

ZEXEL
PRODUCT INFORMATION

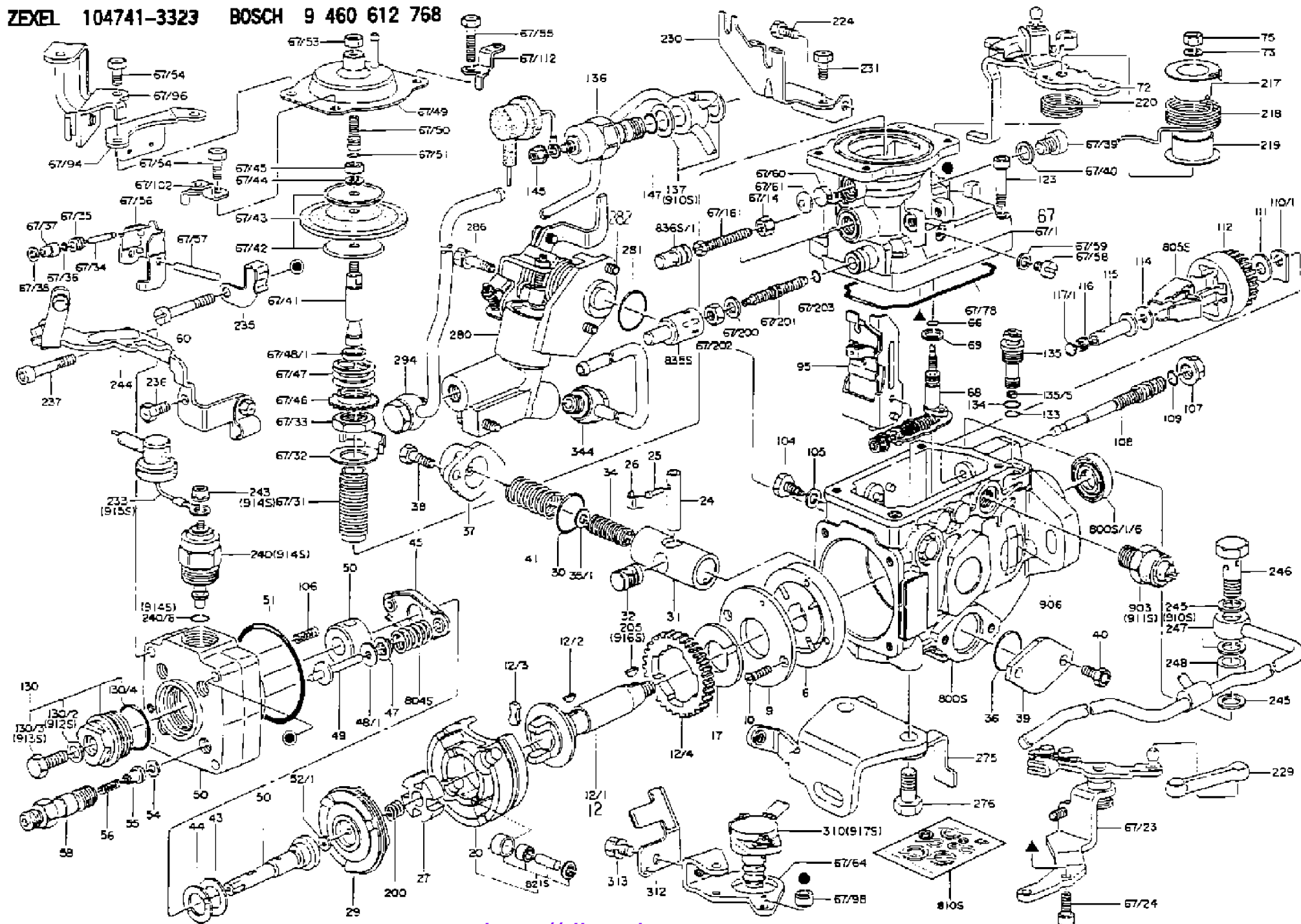
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INJECTION-PUMP ASSEMBLY

