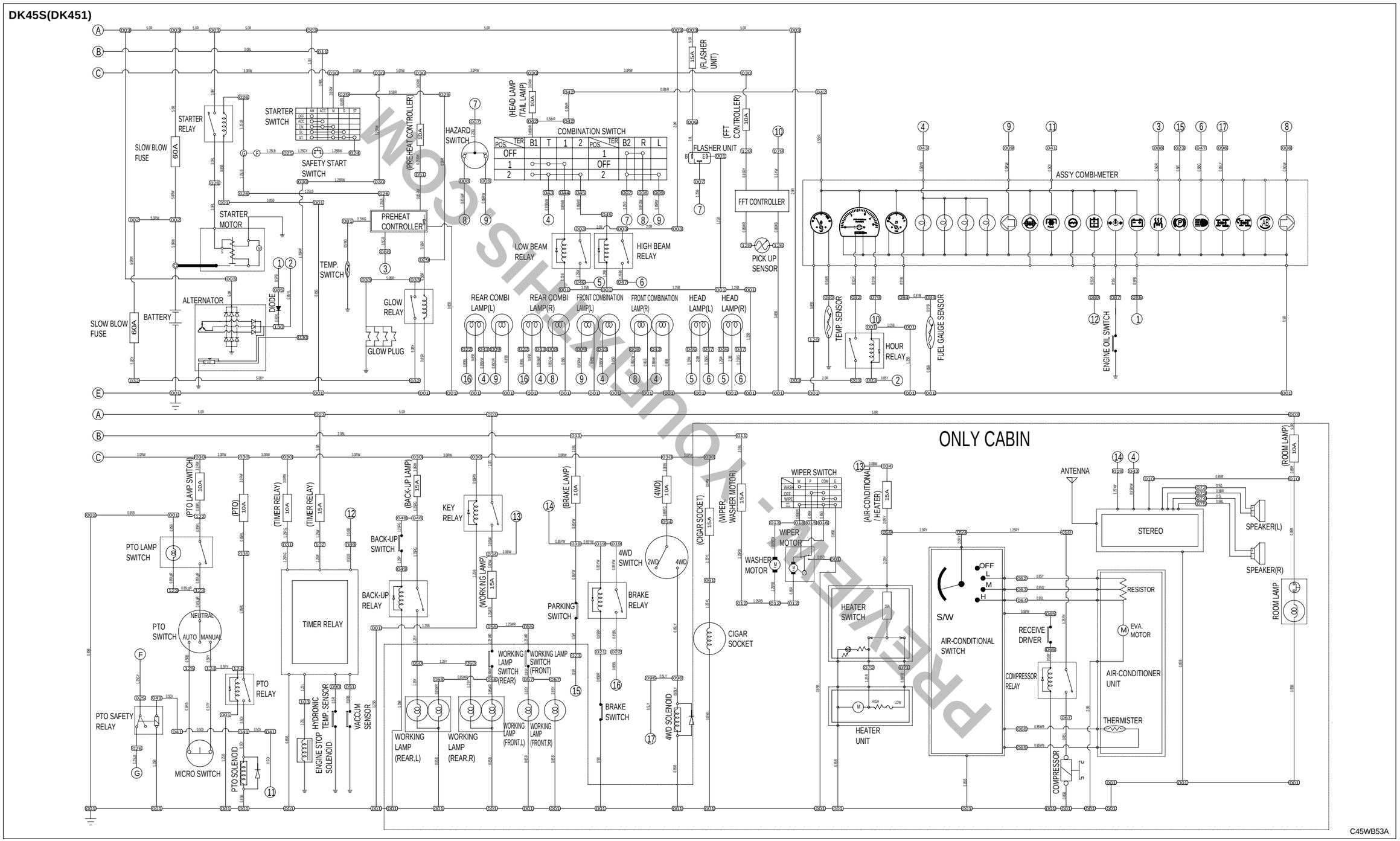
1.8 WIRING DIAGRAM

DK45S(DK451)

