

INJECTION PUMP TEST SPECIFICATIONS

096000-0512

INJECTION PUMP	096000-051# (VE4/9F1900RND051)	MANU-FACTURER	MAZDA
Governor Type	All speed	ENGINE TYPE	XA
Rated Voltage	12V	VEHICLE MODEL	T Series
Rotation	Clockwise viewed from drive side	Dimension (mm) MS	: -
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
(ND-DN12SD12A) | 4) Feed Pressure | : 0.2 kgf/cm ² |
| 2) Nozzle Opening Pressure | : 145 - 155 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)

	Pump Speed (rpm)	Fuel Delivery (cc/200st· 1cyl.)	Remarks
Full Load	1000	8.2 - 8.8	By full load setting screw
High Speed	2150	2.4 - 3.6	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/cm²)	Remarks
400	1.9 - 2.5	By the regulating valve
1900	6.8 - 7.4	

4. OVERFLOW QUANTITY CHECK (at full lever position)

Pump Speed (rpm)	Overflow Quantity (cc/1000st)	Remarks
1900	193 - 421	The overflow valve belonging to the pump should be used for checking.

5. ADJUSTMENT OF TIMER (at full lever position)

Pump Speed (rpm)	650	1000	1500	1900
Piston Travel (mm)	0.2 - 1.0	2.6 - 3.4	6.1 - 6.5	8.4 - 9.2

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	1000	8.4 – 8.6	0.4	—	By full load setting screw
	2150	2.6 – 3.4	—	—	By max. speed setting screw
	2000	7.2 – 9.0	—	—	
	2250	Less than 0.2	—	—	
	200	13.6 – 16.6	0.8	—	By governor sleeve plug
	300	9.4 – 11.0	0.5	—	
	500	7.7 – 8.3	0.5	—	
	1500	9.4 – 10.0	0.5	—	
1900	9.3 – 9.8	0.5	—		
7. SETTING OF LOAD SENSING TIMER (at full lever position, boost pressure – mmHg)					N.A. : Not Applicable
	Pump Speed (rpm)	Fuel Delivery (cc/200st, 1cyl)	Remarks		
Start of Load Sensing	N.A.	N.A.			
End of Pressure Drop	N.A.	N.A.			
CHECK POINTS 1. Change of Piston Travel : – mm (pump speed 1750 rpm) 1. Piston Travel at End of Pressure Drop : – mm (pump speed rpm) 2. Dimension of Governor Shaft : L = 1.2 – 1.8 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	A = 3.0 – 4.5	1.0	By idle setting screw	
	500	Less than 0.5	—		
9. ADJUSTMENT OF BOOST COMPENSATOR					N.A. : Not Applicable
Pump Speed (rpm)	Boost Pressure (mmHg)	Fuel Delivery (cc/200st, 1cyl)	Remarks		
N.A.	N.A.	N.A.			
10. ADJUSTMENT OF T.C.V. (with no power supply to 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 ±0.005V to 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	N.A.	N.A.	N.A.	
	N.A.	N.A.	N.A.	
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	N.A.	N.A.	N.A.	
14. SETTING OF DIAPHRAGM FOR HEATER				N.A. : Not Applicable
Lever Position	Pump Speed (rpm)	Fuel Delivery (cc/200st. 1cyl)	Boost Pressure To Diaphragm (mmHg)	Remarks
IDLE	N.A.	N.A.	N.A.	
15. FINAL CHECK AFTER ADJUSTMENT				
<p>(1) Range of lever angle between idle and full lever position is 37° ±5°.</p> <p>(2) After adjustment has been completed, confirm that there is no injection when voltage at fuel cut solenoid is reduced to zero (pump speed Np =350 upm).</p> <p>(3) MICROSWITCH SETTING Set microswitch in such a way it turns ON at the lever position when fuel delivery is 1.5 – 2.1 cc/200 st at pump speed 500 rpm.</p>				