

**ZEXEL  
COMPONENTS**

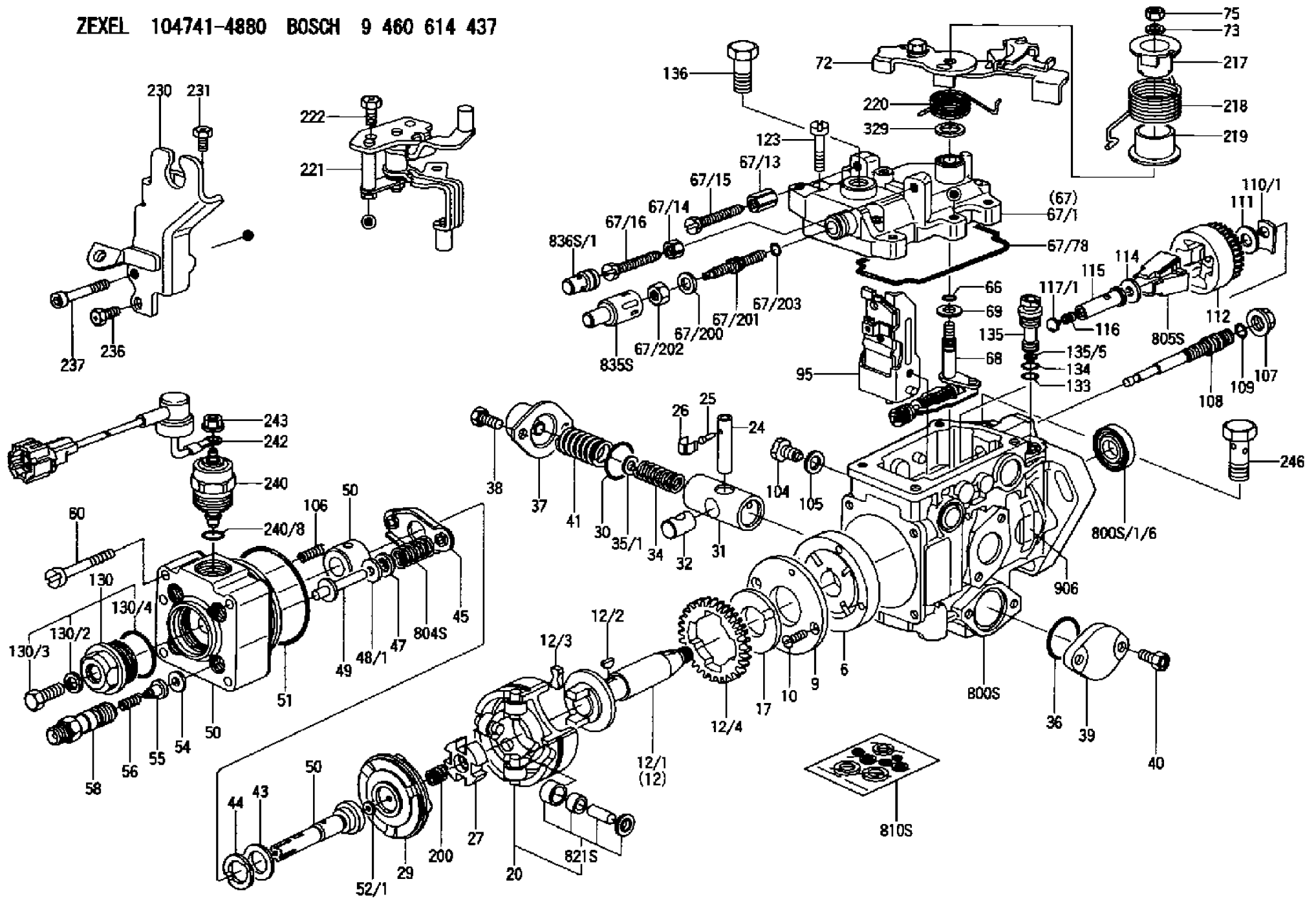
Date:16.01.12  
Time:13:50:36

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+ INJECTION-PUMP ASSEMBLY	104741-4880	9 460 614 437	
Manufacturer No.:	167002S621		
- FUEL-INJECTION PUMP	104641-4880	9 461 627 901	NP-VE4/11F1800RNP2505
- NAMEPLATE	146984-2000	9 461 627 957	
-			
-			
-			
- NOZZLE AND HOLDER ASSY.	105148-1221	9 430 610 135	0050T
Nozzle and Holder:			
Open Pre:MPa(Kgf/cm2):	<b>9,8 (100)</b>		
- NOZZLE-HOLDER	105078-0050	9 430 615 042	
- NOZZLE	105007-1210	9 432 610 199	NP-DN0PDN121