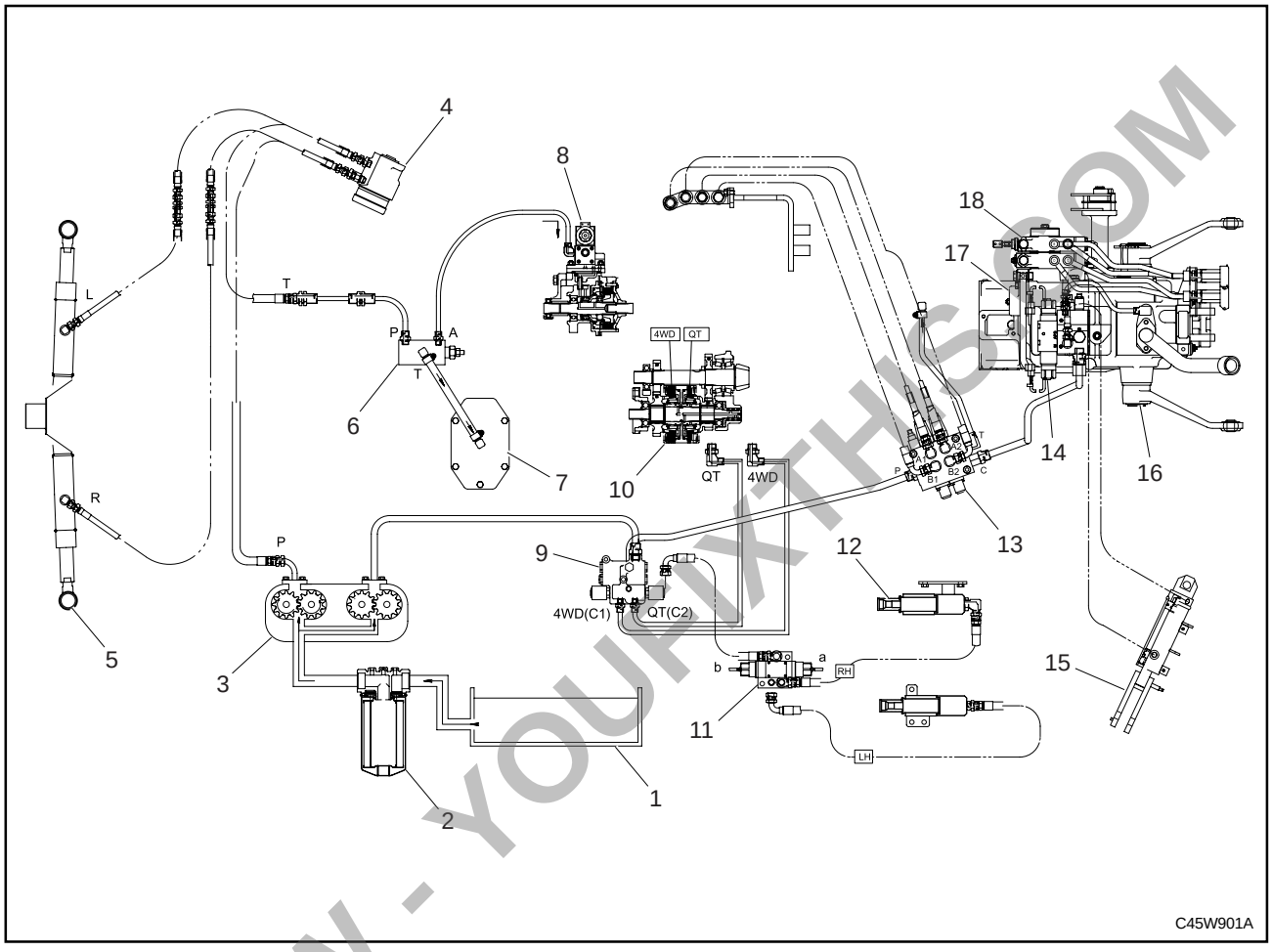


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1. STRUCTURE

1.1 HYDRAULIC OIL FLOW SHEMATIC

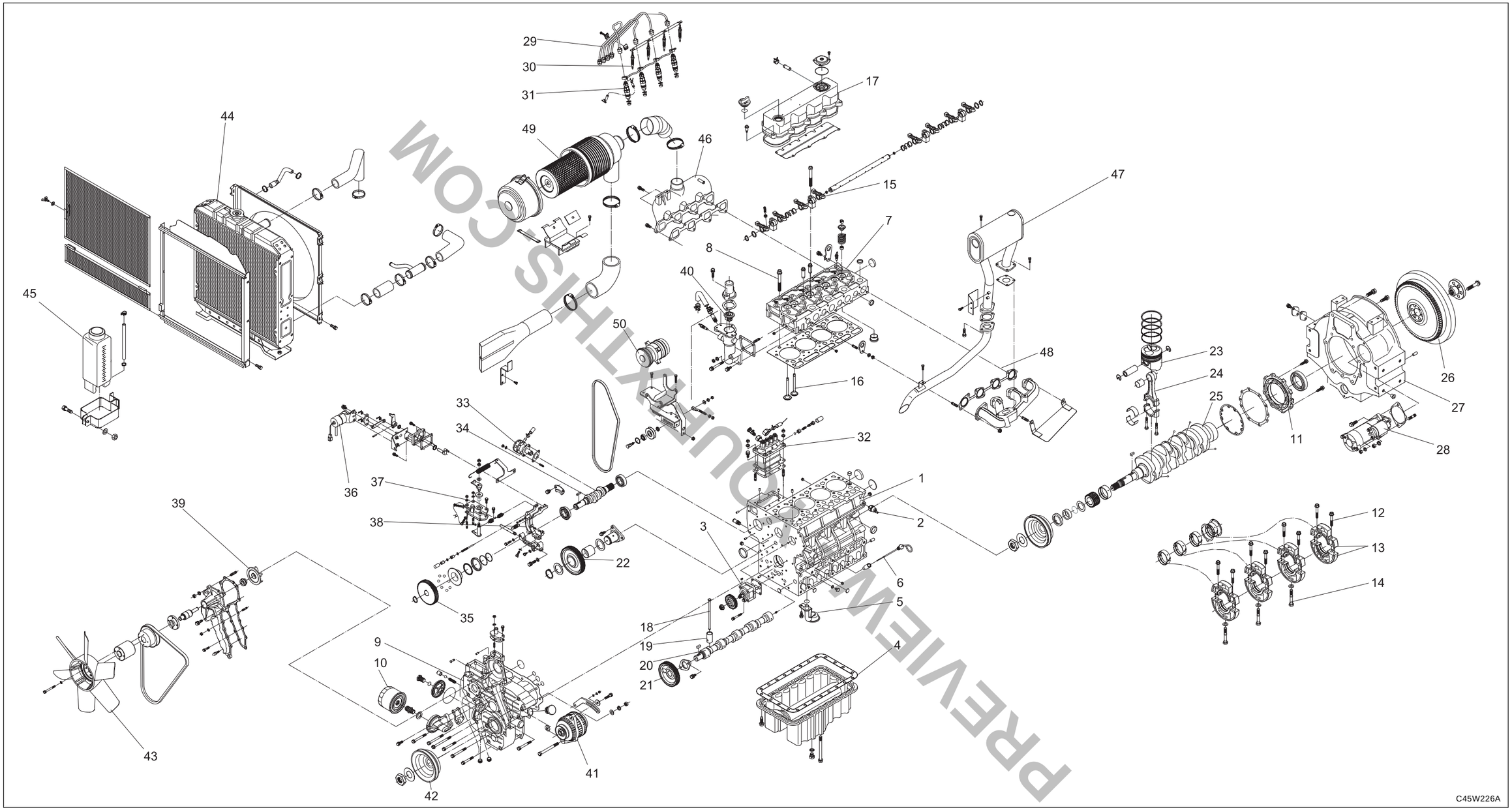


(1) Transmission Case
(2) Oil Filter
(3) Gear Pump
(4) Power Steering Unit
(5) Steering Cylinder
(6) Priority Valve
(7) Shuttle Cover
(8) PTO Clutch Control Vlave
(9) 4WD Q/T Valve
(10) 4WD Q/T Clutch
(11) Brake Control Valve
(12) Brake Cylinder
(13) Joystick Valve
(14) Horizontal Control Valve
(15) Lift Cylinder
(16) Hydraulic Lift Cylinder
(17) MLS Valve
(18) Auxiliary Control Valve

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7.2 ENGINE DISASSEMBLED VIEW



(1) Cylinder Block
(2) Oil Pressure Switch
(3) Oil Pump
(4) Oil Pan
(5) Oil Strainer
(6) Oil Gauge
(7) Cylinder Head
(8) Head Bolt
(9) Gear case
(10) Oil Filter
(11) Main bearing Case Cover
(12) Bearing Case Bolt 1
(13) Main Bearing Case
(14) Bearing Case Bolt 2
(15) Rocker Arm
(16) Inlet, Exhaust Valve
(17) Cylinder Hear Cover
(18) Push Rod
(19) Tappet
(20) Camshaft
(21) Camshaft Gear
(22) Idle Gear
(23) Piston
(24) Connecting Rod
(25) Crankshaft
(26) Flywheel
(27) Flywheel Housing
(28) Starter
(29) Injection Pipe
(30) Glow Plug
(31) Nozzle
(32) Fuel Injection Pump
(33) Fuel Feed Pump
(34) Fuel Camshaft
(35) Fuel Camshaft Gear
(36) Engine Stop Solenoid
(37) Speed Control Plate
(38) Fork Lever (Governor)
(39) Impeller
(40) Thermostat
(41) Alternator
(42) Fan Drive Pulley
(43) Cooling Fan
(44) Radiator
(45) Reserve Tank Ass'y
(46) Inlet Manifold
(47) Muffler
(48) Exhaust Manifold
(49) Air Cleaner
(50) Air Conditioner Compressor

