

INJECTION PUMP TEST SPECIFICATIONS

096000-7480

INJECTION PUMP	096000-748# (VE4/10F2500RND748)	MANU-FACTURER	TOYOTA
Governor Type	Maximum-minimum speed	ENGINE TYPE	2C-L
Rated Voltage	12V	VEHICLE MODEL	COROLLA
Rotation	Clockwise viewed from drive side	Dimension (mm) MS	: 0.43 – 0.63
Injection Order	A – B – C – D	Dimension (mm) K	: 3.20 – 3.40
Injection Interval	90° ±30'	Dimension (mm) KF	: 5.20 – 5.40

1. TEST CONDITIONS

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|----------------------------|---------------------------------|-----------------------|------------------------------|
| 1) Nozzle | : 093400-0540
(DN12SD12A) | 4) Feed Pressure | : 0.2 kgf/cm ² |
| 2) Nozzle Opening Pressure | : 149 – 151 kgf/cm ² | 5) High Pressure Pipe | : ø2 x ø6 x 840 mm |
| 3) Test Oil | : SAE J967 (ISO4113) | 6) Fuel Temperature | : 40 – 45°C
(104 – 113°F) |

NOTE: Apply 6 volts DC across the fuel cut solenoid during adjustment.

2. PRE-ADJUSTMENT (at full lever position, boost pressure – mmHg)

	Pump Speed (rpm)	Fuel Delivery (cc/200st· 1cyl.)	Remarks
Full Load	1500	8.09 – 8.83	By full load setting screw
High Speed	2700	1.80 – 3.40	By max. speed setting screw

Load Sensing Timer: Adjust the governor shaft so that the dimension "L" between the housing flange and the end of the governor shaft is about 2.5 mm.

3. ADJUSTMENT OF PUMP INTERNAL PRESSURE (at full lever position, boost pressure – mmHg)

Pump Speed (rpm)	Internal Pressure (kgf/cm²)	Remarks
600	2.70 – 3.30	By the regulating valve
2100	6.47 – 7.07	

4. OVERFLOW QUANTITY CHECK (at full lever position, boost pressure – mmHg)

Pump Speed (rpm)	Overflow Quantity (cc/1000st)	Remarks
2100	167.0 – 364.0	The overflow valve belonging to the pump should be used for checking.

5. ADJUSTMENT OF TIMER (at full lever position, boost pressure – mmHg)

Pump Speed (rpm)	600	1500	2100	
Piston Travel (mm)	0.68 – 1.68	4.92 – 5.92	7.75 – 8.75	

NOTE: Hysteresis at each pump speed is less than 0.3 mm.

6. ADJUSTMENT OF FUEL DELIVERY

Lever Position	Pump speed (rpm)	Fuel Delivery (cc/200st, 1cyl)	Max. Spread In Delivery (cc)	Boost Pressure Absolute Pressure (mmHg)	Remarks
FULL	1500	8.29 – 8.63	0.4	—	By full load setting screw
	2700	2.00 – 3.20	—	—	By max. speed setting screw
	2600	4.50 – 6.30	—	—	
	2950	Less than 0.70	—	—	
	100	8.60 – 13.40	1.2	—	
	500	6.81 – 7.71	0.5	—	By governor sleeve plug
	2350	7.19 – 8.09	0.5	—	
	2500	6.39 – 7.65	0.5	—	
	—	—	—	—	

7. SETTING OF LOAD SENSING TIMER (at full lever position, boost pressure – mmHg)

	Pump Speed (rpm)	Fuel Delivery (cc/200st, 1cyl)	Remarks
Start of Load Sensing	1500	Full-load delivery – (0.70 – 1.30)	By governor shaft
End of Pressure Drop	1500	Full-load delivery – (2.40 – 3.00)	Check

CHECK POINTS 1. Change of Piston Travel : 2.16 – 2.76 mm (pump speed 1500 rpm)
 2. Dimension of Governor Shaft : L = 0.50 – 2.00 mm

8. SETTING OF ADJUSTING LEVER AT LOW SPEED (at idle lever position)

Lever Position	Pump Speed (rpm)	Fuel Delivery (cc/500st, 1cyl)	Max. Spread In Delivery (cc)	Remarks
IDLE	400	Q = 5.88 – 8.13	0.85	By idle setting screw
	375	More than (Q + 1.25)	—	
	475	Q – (3.75 – 6.25)	—	
	1300	Less than 0.50	—	

9. ADJUSTMENT OF BOOST COMPENSATOR

N.A. : Not Applicable

Pump Speed (rpm)	Boost Pressure (mmHg)	Fuel Delivery (cc/1000st, 1cyl)	Remarks
N.A.	N.A.	N.A.	

10. ADJUSTMENT OF T.C.V. (with no power supply to T.C.V.)

N.A. : Not Applicable

Pump Speed (rpm)	Boost Pressure (mmHg)	Piston Stroke (mm)
N.A.	N.A.	N.A.

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11. ADJUSTMENT OF THROTTLE POSITION SENSOR (Applying 5.0 \pm 0.005V to sensor.)				N.A. : Not Applicable	
	Pump Speed (rpm)	Condition		Sensor Output Voltage	
Set point	N.A.	N.A.		N.A.	
Check point	N.A.	N.A.		N.A.	
12. CHARACTERISTIC OF A.C.S.D.					
Lever Position	Pump Speed (rpm)	Fuel Temperature (°C)	Measuring Value		Remarks
IDLE	400	24 – 26	Piston Travel (mm) : 0.55 – 0.95		
	400	24 – 26	Idle-up Quantity (cc/500st) : Q + (3.00 – 4.00)		
13. ADJUSTMENT OF POWER CONTROL (Adjustment should be done while the power control lever is in contact with the stopper.)					
N.A. : Not Applicable					
Lever Position	Pump Speed (rpm)	Boost Pressure (mmHg)	Fuel Delivery (cc/200st. 1cyl)	Remarks	
FULL	N.A.	N.A.	N.A.		
14. ADJUSTMENT OF DASH POT					
N.A. : Not Applicable					
Pump Speed (rpm)	Boost Pressure (mmHg)		Fuel Delivery (cc/500st)	Remarks	
N.A.	N.A.		N.A.		
15. FINAL CHECK AFTER ADJUSTMENT					
<p>(1) Range of lever angle between idle and full lever position is 47° \pm5°.</p> <p>(2) Resistance of pick-up tachometer must be 650 – 970 ohms.</p>					