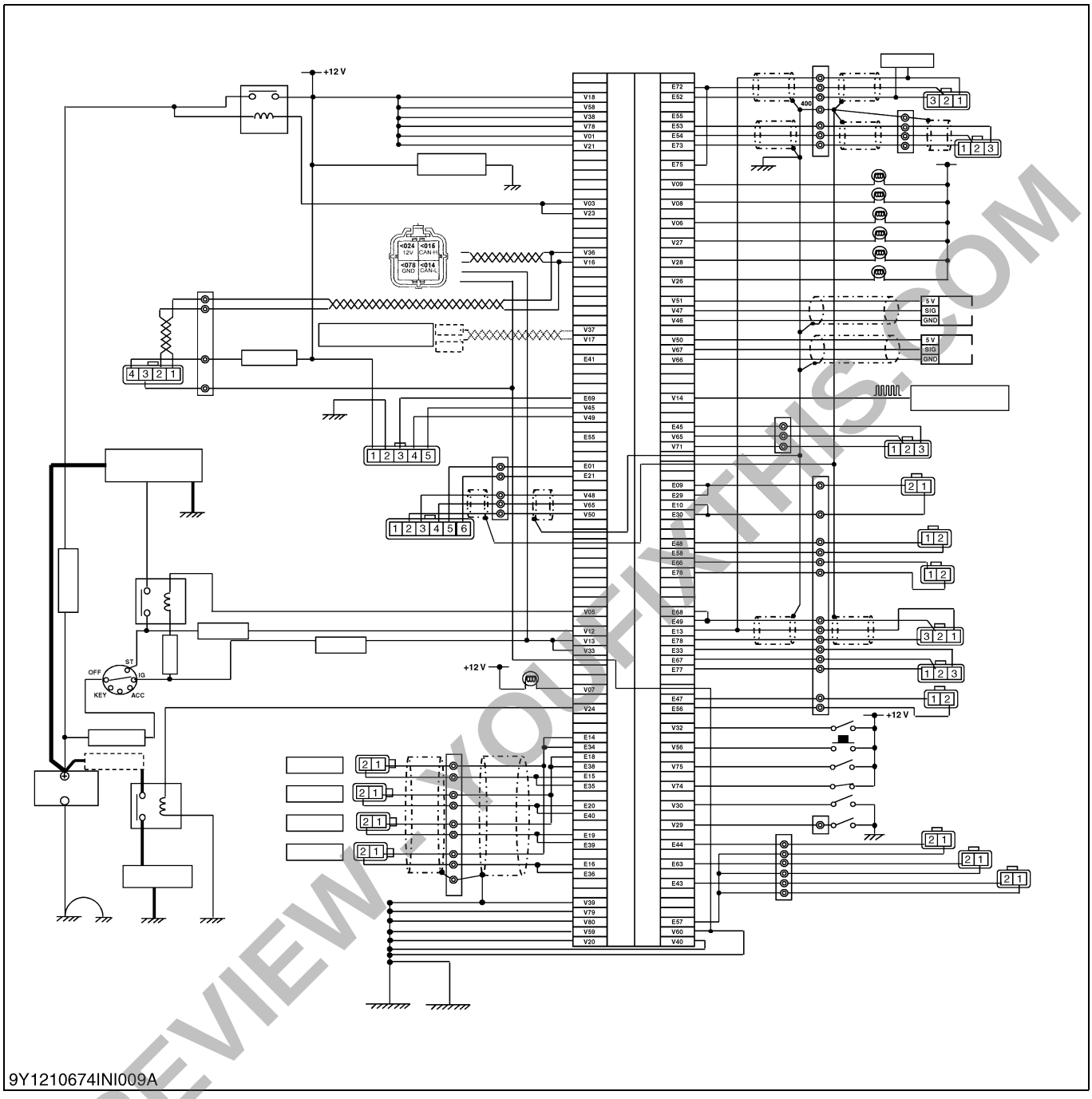
[4] SYSTEM WIRING DIAGRAM



9Y1210674INI009A

(1) Main Relay
(2) Fuel Feed Pump
(3) CAN1 Connector (For Service)
(4) CAN2 Connector (For OEM Machine)
(5) EGR Valve
(6) Starter
(7) Air Flow Sensor
(8) Intake Throttle Valve
(9) Starter Relay
(10) Battery
(11) Glow Relay
(12) Glow Plug
(13) Injector 1
(14) Injector 2
(15) Injector 3
(16) Injector 4
(17) Crankshaft Position Sensor
(18) Camshaft Position Sensor
(19) Accel Sensor 1
(20) Accel Sensor 2
(21) Vehicle Speed Sensor
(22) DPF Differential Pressure Sensor (ΔP)
(23) SCV (Suction Control Valve)
(24) Fuel Temperature Sensor
(25) Coolant Temperature Sensor
(26) Rail Pressure Sensor
(27) Boost Sensor
(28) Intake Air Temperature Sensor
(29) Stop Switch
(30) Parked Regeneration Switch
(31) Parking Switch
(32) Regeneration Inhibit Switch
(33) Neutral Switch
(34) DPF Temperature Sensor (T_0)
(35) DPF Temperature Sensor (T_1)
(36) DPF Temperature Sensor (T_2)

DPF: Diesel Particulate Filter

■ **NOTE**

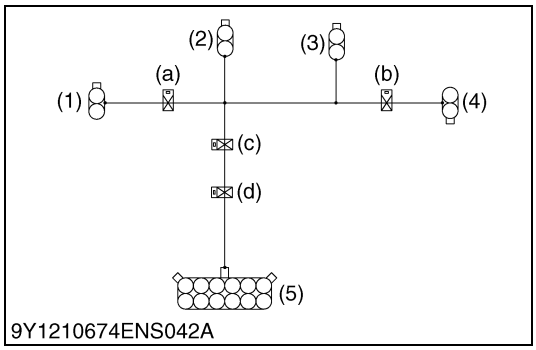
- **Terminal names and terminal numbers marked with * have become invalid.**

9Y1210674INI0013US0