ZEXEL No. 104741-3323
BOSCH No. 9 460 612 768

Microfiche Position: PDC-099 H-6 ... H-10
Engine type: 4M40
Manufacturers: MITSUBISHI

ZEXEL 104741-3323 BOSCH 9 460 612 768



<http://dieselmater.ucoz.ru>

104741-3323 9 460 612 768 INJECTION-PUMP ASSEMBLY

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Item	ZEXEL No.	BOSCH No.	Info	Piece	Designation
1/6	146601-0700	9 461 615 373		1	PACKING RING
6	146100-0220	9 461 611 363		1	SUPPLY PUMP
9	146103-0100	9 461 611 411		1	COVER
10	139104-0000	9 411 610 049		2	FLAT-HEAD SCREW
12	146200-0320	9 461 610 105		1	# DRIVE SHAFT
12/1	146200-0300	9 461 610 104		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	146210-3520	9 461 615 340		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	146220-3220	9 461 615 343		1	CAM PLATE
30	146600-0800	9 461 610 421		1	O-RING
31	146311-8520	9 461 615 258		1	PUMP PLUNGER
32	146301-0000	9 461 610 138		1	SLIDING PIECE
34	146312-5000	9 461 615 550	A	1	COMPRESSION SPRING
34B	146312-5100	9 461 615 551	A	1	COMPRESSION SPRING
34C	146312-5200	9 461 615 552	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	146312-2000	9 461 613 833		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	146234-0600	9 461 617 869		2	GUIDE PIN
50	146403-4920	9 461 615 358		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	146430-4820	9 413 610 228		4	DELIVERY-VALVE ASSEMBLY
56	146432-0000	9 461 610 238		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	146703-5220	9 461 622 380		1	# COMPENSATOR,MANIFOLD-PRES
67/1	146805-8320	9 461 615 573		1	GOVERNOR COVER
67/14	146621-1700	9 461 610 503		1	UNION NUT
67/16	146526-3000	9 461 611 439		1	BLEEDER SCREW
67/23	146930-9422	9 461 615 623		1	BRACKET
67/24	010206-1440	9 442 610 202		2	HEX-SOCKET-HEAD CAP SCREW:M6P1L14
67/31	146710-0700	9 461 613 521		1	BUSHING
67/32	146711-0000	9 461 610 554		1	CLAMPING JAW
67/33	139218-0400	9 411 610 060		1	UNION NUT
67/34	146712-0700	9 461 611 031		1	BEARING PIN
67/35	146621-0300	9 461 610 502		1	UNION NUT
67/36	146600-1400	9 461 610 426		1	O-RING
67/37	146710-0100	9 461 610 553		1	BUSHING
67/38	139506-0200	9 411 610 073		1	GASKET:D8.9&6.8T1.00
67/39	146620-0300	9 461 610 498		1	CAPSULE
67/40	026512-1540	9 442 610 044		1	GASKET:D15.4&12.2T1.50
67/41	146713-4300	9 461 615 994		1	ADJUSTING PIN
67/42	146714-0200	9 461 613 523		2	CLAMPING JAW
67/43	146715-0300	9 461 613 524		1	DIAPHRAGM
67/44	139306-0100	9 411 610 061		1	LOCKING WASHER
67/45	013030-6040	9 442 610 012		1	UNION NUT:M6P1H3.6
67/46	146716-0000	9 461 610 560		1	UNION NUT
67/47	146717-2900	9 461 614 503		1	COILED SPRING
67/48/1	146720-3000	9 461 613 526	A	1	SPACER BUSHING:L3.7
67/48/1	146720-3100	9 461 613 527	A	1	SPACER BUSHING:L3.9
67/48/1	146720-3200	9 461 613 528	A	1	SPACER BUSHING:L4.1
67/48/1	146720-3300	9 461 613 529	A	1	SPACER BUSHING:L4.3
67/48/1	146720-3400	9 461 613 530	A	1	SPACER BUSHING:L4.5
67/48/1	146720-3500	9 461 613 531	A	1	SPACER BUSHING:L4.7
67/48/1	146720-3600	9 461 613 532	A	1	SPACER BUSHING:L4.9
67/48/1	146720-3700	9 461 613 533	A	1	SPACER BUSHING:L5.1
67/48/1	146720-3800	9 461 613 534	A	1	SPACER BUSHING:L5.3
67/48/1	146720-3900	9 461 613 535	A	1	SPACER BUSHING:L5.5
67/48/1	146720-4000	9 461 613 536	A	1	SPACER BUSHING:L5.7
67/48/1	146720-4100	9 461 613 537	A	1	SPACER BUSHING:L5.9