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ZEXEL 104741-4880 BOSCH 9 460 614 437



104741-4880 9 460 614 437 167002S621 INJECTION-PUMP ASSEMBLY

Product: 104741-4880 9 460 614 437 167002S621 INJECTION-PUMP ASSEMBLY

Item	ZEXEL No.	BOSCH No.	Info	Piece	Designation
1/6	146601-0900	9 461 614 046		1	PACKING RING
6	146100-0420	9 461 612 063		1	SUPPLY PUMP
9	146103-0100	9 461 611 411		1	COVER
10	139104-0000	9 411 610 049		2	FLAT-HEAD SCREW
12	146200-0020	9 461 610 101		1	# DRIVE SHAFT
12/1	146200-0000	9 461 610 100		1	DRIVE SHAFT
12/2	146201-0000	9 461 610 107		1	WOODRUFF KEY
12/3	146202-0100	9 461 610 109		2	DAMPER
12/4	146203-0000	9 461 610 110		1	TOOTHED GEAR
17	146204-0000	9 461 610 111		1	PLAIN WASHER
20	146210-2320	9 461 612 064		1	ROLLER SET
24	146303-0100	9 461 611 659		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	146311-6420	9 461 614 773		1	PUMP PLUNGER
32	146301-0000	9 461 610 138		1	SLIDING PIECE
34	146312-2900	9 461 613 671	A	1	COMPRESSION SPRING
34B	146312-3000	9 461 613 469	A	1	COMPRESSION SPRING
34C	146312-2800	9 461 613 591	A	1	COMPRESSION SPRING
35/1	146690-3200	9 461 612 011	A	1	SHIM:D11.5&9.4T0.1
35/1	146690-3300	9 461 612 012	A	1	SHIM:D11.5&9.4T0.2
35/1	146690-3400	9 461 612 013	A	1	SHIM:D11.5&9.4T0.25
35/1	146690-3500	9 461 612 014	A	1	SHIM:D11.5&9.4T1.0
35/1	146690-4100	9 461 612 015	A	1	SHIM:D11.5&9.4T2
35/1	146690-4200	9 461 612 278	A	1	SHIM:D11.5&9.4T0.5
35/1	146690-4300	9 461 612 279	A	1	SHIM:D11.5&9.4T0.75
36	146600-0800	9 461 610 421		1	O-RING
37	146310-4020	9 461 616 691		1	COVER
38	146620-5000	9 461 612 038		2	BLEEDER SCREW
39	146310-5100	9 461 615 453		1	COVER
40	146620-5000	9 461 612 038		2	BLEEDER SCREW
41	146312-5300	9 461 617 085		1	COMPRESSION SPRING
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	146401-4220	9 461 617 094		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:D12&6.4T1.00
55	146430-0320	9 413 610 009		4	DELIVERY-VALVE ASSEMBLY
56	146432-0200	9 461 612 323		4	COMPRESSION SPRING
58	146440-0720	9 461 613 411		4	FITTING
60	139106-0100	9 411 610 051		3	FLAT-HEAD SCREW
66	146600-0100	9 461 610 414		1	O-RING
67	146503-9820	9 461 617 622		1	# GOVERNOR COVER
67/1	146508-2221	9 461 613 091		1	GOVERNOR COVER
67/13	146621-1700	9 461 610 503		1	UNION NUT
67/14	146621-1700	9 461 610 503		1	UNION NUT
67/15	146526-3400	9 461 611 163		1	BLEEDER SCREW
