Gross)	25.3 HP (18.9 kW) @ 2500 rpm		28.4 HP (21.2 kW) @ 2500 rpm	
(Net)	24.0 PS (17.7 kW) @ 2500 rpm		28.0 PS (20.6 kW) @ 2500 rpm	
Firing Order	1-3-2			
Compression Ratio	21.5 to 1		21.7 to 1	
Low Idle Speed	900-1000 rpm		930-970 rpm	
High Idle Speed	2650-2750 rpm		2650-2750 rpm	
Valve Clearance (Cold) ; Intake	0.35 mm			
Exhaust	0.35 mm			
Air Cleaner	Dual stage, dry element			
Engine Cooling	Liquid, forced circulation			
Cold Starting Aid	Glow plugs (3)			
TRANSMISSION:				
Type	Gear Type, 3 speeds forward, 1 reverse with 3 speed range			
Gear Speeds	9 gears forward, 3 reverse			
Clutch	Dual clutch (ϕ 215 mm)			
Brakes	Mechanically actuated sealed wet disk			
POWER TAKE-OFF (PTO):				
Type	Transmission driven			
Control	Sliding gear and disk clutch			
Rear PTO; Shaft	35 mm diameter, six spline			
Output	Clockwise rotation			
Engine Speed @ engine rpm	581 @2500 rpm			
Mid PTO; Shaft	25.4 mm diameter fifteen spline	-	25.4 mm diameter fifteen spline	-
Output	Clockwise rotation	-	Clockwise rotation	-
Mid PTO Speed @ engine rpm	2000 @ 2500 rpm	-	2000 @ 2500 rpm	-
HYDRAULICS:				
Steering System; Type	Hydrostatic (power)			
Pump	Engine-mounted gear pump			
Maximum Output	9.8 l/min at 2500 rpm			
Pressure	11772 kPa			
Main Hydraulic System; Pump	Engine-mounted gear pump			
Maximum Output	28.0 l/min at 2500rpm			
Pressure	Relief valve setting 14715 kPa			
Rear Linkage; Type	Three-point hitch			
Size	Category 1			
Control	Position (OPT draft control)			
Lift Capacity	1100 kg measured at ball ends			
	800 kg measured at 24" behind			
ELECTRICAL SYSTEM:				
System Voltage	12 volt, negative (-) ground			
Battery cca @ 0 F (-18)	433 cca			
Charging	40 amp alternator with internal regulator/rectifier			

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2. EXTERIOR PARTS

2.1 HOOD AND FRONT GRILLE

(1) HOOD AND FRONT GRILLE

a. Hood

Turn the knob, 1, to clockwise and open the engine hood and lock it by retaining stay, 2.

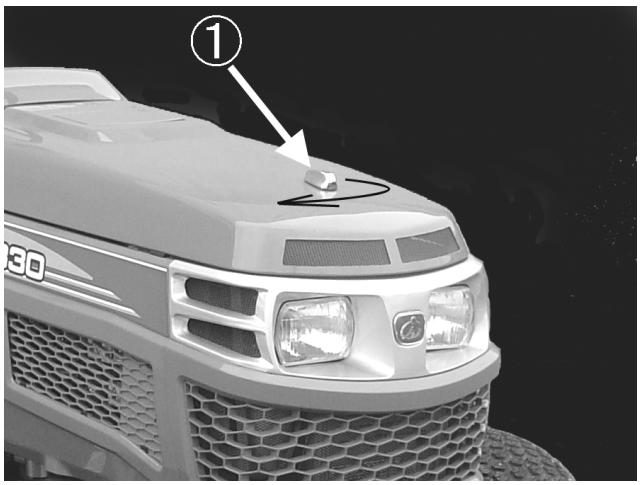


Fig. 2-1

b. Side Panel

Pull locking pins, 3, out, and then lift side panel upward to disengage and remove.



Fig. 2-2

c. Front Grill

Remove locking knobs, 4, and then pull upward and outward.

2.2 SEAT, FENDERS, FLOOR DECK, AND RELATED PARTS

a. Remove two bolts and differential lock lever (1).

