

HOW TO READ THIS MANUAL

This manual consists of the following parts:

- Specifications
- Structure and Operation
- Troubleshooting
- General Inspection and Adjustment
- Service procedures

General Inspection and Adjustment

- Procedures for inspection and adjustment of individual parts and assemblies as mounted on the machine are described including specific items to check and adjust. Specified or otherwise, inspection should be performed for looseness, play, backlash, crack, damage, etc.

Service procedure


- Procedures for servicing components and parts off the machine are described centering on key points in their removal, installation, disassembly, reassembly, inspection, etc.


Inspection


- Check items subject to “acceptable/unacceptable” judgement on the basis of service standards are all given.
- Some routine visual checks and cleaning of some reused parts are not described but must always be included in actual service work.

Caution

- This service manual contains important cautionary instructions and supplementary information under the following four headings which identify the nature of the instructions and information:

DANGER  —————
Precautions that should be taken in handling potentially dangerous substances such as battery fluid and coolant additives.

WARNING  —————
Precautionary instructions, which, if not observed, could result in serious injury or death.

CAUTION  —————
Precautionary instructions, which, if not observed, may result in damage to or destruction of equipment or parts.

NOTE —————
Suggestions or supplementary information for more efficient use of equipment or better understandings.

Terms and Units

- Front and rear
The forward running direction of the machine is referred to as the front and the reverse running direction is referred to as the rear.
- Left and right
Left hand side and right hand side, when facing the forward running direction of the machine, are respectively left and right.

Standard value

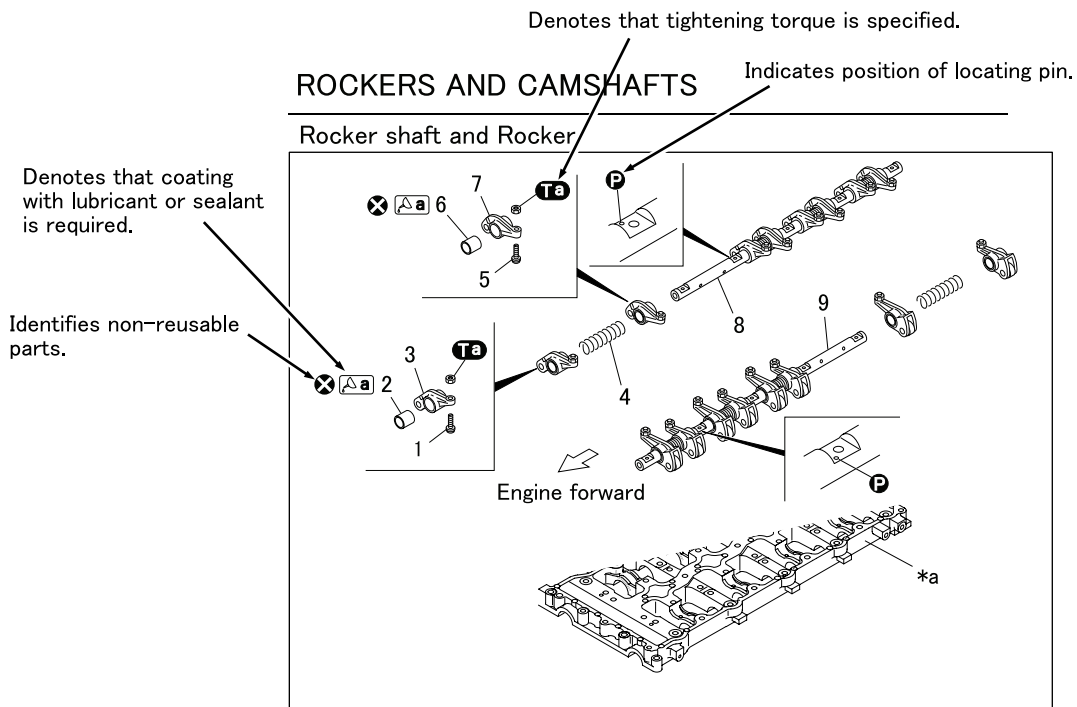
- Standard value dimensions in designs indicating: the design dimensions of individual parts, the standard clearance between two parts when assembled, and the standard value for an assembly part, as the case may be.

Limit

- When the value of a part exceeds this, it is no longer serviceable in respect of performance and strength and must be replaced or repaired.

HOW TO READ THIS MANUAL

Symbol	Denotation	Application	Remarks
Ta	Tightening torque	Parts not tightened to standard torques (standard torques specified where necessary for servicing)	Specified values shown in table See Table of Standard Tightening Torques for parts for which no tightening torques are specified.
P	Locating pin	Parts to be positioned for installation	
X	Non-reusable parts	Parts not to be reused	
△a	Lubricant and/or sealant	Parts to be coated with lubricant or sealant for assembly or installation	Necessary lubricant and/or sealant, quantity required, etc. are specified in table.
C a	Special tool	Parts for which special tools are required for service operation	Tool name/shape and part number are shown in table.
*a	Associated part	Parts associated with those removed/disassembled for servicing	



- Disassembly sequence
 - 1 Adjusting screw
 - 2 Rocker bushing
 - 3 Short rocker
 - 4 Rocker shaft spring
 - 5 Adjusting screw
 - 6 Rocker bushing
 - 7 Long rocker
 - 8 Exhaust rocker shaft
 - 9 Intake rocker shaft
 - Assembly sequence

Follow the disassembly sequence in reverse.
- *a: Camshaft frame
P: Hole for camshaft frame locating pin
X: Non-reusable parts

CAUTION **△**

The short rockers and long rockers must be installed alternately. Be aware that the order for the intake rockers is different from the order of installation for the exhaust rockers.

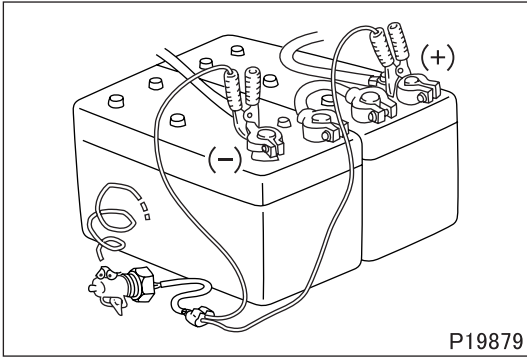
"Wet" is indicated when part is to be tightened with oil or grease applied to its threaded section.

These location numbers correspond with disassembly sequence numbers.