67/16	146526-3400	9 461 611 163		1	BLEEDER SCREW
67/78	146600-4400	9 461 615 663		1	SEAL RING
67/200	139308-0300	9 411 610 063		1	PLAIN WASHER
67/201	146545-3400	9 461 612 181	A	1	THREADED PIN:L53.00
67/201B	146545-3500	9 461 612 182	A	1	THREADED PIN:L55.00
67/201C	146545-3600	9 461 612 183	A	1	THREADED PIN:L57.00
67/202	139208-0900	9 411 610 627		1	UNION NUT
67/203	146600-1200	9 461 610 424		1	O-RING
68	146810-6620	9 461 618 594		1	CONTROL SHAFT
69	139310-0200	9 411 610 065		1	PLAIN WASHER
72	146538-4120	9 461 617 630		1	CONTROL LEVER
73	014110-6440	9 442 610 020		1	LOCKING WASHER
75	013020-6040	9 442 610 010		1	UNION NUT:M6P1H5
95	146865-3520	9 461 617 715		1	FULCRUM LEVER
104	146568-0000	9 461 610 342		2	SLOTTED SPRING PIN
105	026508-1140	0 986 613 069		2	GASKET:D11.4&8.2T1
106	146588-0500	9 461 611 663		2	COILED SPRING
107	146569-0300	9 461 612 031		1	UNION NUT
108	146570-0100	9 461 610 346		1	GOVERNOR SHAFT
109	146600-0400	9 461 610 417		1	O-RING
110/1	146571-0000	9 461 610 348	A	1	SHIM:D20.2&8.3T1.05
110/1	146571-0100	9 461 610 349	A	1	SHIM:D20.2&8.3T1.25
110/1	146571-0200	9 461 610 350	A	1	SHIM:D20.2&8.3T1.45
110/1	146571-0300	9 461 610 351	A	1	SHIM:D20.2&8.3T1.65
110/1	146571-0400	9 461 610 352	A	1	SHIM:D20.2&8.3T1.85
110/1	146571-0500	9 461 610 353	A	1	SHIM:D20.2&8.3T1.15
110/1	146571-0600	9 461 610 354	A	1	SHIM:D20.2&8.3T1.35
110/1	146571-0700	9 461 610 355	A	1	SHIM:D20.2&8.3T1.55
110/1	146571-0800	9 461 610 356	A	1	SHIM:D20.2&8.3T1.75
111	146602-0600	9 461 610 437		1	PLAIN WASHER:D20&8.4T1.40
112	146572-0020	9 461 610 357		1	FLYWEIGHT ASSEMBLY
114	146602-0500	9 461 610 436		1	PLAIN WASHER:D17&6.4T1.60
115	146975-4200	9 461 618 306		1	SLIDING SLEEVE
116	146576-0200	9 461 610 851		1	CAP
117/1	146577-1800	9 461 610 383	A	1	PLUG:L2.10
117/1	146577-1900	9 461 610 384	A	1	PLUG:L2.30
117/1	146577-2000	9 461 610 385	A	1	PLUG:L2.50
117/1	146577-2100	9 461 610 386	A	1	PLUG:L2.70
117/1	146577-2200	9 461 610 387	A	1	PLUG:L2.90
117/1	146577-2300	9 461 610 388	A	1	PLUG:L3.10
117/1	146577-2400	9 461 610 389	A	1	PLUG:L3.30
117/1	146577-2500	9 461 610 390	A	1	PLUG:L3.50
117/1	146577-2600	9 461 610 391	A	1	PLUG:L3.70
117/1	146577-2700	9 461 610 392	A	1	PLUG:L3.90
117/1	146577-2800	9 461 610 393	A	1	PLUG:L4.10
117/1	146577-2900	9 461 610 394	A	1	PLUG:L4.30
117/1	146577-3000	9 461 610 395	A	1	PLUG:L4.50
117/1	146577-3100	9 461 610 396	A	1	PLUG:L4.70