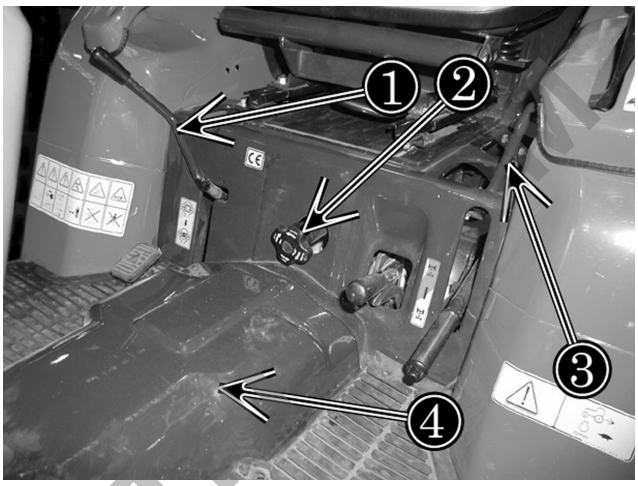


Fig. 2-3

b. Remove a screw and lowering speed control knob (2).

c. Remove two bolts and cruising speed control lever (3).

d. Remove floor mat (LH and RH).

e. Remove four bolts and center cover (4).

f. Disconnect the wiring harness for seat switch.

g. Remove bolts that fixing the seat panel then shift the seat panel forward for avoiding mid PTO lever and 4WD lever, and remove it with the seat.

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CHAPTER 6. HYDROSTATIC TRANSMISSION

