

# INJECTION PUMP TEST SPECIFICATIONS

096000-6130

<b>INJECTION PUMP</b>	096000-613# (VE4/10F2100RND613)	<b>MANU-FACTURER</b>	TOYOTA
<b>Governor Type</b>	Maximum-minimum speed	<b>ENGINE TYPE</b>	2L-T
<b>Rated Voltage</b>	12V	<b>VEHICLE MODEL</b>	CRESSIDA
<b>Rotation</b>	Clockwise viewed from drive side	Dimension (mm) MS : 0.20 – 0.30	
<b>Injection Order</b>	A – B – C – D	Dimension (mm) K : 3.20 – 3.40	
<b>Injection Interval</b>	90° ±30'	Dimension (mm) KF : 6.00 – 6.20	

## 1. TEST CONDITIONS

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)

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

## 2. PRE-ADJUSTMENT (at full lever position, boost pressure 500 mmHg)

	<b>Pump Speed (rpm)</b>	<b>Fuel Delivery (cc/200st· 1cyl.)</b>	<b>Remarks</b>
<b>Full Load</b>	1400	13.74 – 14.46	By full load setting screw
<b>High Speed</b>	2450	4.10 – 6.50	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 500 mmHg)

<b>Pump Speed (rpm)</b>	<b>Internal Pressure (kgf/cm<sup>2</sup>)</b>	<b>Remarks</b>
500	3.2 – 3.8	By the regulating valve
2300	7.0 – 7.6	

## 4. OVERFLOW QUANTITY CHECK (at full lever position, boost pressure 500 mmHg)

<b>Pump Speed (rpm)</b>	<b>Overflow Quantity (cc/1000st)</b>	<b>Remarks</b>
2200	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 500 mmHg)

<b>Pump Speed (rpm)</b>	800	1200	2000	2300
<b>Piston Travel (mm)</b>	1.2 – 2.0	2.5 – 3.3	5.4 – 6.0	5.7 – 6.0

**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	1400	13.94 – 14.26	0.4	500	By full load setting screw
	2450	4.30 – 6.30	—	500	By max. speed setting screw
	2250	8.30 – 10.50	—	500	
	2750	Less than 1.30	—	500	
	100	13.60 – 18.40	1.2	0	
	500	11.50 – 12.30	—	0	By governor sleeve plug
	1200	13.70 – 15.10	—	500	
	1800	12.30 – 13.70	—	500	
	2000	11.60 – 12.80	0.5	500	
	—	—	—	—	
7. SETTING OF LOAD SENSING TIMER (at full lever position, boost pressure 0 mmHg)					
	Pump Speed (rpm)	Fuel Delivery (cc/200st, 1cyl)	Remarks		
Start of Load Sensing	1200	Full-load delivery – (0.20 – 1.00)	By governor shaft		
End of Pressure Drop	1200	8.1 – 8.5	Check		
<b>CHECK POINTS</b> 1. Change of Piston Travel : 1.44 – 1.84 mm (pump speed 1200 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	600	A = 1.25 – 1.75	—	Presetting	
	600	A + (0.25 – 0.75)	—	Dash pot adjustment	
	400	B = 8.00 – 10.50	0.85	Lever setting	
9. ADJUSTMENT OF BOOST COMPENSATOR					
Pump Speed (rpm)	Boost Pressure (mmHg)	Fuel Delivery (cc/1000st, 1cyl)	Remarks		
1400	100	54.5 – 58.5			
1400	300	63.5 – 66.5			
1400	500	69.7 – 71.3			
1400	550	69.2 – 71.8			
1400	800	Less than 68.0			
10. ADJUSTMENT OF 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 5.0 ±0.005V to sensor.)				N.A. : Not Applicable
	<b>Pump Speed (rpm)</b>	<b>Condition</b>		<b>Sensor Output Voltage</b>
<b>Set point</b>	1500	15 +/- 0.2(cc/500st)		1.892 – 1.940
<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) : 0.7 – 0.9	
	400	24 – 26	Idle-up Quantity (cc/500st) : B + (3.95 – 4.45)	
<b>13. ADJUSTMENT OF POWER CONTROL</b>				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.	
<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>				
<p>(1) Range of lever angle between idle and full lever position is 46° ±5°.</p> <p>(2) Resistance of pick-up tachometer must be 650 – 970 ohms.</p>				