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[B] Injector Intermediate Harness (Engine Side Harness)
V2607-CR-E4B / V2607-CR-TE4B / V3307-CR-TE4B



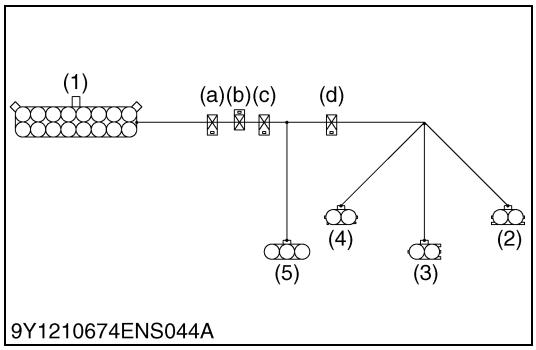
9Y1210674ENS042A

(1) Injector #4 Connector (2P)
(2) Injector #3 Connector (2P)
(3) Injector #2 Connector (2P)
(4) Injector #1 Connector (2P)
(5) Injector Intermediate Connector (12P)

(a) to (d): Clamp

9Y1210674ENS0114US0

[C] DPF Intermediate Harness (Engine Side Harness)
V2607-CR-E4B / V2607-CR-TE4B / V3307-CR-TE4B

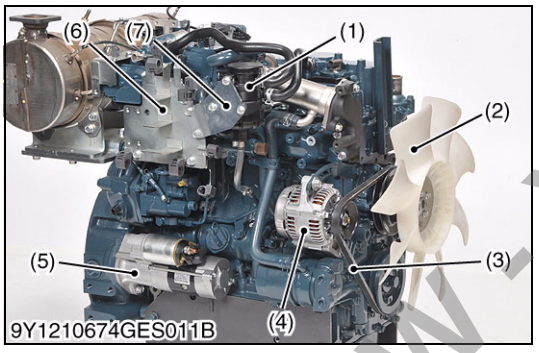


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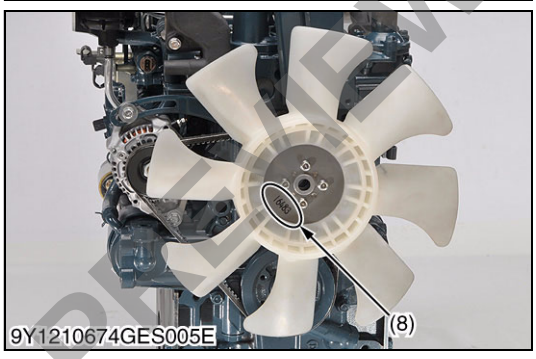
(1) DPF Intermediate Connector (16P)
(2) DPF Temperature Sensor (T_0) (2P)
(3) DPF Temperature Sensor (T_1) (2P)
(4) DPF Temperature Sensor (T_2) (2P)
(5) Differential Pressure Sensor (ΔP) (3P)

(a) to (d): Clamp

9Y1210674ENS0115US0



9Y1210674GES011B



9Y1210674GES005E

Air Cleaner and Others

1. Remove the air cleaner.
2. Remove the fan (2), fan belt (3), alternator (4) and starter (5).
3. Remove the oil separator (1), wire harness bracket (6) and oil separator bracket (7).

