

ZEXEL Ass'y No.	104701-2007
Bosch Ass'y No.	9 460 610 973
Bosch Typecode	
Engine Type	TD27T
Manufacturer	NISSAN
Edition date	26.03.08

1 Adjustment conditions

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
	Test oil		ISO4113orSAEJ967 d				
		1404 Test oil					
P	Test oil temperature	degC	45	45	50		
	Nozzle		105780-0060				
	Bosch type code		NP-DN0SD1510				
	Nozzle holder		105780-2150				
P	Opening pressure	MPa	13	13	13.3		
P	Opening pressure	kgf/cm2	133	133	136		
	Injection pipe		157805-7320				
P	Injection pipe	mm	2-6-450				
		Inside diameter - outside diameter - length (mm)					
	Joint assembly		157641-4720				
	Tube assembly		157641-4020				
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 Compensation resistor, compensation voltage comparison

Name	Comp. resistor/voltage																																						
	<table border="1"> <thead> <tr> <th rowspan="2">A</th> <th>B</th> <th>C(ΔUαsoll)</th> </tr> <tr> <th>kΩ</th> <th>V</th> </tr> </thead> <tbody> <tr><td>1</td><td>0.18</td><td>0.056</td></tr> <tr><td>2</td><td>0.30</td><td>0.045</td></tr> <tr><td>3</td><td>0.43</td><td>0.034</td></tr> <tr><td>4</td><td>0.62</td><td>0.023</td></tr> <tr><td>5</td><td>0.82</td><td>0.011</td></tr> <tr><td>6</td><td>1.10</td><td>0</td></tr> <tr><td>7</td><td>1.60</td><td>-0.011</td></tr> <tr><td>8</td><td>2.00</td><td>-0.023</td></tr> <tr><td>9</td><td>2.70</td><td>-0.034</td></tr> <tr><td>10</td><td>3.90</td><td>-0.045</td></tr> <tr><td>11</td><td>5.60</td><td>-0.056</td></tr> </tbody> </table>	A	B	C(ΔUαsoll)	kΩ	V	1	0.18	0.056	2	0.30	0.045	3	0.43	0.034	4	0.62	0.023	5	0.82	0.011	6	1.10	0	7	1.60	-0.011	8	2.00	-0.023	9	2.70	-0.034	10	3.90	-0.045	11	5.60	-0.056
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11	5.60	-0.056																																					
	Compensation resistance/compensation voltage comparison A = Compensation resistor number B= Compensation resistance C = Compensation voltage delta U alpha soll																																						

2.2 Pump chamber pressure

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	1000	1000	1000		
P	TCV duty (%) F TCV 60Hz	%	100	100	100		
P	U alpha soll	V	2.7	2.7	2.7		
S	Pump chamber pressure	kPa	617.5	588	647		
S	Pump chamber pressure	kgf/cm2	6.3	6	6.6		
P	Basic		*				
CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	100	100	100		
P	TCV duty (%) F TCV 60Hz	%	100	100	100		
P	U alpha soll	V	2.7	2.7	2.7		
C	Pump chamber pressure	kPa	294	294			
C	Pump chamber pressure	kgf/cm2	3	3			
CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	1000	1000	1000		
P	TCV duty (%) F TCV 60Hz	%	100	100	100		

P	U alpha soll	V	2.7	2.7	2.7		
C	Pump chamber pressure	kPa	618	579	657		
C	Pump chamber pressure	kgf/cm2	6.3	5.9	6.7		
CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	2000	2000	2000		
P	TCV duty (%) F TCV 60Hz	%	100	100	100		
P	U alpha soll	V	2.7	2.7	2.7		
C	Pump chamber pressure	kPa	755	706	804		
C	Pump chamber pressure	kgf/cm2	7.7	7.2	8.2		

2.3 Timer stroke

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	1000	1000	1000		
P	TCV duty (%) F TCV 60Hz	%	70	70	70		
P	U alpha soll	V	2.7	2.7	2.7		
S	Timer stroke	mm	4.1	3.9	4.3		
P	Basic		*				

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	500	500	500		
P	TCV duty (%) F TCV 60Hz	%	100	100	100		
P	U alpha soll	V	2.7	2.7	2.7		
C	Timer stroke	mm	7.4	5.4	9.4		

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	1000	1000	1000		
P	TCV duty (%) F TCV 60Hz	%	100	100	100		
P	U alpha soll	V	2.7	2.7	2.7		
C	Timer stroke	mm	8.1	6.1	10.1		