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7. TIGHTENING TORQUES

7.1 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	4 No-grade or 4T						7 7T						9 9T		
Material of bolt	SS400, S20C						S43C, S48C						SCr435, SCM435		
Material of opponent part	Ordinariness			Aluminum			Ordinariness			Aluminum			Ordinariness		
Unit / Diameter	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 (6 mm, 0.24 in.)	7.85 ~ 9.31	0.80 ~ 0.95	5.79 ~ 6.87	7.85 ~ 8.82	0.80 ~ 0.90	5.79 ~ 6.50	9.81 ~ 11.2	1.00 ~ 1.15	7.24 ~ 8.31	7.85 ~ 8.82	0.80 ~ 0.90	5.79 ~ 6.50	12.3 ~ 14.2	1.25 ~ 1.45	9.05 ~ 10.4
M8 (8 mm, 0.31 in.)	17.7 ~ 20.5	1.8 ~ 2.1	13.1 ~ 15.1	16.7 ~ 19.6	1.7 ~ 2.0	12.3 ~ 14.4	23.6 ~ 27.4	2.4 ~ 2.8	17.4 ~ 20.2	17.7 ~ 20.5	1.8 ~ 2.1	13.1 ~ 15.1	29.5 ~ 34.3	3.0 ~ 3.5	21.7 ~ 25.3
M10 (10 mm, 0.39 in.)	39.3 ~ 45.1	4.0 ~ 4.6	29.0 ~ 33.2	31.4 ~ 34.3	3.2 ~ 3.5	23.2 ~ 25.3	48.1 ~ 55.8	4.9 ~ 5.7	35.5 ~ 41.2	39.3 ~ 44.1	4.0 ~ 4.5	29.0 ~ 32.5	60.9 ~ 70.6	6.2 ~ 7.2	44.9 ~ 52.0
M12 (12 mm, 0.47 in.)	62.8 ~ 72.5	6.4 ~ 7.4	46.3 ~ 53.5				77.5 ~ 90.2	7.9 ~ 9.2	57.2 ~ 66.5	62.8 ~ 72.5	6.4 ~ 7.4	46.3 ~ 53.5	103 ~ 117	10.5 ~ 12.0	76.0 ~ 86.7
M14 (14 mm, 0.55 in.)	108 ~ 125	11.0 ~ 12.8	79.6 ~ 92.5				124 ~ 147	12.6 ~ 15.0	91.2 ~ 108				167 ~ 196	17.0 ~ 20.0	123 ~ 144
M16 (16 mm, 0.63 in.)	167 ~ 191	17.0 ~ 19.5	123 ~ 141				197 ~ 225	20.0 ~ 23.0	145 ~ 166				260 ~ 304	26.5 ~ 31.0	192 ~ 224
M18 (18 mm, 0.71 in.)	246 ~ 284	25.0 ~ 29.0	181 ~ 209				275 ~ 318	28.0 ~ 32.5	203 ~ 235				344 ~ 402	35.0 ~ 41.0	254 ~ 296
M20 (20 mm, 0.79 in.)	334 ~ 392	34.0 ~ 40.0	246 ~ 289				368 ~ 431	37.5 ~ 44.0	272 ~ 318				491 ~ 568	50.0 ~ 58.0	362 ~ 419

7.2 STUD BOLTS

Material of opponent part	Ordinariness			Aluminum		
Unit / Diameter	N·m	kgf·m	lbf·ft	N·m	kgf·m	lbf·ft
M8 (8 mm, 0.31 in.)	11.8 ~ 15.6	1.2 ~ 1.6	8.68 ~ 11.5	8.82 ~ 11.8	0.90 ~ 1.2	6.51 ~ 8.67
M10 (10 mm, 0.39 in.)	24.6 ~ 31.3	2.5 ~ 3.2	18.1 ~ 23.1	19.7 ~ 25.4	2.0 ~ 2.6	14.5 ~ 18.8
M12 (12 mm, 0.47 in.)	29.5 ~ 49.0	3.0 ~ 5.0	21.7 ~ 36.1	31.4	3.2	23.1

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5. TROUBLESHOOTING

Symptom	Probable Cause	Solution
Engine Does Not Start	• Not fuel	Replenish fuel
	• Air in the fuel system	Vent air
	• Water in the fuel system	Change fuel and repair or flush fuel system
	• Fuel pipe clogged	Clean
	• Fuel filter clogged	Clean or replace
	• Excessively high viscosity of fuel or engine oil at low temperature	Use the specified fuel or engine oil Use the specified fuel
	• Fuel with low cetane number	Tighten nut
	• Fuel leak due to loose injection pipe retaining nut	Adjust
	• Incorrect injection timing	Replace
	• Fuel camshaft worn	Clean or replace
	• Injection nozzle clogged	Repair or replace
	• Injection pump malfunctioning	Repair or replace
	• Fuel transfer pump malfunctioning	Repair or replace
	• Seizure of transfer pump malfunctioning piston, cylinder bore or bearing	Replace head gasket, tighten cylinder head screws, glow plug and nozzle holder
	• Compression leak from cylinder	Repair or replace
	• Improper valve seating, valve spring broken, valve seized	Correct or replace timing gear
	• Improper valve timing	Repair or replace
	• Piston ring and bore worn	Adjust
	• Excessive valve clearance	Charge
(Starter Does Not Run)	• Battery discharged	Repair or replace
	• Starter malfunction	Repair or replace
	• Starter switch malfunction	Connect
	• Wiring disconnected	Clean or replace
Engine Revolution is Not Smooth	• Fuel filter clogged or dirty	Clean or replace
	• Air cleaner clogged	Tighten nut
	• Fuel leak due to loose injection pipe retaining nut	Repair or replace
	• Injection pump malfunctioning	Adjust
	• Incorrect nozzle opening pressure	Repair or replace
	• Nozzle stuck or clogged	Clean
	• Fuel over flow pipe clogged	Repair
	• Governor malfunctioning	

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5. SPECIFICATIONS

Model			DK45S	DK451
Engine	Model		4A220B	
	Type		Liquid-cooled, 4-cylinder diesel	
	Engine gross	HP (kW)	45 (33.6)	
	P.T.O	HP (kW)	38 (28.3)	
	Displacement	cc (cu.in)	2,197 (134.1)	
	Rated revolution	r.p.m min-1	2,600	
	Fuel tank capacity	ℓ (gal.)	58 (15.32)	
Drive train	Clutch		Dry type single stage	
	Transmission		Synchro	
	Speeds		12F 12R	
	Differential lock		Standard	
	Brake		Wet disc type	
	P.T.O		Trans	
	Rear	(rpm)	1 speed (540 rpm at 2,600 engine rpm)	3 speed (560/728/1040 rpm at 2,600 engine rpm)
Hydraulic system	Pump capacity (Max. flow rate)	ℓ/min (gpm)	Main pump 37.4 (9.88) Power steering pump 16.4 (4.33)	
	3-point hitch		Cat.I	
	Maximum lifting capacity	kgf (lbs.)	1,204 (2,654)	
	Hydraulic lift control system		Position, draft and Mixed control	
	Steering		Hydrostatic	
Standard tire size	Front		9.5 - 16, 6PR	9.5 - 16, 6PR
	Rear (AG, TURF, INDUSTRIAL)		14.9 - 24, 6PR	13.6 - 26, 6PR
Traveling speeds	Forward (At rated engine rpm)	km/h (mph)	0.39 ~ 25.90 (0.24 ~ 16.09)	0.38 ~ 25.67 (0.236 ~ 15.95)
	Reverse (At rated engine rpm)	km/h (mph)	0.32 ~ 21.44 (0.20 ~ 13.32)	0.32 ~ 21.25 (0.20 ~ 13.20)
Dimen-sions	Overall length (with 3p)	mm (in.)	3,243 (126.8)	
	Overall width (minimum tread)	mm (in.)	1,564 (61.6)	
	Overall height (Top of Cabin)	mm (in.)	2,333 (91.9)	2,325 (91.5)
	Wheel base	mm (in.)	1,880 (74.0)	
	Min. ground clearance	mm (in.)	370 (14.6)	
	Tread	Front mm (in.)	1,265 (49.8)	
		Rear mm (in.)	1,208 ~ 1,490 (47.6 ~ 58.7)	
	Min. turning radius (with brake)	m (Ft.)	2,865 (112.8)	
	Weight (with Cabin)	kgf (lbs.)	2,030 (4,475)	

NOTE: The specifications are subject to change for the purpose of improvement without any notice.