(When reassembling)

- Examine for cracks on the belt surface.

■ **IMPORTANT**

- **After you assemble the fan belt, adjust the fan belt tension.**
- **Do not put the fan in the incorrect direction. Install the fan so that the parts number (8) of the fan is toward the front side. (radiator side)**

(1) Oil Separator
(2) Fan
(3) Fan Belt
(4) Alternator
(5) Starter
(6) Wire Harness Bracket
(7) Oil Separator Bracket
(8) Parts Number

9Y1210674ENS0029US0

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[2] TIGHTENING TORQUES OF SCREWS, BOLTS AND NUTS FOR SPECIAL USE

■ **NOTE**

- **For the screws, bolts and nuts with the mark "*", apply engine oil to their threads and seats before you tighten.**
- **The alphabet "M" in Dimension × Pitch shows that the screw, bolt or nut dimensions are in the metric system. The dimension is the nominal external diameter in mm of the threads. The pitch is the nominal distance in mm between 2 threads.**

Item	Dimension × Pitch	N·m	kgf·m	lbf·ft
Glow lead mounting nut	M4 × 0.7	0.98 to 1.7	0.10 to 0.18	0.73 to 1.3
Glow plug	M8 × 1.0	7.7 to 9.3	0.78 to 0.95	5.7 to 6.8
Cylinder head cover screw	M6 × 1.0	9.81 to 11.2	1.00 to 1.15	7.24 to 8.31
Injection pipe retaining nut	M12 × 1.5	30 to 40	3.1 to 4.0	23 to 29
Oil switch taper screw	R 1/8	15 to 19	1.5 to 2.0	11 to 14
Supply pump mounting nut	M8 × 1.25	24 to 27	2.4 to 2.8	18 to 20
Injector clamp nut	M8 × 1.25	24 to 27	2.4 to 2.8	18 to 20
Supply pump gear mounting nut	M14 × 1.5	59 to 68	6.0 to 7.0	44 to 50
Overflow pipe joint screw (Cylinder head side)	M8	11 to 15	1.2 to 1.5	8.2 to 11
Overflow pipe joint screw (Common rail side)	M10	7.9 to 12	0.80 to 1.3	5.8 to 9.4
Overflow pipe joint screw (Supply pump side)	M10	7.9 to 12	0.80 to 1.3	5.8 to 9.4
Common rail mounting screw	M8 × 1.25	24 to 27	2.4 to 2.8	18 to 20
Coolant temperature sensor	–	16 to 19	1.6 to 2.0	12 to 14
Camshaft position sensor mounting screw	–	8.0 to 12	0.82 to 1.2	5.9 to 8.8
Crankshaft position sensor mounting screw	–	8.0 to 12	0.82 to 1.2	5.9 to 8.8
Intake air temperature sensor	–	30 to 39	3.0 to 4.0	22 to 28
Boost sensor mounting screw (Turbocharger model)	M6 × 1.0	4 to 5	0.4 to 0.6	3 to 4
Air flow sensor mounting screw	M4 × 0.7	1.17 to 1.77	0.120 to 0.180	0.863 to 1.30
Idle gear mounting screw	M10 × 1.25	49 to 55	5.0 to 5.7	37 to 41
Mounting screw of crankshaft position pulsar gear	M6 × 1.0	9.81 to 11.2	1.00 to 1.15	7.24 to 8.31
Muffler full assembly (DPF) mounting screw	M10 × 1.25	49 to 55	5.0 to 5.7	37 to 41
DPF bracket mounting screw	M12 × 1.25	78 to 90	7.9 to 9.2	58 to 66
Temperature sensor	M12 × 1.25	25 to 34	2.5 to 3.5	18 to 25
Differential pressure pipe	M12 × 1.0	16 to 22	1.6 to 2.3	12 to 16
Reed valve of EGR valve	M6 × 1.0	9.81 to 11.2	1.00 to 1.15	7.24 to 8.31
Exhaust manifold mounting nut	M8 × 1.25	30 to 34	3.0 to 3.5	22 to 25
EGR cooler flange screw	M8 × 1.25	24 to 27	2.4 to 2.8	18 to 20
Case of oil separator	–	9.50 to 10.5	0.969 to 1.07	7.01 to 7.74
Drain plug	M22 × 1.5	45 to 53	4.5 to 5.5	33 to 39