67/48/1	146720-4200	9 461 613 538	A	1	SPACER BUSHING:L6.1
67/48/1	146720-4300	9 461 613 539	A	1	SPACER BUSHING:L6.3
67/48/1	146720-4400	9 461 613 540	A	1	SPACER BUSHING:L6.5
67/48/1	146720-8900	9 461 613 541	A	1	SPACER BUSHING:L6.7
67/48/1	146720-9000	9 461 613 542	A	1	SPACER BUSHING:L6.9
67/48/1	146720-9100	9 461 613 543	A	1	SPACER BUSHING:L7.1
67/48/1	146720-9200	9 461 613 544	A	1	SPACER BUSHING:L7.3
67/48/1	146720-9300	9 461 613 545	A	1	SPACER BUSHING:L7.5
67/48/1	146720-9400	9 461 613 546	A	1	SPACER BUSHING:L7.7
67/48/1	146720-9500	9 461 613 547	A	1	SPACER BUSHING:L7.9
67/48/1	146720-9600	9 461 613 548	A	1	SPACER BUSHING:L8.1
67/48/1	146720-9700	9 461 613 549	A	1	SPACER BUSHING:L8.3
67/48/1	146720-9800	9 461 613 550	A	1	SPACER BUSHING:L8.5
67/48/1	146720-9900	9 461 614 185	A	1	SPACER BUSHING:L3.6
67/48/1	146725-0000	9 461 614 186	A	1	SPACER BUSHING:L3.8
67/48/1	146725-0100	9 461 614 187	A	1	SPACER BUSHING:L4.0
67/48/1	146725-0200	9 461 614 188	A	1	SPACER BUSHING:L4.2
67/48/1	146725-0300	9 461 614 189	A	1	SPACER BUSHING:L4.4
67/48/1	146725-0400	9 461 614 190	A	1	SPACER BUSHING:L4.6
67/48/1	146725-0500	9 461 614 191	A	1	SPACER BUSHING:L4.8
67/48/1	146725-0600	9 461 614 192	A	1	SPACER BUSHING:L5.0
67/48/1	146725-0700	9 461 614 193	A	1	SPACER BUSHING:L5.2
67/48/1	146725-0800	9 461 614 194	A	1	SPACER BUSHING:L5.4
67/48/1	146725-0900	9 461 614 195	A	1	SPACER BUSHING:L5.6
67/48/1	146725-1000	9 461 614 196	A	1	SPACER BUSHING:L5.8
67/48/1	146725-1100	9 461 614 197	A	1	SPACER BUSHING:L6.0
67/48/1	146725-1200	9 461 614 198	A	1	SPACER BUSHING:L6.2
67/48/1	146725-1300	9 461 614 199	A	1	SPACER BUSHING:L6.4
67/48/1	146725-1400	9 461 614 200	A	1	SPACER BUSHING:L6.6
67/48/1	146725-1500	9 461 614 201	A	1	SPACER BUSHING:L6.8
67/48/1	146725-1600	9 461 614 202	A	1	SPACER BUSHING:L7.0
67/48/1	146725-1700	9 461 614 203	A	1	SPACER BUSHING:L7.2
67/48/1	146725-1800	9 461 614 204	A	1	SPACER BUSHING:L7.4
67/48/1	146725-1900	9 461 614 205	A	1	SPACER BUSHING:L7.6
67/48/1	146725-2000	9 461 614 206	A	1	SPACER BUSHING:L7.8
67/48/1	146725-2100	9 461 614 207	A	1	SPACER BUSHING:L8.0
67/48/1	146725-2200	9 461 614 208	A	1	SPACER BUSHING:L8.2
67/48/1	146725-2300	9 461 614 209	A	1	SPACER BUSHING:L8.4
67/48/1	146725-2400	9 461 614 210	A	1	SPACER BUSHING:L8.6
67/49	146721-3621	9 461 616 246		1	COVER
67/50	146722-0200	9 461 615 396		1	FLAT-HEAD SCREW
67/51	146600-0300	9 461 610 416		1	O-RING
67/53	013020-6040	9 442 610 010		1	UNION NUT:M6P1H5
67/54	139006-4600	9 411 610 667		2	BLEEDER SCREW
67/55	139006-4800	9 411 610 556		2	BLEEDER SCREW

