Technical Manual

(Operational Principle)

ZAXIS70/70LC

Vol No.: TO1CDE-00

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RECOGNIZE SAFETY INFORMATION

- This is the **SAFETY ALERT SYMBOL**.
  - When you see this symbol on your machine or in this manual, be alert to the potential for personal injury.
  - Follow recommended precautions and safe operating practices.



001-E01A-0688

SA-688

UNDERSTAND SIGNAL WORDS

- On machine safety signs, signal words designating the degree or level of hazard - DANGER, WARNING, or CAUTION - are used with the safety alert symbol.
  - **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.
  - **DANGER or WARNING safety signs** are located near specific hazards. General precautions are listed on **CAUTION safety signs**.
  - Some safety signs don't use any of the designated signal words above after the safety alert symbol are occasionally used on this machine.
- **CAUTION** also calls attention to safety messages in this manual.
- To avoid confusing machine protection with personal safety messages, a signal word **IMPORTANT** indicates a situation which, if not avoided, could result in damage to the machine.
- ***NOTE*** indicates an additional explanation for an element of information.



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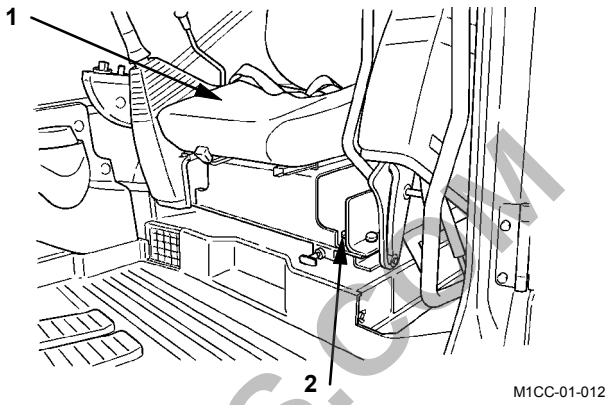
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REMOVE AND INSTALL CAB

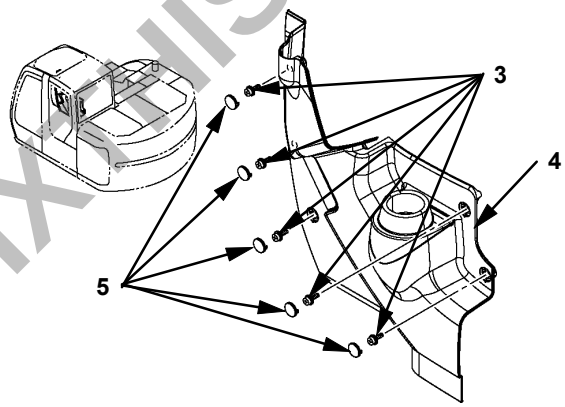
Removal

1. Remove seat mounting bolts (2) (04 used) to remove seat (1).
   : 17 mm



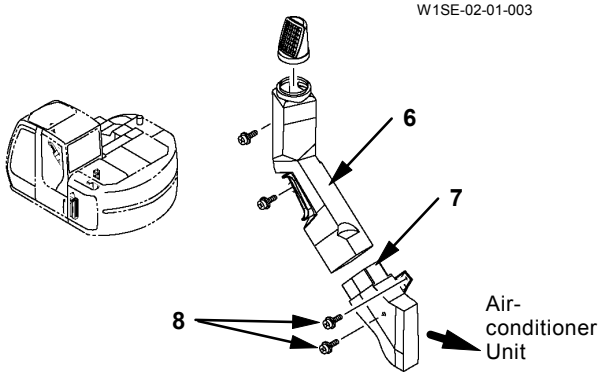
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2. Remove caps (5) (5 used) from duct cover (4) with a screw driver. Remove screws (3) (5 used) to remove the duct cover.



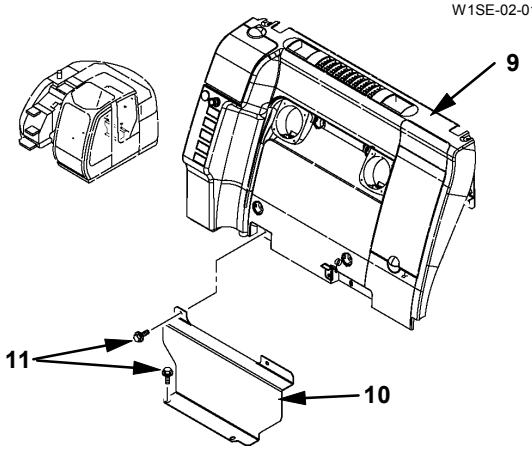
W1SE-02-01-003

3. Remove screws (8) (2 used).Push duct (7) into the duct (6) side once, and remove the bottom of duct (7) from the air conditioner unit. Remove duct (7) from duct (6).



W1SE-02-01-004

4. Remove bolts (11)(4 used) from the rear side of cab. Remove cover (10) from rear cover (9).
   : 13 mm



W1SE-02-01-005

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RETURN

ATTACH TO VOL.NO : TT1CDE-00

ZX70/70LC ELECTRICAL CIRCUIT DIAGRAM (1)

⚠CAUTION: Parts numbers on the drawing are provided only for reference purpose.
To order parts on the drawing,be sure to consult the Parts Catalog.