117/1	146577-3200	9 461 610 397	A	1	PLUG:L4.90
117/1	146577-3300	9 461 610 398	A	1	PLUG:L5.10
117/1	146577-6700	9 461 611 309	A	1	PLUG:L2.2
117/1	146577-6800	9 461 611 310	A	1	PLUG:L2.4
117/1	146577-6900	9 461 611 311	A	1	PLUG:L2.6
117/1	146577-7000	9 461 611 312	A	1	PLUG:L2.8
117/1	146577-7100	9 461 611 313	A	1	PLUG:L3.0
117/1	146577-7200	9 461 611 314	A	1	PLUG:L3.2
117/1	146577-7300	9 461 611 315	A	1	PLUG:L3.4
117/1	146577-7400	9 461 611 316	A	1	PLUG:L3.6
117/1	146577-7500	9 461 611 317	A	1	PLUG:L3.8
117/1	146577-7600	9 461 611 318	A	1	PLUG:L4.0
117/1	146577-7700	9 461 611 319	A	1	PLUG:L4.2
117/1	146577-7800	9 461 611 320	A	1	PLUG:L4.4
117/1	146577-7900	9 461 611 321	A	1	PLUG:L4.6
117/1	146577-8000	9 461 611 322	A	1	PLUG:L4.8
117/1	146577-8100	9 461 611 323	A	1	PLUG:L5.0
117/1	146877-0000	9 461 613 553	A	1	PLUG:L5.2
117/1	146877-0100	9 461 613 554	A	1	PLUG:L5.3
117/1	146877-0200	9 461 613 555	A	1	PLUG:L5.4
117/1	146877-0300	9 461 613 556	A	1	PLUG:L5.5
117/1	146877-4700	9 461 616 284	A	1	PLUG
117/1	146877-4800	9 461 616 285	A	1	PLUG
117/1	146877-4900	9 461 616 286	A	1	PLUG
117/1	146877-5000	9 461 616 287	A	1	PLUG
123	139106-0200	9 411 610 052		4	FLAT-HEAD SCREW
130	146421-0020	9 461 610 236		1	# CAPSULE
130/2	026508-1140	0 986 613 069		1	GASKET:D11.4&8.2T1
130/3	146422-0000	9 461 610 237		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	146110-0920	9 461 610 093		1	# CONTROL VALVE
135/5	146114-0000	9 461 610 094		1	SPRING WASHER
136	146120-0020	9 461 610 095		1	OVER FLOW VALVE
200	146206-0100	9 461 610 113		1	COILED SPRING
217	146541-3100	9 461 610 320		1	SLOTTED WASHER
218	146587-9900	9 461 612 101		1	COILED SPRING
219	146541-3000	9 461 610 319		1	BUSHING
220	146587-8000	9 461 611 476		1	COILED SPRING
221	146936-3320	9 461 627 949		1	BRACKET
222	139006-4600	9 411 610 667		2	BLEEDER SCREW
230	146936-3420	9 461 627 950		1	BRACKET
231	139006-4600	9 411 610 667		1	BLEEDER SCREW
236	139006-4800	9 411 610 556		1	BLEEDER SCREW
237	146620-0200	9 461 610 497		1	HEX-SOCKET-HEAD CAP SCREW
240	146650-0720	9 461 610 530		1	# PULLING ELECTROMAGNET
240/8	146600-1700	9 461 610 427		1	O-RING
242	146662-6520	9 461 617 657		1	WIRE
243	146621-4901	9 461 621 894		1	UNION NUT
246	027412-2440	9 442 610 048		1	EYE BOLT
329	146541-4900	9 461 610 829		1	PLAIN WASHER:D20&10T0.5
800S	146009-9520	9 461 612 062		1	PUMP HOUSING
800S/1/6	146601-0900	9 461 614 046		1	PACKING RING
804S	146232-1520	9 461 624 116		1	COMPRESSION SPRING
805S	146574-0120	9 461 610 358		1	PARTS SET
810S	146600-1120	9 461 610 423		1	REPAIR SET
821S	146210-5720	9 461 616 128		1	ROLLER SET
835S	146598-1000	9 461 612 195		1	CAP
836S/1	146598-0600	9 461 612 191	A	1	CAP:L18
836S/1	146598-0700	9 461 612 192	A	1	CAP:L21
836S/1	146598-0800	9 461 612 193	A	1	CAP:L24
836S/1	146598-0900	9 461 612 194	A	1	CAP:L27
906	146984-2000	9 461 627 957		1	NAMEPLATE