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1. TROUBLESHOOTING

This "TROUBLESHOOTING" shows only mechanical failures. The failures related to the common rail system (CRS), refer to the diagnosis manual (DM) for common rail system engine (9Y120-01990).

Symptom	Probable Cause	Solution	Reference Page
The engine does not start	No fuel	Fill up the fuel	–
	Air in the fuel system	Bleed the air	–
	Water in the fuel system	Change the fuel and repair or replace the fuel system	G-14
	The fuel pump is defective	Replace	–
	The fuel hose is clogged	Clean or replace	G-14
	The fuel filter is clogged	Replace	G-17
	The viscosity of fuel at low temperature is too high	Replace the specified fuel	I-5, G-8
	The cetane number of fuel is low	Replace the specified fuel	I-5, G-8
	Fuel leakage because of loose injection pipe retaining nut	Tighten the retaining nut	1-S38
	The injector is clogged	Replace	G-20, 1-S41
	The supply pump is defective	Replace	1-S48
	Seizure of the crankshaft, camshaft, piston or bearing	Repair or replace	–
	Compression leakage from the cylinder	Replace the head gasket Tighten the cylinder head screw	1-S44, 1-S45, 1-S46
	Incorrect valve timing	Examine the timing gear	1-S58, 1-S59
	Piston ring and cylinder are worn out	Replace	1-S86, 1-S87, 1-S95
	Incorrect valve clearance	Adjust valve clearance	1-S17
The starter does not operate	Discharged battery	Charge or replace	–
	Starter is defective	Repair or replace	1-S22
	The key switch is defective	Replace	–
	The connection of the wires is incorrect	Examine or correct	–

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2. SPECIFICATIONS

Model	V2607-CR-E4B	V2607-CR-TE4B	V3307-CR-TE4B
Number of Cylinder	4		
Engine Type	Vertical, water-cooled, 4-cycle DI diesel engine		
Bore × Stroke	87.0 × 110 mm (3.43 × 4.33 in.)		94.0 × 120 mm (3.70 × 4.72 in.)
Total Displacement	2615 cm^3 (159.6 cu.in.)		3331 cm^3 (203.3 cu.in.)
SAE Net Continuous	34.3 kW / 2700 min^{-1} (rpm) (46.0 HP / 2700 min^{-1} (rpm))	43.5 kW / 2700 min^{-1} (rpm) (58.3 HP / 2700 min^{-1} (rpm))	45.6 kW / 2600 min^{-1} (rpm) (61.2 HP / 2600 min^{-1} (rpm))
SAE Gross Intermittent	42.0 kW / 2700min^{-1} (rpm) (56.3 HP / 2700 min^{-1} (rpm))	53.0 kW / 2700min^{-1} (rpm) (71.1 HP / 2700 min^{-1} (rpm))	55.4 kW / 2600min^{-1} (rpm) (74.3 HP / 2600 min^{-1} (rpm))
Maximum Bare Speed	2900 min^{-1} (rpm)		2800 min^{-1} (rpm)
Minimum Bare Idling Speed	800 min^{-1} (rpm)		
Combustion Chamber	Reentrant Type, Center Direct Injection Type (E-CDIS)		
Fuel Injection Pump	DENSO Common Rail System		
Governor			
Injector			
Fuel Injection Timing			
Fuel Injection Pressure			
Direction of Rotation	Counter-clockwise (Viewed from flywheel side)		
Firing Order	1-3-4-2		
Compression Ratio	18.0	16.8	17.5
Lubricating System	Forced lubrication by trochoid pump		
Oil Pressure Indicating	Electrical Type Switch		
Lubricating Filter	Full Flow Paper Filter (Cartridge Type)		
Cooling System	Pressurized radiator, forced circulation with water pump		
Starting System	Electric Starting with Starter		
Starter Motor	12 V, 2.5 kW		12 V, 3.0 kW
Starting Support Device	By Glow Plug in Combustion Chamber		
EGR	External EGR (EGR Cooler + Electric EGR Valve + Reed Valve)		
Battery	12 V, 92 AH equivalent		12 V, 108 AH equivalent
Charging Alternator	12 V, 720 W		
Fuel	Diesel Fuel No. 2-D S15, see page G-8.		
Lubricating Oil	Class CJ-4 lubricating oil as per API classification is recommended. For details on recommended lubricating oils, see page G-8.		
Lubricating Oil Capacity	10.2 L (2.69 U.S.gals)		11.2 L (2.96 U.S.gals)
Weight (Dry)	267 kg (589 lbs)	272 kg (600 lbs)	305 kg (672 lbs)