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6. LUBRICANTS, FUEL AND COOLANT

<table>
<tr><th>No.</th><th>Locations</th><th>Capacities</th><th colspan="2">Lubricants</th></tr>
<tr><td>1</td><td>Fuel</td><td>58.0 ℓ (15.32 U.S.gal.)</td><td colspan="2">No.2-D diesel fuel
No.1-D diesel fuel if temperature is below -10°C (14°F)</td></tr>
<tr><td>2</td><td>Coolant</td><td>8.6 ℓ (2.30 U.S.gal.)</td><td colspan="2">Fresh clean water with anti-freeze</td></tr>
<tr><td>3</td><td>Engine crankcase</td><td>8.0 ℓ (2.1 U.S.gal.)</td><td colspan="2">Engine oil: API Service Classification CC or CD
<table><tr><td>Above 25°C (77°F)</td><td>SAE30, SAE10W-30 or 10W-40</td></tr><tr><td>0 to 25°C (32 to 77°F)</td><td>SAE20, SAE10W-30 or 10W-40</td></tr><tr><td>Below 0°C (32°F)</td><td>SAE10W, SAE10W-30 or 10W-40</td></tr></table></td></tr>
<tr><td>4</td><td>Transmission case</td><td>38.0 ℓ (10.04 U.S.gal)</td><td colspan="2">Multi-gradetransmission fluid the fluid listed below or equivalent are recommended.
<table><tr><td>Exxonmobil</td><td>Mobilfluid 423 or 424
Exxon hydraul 560</td></tr><tr><td>Shell</td><td>DONAX-TD/TD Plus</td></tr><tr><td>BP</td><td>Tractran UTH</td></tr></table></td></tr>
<tr><td>5</td><td>Front axle case</td><td>8.2 ℓ (2.17 U.S.gal.)</td><td colspan="2">SAE 90 gear oil</td></tr>
<tr><td rowspan="6">6</td><td colspan="2">Applying grease</td><td>Capacity</td><td>Type of grease</td></tr>
<tr><td colspan="2">Hydraulic control lever shaft section</td><td>Small quantity</td><td rowspan="5">SAE multi-purpose type grease</td></tr>
<tr><td colspan="2">3 point link section</td><td rowspan="3">Until grease exits</td></tr>
<tr><td colspan="2">Brake pedal link section</td></tr>
<tr><td colspan="2">Bracket section in front and rear of the front axle</td></tr>
<tr><td colspan="2">Clutch release hub</td><td>Supply when removed</td></tr>
</table>

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8. MAINTENANCE CHECK LIST

No.	Item \ Period		Indication On Hour Meter																		After Purchase		Important	
			50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	1500	3000	1 year	2 years		
1	Engine oil	Change	⊙	●		●		●		●		●		●		●		●						
2	Engine oil filter	Replace	⊙			●				●				●				●						
3	Transmission oil filter	Replace	⊙			●				●				●				●						
4	Transmission fluid	Change	⊙							●								●						
5	Front axle case oil	Change	⊙							●								●						
6	Front axle pivot	Adjust	●					●						●				●						
7	Engine start system	Check	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●						
8	Greasing	-	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●						
9	Wheel bolt torque	Check	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●						
10	Battery condition	Check		●		●		●		●		●		●		●		●					*4	
11	Air cleaner element	Clean		●		●		●		●		●		●		●		●					*1	@
		Replace																			●		*2	
12	Fuel filter element	Check		●		●		●		●		●		●		●		●						@
		Replace								●								●						
13	Fan belt	Adjust		●		●		●		●		●		●		●		●						
14	Clutch	Adjust	⊙	●		●		●		●		●		●		●		●						
15	Brake	Adjust	⊙	●		●		●		●		●		●		●		●						
16	Radiator hose and clamp	Check				●				●				●				●						
		Replace																				●		
17	Power steering oil line	Check				●				●				●				●						
		Replace																				●		
18	Fuel line	Check		●		●		●		●		●		●		●		●						@
		Replace																				●		
19	Intake air line	Check				●				●				●				●						
		Replace																				●	*3	
20	Toe-in	Adjust				●				●				●				●						
21	Engine valve clearance	Adjust																●						
22	Fuel injection nozzle injection pressure	Check																	●	●				@
23	Injection pump	Check																		●				@
24	Cooling system	Flush																				●		
25	Coolant	Change																				●		
26	Fuel system	Bleed																			Service as required			
27	Fuse	Replace																						
28	Light bulb	Replace																						

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7. DISASSEMBLING AND MAINTENANCE

7.1 SEPARATING THE ENGINE

A. DRAINING ENGINE OIL

CAUTION

- ***Before replacing oil, stop the engine after warming-up for 5 minutes.***

1. Underlay oil pan under engine.
2. Remove the drain plug and drain the oil.
3. After draining, install the plug.

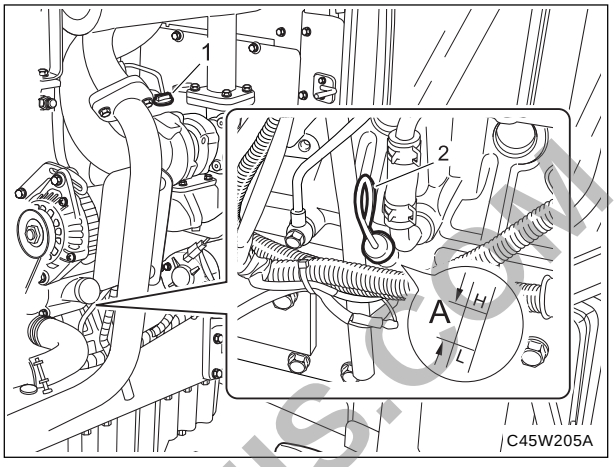
(Filling)

Fill the new oil up to the maximum of the gauge.