1. CONSTRUCTION AND NAMES OF MAJOR COMPONENTS

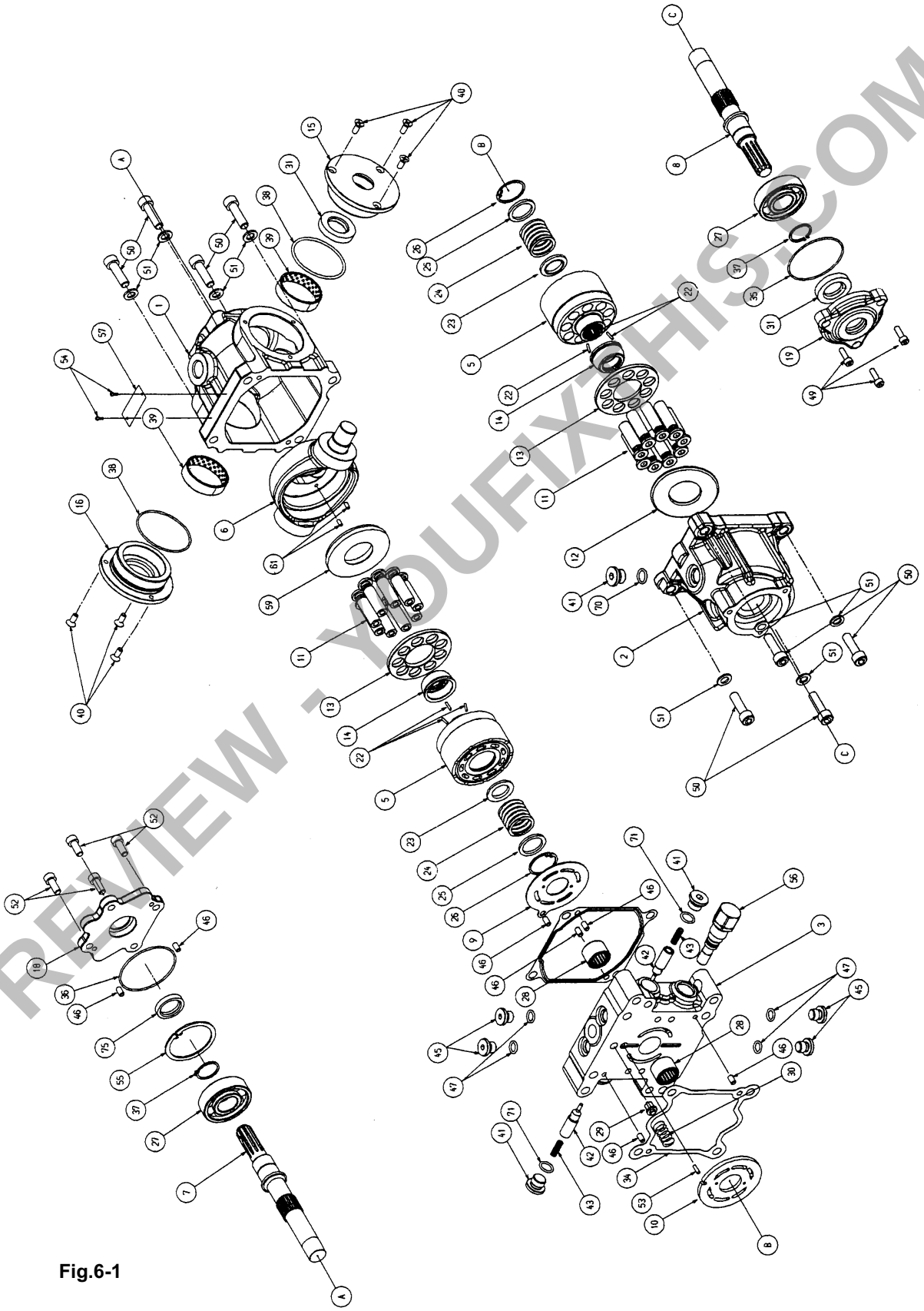


Fig.6-1

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CHAPTER9 . HYDRAULIC SYSTEM

GENERAL DESCRIPTION

1. HYDRAULIC SYSTEM DIAGRAM

(Mechanical type)