- The specification described above is of the standard engine of each model.
- Conversion Formula : HP = 0.746 kW, PS = 0.7355 kW

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4. MAINTENANCE CHECK LIST

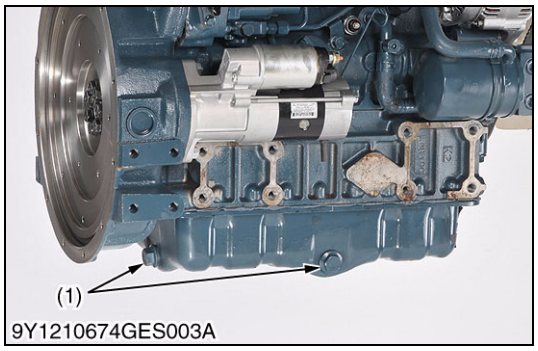
To make sure that the engine operates safely for a long time, refer to the table below to do regular inspections.

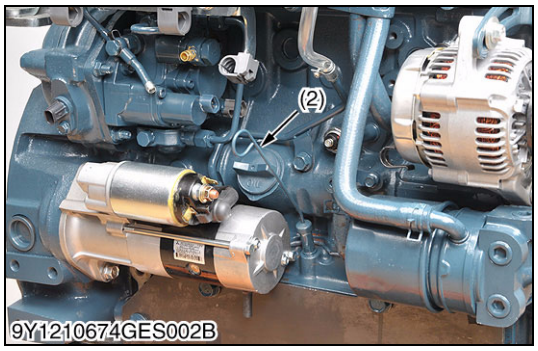
Inspection Item		Service Interval									
		Daily	Initial 50 hrs	Every 50 hrs	Every 250 hrs	Every 500 hrs	Every 1000 hrs	Every 1500 hrs	Every 3000 hrs	Every 1 year	Every 2 years
	Check of engine oil level	❍									
	Check of fuel level	❍									
	Check of coolant level	❍									
	Check of fan belt	❍									
	Check of fuel hoses and clamp bands			❍							
	Check of draining of water separator			❍							
	Check of radiator hoses and clamp bands				❍						
	Cleaning of air cleaner element (Replace the element after 6-times cleaning)				❍						
	Adjustment of fan belt tension				❍						
	Check of intake air line				❍						
	Change of engine oil		❍			❍					
	Replacement of oil filter cartridge		❍			❍					
★1	Replacement of fuel filter cartridge					❍					
	Cleaning of water separator					❍					
★2	Cleaning of fuel tank interior					❍					
★2	Cleaning of water jacket and radiator interior					❍					
★2	Replacement of fan belt					❍					❍
★2	Check of valve clearance						❍				
★2,★3	Check of injector							❍			
★2,★3	Check of EGR cooler							❍			
★3	Replacement of oil separator element							❍			
★2,★3	Check of turbocharger								❍		
★2,★3	Cleaning of DPF								❍		
★2,★3	Check of EGR system								❍		
★2	Replacement of air cleaner element									❍	
★2	Check of DPF differential pressure pipes and hoses									❍	
★2	Check of EGR piping									❍	
	Check of intake air line									❍	
	Check of exhaust manifold (Crack, gas leakage and mounting screw)									❍	
★2	Replacement of oil separator rubber hose										❍
★2	Replacement of rubber hose of DPF differential pressure sensor										❍
★2	Replacement of intake hose (After air flow sensor)										❍
★2	Replacement of pressure detection hose of boost sensor										❍
★2	Replacement of EGR cooler hose										❍
★2	Replacement of water hose										❍
★2	Replacement of lubricant hose										❍
	Change of radiator coolant (L.L.C.)										❍
★2	Replacement of radiator hoses and clamp bands										❍
★1,★2	Replacement of fuel hoses and clamps										❍
★2	Replacement of intake air line										❍