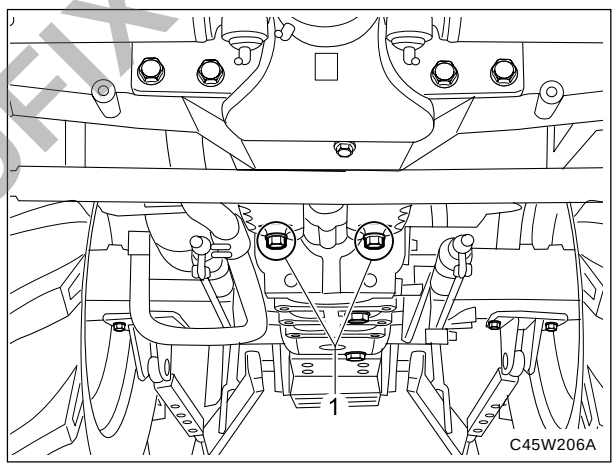
Engine oil capacity	8.0ℓ (2.11 U.S.gal)

IMPORTANT

- ***Never mix with other oil.***
- ***For engine oil specification, refer to page.***



(1) Oil Inlet
(2) Dipstick
(A) Oil Level is Acceptable Within this Range



(1) Drain Plug

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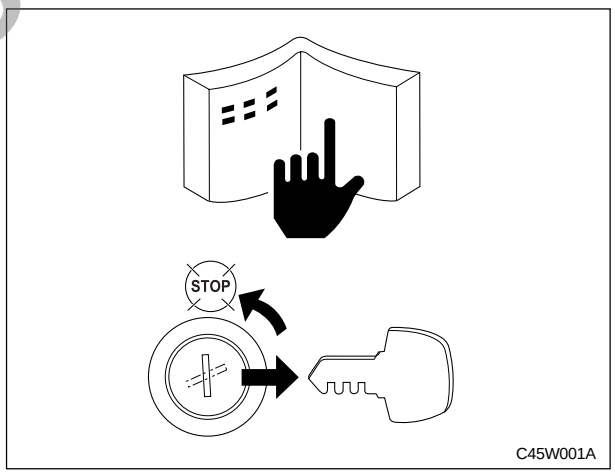
SAFETY FIRST

This symbol, the industry's "Safety Alert Symbol", is used throughout this manual and the decals on the machine itself to warn of the possibility of personal injury. It is essential that you read the instructions and safety regulations before you attempt to repair or operate this unit. Read these instructions carefully.

SIGNS		DESCRIPTION
	DANGER	This mark indicates hazardous situation which, if not observed, may result in death or fatal injury. This mark should be indicated for most dangerous situations only.
	WARNING	This mark indicates potentially hazardous situation which, if not observed, may result in death or moderate injury.
	CAUTION	This mark indicates potentially hazardous situation which, if not observed, may result in minor or moderate injury. And this mark can be used as a warning against unsafe activities.
	IMPORTANT	This mark indicates emphasis on notable characteristics in working procedures or information on working procedures and technology for convenient use.
NOTE		Gives helpful information.

BEFORE SERVICING AND REPAIRING

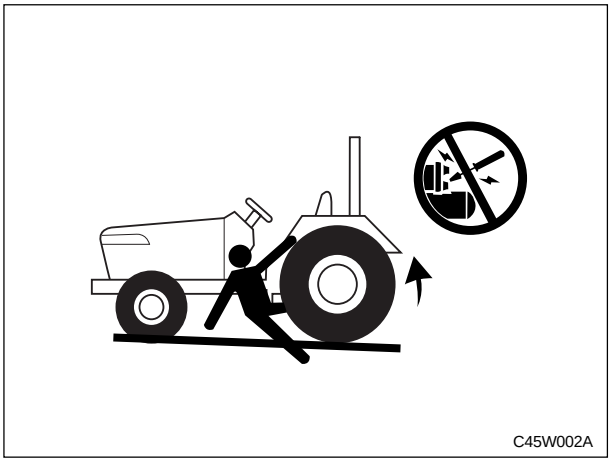
1. Read all safety instructions in this manual and be aware of the safety decals on your machine itself.
2. Thoroughly clean your work area and the machine.
3. Make sure the machine is on firm and level ground and that the parking brake is set.
4. Lower the implement to the ground.
5. Stop the engine and remove the key.
6. Disconnect the negative battery cable.
7. Place a "DO NOT OPERATE" tag in operator station.



C45W001A

SAFETY STARTING

1. Always use the safety start switch to start the engine and never by any other means.
2. Do not alter or remove any part of machine safety system.
3. Before starting the engine, make sure that all shift levers are in neutral positions or in the disengaged positions.
4. Never start the engine unless you are in the operator's seat.


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B. ANTI-FREEZE

If cooling water freezes, it can damage the cylinders and radiator. It is necessary, if the ambient temperature falls below 0°C (32°F), to remove cooling water after operating or to add anti-freeze to it.

1. There are tow types of anti-freeze available; use the permanent type (PT) for this engine.
2. Before adding anti-freeze for the first time, clean the radiator interior by flushing with fresh water a few times.
3. The procedure for mixing of water and anti-freeze differs according to the make of the anti-freeze and the ambient temperature. Basically it should be referred to SAE J1034 standard, more specifically also to SAE J814c.
4. Mix the anti-freeze with water, and then fill the radiator with the mixture.

Vol %	Freezing Point		Boiling Point*	
Anti-freeze	°C	°F	°C	°F
40	-24	-12	106	222
50	-37	-34	108	226

* At 760 mmHg pressure (atmospheric). A higher boiling point is obtained by using a radiator pressure cap which permits the development of pressure within the cooling system.

NOTE:

- *SAE J1034 and SAE J814c are industry standards that necessitate a minimum glycol content in the concentrated anti-freeze.*
- *When the cooling water level drops due to evaporation, add water only. In case of leakage, add anti-freeze and water in the specified mixing ratio.*
- *Anti-freeze absorbs moisture. Keep unused anti-freeze in a tightly sealed container.*
- *Do not use radiator cleaning agents when anti-freeze has been added to the cooling water. (Anti-freeze contains an anti-corrosive agent, that will react with the radiator cleaning agent forming sludge which will affect the engine parts.)*

C. REPLACING RADIATOR HOSE (WATER PIPES)

Replace the hoses and clamps.

(See “Checking Radiator Hose and Clamp” in every 200 hours maintenance.)

D. REPLACING POWER STEERING HOSE

Replace the hoses and clamps.

(See “Checking power steering line” in every 200 hours maintenance.)

E. REPLACING HST OIL LINE (HST TYPE)

Replace the hoses and clamps.

(See “Checking HST oil line” in every 200 hours maintenance.)

F. REPLACING FUEL HOSE

Replace the hoses and clamps.

(See “Checking Fuel line” in every 100 hours maintenance.)

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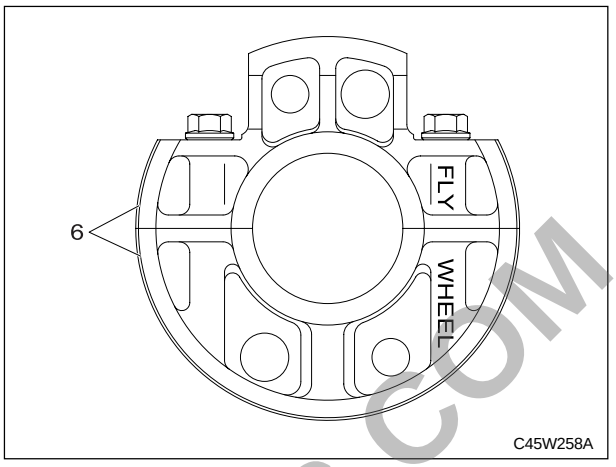
IMPORTANT

- ***Mark a location line (6) to the bearing case, to prevent interchanging.***

(When reassembling)

- Clean the parts and the oil passage of the bearing case.
- Apply oil to the journal, bearing inserts and the bearing case screws.
- Place the thrust bearings on the bearing case with their oil groove outside.
- Install the main bearing case with the mark "FLY WHEEL" toward the flywheel.

