

INJECTION PUMP TEST SPECIFICATIONS

096000-9532

INJECTION PUMP	096000-953# (VE4/10F2300RND953)	MANU-FACTURER	TOYOTA	
Governor Type	Maximum-minimum speed	ENGINE TYPE	3C-TL	
Rated Voltage	12V	VEHICLE MODEL	CAMRY	
Rotation	Clockwise viewed from drive side	Dimension (mm) MS	: 0.70 – 0.90	
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 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 750 mmHg)				
	Pump Speed (rpm)	Fuel Delivery (cc/200st· 1cyl.)	Remarks	
Full Load	1500	11.98 – 12.54	By full load setting screw	
High Speed	2500	4.30 – 5.50	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 750 mmHg)				
	Pump Speed (rpm)	Internal Pressure (kgf/cm²)	Remarks	
	700	2.95 – 3.55	By the regulating valve	
	2100	6.50 – 7.10		
4. OVERFLOW QUANTITY CHECK (at full lever position, boost pressure 750 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 750 mmHg)				
Pump Speed (rpm)	700	1300	1800	2250 (LST: OFF)
Piston Travel (mm)	1.24 – 2.04	3.70 – 4.50	5.75 – 6.55	6.73 – 7.21
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	12.18 – 12.34	0.4	-10	By full load setting screw
	2500	4.50 – 5.30	—	-10	By max. speed setting screw
	2400	7.28 – 9.28	—	-10	
	2800	Less than 0.20	—	-10	
	100	13.00 – 17.00	1.2	-760	By governor sleeve plug
	2000	10.25 – 10.95	0.5	-10	
	2250	9.09 – 10.15	0.5	-10	
—	—	—	—	—	
7. SETTING OF LOAD SENSING TIMER (at full lever position, boost pressure 300 mmHg)					
	Pump Speed (rpm)	Fuel Delivery (cc/200st, 1cyl)	Remarks		
Start of Load Sensing	1800	Full-load delivery – (0.8 – 1.2)	By governor shaft		
End of Pressure Drop	1800	Full-load delivery – (2.1 – 2.5)	Check		
CHECK POINTS 1. Change of Piston Travel : 1.44 – 1.84 mm (pump speed 1800 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	A = 7.125 – 8.375	0.85	By idle setting screw	
	375	More than (A + 1.25)	—		
	500	A – (4.25 – 6.75)	—		
9. ADJUSTMENT OF BOOST COMPENSATOR					
Pump Speed (rpm)	Boost Pressure (mmHg)	Fuel Delivery (cc/1000st, 1cyl)	Remarks		
700	-210	54.2 – 57.2			
700	-610	41.2 – 44.2			
700	-760	40.0 – 42.0			
1500	40	60.3 – 62.3			
1500	240	Less than 57.0			
1500	-760	41.55 – 45.05			
10. ADJUSTMENT OF 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 ±0.01V to sensor.)				
	Pump Speed (rpm)	Condition	Sensor Output Voltage	
Set point	1000	Fuel Delivery Quantity : 12.8 – 13.2 (cc / 500 st.cyl)	2.945 – 2.995	
Check point	—	Lever Position : Idle	3.310 – 4.430	
	—	Lever Position : Full	0.200 – 1.600	
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) : 1.51 – 1.53	
	400	24 – 26	Idle-up Quantity (cc/500st) : A + (5.0 – 6.0)	
13. ADJUSTMENT OF POWER CONTROL				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. SETTING OF DIAPHRAGM FOR HEATER (at A.C.S.D off)				
Lever Position	Pump Speed (rpm)	Fuel Delivery (cc/200st. 1cyl)	Boost Pressure To Diaphragm (mmHg)	Remarks
IDLE	450	1.9 – 2.5	0	
15. FINAL CHECK AFTER ADJUSTMENT				
<p>(1) Range of lever angle between idle and full lever position is 47° ±5°.</p> <p>(2) Resistance of pick-up tachometer must be 650 – 970 ohms.</p>				