

**ZEXEL
COMBINATIONS**

Date: 03.12.15
Time: 12:45:11

Product: 104648-2611 9 461 615 181 FUEL-INJECTION PUMP

+ INJECTION-PUMP ASSEMBLY	104748-2611	9 460 610 599	
Manufacturer No.:	1670080A06		
- FUEL-INJECTION PUMP	104648-2611	9 461 615 181	
- NAMEPLATE	146909-7100	9 461 615 156	
-			
- CAPSULE	146620-0120	9 461 610 496	
-			
- NOZZLE AND HOLDER ASSY.	105141-2261	9 430 610 018	71-1361
Nozzle and Holder:	16600-16A00		
Open Pre:MPa(Kgf/cm2):	12.7{130}		
- NOZZLE-HOLDER	105071-1361	9 430 615 018	
- NOZZLE	105000-1760	9 432 610 004	NP-DN0SD193NP1

**ZEXEL
SERVICE PARTS**

Product: 104748-2611 9 460 610 599 1670080A06 INJECTION-PUMP ASSEMBLY

Item	ZEXEL No.	BOSCH No.	Info	Piece	Designation
1/6	146601-0900	9 461 614 046		1	PACKING RING
6	146100-0320	9 461 614 348		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	146210-2420	9 461 614 349		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	146220-0120	9 461 610 120		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	146310-0100	9 461 610 151		1	COVER
40	146620-5000	9 461 612 038		2	BLEEDER SCREW
41	146312-1900	9 461 612 005		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
48/1	146690-5900	9 461 619 111	A	1	SHIM
48/1	146690-6000	9 461 619 112	A	1	SHIM
48/1	146690-6100	9 461 619 113	A	1	SHIM
48/1	146690-6200	9 461 619 114	A	1	SHIM
48/1	146690-6300	9 461 619 115	A	1	SHIM
48/1	146690-6400	9 461 619 116	A	1	SHIM
48/1	146690-6500	9 461 619 117	A	1	SHIM
48/1	146690-6600	9 461 619 118	A	1	SHIM
48/1	146690-6700	9 461 619 119	A	1	SHIM
48/1	146690-6800	9 461 619 120	A	1	SHIM
48/1	146690-6900	9 461 619 121	A	1	SHIM
48/1	146690-7000	9 461 619 122	A	1	SHIM
48/1	146690-7100	9 461 619 123	A	1	SHIM
48/1	146690-7200	9 461 615 908	A	1	SHIM
48/1	146690-7300	9 461 615 909	A	1	SHIM
48/1	146690-7400	9 461 615 910	A	1	SHIM
48/1	146690-7500	9 461 615 911	A	1	SHIM
48/1	146690-7800	9 461 619 124	A	1	SHIM
49	146234-0500	9 461 623 539		2	GUIDE PIN
50	146400-4220	9 461 610 170		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	146430-6220	9 413 610 297		4	DELIVERY-VALVE ASSEMBLY
56	146432-0000	9 461 610 238		4	COMPRESSION SPRING
58	146440-2720	9 461 617 960		4	FITTING
60	139106-0100	9 411 610 051		3	FLAT-HEAD SCREW
66	146600-0100	9 461 610 414		1	O-RING
67	146503-4220	9 461 613 926		1	# GOVERNOR COVER