67/56	146723-0300	9 461 613 001		1	CONTROL LEVER
67/57	146712-0100	9 461 610 556		1	BEARING PIN
67/58	146620-0600	9 461 610 500		2	CAPSULE
67/59	026506-1040	9 421 617 011		2	GASKET:D9.9&6.2T1
67/60	146724-0300	9 461 611 260		1	ELEMENT
67/61	146724-0600	9 461 611 262		1	CAPSULE
67/64	146930-8900	9 461 615 412		1	BRACKET
67/78	146600-4400	9 461 615 663		1	SEAL RING
67/94	146926-7600	9 461 614 335		1	BRACKET
67/96	146932-1620	9 461 616 526		1	BRACKET
67/98	146648-2800	9 461 614 141		2	SPACER BUSHING
67/102	146930-9000	9 461 615 413		1	BRACKET
67/112	146930-9100	9 461 615 414		1	BRACKET
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	146514-7120	9 461 616 155		1	CONTROL SHAFT
69	139310-0200	9 411 610 065		1	PLAIN WASHER
72	146830-6920	9 461 615 575	A	1	CONTROL LEVER
72B	146830-7020	9 461 615 576	A	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	146865-0520	9 461 615 405		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	146975-2800	9 461 618 764		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	146620-0500	9 461 610 499		4	HEX-SOCKET-HEAD CAP 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	146650-7620	9 461 615 375	1	PULLING ELECTROMAGNET
137	139514-0200	9 411 610 080	2	GASKET
145	146621-1000	9 461 611 665	1	UNION NUT
147	146600-5000	9 461 618 321	1	O-RING
200	146206-0100	9 461 610 113	1	COILED SPRING
205	029470-4030	9 442 610 130	1	WOODRUFF KEY
217	146542-5300	9 461 614 490	1	SLOTTED WASHER
218	146592-2500	9 461 614 492	1	COILED SPRING
219	146541-3000	9 461 610 319	1	BUSHING
220	146592-2600	9 461 614 493	1	COILED SPRING
224	139006-4400	9 411 610 583	1	BLEEDER SCREW
229	146613-8300	9 461 610 892	1	JOINT CONNECTION
230	146629-0200	9 461 612 914	1	BRACKET
231	139006-4400	9 411 610 583	1	BLEEDER SCREW
233	146662-3720	9 461 616 485	1	WIRE
235	146931-6100	9 461 615 419	1	BRACKET
236	139006-4700	9 411 610 555	1	BLEEDER SCREW
237	146620-0200	9 461 610 497	1	HEX-SOCKET-HEAD CAP SCREW
240	146650-1220	9 461 610 533	1	# PULLING ELECTROMAGNET
240/8	146600-1700	9 461 610 427	1	O-RING
243	146621-1000	9 461 611 665	1	UNION NUT
244	146931-7220	9 461 615 421	1	BRACKET
245	139512-0500	9 411 611 625	3	GASKET
246	139812-1900	9 411 610 534	1	EYE BOLT
247	146666-6820	9 461 615 384	1	PIPE
248	146614-0200	9 461 610 481	1	SPACER BUSHING
275	146612-7420	9 461 615 374	1	BRACKET
276	010010-2040	9 442 610 289	2	BLEEDER SCREW:M10P1.5L20
280	146361-2820	9 461 616 470	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
286	139006-4600	9 411 610 667	1	BLEEDER SCREW
294	146666-7520	9 461 616 490	1	INLET UNION
310	146673-9922	9 461 615 386	1	# POTENTIOMETER
310/2	139104-0400	9 411 610 668	2	FLAT-HEAD SCREW
310/3	146648-2900	9 461 617 885	A 1	JOINT CONNECTION
310/3B	146648-3000	9 461 617 886	A 1	JOINT CONNECTION
310/3C	146648-3100	9 461 617 887	A 1	JOINT CONNECTION
310/3D	146648-3200	9 461 617 888	A 1	JOINT CONNECTION
310/3E	146648-3300	9 461 617 889	A 1	JOINT CONNECTION
310/3F	146648-4700	9 461 617 890	A 1	JOINT CONNECTION

