CASE

PROFESSIONAL PARTNER

SERVICE MANUAL

4HK1-6HK1
ISUZU ENGINES

9-44061 NA

Replaces 9-44060 NA

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GENERAL INFORMATION

General Information

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Cooling System

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  - The connection at the data link connector (DLC) is secure.
  - Voltage supply circuit
- DO NOT disturb the tool harness while programming. If an interruption occurs during the programming procedure, programming failure or ECM damage may occur.
- Surrounding environment
  - Surrounding temperature must be between 0 and 50°C (32 and 122°F) during the programming procedure. Excessively low or high temperature may cause the programming failure or ECM damage.
  - Electromagnetic interference (EMI) on the tool harness and ECM may cause the programming failure or ECM damage.

Fuel Injector Flow Rate Programming Procedure

1. Connect the scan tool to the data link connector.
2. Connect the RS-232 to the scan tool and PC.
3. Start TIS 2000 and select the Service Programming System (SPS).
4. In the "Select Diagnostic Tool and Programming Process" screen, select the following menu.
   - Diagnostic tool "Pass-Thru".
   - Select Programming Process "Reprogram ECU".
   - ECU Location on the "Machine".

   Then, follow the SPS screen instructions.
5. Ensure that ALL programming contents are entered correctly and were programmed successfully by turning OFF the ignition for 30 seconds.
6. Using the scan tool to check each programmed fuel injector flow rate.
7. Start the engine and let idle.
8. Inspect for a proper engine running condition and for no DTCs. Refer to the "Diagnostic System Check – Engine Control" if needed.

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Main Data and Specifications

Model (Manufacturer)			Nikko Electric Industry Co., Ltd
Rating	Voltage	V	24
	Power output	kw	5
	Time	Sec.	30
Number of pinion teeth			11
Revolution direction (viewed from pinion side)			Clockwise
Weight (approx.)		N {kg}	78.4 {8}
No load characteristic	Current/Voltage	A/V	85 or less/24
	Speed	rpm	3300 or more
Load characteristic	Current/Voltage	A/V	500 or less/18.5
	Torque	N·m {kgf·m}	28.4 {2.9} or more
	Speed	rpm	1250 or more
Locking characteristic	Current/Voltage	A/V	1400 or less/9
	Torque	N·m {kgf·m}	88.2 {9.0} or more

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Trouble Diagnosis

Symptom	Trouble cause
No generation of electric power	a. Defective IC regulator b. Open circuit in field coil
Low output	a. Defective diode b. Defective stator coil c. Defective rectifier d. Internal short circuit in field coil
Too high regulated voltage	a. Defective IC regulator
Noise	a. Defective bearing b. Defective rectifier c. Foreign material in generator

Specifications

Item			Standard value and limit	
Isuzu Part No.			1-81200-633-0	1-81200-603-2
Manufacturer code No.			A009TU3782	A004TU6285
Rated output		(V-A)	24-90	24-50
Output characteristic (hot)	Voltage	(V)	27	27
	Current	(A)	105 or more	42 or more
	Revolution speed	(r/min)	2,500	2,500
	Voltage	(V)	27	27
	Current	(A)	114 or more	50 or more
	Revolution speed	(r/min)	5,000	5,000
Field coil resistance		(Ω: at 20°C)	4.3-5.0	4.4-5.1
Regulated voltage by regulator		(V)	28-29	28-29
Revolution direction (viewed from pulley side)			Clockwise	Clockwise

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