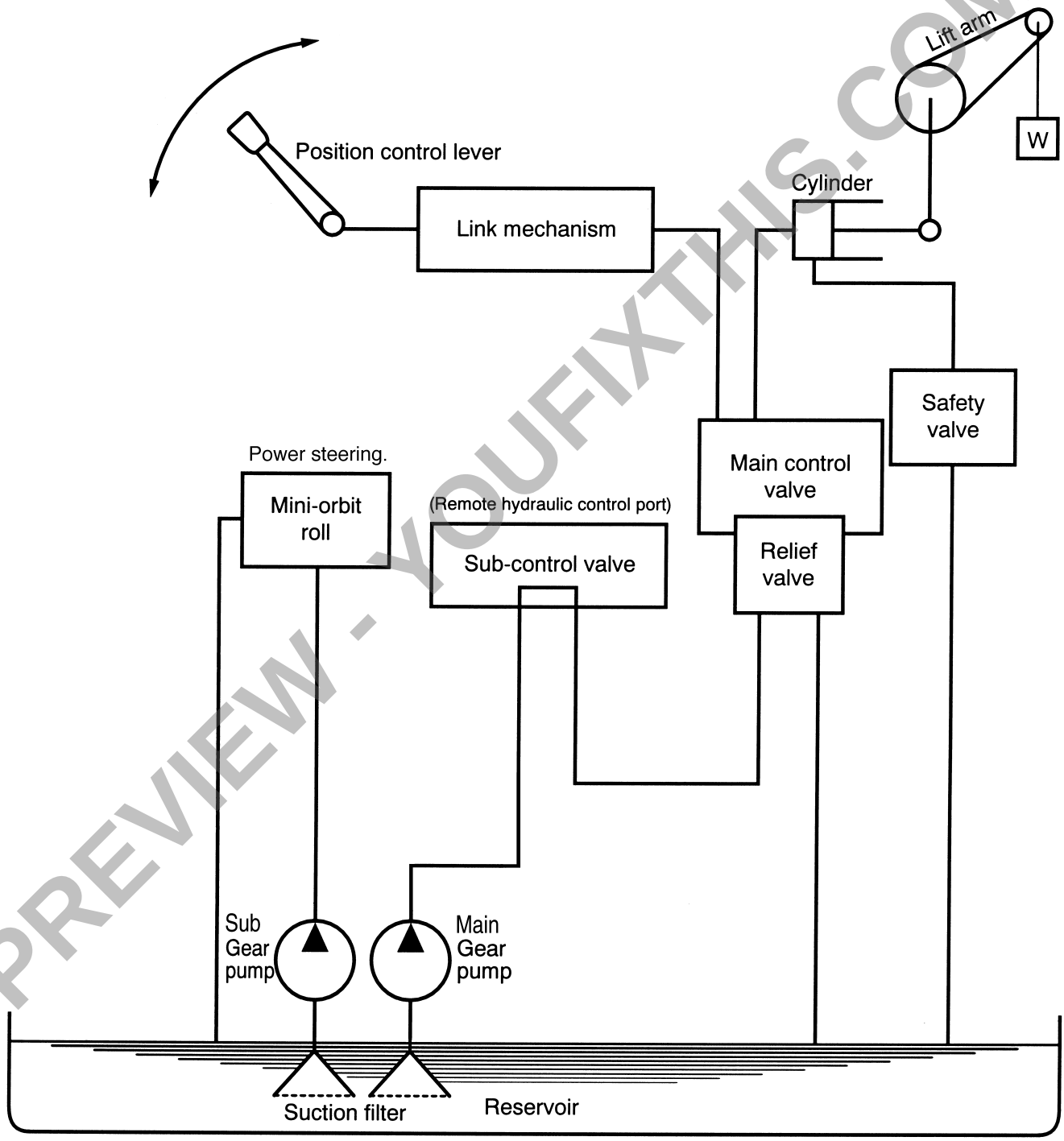


Fig.9-1

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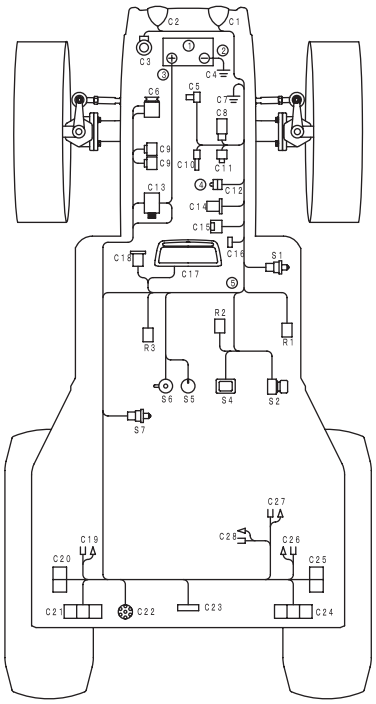
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CHAPTER10 . ELECTRICAL ACCESSORIES

1. CABLE LAYOUT

Main Fuse Box, A – Located at right side of engine.

TH4260F-E4

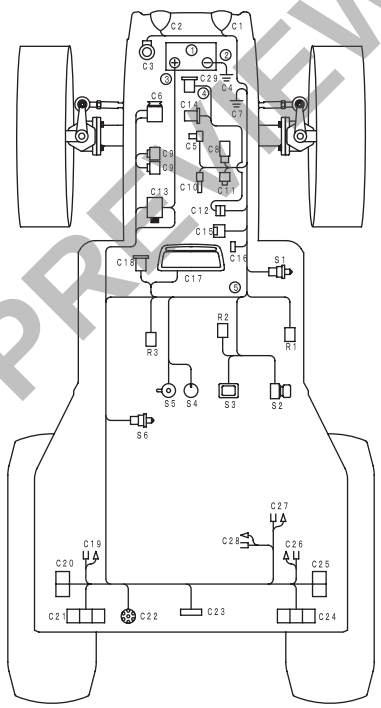


①	Batteries
②	Earth cable
③	Battery cable(+)
④	Harness
⑤	Main harness
C1	Headlight RH
C2	Headlight LH
C3	Horn
C4	Battery ground(-)
C5	Water temperature sensor
C6	Alternator
C7	Body earth
C8	Engine stopping solenoid
C9	Slow-blow fuse(40A)
C10	Glow plug
C11	Oil pressure switch
C12	Connector/Main harness to harness
C13	Starter motor
C14	Fuel pump
C15	Main fuse box
C16	Connector for cabine
C17	Instrument panel
C18	Fuel gauge
C19	Unswitched power
C20	Front combination lamp LH
C21	Rear combination lamp LH
C22	7-pin socket
C23	License plate lamp
C24	Rear combination lamp RH
C25	Front combination lamp RH
C26	Unswitched power
C27	Connector for seat switch
C28	Accessory
R1	Flasher relay
R2	Key stop timer relay
R3	Safety relay
S1	Stop light switch
S2	Ignition key switch
S4	Hazard switch
S5	Small lamp switch
S6	Horn, turn signal and light switch
S7	Clutch safety switch

Main Fuse

1. Head lamp(LH/High)
2. Head lamp(RH/High)
3. Head lamp(LH/Low)
4. Head lamp(RH/Low)
5. Position lamps
6. Work lamps
7. Direction indicators
8. Stop lamps/Cabin(B)
   Engine stop relay
9. Fuel pump/Safty switch
   PTO/Engine stop relay
10. Monitor/Alternator
    /Cabin(AC)
11. Spare power supply(AC)