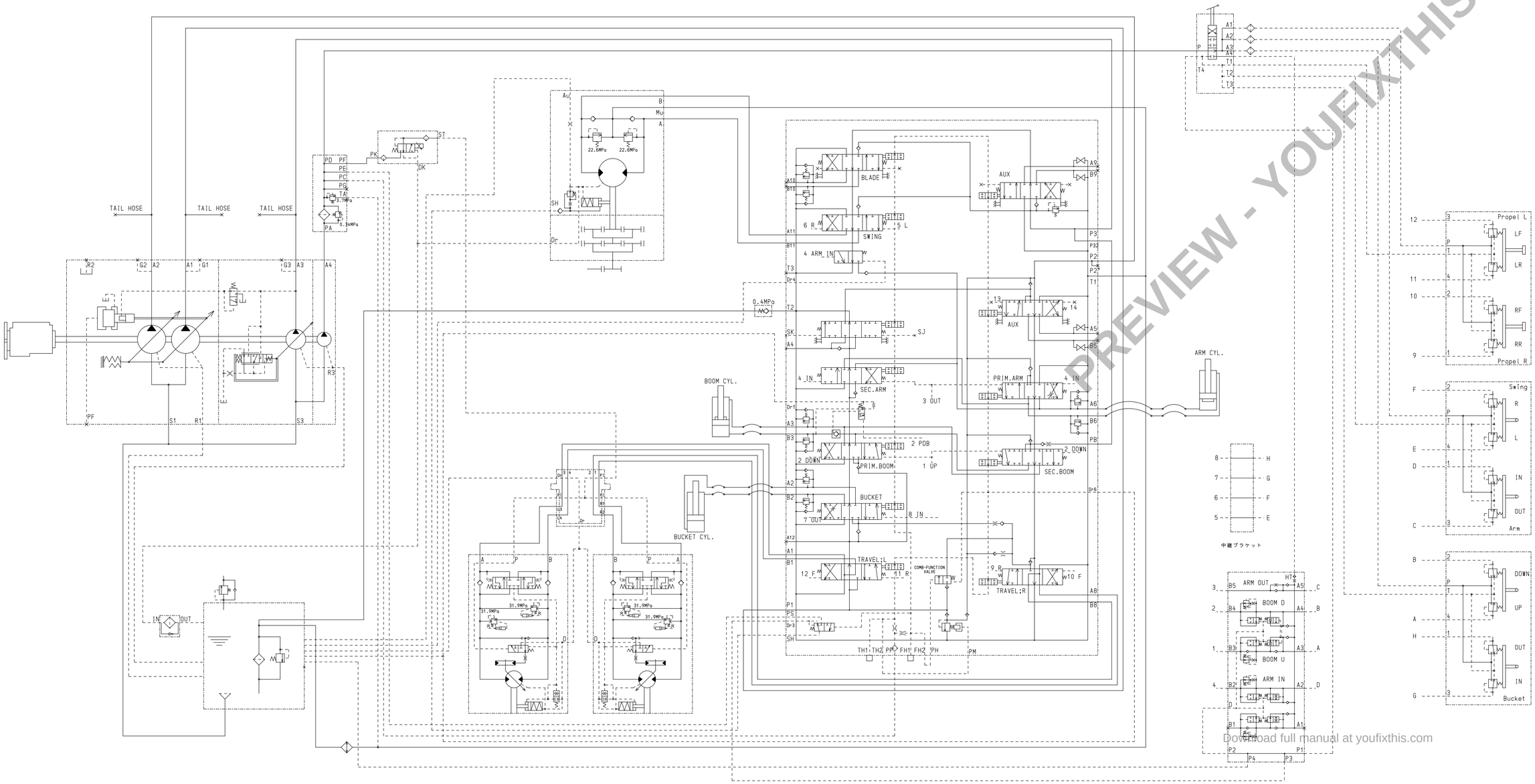
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ZAXIS 70 / 70LC HYDRAULIC CIRCUIT DIAGRAM

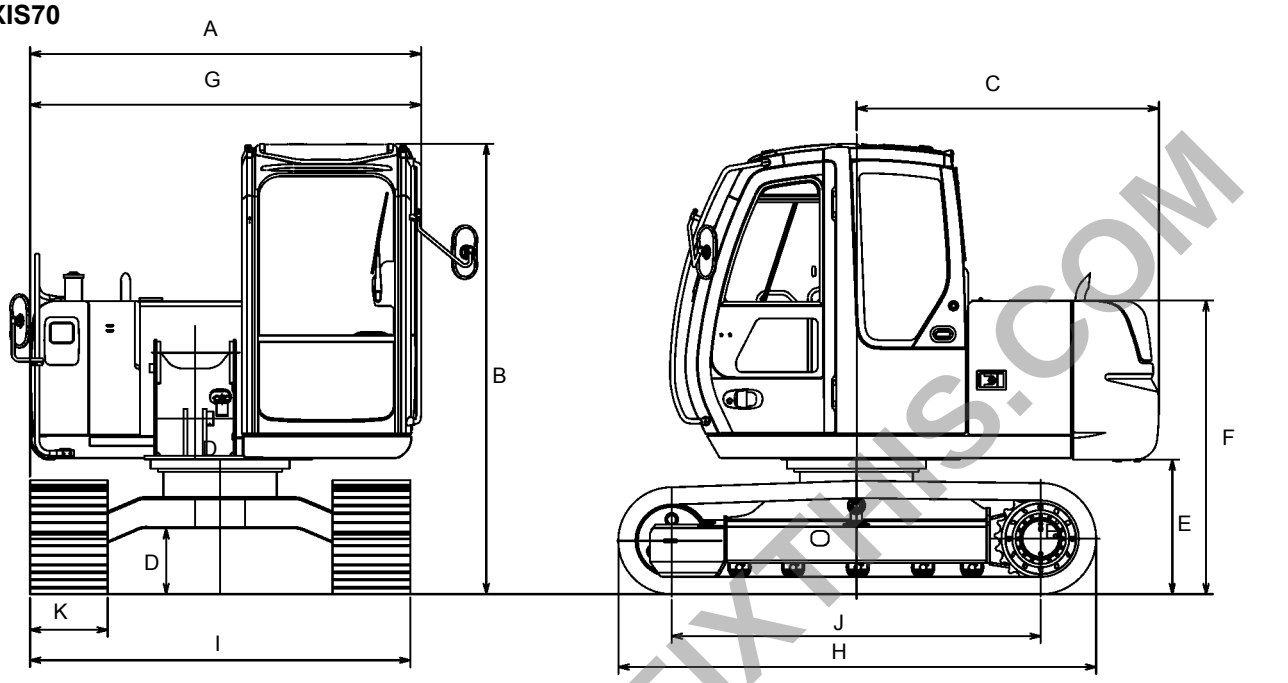
NOTE: Refer to the PERFORMANCE STANDARD in the technical manual for the relief valve pressure satting value.