Location	Maintenance item	Standard value	Limit	Remedy
2, 6, 8, 9	Rocker bushing-to-rocker shaft clearance	0.01 to 0.08	0.12	Replace
3, 7	Rocker (roller) radial play	0.038 to 0.100	-	Replace

Mark	Parts to be tightened	Tightening torque	Remarks
Ta	Lock nut (adjusting screw stopping)	11.2 [1.14]	Wet

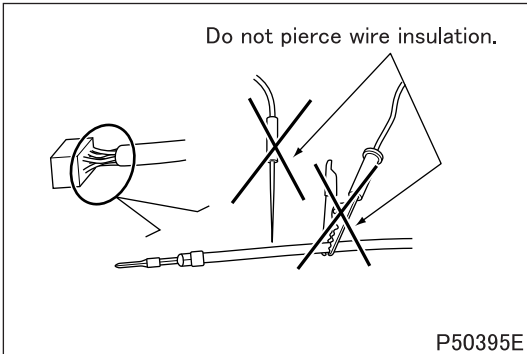
Mark	Points of application	Specified lubricant and/or sealant	Quantity
△a	Rocker bushing inner surface	Engine oil	As required



- When applying a voltage to a part for inspection purposes, check that the (+) and (-) cables are connected properly then gradually increase the voltage from zero. Do not exceed the specified voltage.

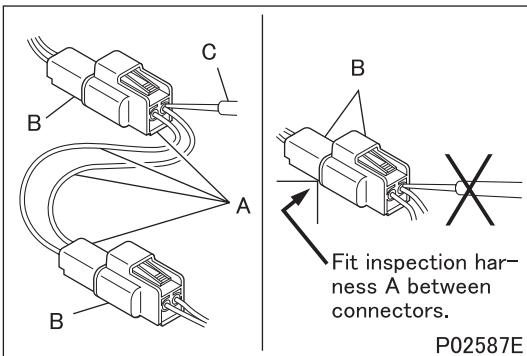
Remember that control units and sensors do not necessarily operate on the battery voltage.

1. Handling Precautions for Electric Circuits



CAUTION

- Do not pierce wire insulation with test probes or alligator clips when performing electrical inspections. Piercing the wire harness will cause corrosion.

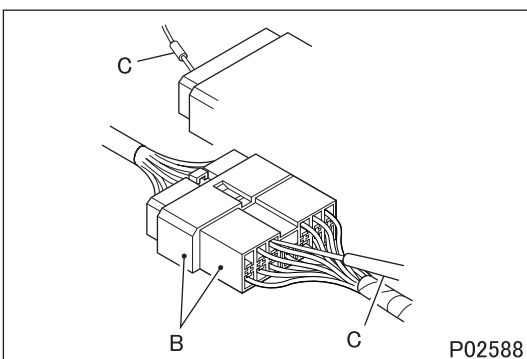


1.1 Inspection of harnesses

(1) Inspections with connectors fitted together

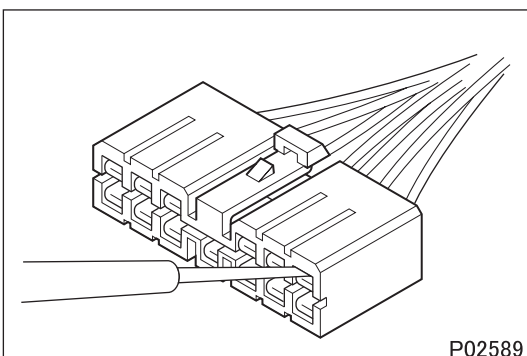
(1.1) Waterproof connectors

- Connect an inspection harness and connector **A** between the connectors **B** of the circuit to be inspected. Perform the inspection by applying a test probe **C** to the connectors of the inspection harness. Do not insert the test probe **C** into the wire-entry sides of the waterproof connectors since this would damage their waterproof seals and lead to rust.



(1.2) Non-waterproof connectors

- Perform the inspection by inserting a test probe **C** into the wire-entry sides of the connectors. An extra-narrow probe is required for control unit connectors, which are smaller than other types of connector. Do not force a regular-size probe into control unit connectors since this would cause damage.



(2) Inspections with connectors separated

(2.1) Inspections on female terminals

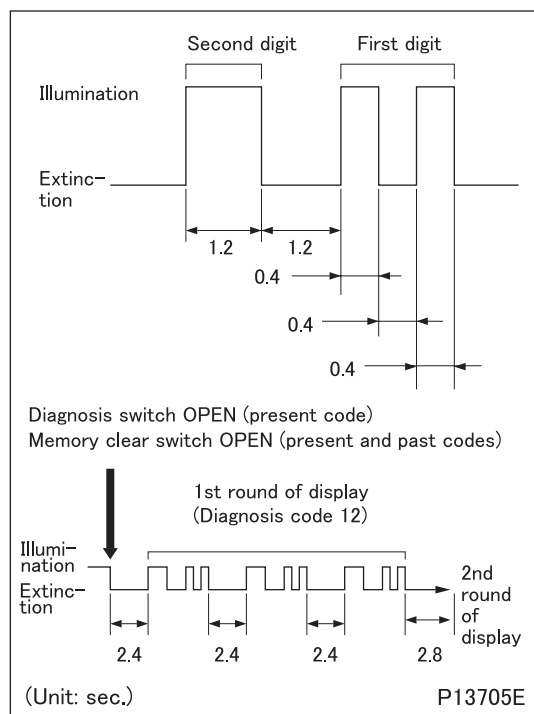
- Perform the inspection by carefully inserting a test probe into the terminals. Do not force the test probe into the terminals since this could deform them and cause poor connections.

2. Use of Blinking Warning Lamp for Diagnostic Code

- Using the diagnostic and memory clear switches, display diagnostic codes.

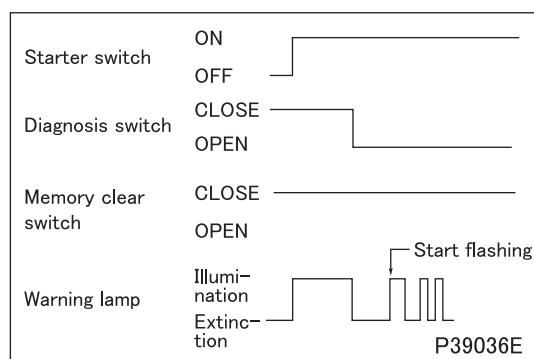
CAUTION

- Opening the memory clear switch followed by its reconnection will erase the stored diagnostic codes from the memory. To avoid inadvertently erasing necessary codes, be sure to read well the procedure described below before handling diagnostic codes.