TH4290F-E4



①	Batteries
②	Earth cable
③	Battery cable(+)
④	Sub fuel tank harness
⑤	Main harness
C1	Headlight RH
C2	Headlight LH
C3	Horn
C4	Battery ground(-)
C5	Water temperature sensor
C6	Alternator
C7	Body earth
C8	Engine stopping solenoid
C9	Slow-blow fuse(40A)
C10	Glow plug
C11	Oil pressure switch
C12	Connector/Main harness to harness
C13	Starter motor
C14	Fuel pump
C15	Main fuse box
C16	Connector for cabine
C17	Instrument panel
C18	Main fuel gauge
C19	Unswitched power
C20	Front combination lamp LH
C21	Rear combination lamp LH
C22	7-pin socket
C23	License plate lamp
C24	Rear combination lamp RH
C25	Front combination lamp RH
C26	Unswitched power
C27	Connector for seat switch
C28	Accessory
C29	Sub fuel gauge
R1	Flasher relay
R2	Key stop timer relay
R3	Safety relay
S1	Stop light switch
S2	Ignition key switch
S3	Hazard switch
S4	Small lamp switch
S5	Horn, turn signal and light switch
S6	Clutch safety switch

Main Fuse

1. Head lamp(LH/High)
2. Head lamp(RH/High)
3. Head lamp(LH/Low)
4. Head lamp(RH/Low)
5. Position lamps
6. Work lamps
7. Direction indicators
8. Stop lamps/Cabin(B)
   Engine stop relay
9. Fuel pump/Safty switch
   PTO/Engine stop relay
10. Monitor/Alternator
    /Cabin(AC)
11. Spare power supply(AC)

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Inspection items	Problems	Countermeasures
Starter does not work when starter switch is turned to start.	Faulty battery Faulty circuit wiring Poorly contacted terminals Faulty starter assembly Faulty horn relay Faulty safety switch	Recharge or take necessary countermeasures. Repair. Repair. Refer to Engine manual. Replace. Replace.
f. Horn and horn switch		
Horn does not sound.	Faulty horn switch Faulty engine oil viscosity Faulty horn Poorly contacted terminals Faulty horn relay	Replace switch assembly. Replace with proper viscosity oil. Replace horn assembly. Repair. Replace relay.
g. Oil pressure pilot light		
Light is lit during operation	Low engine oil level Faulty engine oil viscosity Clogged oil filter element Faulty oil pressure switch Broken oil pump	Replenish oil level. Replace with proper viscosity oil. Replace element. Replace switch assembly. Replace pump assembly.
h. Charge pilot light		
Light is lit during operation.	Faulty wiring Faulty alternator Faulty battery Loose fan belt	Repair. Repair or replace alternator assembly. Recharge or take necessary countermeasures. Retighten or replace belt.

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(7) Adjust the free play of the clutch pedal.

Clutch pedal free play (at pedal top)	30 mm (1.18 in.)

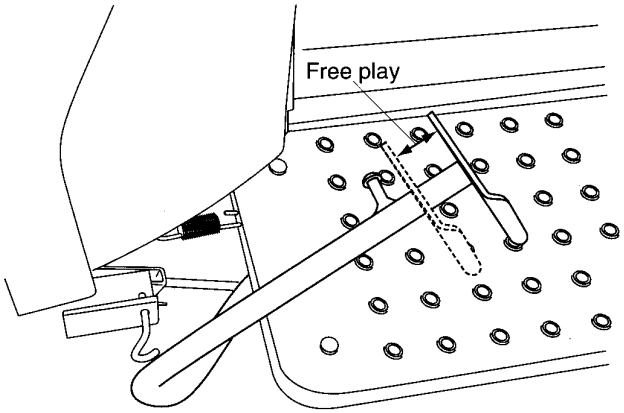


Fig. 4-10

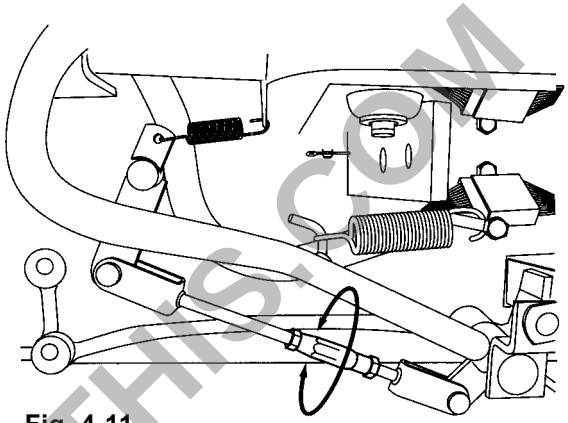


Fig. 4-11

5. TROUBLESHOOTING

1. PROBLEM: Clutch slippage

The initial stage of clutch slippage is very hard to notice, but the following symptoms are noticeable.

