

ZEXEL Ass'y No.	104701-2043
Bosch Ass'y No.	9 460 611 583
Bosch Typecode	
Engine Type	QD32-TI
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			
		A	B	C ($\Delta U_{\alpha \text{ soll}}$)
			k Ω	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	1.50	-0.011
		8	2.00	-0.023
		9	2.70	-0.034
		10	3.90	-0.045
		11	5.80	-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
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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

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		*				
	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		

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
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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

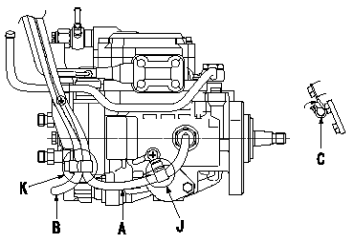
CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
C	Max. applied voltage	V	8	8	8		
P	Test voltage	V	13	12	14		

3 Assembly dimension

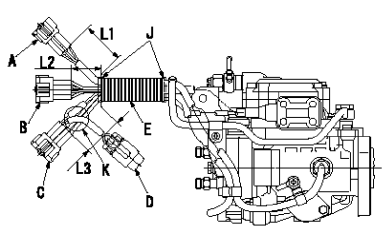
CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
S	K dimension	mm	3.3	3.2	3.4		
S	KF dimension	mm	5.62	5.52	5.72		
S	Pre-stroke	mm	0.1	0.08	0.12		

4 Attachments' specification

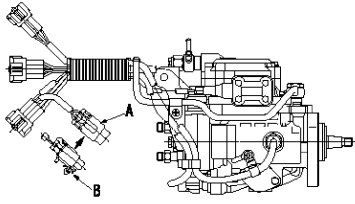
4.1 Attachment specification 1

Name	HARNESS & CONNECTOR
	
	<p>Pickup, TCV harness fixing standards</p> <p>(1)Fix the pickup harness using the clip at J and K. At this time, fix it so that there is not excessive slack between J and K.</p> <p>(2)The TCV harness must be clipped at K. Because it is clipped together with the pickup harness, be careful of the harness layout.</p> <p>(3)Bend the clips over when fixing at J and K to ensure that they are fixed securely.</p> <p>(4)After bending the clip at J, push the clip towards the pump so that the harness does not move up.</p> <p>A:Pickup harness B:T.C.V. harness C:Clips (J, K)</p>

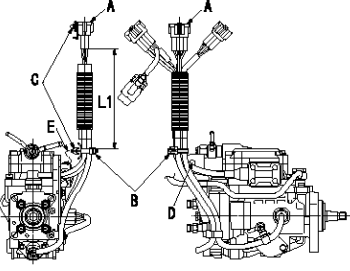
4.2 Attachment specification 2

Name	HARNESS & CONNECTOR
L1=80+-10mm L2=50+-10mm L3=60+-10mm	
	<p>Corrugated tube assembly specification</p> <p>(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.</p> <p>(2)At K, pull the Q adjustment resistor forward towards the clip.</p> <p>(3)Wrap black vinyl tape 4 times around the end of the corrugated tube to fix the tube.</p> <p>A:RS03M-GY B:RS08M-GY C:RS08M-B D:Q adjustment resistor E:Corrugated tube J:PVC tape</p>

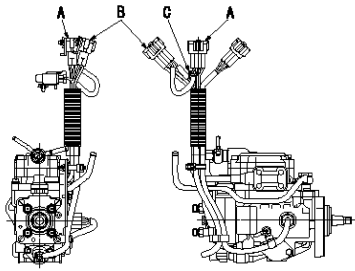
4.3 Attachment specification 3

Name	HARNESS & CONNECTOR
	
	<p>Q adjustment resistor clip assembly specifications</p> <p>(1)After fixing the corrugated tube, install clip B to the Q adjustment resistor.</p> <p>A:Injection quantity adjustment compensation resistor (Q adjustment resistor)</p> <p>B:Clip (be careful of installation direction)</p>

4.4 Attachment specification 4

Name	HARNESS & CONNECTOR
L1=161±5mm	
	<p>Harness position specification</p> <p>(1)Fix all of the harnesses so that they are L1 from the face of A's connector.</p> <p>(2)Be careful of the clip and connector clip positions.</p> <p>(3)Fix the clip holding the harness to the bracket hole.</p> <p>A:RS08M-GY Connector</p> <p>B:Binder</p> <p>C:clip</p> <p>D:Bracket hole</p> <p>E:Fix at bracket hole.</p>

