

ZEXEL Ass'y No.	104749-2190
Bosch Ass'y No.	9 460 610 156
Bosch Typecode	
Engine Type	LD20(XP)
Manufacturer	NISSAN
Edition date	06.04.04

## 1 Adjustment conditions

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
	Test oil		ISO4113orSAEJ967d				
		1404 Test oil					
P	Test oil temperature	degC	45	45	50		
	Nozzle		105000-2010				
	Bosch type code		NP-DN12SD12TT				
	Nozzle holder		105780-2080				
P	Opening pressure	MPa	14.7	14.7	15.19		
P	Opening pressure	kgf/cm2	150	150	155		
P	Injection pipe	mm	2-6-840				
		Inside diameter - outside diameter - length (mm)					
P	Transfer pump pressure	kPa	20	20	20		
P	Transfer pump pressure	kgf/cm2	0.2	0.2	0.2		
	Direction of rotation (viewed from drive side)		R				
		Right					

## 2 Adjustment specification

### 2.1 Full load delivery

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	900	900	900		
S	Average injection quantity	mm3/st.	33	32.5	33.5		
S	Difference in delivery	mm3/st.	2.5		2.5		
P	Basic		*				

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	2700	2700	2700		
C	Average injection quantity	mm3/st.	13.9	10.4	17.4		

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	2300	2300	2300		
C	Average injection quantity	mm3/st.	32.6	30.6	34.6		

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	900	900	900		
C	Average injection quantity	mm3/st.	33	32	34		

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	600	600	600		
C	Average injection quantity	mm3/st.	33.2	31.2	35.2		

### 2.2 Governing

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	2700	2700	2700		
S	Average injection quantity	mm3/st.	13.9	10.9	16.9		
P	Basic		*				

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	2800	2800	2800		
C	Average injection quantity	mm3/st.	6		6		

### 2.3 Idle

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	350	350	350		
S	Average injection quantity	mm3/st.	6.2	4.7	7.7		
P	Basic		*				

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	350	350	350		
C	Average injection quantity	mm3/st.	6.2	4.2	8.2		
C	Difference in delivery	mm3/st.	2.5		2.5		

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	500	500	500		
C	Average injection quantity	mm3/st.	4.5		4.5		

### 2.4 Partial injection quantity

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	900	900	900		
C	Average injection quantity	mm3/st.	9.1	4.1	14.1		

### 2.5 Start

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	100	100	100		

S	Average injection quantity	mm3/st.	50	40	60		
P	Basic		*				
	Remarks						
		Refer to additional devices.					

**2.6 Stop**

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	350	350	350		
C	Average injection quantity	mm3/st.	0	0	0		
	Remarks						
		Magnet OFF					

**2.7 Overflow**

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	900	900	900		
C	Overflow quantity	cm3/min	342	210	474		

**2.8 Pump chamber pressure**

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	900	900	900		
S	Pressure	kPa	343.5	314	373		
S	Pressure	kgf/cm2	3.5	3.2	3.8		
P	Basic		*				

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	900	900	900		
C	Pressure	kPa	343	304	382		
C	Pressure	kgf/cm2	3.5	3.1	3.9		

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	1800	1800	1800		
C	Pressure	kPa	539.5	500	579		
C	Pressure	kgf/cm2	5.5	5.1	5.9		

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	2500	2500	2500		
C	Pressure	kPa	706	667	745		
C	Pressure	kgf/cm2	7.2	6.8	7.6		

**2.9 Timer**

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	900	900	900		
S	Timer stroke	mm	1.5	1.3	1.7		
P	Basic		*				

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	900	900	900		
C	Timer stroke	mm	1.5	1.2	1.8		

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	1800	1800	1800		
C	Timer stroke	mm	6.1	5.5	6.7		

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	2300	2300	2300		
C	Timer stroke	mm	8.3	7.7	8.9		

**2.10 Magnet**

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
C	Max. applied voltage	V	8	8	8		
P	Test voltage	V	13	12	14		