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SPECIFICATIONS

ZAXIS70



M1CD-12-001

Model		Grouser Shoe	Rubber Covered Shoe	Rubber Pad Shoe
Type of Front-End Attachment	—	1.62 m Arm		
Bucket Capacity (Heaped)	—	PCSA: 0.28 m^3 (0.37 yd^3), CECE: 0.24 m^3		
Operating Weight	kg (lb)	6300 (13900)	6920 (43900)	6620 (14600)
Basic Machine Weight	kg (lb)	4950 (10900)	4940 (10900)	5270 (11600)
Engine	—	ISUZU AA-4JG1 40.5 kW / 2100 min^{-1} (55 PS / 2100 rpm)		
A: Overall Width (Excluding rear view mirrors)	mm (ft in)	2260 (7’ 5”)	2260(7’ 5”)	2260(7’ 5”)
B: Cab Height	mm (ft in)	2600 (8’ 6”)	2630 (8’ 8”)	2630 (8’ 8”)
C: Rear End Swing Radius	mm (ft in)	1750 (5’ 9”)	1750 (5’ 9”)	1750 (5’ 9”)
D: Minimum Ground Clearance	mm (ft in)	360 * (1’ 2”)	410 * (1’ 4”)	410 * (1’ 4”)
E: Counterweight Clearance	mm (ft in)	760 * (2’ 6”)	810 (2’ 8”)	810 (2’ 8”)
F: Engine Cover Height	mm (ft in)	1680 * (5’ 6”)	1730 (5’ 8”)	1730 (5’ 8”)
G: Overall Width of Upperstructure	mm (ft in)	2260 (7’ 5”)	2260 * (7’ 5”)	2260 * (7’ 5”)
H: Undercarriage Length	mm (ft in)	2765 (9’ 1”)	2820 * (9’ 3”)	2825 * (9’ 3”)
I: Undercarriage Width	mm (ft in)	2200 (7’ 3”)	2200 * (7’ 3”)	2200* (7’ 3”)
J: Sprocket Center to Idler Center	mm (ft in)	2140 (7’ 0”)	2140 (7’ 0”)	2140 (7’ 0”)
K: Track Shoe Width	mm (ft in)	450 (1’ 6”)	450 (1’ 6”)	450 (1’ 6”)
Ground Pressure	kPa (kgf/cm^2, psi)	29 (0.30 , 4.3)	29 (0.30 , 4.1)	30 (0.30 , 4.4)
Swing Speed	min^{-1} (rpm)	11.3	11.3	11.3
Travel Speed (Fast/Slow)	km/h (mph)	5.0/3.4 (3.1/2.1)	5.0/3.4 (3.1/2.1)	5.0/3.4 (3.1/2.1)
Gradeability	Degree (%)	35 (70)	35 (70)	35 (70)

*NOTE: Dimensions marked * don’t include the shoe lug height.*

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INTRODUCTION

Refer to the inspection and troubleshooting procedures after any machine trouble has occurred. The inspection and troubleshooting procedures are presented in an orderly fashion in this section to quickly find the cause of the machine trouble and solution.

The troubleshooting section in this manual consists of 7 groups; General, Component Layout, Troubleshooting A (base machine diagnosis using fault codes), Troubleshooting B (base machine diagnosis starting with inspection of abnormal operational status), Troubleshooting C (monitor diagnosis), Electrical System Inspection, and ICX.

- General

- Component Layout

- Troubleshooting A (base machine diagnosis using fault codes)
  Refer to these procedures if any fault codes are displayed when the main controller (MC) is diagnosed with Dr. EX. (or the built-in diagnosing system)
  (MC self-diagnosing function retains a record of the electrical signal system malfunction in the form of fault codes.)

  Example: Fault Code 06: Abnormal EC Sensor

- Troubleshooting B (base machine diagnosis starting with inspection of abnormal operational status)
  Refer to these procedures when no fault codes are displayed after diagnosing the machine with Dr. EX (or the built-in diagnosing system). Trace the cause of trouble based on the inspected result of the abnormal symptom.

  Example: Even if the engine control dial is operated, engine speed remains unchanged.

- Troubleshooting C (monitor diagnosis)
  Refer to these procedures when gauges and/or indicators are malfunctioning.

  Example: Malfunction of fuel gauge

- Electrical System Inspection
  Refer to this group when required to obtain precautions and/or information for the electrical system inspection.

  Example: Fuse Inspection

- ICX
  Refer to these procedures after any fault code is displayed after diagnosing ICX (Information Controller) or the satellite terminal (optional) with Dr. EX. (The controller self-diagnosing function retains a record of the electrical signal system malfunction in the form of fault codes.)

  Example: ICX Fault Code 7: MC Communication Time Out

  In addition, information on the following items is described in this group.
  (1) Trouble shooting and setting procedures of ICX and satellite terminal using Dr. EX.
  (2) Information on the satellite communication system

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PREHEAT CIRCUIT (KEY SWITCH: HEAT)

- When the key switch is turned to the HEAT position, key switch terminal B is connected to terminal G1 in the key switch.
- The current from terminal G1 magnetizes the glow plug relay via the fuse box #19 and also flows to the monitor and MC, turning the preheat indicator ON.
- The battery current is routed to the glow plugs through the glow plug relay.
- The MC timer operates approx. 20 seconds after preheating starts, turning the preheat indicator OFF and informing that preheating is complete.