310/3G	146648-5300	9 461 617 891	A	1	JOINT CONNECTION
310/3H	146649-1700	9 461 617 892	A	1	JOINT CONNECTION
310/4	146661-0601	9 461 617 525		1	BOOT
312	146932-0621	9 461 617 907		1	BRACKET
313	020106-1240	9 442 610 314		1	BLEEDER SCREW:M6P1.0L12
344	146666-7620	9 461 616 491		1	INLET UNION
800S	146018-5020	9 461 615 336		1	# PUMP HOUSING
800S/1/6	146601-0700	9 461 615 373		1	PACKING RING
804S	146232-0720	9 461 612 351		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	479771-0520	9 461 619 928		1	PULSE GENERATOR
906	146957-6800	9 461 622 545		1	NAMEPLATE
910S	146600-4320	9 461 615 372		1	PARTS SET
911S	479771-0520	9 461 619 928		1	PULSE GENERATOR
912S	026508-1140	0 986 613 069		1	GASKET:D11.4&8.2T1
913S	146422-0000	9 461 610 237		1	BLEEDER SCREW
914S	146699-0020	9 461 613 775		1	VALVE SET
915S	146662-3720	9 461 616 485		1	WIRE
916S	025804-1610	9 442 610 040		1	WOODRUFF KEY
917S	146684-2310	9 461 615 141		1	POTENCIOMETER

ZEXEL
PRODUCT INFORMATION

Date:31.05.10
Time:17:56:29

INJECTION-PUMP ASSEMBLY

ZEXEL No. 104741-3323
BOSCH No. 9 460 612 768

Microfiche Position:
Engine Type:
Manufacturer:

ZEXEL Ass'y No.	104741-3323
Bosch Ass'y No.	9 460 612 768
Bosch Typecode	
Engine Type	
Manufacturer	
Edition date	01.06.01

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)		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		
P	Boost pressure	kPa	73.3	72	74.6		
P	Boost pressure	mmHg	550	540	560		
S	Average injection quantity	mm3/st.	81.3	80.8	81.8		
S	Difference in delivery	mm3/st.	6.5		6.5		
P	Basic		*				
	Remarks	Full					

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	600	600	600		
P	Boost pressure	kPa	31.3	30	32.6		
P	Boost pressure	mmHg	235	225	245		
S	Average injection quantity	mm3/st.	67.3	66.8	67.8		
S	Difference in delivery	mm3/st.	5.5		5.5		
P	Basic		*				
	Remarks	CBS					

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	750	750	750		
P	Boost pressure	kPa	0	0	0		
P	Boost pressure	mmHg	0	0	0		
S	Average injection quantity	mm3/st.	57.2	56.7	57.7		
S	Difference in delivery	mm3/st.	4.5		4.5		
P	Basic		*				
	Remarks	NA					

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	2300	2300	2300		
P	Boost pressure	kPa	73.3	72	74.6		
P	Boost pressure	mmHg	550	540	560		
C	Average injection quantity	mm3/st.	56.8	53.3	60.3		

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	2000	2000	2000		
P	Boost pressure	kPa	73.3	72	74.6		

P	Boost pressure	mmHg	550	540	560		
C	Average injection quantity	mm ³ /st.	75.8	72.3	79.3		
CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	1000	1000	1000		
P	Boost pressure	kPa	73.3	72	74.6		
P	Boost pressure	mmHg	550	540	560		
C	Average injection quantity	mm ³ /st.	81.3	80.3	82.3		
	Remarks						
		Full					