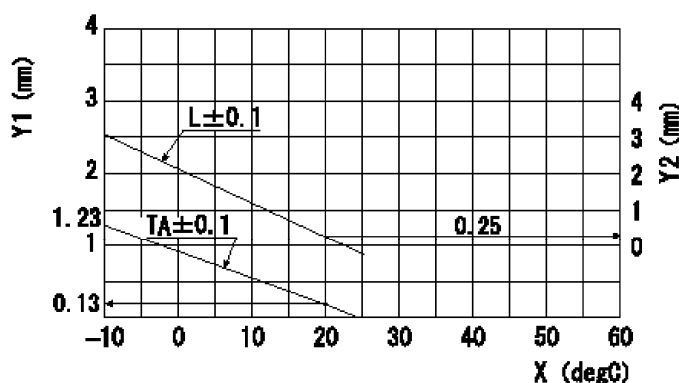
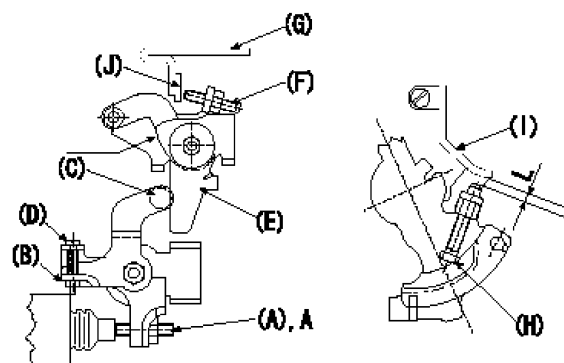
**2.11 Compensator****2.11.1 Load-timer adjustment**

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	900	900	900		
S	Average injection quantity	mm3/st.	17	16	18		
S	Timer stroke variation dT	mm	0.65	0.45	0.85		
P	Basic		*				

**2.12 Additional device adjustment**

## 2.12.1 Additional device 1

Name	W-CSD ADJUSTMENT
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$$TA - t :$$

$$TA = -0.0367t + 1.424$$

$$L - t :$$

$$L = -0.0950t + 3.6$$

 $L1 = 0.25 \pm 0.05 \text{ mm}$ 
 $L2 = L \pm 0.05 \text{ mm}$ 
 $a = 30 \text{ degC}$ 

## Adjustment of the W-CSD

1. Set the intermediate lever position.

Insert a block gauge L1 determined from the graph between the idling set bolt H and the bracket I. Align the intermediate lever E with the aligning mark and position it perpendicularly, then fix it so that the control lever G contacts the screw F.

2. Timer advance adjustment

Adjust using screw (A) so that the timer lift is the value determined from the graph.

3. W-CSD lever adjustment

Insert a block gauge L2 determined from the graph between the idling set bolt (H) and the bracket (I). Adjust the screw (D) so that the W-CSD lever (C)'s roller contacts the intermediate lever (E).

Then fix the screw.

Note: The temperature of the wax at adjustment must not exceed a. When inserting the block gauge, separate (C) and (E) using screw (D) without using excessive force on the lever.

A = after adjustment, turn clockwise 2 turns.

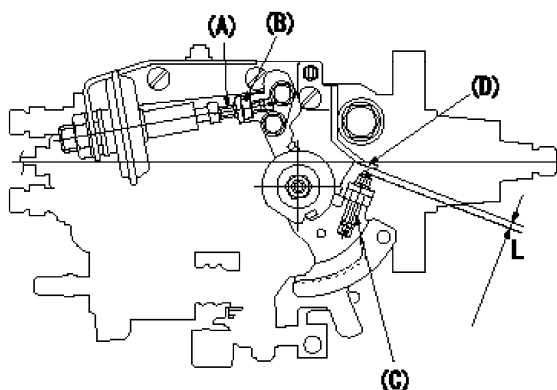
X = temperature t (deg C)

Y1 = timer stroke TA (mm)

Y2 = control lever dimension L mm (control lever position)

## 2.12.2 Additional device 2

Name	DASHPOT ADJUSTMENT
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 $L = 3.8 \pm 0.05 \text{ mm}$ 

 $L = 3.8 \pm 0.05 \text{ mm}$ 

## Adjustment of the dash pot

1. Insert a block gauge L (thickness gauge) between the idle set screw and the bracket.

2. In the above condition, adjust the locknut so that the dashpot adjusting screw (A) contacts the pushrod, and then fix it using the locknut (B).

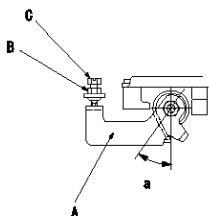
Note: (1) The dashpot and control lever contact faces must be smooth.

(2) Confirm that the control lever returns to the idling position.

**2.12.3 Additional device 3**

Name	STARTING I/Q ADJUSTMENT
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a=32+-4deg

**Starting injection quantity adjustment**

Fix the stop lever's starting injection quantity adjusting bolt. At adjustment, adjust the bolt so that the starting injection quantity is as specified and then fix using the locknut.

A = stop lever

B = locknut

C = adjusting bolt

**3 Assembly dimension**

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
S	K dimension	mm	3.3	3.2	3.4		
S	KF dimension	mm	5.8	5.7	5.9		
S	MS dimension	mm	1.2	1.1	1.3		
S	Control lever angle alpha	deg.	25	21	29		
S	Control lever angle beta	deg.	44	39	49		
S	Control lever angle gamma	deg.	11	10.5	11.5		