ZEXEL Ass'y No.	104741-4880
Bosch Ass'y No.	9 460 614 437
Bosch Typecode	
Engine Type	QD32
Manufacturer	NISSAN DIESEL
Edition date	06.01.04

**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 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.	55.3	54.8	55.8		
S	Difference in delivery	mm3/st.	4.5		4.5		
P	Basic		*				
P	Oil temperature	degC	50	48	52		

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	500	500	500		
C	Average injection quantity	mm3/st.	49	45.5	52.5		
		About					
P	Oil temperature	degC	48	46	50		

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	800	800	800		
C	Average injection quantity	mm3/st.	54.1	50.6	57.6		
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.	55.3	54.3	56.3		
C	Difference in delivery	mm3/st.	5		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	1500	1500	1500		
C	Average injection quantity	mm3/st.	55.3	52.3	58.3		
		About					
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.	57.5	54.5	60.5		
		About					
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	2350	2350	2350		

S	Average injection quantity	mm <sup>3</sup> /st.	17.8	15.8	19.8		
P	Basic		*				
P	Oil temperature	degC	52	50	54		
<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	2600	2600	2600		
C	Average injection quantity	mm <sup>3</sup> /st.	5		5		
P	Oil temperature	degC	55	52	58		
<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	2350	2350	2350		
C	Average injection quantity	mm <sup>3</sup> /st.	17.8	15.3	20.3		
P	Basic		*				
P	Oil temperature	degC	52	50	54		

**2.3 Idle**

<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		
S	Average injection quantity	mm <sup>3</sup> /st.	12.9	10.9	14.9		
S	Difference in delivery	mm <sup>3</sup> /st.	2		2		
P	Basic		*				
P	Oil temperature	degC	48	46	50		
<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		
C	Average injection quantity	mm <sup>3</sup> /st.	12.9	10.4	15.4		
C	Difference in delivery	mm <sup>3</sup> /st.	2.5		2.5		
P	Basic		*				
P	Oil temperature	degC	48	46	50		

**2.4 Start**

<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	100	100	100		
S	Average injection quantity	mm <sup>3</sup> /st.	90	75	110		
	Remarks		About				
P	Basic		*				
P	Oil temperature	degC	48	46	50		
	Remarks		Full				
<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	100	100	100		
C	Average injection quantity	mm <sup>3</sup> /st.	90	75	110		
	Remarks		About				
P	Oil temperature	degC	48	46	50		
	Remarks		Full				

**2.5 Stop**

<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		
C	Average injection quantity	mm <sup>3</sup> /st.	0	0	0		
P	Oil temperature	degC	48	46	50		
	Remarks		Magnet OFF at idling position				

**2.6 Overflow**

<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		
C	Overflow quantity	cm <sup>3</sup> /min	390	260	520		
	Remarks		About				
P	Oil temperature	degC	50	48	52		

**2.7 Pump chamber pressure**

<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		
S	Pressure	kPa	539	519	559		
S	Pressure	kgf/cm <sup>2</sup>	5.5	5.3	5.7		
P	Basic		*				
P	Oil temperature	degC	50	48	52		
<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		
C	Pressure	kPa	539	510	568		



C	Pressure	kgf/cm2	5.5	5.1	5.9		
P	Basic		*				
P	Oil temperature	degC	50	48	52		
<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	1800	1800	1800		
C	Pressure	kPa	736	677	795		
C	Pressure	kgf/cm2	7.5	6.9	8.1		
P	Oil temperature	degC	50	48	52		

**2.8 Timer**

<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		
S	Timer stroke	mm	3.5	3.3	3.7		
P	Basic		*				
P	Oil temperature	degC	50	48	52		

<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	600	600	600		
C	Timer stroke	mm	1.4	0.9	1.9		
		About					
P	Oil temperature	degC	50	48	52		

<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		
C	Timer stroke	mm	3.5	3.2	3.8		
P	Basic		*				
P	Oil temperature	degC	50	48	52		

<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	1800	1800	1800		
C	Timer stroke	mm	7.4	6.9	7.9		
		About					
P	Oil temperature	degC	50	48	52		

<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	2050	2050	2050		
C	Timer stroke	mm	8.2	7.7	8.6		
P	Oil temperature	degC	52	50	54		

**2.9 Magnet**

<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>
C	Max. applied voltage	V	8	8	8		
P	Test voltage	V	13	12	14		

**3 Assembly dimension**

<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>
S	K dimension	mm	3.3	3.2	3.4		
S	KF dimension	mm	5.62	5.52	5.72		
S	MS dimension	mm	0.9	0.8	1		
S	Pre-stroke	mm	0.1	0.08	0.12		
S	Control lever angle alpha	deg.	55.5	51.5	59.5		
S	Control lever angle beta	deg.	32.5	27.5	37.5		