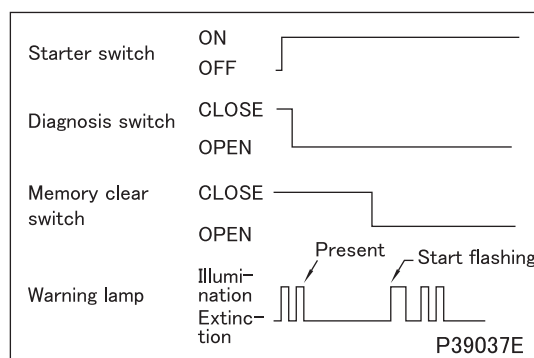
2.1 Reading diagnostic codes

- To read a diagnostic code, observe how many times the warning lamp flashes and how long each illumination lasts.
- The duration of illumination differs between the first and second digits.
 - Second digit: 1.2 sec.
 - First digit: 0.4 sec.
- A diagnostic code consists of the flashing of second digit and the flashing of first digit in that order. If a diagnostic code has "0" in the second digit, only the first digit will be displayed.
- The same diagnostic code will be displayed 3 times in a row before moving to the display of the next code.
- After the last diagnostic code is displayed, the first code will be displayed again 3 times in a row and then the subsequent codes. This will be repeated.



2.2 Present diagnostic codes

- Turn the starter switch ON.
- Remove the diagnostic switch.
- Diagnostic codes will be displayed (flashing of the warning lamp).
- When the diagnostic switch is connected, electronic control unit will immediately stop (terminate) displaying diagnostic codes.









2.3 Present and past diagnostic codes


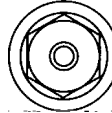

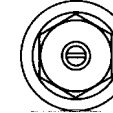


- Turn the starter switch to the ON position.
- Open the diagnostic switch.
- Open the memory clear switch.
- The corresponding warning lamp will display diagnostic codes by flashing.
- Turn the starter switch to the OFF position, connect the memory clear switch and then connect the diagnostic switch. The electronic control unit terminates (exits) the diagnostic code displaying mode.

- Use specified bolts and nuts. Tighten them to the torques shown below as appropriate, unless otherwise specified.
- Threads and bearing surfaces shall be dry.
- If the mating nut and bolt (or stud bolt) are different in level of strength, tighten them to the torque specified for the bolt.

Hexagon Head Bolts and Stud Bolts (Unit: N·m {kgf·m})

Strength	4T		7T		8T	
Identification symbol						
Nominal diameter	(stud)		(stud)		(stud)	02154
M5	2 to 3 {0.2 to 0.3}	—	4 to 6 {0.4 to 0.6}	—	5 to 7 {0.5 to 0.7}	—
M6	4 to 6 {0.4 to 0.6}	—	7 to 10 {0.7 to 1.0}	—	8 to 12 {0.8 to 1.2}	—
M8	9 to 13 {0.9 to 1.3}	—	16 to 24 {1.7 to 2.5}	—	19 to 28 {2.0 to 2.9}	—
M10	18 to 27 {1.8 to 2.7}	17 to 25 {1.8 to 2.6}	34 to 50 {3.5 to 5.1}	32 to 48 {3.3 to 4.9}	45 to 60 {4.5 to 6.0}	37 to 55 {3.8 to 5.7}
M12	34 to 50 {3.4 to 5.1}	31 to 45 {3.1 to 4.6}	70 to 90 {7.0 to 9.5}	65 to 85 {6.5 to 8.5}	80 to 105 {8.5 to 11}	75 to 95 {7.5 to 10}
M14	60 to 80 {6.0 to 8.0}	55 to 75 {5.5 to 7.5}	110 to 150 {11 to 15}	100 to 140 {11 to 14}	130 to 170 {13 to 17}	120 to 160 {12 to 16}
M16	90 to 120 {9 to 12}	90 to 110 {9 to 11}	170 to 220 {17 to 23}	160 to 210 {16 to 21}	200 to 260 {20 to 27}	190 to 240 {19 to 25}
M18	130 to 170 {14 to 18}	120 to 150 {12 to 16}	250 to 330 {25 to 33}	220 to 290 {23 to 30}	290 to 380 {30 to 39}	250 to 340 {26 to 35}
M20	180 to 240 {19 to 25}	170 to 220 {17 to 22}	340 to 460 {35 to 47}	310 to 410 {32 to 42}	400 to 530 {41 to 55}	360 to 480 {37 to 49}
M22	250 to 330 {25 to 33}	230 to 300 {23 to 30}	460 to 620 {47 to 63}	420 to 560 {43 to 57}	540 to 720 {55 to 73}	490 to 650 {50 to 67}
M24	320 to 430 {33 to 44}	290 to 380 {29 to 39}	600 to 810 {62 to 83}	540 to 720 {55 to 73}	700 to 940 {72 to 96}	620 to 830 {63 to 85}

Hexagon Head Flange Bolts (Unit: N·m {kgf·m})

Strength	4T		7T		8T	
Identification symbol						
Nominal diameter						02154
M6	4 to 6 {0.4 to 0.6}	—	8 to 12 {0.8 to 1.2}	—	10 to 14 {1.0 to 1.4}	—
M8	10 to 15 {1.0 to 1.5}	—	19 to 28 {2.0 to 2.9}	—	22 to 33 {2.3 to 3.3}	—
M10	21 to 31 {2.1 to 3.1}	20 to 29 {2.0 to 3.0}	45 to 55 {4.5 to 5.5}	37 to 54 {3.8 to 5.6}	50 to 65 {5.0 to 6.5}	50 to 60 {5.0 to 6.5}
M12	38 to 56 {3.8 to 5.5}	35 to 51 {3.5 to 5.2}	80 to 105 {8.0 to 10.5}	70 to 95 {7.5 to 9.5}	90 to 120 {9 to 12}	85 to 110 {8.5 to 11}


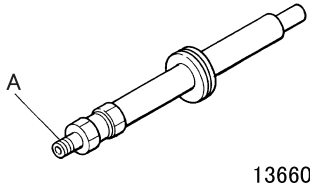
GENERAL INSPECTION AND ADJUSTMENT

1. Measuring Compression Pressure

Service standards

Location	Maintenance item	Standard value	Limit	Remedy
-	Compression pressure	Each cylinder (at 200 rpm) 2,940 kPa {30 kgf/cm ² }	1,960 kPa {20 kgf/cm ² }	Inspect
		Cylinder-to-cylinder pressure difference	-	390 kPa {4 kgf/cm ² } or less