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Motor Swash Angle (Travel Mode) Control

The swash plate angle is changed by moving the piston to control the motor rotation speed. When the swash plate is in the maximum angle position, the motor runs at slow speed and in the minimum angle position at fast speed. The maximum swash plate angle (slow) is automatically selected if travel load increases more than the specified value when the motor is running at the minimum swash angle (fast).

- Maximum Swash Angle (Slow Motor Speed)

1. The spool is pushed upward by spring unless the pilot pressure is supplied.

2. Under this condition, the spool blocks the pressure oil from the shuttle valve.

NOTE: When the motor is running, the pressure oil is constantly supplied to the shuttle valve through either high pressure port AM or port BM.

3. Accordingly, the pressure oil does not push the piston to the left.

4. Consequently, the swash plate angle increases so that the plunger stroke is extended, increasing the motor displacement. Then, the motor runs at slow speed.

NOTE: The swash plate oscillates around the steel ball that is eccentrically located from the center of the swash plate. Therefore, the swash plate angle increases unless the piston pushes the swash plate.

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REMOVE PAINT BEFORE WELDING OR HEATING



SA-029

- Hazardous fumes can be generated when paint is heated by welding, soldering, or using a torch. If inhaled, these fumes may cause sickness.

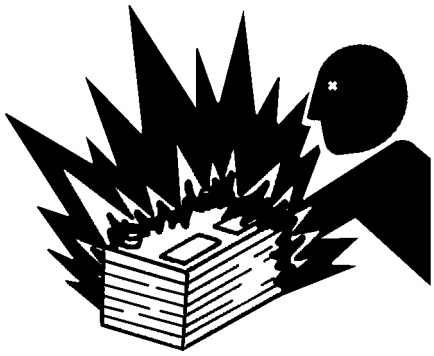
  - Avoid potentially toxic fumes and dust.
  - Do all such work outside or in a well-ventilated area. Dispose of paint and solvent properly.

  - Remove paint before welding or heating:

1) If you sand or grind paint, avoid breathing the dust.
   Wear an approved respirator.
2) If you use solvent or paint stripper, remove stripper with soap and water before welding. Remove solvent or paint stripper containers and other flammable material from area. Allow fumes to disperse at least 15 minutes before welding or heating.

511-E01A-0029

PREVENT BATTERY EXPLOSIONS



SA-032

- Battery gas can explode.

  - Keep sparks, lighted matches, and flame away from the top of battery.
  - Never check battery charge by placing a metal object across the posts. Use a voltmeter or hydrometer.
  - Do not charge a frozen battery; it may explode. Warm the battery to 16 °C (60 °F) first.
  - Do not continue to use or charge the battery when electrolyte level is lower than specified. Explosion of the battery may result.
  - Loose terminals may produce sparks. Securely tighten all terminals.

- Battery electrolyte is poisonous. If the battery should explode battery electrolyte may be splashed into eyes, possibly resulting in blindness.

  - Be sure to wear eye protection when checking electrolyte specific gravity.

512-E01C-0032

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OPERATIONAL PERFORMANCE STANDARD TABLE

The standard Performance values are listed in the table below. Refer to the Group T4-2 to T4-4 for performance test procedures. Values indicated in parentheses are reference values.

* The following switch positions shall be selected:
Engine Control Dial: Fast Idle
Power Mode Switch: P Mode
Oil Temperature: 50±5 °C

PERFORMANCE TEST DESIGNATION	Performance Standard	Remarks
ENGINE SPEED min^{-1}		
Fast Idle(Normal)	2260±50	ECO Relieved
	2160±50	ECO
Fast Idle(When relieving)	2160±100	1P, 2P and 3P relief
Fast Idle(E Mode)	1900±100	
Slow Idle	1100^{+100}_{-50}	
Auto-Idle	1200±100	
ENGINE COMPRESSION PRESSURE (After warming up) MPa (kgf/cm^2)	2.9 (30) or more	After warming -up
VALVE CLEARANCE(IN, EX) mm	0.40	With the engine cold
NOZZULE INJECTION PRESSURE MPa (kgf/cm^2)	18.1 (185)	
INJECTION TIMING(Degrees before TDC) deg.	10°	
TRAVEL SPEED sec/20 m		
Fast Speed	14.4±1.0	
Slow Speed (Reference)	(21.2±2.0)	
TRACK REVOLUTION SPEED (Fast Speed) sec/3 rev	12.3±1.0	ZX70LC: (12.9)
MISTRACK(in fast and slow speed mode) mm/20 m	200 or less	
TRAVEL PARKING FUNCTION CHECK mm/5 min	0	
SWING SPEED sec/3 rev	15.9±1.0	
SWING FUNCTION DRIFT CHECK mm /180°	280 or less	
SWING MOTOR LEAKAGE mm/5 min	0	
MAXIMUM SWINGABLE SLANT ANGLE deg.	22.0 or possibly more	
SWING BEARING PLAY mm	0.7 or less	

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NOTE: The trouble symptoms in this table are described provided that each trouble occurs independently.
In case more than one trouble occurs at the same time, find out all faulty components while checking all suspected components in each trouble symptom.

E-5	E-6	E-7	E-8	E-9
Even if key switch is turned OFF, engine doesn't stop.	Auto-idle system is inoperable.	Even if power mode switch is turned to the E mode position, engine speed remains unchanged.	Engine stalls within several seconds after engine has started.	Engine is difficult to start at low temperature.
○	●	●		
○	○	○		
○		○		
	○			
	○			
○				
○	○	○		
	●			
	○	●		
○			●	
				●
				●
		○		●
○		○		
			Check fuel system for clogging.	Check batteries.

