INJECTION PUMP TEST SPECIFICATIONS

096000-4620

INJECTION PUMP	096000-462# (VE4/12F1800RND462)	**MANU-FACTURER**	TOYOTA
Governor Type	All speed	**ENGINE TYPE**	14B
Rated Voltage	24V	**VEHICLE MODEL**	DYNE
Rotation	Clockwise viewed from drive side	Dimension (mm) MS	: 0.42 – 0.62
Injection Order	A – B – C – D	Dimension (mm) K	: 3.20 – 3.40
Injection Interval	90° ±30'	Dimension (mm) KF	: 5.80 – 6.00

1. TEST CONDITIONS

1) Nozzle : 093400-0540 (DN12SD12A)

2) Nozzle Opening Pressure : 145 – 155 kgf/cm^2

3) Test Oil : SAE J967 (ISO4113)

4) Feed Pressure : 0.2 kgf/cm^2

5) High Pressure Pipe : ø2 x ø6 x 840 mm

6) Fuel Temperature : 40 – 45°C (104 – 113°F)

NOTE: Apply 14 volts DC across the fuel cut solenoid during adjustment.

2. PRE-ADJUSTMENT (at full lever position)

	Pump Speed (rpm)	**Fuel Delivery (cc/200st· 1cyl.)**	**Remarks**
Full Load	1100	14.44 – 15.34	By full load setting screw
High Speed	2075	3.40 – 5.80	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)

Pump Speed (rpm)	**Internal Pressure (kgf/cm^2)**	**Remarks**
400	2.20 – 2.80	By the regulating valve
1600	6.40 – 7.00	

4. OVERFLOW QUANTITY CHECK (at full lever position)

Pump Speed (rpm)	**Overflow Quantity (cc/1000st)**	**Remarks**
1600	390.0 – 670.0	The overflow valve belonging to the pump should be used for checking.

5. ADJUSTMENT OF TIMER (at full lever position)

Pump Speed (rpm)	1360	1460	1600	
Piston Travel (mm)	2.00 – 2.90	3.20 – 4.10	4.76 – 5.24	

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	1100	14.64 – 15.14	0.6	—	By full load setting screw
	2075 2250	3.40 – 5.60 Less than 0.40	— —	— —	By max. speed setting screw
	100	17.0 – 21.0	1.4	—	By governor sleeve plug
	500 700 900 1300 1700	10.52 – 11.52 11.16 – 12.16 14.08 – 15.08 Approx.(14.2 – 15.2) 12.60 – 13.60	0.6 0.6 0.6 0.6 0.6	— — — —	

7. SETTING OF LOAD SENSING TIMER (at full lever position)

N.A. : Not Applicable

	Pump Speed (rpm)	Fuel Delivery (cc/200st, 1cyl)	Remarks
Start of Load Sensing	1360	Full-load delivery – (13.0 – 13.4)	By governor shaft
End of Pressure Drop	1360	11.2 – 11.6	Check

CHECK POINTS 1. Piston Trevel at End of Pressure Drop :1.2–1.5 mm (pump speed 1360 rpm)
2. Dimension of Governor Shaft : L = 0.5 – 2.0 mm

8. SETTING OF ADJUSTING LEVER AT LOW SPEED

Lever Position	Pump Speed (rpm)	Fuel Delivery (cc/500st, 1cyl)	Max. Spread In Delivery (cc)	Remarks
IDLE	325 325 325	A = 9.5 – 10.5 A + (1.0 – 2.0) 3.25 – 6.25	— — 1.0	Dash pot adjustment Screw down the dash pot screw By idle setting screw

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.

N.A. : Not Applicable

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

INJECTION PUMP TEST SPECIFICATIONS

096000-4620

11. ADJUSTMENT OF THROTTLE POSITION 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.

N.A. : Not Applicable

Lever Position	Pump Speed (rpm)	Fuel Temperature (°C)	Measuring Value	Remarks
IDLE	400	24 – 26	Piston Travel (mm) : 0.5 – 0.7	
	400	24 – 26	Idle Screw Gap (mm) : Q + (4.5 – 5.5)	

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	1100	N.A.	13.62 – 13.82	By stopper screw

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

(1) Range of lever angle between idle and full lever position is 43° ±5°.
(2) Q is measured fuel delivery quantity (cc/500st) at 400 rpm.