4.5 Attachment specification 5

Name	HARNESS & CONNECTOR
	
	<p>Q adjustment connector (harness) temporary fixing specifications</p> <p>(1)After clipping the harness, etc and completing all procedures, insert the Q adjustment connector (harness) between A and B and fix it temporarily.</p> <p>A:RS08M-GY Connector</p> <p>B:RS08M-B Connector</p> <p>C:Q adjustment connector (harness)</p>

**ZEXEL
COMPONENTS**

Date: 14.05.12
Time: 18:19:59

+ INJECTION-PUMP ASSEMBLY	104701-2043	9 460 611 583	
Manufacturer No.:	16700VE000		
- FUEL-INJECTION PUMP	104601-2043	9 461 619 947	NP-VE4/11E2050RNP20
- NAMEPLATE	148633-4900	9 461 620 474	
-			
-			
- NOZZLE AND HOLDER ASSY.	105148-8003	9 443 611 769	0003
- NOZZLE AND HOLDER ASSY.	105148-1221	9 430 610 135	0050T
Nozzle and Holder:	16600-63G01		
Open Pre:MPa(Kgf/cm2):	9.8{100}		
- NOZZLE-HOLDER	105078-0050	9 430 615 042	
- NOZZLE	105007-1210	9 432 610 199	NP-DN0PDN121

Product: 104701-2043 9 460 611 583 16700VE000 INJECTION-PUMP ASSEMBLY

Item	ZEXEL No.	BOSCH No.	Info	Piece	Designation
1/6	146601-0900	9 461 614 046		1	PACKING RING
6	146100-0020	9 461 610 088		1	SUPPLY PUMP
9	148103-0300	9 461 615 940		1	COVER
10	139104-0000	9 411 610 049		2	FLAT-HEAD SCREW
12	148200-0620	9 461 615 943		1	# DRIVE SHAFT
12/1	148200-0300	9 461 626 637		1	DRIVE SHAFT
12/3	146201-0000	9 461 610 107		1	WOODRUFF KEY
17	146204-0000	9 461 610 111		1	PLAIN WASHER
20	148210-0220	9 461 615 945		1	ROLLER SET
24	146303-0000	9 461 610 147		1	BEARING PIN
25	146304-0000	9 461 610 148		1	BEARING PIN
26	146305-0000	9 461 610 149		1	CLAMPING BAND
27	146205-0000	9 461 610 112		1	SLOTTED WASHER
29	146220-4520	9 461 615 858		1	CAM PLATE
30	146600-0800	9 461 610 421		1	O-RING
31	146300-1900	9 461 610 137		1	PUMP PLUNGER
32	146301-0000	9 461 610 138		1	SLIDING PIECE
33	146603-0700	9 461 610 447		1	SHIM
34	146306-2100	9 461 615 862		1	COMPRESSION SPRING
35/1	146603-0700	9 461 610 447	B	0	SHIM:D17.5&7.5T0.60
35/1	146603-0800	9 461 610 448	B	0	SHIM:D17.5&7.5T0.70
35/1	146603-0900	9 461 610 449	B	0	SHIM:D17.5&7.5T0.90