(1) The tractor is not generating adequate power when performing heavy duty operations.

(2) Output is not commensurate to increase in engine speed when the engine is accelerated suddenly during operation.

(3) Increased fuel consumption

These symptoms are apt to be mistaken for engine problems. Clutch slippage that is not repaired will result in serious damage such as excessive wear of the clutch facing, the clutch cover, and even flywheel or clutch seizures.

TEST METHOD:

If the parking brakes are applied and the transmission gears shifted to top speed and the engine stops, then the clutch is normal. But if the engine does not stop, it shows that the clutch is slipping.

Probable causes	Countermeasures
a. No play in the release bearing	Adjust.
b. Broken or fatigued diaphragm spring	Replace.
c. Excessive wear of clutch facing	Replace.
d. Oil stained or hardened clutch facing	Repair or replace.
e. Deviation of flywheel or pressure plate	Repair or replace.

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b. Insert O-ring (31) into housing (13).

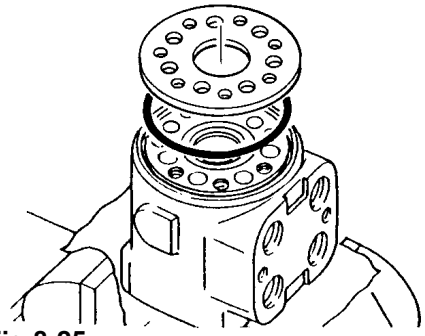


Fig.8-25

c. Place spacer plate (10) as shown and align the oil holes.

Note:
The bolt hole and oil holes are different.

d. Insert drive (11).

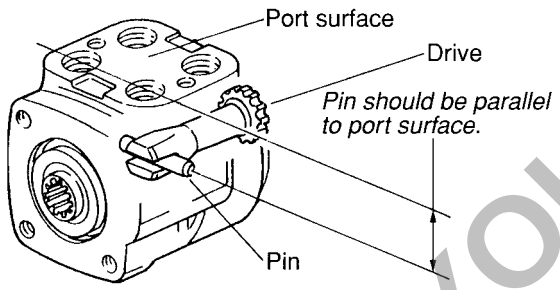


Fig.8-26

Note:
Provide a guideline on the drive end face parallel with the pin axis with a felt pen for correct installation.

e. Insert O-ring (31) on gerotor (7).

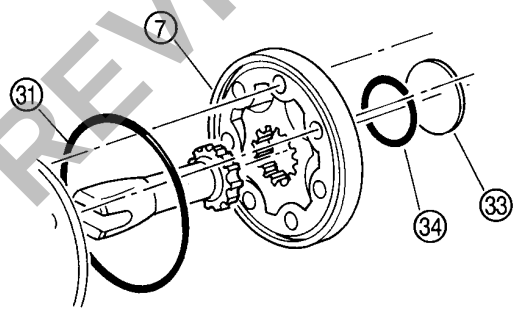


Fig.8-27

f. Install O-ring (34) and seal (33) on gerotor (7).

g. A: line from a bottom land of the rotor to the opposite bottom land

B: guideline for the pin axis
C: Pin axis
D: Port surface

A, B, and C should be parallel to each other.

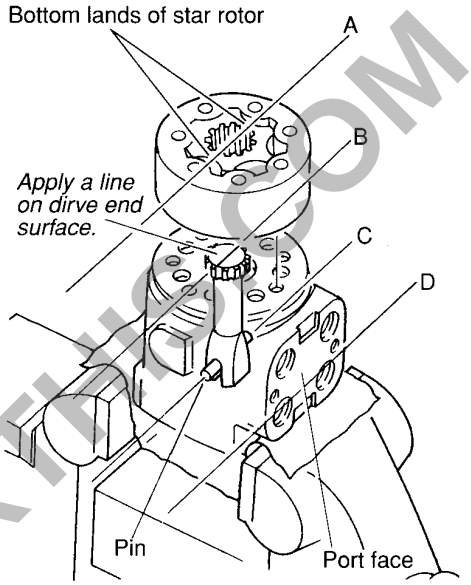


Fig.8-28

h. Turn O-ring (31) on gerotor (7) toward spacer plate (10) and install the gerotor on the drive by aligning the bottom land to bottom land line of the gerotor with the guide line on the drive.

Note:
When the boltholes of the gerotor and placer plate do not align to each other; turn the gerotor housing alone.

i. Insert O-ring (31) on end cap (6).

j. Place end cap (6) on gerotor (7) and align boltholes.

