

ZEXEL Ass'y No.	104701-2031
Bosch Ass'y No.	9 460 610 729
Bosch Typecode	
Engine Type	TD27ETI
Manufacturer	NISSAN
Edition date	11.05.09 (4)

**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>0.058</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>1.50</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>-0.058</td> </tr> </tbody> </table>	A	B	C(ΔUαsoll)	kΩ	V	1	0.18	0.058	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	1.50	-0.011	8	2.00	-0.023	9	2.70	-0.034	10	3.90	-0.045	11	5.60	-0.058
A	B		C(ΔUαsoll)																																				
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	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		*				

Confirmation of difference in delivery

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	mm3/st.	16.1	13.6	18.6		
S	Difference in delivery	mm3/st.	5		5		
P	Basic		*				

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	mm3/st.	83.3	73.3	93.3		

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
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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	mm3/st.	7	4	10		
<b>CAT</b>	<b>Designation</b>	<b>Unit</b>	<b>Set value</b>	<b>min.</b>	<b>max.</b>	<b>Actual values</b>	<b>OT</b>
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	mm3/st.	50.1	48.1	52.1		
<b>CAT</b>	<b>Designation</b>	<b>Unit</b>	<b>Set value</b>	<b>min.</b>	<b>max.</b>	<b>Actual values</b>	<b>OT</b>
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	mm3/st.	15.4	13.4	17.4		
<b>CAT</b>	<b>Designation</b>	<b>Unit</b>	<b>Set value</b>	<b>min.</b>	<b>max.</b>	<b>Actual values</b>	<b>OT</b>
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	mm3/st.	64.4	62.4	66.4		
<b>CAT</b>	<b>Designation</b>	<b>Unit</b>	<b>Set value</b>	<b>min.</b>	<b>max.</b>	<b>Actual values</b>	<b>OT</b>
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	mm3/st.	16.6	14.6	18.6		
<b>CAT</b>	<b>Designation</b>	<b>Unit</b>	<b>Set value</b>	<b>min.</b>	<b>max.</b>	<b>Actual values</b>	<b>OT</b>
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	mm3/st.	80.5	79.5	81.5		
<b>CAT</b>	<b>Designation</b>	<b>Unit</b>	<b>Set value</b>	<b>min.</b>	<b>max.</b>	<b>Actual values</b>	<b>OT</b>
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	mm3/st.	63.7	61.7	65.7		
<b>CAT</b>	<b>Designation</b>	<b>Unit</b>	<b>Set value</b>	<b>min.</b>	<b>max.</b>	<b>Actual values</b>	<b>OT</b>
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	mm3/st.	54.3	51.8	56.8		
<b>CAT</b>	<b>Designation</b>	<b>Unit</b>	<b>Set value</b>	<b>min.</b>	<b>max.</b>	<b>Actual values</b>	<b>OT</b>
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	mm3/st.	16.1	13.6	18.6		
<b>CAT</b>	<b>Designation</b>	<b>Unit</b>	<b>Set value</b>	<b>min.</b>	<b>max.</b>	<b>Actual values</b>	<b>OT</b>
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	mm3/st.	3		3		
<b>2.6 Magnet valve OFF</b>							
<b>CAT</b>	<b>Designation</b>	<b>Unit</b>	<b>Set value</b>	<b>min.</b>	<b>max.</b>	<b>Actual values</b>	<b>OT</b>
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	cm3/min	0	0	0		
<b>CAT</b>	<b>Designation</b>	<b>Unit</b>	<b>Set value</b>	<b>min.</b>	<b>max.</b>	<b>Actual values</b>	<b>OT</b>
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	cm3/min	0	0	0		
<b>2.7 Confirming NP sensor output</b>							
<b>CAT</b>	<b>Designation</b>	<b>Unit</b>	<b>Set value</b>	<b>min.</b>	<b>max.</b>	<b>Actual values</b>	<b>OT</b>
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.							
<b>2.8 Checking fuel temperature sensor</b>							
<b>CAT</b>	<b>Designation</b>	<b>Unit</b>	<b>Set value</b>	<b>min.</b>	<b>max.</b>	<b>Actual values</b>	<b>OT</b>
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		

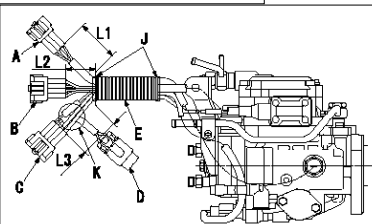
**3 Assembly dimension**

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 &amp; CONNECTOR

L1=110+-10mm  
L2=60+-10mm  
L3=50+-10mm

**Corrugated tube assembly specification**

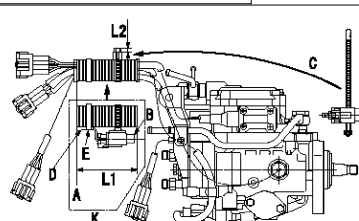
- (1) Maintain the corrugated tube so that the dimension of the end of the connector and the end of the corrugated are as shown in the figure.
- (2) At K, pull the Q adjustment resistor towards the clip.
- (3) Wrap black vinyl tape 4 times around the end of the corrugated tube to fix the tube.

A:RS03M-GY  
B:RS08M-GY  
C:RS08M-B  
D:Q adjustment resistor  
E:Corrugated tube  
J:PVC tape

**4.2 Attachment specification 2**

Name HARNESS &amp; CONNECTOR

L1=(70mm)  
L2=(5mm)

**Injection quantity adjustment compensation resistor assembly standards**

- (1) Fix the injection quantity adjustment compensation resistor (Q adjustment resistor) using clips.
- (2) After fixing the corrugated tube, and at the dimension L1 shown in the figure, fix the Q adjustment resistor so that it is positioned in the direction shown by the arrow in the figure (each connector or clip side).
- (3) Fix the Q adjustment harness's protective tube to the corrugated tube using black PVC tape.
- (4) After confirming that the Q adjustment resistor is fixed in the position as shown by the arrow in diagram, cut off the excess clip to leave L2.

A:End of corrugated tube  
B:Injection quantity adjustment compensation resistor (Q adjustment resistor)  
C:After attaching the clip to the Q adjustment resistor, fix the corrugated tube.  
D:Q adjustment resistor harness protective tube  
E:PVC tape  
K:Figure shown by arrow