Tightening torque	Bearing case screw 1	46.1 ~ 51.0 N·m 4.7 ~ 5.2 kgf·m 34.0 ~ 37.6 lbf·ft



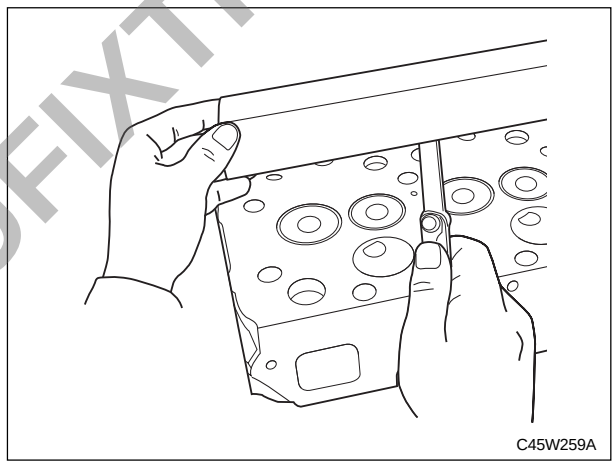
(6) Bearing Case

F. SERVICING

a. Cylinder Head and Valve

(A) Cylinder head surface flatness

1. Thoroughly clean the cylinder head surface.
2. Place a straight edge on the cylinder head and measure the clearance with a feeler gage as shown in the figure.
3. If the measurement exceeds the allowable limit, replace the cylinder head.



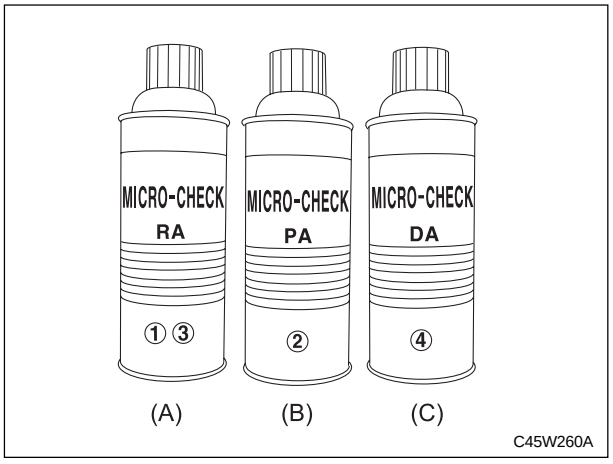
IMPORTANT

- ***Do not place the straight edge on the combustion camber.***

Flatness	Allowable limit	0.05 mm / 100 mm 0.0019 in. / 3.937 in.

(B) Cylinder head surface flaw

1. Prepare an air spray red check.
2. Clean the cylinder head surface with the detergent (B).
3. Spray the cylinder head surface with the red permeative liquid (A).
4. Wash away the red permeative liquid on the cylinder head surface with the detergent (B) after ten minutes.
5. Spray the cylinder head surface with the white developer (C).
6. If any flaw is found such as a red mark, replace the cylinder head.

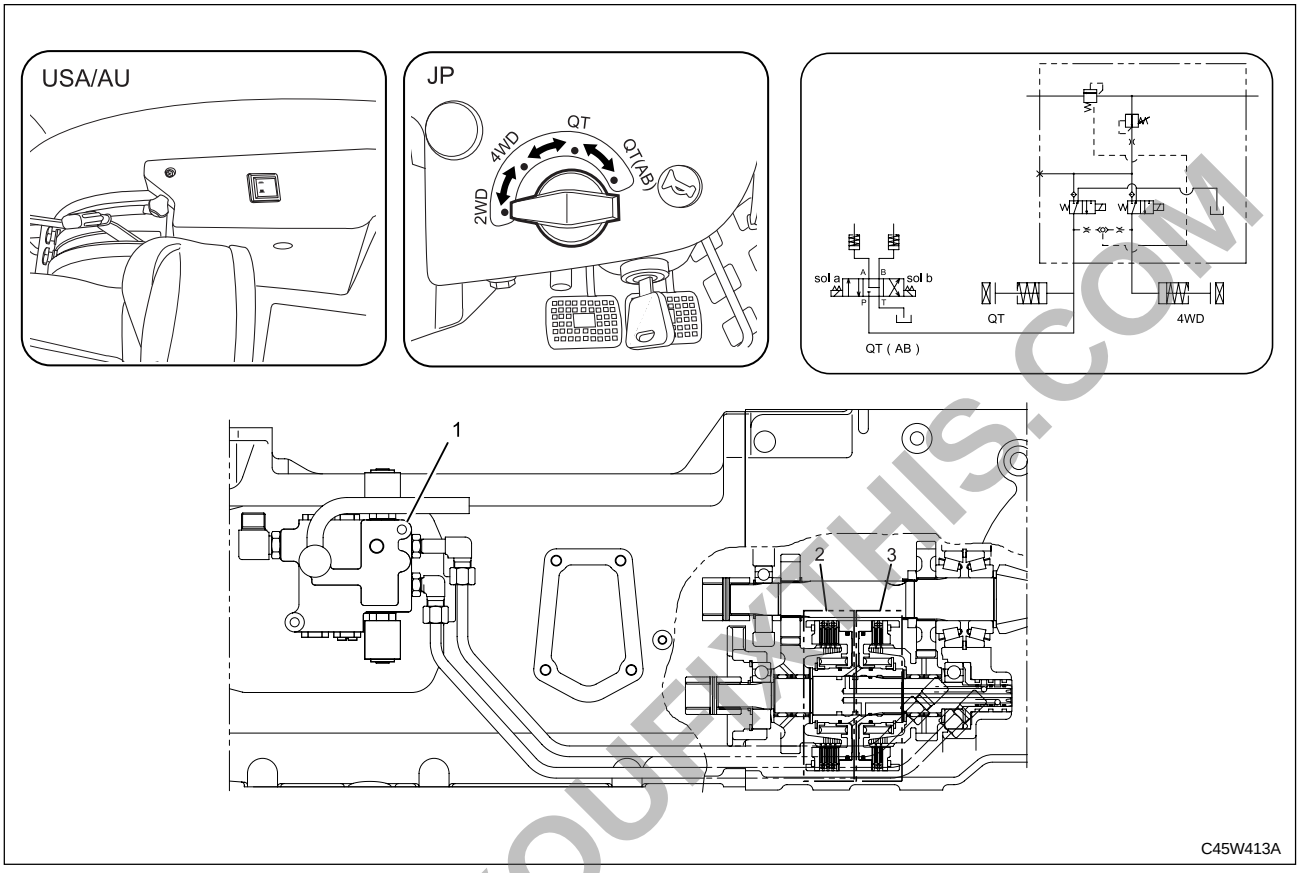


(A) Red Permeative Liquid (C) White Developer
(B) Detergent

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D. FRONT WHEEL DRIVE SHIFT



(1) 4WD / QT Valve

(2) 4WD Clutch Pack

(3) 4WD / QT Clutch Pack (only JP)

Front wheel is driven by 4WD,QT switch in the illustration above.