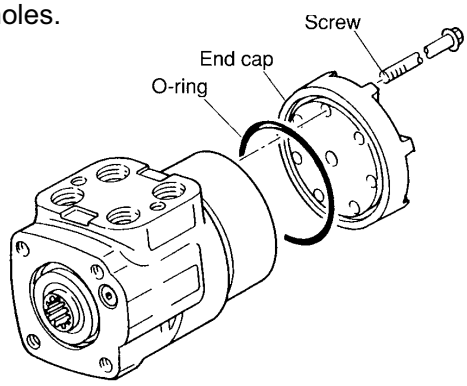
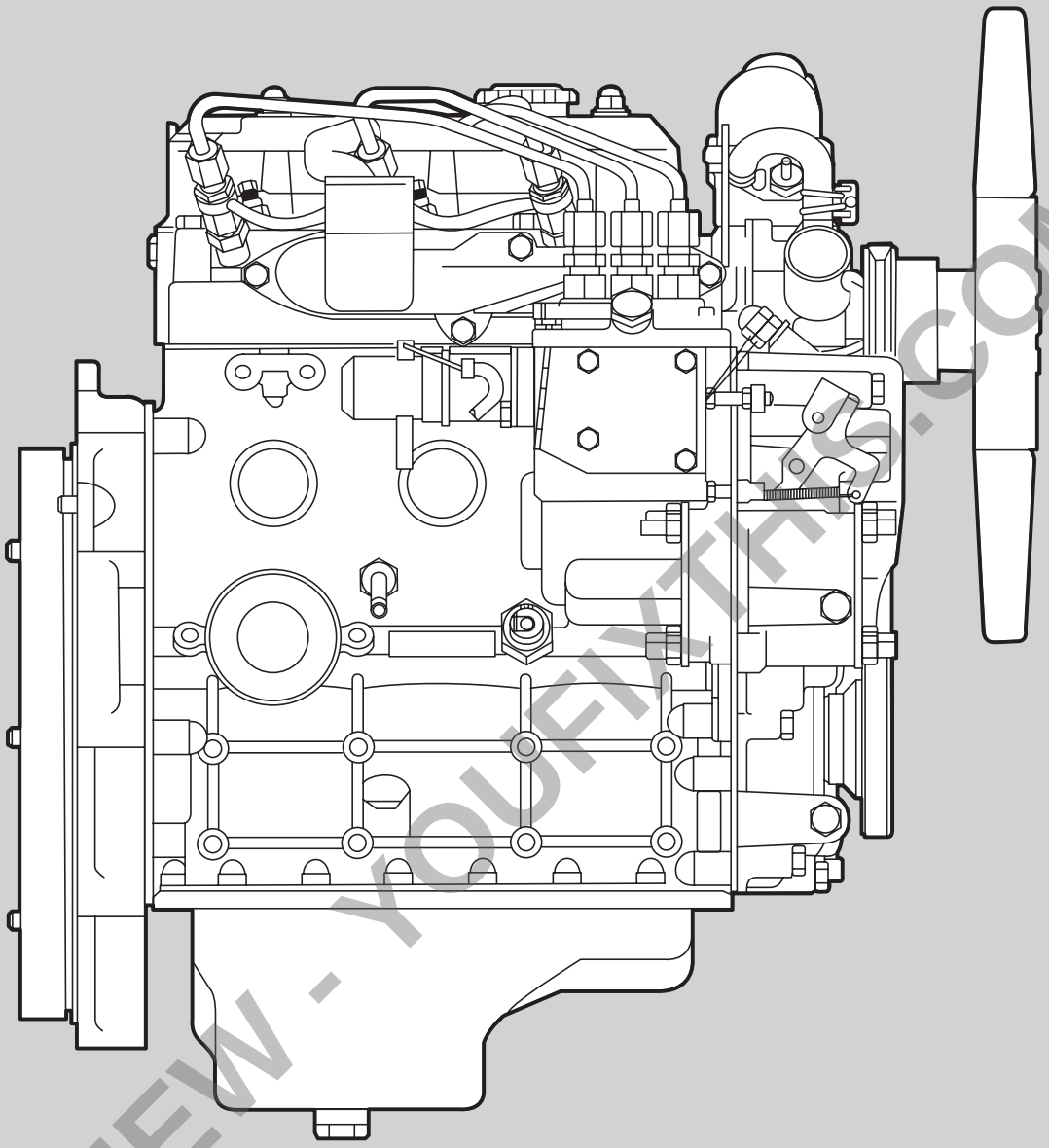


Fig.8-29

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3-cylinder Engines

E3CD
E3CE
E3CF

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oil clearance again. When the clearance exceeds the usable limit ever after new bearing have been installed, polish the pin and use undersize bearings.