● : Related, required to check
○ : Related. However, in case this component fails, other trouble symptom will be more noticeable so that this component will not be the direct cause of the trouble concerned.

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Faulty coolant temperature sensor

YES — Faulty monitor

NO — Broken harness between monitor and sensor

Faulty coolant temperature sensor

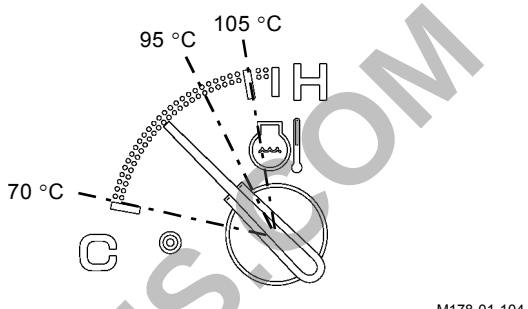
YES — Short-circuited harness between monitor and sensor

NO — Faulty monitor

Faulty coolant temperature sensor

Faulty monitor

Coolant Temperature Gauge



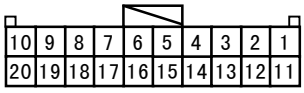
M178-01-104

Coolant Temperature Sensor

Coolant Temperature °C (°F)	Resistance (kΩ)
25 (77)	7.6
40 (104)	4.0±0.32
50 (122)	2.7±0.22
80 (176)	0.92
95 (203)	0.56
105 (221)	0.42
120 (248)	0.28±0.01

Connector (Harness end connector terminals seen from the open end side)

Monitor Connector B (20P)

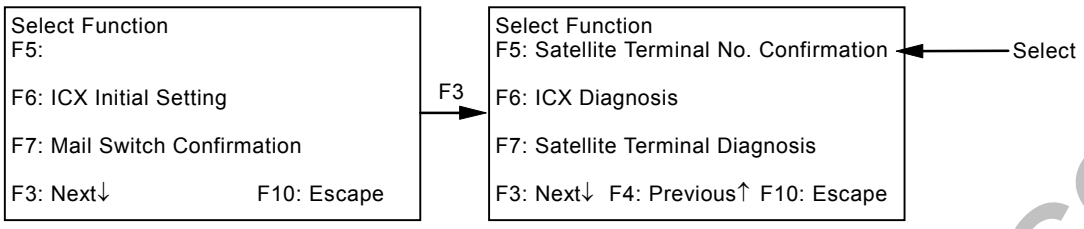


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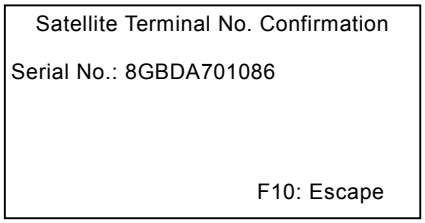
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5-4 Satellite terminal number

(1) Select Satellite Terminal No. on the Function Selection screen.



(2) Confirm that the serial number and the satellite communication contract number are identical.



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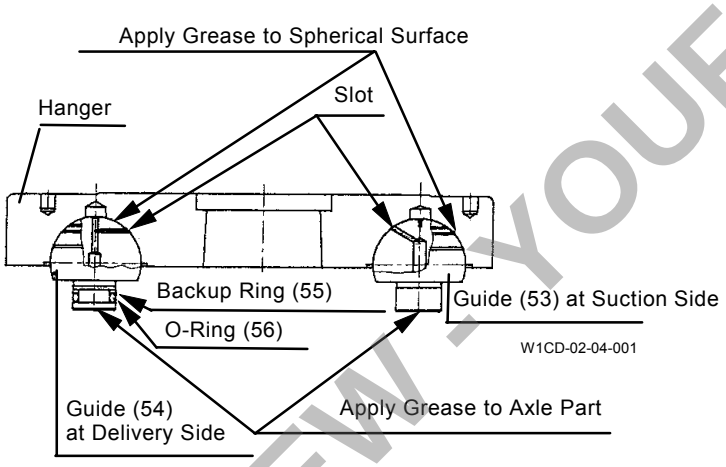
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Assemble Main Pumps 1 and 2

- Be sure to thoroughly read “Precautions for Disassembly and Assembly Work” on page W1-1-1 before starting the assembly work.

IMPORTANT: Install guides (53) and (54) into housing (60) and apply grease to the guide axle part to prevent it from coming off.
Be sure that the O-ring (56) and backup ring (55) of guide (54) at delivery side are set in correct positions as shown below.
When installing guide (53) and (54) into housing (60), be sure that those are set in correct positions as shown below.
Pay attention the slot directions for guide (53) and (54).
Apply grease around all spherical surfase.



1. Install guides (53 and 54) into housing (60).

2. Install hanger (50) onto guides (53 and 54).

3. Install retaining ring (64) onto shaft (61) to press bearing (63) down. Install retaining ring (62) onto shaft.

4. Support the hanger (50) with hands and press shaft (61) assembly into housing (60). Install O-ring (66), cover (67) assembly and retaining ring (68) into the housing.

5. Apply enough grease on pins (45) (3 used) and install the pins into the spline groove of cylinder block (44). (Refer to Illustration W1CD-02-04-007 on page W2-4-5.)

6. Install cylinder block (44) assembly (parts 40 to 48) onto shaft (61) in housing (60) to prevent pin (45) from dropping off.

IMPORTANT: Apply grease on the spherical tip surface of spring seat (16).

7. Install spring seat (16), guide (15), spring (14) and spring (13) onto hanger (50) from bushing (49) side.

IMPORTANT: Apply grease on shim (12) to prevent it from dropping.