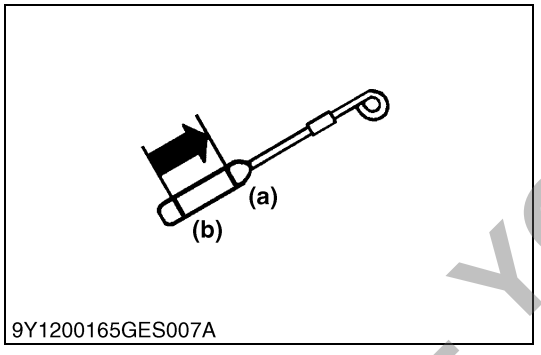
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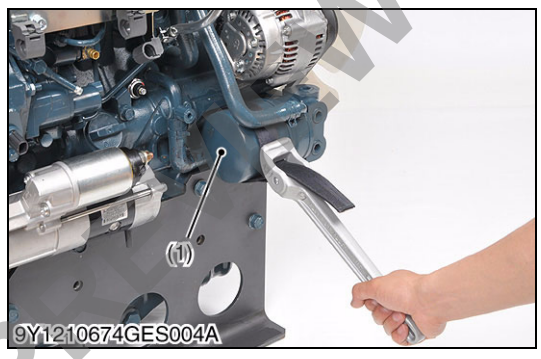
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[2] INITIAL 50 HOURS









Change of Engine Oil

CAUTION

- **Make sure that you stop the engine before you change the engine oil.**

1. Start and warm-up the engine for approximately 5 minutes.
2. Put an oil pan below the engine.
3. Remove the drain plug (1) at the bottom of the engine and drain the oil fully.
4. Tighten the drain plug (1).
5. Fill new oil until the upper line on the dipstick (2).

IMPORTANT

- **When you use an oil of different brand or viscosity from the previous, drain the remaining oil.**
- **Do not mix 2 different types of oil.**
- **Engine oil must have the properties of API classification CJ-4. Use the correct SAE Engine Oil by reference to the ambient temperature.**

Above 25 °C (77 °F)	SAE 30 or SAE 10W-30, SAE 15W-40
0 °C to 25 °C (32 °F to 77 °F)	SAE 20 or SAE 10W-30, SAE 15W-40
Below 0 °C (32 °F)	SAE 10W or SAE 10W-30, SAE 15W-40

Engine oil capacity	V2607-CR-E4B, V2607-CR-TE4B	10.2 L 2.69 U.S.gals
	V3307-CR-TE4B	11.2 L 2.96 U.S.gals

Tightening torque	Drain plug	45 to 53 N·m 4.5 to 5.5 kgf·m 33 to 39 lbf·ft

(1) Drain Plug
(2) Dipstick
(a) Upper Line
(b) Lower Line

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Replacement of Oil Filter Cartridge

CAUTION

- **Make sure that you stop the engine before you replace the oil filter cartridge.**

1. Remove the oil filter cartridge (1) with the filter wrench.
2. Apply a thin layer of oil on the new cartridge gasket.
3. Install the new cartridge by hand. Do not tighten too much because it can cause deformation of the rubber gasket.
4. After you replace the cartridge, the engine oil usually decrease by a small level. Make sure that the engine oil does not flow through the seal and read the oil level on the dipstick. Fill the engine oil until the specified level.

IMPORTANT

- **To prevent serious damage to the engine, replacement element must be highly efficient. Use only a KUBOTA genuine filter or its equivalent.**