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	750	750	750		
P	Boost pressure	kPa	0	0	0		
P	Boost pressure	mmHg	0	0	0		
C	Average injection quantity	mm ³ /st.	57.2	56.2	58.2		
	Remarks						
		NA					

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	600	600	600		
P	Boost pressure	kPa	31.3	30	32.6		
P	Boost pressure	mmHg	235	225	245		
C	Average injection quantity	mm ³ /st.	67.3	66.3	68.3		
	Remarks						
		CBS					

2.2 Governing

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	2300	2300	2300		
P	Boost pressure	kPa	73.3	72	74.6		
P	Boost pressure	mmHg	550	540	560		
S	Average injection quantity	mm ³ /st.	56.8	53.8	59.8		
S	Difference in delivery	mm ³ /st.	17		17		
P	Basic		*				

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	3000	3000	3000		
P	Boost pressure	kPa	73.3	72	74.6		
P	Boost pressure	mmHg	550	540	560		
C	Average injection quantity	mm ³ /st.	12		12		

2.3 Idle

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	400	400	400		
P	Boost pressure	kPa	0	0	0		
P	Boost pressure	mmHg	0	0	0		
S	Average injection quantity	mm ³ /st.	12.4	10.4	14.4		
S	Difference in delivery	mm ³ /st.	2		2		
P	Basic		*				

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	700	700	700		
P	Boost pressure	kPa	0	0	0		
P	Boost pressure	mmHg	0	0	0		
C	Average injection quantity	mm ³ /st.	3		3		

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	400	400	400		
P	Boost pressure	kPa	0	0	0		
P	Boost pressure	mmHg	0	0	0		
C	Average injection quantity	mm ³ /st.	12.4	9.9	14.9		

2.4 Start

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	150	150	150		
P	Boost pressure	kPa	0	0	0		
P	Boost pressure	mmHg	0	0	0		
S	Average injection quantity	mm ³ /st.	52	42	62		
P	Basic		*				
	Remarks						
		IDLE					

2.5 Stop

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	400	400	400		
P	Boost pressure	kPa	0	0	0		
P	Boost pressure	mmHg	0	0	0		
C	Average injection quantity	mm ³ /st.	0	0	0		
	Remarks						
		Magnet OFF					

2.6 Overflow

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	1250	1250	1250		
P	Boost pressure	kPa	73.3	72	74.6		
P	Boost pressure	mmHg	550	540	560		
C	Overflow quantity with S/T ON	cm ³ /min	711	582	840		

2.7 Pump chamber Pressure

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	1000	1000	1000		
P	Boost pressure	kPa	73.3	72	74.6		
P	Boost pressure	mmHg	550	540	560		
S	Pressure with S/T OFF	kPa	451	431	471		
S	Pressure with S/T OFF	kgf/cm ²	4.6	4.4	4.8		
P	Basic		*				

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	1000	1000	1000		
P	Boost pressure	kPa	73.3	72	74.6		
P	Boost pressure	mmHg	550	540	560		
C	Pressure with S/T OFF	kPa	451	431	471		
C	Pressure with S/T OFF	kgf/cm ²	4.6	4.4	4.8		

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	2000	2000	2000		
P	Boost pressure	kPa	73.3	72	74.6		
P	Boost pressure	mmHg	550	540	560		
C	Pressure with S/T OFF	kPa	667	628	706		
C	Pressure with S/T OFF	kgf/cm ²	6.8	6.4	7.2		

2.8 Timer

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	1000	1000	1000		
P	Boost pressure	kPa	73.3	72	74.6		
P	Boost pressure	mmHg	550	540	560		
S	Timer stroke with S/T OFF	mm	3.6	3.4	3.8		
P	Basic		*				

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	670	670	670		
P	Boost pressure	kPa	73.3	72	74.6		
P	Boost pressure	mmHg	550	540	560		
C	Timer stroke with S/T OFF	mm	0.3	0.3			