67/1	146508-2021	9 461 613 927		1	GOVERNOR COVER
67/13	013020-6040	9 442 610 010		1	UNION NUT:M6P1H5
67/14	146621-1700	9 461 610 503		1	UNION NUT
67/15	146526-3400	9 461 611 163		1	BLEEDER SCREW
67/16	146526-2800	9 461 610 278		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	146510-8620	9 461 611 434		1	CONTROL SHAFT
69	139310-0200	9 411 610 065		1	PLAIN WASHER
72	146537-0520	9 461 610 821		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	146551-4420	9 461 611 465		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	146570-0420	9 461 610 347		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	146975-7000	9 461 623 542		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	146110-0220	9 461 610 091		1	# CONTROL VALVE
135/5	146114-0000	9 461 610 094		1	SPRING WASHER
136	146120-0220	9 461 610 097		1	OVER FLOW VALVE
137	139512-0200	9 411 610 074		2	GASKET:D18.5&12.2T1.00
138	146609-2921	9 461 610 457		1	INLET UNION
200	146206-0100	9 461 610 113		1	COILED SPRING
217	146541-2900	9 461 610 318		1	SLOTTED WASHER
218	146587-6400	9 461 610 862		1	COILED SPRING
219	146541-3000	9 461 610 319		1	BUSHING
220	146587-6500	9 461 610 863		1	COILED SPRING
221	146926-2520	9 461 613 930		1	BRACKET
222	139006-4600	9 411 610 667		2	BLEEDER SCREW
230	146626-4020	9 461 610 924		1	BRACKET
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	146658-2820	9 461 611 007	1	WIRE
243	146621-1000	9 461 611 665	1	UNION NUT
245	139512-0200	9 411 610 074	3	GASKET:D18.5&12.2T1.00
246	139812-0500	9 411 610 077	1	EYE BOLT
247	146606-4120	9 461 610 868	1	INLET UNION
248	146614-0200	9 461 610 481	1	SPACER BUSHING
251	146125-0101	9 461 613 603	1	FILTER
252	146125-0200	9 461 611 413	1	COILED SPRING
275	146612-2120	9 461 610 471	1	BRACKET
276	010010-1640	9 442 610 001	2	BLEEDER SCREW:M10P1.5L16 4T
280	146360-5220	9 461 614 774	1	START ADVANCE ASSY
281	146600-0800	9 461 610 421	1	O-RING
282	010206-1240	9 442 610 201	2	HEX-SOCKET-HEAD CAP SCREW:M6P1L12
287	020146-1440	9 442 610 678	1	BLEEDER SCREW:M6P1L14
329	146541-4900	9 461 610 829	1	PLAIN WASHER:D20&10T0.5
800S	146019-1620	9 461 614 772	1	PUMP HOUSING
800S/1/6	146601-0900	9 461 614 046	1	PACKING RING
804S	146232-0320	9 461 610 127	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
903	146620-0120	9 461 610 496	1	# CAPSULE
903/2	146600-1300	9 461 610 425	1	O-RING:&13W1.9
906	146909-7100	9 461 615 156	1	NAMEPLATE

ZEXEL Ass'y No.	104748-2611
Bosch Ass'y No.	9 460 610 599
Bosch Typecode	
Engine Type	CD17
Manufacturer	NISSAN
Edition date	20.02.04 (1)

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		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)		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	1000	1000	1000		
S	Average injection quantity	mm3/st.	27.6	27.1	28.1		
S	Difference in delivery	mm3/st.	2.5		2.5		
P	Basic		*				

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	2700	2700	2700		
C	Average injection quantity	mm3/st.	14.8	11.3	18.3		

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	2500	2500	2500		
C	Average injection quantity	mm3/st.	26.3	24.3	28.3		

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	1000	1000	1000		
C	Average injection quantity	mm3/st.	27.6	26.6	28.6		

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	600	600	600		
C	Average injection quantity	mm3/st.	26.8	24.8	28.8		

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.	14.8	11.8	17.8		
P	Basic		*				

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	2900	2900	2900		
C	Average injection quantity	mm3/st.	6		6		

2.3 Idle

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	360	360	360		
S	Average injection quantity	mm3/st.	8.1	6.6	9.6		
P	Basic		*				

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	360	360	360		
C	Average injection quantity	mm3/st.	8.1	6.1	10.1		
C	Difference in delivery	mm3/st.	2.5		2.5		

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	600	600	600		
C	Average injection quantity	mm3/st.	3		3		

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	mm ³ /st.	12.8	8.3	17.3		
	Remarks						
		From idle					

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	mm ³ /st.	60.3	50.3	70.3		
P	Basic		*				

2.6 Stop

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	360	360	360		
C	Average injection quantity	mm ³ /st.	0	0	0		
	Remarks						
		Magnet OFF					

2.7 Overflow

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	1200	1200	1200		
C	Overflow quantity	cm ³ /min	348	216	480		

2.8 Pump chamber pressure

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	1200	1200	1200		
S	Pressure	kPa	372.5	343	402		
S	Pressure	kgf/cm ²	3.8	3.5	4.1		
P	Basic		*				

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	1200	1200	1200		
C	Pressure	kPa	372.5	333	412		
C	Pressure	kgf/cm ²	3.8	3.4	4.2		

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	1800	1800	1800		
C	Pressure	kPa	510	471	549		
C	Pressure	kgf/cm ²	5.2	4.8	5.6		

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	2500	2500	2500		
C	Pressure	kPa	667	628	706		
C	Pressure	kgf/cm ²	6.8	6.4	7.2		

2.9 Timer

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	1200	1200	1200		
S	Timer stroke	mm	2.9	2.7	3.1		
P	Basic		*				

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	1200	1200	1200		
C	Timer stroke	mm	2.9	2.6	3.2		

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	1800	1800	1800		
C	Timer stroke	mm	5.4	5	5.8		

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	2500	2500	2500		
C	Timer stroke	mm	8.15	7.7	8.6		

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 Compensator**2.11.1 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	mm ³ /st.	16.5	15.5	17.5		
S	Timer stroke variation dT	mm	0.6	0.4	0.8		

