ZEXEL Ass'y No.	104760-4271
Bosch Ass'y No.	9 460 613 124
Bosch Typecode	
Engine Type	TD42
Manufacturer	NISSAN DIESEL
Edition date	14.03.02

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	1000	1000	1000		
S	Average injection quantity	mm3/st.	51.2	50.7	51.7		
S	Difference in delivery	mm3/st.	3.5		3.5		
P	Basic		*				

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	2300	2300	2300		
C	Average injection quantity	mm3/st.	16.7	14.2	19.2		

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	2100	2100	2100		
C	Average injection quantity	mm3/st.	44.1	39.6	48.6		

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	2000	2000	2000		
C	Average injection quantity	mm3/st.	45	42.9	47.1		

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	1000	1000	1000		
C	Average injection quantity	mm3/st.	51.2	50.2	52.2		

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	600	600	600		
C	Average injection quantity	mm3/st.	52.9	50.9	54.9		

2.2 Governing

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	2300	2300	2300		
S	Average injection quantity	mm3/st.	16.7	14.7	18.7		
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	2500	2500	2500		
C	Average injection quantity	mm3/st.	5		5		

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.	8.8	6.8	10.8		
S	Difference in delivery	mm3/st.	2		2		
P	Basic		*				

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	450	450	450		
C	Average injection quantity	mm3/st.	3		3		

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	350	350	350		
C	Average injection quantity	mm3/st.	8.8	6.3	11.3		

2.4 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.	65	50	80		
P	Basic		*				

2.5 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 at idling position					

2.6 Overflow

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	1000	1000	1000		
C	Overflow quantity with S/T ON	cm3/min	399	270	528		
	Remarks						
		With an O-ring					

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	1000	1000	1000		
C	Overflow quantity with S/T ON	cm3/min	450	318	582		
	Remarks						
		Without an O-ring					

2.7 Pump chamber pressure

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	1000	1000	1000		
S	Pressure with S/T ON	kPa	480.5	441	520		
S	Pressure with S/T ON	kgf/cm2	4.9	4.5	5.3		
S	Pressure with S/T OFF	kPa	362.5	333	392		

S = Setting value, C = Check value)
OT = Outside Tolerance (X is set)

S	Pressure with S/T OFF	kgf/cm2	3.7	3.4	4		
P	Basic		*				
	Remarks						
		OFF					

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	1000	1000	1000		
C	Pressure with S/T ON	kPa	485.5	441	530		
C	Pressure with S/T ON	kgf/cm2	4.95	4.5	5.4		
C	Pressure with S/T OFF	kPa	362.5	333	392		
C	Pressure with S/T OFF	kgf/cm2	3.7	3.4	4		

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	1600	1600	1600		
C	Pressure with S/T OFF	kPa	568.5	539	598		
C	Pressure with S/T OFF	kgf/cm2	5.8	5.5	6.1		

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	1800	1800	1800		
C	Pressure with S/T OFF	kPa	627.5	598	657		
C	Pressure with S/T OFF	kgf/cm2	6.4	6.1	6.7		

2.8 Timer

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	1000	1000	1000		
S	Timer stroke with S/T ON	mm	4.6	4.2	5		
S	Timer stroke with S/T OFF	mm	2.9	2.7	3.1		
P	Basic		*				
	Remarks						
		OFF					

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	650	650	650		
C	Timer stroke with S/T OFF	mm	1.2	0.6	1.8		

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	1000	1000	1000		
C	Timer stroke with S/T ON	mm	4.6	4.1	5.1		
C	Timer stroke with S/T OFF	mm	2.9	2.6	3.2		

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	1200	1200	1200		
C	Timer stroke with S/T OFF	mm	3.9	3.3	4.5		

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	1800	1800	1800		
C	Timer stroke with S/T OFF	mm	6.6	6	7.2		

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	2200	2200	2200		
C	Timer stroke with S/T OFF	mm	8.1	7.6	8.6		

2.9 Magnet

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
C	Max. applied voltage	V	16	16	16		
P	Test voltage	V	25	24	26		

2.10 Compensator

2.10.1 Load-timer adjustment

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	1200	1200	1200		
S	Average injection quantity	mm3/st.	31.2	30.7	31.7		
S	Timer stroke variation dT	mm	0.5	0.3	0.7		
P	Basic		*				
	Remarks						
		OFF					