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	1000	1000	1000		
P	TCV duty (%) F TCV 60Hz	%	70	70	70		
P	U alpha soll	V	2.7	2.7	2.7		
C	Timer stroke	mm	4.1	3.8	4.4		

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	1000	1000	1000		
P	TCV duty (%) F TCV 60Hz	%	0	0	0		
P	U alpha soll	V	2.7	2.7	2.7		
C	Timer stroke	mm	0	0	0		

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	1500	1500	1500		
P	TCV duty (%) F TCV 60Hz	%	100	100	100		
P	U alpha soll	V	2.7	2.7	2.7		
C	Timer stroke	mm	9.75	9.3	10.2		

2.4 Overflow

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	1000	1000	1000		
P	TCV duty (%) F TCV 60Hz	%	100	100	100		
P	U alpha soll	V	2.7	2.7	2.7		
C	Overflow quantity	cm3/min	600	470	730		

2.5 Fuel injection quantities

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	1000	1000	1000		
P	U alpha soll + dU alpha soll	V	2.8	2.8	2.8		
P	TCV duty (%) F TCV 60Hz	%	100	100	100		
S	Average injection quantity	mm3/st.	80.5	80	81		
S	Difference in delivery	mm3/st.	5		5		
P	Basic		*				

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT	
P	Pump speed	r/min	375	375	375			
P	U alpha soll + dU alpha soll	V	1.89	1.89	1.89			
P	TCV duty (%) F TCV 60Hz	%	100	100	100			
S	Average injection quantity	mm3/st.	7	4	10			
S	Difference in delivery	mm3/st.	2		2			
P	Basic		*					
	Remarks							
			Confirmation of difference in delivery					

C = Check value)

OT = Outside Tolerance (X is set)

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	2500	2500	2500		
P	U alpha soll + dU alpha soll	V	1.66	1.66	1.66		
P	TCV duty (%) F TCV 60Hz	%	100	100	100		
S	Average injection quantity	mm ³ /st.	16.1	13.6	18.6		
S	Difference in delivery	mm ³ /st.	5		5		
P	Basic		*				
	Remarks						
Confirmation of difference in delivery							

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	100	100	100		
P	U alpha soll + dU alpha soll	V	3.5	3.5	3.5		
P	TCV duty (%) F TCV 60Hz	%	100	100	100		
C	Average injection quantity	mm ³ /st.	83.3	73.3	93.3		

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	375	375	375		
P	U alpha soll + dU alpha soll	V	1.89	1.89	1.89		
P	TCV duty (%) F TCV 60Hz	%	100	100	100		
C	Average injection quantity	mm ³ /st.	7	4	10		

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	500	500	500		
P	U alpha soll + dU alpha soll	V	2.49	2.49	2.49		
P	TCV duty (%) F TCV 60Hz	%	100	100	100		
C	Average injection quantity	mm ³ /st.	50.1	48.1	52.1		

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	800	800	800		
P	U alpha soll + dU alpha soll	V	1.86	1.86	1.86		
P	TCV duty (%) F TCV 60Hz	%	100	100	100		
C	Average injection quantity	mm ³ /st.	15.4	13.4	17.4		

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	800	800	800		
P	U alpha soll + dU alpha soll	V	2.62	2.62	2.62		
P	TCV duty (%) F TCV 60Hz	%	100	100	100		
C	Average injection quantity	mm ³ /st.	64.4	62.4	66.4		

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	1000	1000	1000		
P	U alpha soll + dU alpha soll	V	1.85	1.85	1.85		
P	TCV duty (%) F TCV 60Hz	%	100	100	100		
C	Average injection quantity	mm ³ /st.	16.6	14.6	18.6		

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	1000	1000	1000		
P	U alpha soll + dU alpha soll	V	2.8	2.8	2.8		
P	TCV duty (%) F TCV 60Hz	%	100	100	100		
C	Average injection quantity	mm ³ /st.	80.5	79.5	81.5		

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	2000	2000	2000		
P	U alpha soll + dU alpha soll	V	2.58	2.58	2.58		
P	TCV duty (%) F TCV 60Hz	%	100	100	100		
C	Average injection quantity	mm ³ /st.	63.7	61.7	65.7		

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	2250	2250	2250		
P	U alpha soll + dU alpha soll	V	2.43	2.43	2.43		
P	TCV duty (%) F TCV 60Hz	%	100	100	100		
C	Average injection quantity	mm ³ /st.	54.3	51.8	56.8		