8. Install O-ring (10) and shim (12) onto spring seat (11) and install the spring seat into cover (1).

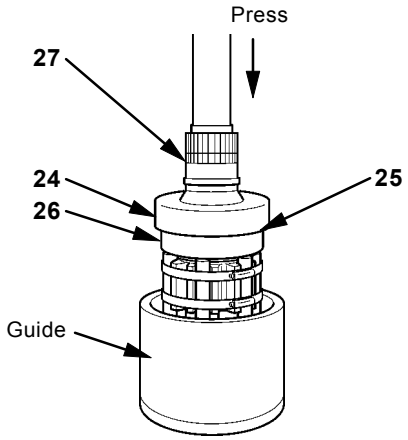
9. Install cover (9) assembly (parts 6, 8, 9) into cover (1) with socket bolts (7) (2 used).
   : 8 mm
   : 55 to 69 N·m
   (5.6 to 7.0 kgf·m, 41 to 51lbf·ft)

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CAUTION: Work should be carried out in the guide be sure to carry it out inside the guide.

11. Set shaft (27), with clamping apparatus on it, into a press.



W157-02-06-014

12. Remove the inner race for bearing (24), thrust plate (25) and spacer (26) from shaft (27).

IMPORTANT: Do not remove the outer races of bearings (20) and (24) from housing (22). The press force on the outer races of bearings (20) and (24) will be reduced, shortening the service life of the bearings. When removing the outer races, be sure to replace not only the outer races but also housing (22).

13. Remove the inner race of bearing (20) and oil seal (21) from housing (22).

14. Remove all old grease from the surfaces of housing (22), bearing (24) and spacer (26).

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Assemble Blade Pilot Valve

- Be sure to read “Precautions for Disassembly and Assembly” thoroughly on page W1-1-1 before starting the disassembly work.

IMPORTANT: Install washers (6) (4 used) with its sharp edge side facing upward.
Install spring seat (7) in its correct direction.
Do not compress balance spring (9) with spring seat (7) more than 4 mm (0.157 in) when installing spring seat (7).

1. Install shims (11) (2 used), spacers (10) (2 used) and balance springs (9) (2 used) on spools (12) (2 used). Compress balance springs (9) to install spring seat (7) (2 used) and washers (6) (4 used) to spool (12).

IMPORTANT: Be sure to confirm the port number before inserting each spool (12) assembly, to be sure that the spool assembly is inserted into its correct port.

2. Insert return springs (8) (2 used) and spool (12) assemblies (2 used) into casing (13).

IMPORTANT: Install oil seals (3) (2 used) and dust seals (1) (2 used) in their correct directions. Apply a film of grease to the lips of the oil seal and the dust seal, and to the inside of bushing (2).

3. Install oil seals (3) (2 used), dust seals (1) (2 used) and O-rings (4) (2 used) on bushings (2) (2 used). Insert pushers (5) (2 used) into the bushing.

   Use one of the following greases:
   - Apolloil Autorex C (Idemitsu)
   - Ocean 7 (Nihon Ore Louve)
   - Screw Bar L60 (NOK)

4. Place the pusher (5) assemblies (2 used) and cover (16) onto each spool (12) assembly (2 used). Alternately tighten socket bolts (17) (2 used) to install the cover on casing (13).
   : 6 mm
   : 29.5±2.9 N·m
   (3.0±0.3 kgf·m, 21.5±2.1 lbf·ft)

5. Install adjusting screws (19) (2 used) on cam (20) and temporarily tighten lock nuts (18). Install the cam (20) assembly on cover (16) with pin (15).
   : 5 mm

IMPORTANT: Apply LOCTITE #241 to set screw (21).

6. Install set screw (21) into cam (20).
   : 3 mm
   : 6.9±1 N·m (0.7±0.1 kgf·m, 5.0±0.7 lbf·ft)

7. Adjust adjusting screws (19) (2 used).
   Secure cam (20) horizontally. The clearance between pushers (5) (2 used) and adjusting screws (19) is 0 mm, then tighten lock nuts (18) (2 used).
   : 5 mm
   : 17 mm
   : 33.3±3.4 N·m
   (3.4±0.3 kgf·m, 24.5±2.5 lbf·ft)

8. Tilt cam (20) and apply a film of grease to the pushers (5) (2 used) heads.

9. Install boot (22) on cover (16).

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CAUTION: Housing weight: 26 kg (57 lb)

12. Place housing (12) with the brake valve assembly (26) mounting surface facing upward.

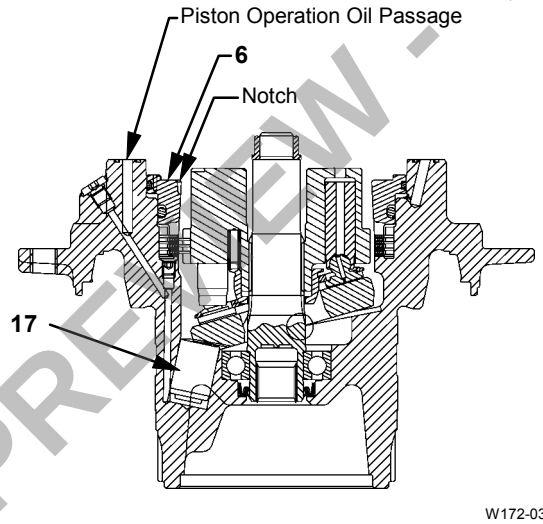
IMPORTANT: Install plates (20) (4 used) and friction plates (19) (3 used) alternately. Be sure to Install plate (20) first.

13. Install plates (20) (4 used) into the groove of housing (12) and friction plates (19) (3 used) into the groove of rotor (8) alternately.