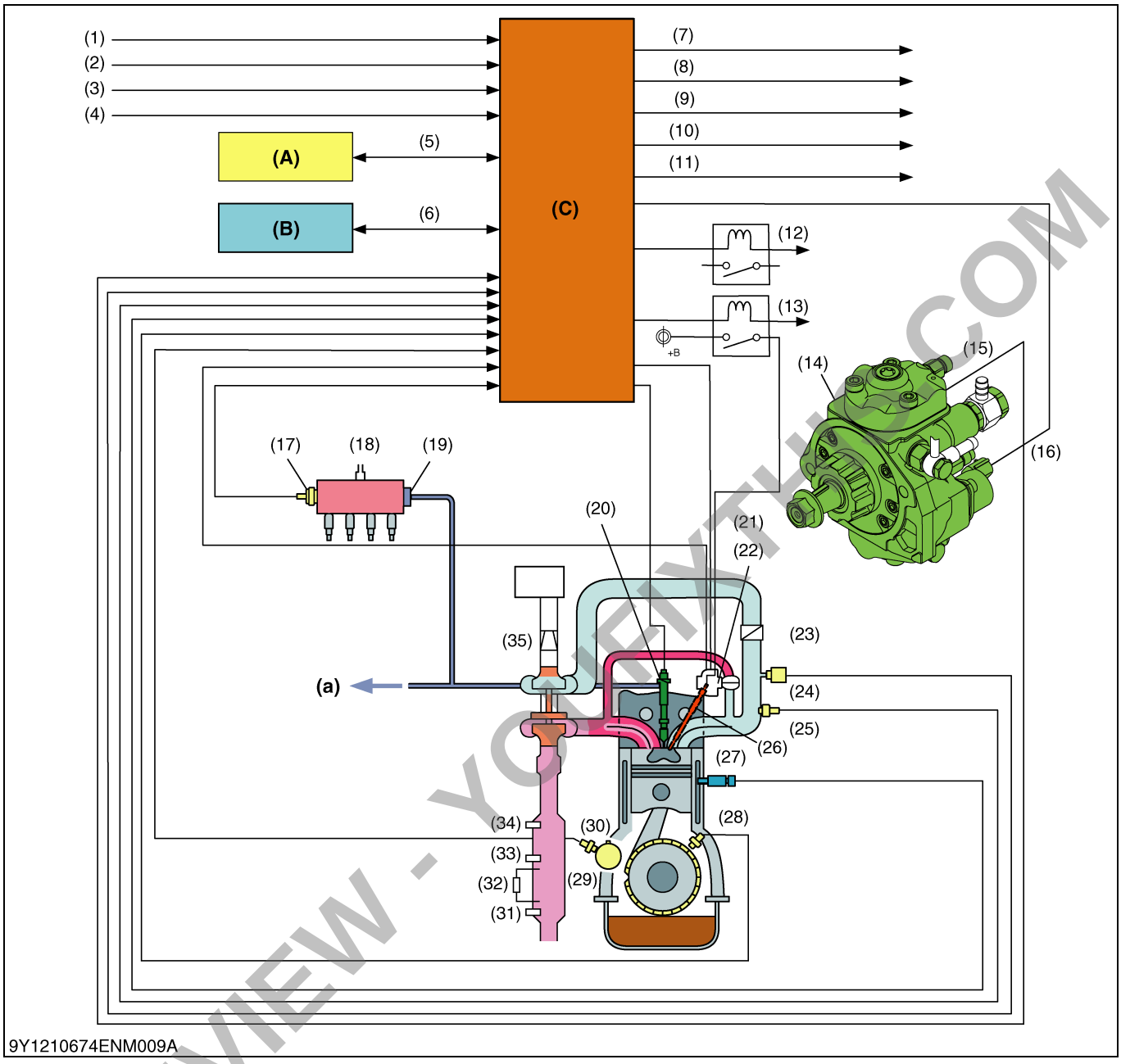
(1) Oil Filter Cartridge

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[5] ENGINE CONTROL SYSTEM



(1) Key Switch ON Signal
(2) Starter Switch Signal
(3) Emergency Stop Switch
(4) Oil Pressure Switch
(5) CAN Communication for OEM Machine (Accelerator Position Signal*, Neutral Switch*, Machine Travel Speed Signal*)
(6) CAN Communication for Service
(7) Engine Warning Light Signal
(8) Stop Lamp Signal
(9) Oil Pressure Warning Lamp Signal
(10) Overheat Lamp Signal
(11) Glow (Air Heater) Lamp Signal
(12) Starter Relay
(13) Glow Relay
(14) Supply Pump
(15) Fuel Temperature Sensor
(16) SCV (Suction Control Valve)
(17) Rail Pressure Sensor
(18) Rail
(19) Pressure Limiter
(20) Injector
(21) EGR DC Motor
(22) EGR Lift Sensor
(23) Intake Throttle Valve
(24) Intake Air Pressure Sensor
(25) Intake Air Temperature Sensor
(26) Glow Plug
(27) Coolant Temperature Sensor
(28) Crankshaft Position Sensor
(29) Diesel Particulate Filter (Hereinafter Referred To As The "DPF") Muffler
(30) Camshaft Position Sensor
(31) Temperature Sensor (DPF Outlet Exhaust Temperature) (T_2)
(32) Differential Pressure Sensor (DPF Differential Pressure) (ΔP)
(33) Temperature Sensor (DPF Inlet Exhaust Temperature) (T_1)
(34) Temperature Sensor (DOC Inlet Exhaust Temperature) (T_0)
(35) Air Flow Sensor