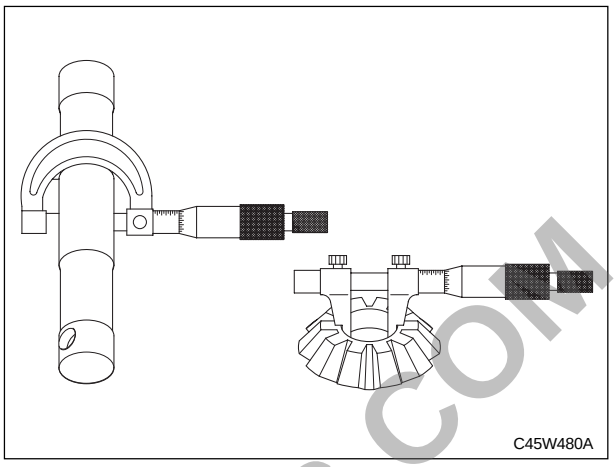
- 2WD : normal 2WD.
- 4WD : normal 4WD.
- Q.T (Quick Turn): with 4WD driving, front wheel revolves approx. double speed when steering angle is over 35 degree.
- Q.T(AB) (Quick Turn + Auto Brake): If the 4WD and the front wheel steering angle is more than 35 degrees the front wheel revolves double speed and at the same time the brakes operate automatically minimizing the turning radius.

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d. Clearance Between Differential Pinion Shaft and Differential Pinion

1. Measure the differential pinion shaft O.D
2. Measure the differential pinion I.D and calculate the clearance.
3. If the clearance exceeds the allowable limit, replace them.

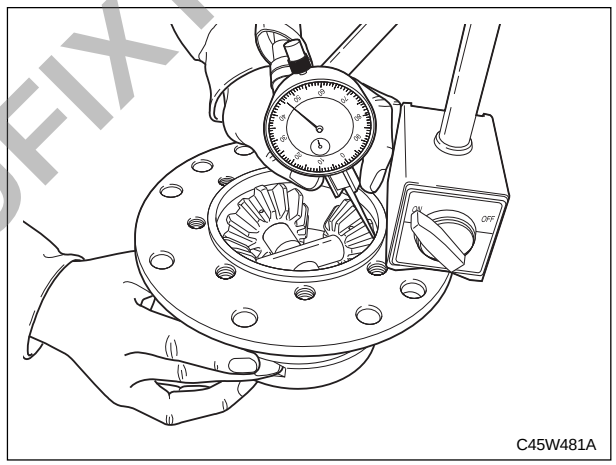

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Clearance between differential pinion shaft and differential pinion	Factory spec.	0.05 ~ 0.151 mm 0.00236 ~ 0.00402 in.
	Allowable limit	0.25 mm 0.0098 in.

Differential pinion shaft O.D	Factory spec.	19.959 ~ 19.980 mm 0.78579 ~ 0.78661 in.
Differential pinion I.D	Allowable limit	20.040 ~ 20.061 mm 0.78898 ~ 0.78980 in.

e. Backlash Between Differential Pinion and Differential Side Gear

1. Set a deal indicator (lever type) on the tooth of the differential pinion.
2. Hold the differential side gear and move the differential pinion to measure the backlash.
3. If the measurement is not within the factory specifications, adjust with the differential side gear washer.


C45W481A

Backlash between differential pinion and differential side gear	Factory spec.	0.15 ~ 0.30 mm 0.003 ~ 0.012 in.
	Allowable limit	0.40 mm 0.016 in.

(Reference)

- Thickness of differential side gear washers:
  1.5 mm (0.059 in.)
  1.6 mm (0.063 in.)
  1.7 mm (0.067 in.)

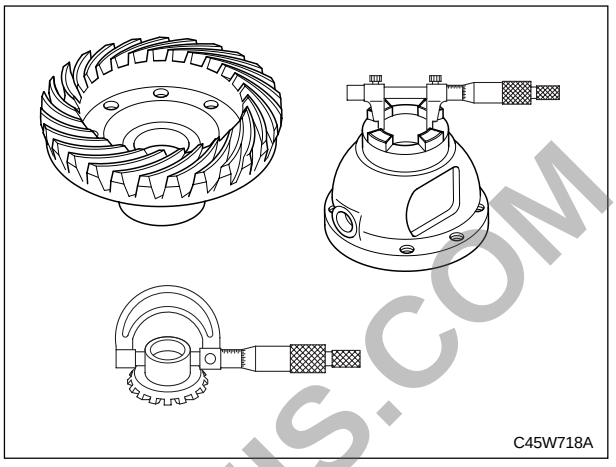
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5.4 SERVICING

A. CLEARANCE BETWEEN DIFFERENTIAL CASE AND DIFFERENTIAL SIDE GEAR

1. Measure the differential side gear boss O.D.
2. Measure the differential case bore I.D. and calculate the clearance.
3. Measure the 27 bevel gear bore I.D. and calculate the clearance.
4. If the clearance exceeds the allowable limit, replace faulty parts.

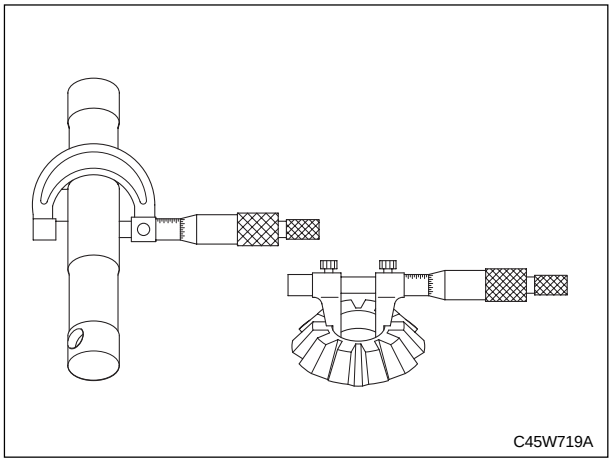

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Item	Factory spec.	Allowable limit
Clearance between differential case (27 bevel gear) and differential side gear	0.040 ~ 0.074 mm 0.00167 ~ 0.00291 in.	0.35 mm 0.0138 in.

Item	Factory spec.	Allowable limit
Differential case bore I.D.	32.025 ~ 32.050 mm 1.26082 ~ 1.26181 in.	-
27 bevel gear bore I.D.	32.025 ~ 32.050 mm 1.26082 ~ 1.26181 in.	-
Differential side gear O.D.	31.959 ~ 31.975 mm 1.25822 ~ 1.25885 in.	-

B. CLEARANCE BETWEEN PINION SHAFT AND DIFFERENTIAL PINION

1. Measure the pinion shaft O.D.
2. Measure the differential pinion I.D. and calculate the clearance.
3. If the clearance exceeds the allowable limit, replace faulty parts.