IMPORTANT: Install brake piston (6) with the notch (1 place) on brake piston (6) facing the piston (17) operation oil passage side.

IMPORTANT: Brake piston (6) keeps floating because of the o-ring of the outer circumference. Evenly push brake piston (6) into housing (12) by hands. Be sure never tap brake piston (6) with a hammer forcedly.

14. Install o-ring (21) and (22) into brake piston (6). Install it (6) into housing (12).



W172-03-02-013

IMPORTANT: Install disc spring (5) so that the outer circumference of disc spring (5) comes into contact with brake piston (6).

15. Install disc spring (5) into housing (12).

16. Install o-rings (4) and (24) into housing (12).

17. Refill the hydraulic oil 0.5 L into housing (12).

18. Install o-ring (23) into brake valve assembly (26).

IMPORTANT: Install the outer race of roller bearing (25) with the stamped mark facing upward.

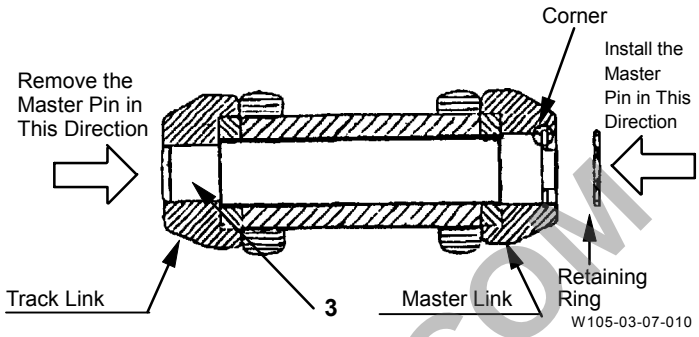
19. Install the outer race of roller bearing (25) into brake valve assembly (26).

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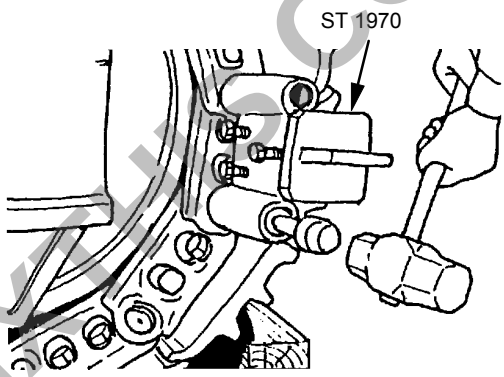
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IMPORTANT: Install master pin (3) in the correct direction as illustrated below.

5. Install master pin (3) using a hammer and special tool (ST 1970).



W105-03-07-010

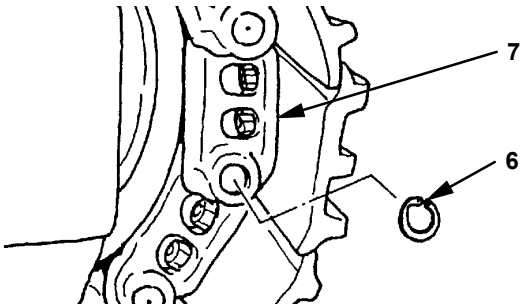


W105-03-07-017

IMPORTANT: Old retaining ring (6) can not be re-used as it is easily deformed. Replace it with a new one.

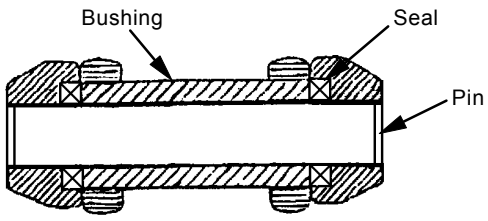
6. Install retaining ring (6).

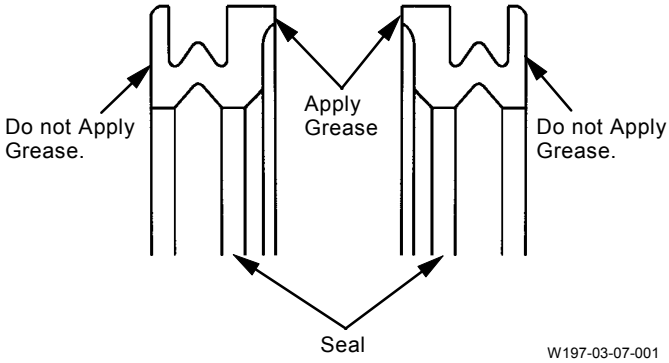
NOTE: Retaining ring (6) has directivity. Install retaining ring (6) into the master link (7) groove with the flat side of the hole to insert puller facing outward.



W105-03-07-009

IMPORTANT: If any links have been removed from the track, be sure to fill the grease (Daphne Epones SR or equivalent) into the clearance between the pin and bushing when reconnecting the links. Stand the bushing on flat plate. Fill the bushing bore with the grease. Insert the pin into the bushing while pushing the bushing onto the plate so that the bushing end stays on the plate. Wipe off excess grease.
Install the seal in the correct direction as illustrated.





W197-03-07-001

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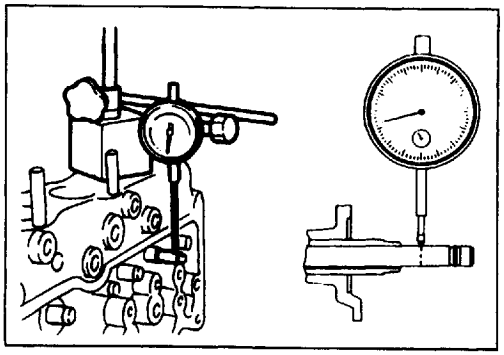
MEMO

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Manifold Fitting Face Warpage mm (in)

Standard	Limit	Maximum Grinding Allwance
0.05 (0.002) or less	0.2 (0.008)	0.4 (0.016)



VALVE GUIDE

Valve Stem and Valve Guide Clearance

Measuring Method - I

1. With the valve stem inserted in the valve guide, set the dial indicator needle to "0".
2. Move the valve head from side to side.