Special tools (Unit: mm)

Mark	Tool name and shape	Part No.	Application		
	Compression gauge adapter 	MH063384	Measuring compression pressure		
	<table border="1" style="margin-left: 20px;"> <tr><td>A</td></tr> <tr><td>M16 × 18</td></tr> </table>	A	M16 × 18		
A					
M16 × 18					

- A drop in compression pressure can be used as a guide to determine when the engine should be overhauled.
- Measure the compression pressure at regular intervals. Keeping track of its transitions can provide a useful tool for troubleshooting. On new vehicles and vehicles with newly replaced parts, the compression pressure will be somewhat higher depending on the break-in condition of piston rings, valve seats, etc., but this will return to normal as the parts wear down.
- Before inspection, confirm that the engine oil, starter, and battery are in normal condition, and satisfy the following conditions.
 - Warm up the engine until the coolant temperature reaches approximately 75 to 85°C.
 - Turn off the lights and auxiliaries.
 - Place the lever in neutral.

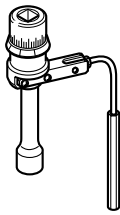
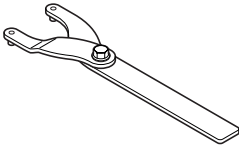
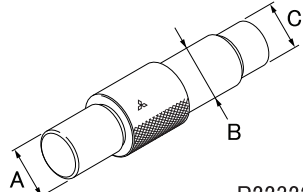
- Remove the fuse for fuel cut to prevent fuel from being injected while the engine is cranked using the starter.

CAUTION

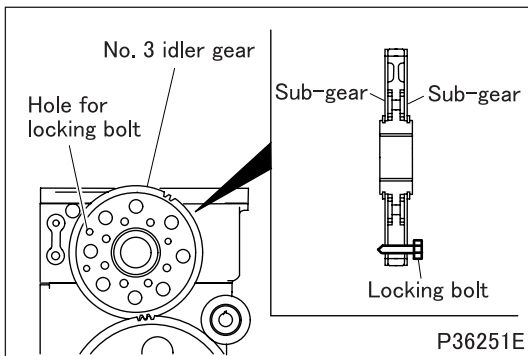
- **When cranking the engine, never shut off the power supplied to the engine electronic control unit by disconnecting the engine electronic control unit connector or other similar methods. If the engine is cranked with the power to the engine electronic control unit shut off, the supply pump will not be controlled by the electronic control unit, causing the supply pump to be malfunctioned.**

CYLINDER HEAD AND VALVE MECHANISM

Special tools (Unit: mm)

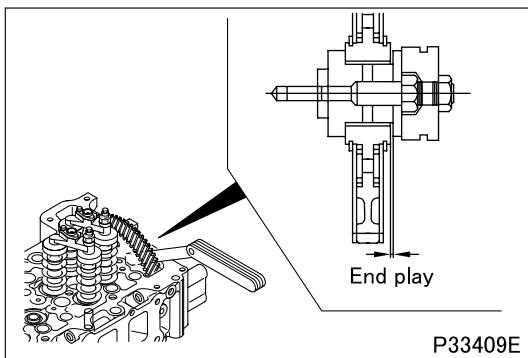
Mark	Tool name and shape	Part No.	Application						
Ca	Socket wrench 	MH063388 P01984	Installation of cylinder head						
Cb	Pin wrench arm 	MH063473 P36247	Assembly of No. 3 idler gear						
Cc	Idler gear push-puller <table border="1" data-bbox="231 828 502 907"> <thead> <tr> <th>A</th> <th>B</th> <th>C</th> </tr> </thead> <tbody> <tr> <td>φ 32</td> <td>φ 35</td> <td>φ 32</td> </tr> </tbody> </table> 	A	B	C	φ 32	φ 35	φ 32	MH061779 P22322	Removal and installation of No. 3 idler gear bushing
A	B	C							
φ 32	φ 35	φ 32							

◆ Work before removal ◆



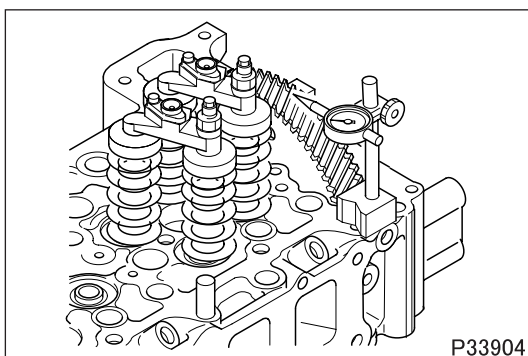
■ Locking sub-gears

- Before removing the No. 3 idler gear, install a locking bolt (M8 × 1.25 mm, length 20 mm) into the dedicated hole to lock the sub-gears.



■ Inspection: End play of No. 3 idler gear

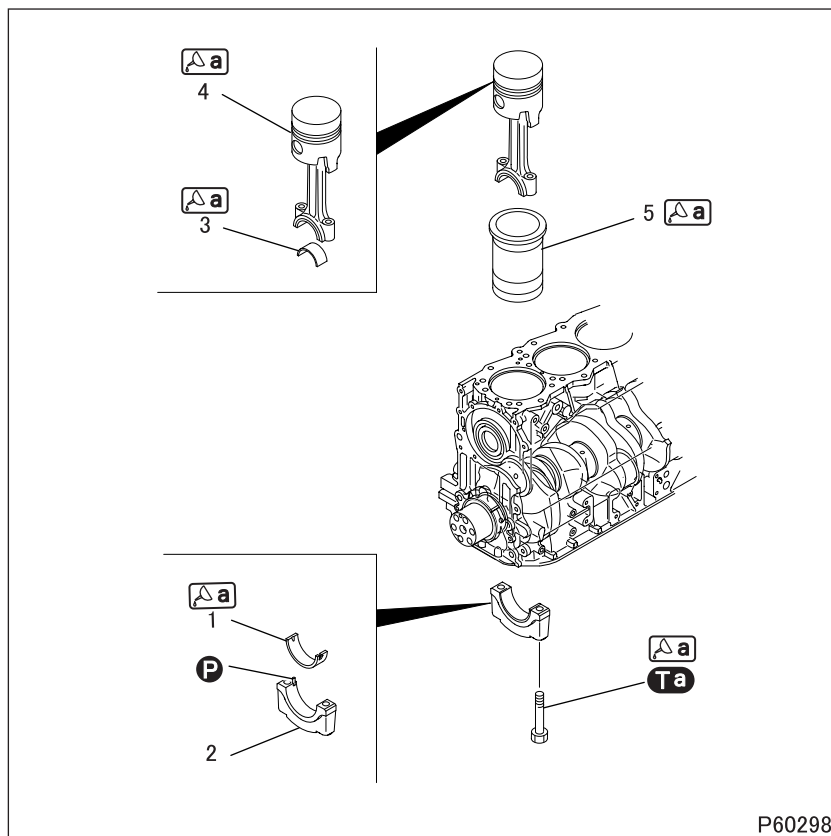
- If the measurement exceeds the limit, replace the defective part(s).