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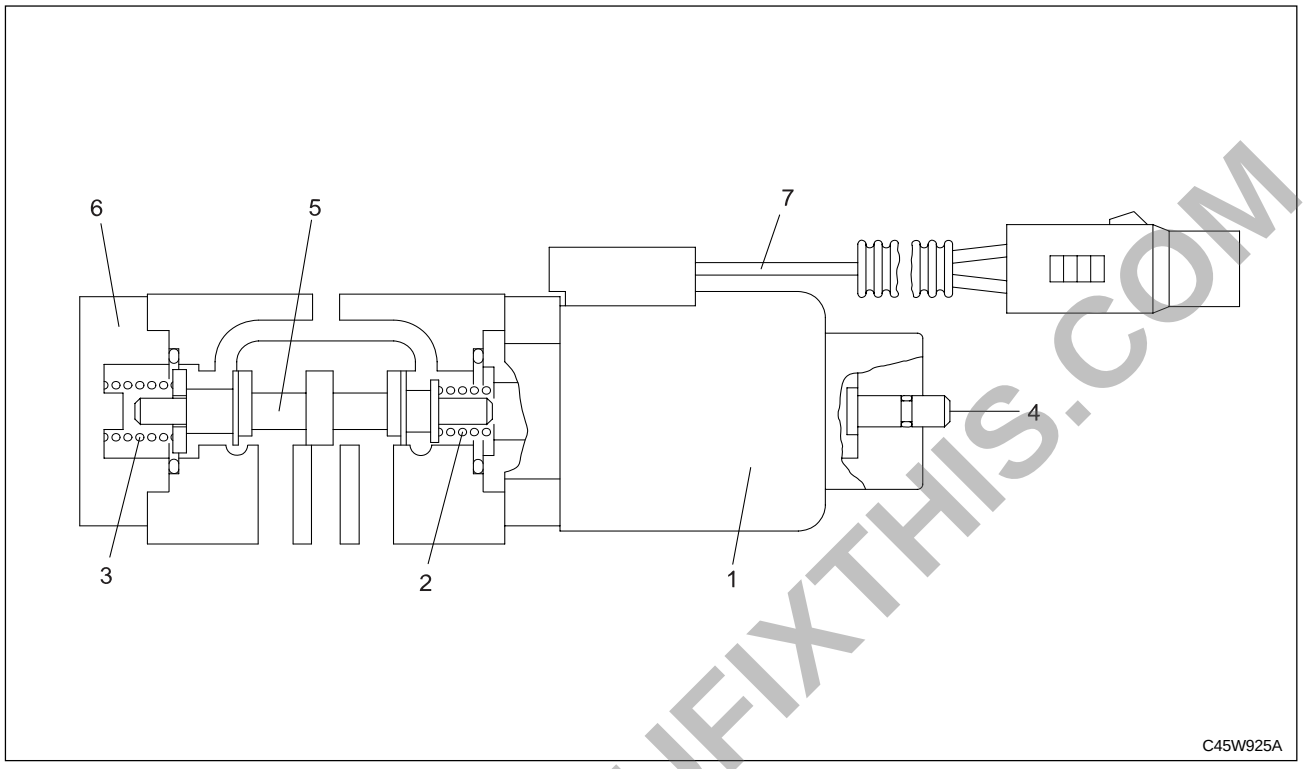
Item	Factory spec.	Allowable limit
Clearance between pinion shaft and differential pinion	0.016 ~ 0.052 mm 0.00063 ~ 0.00204 in.	0.25 mm 0.0098 in.

Item	Factory spec.	Allowable limit
Pinion shaft O.D.	15.966 ~ 15.984 mm 0.62858 ~ 0.62929 in.	-
Differential pinion I.D.	16.000 ~ 16.018 mm 0.62992 ~ 0.63063 in.	-

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C. SOLENOID VALVE



(1) Solenoid Ass'y
(2) Spring
(3) Spring
(4) Spool
(5) Spool
(6) Plug
(7) Wire Lead

Spool

1. Loosen the bolt on the cover (1) and remove the cover.
2. Take out the spring and spool.

CAUTION

- ***Hold the body to Disassembling the cover (however, do not hold the solenoid section).***

Solenoid

1. Loosen the sectional end of the solenoid with a spanner.
2. Take out the solenoid ass'y and the spring.

CAUTION

- ***Be careful of the direction of the solenoid lead line when assembling.***

(When reassembling)

- Be careful of the direction of the spool when assembling.
- Apply oil sufficiently to the spool body after washed, not to cause damage thereon when assembling.

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D. CHARGING.

IMPORTANT

- ***Refill the gas after gas has been released and vacuuming has been performed.***
- ***When refilling gas, do not start the engine and perform from the high pressure end first, and then start the engine and put in the prescribed amount.***

WARNING

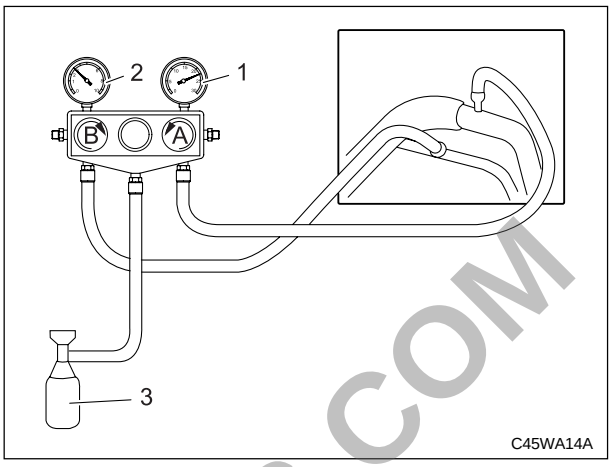
- ***When refilling gas on the high pressure end, do not start the engine. This could cause rupture from the back flow and as there are no refrigerants it could cause damage to the compressor.***

1. Open the high pressure valve and put in about……. of refrigerant.
2. Close the high pressure valve and check for any gas leakages.

WARNING

- ***Because the engine is turned on when refrigerant is put into the low pressure end, do not open the high pressure valve.***
- ***When replacing the service can, release the air from the charging hose (green).***

3. After checking that the high pressure valve is closed, start the engine and take it to about 2000rpm.
4. Open the interior door and adjust the temperature control lever to cool, and the fan switch to high.
5. Open the low pressure valve and put in refrigerant until the bubbles disappear from the receiver window.
6. When the refrigerant has been filled, close the low pressure valve and stop the engine.
7. Perform refrigerant leakage tests.
   - Refrigerant insertion quantity : 700g (1.54 lbs)
   - Manifold gauge pressure {when the exterior temperature in 30 degrees (86°F)}
   - High pressure : 14.5 ~ 15 kgf/cm^2 (1.42 ~ 1.47 Mpa, 206.2 ~ 213.3 psi)
   - Low pressure : 1.5 ~ 2.0 kgf/cm^2 (0.15 ~ 0.19 Mpa, 21.3 ~ 28.4 psi)



(1) High Pressure Gauge
(2) Low Pressure Gauge
(3) Refrigerant
(A) High pressure (open)
(B) Low pressure (close)

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