ZEXEL Ass'y No.	104740-2610
Bosch Ass'y No.	9 460 610 705
Bosch Typecode	
Engine Type	CD20
Manufacturer	NISSAN
Edition date	24.08.01

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)		L				
		Left					

2 Adjustment specification

2.1 Full load delivery

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	500	500	500		
C	Average injection quantity	mm3/st.	35	29.5	40.5		
		About					
P	Oil temperature	degC	48	46	50		

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	600	600	600		
C	Average injection quantity	mm3/st.	31.1	28.6	33.6		
		About					
P	Oil temperature	degC	50	48	52		

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	1000	1000	1000		
C	Average injection quantity	mm3/st.	29.3	26.8	31.8		
		About					

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

P	Oil temperature	degC	50	48	52		

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	1400	1400	1400		
C	Average injection quantity	mm3/st.	37.2	36.2	38.2		
C	Difference in delivery	mm3/st.	3.5		3.5		
P	Basic		*				
P	Oil temperature	degC	50	48	52		

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	1800	1800	1800		
C	Average injection quantity	mm3/st.	35.8	33.3	38.3		
		About					
P	Oil temperature	degC	50	48	52		

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	2400	2400	2400		
C	Average injection quantity	mm3/st.	37.4	33.9	40.9		
		About					
P	Oil temperature	degC	50	48	52		

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	1400	1400	1400		
S	Average injection quantity	mm3/st.	37.2	36.8	37.6		
S	Difference in delivery	mm3/st.	3		3		
P	Basic		*				
P	Oil temperature	degC	50	48	52		

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.	14	12	16		
S	Difference in delivery	mm3/st.	4.5		4.5		
P	Basic		*				
P	Oil temperature	degC	55	52	58		

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	2700	2700	2700		
C	Average injection quantity	mm3/st.	14	10.5	17.5		
C	Difference in delivery	mm3/st.	5		5		
P	Basic		*				
P	Oil temperature	degC	55	52	58		

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	2800	2800	2800		
C	Average injection quantity	mm3/st.	5		5		
P	Oil temperature	degC	55	52	58		

2.3 Idle

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	350	350	350		

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

S	Average injection quantity	mm3/st.	10.5	9.5	11.5		
S	Difference in delivery	mm3/st.	2		2		
P	Basic		*				
P	Oil temperature	degC	48	46	50		

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	350	350	350		
C	Average injection quantity	mm3/st.	10.5	8.5	12.5		
C	Difference in delivery	mm3/st.	2.5		2.5		
P	Basic		*				
P	Oil temperature	degC	48	46	50		

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	700	700	700		
C	Average injection quantity	mm3/st.	5		5		
P	Oil temperature	degC	50	48	52		

2.4 Partial injection quantity

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	700	700	700		
C	Average injection quantity	mm3/st.	18	11.5	24.5		
		About					
P	Oil temperature	degC	50	48	52		

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	900	900	900		
C	Average injection quantity	mm3/st.	14.2	7.2	21.2		
		About					
P	Oil temperature	degC	50	48	52		

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	1200	1200	1200		
C	Average injection quantity	mm3/st.	15.3	6.8	23.8		
		About					
P	Oil temperature	degC	50	48	52		

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.	60	50	70		
P	Basic		*				
P	Oil temperature	degC	48	46	50		
	Remarks						
		Full					

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	100	100	100		
C	Average injection quantity	mm3/st.	60	50	70		
P	Oil temperature	degC	48	46	50		

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 at idling position					

2.7 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	440	310	570		
P	Oil temperature	degC	50	48	52		

2.8 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	422	383	461		
		About					
S	Pressure with S/T ON	kgf/cm2	4.3	3.9	4.7		
		About					
S	Pressure with S/T OFF	kPa	373	344	402		
S	Pressure with S/T OFF	kgf/cm2	3.8	3.5	4.1		
P	Basic		*				
P	Oil temperature	degC	50	48	52		
	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	422	373	471		
		About					
C	Pressure with S/T ON	kgf/cm2	4.3	3.8	4.8		
		About					
C	Pressure with S/T OFF	kPa	373	334	412		
C	Pressure with S/T OFF	kgf/cm2	3.8	3.4	4.2		
P	Basic		*				
P	Oil temperature	degC	50	48	52		

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	520	471	569		
		About					
C	Pressure with S/T OFF	kgf/cm2	5.3	4.8	5.8		
		About					
P	Oil temperature	degC	50	48	52		

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	2400	2400	2400		
C	Pressure with S/T OFF	kPa	637	588	686		
		About					

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

C	Pressure with S/T OFF	kgf/cm2	6.5	6	7		
		About					
P	Oil temperature	degC	52	50	54		

2.9 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	3.1	2.7	3.5		
		About					
S	Timer stroke with S/T OFF	mm	1.9	1.7	2.1		
P	Basic		*				
P	Oil temperature	degC	50	48	52		
	Remarks						
		OFF					

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	3.1	2.6	3.6		
		About					
C	Timer stroke with S/T OFF	mm	1.9	1.6	2.2		
P	Basic		*				
P	Oil temperature	degC	50	48	52		

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	5.6	5.1	6.1		
P	Oil temperature	degC	50	48	52		

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	2400	2400	2400		
C	Timer stroke with S/T OFF	mm	7.4	6.9	7.8		
P	Oil temperature	degC	52	50	54		

