

INJECTION PUMP TEST SPECIFICATIONS

096000-7562

MANUFACTURER	TOYOTA	INJECTION PUMP		096000-756#	
ENGINE TYPE	2L			VE4/10F2100RND756	
VEHICLE MODEL	HILUX/ 4 RUNNER	ROTATION	drive side	GOVERNOR TYPE	All speed
RATED VOLTAGE		INJECTION ORDER		INJECTION INTERVAL	90° ± 30'
Dimension KF (mm)	5.50 ± 0.10		Dimension MS (mm)	0.45 ± 0.10	
Dimension K (mm)	3.30 ± 0.10		Dimension PS (mm)	—	

1. TEST CONDITIONS

Nozzle	093400-0540 (DN12SD12A)	Feed Pressure	19.6 kPa (0.2 kgf/cm ²)
Nozzle Opening Pressure	14.7 ± 0.5 MPa (150 ± 5 kgf/cm ²)	High Pressure Pipe	Ø2 × Ø6 × 840 mm
Test Oil	SAE J967 (ISO4113)	Fuel Temperature	40 - 45 °C (104 - 113°F)

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

2. PRE-ADJUSTMENT

Applying 0 V to T.C.V.

	Lever Position (deg)	Pump Speed (rpm)	Boost Pressure		Fuel Delivery		Max. Spread in Delivery	
			(kPa)	(mmHg)	(mm ³ /st)	(cc/200st)	(mm ³)	(cc)
Full Load	28.5 ± 5°	1200	—	—	56.0 ± 0.5	11.2 ± 0.1	2.0	0.4
High Speed	(Full position)	2575	—	—	24.0 ± 2.5	4.8 ± 0.5	—	—

3. ADJUSTMENT OF INTERNAL PRESSURE

Applying 0 V to T.C.V.

Lever Position	Pump Speed (rpm)	Boost Pressure		Internal Pressure		Remarks
		(kPa)	(mmHg)	(kPa)	(kgf/cm ²)	
Full	500	—	—	343.0 ± 29.0	3.5 ± 0.3	By the regulating valve
	2100	—	—	677.0 ± 29.0	6.9 ± 0.3	

4. OVERFLOW QUANTITY CHECK

Applying 0 V to T.C.V.

Lever Position	Pump Speed (rpm)	Boost Pressure		Overflow Quantity		Remarks
		(kPa)	(mmHg)	(L/h)	(cc/1000st)	
Full	2200	—	—	22 48	167 364	

NOTE : The overflow valve belonging to the pump should be used checking.

5. ADJUSTMENT OF TIMER

Applying 0 V to T.C.V.

Lever Position	Pump Speed (rpm)	Boost Pressure		Piston Travel (mm)	Remarks
		(kPa)	(mmHg)		
Full	600	—	—	1.40 ± 0.50	
	1200	—	—	4.40 ± 0.50	
	2000	—	—	8.40 ± 0.40	
	2300	—	—	9.00 ± 0.24	

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

6. ADJUSTMENT OF BOOST COMPENSATOR								— : Not Applicable
Lever Position	Pump Speed (rpm)	Boost Pressure		Fuel Delivery		Max. Spread in Delivery		Remarks
		(kPa)	(mmHg)	(mm ³ /st)	(cc/200st)	(mm ³)	(cc)	
—	—	—	—	—	—	—	—	—

7. ADJUSTMENT OF FUEL DELIVERY								Applying 0 V to T.C.V.
Lever Position	Pump Speed (rpm)	Boost Pressure		Fuel Delivery		Max. Spread in Delivery		Remarks
		(kPa)	(mmHg)	(mm ³ /st)	(cc/200st)	(mm ³)	(cc)	
Full	1200	—	—	56.0 ± 0.5 = A	11.2 ± 0.1 = A	2.0	0.4	By full load setting screw
	2575	—	—	24.0 ± 2.5	4.8 ± 0.5	—	—	By max. speed setting screw
	2250	—	—	44.0 ± 3.0	8.8 ± 0.6	—	—	
	2850	—	—	Less than 5.0	Less than 1.0	—	—	
	100	—	—	65.0 ± 10.0	13.0 ± 2.0	6.0	1.2	By governor sleeve plug
	500	—	—	53.0 ± 2.0	10.6 ± 0.4	2.5	0.5	
	2000	—	—	51.0 ± 2.0	10.2 ± 0.4	2.5	0.5	