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	700	700	700		
P	Boost pressure	kPa	73.3	72	74.6		
P	Boost pressure	mmHg	550	540	560		
C	Timer stroke with S/T ON	mm	2.9	2.2	3.6		
C	Timer stroke with S/T OFF	mm	1.5	0.7	2.3		

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	1000	1000	1000		
P	Boost pressure	kPa	73.3	72	74.6		
P	Boost pressure	mmHg	550	540	560		
C	Timer stroke with S/T OFF	mm	3.6	3.3	3.9		

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	1250	1250	1250		
P	Boost pressure	kPa	73.3	72	74.6		
P	Boost pressure	mmHg	550	540	560		
C	Timer stroke with S/T ON	mm	6.2	5.5	6.9		
C	Timer stroke with S/T OFF	mm	5.1	4.5	5.7		

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	1500	1500	1500		

P	Boost pressure	kPa	73.3	72	74.6		
P	Boost pressure	mmHg	550	540	560		
C	Timer stroke with S/T OFF	mm	6.4	5.6	7.2		
CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	2300	2300	2300		
P	Boost pressure	kPa	73.3	72	74.6		
P	Boost pressure	mmHg	550	540	560		
C	Timer stroke with S/T OFF	mm	9.7	9.2	10.2		

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		

2.10 Additional device adjustment

2.10.1 Additional device 1

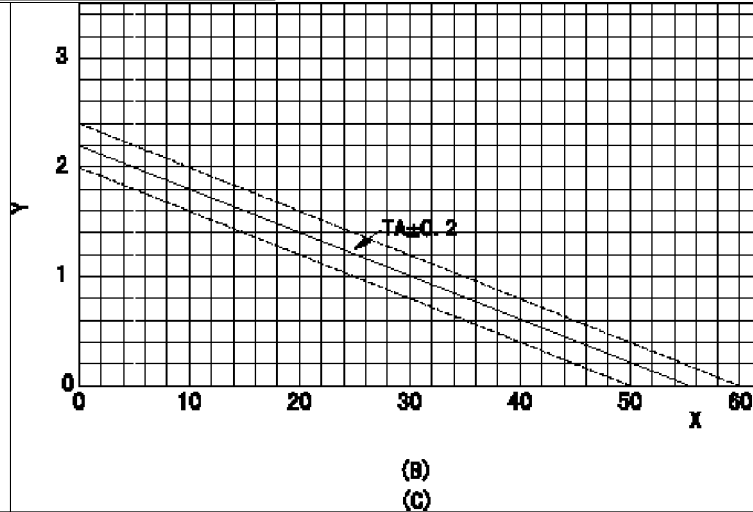
Name	POTENTIOMETER ADJUSTMENT
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<p>N1=750r/min V1=5.24+-0.03V V2=2.16+-0.52V V3=9.02+-0.76V Q1=36.4+-1.0mm3/st Vi=10V</p>	<table border="1"> <tr> <td>C</td> <td>N</td> <td>V</td> <td>Q</td> <td></td> </tr> <tr> <td></td> <td>N1</td> <td>V1</td> <td>Q1</td> <td>A</td> </tr> <tr> <td>C1</td> <td></td> <td>V2</td> <td></td> <td>B</td> </tr> <tr> <td>C2</td> <td></td> <td>V3</td> <td></td> <td>B</td> </tr> </table> <p style="text-align: center;">Vi: P1 (P2)</p>	C	N	V	Q			N1	V1	Q1	A	C1		V2		B	C2		V3		B
C	N	V	Q																		
	N1	V1	Q1	A																	
C1		V2		B																	
C2		V3		B																	
<p>N1=750r/min Q1=36.4+-1.0cm3/1,000st V1=5.24+-0.03V</p>	<p>Adjustment of the potentiometer Adjusting method (service voltage Vi, dummy bolt): 1. Hold the dummy bolt against the control lever when N = N1 r/min, Q = Q1 mm3/st. Fix using the lock nut. 2. When adjusting the potentiometer, position the control lever against the dummy bolt and adjust the potentiometer so that the output voltage is V1 (V). 3. Remove the dummy bolt after the completion of adjustment. Confirm that the potentiometer output voltage is within the standards mentioned when the control lever is idling and in full-speed position. Vi: Applied voltage C: Position of the control lever N: Pump speed (r/min) V: Output voltage (V) Q: Injection quantity (mm3/st) A: Adjusting point B: Checking point C1: Idling C2: Full speed P1: Boost pressure P2: Boost pressure</p>																				

