

# INJECTION PUMP TEST SPECIFICATIONS

096000-9150

<b>INJECTION PUMP</b>	096000-915# (VE4/10F2500RND915)	<b>MANU-FACTURER</b>	TOYOTA
<b>Governor Type</b>	All speed	<b>ENGINE TYPE</b>	2C
<b>Rated Voltage</b>	12V	<b>VEHICLE MODEL</b>	MODEL F/LITEACE
<b>Rotation</b>	Clockwise viewed from drive side	Dimension (mm) MS	: 0.61 – 0.81
<b>Injection Order</b>	A – B – C – D	Dimension (mm) K	: 3.20 – 3.40
<b>Injection Interval</b>	90° ±30'	Dimension (mm) KF	: 5.20 – 5.40
<b>1. TEST CONDITIONS</b>			
1) Nozzle	: 093400-0540 (DN12SD12A)	4) Feed Pressure	: 0.2 kgf/cm <sup>2</sup>
2) Nozzle Opening Pressure	: 149 – 151 kgf/cm <sup>2</sup>	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)
<b>NOTE:</b> Apply 6 volts DC across the fuel cut solenoid during adjustment.			
<b>2. PRE-ADJUSTMENT</b> (at full lever position, boost pressure – mmHg)			
	<b>Pump Speed (rpm)</b>	<b>Fuel Delivery (cc/200st· 1cyl.)</b>	<b>Remarks</b>
<b>Full Load</b>	1500	7.83 – 8.57	By full load setting screw
<b>High Speed</b>	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.			
<b>3. ADJUSTMENT OF PUMP INTERNAL PRESSURE</b> (at full lever position, boost pressure – mmHg)			
	<b>Pump Speed (rpm)</b>	<b>Internal Pressure (kgf/cm<sup>2</sup>)</b>	<b>Remarks</b>
	600	2.70 – 3.30	By the regulating valve
	2100	6.47 – 7.07	
<b>4. OVERFLOW QUANTITY CHECK</b> (at full lever position, boost pressure – mmHg)			
	<b>Pump Speed (rpm)</b>	<b>Overflow Quantity (cc/1000st)</b>	<b>Remarks</b>
	2100	167.0 – 364.0	The overflow valve belonging to the pump should be used for checking.
<b>5. ADJUSTMENT OF TIMER</b> (at full lever position, boost pressure – mmHg)			
<b>Pump Speed (rpm)</b>	600	1500	2100
<b>Piston Travel (mm)</b>	0.82 – 1.82	4.78 – 5.78	7.42 – 8.42
<b>NOTE:</b> 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	8.03 – 8.37	0.4	—	By full load setting screw
	2700	2.00 – 3.20	—	—	By max. speed setting screw
	2600	3.72 – 5.52	—	—	
	2950	Less than 0.7	—	—	
	100	8.60 – 13.40	1.2	—	By governor sleeve plug
	500	6.71 – 7.61	0.5	—	
	2350	6.83 – 7.73	0.5	—	
2500	5.98 – 7.23	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 – (0.7 – 1.3)	By governor shaft		
End of Pressure Drop	1500	Full-load delivery – (2.0 – 2.6)	Check		
<b>CHECK POINTS</b> 1. Change of Piston Travel : 1.34 – 1.94 mm (pump speed 1500 rpm) 2. Dimension of Governor Shaft : L = 0.5 – 2.0 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 = 6.38 – 8.63	0.85	By idle setting screw	
	375	More than (Q + 1.25)	—		
	475	Q – (4.0 – 6.5)	—		
9. ADJUSTMENT OF BOOST COMPENSATOR <span style="float: right;">N.A. : Not Applicable</span>					
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.) <span style="float: right;">N.A. : Not Applicable</span>					
Pump Speed (rpm)	Boost Pressure (mmHg)	Piston Stroke (mm)			
N.A.	N.A.	N.A.			

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<b>11. ADJUSTMENT OF THROTTLE POSITION SENSOR</b> (Applying – V to sensor.)				N.A. : Not Applicable
	<b>Pump Speed (rpm)</b>	<b>Condition</b>		<b>Sensor Output Voltage</b>
<b>Set point</b>	N.A.	N.A.		N.A.
<b>Check point</b>	N.A.	N.A.		N.A.
<b>12. CHARACTERISTIC OF A.C.S.D.</b>				
<b>Lever Position</b>	<b>Pump Speed (rpm)</b>	<b>Fuel Temperature (°C)</b>	<b>Measuring Value</b>	<b>Remarks</b>
IDLE	400	24 – 26	Piston Travel (mm) : 0.74 – 1.14	
	400	24 – 26	Idle-up Quantity (cc/500st) : Q + (1.5 – 2.5)	
<b>13. ADJUSTMENT OF POWER CONTROL</b> (Adjustment should be done while the power control lever is in contact with the stopper.)				N.A. : Not Applicable
<b>Lever Position</b>	<b>Pump Speed (rpm)</b>	<b>Boost Pressure (mmHg)</b>	<b>Fuel Delivery (cc/200st. 1cyl)</b>	<b>Remarks</b>
FULL	N.A.	N.A.	N.A.	By stopper screw
<b>14. ADJUSTMENT OF DASH POT</b>				N.A. : Not Applicable
<b>Pump Speed (rpm)</b>	<b>Boost Pressure (mmHg)</b>	<b>Fuel Delivery (cc/500st)</b>	<b>Remarks</b>	
N.A.	N.A.	N.A.		
<b>15. FINAL CHECK AFTER ADJUSTMENT</b>				
(1) Range of lever angle between idle and full lever position is 43° ±5°.				