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	2500	2500	2500		
P	U alpha soll + dU alpha soll	V	1.66	1.66	1.66		
P	TCV duty (%) F TCV 60Hz	%	100	100	100		
C	Average injection quantity	mm ³ /st.	16.1	13.6	18.6		

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	2500	2500	2500		
P	U alpha soll + dU alpha soll	V	1	1	1		
P	TCV duty (%) F TCV 60Hz	%	100	100	100		
C	Average injection quantity	mm ³ /st.	3		3		

C = Check value)

OT = Outside Tolerance (X is set)

2.6 Magnet valve OFF

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	375	375	375		
P	U alpha soll + dU alpha soll	V	1.89	1.89	1.89		
P	TCV duty (%) F TCV 60Hz	%	0	0	0		
C	Average injection quantity	cm ³ /min	0	0	0		

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	2250	2250	2250		
P	U alpha soll + dU alpha soll	V	2.43	2.43	2.43		
P	TCV duty (%) F TCV 60Hz	%	100	100	100		
C	Average injection quantity	cm ³ /min	0	0	0		

2.7 Confirming NP sensor output

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	200	200	200		
P	TCV duty (%) F TCV 60Hz	%	100	100	100		
P	U alpha soll	V	2.7	2.7	2.7		
C	Speed output	r/min	N+-8				

N=Measure the actual speed.

2.8 Checking fuel temperature sensor

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	1000	1000	1000		
P	TCV duty (%) F TCV 60Hz	%	100	100	100		
P	U alpha soll	V	2.8	2.8	2.8		
C	Temperature output	degC	T+-5				

Measure T = actual output temperature

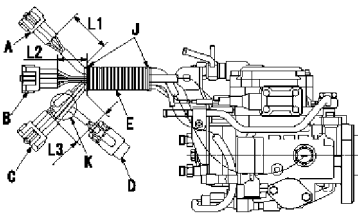
2.9 Magnet

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		

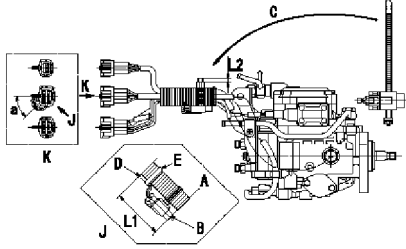
3 Assembly dimension

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
S	K dimension	mm	3.3	3.2	3.4		
S	KF dimension	mm	5.62	5.52	5.72		
S	Pre-stroke	mm	0.1	0.08	0.12		

4 Attachments' specification**4.1 Attachment specification 1**

Name	HARNESS & CONNECTOR
L1=50+-10mm L2=40+-10mm L3=50+-10mm	 <p>Corrugated tube assembly specification (1) Maintain the corrugated tube so that the dimension of the end of the connector and the end of the corrugated are as shown in the figure. (2) At K, pull the Q adjustment resistor towards the clip. (3) Wrap black vinyl tape 4 times around the end of the corrugated tube to fix the tube. A:RS03M-GY B:RS08M-GY C:RS08M-B D:Q adjustment resistor E:Corrugated tube J:PVC tape</p>

4.2 Attachment specification 2

Name	HARNES & CONNECTOR
a=(45deg) L1=(90mm) L2=(5mm)	
	<p>Injection quantity adjustment compensation resistor assembly standards</p> <p>(1) Fix the injection quantity adjustment compensation resistor (Q adjustment resistor) using clips .</p> <p>(2) After fixing the corrugated tube, and with the corrugated tube's end and the end of the Q adjustment resistor aligned, fix the Q adjustment resistor so that it is positioned in the direction shown by the arrow in the figure (each connector clip side a) .</p> <p>(3) Fix the Q adjustment harness's protective tube to the corrugated tube using black PVC tape.</p> <p>(4) After confirming that the Q adjustment resistor is fixed in the position as shown by the arrow in diagram K, cut off the excess clip to leave L2.</p> <p>A: Align the end of the corrugated tube and the end of the Q adjustment resistor.</p> <p>B: Injection quantity adjustment compensation resistor (Q adjustment resistor)</p> <p>C: After attaching the clip to the Q adjustment resistor, fix the corrugated tube.</p> <p>D: Q adjustment resistor harness protective tube</p> <p>E: PVC tape</p> <p>K: Figure shown by arrow</p> <p>J: Figure shown by arrow</p>