

# INJECTION PUMP TEST SPECIFICATIONS

093000-3301

<b>INJECTION PUMP</b>	093000-330# (ND-PES4A95G321RND330)	<b>MANUFACTURER</b>	mitsubishi
<b>GOVERNOR</b>	091300-299# (R801)	<b>ENGINE TYPE</b>	4D33
<b>TIMER</b>	091800-281# (SA)	<b>VEHICLE MODEL</b>	CANTER

## 1. INJECTION TIMING

- |                       |                                    |                           |                    |
|-----------------------|------------------------------------|---------------------------|--------------------|
| 1) Rotation           | : Clockwise viewed from drive side | 4) Pre-stroke             | : 3.95 – 4.05 mm   |
| 2) Injection Order    | : 1 – 3 – 4 – 2                    | 5) Tappet Clearance       | : More than 0.2 mm |
| 3) Injection Interval | : 90° ± 30'                        | 6) Locked Timing Location | : BTDC 10.5°       |

## 2. ADJUSTMENT OF DELIVERY QUANTITY

Test Conditions

- |                            |                                |                       |  |
|----------------------------|--------------------------------|-----------------------|--|
| 1) Nozzle                  | : 093400 – 0540<br>(DN12SD12A) | 4) Feed Pressure      | : 1.6 kgf/cm <sup>2</sup>                            |
| 2) Nozzle Opening Pressure | : 175 kgf/cm <sup>2</sup>      | 5) High Pressure Pipe | : $\varnothing 2 \times \varnothing 6 \times 600$ mm |
| 3) Test Oil                | : SAE J967 (ISO4113)           | 6) Fuel Temperature   | : 40 – 45 °C (104 – 113 °F)                          |

Pump Speed (rpm)	Rack Travel (mm)	Number of Strokes	Delivery Quantity (cc/cyl.)	Max. Spread in Delivery (cc)	Remarks
900	14.4	200	13.5 – 14.1	0.8	
1600	14.5	200	14.7 – 15.5	1.0	
1800	About 12.0	200	3.5 – 5.1	0.8	
300	About 11.5	500	3.5 – 6.5	1.0	

Overflow valve opening : 1.6 kgf/cm<sup>2</sup>

## 3. ADJUSTMENT OF GOVERNOR...Refer to the right side of this sheet.

## 4. ADJUSTMENT OF PUMP WITH GOVERNOR OPERATION

Lever Position (deg)	Pump Speed (rpm)	Number of Strokes	Delivery Quantity (cc/cyl.)	Remarks
FULL	900	1000	68.0 – 70.0	
	1600	1000	About 74.5	
	500	1000	About 54.0	
	650	1000	About 52.5	
	1100	1000		

