TEST OIL:
ISO 4113 or
SAE J967d

INJ. PUMP CALIBRATION DATA

TEMPORARY

ENGINE MODEL : TD27-T

Ass'y No. 104745—9172
Date : 10 Jun. 1998 [3]
Company : NISSAN DIESEL
No. 16700 86P02

Injection pump No: 104645—9172 [NP—VE4/10F2000RNP1442]
Pump rotation : Clockwise-viewed from drive side

Refer to the service manual (VE pump B.I.S. ; Publication No. EE14E-11042) for all procedures and details other than the following.

1. Test Conditions

1—1 Nozzle : 105780-0060 (NP-DN0SD1510)
1—2 Nozzle holder : 105780-2150
1—3 Nozzle opening pressure : $13.0^{+0.5}$ MPa [133^{+3}kgf/cm²]
1—4 Injection pipe : φ2×φ6×450mm
1—5 Fuel oil temperature : 45^{+5}°C
1—6 Supply pump pressure : 20kPa [0.2 kgf/cm²]
1—7 Joint ass'y : 157641-4720
1—8 Tube ass'y : 157641-4020

2. Setting

		Pump speed (r/min)	Settings		Charge air press kPa [mmHg]	Difference in delivery (cm³)
2—1	Full load delivery	1,100(FULL)	65.2±0.5	(cm³/1,000st)	66.7±1.3 [500±10]	5.0
	Full load delivery	850(BCS)	55.4±0.5	(cm³/1,000st)	32.0±1.3 [240±10]	
2—2	Supply pump pressure	1,100	OFF 451±20 [4.6±0.2]	kPa [kgf/cm²]	66.7±1.3 [500±10]	
2—3	Timing device travel	1,100	OFF 4.2±0.2	(mm)	66.7±1.3 [500±10]	
2—4	Idle speed regulation	400	10.2±2.0	(cm³/1,000st)	0	2.0
2—5	Start (Full lever)	100	$75.0^{+20.0}_{-15.0}$	(cm³/1,000st)	0	
2—6	Full-load speed regulation	2,500	23.5±2.0	(cm³/1,000st)	66.7±1.3 [500±10]	
2—7	Load-timer Adjustment	1,100	3.6±0.2	(mm)	66.7±1.3 [500±10]	
2—8						

3. Test Specifications

	Charge air press	66.7±1.3 kPa [500±10 mmHg]					
	Solenoid timer	ON		OFF			
3—1 Timing device	N =r/min mm	700 (4.0±0.5)	1,100 (6.4±0.4)	700 (1.6±0.4)	1,100 4.2±0.2	1,500 (6.4±0.4)	2,000 $7.0^{+0.4}_{-0.5}$
3—2 Supply pump	N =r/min kPa [kgf/cm²]	700 (441±39) [(4.5±0.4)]	1,100 (559±39) [(5.7±0.4)]	700 (324±39) [(3.3±0.3)]	1,100 451±20 [4.6±0.2]	1,500 (549±29) [(5.6±0.3)]	
3—3 Overflow delivery	N =r/min cm³/min			1,100 (O-Ring) 550±130	1,100(O-Ring less) 430±130		

3—4 Fuel injection quantities

Speed control lever position	Pump speed (r/min)	Fuel delivery (cm³/1,000st)	Charge air press kPa [mmHg]
Max. speed	1,100(FULL)	65.2±1.0	66.7±1.3 [500±10]
	850(BCS)	55.4±1.0	32.0±1.3 [240±10]
	400	(49.1±4.5)	0
	500	(48.0±1.5)	0
	850	(47.4±2.5)	0
	850	(60.1±5.0)	42.7±1.3 [320±10]
	1,100	(48.6±2.0)	0
	1,500	(64.0±2.0)	66.7±1.3 [500±10]
	2,000	(58.3±2.0)	66.7±1.3 [500±10]
	2,150	(55.4±4.0)	66.7±1.3 [500±10]
	2,250	(44.9±4.0)	66.7±1.3 [500±10]
	2,500	23.5±2.0	66.7±1.3 [500±10]
	2,700	Below 10.0	66.7±1.3 [500±10]
Switch OFF Magnet valve	350	0 Idle	0
Idling	400	10.2±2.0	0
	350	(16.2±4.0)	0
	750	Below 5.0	0

3—5 Solenoid Max. cut-in voltage : 8V, Test voltage : 12~14V

4. Dimensions

K	3.3 ±0.1	mm
KF	5.9 ±0.1	mm
MS	1.0 ±0.1	mm
BCS	—	mm
Pre-stroke	—	mm

Control lever angle

α	10.4±4.0	(°)
β	36.0±5.0	(°)
γ	—	(°)

24時間

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■ Load timer adjustment

1. Adjust the governor shaft so that the clearance between the end of the flange and the end of the governor shaft is approxiamely 3 mm and then lock the nut.

2. Load timer adjustment

(1) Fix the control lever in the position satisfying the following conditions.

Boost Pressure	:	66.7±1.3	kPa { 500±10 mmHg }
Pump Speed	:	1,100	r/min
Fuel Injection Quantity	:	44.0±0.5	cm^3/1,000st

(2) With the control lever positioned as described in (1) above, adjust the governor sleeve so that the timer reduction value (ΔT) conforms to the specified values (Item 2—7).
T=17~22 N·m {1.7 ~ 2.2 kgf·m}

3. Confirmation of Timer Characteristics
Fix the control lever in the position satisfying the following conditions, and confirm the timer stroke.

Control lever position			Specified Values	
Pump speed (r/min)	Fuel injection q'ty (cm^3/1,000st)	Boost Pressure kPa {mmHg}	Timer stroke (mm)	Timer reduction value (mm)
1,100	44.0±1.0	66.7±1.3 {500±10}	3.6±0.1	(0.6)
1,100	33.0±1.0	66.7±1.3 {500±10}	2.9±0.4	(1.3)

■ Potentiometer adjustment

	Pump speed (r/min)	Fuel injection q'ty (cm^3/1,000st)	Out-put voltage (V)	Control lever angle	Remaks
Potentiometer spec.	850	3.72±0.03	20.9±1.0	—	Adjusting point
	—	(2.18±0.43)		IDLE	Check point
	—	(8.10±0.58)		FULL	Check point
ON → OFF Switch spec.	ON → OFF	—	—	(1.4°)	Check point
	OFF → ON	—	—	(15.9°)	Check point

Boost pressure : 0 kPa [0 mmHg] (Input-voltage : 10V)

1. Hold the control lever in the idling position.
2. Adjust the potentiometer so that the out-put voltage is 3.72±0.03 V. Then fix the potentiometer.
3. After adjusting the potentiometer, remove the dummy bolt and then confirm the potentiometer's out-put voltage specifications above.