35/1	146603-1000	9 461 610 450	B	0	SHIM:D17.5&7.5T1.00
35/1	146603-1100	9 461 610 451	B	0	SHIM:D17.5&7.5T1.20
35/1	146603-3600	9 461 610 452	B	0	SHIM:D17.5&7.5T2.40
36	146600-0800	9 461 610 421		1	O-RING
37	146310-0700	9 461 611 574		1	COVER
38	146620-5000	9 461 612 038		2	BLEEDER SCREW
39	146310-0100	9 461 610 151		1	COVER
40	146620-5000	9 461 612 038		2	BLEEDER SCREW
43	146230-0000	9 461 610 123		1	SHIM
44	146230-0100	9 461 610 124		1	PLAIN WASHER
45	146231-0001	9 461 614 270		1	SLOTTED WASHER
47	146233-0000	9 461 610 128		2	SLOTTED WASHER
48/1	146603-0000	9 461 610 440	A	1	SHIM:D17.0&5.2T0.50
48/1	146603-0100	9 461 610 441	A	1	SHIM:D17.0&5.2T0.80
48/1	146603-0200	9 461 610 442	A	1	SHIM:D17.0&5.2T1.00
48/1	146603-0300	9 461 610 443	A	1	SHIM:D17.0&5.2T1.20
48/1	146603-0400	9 461 610 444	A	1	SHIM:D17.0&5.2T1.50
48/1	146603-0500	9 461 610 445	A	1	SHIM:D17.0&5.2T1.80
48/1	146603-0600	9 461 610 446	A	1	SHIM:D17.0&5.2T2.00
48/1	146690-1400	9 461 611 329	A	1	SHIM:D17&5.2T0.9
48/1	146690-1500	9 461 611 330	A	1	SHIM:D17&5.2T1.1
48/1	146690-1600	9 461 611 331	A	1	SHIM:D17&5.2T1.3
48/1	146690-1700	9 461 611 332	A	1	SHIM:D17&5.2T1.4
48/1	146690-1800	9 461 611 333	A	1	SHIM:D17&5.2T1.6
48/1	146690-1900	9 461 611 334	A	1	SHIM:D17&5.2T1.7
48/1	146690-5800	9 461 619 110	A	1	SHIM:D17&5.2T2.1
48/1	146690-5900	9 461 619 111	A	1	SHIM:D17&5.2T2.2
48/1	146690-6000	9 461 619 112	A	1	SHIM:D17&5.2T2.3
48/1	146690-6100	9 461 619 113	A	1	SHIM:D17&5.2T2.4
48/1	146690-6200	9 461 619 114	A	1	SHIM:D17&5.2T2.5
48/1	146690-6300	9 461 619 115	A	1	SHIM:D17&5.2T2.6
48/1	146690-6400	9 461 619 116	A	1	SHIM:D17&5.2T2.7
48/1	146690-6500	9 461 619 117	A	1	SHIM:D17&5.2T2.8
48/1	146690-6600	9 461 619 118	A	1	SHIM:D17&5.2T2.9
48/1	146690-6700	9 461 619 119	A	1	SHIM:D17&5.2T3.0
48/1	146690-6800	9 461 619 120	A	1	SHIM:D17&5.2T3.1
48/1	146690-6900	9 461 619 121	A	1	SHIM:D17&5.2T3.2
48/1	146690-7000	9 461 619 122	A	1	SHIM:D17&5.2T3.3
48/1	146690-7100	9 461 619 123	A	1	SHIM:D17&5.2T3.4
48/1	146690-7200	9 461 615 908	A	1	SHIM:D17&5.2T0.4
48/1	146690-7300	9 461 615 909	A	1	SHIM:D17&5.2T0.6