2.10.2 Additional device 2

Name W-CSD ADJUSTMENT

$(C)=TA=-0.04t+2.2(0 \leq t(\text{degC}))$



Adjustment of the W-CSD

1. Adjustment of the advance angle of the timer

(1) Determine the timer advance angle using the following graph.

(2) (1) Adjust with the screw (A) so that the timer advance angle determined in the item (1) is obtained.

X: Temperature t (deg C)

Y: Timer stroke TA (mm)

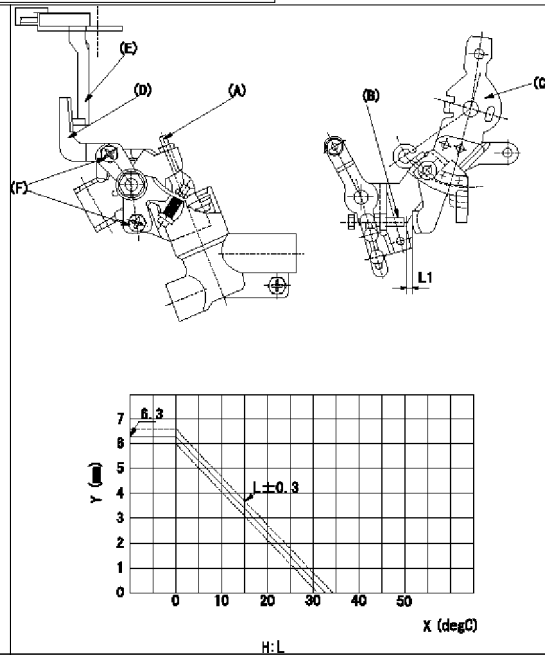
(B): Timer stroke TA (mm):

2.10.3 Additional device 3

Name W-FICD LEVER ADJUSTMENT

$L1=L \pm 0.3\text{mm}$

$L=-0.193X+6.3(0 \leq X(\text{degC}))$



$L1=L \pm 0.3\text{mm}$

$T=3.4 \sim 4.9\text{Nm}\{0.35 \sim 0.5\text{kgfm}\}$

$t=35\text{degC}$

2. Adjustment of the W-FICD

(1) Insert a block gauge L1 determined from the graph below between the control lever (C) and the idling stopper bolt (B).

(2) Fix the bolt (F) at the position where the W-FICD lever (D) and the control lever (E) contact.

T: Tightening torque

(3) After completing W-FICD (D) adjustment, confirm that the timer stroke is the value adjusted in item 1.

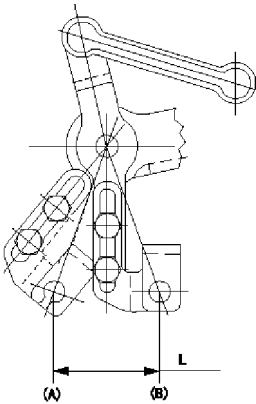
Caution: The temperature of the wax at adjustment must not exceed t.

X: Temperature x (deg C)

Y: Control lever L (mm)

H: Clearance of the control lever

2.10.4 Additional device 4

Name	ACCELERATOR LINK STROKE	
L=32.9+1mm		
L=32.9+1mm	<p>Adjustment of the accelerator link stroke</p> <p>As shown in the figure, adjust so that the accelerator link's stroke between idle (B) and full speed (A) is L1.</p> <p>(A): Full-speed (B): Idle</p>	

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	6.01	5.91	6.11		
S	MS dimension	mm	0.6	0.5	0.7		
S	BCS stroke	mm	5.5	5.3	5.7		
S	Control lever angle alpha	deg.	59	55	63		
S	Control lever angle beta	deg.	42	37	47		