P	Basic		*				
CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	1200	1200	1200		
C	Average injection quantity	mm ³ /st.	16.5	15	18		
C	Timer stroke variation dT	mm	0.6	0.3	0.9		
CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	1200	1200	1200		
C	Average injection quantity	mm ³ /st.	14	12.5	15.5		
C	Timer stroke variation dT	mm	1.2	0.7	1.7		

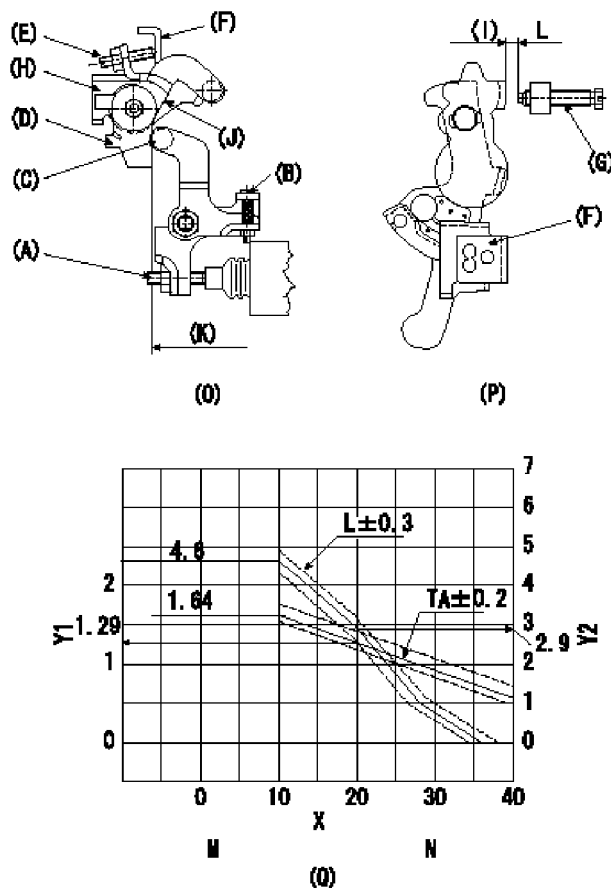
2.12 Additional device adjustment

2.12.1 Additional device 1

Name	CONTROL LEVER ANGLE	
<p>R=44mm L=15.4~18.1mm a=1~-1deg b=37~47deg</p>		
<p>R=44mm L=15.4~18.1mm</p>	<p>Control lever angle measurement</p> <ol style="list-style-type: none"> 1. Measure the dimension L from the lever tip to the flange face (A). 2. Measure the lever angle from the pin hole R (plate). <p>(B): lever angle measuring hole Alpha = a beta: b</p>	

2.12.2 Additional device 2

Name	W-CSD ADJUSTMENT
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L1=L=2.9±0.05mm
 L2=2.9mm
 L3=L+0.05mm
 a=30degC

Adjustment of the W-CSD

- Timer advance adjustment (refer to Fig 1 [O], 3 [Q]).
 (1) Determine the timer advance angle from the graph in Fig. 3 (Q).
 (2)(1) Adjust with the screw (A) so that the timer advance angle determined in the item (1) is obtained.
- Setting the intermediate lever position (refer to fig 1 and fig 2)
 (1) Insert a block gauge L1 between the idling set screw (G) and the control lever (F).
 (2) Align the intermediate lever (D) with the aligning line (J) and position it perpendicularly.
- W-CSD lever adjustment [refer to fig 1 (O) and fig 2 (P)]
 (1) After completing (2) above, remove the block gauge L2.
 (2) Insert a block gauge (I) L3 determined from the graph (L-theta) in figure 3 (Q) between the idling set screw (G) and the control lever (F).
 (3) Fix screw (B) so that the W-CSD lever (C)'s roller contacts the intermediate lever (D). Fix using the nut.

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)
 K: Vertical position
 M: TA-theta line
 $10 \leq \theta \text{ (deg C)} \leq 20: TA = -0.0355 \theta + 1.995$
 $20 \leq \theta \text{ (deg C)} \leq 57: TA = -0.03515 \theta + 1.988$
 N: L-theta graph
 $\theta \text{ (deg C)} \leq 10: L = 4.6$
 $10 < \theta \text{ (deg C)} \leq 20: L = -0.17\theta + 6.3$
 $20 < \theta \text{ (deg C)} \leq 28.5: L = -0.235 \theta + 7.6$
 $28.5 < \theta \text{ (deg C)} \leq 36: L = -0.012 \theta + 4.32$

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	5.8	5.7	5.9		

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

S	MS dimension	mm	1.8	1.7	1.9		
S	Control lever angle alpha	deg.	0	-1	1		
		Refer to additional devices.					
S	Control lever angle beta	deg.	42	37	47		
		Refer to additional devices.					
S	Control lever angle gamma	deg.	11	10.5	11.5		
		From idle					