(A) CAN2 Connector (For OEM Machine)
(B) CAN1 Connector (For Service)
(C) Engine ECU
(a) To Fuel Tank

■ **NOTE**
- **The signals marked with * are CAN communication.**

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WSM

WORKSHOP MANUAL
DIESEL ENGINE

V2607-CR-E4B,
V2607-CR-TE4B,
V3307-CR-TE4B

Kubota

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KiSC issued 12, 2012 A

INFORMATION

CONTENTS

1. SAFETY FIRST I-1
2. SPECIFICATIONS I-5
3. PERFORMANCE CURVES I-6
4. DIMENSIONS I-9
5. WIRING DIAGRAM I-12
   [1] ENGINE INTERMEDIATE HARNESS (ENGINE SIDE HARNESS) I-12
   [2] INJECTOR INTERMEDIATE HARNESS (ENGINE SIDE HARNESS) I-14
   [3] ECU INTERMEDIATE HARNESS (ONE SIDE HARNESS) I-15
   [4] SYSTEM WIRING DIAGRAM I-20

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1. SAFETY FIRST

⚠ 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 try to repair or use this unit.**

⚠ DANGER
- **Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.**

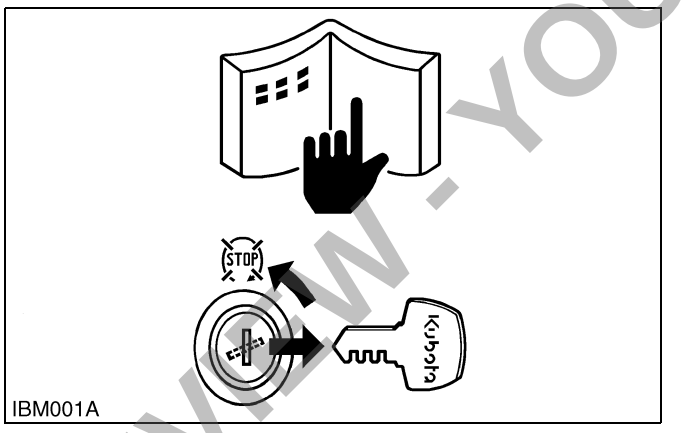
⚠ WARNING
- **Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.**

⚠ CAUTION
- **Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.**

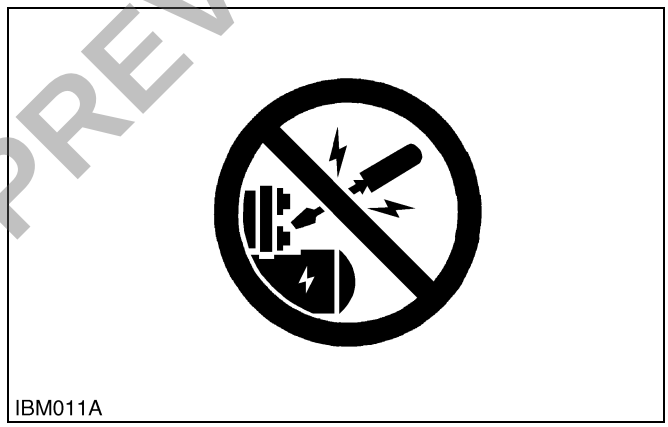
■ IMPORTANT
- **Indicates that equipment or property damage could result if instructions are not followed.**

■ NOTE
- **Gives helpful information.**

WSM000001INI0001US1



IBM001A


IBM011A

BEFORE YOU START SERVICE

- Read all instructions and safety instructions in this manual and on your engine safety decals.
- Clean the work area and engine.
- Park the machine on a stable and level ground.
- Let the temperature of the engine decrease before you start a job.
- Stop the engine, then remove the key.
- Disconnect the battery negative cable.
- Hang a **"DO NOT OPERATE"** tag in the operator station.

WSM000001INI0002US0

START SAFELY

- Do not do the procedures below when you start the engine.
  - short across starter terminals
  - bypass the safety start switch
- Do not make unauthorized modifications to the engine. This can cause damage and decrease the engine life.

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