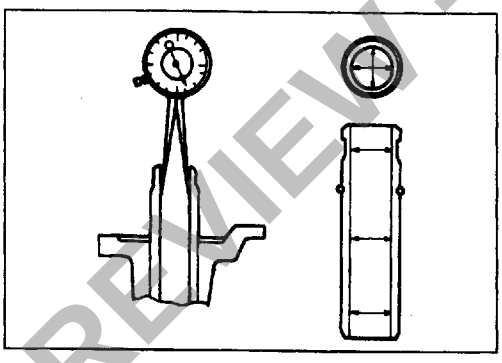
   Read the dial indicator.

   Note the highest dial indication.

   If the measured values exceed the specified limit, the valve and the valve guide must be replaced as a set.

Valve Stem Clearance mm(in)

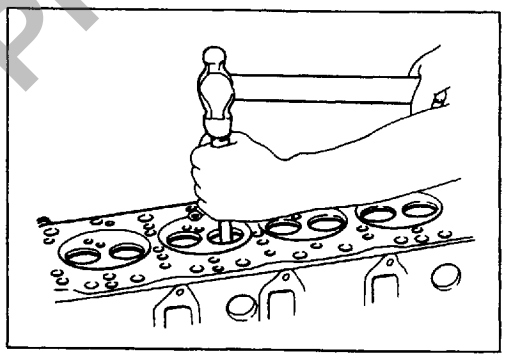
	Standard	Limit
Intake Valve	0.039 – 0.071 (0.0015 – 0.0028)	0.20 (0.008)
Exhaust Valve	0.064 – 0.096 (0.0025 – 0.0038)	0.25 (0.0098)



Measuring Method - II

1. Measure the valve stem outside diameter.

   Refer to the Item "Valve Stem Outside Diameter".
2. Use a caliper calibrator or a telescoping gauge to measure the valve guide inside diameter.



Valve Guide Replacement

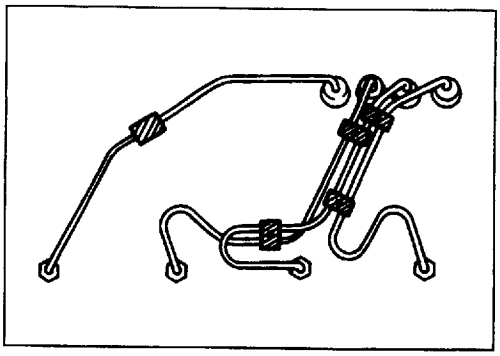
Valve Guide Removal

Use a hammer and the valve guide replacer to drive out the valve guide from the cylinder head lower face.

Valve Guide Replacer: 9-8523-1212-0

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3. Fuel Injection Pipe with Clip

1) Temporarily tighten the injection pipe sleeve nut.
2) Set the clip in the prescribed position.

Note:

Make absolutely sure that the clip is correctly positioned.

An improperly positioned clip will result in injection pipe breakage and fuel pulsing noise.

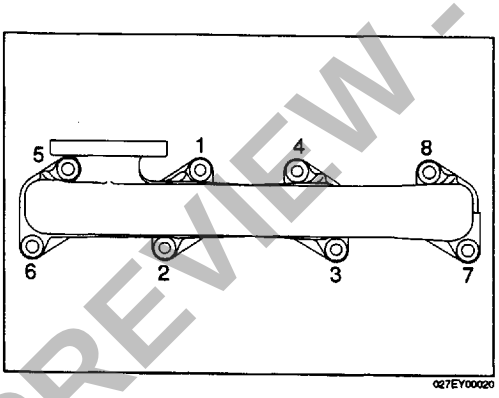
3) Tighten the injection pipe sleeve nut to the specified torque.

Injection Pipe Sleeve Nut Torque	N·m(kgf·m/lb.ft)
20 – 39 (2.0 – 4.0/14 – 29)	

10. Starter

Tighten the starter bolts to the specified torque.

Starter Bolt Torque	N·m(kgf·m/lb.ft)
65 – 85 (6.7 – 8.7/48 – 63)	



11. Exhaust Manifold

Tighten the exhaust manifold bolts to the specified torque a little at a time in the numerical order shown in the illustration.

Exhaust Manifold Bolt Torque	N·m(kgf·m/lb.ft)
14 – 24 (1.4 – 2.4/10 – 17)	

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INSPECTION

1. Stator

Visually inspect the stator for damage, a loose connection, or discolored windings.

1 Check all the stator coil leads using a circuit tester for continuity.

Replace the stator if there is no continuity.

2 Check for continuity between the stator coil leads and core using a circuit tester.

Replace the stator if there is continuity.

2. Rotor

1 Clean away dirt and particles from the rotor with compressed air or clean cloth.

Check the slip rings for wear and roughness. If the slip rings are worn down beyond the wear limit, the rotor should be replaced.

Slip rings are not serviced as a separate item. They are serviced with rotor assembly.

When abnormal wear or partial wear is found, it is necessary not only to correct it, but to check related parts which cause abnormal conditions, such as brush sets, field coil resistance value, bearings, grease deposits, and water ingression.

2 Check for continuity between the slip rings and rotor shaft or poles.

Replace the rotor if there is continuity.

3 Measure the coil resistance between the two slip rings using an ohmmeter.

If it is not within specification, replace the rotor.

4 Check the bearing for any abnormal noise, roughness, or grease leakage (just wire off it the amount is very little), and replace it as necessary. It is more effective to check with the bearing fitted onto the rotor shaft than to check the bearing itself (with no parts mounted).

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