■ Inspection: Backlash between No. 2 and No. 3 idler gears

- If the measurement exceeds the limit, replace the defective part(s).

PISTON AND CONNECTING ROD, CYLINDER LINER



● Disassembly sequence

- 1 Lower connecting rod bearing
- 2 Connecting rod cap
- 3 Upper connecting rod bearing
- 4 Piston and connecting rod
(See later sections.)
- 5 Cylinder liner

P: Locating pin

● Assembly sequence

Follow the disassembly sequence in reverse.

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Service standards (Unit: mm)

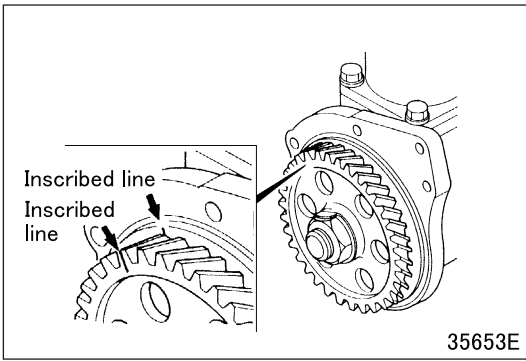
Location	Maintenance item	Standard value	Limit	Remedy
–	Piston projection from crankcase top surface	0.81 to 1.01	–	Inspect
–	Connecting rod end play	0.15 to 0.45	0.6	Inspect
1, 3	Connecting rod bearing	Oil clearance	0.034 to 0.093	0.2
		Span when free	–	Less than 74.5
4, 5	Piston and connecting rod-to-cylinder liner clearance	0.19 to 0.21	–	Replace
5	Cylinder liner	Flange projection	0.03 to 0.10	–
		Bore	φ118 to 118.03	φ118.25
		Out of roundness	0.03 or less	–

Tightening torque (Unit: N·m {kgf·m})

Mark	Parts to be tightened	Tightening torque	Remarks
Ta	Bolt (connecting rod cap installation)	29 {3} + 90° (± 5°)	Wet

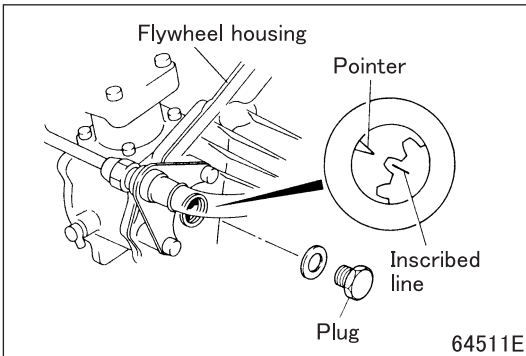
Lubricant and/or sealant

Mark	Points of application	Specified lubricant and/or sealant	Quantity
a	Threaded portion of connecting rod bolt	Engine oil	As required
	Inside surface of connecting rod bearing		
	Outside periphery of cylinder liner		
	Outside periphery of piston		

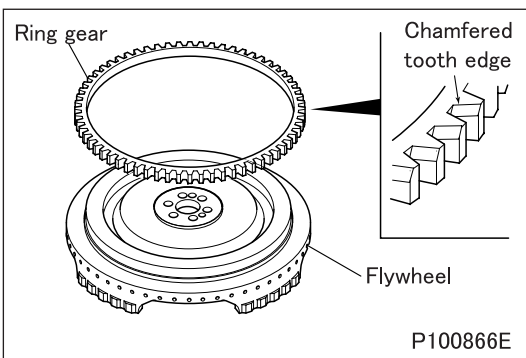


■ Installation: Air compressor

- Bring the No. 1 cylinder of the engine to top dead center of the compression stroke.
- After aligning inscribed lines with each other, install the air compressor to the flywheel housing.



- Remove the inspection plug and check if the inscribed line is aligned with the pointer.
- If not aligned, remove and refit the air compressor.

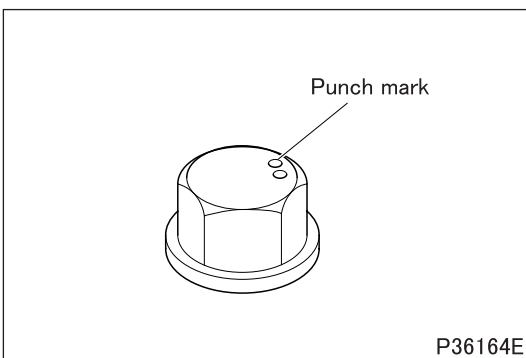


■ Installation: Ring gear

- Heat the ring gear evenly with a gas burner or the like until it reaches approximately 200°C.

WARNING ⚠

- **You may burn yourself if you touch the heated ring gear.**
- Fit the ring gear with the side having non-chamfered tooth edges toward the flywheel.



■ Installation: Flywheel

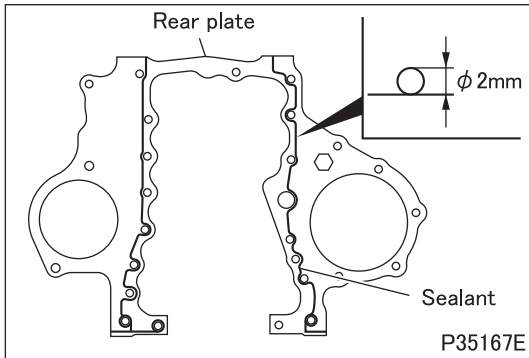
CAUTION ⚠

- **Before installing a bolt, check the number of punch marks on the bolt head. (Bolts with up to two punch marks can be reused.)**

The number of punch marks indicates the number of times the bolt has been tightened in the past within the plastic region. If there are three punch marks (tightened three times in the past), replace the bolt.