8. SETTING OF LOAD SENSING TIMER								Applying 0 V to T.C.V.
Lever Position	Pump Speed (rpm)	Boost Pressure		Fuel Delivery		Remarks		
		(kPa)	(mmHg)	(mm ³ /st)	(cc/200st)			
Start of Load Sensing	1200	—	—	(A - 5.0) ± 2.0	(A - 1.0) ± 0.4	By governor shaft		
End of Pressure Drop	1200	—	—	44.0 ± 1.0	8.8 ± 0.2	Check		
Check Points	1. Change of Piston Travel : 2.20 ± 0.40 mm (Pump speed 1200 rpm) 2. Dimension of Governor Shaft : L = mm							

9. SETTING OF ADJUSTING LEVER AT LOW SPEED

Applying 0 V to T.C.V.

Lever Position (deg)	Pump Speed (rpm)	Boost Pressure (kPa)	Fuel Delivery		Max. Spread in Delivery		Remarks
			(mm ³ /st)	(cc/500st)	(mm ³)	(cc)	
- 16 ± 5° (Idle position)	350	—	17.4 ± 1.5 = B	8.7 ± 0.8 = B	1.7	0.9	Lever setting
	425	—	(B - 10.8) ± 2.5	(B - 5.4) ± 1.3	—	—	

10. SETTING OF ADJUSTING LEVER AT PARTIAL RANGE

— : Not Applicable

Pump Speed (rpm)	Boost Pressure		Fuel Delivery		Remarks
	(kPa)	(mmHg)	(mm ³ /st)	(cc/500st)	
—	—	—	—	—	—

11. CHARACTERISTIC OF A.C.S.D.

Applying 0 V to T.C.V.

Lever Position	Pump Speed (rpm)	Boost Pressure		Measuring Value	Remarks
		(kPa)	(mmHg)		
Idle	350	—	—	1.00 ± 0.10 mm	Piston Travel Idle-up Quantity (0 cc/500st)
	350	—	—	0 mm ³ /st	

Fuel temperature : 39 - 41°C

12. ADJUSTMENT OF T.C.V.

Lever Position	Pump Speed (rpm)	Boost Pressure		Piston Travel (mm)	Remarks
		(kPa)	(mmHg)		
At End of Pressure Drop	1200	—	—	4.40 ± 0.70	With applying 6 ± 0.1 (V)

13. SETTING OF DIAPHRAGM FOR HEATER & POWER STEERING

— : Not Applicable

Pump Speed (rpm)	Vacuum Pressure		Fuel Delivery		Remarks
	(kPa)	(mmHg)	(mm ³ /st)	(cc/500st)	
—	—	—	—	—	—

14. ADJUSTMENT OF POWER CONTROL

— : Not Applicable

Lever Position	Pump Speed (rpm)	Boost Pressure		Fuel Delivery		Remarks
		(kPa)	(mmHg)	(mm ³ /st)	(cc/200st)	
—	—	—	—	—	—	—

15. ADJUSTMENT OF THROTTLE POSITION SENSOR							— : Not Applicable
Lever Position	Pump Speed (rpm)	Boost Pressure		Fuel Delivery		Sensor Output Voltage (V)	Remarks
		(kPa)	(mmHg)	(mm ³ /st)	(cc/500st)		
—	—	—	—	—	—	—	—

16. FINAL CHECK AFTER ADJUSTMENT

- 1 . Range of lever angle between idle and full lever position is $44.5 \pm 3^\circ$.
- 2 . After adgustment has been completed, delivery quantity must be 0 mm³/st (0 cc/200st) when voltage at fuel cut solenoid is reduced to zero. (Pump Speed Np = 100 rpm)