Undersize bearings	0.5; 1.0 mm

When the ground-down limit of 1.0 mm (0.039 in.) is enough for correction, replace both crankshaft and bearings with new ones.

• Thrust clearance

Install the connecting rod on the crank pin and measure the thrust play with thickness gauges. If the play exceeds the usable limit, replace the connecting rod.

Standard value	Usable limit
0.175 - 0.030 mm	0.35 mm

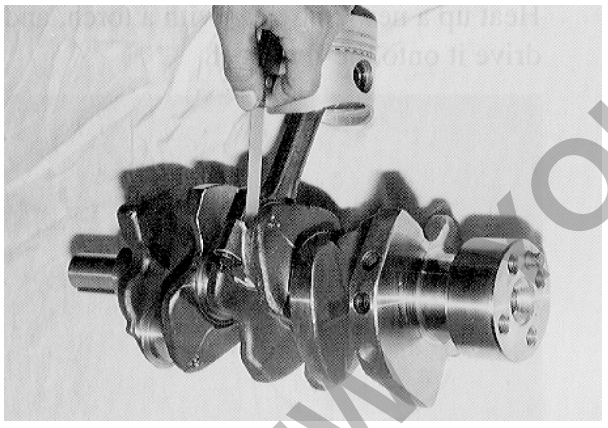


Fig. 3-72

(3) Inspection of the flywheel

Check the friction surface for cracks and other damage. If defective, correct or replace with a new flywheel.
Check the ring gear teeth for excessive wear and other damage. If defective, replace the ring gear with a new one.

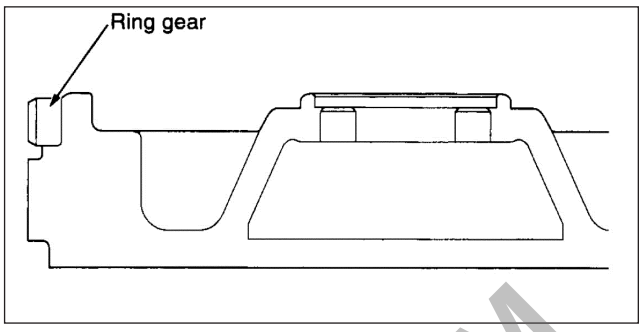


Fig. 3-73

• Replacement of the ring gear

Hammer the circumference of the ring gear evenly via a holding rod to remove the ring gear.

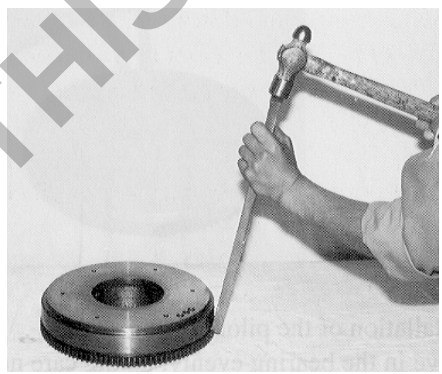


Fig. 3-74

Heat up a new ring gear with a torch, and then drive it onto the flywheel.

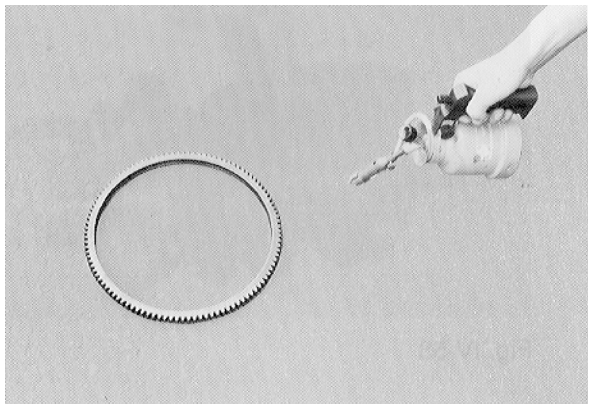


Fig. 3-75

Note:

- *Install the ring gear with the chamfered side turned toward the starter.*
- *After installation, make sure the ring gear is in tight contact with the flywheel.*

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