CRANKSHAFT AND CRANKCASE

◆ Installation procedure ◆

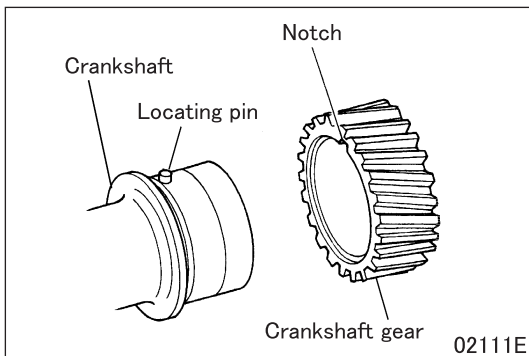


■ Installation: Rear plate

- Clean the rear plate surface where sealant is to be applied.
- Apply an even and continuous bead of sealant onto the rear plate surface where the crankcase is to be mounted.
- Install the rear plate onto the crankcase within 3 minutes following the application. Be careful not to smear the sealant bead.

CAUTION ⚠

- Do not start the engine at least for an hour after the rear plate has been installed.
- If the rear plate mounting bolts are subsequently loosened, be sure to apply sealant again upon reassembly.



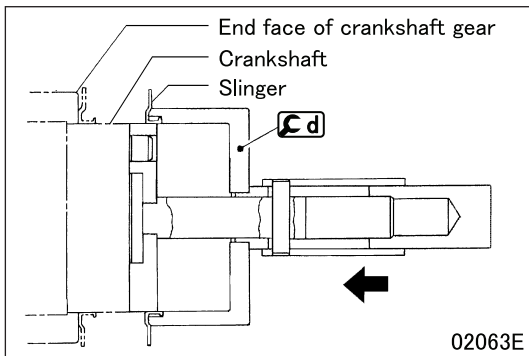
■ Installation: Crankshaft gear

- Heat the crankshaft gear to approximately 100°C with a burner or the like.

WARNING ⚠

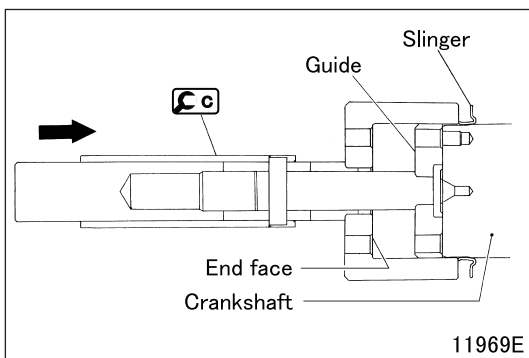
- Be careful not to get burned.

- Align the key fitted in the crankshaft with the slot in the crankshaft gear. Drive the gear into position by lightly striking its end face with a plastic hammer.



■ Installation: Rear oil seal slinger

- Using ϕd , install the rear oil seal slinger onto the crankshaft until ϕd comes into positive contact with the end face of the crankshaft gear.



■ Installation: Front oil seal slinger

- Using ϕc , install the front oil seal slinger onto the crankshaft until the end face of ϕc comes into positive contact with the guide.

GENERAL INSPECTION AND ADJUSTMENT

1. Oil Filter Replacement


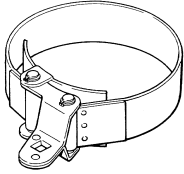
Tightening torque (Unit: N·m {kgf·m})

Mark	Parts to be tightened	Tightening torque	Remarks
–	Drain plug (oil filter)	7.8 ± 2.0 {0.8 ± 0.2}	–

Lubricant and/or sealant

Mark	Points of application	Specified lubricant and/or sealant	Quantity
–	Oil filter	Engine oil API classification CD, CD/SF, CE, CE/SF, CF-4	Approx. 2.3 dm ³ {2.3L}

Special tools

Mark	Tool name and shape	Part No.	Application
	Oil filter wrench 	MH061537	Removal of oil filter

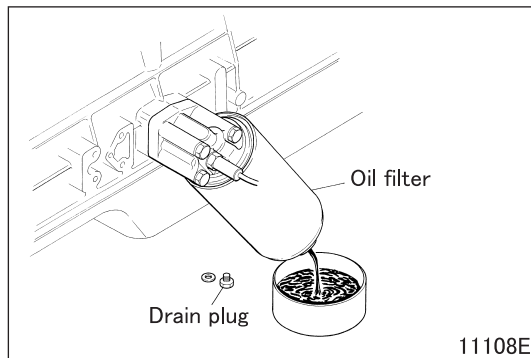
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WARNING

- Wipe up any spilled engine oil, as it can cause fires.

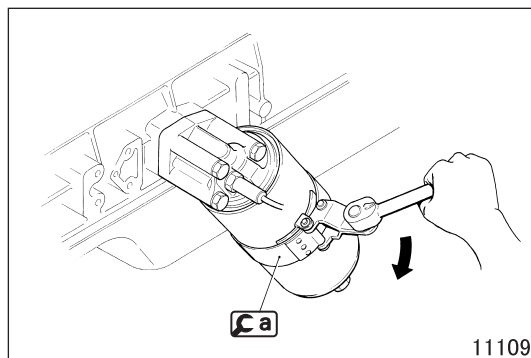
CAUTION


- Make sure not to put any engine oil on the V-belt when working on the oil filter. V-belts soiled with oil or grease may easily slip, resulting in deteriorated performance of the cooling system.



[Removal]

- Remove the drain plug and drain the oil out of the oil filter.