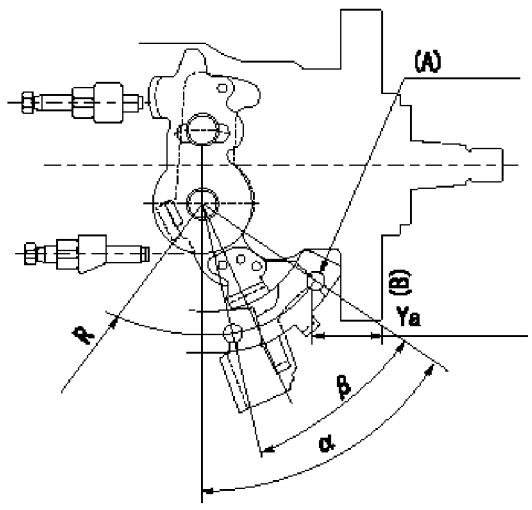
CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	1200	1200	1200		
C	Average injection quantity	mm3/st.	31.2	30.2	32.2		
C	Timer stroke variation dT	mm	0.5	0.2	0.8		

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	1200	1200	1200		
C	Average injection quantity	mm3/st.	23.1	21.6	24.6		
C	Timer stroke variation dT	mm	1	0.7	1.3		

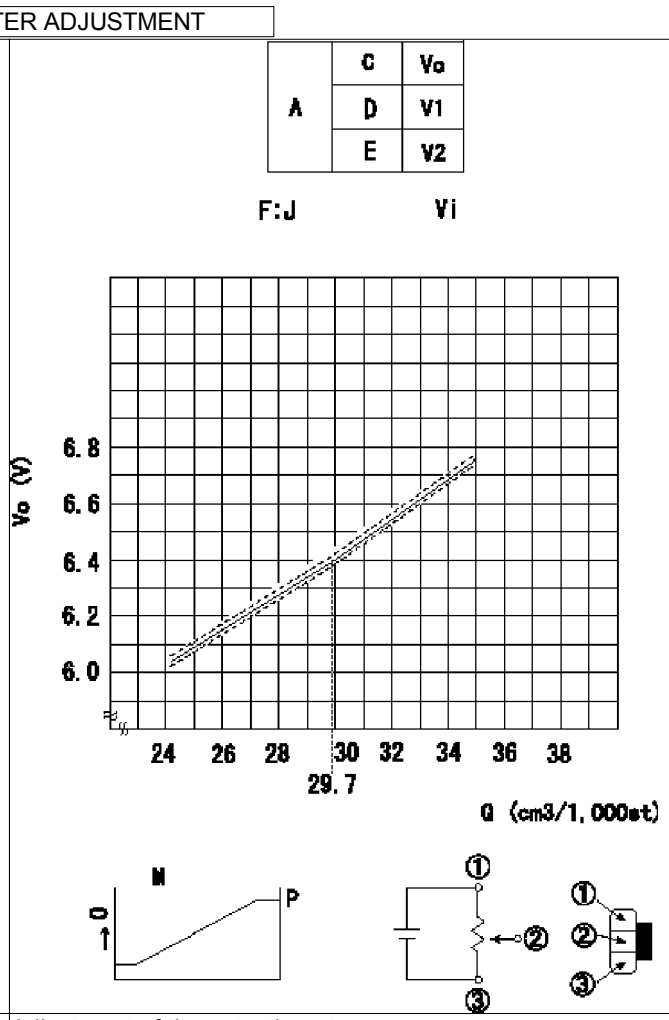
2.11 Additional device adjustment

2.11.1 Additional device 1

Name	CONTROL LEVER ANGLE

Ya=24.3~28.7mm R=53mm Alpha=51.5~59.5deg Beta=35~45deg	
Ya=24.3~28.7mm R=53mm	Control lever angle measurement 1. Measure dimension Ya between the end of the lever and the flange face. 2. Measure the lever angle from the pin hole R (plate). (A) = lever angle and lever reaction force measuring position

2.11.2 Additional device 2

Name	POTENTIOMETER ADJUSTMENT
V1=(1.6+-0.4)V V2=(10.0) J=Vo+-0.03=0.062Q+2.54	
N1=650r/min V1=-V Vi=10 V a=5.7deg L1=4.0+-0.05mm	Adjustment of the potentiometer In the following condition, change the installation position of the potentiometer to adjust the outp ut voltage to within the specified values. At pump speed N1 and with the control lever angle at a (corresponding to a shim thickness of L1), measure the injection quantity Q. Then, determine the voltage Vo from the voltage formula F a nd adjust the potentiometer. J:Vo+-0.03 A = potentiometer performance specifications C = control lever position Q = injection quantity Vo = output voltage D = idle E = full speed Vi = applied voltage M = potentiometer graph O = output P output at connecting harnesses 2 and 3

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	6.64	6.54	6.74		
S	MS dimension	mm	1	0.9	1.1		
S	Control lever angle alpha	deg.	55.5	51.5	59.5		
S	Control lever angle beta	deg.	40	35	45		