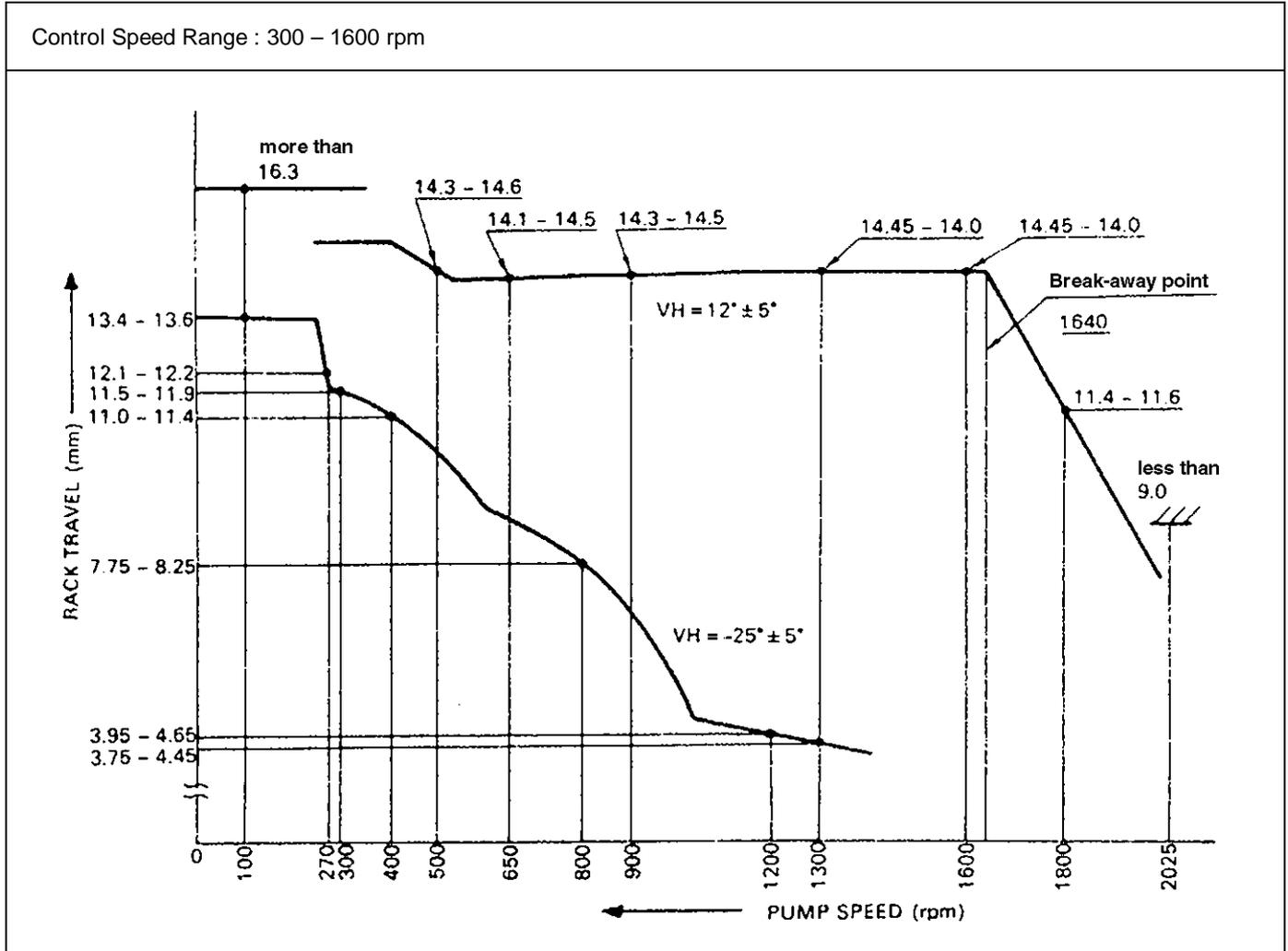
## NOTE

The 1st cylinder is on the governor side.

## 5. ADJUSTMENT OF TIMER

N.A. : Not Applicable

Pump Speed (rpm)	1200 – 1500				
Advance Angle (deg)	6				



6. ADJUSTMENT OF BOOST COMPENSATOR (Full lever position)

Pump Speed (rpm)	Boost Pressure (mmHg)	RW (mm)	Delivery Quantity (cc/200st)
N.A.	N.A.	N.A.	N.A.

NOTE:

- (1) Adjusting Lever Position  
Setting position 0° to be at vertical position.
- (2) Stop Lever Set  
Rack travel must be 6.7 – 6.9 mm when the stop lever is pulled at pump speed 500 rpm (in idle lever position) then fuel delivery must be less than 1.0 cc/200 st.1cyl.
- (3) When rack is once at pump speed 300 rpm in idle lever position, then pump speed increased to 1300 rpm and returned to 300 rpm, the distance between the original rack position and new rack position must be less than 0.2 mm.
- (4) When rack is once at pump speed 100 rpm in idle lever position, then pump speed increased to 400 rpm and returned to 150 rpm, the distance between the original rack position and new rack position must be less than 0.2 mm.
- (5) Temporary Adjustment of Stop Cam  
L<sub>1</sub> = 30.5 mm L<sub>2</sub> = 30.5 mm L<sub>3</sub> = 25.36 mm