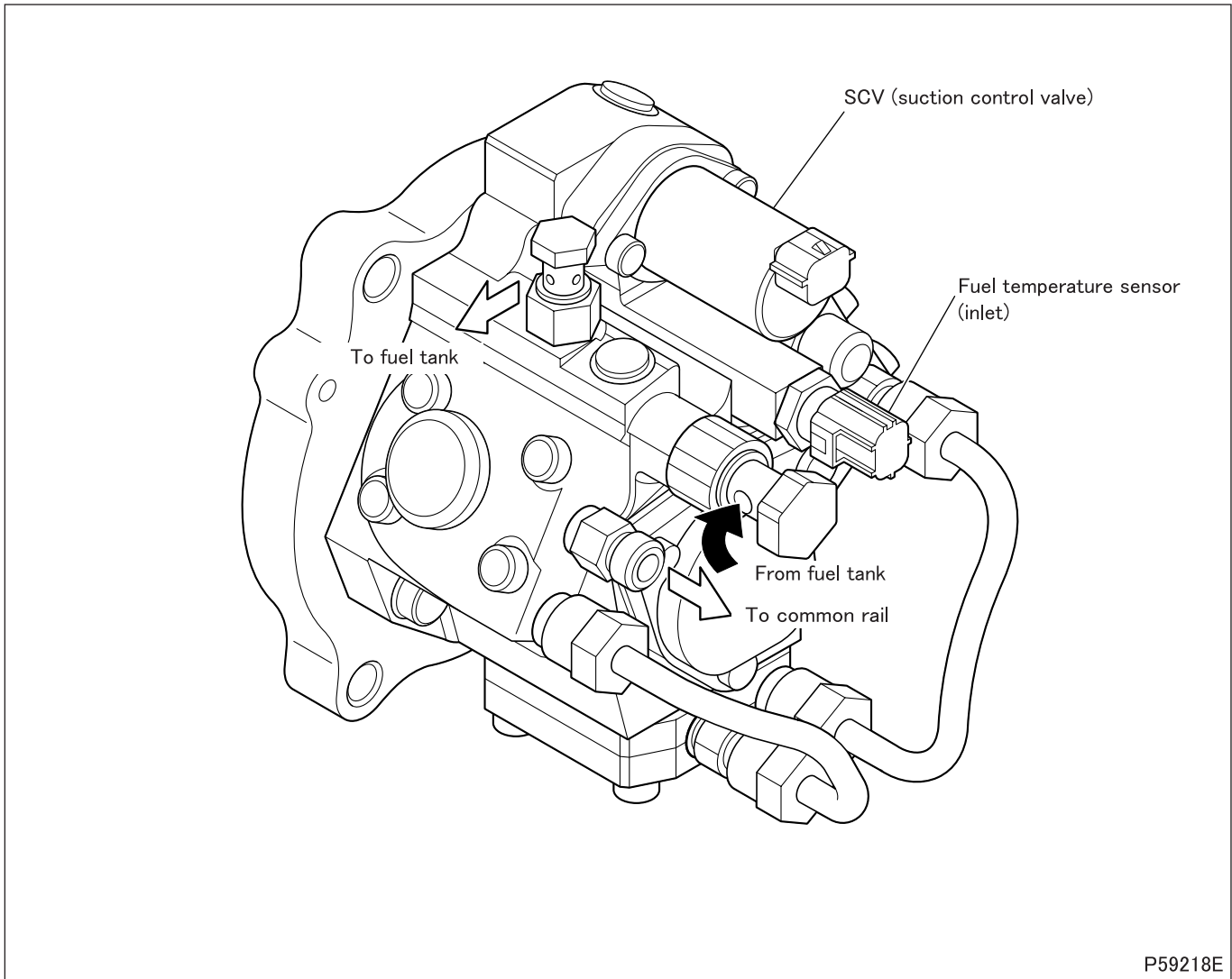
- Remove the oil filter using .

TROUBLESHOOTING

Symptoms		Possible causes										Reference Gr	
		Engine does not start	Engine hard to start	Engine knocks	Engine output unstable	Excessive black smoke	Engine output not sufficient	Engine maximum speed too high	Engine idling unstable	Engine stalls immediately after start	Engine does not reach maximum speed		Fuel supply insufficient
Common rail system abnormal												O	Gr13E
Supply pump	Defective feed pump	O	O				O			O	O	O	*
	Incorrect pump output	O	O				O			O	O		*
	Defective pressurized-fuel delivery system	O	O				O			O	O		*
	Defective SCV; Defective base supply pump	O	O				O			O	O		*
	SCV open-circuited, short, or intermittent connection	O	O				O			O	O	O	Gr13E or *
	Defective sealing		O				O			O			*
Common rail	Pressure limiter valve opening pressure too low		O	O		O	O				O		
	Operation of flow damper		O				O						
	Common rail pressure sensor circuit open, short, or intermittent connection	O	O		O		O			O	O	O	Gr13E
	Defective sealing		O			O	O				O		
Incorrect injector fuel injection	Injector magnetic valve open-circuited, short, or intermittent connection		O	O		O	O	O	O			O	Gr13E or *
	Defective injector, injector magnetic valve, or injection nozzle		O	O		O	O	O	O		O		*
	Orifice clogged				O	O		O	O				
Fuel filter clogged		O	O				O		O	O	O	O	
Clogged water separator		O	O		O				O	O			
No fuel in fuel tank		O	O				O			O	O	O	
High-pressure piping	Defective sealing or sealing surface		O				O			O	O		
	Piping cracked		O	O	O		O			O	O		
	Piping crushed and restricted		O				O			O	O		
	Foreign matter stuck in piping		O				O			O	O		
Low-pressure piping	Defective sealing or sealing surface	O	O				O			O	O	O	
	Piping cracked or clogged	O	O				O			O	O	O	
Air or water in fuel system			O		O		O		O	O	O	O	
Poor quality fuel is used			O	O		O	O	O		O	O		
Engine control	Incorrectly adjusted accelerator pedal stopper bolt						O				O		
	Defective accelerator position sensor											O	Gr13E

SCV: Suction Control Valve

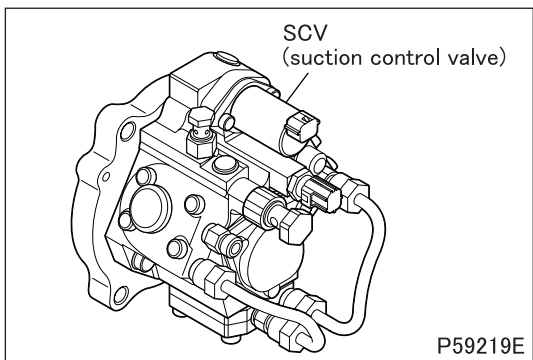
*: Contact DENSO Service Station for repair.



CAUTION ⚠

• Be sure to connect the SCV (suction control valve) connector to the engine harness before starting the engine. If the engine is started with the SCV (suction control valve) connector not connected, control of the supply pump by the engine electronic control unit would not be possible and a fault would ensue.

- The supply pump pressurizes fuel and supplies it in a highly pressurized state.
- Fuel drawn from the fuel tank by the feed pump is not supplied directly to the plungers. It is supplied first to the common rail pressure solenoid valve, which controls the amount of fuel reaching the plungers.
- If the fuel pressure exceeds a certain level, the regulating valve returns fuel to the inlet side of the feed pump. This operation keeps the pressure of the fuel fed to SVC (suction control valve), constant.
- Rotation of the camshaft causes (via the ring cam) up-down movement of the plungers. Fuel in the plunger chambers is thus highly pressurized.