48/1	146690-7400	9 461 615 910	A	1	SHIM:D17&5.2T0.7
48/1	146690-7500	9 461 615 911	A	1	SHIM:D17&5.2T1.9
48/1	146690-7800	9 461 619 124	A	1	SHIM:D17&5.2T0.2
49	146234-0600	9 461 617 869		2	GUIDE PIN
50	146403-6120	9 461 615 865		1	HYDRAULIC HEAD
51	146600-0000	9 461 610 413		1	O-RING
52/1	146420-0000	9 461 610 177	A	1	SHIM:D9.5&3.0T1.90
52/1	146420-0100	9 461 610 178	A	1	SHIM:D9.5&3.0T1.92
52/1	146420-0200	9 461 610 179	A	1	SHIM:D9.5&3.0T1.94
52/1	146420-0300	9 461 610 180	A	1	SHIM:D9.5&3.0T1.96
52/1	146420-0400	9 461 610 181	A	1	SHIM:D9.5&3.0T1.98
52/1	146420-0500	9 461 610 182	A	1	SHIM:D9.5&3.0T2.00
52/1	146420-0600	9 461 610 183	A	1	SHIM:D9.5&3.0T2.02
52/1	146420-0700	9 461 610 184	A	1	SHIM:D9.5&3.0T2.04
52/1	146420-0800	9 461 610 185	A	1	SHIM:D9.5&3.0T2.06
52/1	146420-0900	9 461 610 186	A	1	SHIM:D9.5&3.0T2.08
52/1	146420-1000	9 461 610 187	A	1	SHIM:D9.5&3.0T2.10
52/1	146420-1100	9 461 610 188	A	1	SHIM:D9.5&3.0T2.12
52/1	146420-1200	9 461 610 189	A	1	SHIM:D9.5&3.0T2.14
52/1	146420-1300	9 461 610 190	A	1	SHIM:D9.5&3.0T2.16
52/1	146420-1400	9 461 610 191	A	1	SHIM:D9.5&3.0T2.18
52/1	146420-1500	9 461 610 192	A	1	SHIM:D9.5&3.0T2.20
52/1	146420-1600	9 461 610 193	A	1	SHIM:D9.5&3.0T2.22
52/1	146420-1700	9 461 610 194	A	1	SHIM:D9.5&3.0T2.24
52/1	146420-1800	9 461 610 195	A	1	SHIM:D9.5&3.0T2.26
52/1	146420-1900	9 461 610 196	A	1	SHIM:D9.5&3.0T2.28
52/1	146420-2000	9 461 610 197	A	1	SHIM:D9.5&3.0T2.30
52/1	146420-2100	9 461 610 198	A	1	SHIM:D9.5&3.0T2.32
52/1	146420-2200	9 461 610 199	A	1	SHIM:D9.5&3.0T2.34
52/1	146420-2300	9 461 610 200	A	1	SHIM:D9.5&3.0T2.36
52/1	146420-2400	9 461 610 201	A	1	SHIM:D9.5&3.0T2.38
52/1	146420-2500	9 461 610 202	A	1	SHIM:D9.5&3.0T2.40
52/1	146420-2600	9 461 610 203	A	1	SHIM:D9.5&3.0T2.42
52/1	146420-2700	9 461 610 204	A	1	SHIM:D9.5&3.0T2.44
52/1	146420-2800	9 461 610 205	A	1	SHIM:D9.5&3.0T2.46
52/1	146420-2900	9 461 610 206	A	1	SHIM:D9.5&3.0T2.48
52/1	146420-3000	9 461 610 207	A	1	SHIM:D9.5&3.0T2.50
52/1	146420-3100	9 461 610 208	A	1	SHIM:D9.5&3.0T2.52
52/1	146420-3200	9 461 610 209	A	1	SHIM:D9.5&3.0T2.54
52/1	146420-3300	9 461 610 210	A	1	SHIM:D9.5&3.0T2.56
52/1	146420-3400	9 461 610 211	A	1	SHIM:D9.5&3.0T2.58
52/1	146420-3500	9 461 610 212	A	1	SHIM:D9.5&3.0T2.60
52/1	146420-3600	9 461 610 213	A	1	SHIM:D9.5&3.0T2.62
52/1	146420-3700	9 461 610 214	A	1	SHIM:D9.5&3.0T2.64
52/1	146420-3800	9 461 610 215	A	1	SHIM:D9.5&3.0T2.66
52/1	146420-3900	9 461 610 216	A	1	SHIM:D9.5&3.0T2.68
52/1	146420-4000	9 461 610 217	A	1	SHIM:D9.5&3.0T2.70
52/1	146420-4100	9 461 610 218	A	1	SHIM:D9.5&3.0T2.72
52/1	146420-4200	9 461 610 219	A	1	SHIM:D9.5&3.0T2.74
52/1	146420-4300	9 461 610 220	A	1	SHIM:D9.5&3.0T2.76
52/1	146420-4400	9 461 610 221	A	1	SHIM:D9.5&3.0T2.78
52/1	146420-4500	9 461 610 222	A	1	SHIM:D9.5&3.0T2.80
52/1	146420-4600	9 461 610 223	A	1	SHIM:D9.5&3.0T2.82
52/1	146420-4700	9 461 610 224	A	1	SHIM:D9.5&3.0T2.84
52/1	146420-4800	9 461 610 225	A	1	SHIM:D9.5&3.0T2.86
52/1	146420-4900	9 461 610 226	A	1	SHIM:D9.5&3.0T2.88
52/1	146420-5000	9 461 610 227	A	1	SHIM:D9.5&3.0T2.90
52/1	146420-5100	9 461 610 228	A	1	SHIM:D9.5&3.0T1.74
52/1	146420-5200	9 461 610 229	A	1	SHIM:D9.5&3.0T1.76
52/1	146420-5300	9 461 610 230	A	1	SHIM:D9.5&3.0T1.78
52/1	146420-5400	9 461 610 231	A	1	SHIM:D9.5&3.0T1.80
52/1	146420-5500	9 461 610 232	A	1	SHIM:D9.5&3.0T1.82
52/1	146420-5600	9 461 610 233	A	1	SHIM:D9.5&3.0T1.84
52/1	146420-5700	9 461 610 234	A	1	SHIM:D9.5&3.0T1.86
52/1	146420-5800	9 461 610 235	A	1	SHIM:D9.5&3.0T1.88
54	146433-0100	9 461 610 239		4	GASKET
55	146430-5920	9 413 610 295		4	DELIVERY-VALVE ASSEMBLY:VE59
56	146432-0700	9 461 615 053		4	COMPRESSION SPRING
58	146440-2720	9 461 617 960		4	FITTING