2.10 Magnet

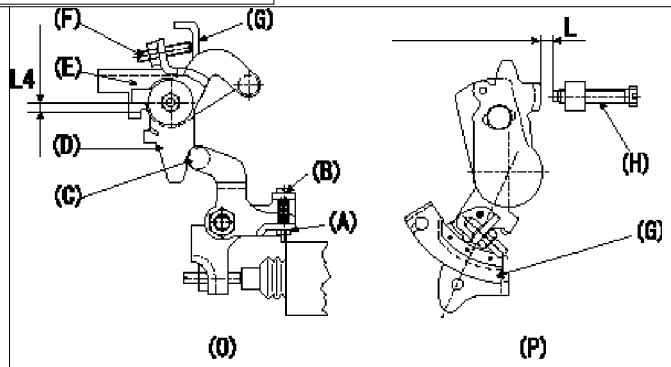
CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
C	Max. applied voltage	V	8	8	8		
P	Test voltage	V	13	12	14		

2.11 Additional device adjustment

2.11.1 Additional device 1

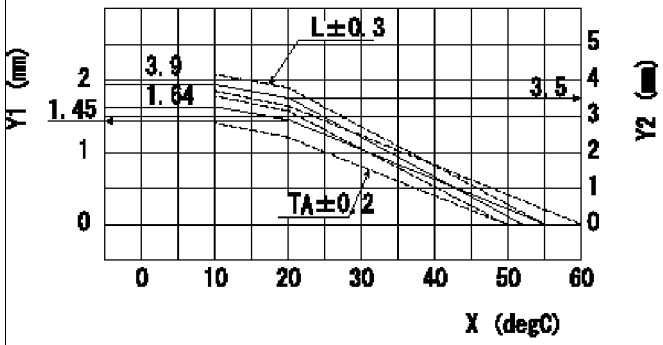
Name	W-CSD ADJUSTMENT

L4=5.3mm



(O)

(P)

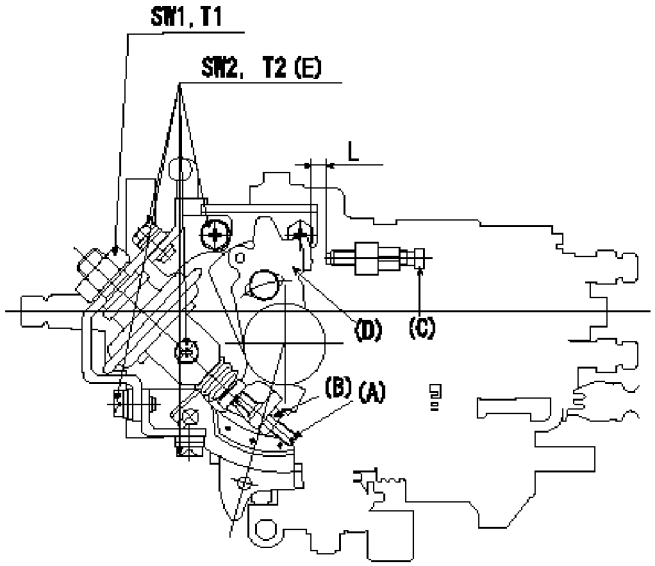


J K

(Q)

L1:L=3.5+-0.05mm L2=5.3+-0.05mm L3=3.5mm L4=5.3mm L5=L+-0.05mm a=30degC	Adjustment of the W-CSD 1. Setting the intermediate lever position (Refer to Fig. 1(O), 2(P).) (1)Insert a block gauge L1 between the idling set screw (H) and the control lever (G). (2)Insert a shim of thickness L2 mm between the intermediate lever (D) and the intermediate lev er bracket (E). Ensure the screw (F) contacts the control lever (G), then fix the nut. 2. Adjustment of the W-CSD lever (Refer to Fig. 1(O), 2(P).) (1)After completing (1) above, remove the block gauge L3 and the shim with the thickness L4. (2)Insert a block gauge L5 determined from the graph (L-theta) in figure 3 (Q) between the idling set screw (H) and the control lever (G). (3)Adjust the screw (B) until the screw (F) contacts the control lever (G). Then fix locknut (A). Note: The temperature of the wax at adjustment must not exceed a. X:Temperature theta (deg C) Y1:Timer stroke TA (mm) Y2:Control lever L dimension (mm; control lever position) J:TA-theta line theta (deg C) <= 10: TA = 1.64 10 <= theta (deg C) <= 20: TA = -0.019 theta + 1.83 20 <= theta (deg C) <= 55: TA = -0.0414 theta + 2.277 K:L-theta graph theta (deg C) <= 10: L = 3.9 10 <= theta (deg C) <= 20: L = -0.04 theta + 4.3 20 <= theta (deg C) <= 52.3: L = -0.108 theta + 5.66

2.11.2 Additional device 2

Name	DASHPOT ADJUSTMENT
T1=15.0~20.0N-m(1.5~2.0kgf-m) T2=6.0~9.0N-m(0.6~0.9kgf-m) SW1=SW22 SW2=SW10 L=6.0+-0.05mm	
T3=4.9~7N-m(0.5~0.7kgf-m) L=6.0+-0.05mm	Adjustment of the dash pot 1. Insert a block gauge L (thickness gauge) between the idle set screw (C) and the control lever (D). 2. In the above condition, adjust so that the dashpot adjusting screw (A) contacts the pushrod. T hen, fix using the locknut (B) (Tightening torque T3). 3. Ensure the adjusting screw or dashpot does not stick or come loose. 4. Confirm that the control lever returns to the idling position. (E) 6 locations

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	6.78	6.68	6.88		
S	MS dimension	mm	0.8	0.7	0.9		
S	Control lever angle alpha	deg.	25	23	27		
S	Control lever angle beta	deg.	44	39	49		

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