(1) SCV (suction control valve)

- The SCV (suction control valve) receives fuel from the feed pump and feeds fuel toward the plungers of the supply pump in such a quantity that the fuel pressure corresponds to that required by the engine electronic control unit.
- When the SCV (suction control valve) is not operating, i.e., when current is not flowing, fuel flows at its maximum rate. When current flows, the piston in the common rail pressure solenoid valve is pressed down such that fuel is not fed toward the plungers.
- The engine electronic control unit controls the ratio of current-off time (duty ratio).

TROUBLESHOOTING

E-42: CRS Press M/V 1 (Low) (warning lamp flashes: 63) P1255

Generation condition		SCV (suction control valve) is short-circuited to ground, or open circuited, or coil is broken.
Recoverability		System recovers (power is re-supplied to electronic control unit) if signal becomes normal when starter switch is turned OFF → ON.
Control effected by electronic control unit		<ul style="list-style-type: none"> • Main injections only enabled. • Common rail pressure upper limit provided. • Injection rate limited to predetermined value. • Exhaust gas recirculation control stopped.
Inspection	Actuator test	B9: Fuel Leak Check
	Electronic control unit connector	12 : SCV (suction control valve)
	Electrical equipment	#574: SCV (suction control valve)

E-42: CRS Press M/V 1 (High) (warning lamp flashes: 63) P1256

Generation condition		SCV (suction control valve) is shorted to power supply circuit.
Recoverability		System recovers (power is re-supplied to electronic control unit) if signal becomes normal when starter switch is turned OFF → ON.
Control effected by electronic control unit		<ul style="list-style-type: none"> • Main injections only enabled. • Common rail pressure upper limit provided. • Injection rate limited to predetermined value. • Exhaust gas recirculation control stopped.
Inspection	Actuator test	B9: Fuel Leak Check
	Electronic control unit connector	12 : SCV (suction control valve) system
	Electrical equipment	#574: SCV (suction control valve) system

E-42: Common Rail Pressure M/V 1 (warning lamp flashes: 63) P1257

Generation condition		SCV (suction control valve) binds and fails to operate.
Recoverability		System recovers (power is re-supplied to electronic control unit) if signal becomes normal when starter switch is turned OFF → ON.
Control effected by electronic control unit		<ul style="list-style-type: none"> • Main injections only enabled. • Common rail pressure upper limit provided. • Injection rate limited to predetermined value. • Exhaust gas recirculation control stopped.
Inspection	Actuator test	B9: Fuel Leak Check
	Electronic control unit connector	12 : SCV (suction control valve)
	Electrical equipment	#574: SCV (suction control valve)

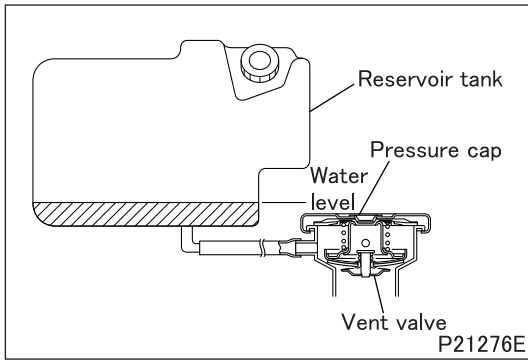
E-43: EGR 1 (warning lamp flashes: 67) P1267

Generation condition		Exhaust gas recirculation solenoid valve (M/V-1) is shorted-circuited to ground, or open circuited.
Recoverability		System recovers if signal becomes normal with starter switch in ON position.
Control effected by electronic control unit		Exhaust gas recirculation control is stopped.
Inspection	Service data	1F: EGR Position
	Actuator test	A1: EGR 1
	Electrical equipment	#530: Exhaust gas recirculation solenoid valve

E-43: EGR 1 (warning lamp flashes: 67) P1268

Generation condition		Exhaust gas recirculation solenoid valve (M/V-1) is shorted to power supply circuit.
Recoverability		System recovers if signal becomes normal with starter switch in ON position.
Control effected by electronic control unit		Exhaust gas recirculation control is stopped.
Inspection	Service data	1F: EGR Position
	Actuator test	A1: EGR 1
	Electrical equipment	#530: Exhaust gas recirculation solenoid valve

RADIATOR, OIL COOLER, INTERCOOLER AND FAN SHROUD



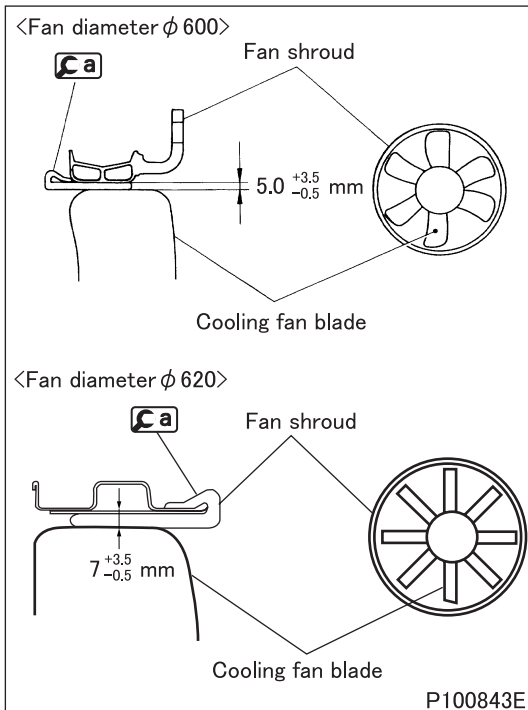
(2) Inspection of vent valve

- Note the coolant level in the reservoir tank.
- Start the engine and run it at high speed until the coolant level in the reservoir tank has risen to a certain degree. Stop the engine.
- Allow the system to cool down. When the coolant temperature has dropped to the atmospheric temperature, check if the coolant level in the reservoir tank has subsided to the original level noted earlier.
- If not, the vent valve is deemed faulty. Replace the pressure cap.


CAUTION

- If the pressure cap is opened before the coolant temperature drops to the atmospheric temperature, the negative pressure in the radiator is canceled out. As a result, it is no longer possible for coolant to flow into the reservoir tank. Ensure that this does not happen.

◆ Installation procedure ◆



■ Installation: Fan shroud

- Using , adjust the clearance between the fan shroud and cooling fan blades to the dimension shown in the illustration.