60	139106-0100	9 411 610 051	3	FLAT-HEAD SCREW
123	146620-8800	9 461 615 877	1	FLAT-HEAD SCREW
130	146421-1020	9 461 615 867	1	# CAPSULE
130/2	139508-0200	9 411 610 839	1	GASKET
130/3	146422-0300	9 461 612 322	1	BLEEDER SCREW
130/4	146600-0500	9 461 610 418	1	O-RING
133	146600-0600	9 461 610 419	1	O-RING
134	146600-0700	9 461 610 420	1	O-RING
135	146110-3220	9 461 615 857	1	# CONTROL VALVE
135/5	146114-0000	9 461 610 094	1	SPRING WASHER
136	148120-0020	9 461 615 942	1	OVER FLOW VALVE
137	139512-0200	9 411 610 074	3	GASKET
138	146668-5720	9 461 618 517	1	INLET UNION
158	146614-6900	9 461 615 874	1	SPACER BUSHING
200	146206-0100	9 461 610 113	1	COILED SPRING
230	148613-2600	9 461 618 811	1	BRACKET
232	146659-8700	9 461 619 242	1	CLAMPING BAND
236	146620-2700	9 461 611 114	1	HEX-SOCKET-HEAD CAP SCREW
237	146620-0200	9 461 610 497	1	HEX-SOCKET-HEAD CAP SCREW
240	146688-0120	9 461 615 511	1	# PULLING ELECTROMAGNET
240/8	146600-1700	9 461 610 427	1	O-RING
243	146621-4901	9 461 621 894	1	UNION NUT
244	020145-1040	9 442 611 075	1	BLEEDER SCREW
245	139512-0200	9 411 610 074	3	GASKET
246	139812-0500	9 411 610 077	1	EYE BOLT
247	146669-0820	9 461 618 521	1	INLET UNION
248	146614-0200	9 461 610 481	1	SPACER BUSHING
282	139006-4400	9 411 610 583	1	BLEEDER SCREW
298	146659-8800	9 461 619 243	1	CLAMPING BAND
504/1	146649-4500	9 461 615 879	A 1	RESISTER:NO. 1 0.18K:OHM
504/1	146649-4600	9 461 615 880	A 1	RESISTER:NO. 2 0.30K:OHM
504/1	146649-4700	9 461 615 881	A 1	RESISTER:NO. 3 0.43K:OHM
504/1	146649-4800	9 461 615 882	A 1	RESISTER:NO. 4 0.62K:OHM
504/1	146649-4900	9 461 615 883	A 1	RESISTER:NO. 5 0.82K:OHM
504/1	146649-5000	9 461 615 884	A 1	RESISTER:NO. 6 1.10K:OHM
504/1	146649-5100	9 461 615 885	A 1	RESISTER:NO. 7 1.50K:OHM
504/1	146649-5200	9 461 615 886	A 1	RESISTER:NO. 8 2.00K:OHM
504/1	146649-5300	9 461 615 887	A 1	RESISTER:NO. 9 2.70K:OHM
504/1	146649-5400	9 461 615 888	A 1	RESISTER:NO.10 3.90K:OHM
504/1	146649-5500	9 461 615 889	A 1	RESISTER:NO.11 5.60K:OHM
504/1	146649-5600	9 461 615 890	A 1	RESISTER:NO.12 8.20K:OHM
504/1	146649-5700	9 461 615 891	A 1	RESISTER:NO.13 15.00K:OHM
505	148531-2424	9 461 625 782	1	GOVERNOR;ELECTRIC
506	146620-8900	9 461 615 878	3	FLAT-HEAD SCREW
514	146659-8600	9 461 619 241	1	CLAMPING BAND
515	106144-1062	9 443 610 397	1	# TIMING CONTROL VALVE
515/7	161440-3800	9 443 610 357	1	O-RING
515/8	161440-3700	9 443 610 356	1	O-RING
516	010206-1440	9 442 610 202	2	HEX-SOCKET-HEAD CAP SCREW
531	479765-2221	9 443 610 442	1	# PULSE GENERATOR
531/6	479773-6500	9 443 610 377	1	O-RING
535	148650-0300	9 461 627 019	1	TAPE:720MM
536	148650-0900	9 461 627 140	1	TUBE
800S	148009-0320	9 461 615 938	1	# PUMP HOUSING
800S/1/6	146601-0900	9 461 614 046	1	PACKING RING
804S	146232-0720	9 461 612 351	1	COMPRESSION SPRING
810S	146600-4620	9 461 617 567	1	REPAIR SET
821S	146210-5720	9 461 616 128	1	ROLLER SET
878S	148600-1300	9 461 615 948	1	SEAL RING
906	148633-4900	9 461 620 474	1	NAMEPLATE
907	025803-1640	9 442 610 039	1	WOODRUFF KEY